United States
Department of
Agriculture

Forest Service

Pacific
Northwest
Region

MAY 1992

Forest Plan
Monitoring and Evaluation Report

FISCAL YEAR 1991

United States Department of Agriculture **Forest Service** Umatilla National Forest
2517 S.W. Hailey Avenue
Pendleton, OR 97801

Reply To: 1920

Date: May 1, 1992

Dear Reader:

I would like to share with you our achievements in implementing the Umatilla National Forest Plan. The main focus of our first annual monitoring report is to inform you of our achievements in monitoring. Also, included in this report is a general overview of our current program accomplishments and the forest health situation.

1991 has been a very busy year for the Forest since Forest Plan implementation began in August of 1990. As stated in the Forest Plan, monitoring plays a key role in Forest Plan implementation. It is imperative that managers on the Umatilla look closely at the overall management of the forest resources and keep you informed of our progress. In doing so, the information gathered from this report will be used to evaluate the ongoing execution of the Plan.

Another area I would like to inform you about is forest health. Since we began implementation of the Plan, we have had to adjust many priorities to deal with this issue. This resulted in shifting funds and personnel to adequately meet the needs of the salvage and restoration efforts. The salvage and restoration effort is expected to last for the next several years.

I hope you will find this report informative and useful. I personally invite you to respond to the report or any other related issue by calling, writing, or just dropping in at one of the field offices listed on the next page and letting us know how you feel. Your comment is valuable for improving the Forest monitoring and other programs.

Sincerely,

JEFF D. BLACKWOOD
Forest Supervisor
Umatilla National Forest

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

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Ukiah, Oregon 97880
Phone (503) 427-3231
Craig Smith-Dixon, District Ranger

WALLA WALLA RANGER DISTRICT
1415 West Rose
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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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CHAPTER I. INTRODUCTION

The Land and Resource Management Plan for the Umatilla National Forest was approved by the Regional Forester on June 11, 1990; implementation began on August 6. The Forest Plan guides all natural resource management activities and establishes management standards and guidelines for the Umatilla National Forest. This report is the first step in seeing that the Forest Plan is being implemented as intended.

This report is composed of four chapters:

Chapter I. Introduction – Brief overview of the monitoring program.

Chapter II. Forest and District Accomplishments – Summarizes the individual resource programs on the Umatilla National Forest and highlights particular accomplishments. This chapter also provides a tabular comparison of planned versus actual outputs.

Chapter III. Monitoring Results – This chapter provides the specific monitoring information gathered for each of the monitoring items. Also, it provides a summary of recommended actions based upon the results and evaluation of the monitoring process.

Chapter IV. Forest Health – Describes the situation, why the Forest is unhealthy, and what is currently being done.

Before you move on to the report, we would like to give you a quick overview about Forest Plan monitoring. The following topics will explain how monitoring is related to the Forest Plan, what the purpose of monitoring is, and how the Regional monitoring strategy and the Forest Plan monitoring strategy tie together.

MONITORING AND EVALUATION, ITS RELATIONSHIP TO THE FOREST PLAN

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

Monitoring and evaluation may lead to changes in practices or provide a basis for adjustments, amendments, or Plan revisions. Monitoring is intended to keep the Forest Plan dynamic and responsive to change. Upon evaluation of the data and information, determinations are made as to whether or not 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.

PURPOSE OF THE MONITORING REPORT

The purpose of this annual report is to provide information to the agency and public on how well the Forest Plan objectives are being met. This and subsequent reports will be used to provide information for the 5-year Forest Plan evaluation, whereupon an evaluation report will be submitted, with recommended actions for the Forest Supervisor's consideration. The monitoring and evaluation process will provide information to determine if:

- Laws, regulations, and policies are being followed, including those found in the Forest Plan Management Areas and Forest-wide Standards and Guidelines, the Regional Guide, and Forest Service Handbooks.

- The management prescriptions are producing the predicted or Desired Future Conditions of the Forest resources.

- Cost and annual budgets of implementing the Plan are within projected limits.

- Projected outputs are being produced.

A number of monitoring systems are already in place to comply with administrative and legal responsibilities. Forest Plan monitoring does not replace these systems, but rather complements them by addressing specific issues and concerns identified through the planning process and providing additional information for determining the effectiveness of the Plan. The Forest's monitoring report is built on the foundation of the Regional and Umatilla monitoring strategies (as described below).

REGIONAL MONITORING STRATEGY

On June 11, 1991, the Regional Forester signed an updated "Region 6 Monitoring Strategy." The Regional monitoring strategy provides the framework for all monitoring activities in the Region. It provides the overall guidance, goals, and emphasis items and also defines the roles and responsibilities for the different monitoring tasks at each organizational level (regional, forest, district).

The strategy is directly tied to the "Steps of the Journey: Forest Plan Implementation Strategy." As described in the "Steps of the Journey," monitoring and evaluation provide the key linkage between the other steps and influence the implementation process. The essence of monitoring and evaluation is to assess how well the Forest Plan is working and determine the need for amendment or revision.

There are three primary levels of monitoring defined in the Regional Monitoring Strategy:

1. 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.

2. Effectiveness Monitoring collects the information to determine if plans, projects, prescriptions, and activities are effective in meeting the intent of the Forest Plan.

3. Validation Monitoring tests the validity of initial planning data and assumptions.

UMATILLA FOREST PLAN MONITORING STRATEGY

On December 5, 1991, the Forest Supervisor signed the Umatilla Forest Plan "Monitoring Strategy." The strategy is an extension of monitoring described in the Forest Plan. The strategy was developed in conjunction with the Region 6 monitoring strategy.

The main focus of the Umatilla's monitoring strategy is to ensure consistency in implementing the Forest Plan. The National Forest Management Act (NFMA) regulation at 36 CFR 219.12(k), requires that forest plan implementation 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. The Umatilla monitoring strategy is based upon the requirements set by the Forest Plan, the Regional monitoring strategy, and NFMA.

The Umatilla Monitoring Strategy defines the items to be monitored. The strategy contains the key monitoring questions, thresholds of variability (for change), proposed monitoring approaches, assigned responsibilities, and program workforce and budget needs.

CHAPTER II. FOREST AND DISTRICT ACCOMPLISHMENTS

This chapter summarizes the overall accomplishments of the Umatilla National Forest. The accomplishments are broken down into a tabular format to show projected output versus actual. The chapter also discusses accomplishments in programs that are unique, and that have no given value, but rather a value in terms of meeting Forest Plan goals.

TABLE II-1
FY 1991 PROJECTIONS AND OUTPUTS
Umatilla National Forest

RESOURCE	UNIT OF MEASURE	FOREST PLAN PROJECTIONS	OUTPUTS
RECREATION			
Recreation Resource Administration and Maintenance	M PAOT*	404	290
TRAILS			
Trail Construction and Reconstruction[1]	Acres	15	16
Trail Maintenance [2]	Miles	400	638
WILDLIFE			
Wildlife Habitat Non-structural Improvement	M Acres *	–	5.3
Wildlife Habitat Structural Improvement	No.	–	96
Threatened and Endangered Species Habitat Improvement	Acres	–	0
Threatened and Endangered Species Habitat Inventory	Acres	–	600
FISH			
Anadromous Fish Habitat Improvement (nonstructural)	Acres	–	10
Anadromous Fish Habitat Structural Improvement	No.	–	345
Inland Fish Habitat Improvement (nonstructural)	Acres	–	17.0
Inland Fish Habitat Structural Improvement	No.	–	22
Inland Fish Habitat Inventory	Acres	–	600
RANGE			
Permitted Grazing	M AUMs*	58.0	51.4
Range Improvement Nonstructural	M Acres	–	2.3
Range Improvement Structural	No.	–	65
Noxious Weed Control	Acres	–	335
TIMBER			
Timber Sale Program Quantity[3]	MMBF*	159	72.4
Allowable Sale Quantity	MMBF	124	50.2
Reforestation[4]	M Acres	7.5	7.8
Timber Stand Improvement	M Acres	2.9	2.3
Harvest Prescriptions			
Clearcut	M Acres	4.0	3.7
Shelterwood	M Acres	2.6	1.3
Overwood Removal [5]	M Acres	1.5	5.5
Uneven-age Management	M Acres	.9	.9
WATER			
Watershed Improvement	Acre	454	54
MINERALS			
Minerals Proposals, Leases, & Applications	Case	240	243

1 Plan Projected Actual 30; This includes construction which did not occur in FY 1991.
2 Forest Plan does not reflect the increase in additional trail inventory.
3 Refer to write up on page II-5 Timber.
4 Refer to items 35 and 36, pages III-42 and III-43 for explanation. Forest projection includes natural and artificial regeneration.
5 Refer to item 33, page III-41 for explanation.
* M PAOT = Thousand Person At One Time
MMBF = Million Board Feet
M AUM = Thousand Animal Unit Month
M Acres = Thousand Acres

TABLE II-1 (Continued)
FY 1991 PROJECTIONS AND OUTPUTS
Umatilla National Forest

RESOURCE	UNIT OF MEASURE	FOREST PLAN PROJECTIONS	OUTPUTS
LANDS			
Land Line Location	Mile	37.5	36.4
Maintenance	Mile	83	15.8
TRANSPORTATION			
Passenger Car Road Maintenance	Miles	770	900
High Clearance Road Maintenance	Miles	2,530	2,498
FIRE			
Fire Management	$'s/M Acres Protected	779	636
Fuel Treatment [6]	M Acres	9.2	17.1

6 This includes activity and natural fuel treatment acres.
Source: Umatilla National Forest, Management Attainment Report, 1991

RECREATION

An OHV staging area has been constructed at Winom Creek Campground that has loading/unloading, toilet, parking, and camp facilities. Frazier Campground is also being improved to serve as an OHV staging area. Future OHV trail networks are being analyzed in timber sale environmental assessments (EA's). A local four-wheel drive (4WD) club has been working with the Walla Walla Ranger District to evaluate the Target Meadows area for OHV opportunities.

TRAILS

The South Fork Walla Walla (Walla Walla District) and Cable-Tower-Winom (North Fork John Day District) areas provide good networks for motorcycles. The increased popularity of mountain bikes is not being well met. Most trails have gradients too steep for all but the most energetic mountain bike riders. Marked and groomed cross-country ski trails are also in short supply. However, an outstanding network of snowmobile routes is provided on the Forest. This has primarily been a result of the Memorandum of Understanding between the Umatilla National Forest and several local snowmobile clubs. The snowmobile clubs are very active in maintaining trail networks by grooming, signing, and caring for warming shelters. Although state financing assists with grooming costs, much of the work is done by volunteers.

CULTURAL RESOURCES

In Fiscal Years 1990 and 1991, the cultural resource department conducted 90 inventory projects on the Forest. This effort involved 15 archeologists, 13 cultural resource technicians, and 3 contractors.

In 1990, 49,147 acres were surveyed which resulted in a clearance of 94,274 acres. The contract acreage was primarily for timber and accounted for 27,200 acres. Force account surveys, conducted for other functional resource departments, accounted for 1,984 acres.

This survey resulted in the discovery of 212 new cultural properties, 76 sites, and 135 isolated finds.

There were 116 cultural resource sites formally evaluated for their significance and eligibility for inclusion in the National Register of Historic Places. Of those, 67 sites were determined to be eligible and 49 ineligible. Fifty-two evaluations were accomplished by Forest Service personnel while 64 were accomplished by contractor.

ARCHEOLOGICAL ENHANCEMENT

The Forest Archeologist conducted enhancement projects in a number of areas in the past year. A test excavation at a badly looted site on the Heppner Ranger District was conducted with the assistance of a Youth Conservation Corps (YCC) crew. This work revealed that there was still information to be gained; the Forest will pursue funds to excavate and interpret the site.

Stabilization work continues at the Fremont Powerhouse (National Register of Historical Places) where a French drain was installed around the powerhouse itself to remove the standing water from the foundation. After an evaluation of building stability at the Caretaker's house, a contract was let to restore the roof and make the building weatherproof. In addition, hazardous wastes in the lead-acid batteries in the powerhouse were disposed of while the transformers were tested for PCBs and several were found to be contaminated. These will be drained and cleaned during Fiscal Year 1992.

A data recovery project was completed at one site. This project yielded much valuable information on the prehistoric utilization of the northern Blue Mountains and allowed the Forest to move one step further toward true management of cultural resources.

Budget continues to be primarily oriented towards timber support, with little funding allocated for the other cultural resource management activities.

RESEARCH NATURAL AREAS

The Umatilla National Forest has two established and six proposed Research Natural Areas. Permanent ecological sampling plots for designated vegetative elements have been analyzed for the two established RNA's, Pataha Bunchgrass and Rainbow Creek. None of the RNA's have been mapped completely. Efforts to initiate this mapping are expected in 1992.

One of the Forest's proposed RNA's, Birch Creek Cove on the North Fork John Day District, affords a splendid opportunity to serve as a baseline for comparison of the effects of salvage operations.

FISH

In partial response to the "Policy Implementation Guide for Columbia River Basin Anadromous Fish," the Forest will be using baseline data from 1991 in the establishment of numeric DFC's (desired future conditions) in Fiscal Year 1992. Project level monitoring process development was started in 1991 and will continue in 1992. The establishment of monitoring projects and refinement will begin in 1992 and will continue through 1993.

The Umatilla Barometer Watershed Program was initiated in 1965 to monitor and evaluate the functioning of a representative national forest watershed, and to study its response to management activities. Data collection efforts during the first phase of the study concentrated primarily on flow precipitation and temperature related factors. Since 1983, continuous data on sediment and turbidity and annual measurements of bedload and stream channel geometry have also been taken.

A total of 160.5 miles of stream inventories were completed. Data summary and analysis are ongoing. This data will be used to define existing habitat condition and to identify actions needed to attain desired future condition.

RANGE

In the past 3 years, permitted domestic livestock use has been reduced on the Heppner Ranger District. The actual use on the District has taken a far greater decline than permitted use. The reason for the difference between actual and permitted use is as follows: the District has entered into agreements (Memorandum of Understandings [MOU's]) with the permittees for temporary reduction of livestock to provide range recovery. The District has requested permittees to remove their livestock early from the National Forest when the utilization standards are met (11 permittees were requested to move livestock early in 1991). Several permittees have chosen nonuse instead of early removal of livestock. For the past 3 years, the Forest has not renewed or approved certain on/off grazing allotments. One permittee agreed to a reduction in permitted numbers.

Accomplishments in the treatment of noxious weeds in 1991 were similar to previous years.

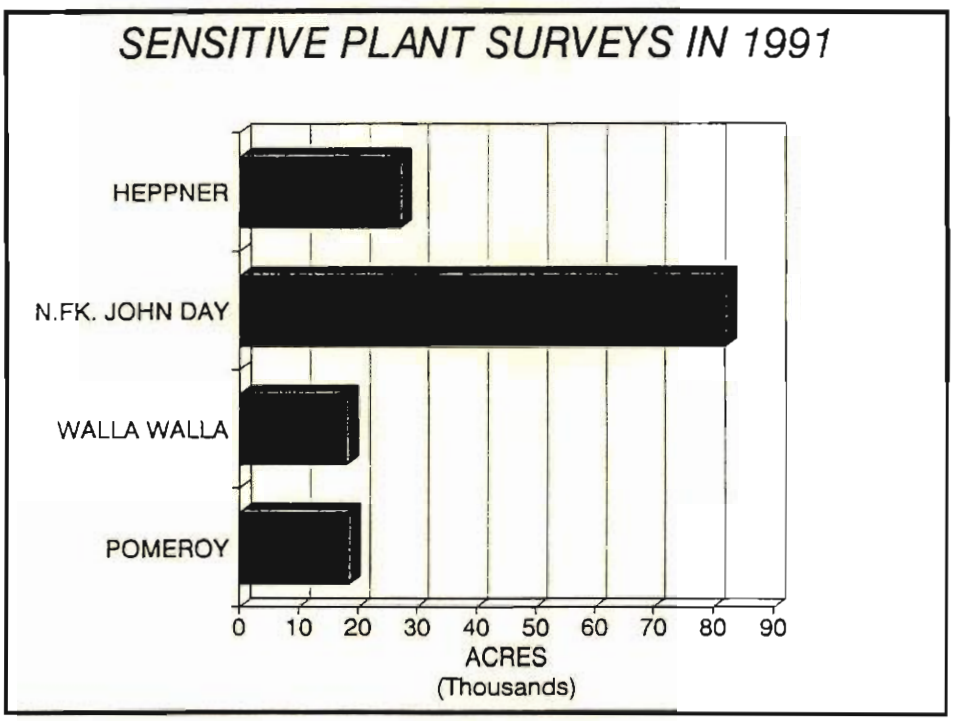
TABLE II-2
Noxious Weeds Treated - 1991

District	Acres Treated	Acres Retreated
Heppner	60	--
North Fork John Day	40	--
Pomeroy	40	151
Walla Walla	44	--
Total Acres	184	151

SENSITIVE PLANTS

Surveys of both project and planning areas for sensitive plant species continue at an accelerated pace on the Umatilla. Survey activity for 1991 is graphically presented below.

FIGURE A



For 1991, assessments were completed for populations of the Mingan Grapefern, *Botrychium minganense*; Arthur's Milkvetch, *Astragalus arthuri*; Umatilla Gooseberry, *Ribes oxyacanthoides cognatum*; Clustered Lady Slipper Orchid, *Cypripedium fasciculatum*; Washington Monkeyflower, *Mimulus washingtonensis*; and Subalpine Apiraea, *Spiraea densiflora splendens*.

Challenge Cost Share funds will be used for the development of a habitat management guide for *Mimulus washingtonensis* during the 1992 field season. Robert Meinke of Oregon State University and the Oregon Department of Agriculture will be our partners in this project. The Umatilla is the only forest known to have populations of this sensitive species of monkeyflower.

SPECIAL INTEREST AREAS (SIA)

Devil's club (*Oplopanax horridum*) has been impacted annually by recreationists, some of whom, at times, attempt to eradicate this spiny shrub. An interpretive sign explaining the unusual occurrence of Devil's club and prohibiting its destruction was constructed during the summer of 1991.

The Blue Mountain Chapter of the Native Plant Society of Oregon will be partners in establishing baseline vegetative databases for the Ruckel Junction and Woodward Campground SIA's on the Walla Walla District early in the summer of 1992.

TIMBER

The Forest total sale program quantity sold for 1991 was 72.4 MMBF. The Forest Plan had projected an annual average of 159 MMBF. The 1991 total is approximately 46 percent of the Forest Plan projection. The following are reasons that planned timber sales were not offered in FY 1991:

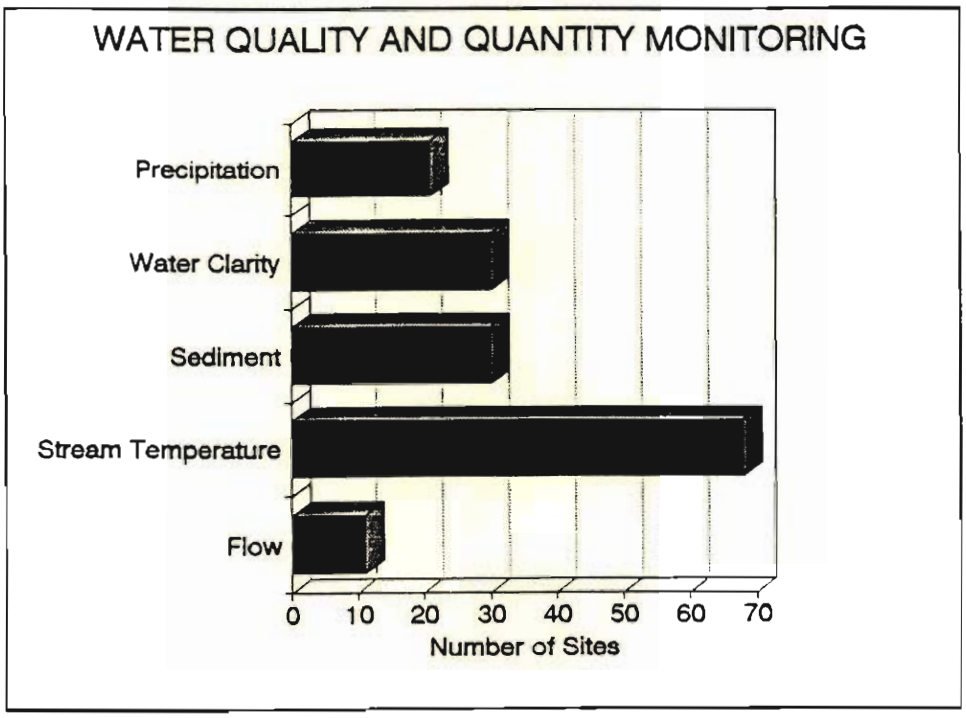
Approximate Volume Affected	Reason Not Offered
24 MMBF	Green sales withdrawn for re-analysis because of declining forest health.
15 MMBF	Cultural resource surveys not completed in a timely manner.
12 MMBF	Withdrawn. Inconsistant with Forest Plan standards and guidelines.
11 MMBF	Appealed, withdrawn. Biological evaluations not consistent with direction.
10 MMBF	Appealed, withdrawn. Loss of big game hiding cover.
9 MMBF	Withdrawn for long-term site productivity study and other reasons.
4 MMBF	Appealed, withdrawn. Being reanalyzed to meet roadless area environmental impact statement requirements.

The Forest planted over 1,937,000 trees on about 7,072 acres in 1991. First-year seedling survival averaged 88 percent, and 76 percent of those trees met or exceeded the Forest's growth objective of 1.2 inches (3 centimeters). For plantations established 3 years ago (1989), 81 percent of the seedlings are still alive and growing well. Timber stand improvement projects (such as thinning in young, crowded stands) were accomplished on another 2,425 acres. During 1991, eight long-term research plots were installed by the Intermountain Forest Tree Nutrition Cooperative to evaluate the effectiveness of fertilization in young stands. During 1991, the last of 173 managed-stand survey plots were installed on the Forest. Managed stands with trees at least 3 inches in diameter are being monitored at 5-year intervals. Information about tree growth, plant communities, mortality, insects, and diseases, wildlife trees, elk use and fuel loading is collected on these plots.

WATER

During 1991, the Forest maintained a water quality monitoring program. (See graph below for number of monitoring sites.) Items monitored included stream flow, water temperature, suspended sediment, water clarity, and precipitation. Other monitoring sites not shown included snow, soil moisture, and channel stability.

FIGURE B



TRANSPORTATION

The process for updating and developing the Transportation Management System (TMS) was implemented in Fiscal Year 1991. The TMS is a database that is linked to the Forest transportation map. The information gained by combining the data with the map will increase management efficiency of the Forest road system. It is anticipated that TMS will be completed in Fiscal Year 1992.

Sixty miles of Forest road were obliterated on the North Fork John Day Ranger District in the first year of implementation of its Access Management Plan.

FIRE

Fire season on the Umatilla started late because of late precipitation received during the month of June. The season continued throughout the fall as a result of a dry weather pattern. Fire season was extended through the third week of October. Firefighting resources, including lookouts, were extended. Campfire restrictions were established throughout much of hunting season.

There were 93 lightning fires recorded, resulting in 49.3 acres burned. The largest lightning fire experienced on the forest was 27 acres in size. Human causes accounted for 52 fires; of those, 41 were from campfires.

The Forest was in a Fire Precaution Level (FPL) of IV for 31 days on the south half and 25 days on the north half of the Forest. In addition, 25 days (north half) and 21 days (south half) were spent in a FPL of III. This exceeded all previous known records for the Forest.

Efforts to maintain cost effectiveness in fire suppression on the Forest centered on the interagency cooperative agreements between the Forest and the Oregon Department of Forestry and the Washington Department of Natural Resources. This effort allowed for successful initial attack, which is particularly important in fuel buildup areas caused by insect infestations. Fire suppression is critical in these areas because of the risk of catastrophic wildfire.

FUELS

The Forest fuels treatment program accomplished 17,122 acres for 1991. Activity fuels and natural fuels treated exceeded planned targets because of the extra effort each District put into this program. Prescribed burning accounted for the majority of the acres treated. In addition to treating forest residues for hazard reduction, prescribed fire was used as a "tool" in reforestation site preparation, range improvement, and wildlife habitat enhancement. Due to erratic weather conditions in the spring and fall, two Districts on the Forest successfully used contractors to conduct the majority of their prescribed burning programs. Few days were available for burning under safe, prescribed fuel treatment situations.

The fire and fuels organizations will be challenged in the next several years to keep up with the demand placed upon them due to the current forest health situation.

DISTRICT ACCOMPLISHMENTS

HEPPNER RANGER DISTRICT

In 1991, the Heppner Ranger District accomplished a variety of projects that benefited the Forest. The following are some of the highlights of those accomplishments:

PARTNERSHIPS: A multiple use information area was completed last summer at the top of Coalmine Hill, along the Blue Mountain Scenic Byway. This project was accomplished in partnership with Morrow County, which performed the construction of the parking area. The site will accommodate motorists on the Byway by providing an information board displaying National Forest brochures and other district information. The site will eventually serve as trailhead parking for the Bald Mountain Trail, as a staging area for snowmobiles and horse users, and as a day use area.

RANGE: The Range department accomplished construction of 32 structures on the District (including 5.5 miles of fencing and 21 ponds and springs). Five hundred and ninety acres of rangeland were seeded to improve forage for livestock grazing. The Bonneville Power Administration funded an additional 13.5 miles of fencing and three cattleguards for the District during FY 1991.

WATER: In Fiscal Year 1991 on the Heppner Ranger District, a hydrological study project was established for the south half of the Forest. This study (information gathered) will be used for assessing the effectiveness of the Forest Best Management Practices. Another important aspect of the study includes a portion of an area infested by the spruce budworm. This will allow for a comparison study of harvested versus unharvested infestation areas.

SILVICULTURE: The District has established a subsoiling study area. The study, in the Fairview Spring area, will be used to analyze growth/survival response of seedlings to areas with or without treatment such as fertilization and subsoiling. The study will also evaluate the use of a subsoiler as a tool for thinning concentrations of young lodgepole pine.

NORTH FORK JOHN DAY RANGER DISTRICT

In 1991, the North Fork John Day Ranger District accomplished a variety of projects. This included developing opportunities, partnerships, wildlife enhancements, range improvements, etc. The accomplishments are as follows:

EDUCATION:

- Conducted tours for various interested parties to view, learn, and discuss forest health.
- In cooperation with the Ukiah school, conducted environmental education activities during Earth Day.

PARTNERSHIPS:

- Implemented a partnership agreement with the Ukiah Parent-Teacher Organization to maintain and use the Forks Guard Station for outdoor school programs.
- Developed a partnership agreement with the Sumpter Snowmobilers to maintain and use the Desolation Guard Station for club activities.
- In partnership with Northwest Trailriders, developed an off-highway vehicle complex.
- In coordination with the Boy Scouts of America developed a partnership for relocation, construction, and maintenance of the Olive Lake Trail.
- Established a New Perspectives demonstration area in partnership with Blue Mountain Natural Resource Institute and the research lab in La Grande, Oregon.
- Initiated several partnership elk projects through the Rocky Mountain Elk Initiative.

FISH AND WILDLIFE:

- Used prescribed fire underburns to improve wildlife forage.
- Fertilized elk winter range for forage enhancement.
- Fenced Fivemile Creek in the Matlock allotment to exclude cattle from the riparian area.
- Surveyed dedicated old growth areas (Management Area C1) to identify conflicts of past management practices and to assess stand suitability as old growth.
- Constructed and maintained fish habitat structures on anadromous fish streams.
- Established 12 monitoring plots to measure dead and down woody material in firewood cutting areas.

RANGE:

- One grazing permittee waived 403 Animal Unit Months (AUM's) back to the government with no preferred applicant.
- Measured big-game use and livestock use on two allotments (Klondike and Texas Bar) by comparing use inside and outside of fenced exclosures.
- Five allotments (F.G. Whitney, Indian, Hidaway, Klondike and Lucky Strike) had utilization measured and three more (Central Desolation, Western Desolation and Texas Bar) had use estimated and then documented.
- Implemented one prescribed underburn for range enhancement.

RECREATION:

- Finished construction of the Winom Creek Campground and installation of odor free restroom facilities.
- Seventy-five percent of the proposed new trailheads on the District were completed.
- Completed construction of the Bear Wallow Trail. (Interpretive signing will be installed in 1992.)

TRANSPORTATION: Implemented the Access and Travel Management Plan by obliterating 60 miles of unneeded road.

SILVICULTURE: Completed 3,333 acres of reforestation.

HUMAN RESOURCE PROGRAM: Implemented over $100,000 worth of project activities with the Human Resource Program, including volunteers, youth groups, etc. (Others are mentioned above.)

POMEROY RANGER DISTRICT

PARTNERSHIPS: Under a cooperative project with the Washington Department of Wildlife (WDW) and the Rocky Mountain Elk Foundation, the District burned approximately 400 acres of winter range to improve the quality of forage for elk.

In cooperation with private landowners and the WDW, the District approved 30 sites where mineral salt will be put out to encourage elk to stay on National Forest land and away from private cropland. Cultural resource inventories and threatened and endangered plant surveys were done on each site before approval was given to put out salt.

The District completed snag surveys on five timber sale areas. In all, 227 one-acre transects and 507 acres of old harvest units were surveyed. The surveys were done to determine snag densities and develop district direction for future management of snags.

Sensitive species surveys were conducted on four timber sale areas totaling approximately 19,000 acres.

In December, in cooperation with the WDW, the District transplanted six bighorn sheep into the North Fork of Asotin Creek in the initial effort to reestablish sheep in the drainage. Four ewes and two rams were captured from the Hall Mountain herd at Sullivan Lake in northeast Washington and transported by truck to the release site.

WALLA WALLA RANGER DISTRICT

The Walla Walla District strongly supports the implementation of the Umatilla National Forest Plan and has initiated a number of new programs to achieve this goal. The following are only a few of the many activities undertaken to earn public trust while blending all resources with values that maintain the inherent dignity of the land.

HUMAN RESOURCE PROGRAMS2: Volunteers contributed 12.17 person years in the accomplishment of various projects on the District. Six Senior Community Service enrollees worked a total of 6,241 hours for the District. The Youth Conservation Corps enrollees and the Job Training Partnership Act enrollees accounted for 7.57 person years of accomplishment. These in conjunction with our temporary and regular workforce teamed up to make 1991 one of our best years.

INTERPRETIVE PROGRAMS: Campfire programs were held at Jubilee Lake for the first time. The programs were presented by various people from the local community and Forest Service employees. Each program was well received by the public. Approximately 700 visitors attended the Saturday evening programs. These programs were an extremely valuable tool for relaying information to the public about various resource issues, including forest health.

TOLLGATE VISITOR INFORMATION CENTER: The center was open to the public 7 days per week. Over 900 visitors stopped by to purchase maps or firewood permits, and to ask questions. The center was staffed by an interpreter/information assistant and a volunteer information host. Construction activities continued all summer long and now the center is accessible to visitors with disabilities.

MORNING CREEK SNO-PARK: Under our partnership agreement, Boise Cascade started construction on the Sno-Park. The parking lot has been excavated and the access road widened, and it is now ready to be surfaced. The paving contract is scheduled to be completed during FY 1992. Volunteers from the snowmobile clubs were also busy constructing the vault toilet.

JUBILEE LAKE BARRIER-FREE PROJECT: Eastern Oregon State Penitentiary completed the construction of 30 barrier-free picnic tables. The Telephone Pioneers of America constructed six fishing piers around the lake. Materials to build the piers were funded through a grant by Oregon Department of Fish & Wildlife. More work is scheduled on the project for FY 1992. The project has raised both public and the Forest Service awareness concerning the need to provide accessible facilities to the public.

PACIFIC YEW PROGRAM: In 1991, the District began following regional and national direction in providing Pacific yew collection opportunities. An estimated 20,000 pounds of yew bark is expected to be collected in Fiscal Year 1992.

SPECIAL EMPHASIS PROGRAMS: The District worked with the Hispanic Community of Walla Walla and surrounding communities to sponsor a bilingual pre-college seminar called "College Knowledge of the Mind." The seminar was attended by youth in grades 6-12 and their parents.

Through the Regional Forester's Cost Share Grant program, the District has established partnerships with 5-6 partners to develop a "Minority Student Mentorship and Leadership Program." This program is scheduled to be completed by the end of May 1992. This program is open to all ethnic minority students in grades 6-12 and GED. It will provide a "shadowing" experience for students with volunteers and bring everyone together for a day in a leadership retreat. The retreat will focus on the shadowing experience and bring in speakers and models of excellence to talk to the participants about the importance of continuing their education beyond high school.

CHAPTER III. MONITORING RESULTS

This chapter contains the 66 items that the Umatilla National Forest monitors. Table III-1 is a summary of recommended actions to be taken as a result of monitoring for those items.

The following categories from the table are the three actions that can be recommended following monitoring.

1. **Change Practices** - Indicates that the current practice is not meeting the specific goals set by the Forest Plan, and improvement is needed.

2. **Further Evaluate to Determine Action** - More information and data are needed to further evaluate the monitoring item to determine what actions need to take place. Once the information and data are evaluated, the appropriate action will be implemented.

3. **Amend/Revise the Forest Plan** - Identifies what changes need to occur in the Forest Plan as a result of policy or environmental changes. An example of this is the current forest health situation. The increased tree mortality has caused a change in the environment, so what was projected in the Forest Plan may not reflect the current forest conditions.

NOTE: Each item will continue to be monitored.

The remaining pages discuss in detail what specific information was found through the first year of monitoring on the Forest. Each monitoring item contains the following four categories:

Forest Goals, Desired Future Condition, Outputs – Gives the specific Forest goal that is to be achieved through management activities. It discusses what the desired future condition (DFC) is, or in other words, what the area should look like after a given period of time.

Monitoring Questions – Asks the pertinent monitoring question(s) that relate directly to each of the monitoring items.

Threshold of Variability – This is a warning system that lets managers know if the monitoring item is not meeting the specific forest goal or DFC. It also informs managers that management practices may have to be changed or corrected.

Results/Narrative – Describes the given results and explains the findings.

TABLE III-1

Summary of Recommended Actions From Forest Plan Monitoring

Umatilla National Forest

ITEM NO.	MONITORING ELEMENT/ITEM	ACTION TO BE TAKEN: Change Practices	Further Eval. to Determine Action	Amend/Revise Forest Plan	5/1/92 Remarks
1	GENERAL Management Areas	•			–Begin using Monitoring Implementation Checklist on all "major" projects.
2	Standards and Guidelines	•			–Same as No. 1.
3	RECREATION Roadless Areas/Semi-primitive Recreation				–No projects in roadless areas in 1991.
4	Off-Highway Vehicle Use		•		–Insufficient information available - refer to report narrative.
5	Visual			•	–Forest Plan schedule for development of viewshed corridor plans has not been followed. Activity schedule needs adjustment.
6	Developed Sites			•	–3-year funding average well below Forest Plan projection; facilities not being maintained to standard.
7	WILDERNESS Nonconforming Uses		•		–Insufficient information available.
8	Management		•		–LAC has not been implemented, insufficient information available.
9	WILDLIFE Elk/Deer Habitat and Estimated Populations		•	•	–Elk populations below management objective; may amend Plan if trend continues (HEI amendment under consideration for salv/rehab - summer range model).
10	Old Growth Tree Habitat		•	•	–Changes occurring to old growth network.
11	Dead and/or Defective Tree Habitat	•			–Not all districts have monitored this element as per direction.
12	Pileated Woodpecker Populations				–Regional protocols developed; effectiveness monitoring to begin in 1992.
13	Pine Marten Populations				–Interagency effectiveness monitoring protocol to be developed.
14	Northern Three-toed Woodpecker Populations				–Regional protocols developed; effectiveness monitoring to begin in 1992.
15	Threatened/Endangered/Sensitive Species Wildlife Populations and Habitat				–Changes occurring to T/E/S list.
16	DIVERSITY				–Monitoring strategy yet to be developed.
17	PLANTS Threatened, Endangered, and Sensitive Species		•		–Potential update of T/E/S list in spring of 1992.

TABLE III-1 (Continued)

Summary of Recommended Actions From Forest Plan Monitoring

Umatilla National Forest

ITEM NO.	MONITORING ELEMENT/ITEM	ACTION TO BE TAKEN			5/1/92
		Change Practices	Further Eval. to Determine Action	Amend/Revise Forest Plan	Remarks
18	RIPARIAN/WATER Effects of Forest Mgmt. Activities on Water and Riparian Areas		•		–Partial information available; indicates action is likely needed.
19	WATER Effects of Forest Mgt. Activities on Water Quantity, Low Flows and Timing of Water Yields		•		–Partial information available but not evaluated.
20	Effects of Forest Mgt. Activities on Water Quality		•		–Same as 18
21	FISH Anadromous and Resident Fisheries		•	•	–Habitat capability and management objective to be established in 1992 & 1993. Trends in spawning show continued decline.
22	WATER/FISH Effects of Forest Mgt. Activities on Stream Temperature	•	•		–Water temperature results – standards not met on some streams.
23	Stream Sedimentation		•		–Partial information available, potential for threshold concerns.
24	Stream Channel Morphological Features		•		–Same as 23
25	WATER/FISH/RIPARIAN Riparian Vegetation	•			–Some streams have riparian vegetation utilization above threshold, especially shrubs.
26	SOIL Soil Productivity	•			–Reoccurring tractor based operations indicate problems with meeting standards on some districts.
27	RANGE Range Condition and Trend	•	•		–Upland conditions generally satisfactory, but riparian areas not.
28	Allotment Planning			•	–18 AMP's scheduled for completion by end of '92. Only one may be completed. Activity schedule needs adjustments because of budget limitations.
29	Comparison of Produced vs. Planned Output				–No action needed, consistent with monitoring strategy.
30	Level of Forage Utilization in Riparian, Upland, and Transitory	•			–Not meeting riparian standards in some areas.
31	Noxious Weeds				–No action needed, consistent with monitoring strategy.
32	Range Improvements Accomplished as Planned				–No action needed, consistent with monitoring strategy.

TABLE III-1 (Continued)

Summary of Recommended Actions From Forest Plan Monitoring

Umatilla National Forest

ITEM NO.	MONITORING ELEMENT/ITEM	ACTION TO BE TAKEN			5/1/92
		Change Practices	Further Eval. to Determine Action	Amend/Revise Forest Plan	Remarks
	TIMBER				
33	Silviculture Harvest Method		•		–Because of changes in the forest health situation, this element will be re-evaluated.
34	Size and Dispersal of Created Openings		•	•	–Same as #33. Under review for Forest Plan minor amendment related to salvage and rehabilitation.
35	Stand Management - Natural Regeneration				–Same as #33
36	Stand Management - Artificial Regeneration				–Same as #33. Reforestation will increase
37	Stand Management - Ponderosa Pine Regeneration		•		–Same as #33 and #36.
38	Regeneration With Genetically Improved Tree Stock		•		–Same as #33
39	Stand Management - Precommercial Thinning				–No action needed, consistent with monitoring strategy.
40	Identification of Lands Suitable for Timber Management	•	•		–Some projects have not reviewed untreated lands for suitability.
41	Managed Yield Projection		•		–To be reviewed in FY 1994; managed stand survey data is being analyzed.
42	Emplrical Yield Projections		•		–Will be reviewed in near future for effects from forest health problems.
43	Timber Offered for Sale				–ASQ target not met; first year results only.
	FUELWOOD				
44	Availability of Firewood				–No action needed, consistent with monitoring strategy.
	MINERALS				
45	Mineral Development and Rehabilitation				–No action needed, consistent with monitoring strategy.
46	Accessibility to Claim and Lease Sites				–No action needed, consistent with monitoring strategy.
	TRANSPORTATION				
47	Forest Road System				–Database system still under development and adjustment.
48	Open Road Density		•		–See item 47; also completion of access and travel management plans will change densities.
49	Trail System		•		–See item 47; also completion of access and travel management plans will require database update.

TABLE III-1 (Continued)

Summary of Recommended Actions From Forest Plan Monitoring

ITEM NO.	MONITORING ELEMENT/ITEM	ACTION TO BE TAKEN			5/1/92
		Change Practices	Further Eval. to Determine Action	Amend/Revise Forest Plan	Remarks
50	PROTECTION Fire - Program Effectiveness				– No action needed, consistent with monitoring strategy.
51	Fire Effects - Prescribed Fire				– No action needed, consistent with monitoring strategy.
52	Air Quality				– No action needed, consistent with monitoring strategy.
53	Fire Effects - Wildfire (on water/soils)				– No action needed, consistent with monitoring strategy.
54	Insect and Disease Control			•	– Currently extensive problems with I and D; Forest Plan amendment is proposed for restoration and salvage of insect damaged forest.
55	CULTURAL RESOURCE Protection of Sites	•	•		A few projects were found out of compliance with Forest Plan standards.
56	SPECIAL INTEREST AREAS - BOTANICAL Effects of Forest Mgmt. Activities on Sensitive and Unique Populations and Landforms				– No action needed, consistent with monitoring strategy.
57	RESEARCH NATURAL AREAS Effects of Activity on Ecosystem				– No action needed, consistent with monitoring strategy.
58	ECONOMICS Forest Budgets				– No action needed, consistent with monitoring strategy.
59	Costs/Values of Forest Plan		•		Analysis not yet conducted, shift in costs & outputs occurring due to management of forest health.
60	ADMINISTRATIVE NEPA/NFMA Compliance	•			Follow direction provided by Forest White Paper and Monitoring Checklist.
61	COMMUNITY EFFECTS Changes in Income Levels		•		Same as #59
62	Changes in Local Populations, Employment, and Income		•		Same as #59
63	Changes in Payments to Counties		•		Apparent error in Forest Plan projection.
64	Changes in Lifestyles, Attitudes, Beliefs, and Values and Social Organization		•		Same as #59
65	Changes in Forest Contributions to Forest Products Industry		•		Same as #59
66	VEGETATIVE MANAGEMENT Mitigation Measures	•			Increase emphasis on use of the vegetation management checklist.

MONITORING ELEMENT: GENERAL

1. **Monitoring Item: Management Areas** (MW-1)[1]

Monitoring Question(s):

1. *Are project plans consistent with the intent of the management areas within which they are being planned and implemented?*
2. *Are the management areas, through their implementation, bringing about the desired future conditions 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/Narrative:

Three sampling techniques were used to assess project plan consistency with Forest Plan direction. During the first year of Forest Plan implementation, a draft Forest Plan implementation checklist was developed. The checklist was developed as a tool to be tested in monitoring Forest-wide and management area standards and guidelines. The main focus of the checklist was to ensure project consistency and achievement of the Forest Plan goals and desired future conditions where management activities were applied. The draft checklist was utilized on four projects on the Forest; one on the North Fork John Day Ranger District and three on the Walla Walla Ranger District.

Some problems were encountered is using the draft checklist. The main issue was consistent interpretation of the standards and guidelines by individual interdisciplinary team members; but after using an interdisciplinary planning approach, the misinterpretations were resolved and consistency achieved. Principal problems arose when standards and guidelines required plans (e.g., viewshed plans) or were covered by other plans (e.g., allotment management plans). The plans (AMP and viewshed) have not yet been prepared. Some standards and guidelines were program related and are beyond the scope of the projects.

Use of the checklist periodically throughout the planning process helped Interdisciplinary team leaders organize and ensure that standards and guidelines were adequately addressed. Use of the checklist also helped to determine what specific analysis and specialist input were needed for project planning. The checklist also assisted in establishing time frames for completing the required analysis work. A review of the checklist during project planning helped identify information for the analysis file. Use of the draft checklist showed that project plans are consistent in the intent of management areas and Forest-wide Standards and Guidelines for the projects tested.

Another means for achieving project consistency with Forest Plan direction is through resource monitoring. On most projects implemented in 1991, standards and guidelines were implemented as designed. However, concerns were identified about consistent compliance with Forest-wide standards for cultural resources (see monitoring item 57, Protection of Sites), soil productivity (see item 27), and NEPA compliance (see item 61).

The third way for ensuring project plan consistency with direction is through EA/EIS reviews. Ten percent of the projects on the Umatilla were sampled by Land Management Planning in the Supervisor's Office for consistency with Forest Plan requirements. For the projects sampled, all met the Forest Plan standards and guidelines.

1 MW Refers to the Forest Plan Monitoring Strategy page number.

Projects implemented were designed to achieve the management areas' desired future conditions. Monitoring of projects in the first year of Plan implementation demonstrated no inconsistency between standards and guidelines and Forest Plan goals and objectives. This monitoring question will be better answered after more years of experience in implementing the Forest Plan. The desired future conditions were adequately met, through implementation of the Forest Plan and with the development of projects fully meeting the intentions of the Forest Plan.

On January 23, 1992, the Forest Supervisor signed a letter of direction to rangers and staff on the use of the Forest Plan implementation monitoring checklist. This direction will give consistency in reporting findings on the implementation of the Forest Plan. The programmatic checklist was not utilized during Fiscal Year (FY) 1991. Use of the checklist on a full array of projects in 1992 will better document project consistency with the Forest Plan.

2. **Monitoring Item: Standards and Guidelines** (MW-3)

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.

2. Deviation from stated goals and objectives (will cause review).

Results/Narrative:

Monitoring Item 2 is combined with Item 1 and covered within the discussion of results.

MONITORING ELEMENT: RECREATION - ROADLESS AREAS

3. **Monitoring Item: Amount of Primitive and Semi-primitive Recreation Opportunity Spectrum; Number of Roadless Areas Entered** (MW-5)

Forest Goals, Desired Future Condition, Outputs:

1. Nearly 30 percent of the Forest remains available in an unroaded status to provide semi-primitive and primitive opportunities (Desired Future Condition).
2. The Forest will continue to meet demand for primitive and semi-primitive opportunities found in wilderness, unroaded, and other areas (50-year Desired Future Condition).

Monitoring Questions:

1. *Are the identified roadless areas or parts thereof managed as the Forest Plan allocated or prescribed?*
2. *Are the primitive and semi-primitive recreation opportunities available as shown in the Plan?*

Threshold Of Variability:

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

Results/Narrative:

Roadless areas have not been entered with new roads in timber sales or other activities during 1991. Environmental impact statements (EISs) are being prepared for two areas: Jaussaud Corral and Willow Springs. Twenty-two areas remain unroaded, totaling about 281,000 acres.

Since no roadless areas have been entered, the primitive and semi-primitive recreation opportunities remain unchanged from the current situation described in the Forest Plan. No threshold of variability has been crossed.

TABLE III-2
Nonwilderness Capacity Recreation Opportunity Spectrum Outputs[1]

	Unit of Measure	Forest Plan [2] Estimated Output	Actual Output
Nonwilderness Capacity Unroaded	1,000 RVD[3]	132	139
Recreation Opportunity Spectrum Primitive Semi-Primitive Nonmotorized Semi-Primitive Motorized	 1,000 Acres 1,000 Acres 1,000 Acres	 50 296 115	 36 318 147

1 Source: Umatilla Forest Plan & FEIS.
2 Projected outputs by end of decade 1.
3 Recreation Visitor Day

MONITORING ELEMENT: RECREATION - OFF HIGHWAY VEHICLE (OHV) USE

4. **Monitoring Item: Location, Type, Amount of Use; Conflicts?** (MW-8)

Forest Goals, Desired Future Condition, Outputs:

1. Manage for a broad spectrum of recreation opportunities and experiences on the Umatilla National Forest (Goal).
2. Provide and manage roads, trails, and facilities needed to accomplish land and resource management and protection objectives on the Forest (Goal).
3. An active program of road closures will respond to elk habitat requirements, dispersed recreation needs, and soil, water, and economic criteria (Desired Future Condition (DFC)).
4. Conflicts between OHV use, other recreation users, and big game will require some adjustments in OHV use seasons and locations. (DFC)

Monitoring Questions:

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

Threshold Of Variability:

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

Results/Narrative:

TABLE III-3
Off Highway Use [1]

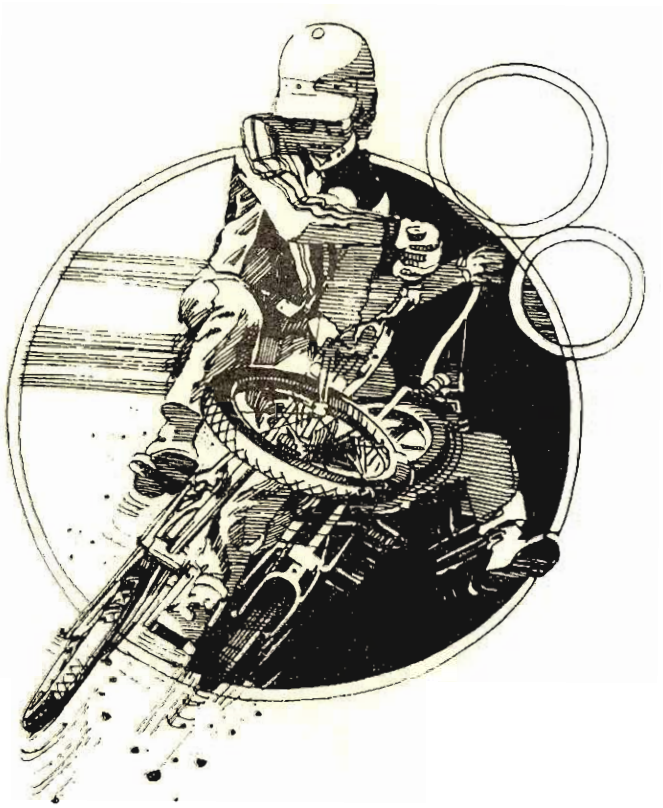
	Unit of Measure	Forest Plan Projected Output [2]	Actual Output
Roads Suitable for Public Use			
Passenger Car (Maintenance)	Miles	900	770
High Clearance Vehicle (Maintenance)	Miles	2,530	2,498
Recreation Opportunity Spectrum			
Semi-Primitive Motorized (Assumes no change from LRMP existing situation)	1,000 Acres	115	147
Total OHV Opportunities	1,000 Acres	316	316
Trails Suitable/Available for Motorized Use	Miles	361	590

1 Source: Umatilla National Forest Plan and FEIS.
2 Projected outputs by end of decade 1.

This monitoring element is highly dependent on the Forest access and travel management (ATM) program (see monitoring item 47). Development of ATM plans are in progress on all Districts except North Fork John Day, where an approved access travel management plan is being implemented. Completion of the ATM plan for Heppner and Pomeroy districts is expected in 1992. Implementation of approved plans will immediately follow. When plans are complete, more effective monitoring can also be initiated.

Although over 500 miles of trails are available for motorcycle use, many are not designed or maintained for satisfactory use. The Winom-Frazier OHV Complex of the North Fork John Day Ranger District has a good network of motorcycle trails managed under a strong partnership with a local club and the State of Oregon all terrain vehicle (ATV) program.

OHV use is well dispersed across the Forest. Isolated, minor resource effects have been noted; e.g., in the Pataha Creek riparian area near the Forest boundary. The Upper Tucannon River and Panjab Creek have been subject to controversy over OHV use. Concern has also been expressed about OHV use on the Upper Tucannon Trail impacting riparian areas and anadromous fish habitat. Conflict resolution is still being sought for the Tiger Canyon wildlife/snowmobile situation. Concern for snowmobile accidents in the Tollgate area has risen; a cooperative accident monitoring system has been implemented with local snowmobile clubs. A winter recreation management plan is nearly completed for the North Fork John Day Ranger District and active coordination is taking place with snowmobile groups.



MONITORING ELEMENT: VISUAL

5. **Monitoring Item: Existing Visual Condition** (MW-11)

Forest Goals, Desired Future Condition, Outputs:

1. 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, often using vegetation management practices (DFC).
2. Many management areas will remain substantially unchanged, except for subtle revegetation changes (50-year DFC).

Monitoring Questions:

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 visual quality objective.
2. Less than 325,000 acres of the Forest meet retention or partial retention visual quality objective.

Results/Narrative:

TABLE III-4
Existing Visual Condition Outputs – 1991[1]

	Unit of Measure	Forest Plan Projected Output[2]	Estimated Output
Visual Quality Objectives			
Preservation	1,000 Acres	304	304
Retention/Partial Retention	1,000 Acres	325	730
Modification/Max. Modification	1,000 Acres	882	477

1 Source: Umatilla Forest Plan & FEIS.
2 Projected outputs by end of decade 1.

Most project planning done on site-by-site basis for timber sale activities, etc., in 1991, did not effect areas with retention/partial retention visual quality objectives (VQO's). The VQO's are assumed to be met during implementation since limited monitoring and evaluation have occurred. Projects were designed to meet visual standards and guidelines.

The Forest database and Geographical Information System (GIS) are being updated to allow calculation of existing visual condition, updating site-specific VQO maps to reflect the Plan direction, and to assist in general project planning and implementation.

The most significant effect on the visual resource is related to the current insect epidemic on the south half of the Forest. Large scale areas of defoliation and salvage logging will substantially change the appearance of the Forest. No thresholds of variability have been crossed.

MONITORING ELEMENT: RECREATION – DEVELOPED SITES

6. **Monitoring Item:** Capacity, Occupancy Rate, Satisfaction (MW-14)

Forest Goals, Desired Future Condition, Outputs:

1. Manage for a broad spectrum of recreation opportunities and experiences on the Umatilla National Forest (Goal).
2. Winter sports, growing in popularity, will be accommodated (DFC).

Monitoring Questions:

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/Narrative:

TABLE III-5
Capacity, Occupancy Rate, Satisfaction Outputs – 1991

	Unit of Measure	Forest Plan Projected Output[1]	Actual Output
Recreation Site Use	1,000 Recreation Visitor Days (RVD)	280	Not Available
Recreation Site - Expansion	Person At One Time (PAOT)	710	50
Occupancy Rate - Sites w/ <60% Occupancy Rate	Number	0	1 *
Capacity - Dev Scale 3	PAOT	6,949 **	7,000

1 Projected outputs by end of decade 1.
*Jubilee Lake
** Table III-35 in the Forest Plan Final Environmental Impact Statement

The Forest is currently developing a method to reliably and consistently collect use information (refer to Forest Plan 2-24). For example, the data base currently shows that more than twice as much use occurs along the Wenaha River in the wilderness than in the Bull Prairie Campground. Since the expected use in this portion of the wilderness is relatively low and the Bull Prairie Campground is one of the most popular and heaviest used sites on the Forest, this indicates inaccuracy of user data for developed recreation sites. The data base to maintain the inventory of use, capacity, and condition of facilities is also currently being developed and refined.

Occupancy rates of most sites are well within standards. Jubilee Lake Campground was used at approximately 74 percent of maximum capacity. Monitoring and analysis is needed to verify expansion needs at Jubilee Lake. A few other campgrounds (e.g., Olive Lake and Bull Prairie) reach capacity on holiday and peak season weekends. The amount of fees collected during the last 3 years has increased each year (no rate increase). Winom Creek off-highway vehicle campground was constructed, increasing capacity on Forest by seven campsites (approximately 50 PAOT).

Conditions at all sites are substandard. Current estimates indicate a need to repair facilities in poor condition, replace those that are not worth repairing, and establish new facilities. Presently, significant funding needs to be appropriated to restore items in fair condition and further prevent deterioration. Current budget levels are inadequate to perform routine maintenance to standards (see budget, item 58).

The Forest Plan output objective is based upon rehabilitating and expanding water-related campgrounds during the first decade, rehabilitating the remaining campgrounds during the second decade, and renovating facilities on a systematic basis thereafter. This objective is not being met since funding remains unavailable for recreation capital improvements.

MONITORING ELEMENT: WILDERNESS – NONCONFORMING USES

7. **Monitoring Item: Location, Kind, Amount, Effects of Nonconforming Uses** (MW-17)

Forest Goals, Desired Future Condition, Outputs:

"...measures to increase the amount of primitive recreation opportunity to desired levels..." (DFC)

Monitoring Questions:

1. *Are 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 Limit of Acceptable Change standards and guidelines for each wilderness.
2. Any increase of nonconforming uses.

Results/Narrative:

TABLE III-6
Wilderness – Nonconforming Uses

Nonconforming Uses	Wenaha-Tucannon		North Fork John Day		North Fork Umatilla		Forest Total	
	Base Year	Cur. Year	Base Year	Cur. Year	Base Year	Cur. Year	Base Year	Cur. Year
Grazing								
No. Permits	1	1	1	1	1	1	3	3
AUMs (actual)	0	0	0	0	0	0	0	0
Mining								
No. Claims	0	0	800	200	0	0	800	0
Plan of Operation	0	0		7	0	0	0	0
Outfitter-Guides								
No. Permits	5	3	1	0	0	0	0	0
Service Days Permitted	0	0	60	0	0	0	0	0
Motor/Mechan. Uses								
No. Authorized	1	5	3	2	0	0	0	7
No. Trespasses	0	0	0	0	0	1	0	0

The amount of nonconforming use is in a downward trend. No thresholds of variability have been crossed. Authorized uses which are conducted under permit are conducted reasonably well to minimize impacts. Several small placer operations are being conducted according to pre-existing rights.

MONITORING ELEMENT: WILDERNESS – MANAGEMENT

8. **Monitoring Item: Limit of Acceptable Change (LAC) Monitoring Items; Amount of Primitive Wilderness Resource Spectrum (WRS)** (MW-19)

Forest Goals, Desired Future Condition, Outputs:

1. "...measures to increase the amount of primitive recreation opportunity to desired levels..." (DFC)
2. The Forest continues to meet demand for primitive and semi-primitive opportunities. (50-year DFC)

Monitoring Questions:

1. *What is the general condition of the wilderness?*
2. *What effect is visitor use having on the wilderness resource?*
3. *Are standards being met for the WRS classes designed 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/Narrative:

Limit of Acceptable Change has not been developed and implemented to adequately evaluate this monitoring element. Standards and indicators need to be verified; e.g., it may be appropriate for an indicator of "permanent structures" to address the traditional, heavy, campsite use situation. A benchmark of naturalness as required has not been established for any of the Umatilla NF wildernesses.

Significant improvement has been made for reducing the permanent structures and caches at campsites in the Wenaha-Tucannon Wilderness. Encounter standards are regularly exceeded during the hunting season in several areas. Group-size standard is exceeded occasionally during this same period.

It is likely that thresholds of variability have been crossed but this has not yet been tested through monitoring. However, the nondegradation principle is estimated to have been met; i.e., each wilderness has been maintained in at least as wild a condition as it was at the time of classification.

MONITORING ELEMENT: WILDLIFE

9. Monitoring Item: Elk/Deer Habitat and Estimated Populations (MW-22)

Forest Goals, Desired Future Condition, 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 zone 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, and open roads valid?*

Threshold Of Variability:

1. Elk habitat effectiveness indices, including discounts for open roads, are more than 10 percent below the objective in any given allocation zone or management area at any point in time.
2. Population 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 components, and cow/calf or doe/fawn ratios for a 3-year period.

Results/Narrative:

Past season elk population data (estimated number, bull/cow and cow/calf ratios) have been summarized from state statistics of all big game management units involving the Umatilla National Forest. This data was adjusted to reflect population data on Forest lands only. (See the following Table, III-7.) The trend in elk numbers has been down over the past 5 years and is presently about 17 percent below the State Management Objective (SMO) level of 21,135 elk. (Also see Figure C for changes in elk populations compared to the SMO through time.) Perhaps of even greater concern is the decline in bull/cow ratios of about 20 percent below the SMO level, and the nearly 30 percent decline in cow/calf ratios. Although data for mule deer was not summarized, the estimates are similar. Hunter numbers have declined by similar amounts over the past 4-5 years.

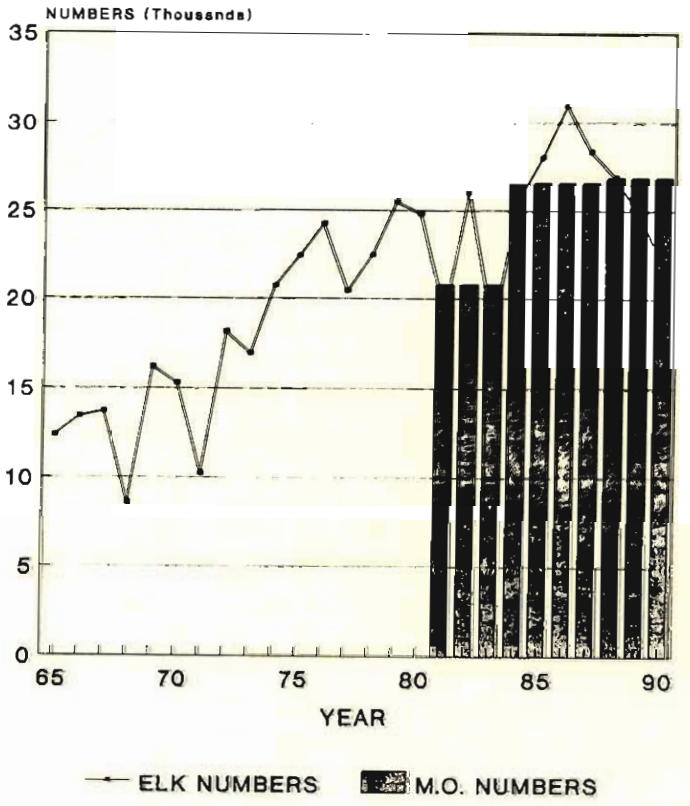
At this point, the reasons for the decline in elk populations, bull numbers, and calf production are probably many and varied, but include the loss of cover from timber harvest and insect related tree mortality. The number of open roads on the Forest resulting in big game vulnerability, and the relatively low number of branch-antlered bulls for breeding are additional factors.

TABLE III-7
Elk/Deer Populations[1]

	OREGON	WASHINGTON	TOTALS	
Elk Populations				
SMO [2]	15,654	5,481	21,135	
Forest Estimate	13,806	3,706	17,512	-17%
Deer Populations				
SMO	16,300	4,100	20,400	
Forest Estimate	13,300	2,200	15,500	-24%
No. Bulls/100 Cows				
SMO	6.1	15.0	–	–
Forest Estimate	4.7	12.4	–	–
No. Calves/100 Cows				
SMO	44.0	45.0	–	–
Forest Estimate	32.0	28.6	–	–

1 *Includes only the Forest portion of the total management unit numbers (percentages as estimated by state biologist in 1981 during MO establishment)*
2 *State Management Objective shown in the Forest Plan.*

FIGURE C
Post Season Elk Numbers and MO's for All Units
Umatilla National Forest



During 1991, a method was developed for implementation monitoring of big game habitat. The process involves testing the effects of projects in meeting the habitat effectiveness index (HEI) (and cover) standards established for each management area (monitoring question 2). Essentially, HEI's (and cover acres) are calculated on a 3,000 to 8,000-acre basis for each management area within each defined subwatershed and added together to determine if standards are met for an entire management area. The process development was a coordinated effort between Oregon Department of Fish and Wildlife (ODFW), Washington Department of Wildlife (WDW), and the three Blue Mountain national forests – the Wallowa-Whitman, Malheur, and Umatilla.

The Forest has tested the process by sampling three subwatersheds to assess effects of projects and influence of spruce budworm defoliation. An initial approximation has been made of the change (loss) in marginal and satisfactory cover through 1991 due to harvest and/or budworm mortality and defoliation since 1987 (base year for updated vegetation data). Initial results are shown in the following tables, including budworm impacts projected for 10 years. The test has been completed since data for entire management areas has not been aggregated to see if standards and guidelines have been met for the whole area.

TABLE III-8A
Estimation of HEI and Cover Changes
Eden/Mosier Subwatershed 88C
Walla Walla

Management Area	E2 – 7,010 Acres		
Management Standard	HEI 45/Sat. Cover 10%		
Year	Estimated HEI	Sat. Cover %	Marginal Cover %
1987	44	16	45
1991	40	16	44

TABLE III-8B
Estimation of HEI and Cover Changes
Indianberry Subwatersheds 91 W, 92B (primary) 92C, 92D
North Fork John Day

Management Area	C3 – 4,777 Acres			C4 – 8,100 Acres		
Management Standard	HEI 70/Sat. Cover 10%			HEI 60/Sat. Cover 15%		
Year	Estimated HEI	Sat. Cover %	Marginal Cover %	Estimated HEI	Sat. Cover %	Marginal Cover %
1987	61	22.5	81.4	60	21.7	30.0
1991 *	59	19.0	20.0	61	19.0	20.0
1991	52	6.0	16.8	55	8.0	22.7
2002 *	42	6.0	1.7	48	8.0	10.3

* Estimated - based on no loss in cover due to spruce budworm.
** Projected - based on expected decline due to spruce budworm.

TABLE III-8C
Estimation of HEI and Cover Changes
Windy Springs Subwatershed
North Fork John Day

Management Area	C3 – 1,911 Acres			C4 – 9,705 Acres		
Management Standard	HEI 70/Sat. Cover 10%			HEI 60/Sat. Cover 15%		
Year	Estimated HEI	Sat. Cover %	Marginal Cover %	Estimated HEI	Sat. Cover %	Marginal Cover %
1987	73	Not Est.	Not Est.	65	Not Est.	Not Est.
1991 *	72	42.1	8.1	68	28.7	21.1
1991	63	Not Est.	Not Est.	54	Not Est.	Not Est.
2002 **	54	Not Est.	Not Est.	41	Not Est.	Not Est.

* Estimated - based on no loss in cover due to spruce budworm.
** Projected - based on expected decline due to spruce budworm.

The monitoring analysis helps to determine if timber management activities are meeting Forest Plan big game standards and guidelines. Each of the sampled areas has completed timber harvests since 1987, with standard silvicultural practices. Results indicate that HEI is at or slightly below standards in two of the three sampled areas and is about the same after timber harvest. (In some cases the HEI is down and in others it has increased.) Spruce budworm defoliation and mortality are causing a major reduction in cover and decline in HEI values in the North Fork John Day areas. Thresholds of variability are exceeded in those cases. Some mitigations and increased HEI values may be achieved by closing additional roads. However, where the spruce budworm epidemic continues, the Forest may have to initiate other mitigation measures to adjust for loss of cover and effective big game habitat.

10. **Monitoring Item: Old Growth Tree Habitat** (MW-25)

Forest Goals, Desired Future Condition, 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, and 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?*
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 allocation zone or management area?*
4. *Are the dedicated old growth units being used by the indicator species, if they are suitable?*
5. *Are sufficient numbers and diameter classes being left adjacent to the designated old growth habitat units as feeding habitat for pileated woodpeckers?*

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 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/Narrative:

In cooperation with the local Audubon Society, the Forest collected information on an estimated 50 percent of the dedicated old growth units outside of wilderness. The survey evaluated the quality of designated units, appropriate size, and any encroachments (roads or harvest activities).

Nine units on the Pomeroy Ranger District are capable rather than suitable old growth, which corresponds to the designation in the Forest Plan. Six units on the Walla Walla Ranger District were identified as having problems (i.e., harvest units under contract within the designated old growth boundaries or boundaries drawn adjacent to roads open to public travel where snags and/or other hazardous trees have to be removed). These units have been carefully evaluated and proposed changes recommended for Plan amendment. Most of the changes and/or problems occur on the North Fork John Day Ranger District. Some of the old growth units contain roads, have harvest units under contract, are affected by heavy insect mortality, or are not large enough. The District evaluated the survey data and made recommendations to adjust their old growth network. Surveys in cooperation with the Audubon Society will be conducted in 1992 on the Heppner Ranger District. The Pomeroy Ranger District will be completing their inventory of dedicated old growth in 1992 as well. Upon completion of these old growth inventories, a Forest Plan amendment will be needed.

The wide spread and catastrophic losses of grand fir and Douglas-fir on the southern two districts as a result of 10 years of spruce budworm activity continues to seriously affect the quality and condition of the dedicated old growth units. Most of the host species are dead or dying which results in reductions in canopy closures, density of canopy layers, and the number of live, large green trees in the stand.

11. **Monitoring Item:** Dead and/or Defective Tree Habitat (MW-28)

Forest Goals, Desired Future Condition, Outputs:

Maintain the number, size, and distribution of dead and/or defective trees (snags and logs) to meet habitat capability objectives, using primary cavity excavators as the management indicator species.

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 form more than 10 percent of the surveyed sites, or are 80 percent or less of predicted numbers.

Results/Narrative:

Each of the districts has looked at the number of snags and down material associated with timber harvest activities. Because of state Occupational Safety Health Administration (OSHA) requirements, concerns with the presence of hazardous trees within sale area boundaries, and loss through wind throw, most of the districts are designating (through wildlife signs) "clumps" of both dead and green trees to provide the required habitat for cavity users. In portions of the forest, past timber harvest and fuelwood cutting activities have taken many, if not most, of the large diameter snags. The catastrophic number of dead and dying trees (primarily grand fir and Douglas-fir) as a result of spruce budworm activity provides more than adequate numbers of available snags for the short term.

The North Fork John Day Ranger District implemented a dead and/or defective tree habitat monitoring program on 35,000 acres in eight timber sale units. Plots were established within the eight firewood cutting units to test the effects of firewood cutting. Only 10 percent of the plots actually had wood cutting activity in them, which resulted in 16 cords of firewood removed. In two of these plots, no trees were felled and only dead and down wood was removed. Some slash piles did have some woody material removed, primarily the tops. No locations were found where trees were taken in excess of minimum Forest Plan standard for wildlife trees. In some locations, the diameter limit of 14 inches for firewood (standing dead) was exceeded. The results of this monitoring effort did not adequately give the needed information. An approach would be to install plots in areas where wood cutting has occurred, estimate amount taken, and measure amount left. When near minimum levels are approached, then the remaining dead trees would be marked to be saved.

On the Pomeroy Ranger District, snag surveys on five timber sale areas showed an abundance of small snags 2 to 3 times more than the objective in the 6- to 12-inch category. However, on two of the five timber sales, the number of large snags were deficient. As a result, the district is reviewing the timber management procedures to assure that future and ongoing sales meet Forest Plan objectives for wildlife tree habitat.

12. **Monitoring Item: Pileated Woodpecker Populations** (MW-30)

Forest Goals, Desired Future Condition, Outputs:

Maintain sufficient mature/old growth tree habitat and adjacent feeding areas to provide for viable populations of pileated woodpeckers.

Monitoring Question(s):

1. *Are pileated woodpeckers using the provided old growth habitat and feeding areas as projected?*
2. *What are the trends in population estimates?*

Threshold Of Variability:

1. Greater than 10 percent variances from expectations in pileated woodpecker occupancy, use, or production within a 5-year average.
2. Populations are on a downward trend.

Results/Narrative:

As outlined in the Forest monitoring strategy, during the first year, monitoring techniques would be developed to monitor woodpecker use and activity within the designated old growth units. During 1991, the Region worked on protocols for monitoring various wildlife species (management indicator species - MIS). A subcommittee headed by Evelyn Bull, scientist, at the Pacific Northwest Research Station in La Grande, Oregon, developed and published a monitoring protocol for pileated woodpeckers. Beginning on the Walla Walla Ranger District in 1992, pileated woodpecker activity will be monitored in cooperation with the local Audubon Society. Such surveys will be continued and will eventually provide data to develop population trend estimates.

13. **Monitoring Item: Pine Marten Populations** (MW-32)

Forest Goals, Desired Future Condition, Outputs:

Maintain no less than viable populations of pine marten.

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/Narrative:

As described under "old growth" tree habitat, some of the dedicated units were inventoried during the year to determine suitability. However, no on-site pine marten surveys to determine use, distribution, or population estimates were done.

Guidelines for monitoring wolverine and lynx were developed for the three Blue Mountain forests in 1992, involving winter track surveys. Similar techniques are applicable for marten and other furbearers. The winter surveys for pine marten (and wolverine) began in January 1992, and will be conducted in succeeding years to determine use, trends, and distribution.

14. **Monitoring Item: Northern Three-Toed Woodpecker Populations** (MW-34)

Forest Goals, Desired Future Condition, Outputs:

Maintain no less than viable populations of three-toed woodpecker on the Forest.

Monitoring Question(s):

1. *Are the designated old growth tree habitats and lodgepole pine areas suitable and being used by three-toed woodpeckers as projected?*
2. *Is the "managed" old growth lodgepole pine concept providing adequate habitat with adequate sizes of snags and distribution to provide viable populations?*

Threshold Of Variability:

1. Populations of three-toed-woodpeckers are more than 20 percent below values expected in the Plan on a 5-year average.
2. The number of larger diameter dead lodgepole pine is more than 15 percent below the objective in any given allocation zone at any point in time.
3. Populations are on a downward trend.

Results/Narrative:

No surveys were conducted during 1991. The newly developed monitoring techniques described for the pileated woodpecker (monitoring item 12) apply to this species and will be used beginning in 1992.

15. **Monitoring Item: Threatened/Endangered/Sensitive Species Wildlife Populations/Habitat** (MW-36)

Forest Goals, Desired Future Condition, Outputs:

1. Protect, provide, and/or manage suitable habitat for the population and recovery of bald eagles and peregrine falcons. Participate in the re-establishment of four pairs of bald eagles and four pairs of peregrines on the Blue Mountain zone.
2. Identify and manage any winter roost sites or potential nest sites on National Forest lands.
3. Identify and manage all winter feeding areas and food resources on Forest lands for use by bald eagles.
4. Protect, provide, and/or maintain suitable habitat for all sensitive wildlife species occurring on the Forest.

Monitoring Question(s):

Bald Eagles –
1. *Are potential habitats, including nest sites, communal roosts, and associated foraging habitats being identified and planned to assure species recovery as specified in the recovery plans and in the Plan?*
2. *Are wintering populations stable or increasing?*

Peregrine Falcons –
1. *Are nesting and associated foraging habitats being identified?*
2. *Are potential nest habitats identified and being managed to maintain suitability?*

Sensitive Species –
Are potential habitats being identified and/or protected to maintain identified species and to ensure that management standards are being met?

Threshold Of Variability:

1. Any nest or roosting sites compromised as a result of Forest Service management activities.
2. Any delays in developing individual site management plans for reintroduction sites or for active nests.

3. Any threatened, endangered, sensitive populations compromised as a result of Forest Service management activities.

Results/Narrative:

Habitat surveys for both bald eagles and peregrine falcon were conducted during 1991. The eagle winter use surveys were done in cooperation with Frank Isaacs, research biologist, and Oregon State University in the Grande Ronde basin. A number of bald eagles utilize the Forest during the winter months. Two communal roost sites have been identified, located on the North Fork John Day River and Owens Creek. Isaacs' field inventories, as well as Ranger District observations, are ongoing and have now included the John Day basin (including the North Fork John Day River). These winter surveys were begun in late December of 1991, and will be continued in 1992. Wintering populations appear to be static.

An aerial survey of peregrine habitat was also done on the south half of the Forest in 1991 in cooperation with the Oregon Department of Fish and Wildlife and the Forest Service Regional Peregrine Biologist, Joel Pagel. No nesting peregrine were found although several other nesting hawks and a golden eagle nest were located. A number of suitable or potential peregrine nest sites were located and mapped and can be enhanced as money becomes available.

Wolverine surveys were initiated in the winter of 1992, but the lack of snow and late development of protocol has limited the inventory to date. No wolverine tracks have been identified.

MONITORING ELEMENT: DIVERSITY

16. Monitoring Item: Plant and Animal Diversity

This element has not yet been fully developed in the monitoring strategy. Development of the monitoring questions and approach to monitoring will be accomplished in spring of 1992. Monitoring is expected to be initiated in 1992.

MONITORING ELEMENT: PLANTS

17. Monitoring Item: Threatened, Endangered, and Sensitive Species (MW-39)

Forest Goals, Desired Future Condition, 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 in the Biological Evaluation for the Threatened/Endangered/Sensitive survey site.

Results/Narrative:

TABLE III-9
PLANTS - 1991
Threatened, Endangered, and Sensitive Species

District	Alpha Code	Pop. Variable by Species/District**	Population Size (No. of Plants)	Trend Indicator (No. of Plants)
Pomeroy	ASAR3[1] CYFA[2] RIOXC[3]	(1:1) DIST (1:1) DIST (1:9) DIST	158 1 5	BASELINE * DOWN – 1 UP – 1
North Fork John Day	BOMI[4]	(1:1) DIST	47	UP – 20
Heppner	MIWA[5]	(1:9) DIST	103	UP – 6
Walla Walla	SPDES[6]	(4:4) DIST	181	UP – 3

1 ASAR3 = Arthur's Milkvetch, *Astragalus arthuri*
2 CYFA = Clustered Lady Slipper, *Cypripedium fasciculatum*
3 RIOXC = Umatilla Gooseberry, *Ribes oxyacanthoides cognatum*
4 BOMI = Mingan Grapefern, *Botrychium minganense*
5 MIWA = Washington Monkey flower, *Mimulus washingtonensis*
6 SPDES = Subalpine spiraea, *Spiraea densiflora var. splendens*
* First year monitoring of ASAR3
** Number of populations assessed/number of populations known to occur.

For the nine populations of sensitive plant species that were informally monitored during the 1991 field season, recommended mitigation measures appear to have been followed, and the population trends appear to be stable to slightly increasing. The single species showing a decline, CYFA (Clustered Lady Slipper, Cypripedium fasciculatum), actually occurs 50 yards from the Forest Boundary on State of Washington land. This population doubled in 1990 and declined in 1991. The State of Washington Natural Heritage Program is advised of activities occurring in the area which may adversely affect the CYFA population. Most of these threats or potential threats are based in recreational areas along the Tucannon River. As funding becomes available, permanent monitoring points and grids will be established according to standards provided by the Area 3 Ecologist.[7]

7 The Area 3 Ecologist is assigned to the northeastern Oregon forests to provide expertise in the area of ecology.

MONITORING ELEMENT: RIPARIAN/WATER

18. Monitoring Item: Effects of Forest Management Activities on Riparian/Water Resources (MW-41)

Forest Goals, Desired Future Condition, 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 and other practices implemented as designed and effective in meeting water quality goals?*

Threshold Of Variability:

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

Results/Narrative:

The monitoring strategy for this item has two proposed facets. One involves planning reviews of projects through the NEPA process and Forest Plan Implementation Checklist (see monitoring items 1 and 2). For the projects that were reviewed, riparian standards and guidelines were included in project design.

A second involves site reviews and monitoring before, during, and after activities with specific attention to timber sales, livestock grazing, and fish habitat watershed restoration projects. No formal project related monitoring was conducted during FY 1991. Only parts of the riparian monitoring effort were done (see monitoring items 19 through 25, 27, particularly 22 and 25).

The monitoring process development and specific project and site determination need to be established. In 1992 the Forest expects to initiate implementation monitoring for this element. Processes established and project monitoring started in 1992 will serve as a baseline for future comparisons and help to meet effectiveness monitoring needs.

Monitoring of the Umatilla Barometer Watershed continued through Fiscal Year 1991. Partial preliminary data is expected to be reported in 1992 with a full report in 1995.

MONITORING ELEMENT: WATER

19. Monitoring Item: Effects of Forest Management Activities on Water Quantity, Low Flows, and Timing of Water Yields (MW-44)

Forest Goals, Desired Future Condition, Outputs:

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

Monitoring Question(s):

1. *Are management activities significantly affecting the volume of water yield from Forest watersheds?*
2. *Are management activities significantly affecting the timing of water yield from Forest watersheds?*
3. *Are management activities significantly affecting 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 deleterious effect to downstream water users.

Results/Narrative:

Eleven water quantity sites have been established on the Forest and flow information collected. Although water quality data was available for this report, the information has not yet been evaluated. Evaluation will be completed and developed in the 1992 Monitoring Report.

20. **Monitoring Item: Effects of Forest Management Activities on Water Quality** (MW-47)

Forest Goals, Desired Future Condition, Outputs:

1. Meet or exceed state water quality standards.
2. Maintain or improve beneficial uses.
3. Improve water quality in stream reaches effected 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/Narrative:

The intent of this monitoring item is to determine baseline water quality on the Forest and to help establish numeric desired future conditions (DFC). Sixty-eight long-term temperature sampling points and 30 long-term sediment and turbidity sites have been established on the Forest. As such, this monitoring item currently overlaps monitoring items 22 and 23; results are discussed in these monitoring items.

No specific project (such as timber, range, road construction, etc.) related water quality monitoring was accomplished during FY 1991.

Monitoring of the Clear Creek area for heavy metal containment was conducted in 1991 on the North Fork John Day Ranger District. The mines were developed near the turn of the century. They have a history of "leaching" heavy metal deposits into Clear Creek. As a result, the Umatilla N.F. took corrective actions to mitigate the adverse effects. Treatment consists of piping mine water into a series of shallow settling ponds. Cattails and other wetland plants have been transplanted into the ponds to create a vegetative bog. The bog (created in 1989) filters and precipitates the contaminants out before the water reaches Clear Creek.

Water samples were taken at 10 sites above, adjacent to, and below mine drainage treatment areas. The samples for each site were analyzed for copper, cadmium, silver, lead, manganese, arsenic, iron, zinc, mercury, and chromium. Preliminary tests have shown almost a 100 percent reduction in heavy metal concentrations within the treatment area.

MONITORING ELEMENT: FISH

21. Monitoring Item: Anadromous and Resident Fisheries (MW-49)

Forest Goals, Desired Future Condition, 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/Narrative:

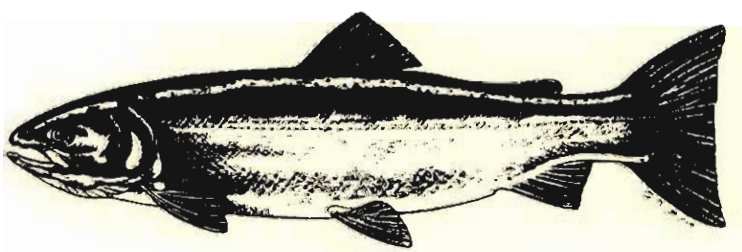
Insufficient data was collected to answer the monitoring questions about fisheries in the Forest's stream systems. The exception is the North Fork John Day River system.

Preliminary information from the Oregon Department of Fish and Wildlife indicates that for the third year in a row, the steelhead trout redd (gravel bed egg deposit site) counts for index streams were below the spawning escapement goal of 8.6 redds per mile on average within the North Fork John Day River system. The Forest has four index streams: Indian and Owens creeks on the North Fork John Day District, and Wall and Wilson creeks on the Heppner District. All index stream counts for steelhead were below the spawning escapement goal of 8.6 redds per mile. Three out of four of the index streams on the Forest were below the 5-year average for the streams. Only Owens Creek was slightly above its 5-year average of 5.0 redds per mile in 1991 with 5.3 redds per mile.

All four North Fork John Day spring chinook index streams were below their 5-year average redd counts (this exceeds threshold of variability). The 1991 data shows a continuation of the downward trend in spawning counts which has been documented since the inventory began in 1964.

The redd inventory for the Umatilla River steelhead conducted annually by the Confederated Tribes of the Umatilla Indian Reservation was not conducted in 1990 or 1991, because of adverse river flow conditions.

Funding for the implementation of the Columbia River Anadromous Fish Habitat Policy began in 1992. Habitat capability and management objectives are expected to be established in 1992 through implementation of the policy process. This will help answer the monitoring questions at a later date.



MONITORING ELEMENT: WATER/FISH

22. Monitoring Item: Effects of Forest Management Activities on Stream Temperature (MW-52)

Forest Goals, Desired Future Condition, Outputs:

Meet or exceed State water quality standards for stream temperature. Summer stream temperature regimes are well-moderated with limited day to night variation and are well within tolerance of aquatic organisms historically found in the systems.

Monitoring Question(s):

1. *Is project implementation in riparian areas resulting in attainment of desired future conditions for stream surface shading and/or in-stream water temperature?*
2. *What are the cumulative effects of Forest management activities on stream temperature?*
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 instream water temperatures.

Results/Narrative:

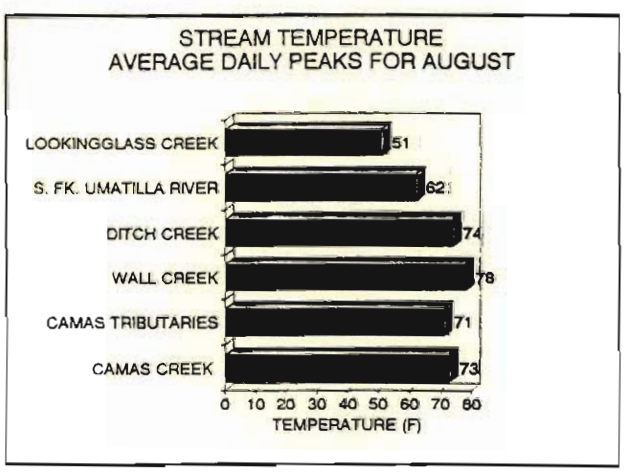
Sixty-eight baseline temperature stations with recording thermographs have been established on the major tributaries and a few on mainstem rivers within the Forest's principal watersheds. The baseline monitoring confirms that water temperature is the major water quality concern on the Forest.

On the south half of the Forest, 1991 summer low flow water temperatures were measured consistently in the 70 to 85 degrees Fahrenheit (F) range (see below). Oregon State Water Quality Standards allow no measurable increase in stream temperatures above 68 degrees F.

Streams monitored on the north half of the Forest were in good to excellent condition with cool summer low flow temperatures in the 50 to 65 degrees F range.

No specific project monitoring for water temperature was done in 1991. The baseline data does, however, reflect the impacts of riparian grazing as impacts are observable throughout these areas. Above and below stream sampling of two riparian area exclosures (each more than 1/2 mile long) has been initiated on the Heppner District.

FIGURE D



23. **Monitoring Item: Stream Sedimentation** (MW-55)

Forest Goals, Desired Future Condition, 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 well 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 critical components of stream fish habitat?*
4. *Is stream sedimentation impacting the productivity of aquatic ecosystems?*
5. *What is the cumulative impact of changes in stream sedimentation on water quality and fish habitat?*

Threshold Of Variability:

1. Exceeding State water quality standards.
2. Measurements of instream sediment sensitive fish habitat parameters exceed values representative of natural functioning aquatic systems.
   (Interim standards: surface fine - 30 percent over 50 percent of spawning habitat; embeddeness - 25 percent as an area weighted average in riffles.)
3. Population levels of sediment sensitive macro-invertebrate species are below expected values for high quality stream ecosystems.
   (Interim standards: less than three sediment sensitive species at densities at or above 200 individuals/meters square.)

Results/Narrative:

Although sediment and turbidity data was collected at 30 sites during FY 1991, the information has not been evaluated. Data will be evaluated and reported in the next monitoring report.

24. Monitoring Item: Stream Channel Morphological Features (MW-58)

Forest Goals, Desired Future Condition, Outputs:

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

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 instream large wood levels.

Results/Narrative:

In 1991, 98 miles of stream inventory were inventoried on the North Fork John Day and Heppner Ranger Districts. Large wood levels and channel pool frequency were examined. Large woody debris measured 20" in diameter or greater and was at least 35 feet long. Small woody debris was a minimum of 12" in diameter and at least 35 feet long. Large wood was not abundant. The range of frequency per mile was from no large wood per mile to 26 pieces per mile with an average of 9 pieces per mile. Small woody debris ranged from a low of 8 pieces per mile to 150 pieces per mile with an average of 39 pieces per mile.

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 pool was not estimated. Four of the streams surveyed had intermittent flow with no pools identified. Pool frequency ranged from the above mentioned streams with no pools to 4.8 pools per mile with an average pool frequency of 2.4 pools per mile. It is important to note that 1991 was the sixth consecutive year of drought that the Umatilla N.F. has experienced.

The Pomeroy Ranger District completed 21.5 miles of inventory on the Wenaha River. The Wenaha is a large river, primarily in wilderness, with the average width of stream in the survey area between 50 and 75 feet wide. Pool frequency was three to four pools per mile averaging 5 to 9 percent total habitat. Large woody debris abundance was between 5 and 15 pieces per mile with an average of 9.4 pieces of large wood per mile. Small wood was slightly more abundant.

Forty-one miles of stream were inventoried on the Walla Walla Ranger District. Meacham Creek was unique with very limited large and small woody debris (less than one piece of large wood per mile, and one piece of small wood per mile). Fourteen percent of Meacham Creek was identified as pool habitat even though large wood is scarce. The six additional streams inventoried on the District had relatively high levels of large woody debris ranging from 9.4 pieces per mile to 70 pieces per mile with an average of 30 pieces per mile. Small woody debris was consistently more abundant with an average of 69 pieces per mile and ranging from 22 to 141 pieces. Pools made up approximately 15 percent of the total stream habitat.

This baseline information indicates apparent deficiency in fish habitat pools and small and large woody material on most of the streams inventoried. Pool shortages are primarily on the southern end of the Forest. After a few more years of plan implementation experience, the effects of management activities conducted under the Forest Plan will be compared to this baseline.

MONITORING ELEMENT: WATER/FISH/RIPARIAN

25. Monitoring Item: Riparian Vegetation (MW-61)[1]

Forest Goals, Desired Future Condition, Outputs:

Riparian vegetation will generally be dense and diverse, contain a variety of species, sizes, and age classes, and be contributing to stable streambanks and complex fish habitat. A variety of dead and down tree habitat will be found within the riparian area. Large diameter standing dead and live trees will provide a longer term supply of large woody material for instream fish habitat.

Monitoring Question(s):

Are management activities in riparian areas resulting in stable or improved 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 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/Narrative:

In Fiscal Year 1991, North Fork John Day and Heppner Ranger Districts developed a shrub utilization monitoring strategy and coordinated the establishment of photopoint transects for riparian vegetation. Riparian shrubs utilization was measured at a total of six sites on five creeks located on the Districts. The utilization objective of 40 percent or less was exceeded at five of the six monitoring sites. Over utilization ranged from 56 to 78 percent shrub utilization. The results of this monitoring effort are representative of field observations of shrub utilization in late summer and early fall on the North Fork John Day and Heppner Districts. It has been extremely difficult to meet shrub utilization standards late in the grazing season on the south half of the Forest.

Grass utilization in riparian areas has been easier to achieve but still requires aggressive permit administration.

No data was available for riparian vegetation utilization from the Pomeroy or Walla Walla Ranger Districts.

Two riparian corridor fences were constructed along portions of Fivemile and Bear Wallow creeks. There were still localized areas in which utilization standards of both grasses and shrubs were exceeded. An exception is Taylor Creek in the Fivemile basin (F.G. Whitney allotment). The entire stream riparian area from Forest Service Road 5312 to Road 5316 and beyond had use that exceeded the standards over at least half of the floodplain.

In summary, utilization on shrubs exceeded standards everywhere it was measured. In some cases, wildlife use on shrubs exceeded the standards prior to cattle being turned into the unit.

1 Refer to Forest Plan page 4-64 for utilization standards.

MONITORING ELEMENT: SOIL

26. Monitoring Item: Soil Productivity (MW-63)

Forest Goals, Desired Future Condition, 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 Forest Plan (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/Narrative:

Three sites were intensively sampled in 1991 on the Forest – two on the Walla Walla and one on the Pomeroy district. Three units from 1989 and 1990 are included from the North Fork John Day District. Extensive monitoring was conducted by the Forest Soil Scientist during field visits on various other projects and is summarized here as narrative. (A detailed Forest report is available at the Forest Supervisor's Office.) Soil and foliar nutrient samples were not taken this year expressly for monitoring purposes. Some sampling took place as part of ongoing research efforts in the northeast Oregon and southeast Washington areas.

This year's monitoring data further confirms, as has been found previously, that "traditional" tractor-based harvest activities and subsequent site preparation activities have left harvest units with detrimental soil impacts in excess of those established in the Forest Plan. Harvest and site preparation methods have been adjusted, to a certain extent, to reduce site disturbance (and meet or exceed standards). Practices have not changed on all operations and contracts and, in some cases, are still creating impacts that exceed acceptable standards.

It is apparent that substantial acreages are suffering from various levels of soil impacts and reduced productivity where traditional tractor-based harvest activities have occurred. Soil rehabilitation methods (primarily deep subsoiling) are used in recent contracts to offset effects of compaction (in particular) in some high traffic areas (such as skid trails and landings) on south-end districts. Soil rehabilitation is needed not only for active operations, but as a means of rehabilitating older harvest activity areas where the opportunity to treat them has not been lost.

Inclusion of soils-related analysis and protection language in planning documents is becoming more common, as evidenced by reviews of environmental assessments. Additional attention is needed for soil protection Forest-wide.

Long-term site and nutrient retention is 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 combustion levels and retain more duff and larger materials. Efforts are underway to further develop nutrient tracking methods in cooperation with research efforts that will also help to assess and quantify the extent of soil impacts and effects on productivity.

MONITORING ELEMENT: RANGE

27. Monitoring Item: Range Condition and Trend (C&T) (MW-66)

Forest Goals, Desired Future Condition, Outputs:

Areas of suitable primary and secondary range, including riparian areas, are in satisfactory condition with a stable or upward trend (with satisfactory condition defined as: Forage conditions are fair or better with at least a stable trend and no allotments are classified as PC, basic resource damage, or PD, other resource damage.

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 degree of attainment as each allotment management plan is updated and improved management implemented.

Results/Narrative:

Heppner Results:

Thirteen condition and trend studies were completed on the Tamarack-Monument C&H Allotment. No interpretation of the C&T'S will be completed until there are adequate funding and personnel, and until the allotment is scheduled for revision.

A quick overview of the information shows that the range condition on the majority of the uplands are in an upward condition. As with the rest of District, the Tamarack-Monument C&H Allotment does not have any C&T'S within riparian areas.

A condition and trend assessment supplement (soils emphasis) was completed on the Tamarack-Monument C&H Allotment. Allotment upland areas are generally showing positive response to adjusted grazing pressure and have less accelerated erosion, both present and potential, because of the presence of greater vegetative cover protection. The riparian areas still exhibit signs of continued overuse in key areas and will continue to need further management to accelerate recovery.

In the past 3 years' stream surveys, water quality monitoring, forage utilization, soil productivity, and streambank condition have been monitored on the District. The surveys and studies have shown that one or more of the following has been occurring on the allotments:

1) Maximum summer water temperatures are elevated above state standards or other approved criteria on streamside management unit (SMU) class I or II streams.

2) Less than 80 percent of the total miles of SMU class I and II streams are in a stable condition.

3) Forage utilization has exceeded the Forest Plan by more than 5 percent as average of use in key areas of an allotment. Most of the use is affecting the shrub species in the riparian areas.

North Fork John Day Results:

Seven photopoint transects were established on five allotments; all photopoints were located in riparian areas. No C&T transects were read. Primary and secondary range (uplands) are generally considered to be in satisfactory condition, although information specific to each allotment was not provided.

Generally, riparian area vegetative conditions are very slowly being improved or remaining in a static trend. One study on the Fivemile system stated "streamside shrub densities and cover have not changed much in the past 30 years...ground cover in intermittent stream flood plains is in satisfactory condition to handle overland flows..."[1] Shrubs are not reestablishing in areas where there appears to be potential (to do so).

As noted in Monitoring Item 25, pace transect measurements showed that wildlife had used the shrubs past the utilization standards prior to cattle being turned into the pasture.

1 Curt Johnson, former Umatilla Hydrologist who now is the Intermountain Region Range Ecosystem Program Manager.

Pomeroy Results:

Baseline information on acres in satisfactory and unsatisfactory (poor and very poor) were established in 1959 through 1963. Since that time utilization checks have been conducted; the information on utilization is up to date. Utilization checks show that most of the allotments are being utilized within the levels set by the Forest Plan.

Walla Walla Results:

Two C&T permanent transects were reread on the Eden Allotment. Based on this limited observation, the range vegetative condition on this allotment is maintained in a satisfactory condition.

Two previously established riparian photopoints were rephotographed on the Eden allotment. Based on this limited observation, the riparian vegetation condition is being maintained in a satisfactory condition.

28. **Monitoring Item: Allotment Planning** (MW-69)

Forest Goals, Desired Future Condition, Outputs:

All allotments have developed and implemented allotment management plans (AMP) 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? In 1990 and 1991, range funding was insufficient to initiate AMP analysis.*
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, Knutson-Vandenberg (KV)[1] sale area improvement plans, etc., are not supported by standards or development schedules from allotment management plans.

Results/Narrative:

Since publishing the Forest Plan, range funding has been insufficient to initiate AMP analysis. Eighteen AMP's were scheduled for completion by the end of 1992. Only one may be completed. With continued deficiencies in funding levels and personnel, complete monitoring of AMP's on the ground will not be met.

The current AMP's on the Forest do not fully meet Forest Plan standards and guidelines. However, the Forest Plan standards and guidelines have been incorporated into the annual operating plans.

1 Knutson-Vandenberg Act

29. **Monitoring Item: Comparison of Produced vs. Planned Output** (MW-71)

Forest Goals, Desired Future Condition, 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/Narrative:

TABLE III-10
Range Outputs

Projected Forest Plan Grazing Output (Thousand AUM's)	Actual Use (Thousand AUM's)	Permitted Non-Use (Thousand AUM's)
58.0	51.4	5.2

The difference between permitted and actual use was primarily due to temporary reduction of livestock to provide for needed rest and to remove livestock early from National Forest land because utilization standards had been reached.

30. **Monitoring Item: Level of Utilization in Riparian, Upland, and Transitory** (MW-73)

Forest Goals, Desired Future Condition, Outputs:

All allotments implement the Forest Plan utilization standards through allotment management plans (AMP's).

Monitoring Question(s):

1. *Are Forest Plan utilization standards being implemented through the Allotment Management Plan (AMP) and 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 5 percent as average of use in key areas of an allotment.

Results/Narrative:

As stated in monitoring item 28, "Allotment Planning," the AMP's have not been updated primarily because of lack of funding. Forest-wide Standards and Guidelines are being implemented through Annual Operating Plans (AOP's).

Riparian utilization is discussed in monitoring item 25. Problems with cattle and wildlife (big game) grazing were identified on the south end of the Forest.

Various levels of utilization checks and monitoring in key areas of uplands and transitory range occurred on each district: 5 allotments on Walla Walla, 5 allotments on Pomeroy, 9 allotments on Heppner, and 10 allotments on North Fork John Day. Results indicate that utilization is within Forest-wide Standards and Guidelines for the uplands.

31. **Monitoring Item: Noxious Weeds** (MW-75)

Forest Goals, Desired Future Condition, Outputs:

Noxious weed infestations are controlled in accordance with the Region 6 "Managing Competing and Unwanted Vegetation" Environmental Impact Statement (EIS) and mediated agreement, the Forest Plan, and applicable state laws and regulations.

Monitoring Question(s):

1. *Are noxious weed infestations being treated in accordance with the Managing Unwanted or Competing Vegetation Environmental Impact Statement, Forest Plan direction, and applicable State/Forest Service Memorandums of Understanding?*
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/Narrative:

The Forest has experienced increases in noxious weeds in some areas, while other areas have stabilized. Of particular concern is the presence of yellow starthistle which occurs on the Pomeroy District. In the vicinity of Eckler Mountain, the weed covers an area of 120 acres. Approval has been given to try to eradicate the plant at this site by using a combination of methods including herbicidal spraying.

Further monitoring of this element is needed. Several more years are needed to adequately determine the spread and intensity of noxious weeds on the Forest.

32. **Monitoring Item: Range Improvements Accomplished as Planned** (MW-77)

Forest Goals, Desired Future Condition, Outputs:

Allotment management plans (AMP's), 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 operation plans, being accomplished?*
2. *Are these improvements contributing to meeting Forest Plan objectives?*

Threshold Of Variability:

Accomplishments of annual range improvement targets fall more than 10 percent below the assigned output.

Results/Narrative:

TABLE III-11
Range - 1991 Accomplishments

District	Nonstructural Improvement	Structural Improvement	BPA [1] Funded Structures
Heppner	590 Ac.	32	30
North Fork John Day	540 Ac.	17	–
Pomeroy	430 Ac.	5	–
Walla Walla	762 Ac.	11	–
Total Forest	2,322 Ac.	65	30

1 The Bonneville Power Administration funded the construction of 13.5 miles of fence and three cattleguards.

The above listed accomplishments contribute towards meeting the Forest Plan objectives.

MONITORING ELEMENT: TIMBER

33. Monitoring Item: Silvicultural Harvest Method (MW-79)

Forest Goals, Desired Future Condition, 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? Reported by silvicultural method and acres treated.

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 Plan.

Results/Narrative:

TABLE III-12
Silvicultural Treatments Outputs – 1991

Silvicultural Treatment	Planned Output (Acres)	Actual Output (Acres)	% of Plan Projection
Clearcut	4,000	3,756	95%
Shelterwood	2,600	1,397	54%
Overwood Removal	1,500	5,530	369%
Uneven-age	900	920	102%

The results for clearcut acres and uneven-age management are well within the thresholds of variability. For FY 1991, far less shelterwood and far more overwood removal were accomplished than anticipated. This is a reflection of harvesting sales that were planned and sold prior to Forest Plan implementation. Normally, within 3 to 4 years, the actual outputs would more closely resemble the planned outputs. Due to changes in the forest health situation, this may not occur and will need to be re-evaluated.

34. **Monitoring Item: Size and Dispersal of Created Openings** (MW-81)

Forest Goals, Desired Future Condition, Outputs:

Achieve unit sizes that fall within the acceptable legal desired ranges.

Monitoring Question(s):

Are unit sizes complying with direction in the Forest Plan, NFMA, and Regional standards?

Threshold Of Variability:

Maximum unit size (and average) exceeds size standards by more than 10 percent. Where exceptions allow, unit sizes meet EA (Regional) requirements.

Results/Narrative:

This monitoring item was not accomplished during Fiscal Year 1991. The Forest is creating a harvest activity database in the geographic information system (GIS) and current information was not available to complete the analyses. Updated information should enable us to answer this monitoring question in 1992.

35. **Monitoring Item: Stand Management – Natural Regeneration** (MW-83)

Forest Goals, Desired Future Condition, Outputs:

Ensure successful reforestation to at least minimal stocking consistent with standards 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 15 percent deviation from Plan level for acres treated (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/Narrative:

The Forest Plan projected an annual output of 3,100 acres. For 1991, the Forest had an output of 783 acres.

The acres reflect harvesting and regenerating sales that were planned prior to Forest Plan implementation. Changes responsive to the Forest Plan in natural regeneration will become most evident after 3 to 4 years of Plan implementation. Comparison to the threshold of variability will be most effective at that time. Because of changes in the forest health, natural regeneration acres are likely to increase.

36. **Monitoring Item: Stand Management – Artificial Regeneration** (MW-85)

Forest Goals, Desired Future Condition, Outputs:

Ensure successful reforestation to at least minimal stocking levels 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 minimum levels within three growing seasons after the reforestation period began?*

Threshold Of Variability:

1. Greater than 15 percent deviation from the Plan level for acres treated (Table 4-1) during a 5-year period.
2. Less than 90 percent of the acres at least minimally stocked after three growing seasons.

Results/Narrative:

The Forest Plan projected an annual output of 4,400 acres of artificial regeneration. The total for 1991 was 7,072 acres, well above the Forest Plan output. Acres reforested represent harvest activities from past years, before the Forest Plan Allowable Sale Quantity (ASQ) was implemented. It is likely that the 15 percent threshold of variability for a 5-year period will be exceeded. In the future, the Forest will need to evaluate the action(s) needed to be taken.

First year survival averaged 88 percent, ranging from highs of 96 percent for western larch and 91 percent for Engelmann spruce, to lows of 84 percent for western white pine and 86 percent for both ponderosa pine and Douglas-fir.

Third year survival averaged 81 percent, ranging from a low of 70 percent for western larch to a high of 90 percent for Engelmann spruce.

Of the 7,072 acres planted during the spring of 1991, only 7.6 percent were replanted areas where previous plantations had failed. Ponderosa pine plantations had the highest replanting percentage. Of the 1991 ponderosa pine plantings, 9.6 percent were replants.

The acreage of successful reforestation which was accomplished with only one treatment was approximately 3,866 acres, which was 87 percent of the total area which was satisfactorily stocked. That means that 87 percent of the areas which met or exceeded the minimum stocking standards after 3 years had been reforested without replanting or other retreatments.

Because of the current forest health situation, artificial regeneration will increase through salvage and restoration activities on the Forest.

37. **Monitoring Item: Stand Management -- Ponderosa Pine Regeneration** (MW-87)

Forest Goals, Desired Future Condition, Outputs:

To identify the amount of ponderosa pine being reestablished and potential change to more seral species on the Forest.

Monitoring Question(s):

How many acres were reforested with ponderosa pine by either natural or artificial regeneration practices? (Responds to state and individual concerns about maintaining or increasing the inventory of ponderosa pine on the Forest).

Threshold Of Variability:

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

Results/Narrative:

The total artificial regeneration of ponderosa pine was 3,324 acres, which equates to 47 percent of the total 7,072 acres of artificial regeneration. Currently, an in-place method to adequately track natural regeneration of ponderosa pine does not exist. A process needs to be developed before this portion of the question can be effectively answered.

38. **Monitoring Item: Regeneration With Genetically Improved Tree Stock** (MW-89)

Forest Goals, Desired Future Condition, Outputs:

Determine if the level of planting with genetically improved stock is consistent with the level assumed in the Plan and managed yield tables.

Monitoring Question(s):

How many acres have been reforested with genetic stock, that is, stock of certification level Subclass B (SB) or higher?[1]

Threshold Of Variability:

More than a 10 percent reduction from levels assumed in the Forest Plan over a 5-year period.

Results/Narrative:

The total number of acres reforested with genetic stock was 2,519. This equates to 35 percent of the total artificial regeneration of 7,072 acres. This figure is consistent with the levels projected within the Forest Plan.

1 SB signifies Subclass B. B means the female parent is known.

39. Monitoring Item: Stand Management – Precommercial Thinning (MW-91)

Forest Goals, Desired Future Condition, 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 of the acres needing stocking level control were treated?* (Relates to managed stand assumptions, and forest health questions.)

Threshold Of Variability:

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

Results/Narrative:

In 1991, 2,352 acres were treated with stocking level control (precommercial thinning) which represents 81 percent of the Forest Plan projected acres of 2,800. This is within the threshold of variability.

The 1991 NEEDS[1] report projected that 2,450 acres would need stocking level control (pre-commercial thinning) in 1991. The Forest accomplished 2,352 acres which represents 96 percent of the NEEDS estimate.

1 NEEDS is a reporting system which the Forest uses to identify projects that are in need of some management action.

40. Monitoring Item: Identification Of Lands Suitable For Timber Management (MW-93)

Forest Goals, Desired Future Condition, 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 5 percent change in the suitable land base.

Results/Narrative:

Insufficient information is currently available to answer the monitoring questions. Districts have been gathering information during project planning on acres classified as suitable which should more accurately be classed as unsuitable. (The changes and corrections that are being made are being placed within GIS on one District.) Identifying lands classed as unsuitable that have become suitable is more difficult to accomplish during project planning, and may have to wait until the inventory is updated. Some preliminary data analysis is expected to be completed in 1992. This may result in adjustments of the suitable landbase.

During 1991 an intensive analysis was performed on approximately 200,000 acres on the south half of the Forest in conjunction with the forest health issues. Although suitability was not analyzed on all acres, those areas proposed for treatments were determined to be suitable for timber management.

41. **Monitoring Item: Managed Yield Projection** (MW-95)

Forest Goals, Desired Future Condition, Outputs:

Determine if yield projection assumptions are consistent with actual managed stand growth.

Monitoring Question(s):

How does actual growth in a managed stand compare to that modeled in the managed yield tables?

Threshold Of Variability:

Deviations likely to effect timber yields by more than 15 percent.

Results/Narrative:

During 1990-1991, the Umatilla installed 173 managed stand plots on the Forest.

The data has been compiled into a managed stand data base and is awaiting analysis. However, the data was not available for this report. It is expected to be analyzed in 1992.

The managed stand survey will answer many questions regarding tree growth, plant communities, mortality, wildlife trees/snags, animal use, and fuel loadings.

42. **Monitoring Item: Empirical Yield Projections** (MW-97)

Forest Goals, Desired Future Condition, Outputs:

Determine if yield projections are consistent with the most recent inventory.

Monitoring Question(s):

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 effect timber yields by more than 15 percent.

Results/Narrative:

Empirical yield projections will not be performed until natural stand inventory is completed. Changed conditions of forest stand health will cause a need to update the empirical yield tables. This process is scheduled to be completed in the next 2 to 5 years.

43. **Monitoring Item: Timber Offered For Sale** (MW-99)

Forest Goals, Desired Future Condition, Outputs:

Provide for production of wood fiber consistent with Forest Plan objectives.

Monitoring Question(s):

Required by National Forest Management Act (NFMA) to assure that decadal allowable sale quantity (ASQ) is not exceeded.

1. *Is the Forest offering the volume of timber necessary to achieve the estimated timber sale program quantity (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 TSPQ.
2. Deviation greater than +5 percent or -20 percent of planned ASQ.
3. Greater than 25 percent ± deviation from planned volume of ponderosa pine sawlogs. Thresholds mentioned above apply to the running average measured annually.

Results/Narrative:

TABLE III-13
Timber Program - 1991

	Planned Output (MMBF)	Actual Output (MMBF)
Timber Sale Program Quantity (TSPQ)	159	72.4
Allowable Sale Quantity (ASQ)	124	50.2
Ponderosa Pine included in ASQ Chip Material Firewood	24 20 15	10.5 13.5 8.7

The total TSPQ was not offered for bid in FY 1991. Several factors affected the movement of volume through the sale planning process as shown in the listing. Many of the sales will be reviewed and revised with decisions and potential sell in 1992.

The recent decline in forest health has necessitated a change in planned sale offerings that would have occurred according to the Plan. Program emphasis on the North Fork John Day and Heppner districts has changed from green sawlog timber sales to salvage. This change in emphasis has required the rework of the sale program on the south end of the Forest. Our intent is to salvage the host species (white fir, Douglas-fir) and leave the seral species (ponderosa pine, western larch). The Forest did not offer the planned ASQ because of reprogramming and the change in emphasis.

MONITORING ELEMENT: FUELWOOD

44. Monitoring Item: Availability of Firewood (MW-101)

Forest Goals, Desired Future Condition, 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/Narrative:

The Forest Plan predicted an annual average output of 15 MMBF. In 1991 the actual output was 8.8 MMBF. This is a 41 percent decline from what was projected in the Forest Plan. Table III-14 depicts the firewood program from 1989 to 1991.

TABLE III-14
Firewood Program 1989 – 1991[1]

	Free Use Permits[2]		Charge Permits		Total Permits	
Fiscal Year	Number	MBF	Number[3]	MMBF[4]	Number	MMBF
1989	29	22	4,794	12.365	4,823	12.4
1990	63	80	3,871	8.024	3,934	4.1
1991	44	55	3,792	8.743	3,836	8.8

1 Table III-14, Personal Use Firewood - Umatilla National Forest. Land and Resource Management Plan Final Environmental Impact Statement, Page III-30.
2 From Annual Free Use Reports
3 From Personal/Commercial Use Reports
4 From STARS Report 33-2, Per. T.S. Accomplishment

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.

Public concern over the program has primarily been in the area of accessibility, increases in permit prices, and high fire precaution levels.

MONITORING ELEMENT: MINERALS

45. Monitoring Item: Mineral Development and Rehabilitation (MW-103)

Forest Goals, Desired Future Condition, Outputs:

To provide for exploration, development, and production of a variety of minerals in coordination with other resources.

Monitoring Question(s):

1. *Are the standards and guidelines being implemented correctly?*
2. *Are the standards and guidelines for mineral operations reasonable and effective?*

Threshold Of Variability:

1. Are the standards and guidelines unreasonable or ineffective in meeting goals?
2. Are the standards and guidelines being implemented correctly?

Results/Narrative:

Although reviews of claims were completed and documented, reports have not been evaluated to insure that standards and guidelines have been properly implemented or are effective.

46. Monitoring Item: Accessibility to Claim and Lease Sites (MW-105)

Forest Goals, Desired Future Condition, Outputs:

To provide for exploration, development, and production of a variety of minerals in coordination with other resources.

Monitoring Question(s):

Is potential vehicle access to mining claims or oil and gas lease sites being restricted?

Threshold Of Variability:

Reduction in lands open to mineral activities is greater than 2 percent.

Results/Narrative:

Access and travel management implementation will close roads to public access but the process will not deny access for mineral exploration, development, and production. In a roadless area, however, an Environmental Impact Statement is required before a determination can be made about whether to permit mineral access.

Only one miner was denied vehicle access to a mining claim on the Forest. The claim is within the North Fork John Day Wilderness and access was denied based upon the proposed size of the operation. However, vehicle access would be allowed if the magnitude of the operation increased sufficiently to warrant vehicle use.

MONITORING ELEMENT: TRANSPORTATION

47. Monitoring Item: Forest Road System (MW-107)

Forest Goals, Desired Future Condition, Outputs:

Provide and manage the road system needed to accomplish the land and resource management and protection objectives of the Forest.

Monitoring Question(s):

Are the total miles of road, and those useable by passenger cars and high clearance vehicles, within Forest Plan projections?

Results/Narrative:

Threshold of variability has yet to be developed. It will be developed in Fiscal Year 1992.

TABLE III-15
Forest Road System

Maintenance Level	Road System	Actual Road Miles
1	Closed Road	1,940
2	High Clearance	2,498
3	Passenger Car	538
4	Passenger Car	153
5	Passenger Car	78
	Open Total	3,268
	Total Road	5,208

	Road System (Mi.)	Forest Plan Projection (Mi.)
Total Passenger Car	770	900
Total High Clearance Vehicle	2,498	2,530

1 These are miles of road by maintenance level and are the actual miles under Forest Service jurisdiction. The figures do not include county miles on forest land, etc.

The Forest Transportation Information System (TIS), and Forest database are being updated; road system mileage may be changed in FY 1992.

48. **Monitoring Item: Open Road Density** (MW-109)

Forest Goals, Desired Future Condition, Outputs:

Maintain the densities of roads and access that meet the objectives of serving the public and of 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/Narrative:

One district, North Fork John Day, has completed an Access and Travel Management Plan. The other three are currently in the planning process. The NFJD District identified a need to reduce the miles of open road. During 1991, the first year of implementing the Plan, the District obliterated 60 miles of Forest roads. Open road densities will likely be reduced Forest-wide.

The North Fork John Day Ranger District began implementing its ATM program in 1990. First-year compliance results were estimated at 65 percent. In 1991, that figure rose to 85 percent. These figures are based upon the number of citations issued.

Transportation (roads) information is being updated. Current road information was not specifically evaluated for its effects on meeting management area direction. However, monitoring in other resource areas takes road densities into account (see monitoring items 4 and 9).

MONITORING ELEMENT: TRANSPORTATION – TRAIL SYSTEM

49. Monitoring Item: Mileage, Location, Condition of Trails (MW-111)

Forest Goals, Desired Future Condition, 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.

Monitoring Questions:

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/Narrative:

TABLE III-16
Transportation – Trail System

	Unit of Measure	1991 Accomplishments	Forest Plan (Annual) Average
Total Inventory	Miles	1,160	735
Standard level	Miles (%)	769 (66)	735
Motorized	Miles	590	529*
Nonmotorized	Miles	570	394
Wilderness	Miles	423	355
Maintained	Miles (%)	638 (55)	400
Reconstructed	Miles	16	15
Relocated	Miles	0	--
Obliterated	Miles	0	--
Abandoned	Miles	0	--
New Construction	Miles	0	15
Fully Accessible	Miles	0	--

* Combined ATV and snowmobile

The Forest Plan construction/reconstruction schedule (Table 4-1) is based on reconstructing trails with resource damage and constructing new sections to provide loop routes. Thus far, and in recent years, only 20-30 percent of the amount needed to meet the long-term objective has been accomplished.

Three districts are currently developing access and travel management plans which should include development of trail management objectives. (One district has implemented an access travel management plan – see monitoring item 48.) Information responsive to this element is not yet available.

Currently, a methodology to measure user needs is not available and thus the last monitoring question cannot be effectively answered. A report is anticipated in 1995.

MONITORING ELEMENT: PROTECTION

50. Monitoring Item: Fire – Program Effectiveness (MW-113)

Forest Goals, Desired Future Condition, Outputs:

Provide and execute a fire protection and fire use 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. Use of prescribed fire will increase in project activities of all types and will help reduce natural fuels. Fire will be allowed to play a more natural role in the wilderness. The general fuel hazard level is slowly being reduced through the combination of these activities.

Monitoring Question(s):

What is the number of fires, by causes and acres burned, plus the actual FFF[1] dollar cost?

Threshold Of Variability:

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

Results/Narrative:

In 1991, 78.3 acres burned in wildfires. Although the total number of fires (145) was greater than the long-term average of 122 fires/year, the total acres burned were significantly lower than previous years.

TABLE III-17
1991 Fire Program

Human Caused:	Total No. of Fires Total Acres Estimated Total Cost	52 29.0 $37,800
Lightning Caused:	Total No. Fires Total Acres Estimated Total Cost	93 49.3 $112,400
Total Number of Fires on Forest		145
Total Estimated Cost		$150,200

1 Fire Fighting Fund (dollars spent in actual suppression activity)

51. **Monitoring Item: Fire Effects – Prescribed Fire** (MW-115)

Forest Goals, Desired Future Condition, Outputs:

Provide and execute a fire use program that is responsive to land and resource management goals and objectives.

Monitoring Question(s):

1. *Are the prescribed fire treatments meeting Forest Plan residue (materials left on site) and resource objectives?*
2. *What are the (understory) vegetative responses in the prescribed burned area?*

Threshold of Variability: None

Results/Narrative:

Sample plots will be established in 1992. Analysis and results on vegetative responses from plots will be conducted in 1993 and 1995.

52. **Monitoring Item: Air Quality** (MW-117)

Forest Goals, Desired Future Condition, 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.

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 to reduce emissions from prescribed burning, as directed by the "Managing Competing and Unwanted Vegetation" Final Environmental Impact Statement (Region 6, USDA Forest Service 1988).

Results/Narrative:

Tons per acre of total suspended particulates (TSP) and total fuels consumed are estimated. As additional data is collected on the average consumption rate specific to the Umatilla National Forest, figures will be adjusted.

TABLE III-18
1991 Air Quality

	1991 Output	Forest Plan Levels[1]
Estimated tons of fuel consumed	476,479	--
Estimated Total Suspended Particulates	4,765	3,030
Estimated FP Baseline (10 yr. avg. TSP)	--	4,879

1 Forest Plan FEIS, pg. IV-124, Table IV-19, Expected Annual Particulate Matter Produced.

53. **Monitoring Item: Fires Effects -- Wildfire (On Water/Soils)** (MW-119)

Forest Goals, Desired Future Condition, Outputs:

Provide and execute a fire use program that is responsive to land and resource management goals and objectives. Maintain or enhance ecosystem functions to provide for the long-term integrity (stability) and productivity of biological communities.

Monitoring Question(s):

1. *How many acres (percentage) of each subwatershed have sustained high intensity burns per 3-year period? Or*
2. *Is visible 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/Narrative:

Within the last 3 years, the Forest has not experienced any fires or combination of fires that have resulted in high intensity burning of 5 percent or more of any watershed. Soil scientists, hydrologists, fisheries biologists, and others have not noted any visible accelerated erosion that was due to past burns.

54. **Monitoring Item: Insect and Disease Control** (MW-121)

Forest Goals, Desired Future Condition, Outputs:

Protect resources and values from unacceptable losses due to destructive pests through IPM (Integrated Pest Management). Monitor levels and activity of forest pests to identify or predict when and where they will hinder the attainment of management objectives.

Monitoring Question(s):

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/Narrative:

Annually, aerial pest surveys are conducted by the Regional Office to assess the extent of and trends in forest pest damage. In addition, each year the districts conduct ground-based sampling, crown sampling, or pheromone trapping to assess trends in specific insect populations.

The western spruce budworm continues to be the insect having the greatest effect on forested ecosystems of the Forest (see table on following page). Most of the budworm damage is occurring on the southern half of the Forest, although defoliation severity is steadily increasing on the northern half as well. In 1991, 593,742 acres were defoliated by budworm; 56 percent of that acreage had low damage levels, while 44 percent had moderate or severe defoliation. The budworm trend continues upward -- 348,041 acres were affected in 1989; 580,199 acres in 1990; and 593,742 acres in 1991. The 1991 defoliation represents a 2 percent increase from 1990, and is 71 percent greater than the 1989 damage levels.

Other insects causing damage on the Umatilla NF include the Douglas-fir bark beetle, fir engraver, mountain pine beetle, western pine beetle, Engelmann spruce beetle, pine engraver, and balsam wooly aphid. Douglas-fir beetle activity is predominant on the southern half of the Forest, whereas fir engraver is causing the greatest damage in the northern portions. Of these insects, the fir engraver and Douglas-fir beetle have caused the greatest losses. In 1991, fir engravers killed white/grand fir and subalpine firs on 88,690 acres; that is a 33 percent decrease from 1990 levels, and 28 percent less than 1989 damage. Douglas-fir beetles killed Douglas-fir on about 12,582 acres in 1991, which was 87 percent less than 1990 levels, and a 78 percent reduction from 1989 damage.

TABLE III-19
1989–1991
ANNUAL PEST SURVEY

PEST	RANGER DISTRICT	1989	1990	1991
Budworm (very low/low)	Heppner	12,070	25,273	*
	North Fork John Day	53,841	180,300	*
	Pomeroy	45,405	41,718	*
	Walla Walla	100,841	117,742	*
	Total	212,157	365,033	332,793 [1]
Budworm (moderate/high)	Heppner	45,550	61,556	*
	North Fork John Day	89,952	153,610	*
	Pomeroy	0	0	*
	Walla Walla	382	0	*
	Total	135,884	215,166	260,949 [2]
Douglas-fir Beetle	Heppner	947	13,228	*
	North Fork John Day	54,797	76,571	*
	Pomeroy	786	3,758	*
	Walla Walla	811	4,147	*
	Total	57,341	97,704	12,582
Fir Engraver	Heppner	7,815	4,531	*
	North Fork John Day	10,353	3,751	*
	Pomeroy	73,053	93,570	*
	Walla Walla	31,754	31,097	*
	Total	122,975	132,949	88,690
Mountain Pine Beetle	Heppner	2,705	46	*
	North Fork John Day	2,319	128	*
	Pomeroy	1,082	234	*
	Walla Walla	414	54	*
	Total	6,520	462	1,691
Western Pine Beetle	Heppner	111	301	*
	North Fork John Day	56	15	*
	Pomeroy	223	145	*
	Walla Walla	0	238	*
	Total	390	669	322

1 Acres reflect additional infestation annually.
2 Only current year mortality is displayed. Previous years' dead trees are excluded.
* District acreage not available for report.

MONITORING ELEMENT: CULTURAL RESOURCES

55. **Monitoring Item: Protection of Sites** (MW-123)

Forest Goals, Desired Future Condition, 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 National Register of Historic Places characteristics of unevaluated and eligible cultural resource properties being protected?*
2. *Is appropriate stabilization or rehabilitation of damaged sites that are eligible for inclusion in the NRHP being undertaken?*

Threshold Of Variability:

No acceptable variability. Issue is tied to Federal law and regulation.

Results/Narrative:

Cultural resource standards and guidelines in the Forest Plan require that the Forest will conduct the cultural resources management program in accordance with law and regulation. The four distinct elements of the cultural resources management program are: inventory, evaluation, protection and enhancement. The Forest has had varied success in meeting those objectives. See Chapter II. Forest and District Accomplishments for inventory evaluation, discussion enhancement.

On the north half of the Forest there were no reported projects conducted out of compliance with the laws and regulations, while on the south half there were at least five such projects. At least two of these projects were conducted without benefit of an inventory while several were accomplished after an inventory but before the necessary consultation with SHPO (State Historical Preservation Office).

There were no reported or identified instances of site damage due to Forest Service activities during Fiscal Year 1991. However, follow-up reviews are planned to assess if damage has occurred on the two sites that were not in compliance.

MONITORING ELEMENT: SPECIAL INTEREST AREAS (SIAs) – BOTANICAL

56. Monitoring Item: Effects of Forest Management Activities on Sensitive and Unique Populations and Landforms (MW-125)

Forest Goals, Desired Future Condition, 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 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/Narrative:

During 1991, monitoring of this element was focused on botanical areas. The Sheep Creek Falls SIA was monitored in 1990 working with the Blue Mountain Chapter of the Native Plant Society of Oregon as partners. Vegetative baseline information for this SIA has been incorporated into a data base. This area is heavily used by recreationists, some of whom apparently attempt to eradicate Devil's Club (*Oplopanax horridum*), a spiny shrub. Signs have been erected explaining the unusual occurrence of Devil's Club and prohibiting its destruction.

Monitoring activities, working in partnership with the Native Plant Society, are scheduled for the Ruckel Junction SIA in May 1992, and the Woodward Campground SIA in June of 1992. The remaining three SIA's (Charley Creek, Teal Spring, and Shimmiehorn Canyon) will be monitored as time and funding are available.

This monitoring item will be expanded to include all A9 (special interest) and A8 (scenic) management areas. This will include geological, viewpoints, cultural/historical, and scenic areas. This will begin in 1992.

BOTANICAL AREA	PROVISIONS	CONDITION	TREND
Sheep Creek Falls	Met	Down	Stable - No change for: Maidenhair Fern, *Adiaufum pedatum*; Male Fern, *Dryopteris filix-mas*; Pine Broomrape, *Orobanche pinorum*; Devil's Club, *Oplopanax horridum*

Maidenhair Fern

MONITORING ELEMENT: RESEARCH NATURAL AREAS (RNA)

57. Monitoring Item: Effects of Activity on Ecosystem (MW-127)

Forest Goals, Desired Future Condition, 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/Narrative:

No information is available. Development of the establishment reports for six of the eight RNA's has yet to be completed. The monitoring report will be directly tied to the establishment report.

MONITORING ELEMENT: ECONOMICS

58. Monitoring Item: Forest Budgets (MW-129)

Forest Goals, Desired Future Condition, 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 what is displayed in the Forest Plan 3-year average.

Results/Narrative:

TABLE III-20
FY '91
Forest Budget/Expenditures[1]

Resource Area	Forest Plan[2] (M$) Level	Forest Plan[3] (M$) '91 Adj Dollars	FY-91 Expend (M$)	% Forest Plan[4]
Recreation/Trails	1,844.0	2,528.9	1,144.6	45
Range/Water/Soil	270.7	371.2	207.2	56
Wildlife/Fish	418.5	573.9	288.7	50
Timber	2,895.9	3,971.4	3,948.6	99
Roads/Engineering/ Facilities	2,592.2	3,554.9	2,147.7	61
Lands/Minerals	217.3	298.0	292.4	98
Salvage	1,187.3	1,628.3	3,391.0	208
K-V, Reforestation, Other	2,096.5	2,875.1	3,591.1	125
Totals		18,585.9	17,521.1	

1 Umatilla National Forest FY 1991, Forest Plan vs. Actual Expenditure
2 Forest Plan in 1982 dollars
3 Forest Plan adjusted to 1991 dollars
4 1991 Expenditures as a percent of Forest Plan projected budget, adjusted to 1991 dollars.

The Forest budget is monitored by comparing the Plan projections against actual expenditures. This comparison serves two purposes. First it provides the information needed for assessing the validity and efficiency of the current budget and, secondly, it identifies those areas of shortfall in accomplishing and monitoring programs.

As a result of the current forest health situation, an increased level of funding has been allocated to the salvage effort. This shift has become the number one priority for the Forest. Levels of funding are expected to increase for this effort in fiscal years 1992 and 1993.

59. **Monitoring Item:** Costs/Values of Forest Plan (MW-131)

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 are present values being realized?*
2. *Are the values used in the Plan analysis being proven by experience?*

Threshold Of Variability:

1. Twenty percent difference between actual expenditures and those projected in the Plan.
2. Twenty percent difference between actual resource values and those projected in the Plan.

Results/Narrative:

This element has not been evaluated. Meaningful analysis could be more efficiently evaluated after further experience with Forest Plan implementation.

MONITORING ELEMENT: ADMINISTRATIVE

60. Monitoring Item: National Environmental Protection Act (NEPA)/National Forest Management Act (NFMA) Compliance (MW-133)

Forest Goals, Desired Future Condition, Outputs:

Comply with the National Environmental Policy Act (NEPA) and National Forest Management Act (NFMA) requirements, including cumulative effects analysis, during project-level decision-making.

Monitoring Question(s):

1. *Are project level decisions made using appropriate NEPA and NFMA procedures including analysis of cumulative effects?*
2. *Are project level decisions tiered to, and in accord with, the Forest Plan?* [Monitoring Question 2 is dealt with under monitoring items "Management Areas" and "Standards and Guidelines."]

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/Narrative:

Most NEPA and NFMA procedures have been followed in general, but a few were not always, and the quality needs to be strengthened in some areas. Wildlife/fish biological evaluations and field surveys were, at times, not fully conducted. Cumulative effects discussions also were sometimes lacking. Some environmental assessments (EAs) and analysis files showed other weaknesses as well. About 75 percent of 15 appealed EA decisions were reversed or withdrawn because of noncompliance with NEPA, primarily due to inadequacies of biological evaluations. To date, additional emphasis on NEPA compliance through further training and reviews is occurring.

From reviews of NEPA projects and response to appeals, the following causes were identified for the Forests NEPA shortcomings:

1. Timeline pressures;
2. Conflict in direction (clarification of NEPA direction through the Forest White Paper occurred late in the year);
3. Resistance to accept changes needed for NEPA full compliance;
4. Lack of focus on the two main purposes of NEPA –
   a. To assure scientific analysis and documentation that lead to environmentally sound decisions, and
   b. To encourage public participation and to disclose environmental effects;
5. Employee turnover, which can regularly introduce people unfamiliar with NEPA or the local forest;
6. Lack of detailed methodology for cumulative effects analysis; and
7. NEPA coordination has not been as well emphasized for non-timber projects.

The Umatilla National Forest "Environmental Policy and Procedures White Paper" was implemented in April 1991, as a basic outline of the procedures used on the Umatilla for developing and processing NEPA documents. The object was to promote some consistency and awareness between the districts and the Supervisor's Office, and to improve NEPA compliance. Further improvements and clarification, responsive to district input, are occurring in 1992 through training and project reviews.

Effective, pre-decisional reviews were conducted by Land Management Planning on at least nine EAs – most with Forest Supervisor authority, and some Ranger decisions. The Forest is developing a process by which the Forest Interdisciplinary Team thoroughly reviews at least one EA from each district each year. The process being established is described in the White Paper.

MONITORING ELEMENT: COMMUNITY EFFECTS

61. Monitoring Item: Changes in Income Levels (MW-135)

Forest Goals, Desired Future Condition, Outputs:

Monitor changes in local income levels.

Monitoring Question(s):

What changes are occurring in local per capita income that can be analyzed for the impacts of Umatilla National Forest operations?

Threshold Of Variability:

Plus or minus 15 percent in 3 years (corrected of inflation).

Results/Narrative:

The following data will serve as baseline information for future evaluation. This monitoring item is scheduled for evaluation in 1993. Data for 1990 and 1991 was unavailable for this report.

TABLE III-21
PER CAPITA INCOME — 1987-1989[1]
Umatilla National Forest

COUNTY	1987	1988	1989
OREGON Grant	13,065	13,589	11,806
Morrow	15,972	17,015	14,511
Umatilla	12,852	13,805	11,922
Union	12,998	14,026	12,217
Wallowa	14,579	16,362	12,570
Wheeler	17,394	19,560	15,483
WASHINGTON Asotin	12,519	13,643	14,880
Garfield	18,839	19,822	21,190
Columbia	15,506	16,051	16,544
Walla Walla	14,111	14,959	16,200

1 Per Capita Income in current dollars.

Oregon Employment Division, Business & Employment Outlook. Vol. 1, 1992. Districts 12 & 13.

Washington State Employment Security Department. Annual Demographic Information, 1991 Service Delivery Area X, Page 75, Table V-C.

62. **Monitoring Item:** Changes in Local Populations, Employment, and Incomes (MW-137)

Forest Goals, Desired Future Condition, Outputs:

Promote human resources and community and economic development within the zone of influence.

Monitoring Question(s):

What changes are occurring in local populations, employment, and personal income that can be analyzed for impacts due to Umatilla National Forest operations?

Threshold Of Variability:

Plus or minus 20 percent for each factor in 3 years (corrected for inflation as needed).

Results/Narrative:

Table III-22 represents changes in county populations over a 10-year period. Four counties (Asotin, Morrow, Umatilla, Walla Walla) have shown minimal growth during the past decade, while the remaining six have shown negative growth. The primary reason for the weak growth in the 10-county area population during this period is or is thought to be linked to the poor economic conditions of the 1980's. This resulted in an out migration of people in search of better economic opportunity elsewhere.

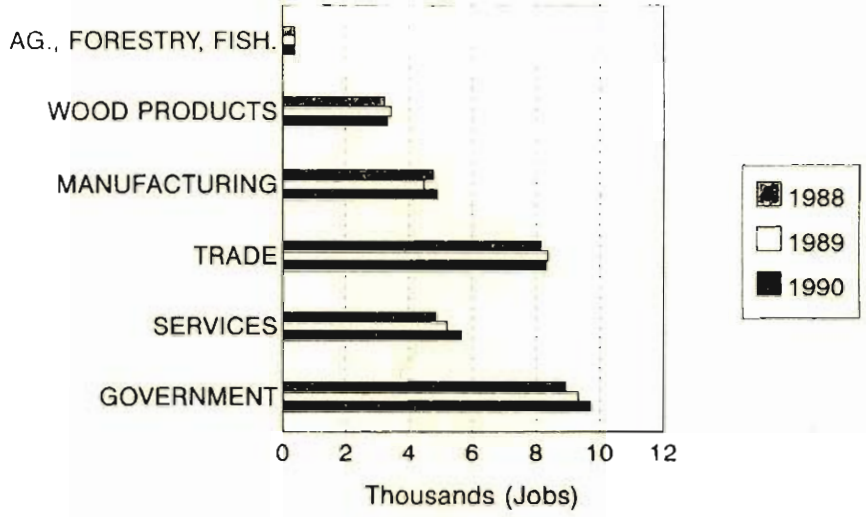
The data presented in Table III-22 will be used as a baseline for future analysis. This element will be reanalyzed in 1993 since the Forest Plan has been in the implementation phase for less than 2 years.

TABLE III-22
LOCAL COUNTY POPULATIONS
Umatilla National Forest

County[1]	1979	1990	% Change
Grant	7,950	7,900	-0.6
Morrow	7,450	7,650	2.6
Umatilla	56,850	59,000	3.8
Wheeler	1,775	1,400	-21.1
	1980	1990	
Union	23,921	23,600	-1.3
Wallowa	7,273	6,950	-4.4
Asotin	16,823	17,605	4.6
Columbia	4,057	4,024	-0.8
Garfield	2,468	2,248	-8.9
Walla Walla	47,435	48,439	2.1

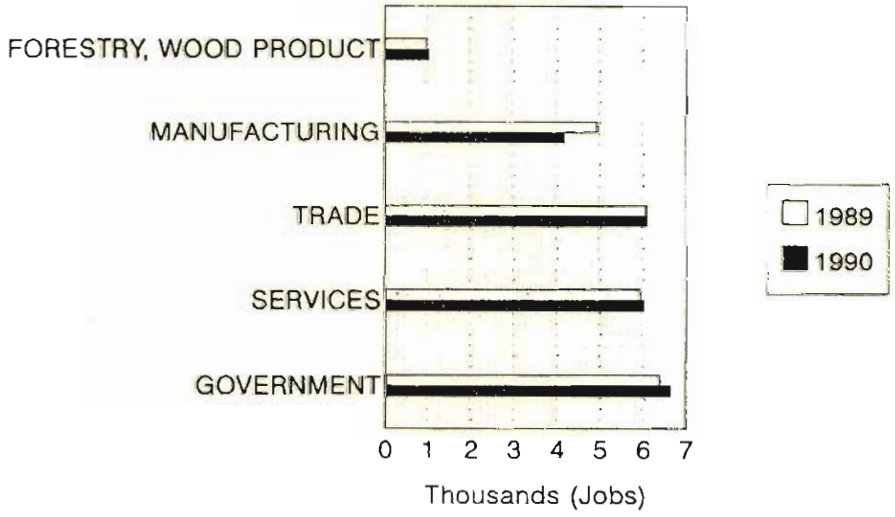
1 Sources: Oregon Employment Division Business & Employment Outlook. Vol. 1. 1992, Districts 12 & 13. Washington State Employment Security Department. Annual Demographic Information, 1991, Service Delivery Area X.

FIGURE D
Oregon – Employment by Major Sector
1988–1990



Data Source: Gerald Wood Regional Economist - Oregon Department of Human Resources, March 1992. Totals for Grant, Morrow, Umatilla, Wheeler, Union, and Wallowa counties.

FIGURE E
Washington – Employment by Major Sector
1989–1990



Source: Washington State Security Department, Annual Demographic Information, 1991. Total Includes Asotin, Columbia, Garfield, and Walla Walla counties. 1988 Data unavailable for this report.

63. **Monitoring Item: Changes in Payments to Counties** (MW-139)

Forest Goals, Desired Future Condition, Outputs:

Promote community and economic development. Monitor changes in the levels of payments to counties resulting from Umatilla National Forest receipts.

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/Narrative:

TABLE III-23
1990 – 1991
PAYMENTS TO COUNTIES[1]

County	1990 Payments	1991 Payments	Forest Plan Projection ('91 Dollars)
Asotin	162,406	141,348	263,024
Columbia	481,510	419,076	779,827
Garfield	288,203	250,833	466,758
Grant	935,500	814,200	1,515,084
Morrow	432,619	376,525	700,646
Umatilla	1,130,284	983,727	1,830,545
Union	301,371	262,286	488,084
Walla Walla	7,345	6,393	11,896
Wallowa	372,861	324,514	603,865
Wheeler	121,808	106,014	197,273
TOTALS	4,233,907 [2]	3,684,916 [3]	6,857,000

1 Umatilla Land and Resource Management Plan, Table 4-1, p. 4-18. Forest Facts and Figures, 1990. Umatilla National Forest Annual Report, 1991.
2 This equals 65% of the Forest Plan projection.
3 This equals 54% of the Forest Plan projection.

The timber harvest level in 1990 and 1991 and the projected dollar value for MBF, which represents nearly 90 percent of the receipts, were nearly the same as projected in the Forest Plan. Payments to the counties in 1990 and 1991 were slightly higher than those of previous years. However, the Forest Plan projections for payment to counties was 5.0 MM dollars (1982 dollars). Thus the difference between Forest Plan projected and the actual payments to counties (-46%) indicates an error in the Plan projection. This element will be further evaluated in 1992.

64. **Monitoring Item: Changes in Lifestyles, Attitudes, Beliefs, and Values and Social Organizations** (MW-141)

Forest Goals, Desired Future Condition, Outputs:

Monitor changes in local lifestyles, attitudes, beliefs, or values.

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 affected 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/Narrative:

No formal process has been used, since adoption of the Forest Plan, to assess lifestyle, attitude, etc. and changes in local communities affected by the Umatilla National Forest. Monitoring has been limited to interviews of key publics, opinion leaders, walk-in customers, public meeting attendees, telephone inquiries, and observations by employees. Other methods used include clipping newspaper and magazine articles; videotaping documentaries, specials, and news spots; and recording radio spots for review and assessment.

Some changes in lifestyles, attitudes, and values have occurred at the early stages of Forest Plan implementation. Strong public sentiment and interest have been demonstrated on the many faceted issues of anadromous fish management and forest health.

Current methods of monitoring will be utilized in Fiscal Year 1992. However, it is anticipated that more issues will receive national attention in the next few years which may necessitate using formalized methods to monitor local lifestyle and attitude changes.

65. **Monitoring Item: Changes in Forest Contributions to Forest Products Industry** (MW-143)

Forest Goals, Desired Future Condition, 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/Narrative:

This element relates directly to monitoring item 43 (Timber Offered for Sale). Additional monitoring of this element was not conducted.

Given the budworm mortality on the south half of the Forest, the type of wood products offered by the Umatilla National Forest is sure to change in the next few years. Further evaluation is needed to determine action because of the forest health situation.

MONITORING ELEMENT: VEGETATIVE MANAGEMENT

66. Monitoring Item: Mitigation Measures (MW-145)

Monitoring Question(s):

Was the checklist for the "Managing Competing and Unwanted Vegetation" Final Environmental Impact Statement (November 1988) used as intended?

Threshold Of Variability:

To be developed in Fiscal Year 1992.

Results/Narrative:

Use of the vegetative management checklist was minimal during Fiscal Year 1991. Two of the four districts used the checklist for at least one project each, but use was neither widespread nor consistent.

Further testing of the vegetative management checklist will be conducted in Fiscal Year 1992. An evaluation of its use will be conducted to determine its feasibility.

CHAPTER IV. FOREST HEALTH

THE SITUATION:

Over three million acres of federal, state, and private land in the Blue Mountains are showing damage from insects and disease, suffering from prolonged drought, and carrying catastrophic buildups of dead and dying material.

WHY ARE THE FORESTS UNHEALTHY?

Over the last century, several factors have apparently changed the forests of eastern Oregon and Washington, making them highly vulnerable to insects, disease, and drought. The result: millions of dead and dying trees and an unhealthy ecosystem.

There are four primary factors that have contributed to the current forest health situation: fire exclusion, selective timber harvesting, drought, and insects and disease.

Fire Exclusion: For thousands of years, fire has played a dominate role in developing eastern Oregon and Washington forests. Fire and climate worked together maintaining vast, open stands dominated by ponderosa pine and western larch. In the early 1900s land managers began suppressing fires and, therefore, encouraged the growth of less-fire-resistant tree species, such as fir and spruce.

Selective Timber Harvesting: Timber harvesters have historically preferred ponderosa pine and western larch because of their superior structural characteristics. Selective harvest of these species further encouraged the spread of fir and spruce.

Drought: The region is currently in its sixth consecutive year of drought, causing severe stress on all species, but particularly moisture-loving firs and spruce that are growing on drier sites more suited to pine and larch.

Insects and Disease: Stressed from the recent drought, firs and spruce are highly vulnerable to insect and disease outbreaks. The result is wide-spread insect attacks and disease outbreaks that are more frequent and severe than in the past.

WHAT'S BEING DONE?

Researchers have identified the problems and their potential causes, and Forest managers are now working toward solutions. In the short term, the main projects underway are timber salvage, budworm spray projects, and restoration activities.

Over the long term, one of the goals of the Umatilla National Forest is to restore the Forest ecosystems to a healthier condition – a greater proportion in stands of pine and larch, with other species present but subordinate. This will be accomplished, in part, through reforestation emphasizing seral species and by allowing fire to once again play a role in restoration of the ecosystems.

The goal will also be accomplished through seven strategies outlined in the Blue Mountains Forest Health Report. They include: public awareness and participation, reviewing forest plans, using fire and silvicultural means, improving coordination with adjacent landowners and agencies, promoting integrated resource analysis, encouraging research and developing technology and information resources.