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Forest Service

Pacific
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Region

1994



Monitoring and Evaluation Report: 1993

Full Report

Colville National Forest Land and Resource Management Plan



0454



United States
Department of
Agriculture

Forest
Service

Colville
National
Forest

765 South Main
Federal Building
Colville, WA 99114

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Date: October 13, 1994

Dear Colville Forest Planning Participant:

The Colville National Forest has been planning and carrying out projects on the forest under the guidelines of the Colville Land and Resource Management Plan - known as the Forest Plan - since 1989.

One of the actions called for in the Forest Plan is a process called monitoring, where Forest staff review projects on a sample basis to determine if Forest Plan guidelines are being followed and Forest Plan objectives are being met.

A monitoring report covering projects sampled on the Colville National Forest during 1993 has just been completed and is available to the public. To ensure that the monitoring report is sent only to those who want to receive it and to reduce unnecessary duplication and postage costs, a postcard is enclosed for you to indicate your interest in receiving either a copy of the Executive Summary report or a copy of the full report.

Thank you for your interest in the management of the Colville National Forest.

Sincerely,

EDWARD L. SCHULTZ
Forest Supervisor

Enclosure



Caring for the Land and Serving People

Colville National Forest Forest Plan Monitoring and Evaluation Report: 1993

The purpose of this report is to provide the results of monitoring the implementation of the Colville National Forest Land and Resource Management Plan (Forest Plan) during Fiscal Year 1993 (10/1/92 - 9/30/93) to the Forest Supervisor, the Regional Forester, and the public.

This report focuses on the monitoring and evaluation process described in Chapter V of the Forest Plan. It is not intended to be a complete overview of the many accomplishments and activities on the Colville National Forest during the past year.

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EXECUTIVE SUMMARY

This section of the report presents an executive summary of findings, trends, and recommended actions to be taken for those monitoring items reported during FY93. More detailed discussions of monitoring findings and recommendations may be found in the full monitoring report.

EXECUTIVE SUMMARY OF MONITORING FINDINGS AND TRENDS

The following is a brief summary of findings and trends compiled from monitoring and evaluation on the Colville National Forest during FY93. More detailed information may be found in the full report (available upon request).

MONITORING ITEM	FINDINGS AND TRENDS
BIOLOGIC AND FOREST HEALTH:	
Soil	Approximately 45% of the harvest units monitored exceeded the 20% detrimental soil disturbance standard prior to followup soil restoration treatment.
Water Quality	Elevated fecal coliform bacteria levels were recorded in some watersheds although state water quality criteria were met. Need to continue to monitor grazed and ungrazed watersheds.
Watershed Best Management Practices	Best Management Practices are being implemented and effective at time of implementation. Some loss in effectiveness after 2-3 years. Consider need to monitor 2-3 years after project.
Riparian Areas	Timber harvest areas showed no adverse impact. Some sedimentation from native roads/livestock use at road crossings. Evaluate monitoring procedure for livestock-related bare soil.
Insect and Disease Populations	Defoliator populations decreased significantly. Forest structure and composition unchanged with much of Forest still at high risk. Douglas-fir dwarf mistletoe and root rots are still primary disease agents.
RESOURCES AND SERVICES TO PEOPLE:	
Recreation User Experience	Visitor/user satisfaction is good. Maintenance/reconstruction of developed recreation sites falling behind.
Trail use	Trail use within ROS criteria. Winter trails/improvements need more attention.

Semiprimitive Setting	ROS criteria being met.
Off Road Vehicle Use	Some resource damage occurring but still at acceptable levels. Increasing use of four wheel vehicles on trails intended for single track vehicles observed. Need standards of acceptable level of resource impacts due to ORV use.
Visual Quality Objectives	Generally, VQO's being met with the exception that mitigation measures for trail corridors not always being included in timber sale EA's and VQO's in some Modification areas not being met.
Wilderness	Draft Limits of Acceptable Change standards are being met or exceeded.
Potential Wild and Scenic Rivers	No management activities were planned or occurred.
Heritage Resource Protection	Although properties are being protected during timber harvest, vandalism and natural deterioration of properties is occurring.
Heritage Resource Compliance	A total of 54 Section 106 properties were submitted identifying 58 NRHP-eligible properties. Compliance field work and reporting varies in quality but compliance standards are being met.
Transportation System Management	Number of constructed, reconstructed, and closed road miles is below Forest Plan projections and decreasing. Timber purchaser and appropriated funds for maintenance are declining resulting in reduced Forest access for recreation use.
Minerals	Management direction is being followed.
Range Improvements	Quality of construction good. More involvement of permittees needed.
Livestock Permitted	Permitted AUM's are 3% below the threshold of variability established in the Forest Plan.
Utilization of Forage	Although 49 out of 63 sample points met or exceeded Forest Plan utilization standards, results are considered inconclusive due to lack of a consistent methodology of locating sample points within allotments or pastures.
Riparian and Range Conditions	Not monitored.
Deer and Elk Winter Range	None of the monitored areas met Plan standards to due to the lack of desired condition occurring naturally.

Executive Summary

Primary Cavity Nesters

Approximately 80% of the monitored areas met Plan Standards.

Old Growth Dependent Species

No monitored areas met conditions described in Forest Plan due to lack of desired conditions occurring naturally.

Management Indicator Species

Results were inconclusive. There is an indication that a lack of lodgepole pine stands 20 years or less in age and high road densities contributed monitored areas failing to meet Plan standards for Franklin's grouse/lynx habitat.

Threatened, Endangered, and Sensitive Species

The Forest is meeting standards for submitting required information to the U.S. Fish and Wildlife Service for consultation. Some improvement in providing complete information packages is needed. The Forest was 100% effective in sending TES information to the Washington Natural Heritage Database and the Washington Department of Fish and Wildlife.

Fisheries

Plan standards are being implemented. Only 64% of the anticipated accomplishment for structures was completed.

Restocking of Lands

Of the 5,789 acres harvested with final removal in FY93, 91% were certified as satisfactorily stocked and the remaining acres expected to be certified in FY94 and FY95 as a result of natural reproduction.

Timber Yields

Not monitored in 1993.

Land Suitability

Management direction met.

Size and Dispersal of Harvest Units

Harvest unit layout is consistent with Forest Plan standards.

Silvicultural Practices

Harvest by silvicultural method is below Forest Plan projection for all methods. Plan direction is being followed.

SOCIAL AND ECONOMIC:

Compliance with NEPA

Ten timber sales decisions were made. Eight were appealed and upheld at Regional Office reviews.

Standard and Guidelines

Further evaluation necessary concerning the effects of mechanical harvesting on soil productivity, and effects of leaving temporary roads open for gathering firewood.

Coordination with
Adjacent Landowners

Direction being met.

Actual and Planned Costs

Not monitored in 1993.

Economic Effects
of Plan Implementation

Returns to Government less than 50% of Plan
projections. Payments to States is about 45% of Plan
projection.

Modelling Assumptions

Spatial disaggregation completed and validated with
FORPLAN harvest constraints.

Community Effects

Unemployment rates for Tri counties continue in
double digits in spite of growing populations. Tri
counties' per capita income rank 37, 38, 39 respective-
ly out of 39 counties.

Executive Summary

Summary of Recommended Actions

TABLE 1, shown on page 9, displays a summary of the recommended actions for each item monitored during FY93.

The recommended actions referenced in TABLE 1 have been broadly categorized as follows:

RESULTS ACCEPTABLE/CONTINUE TO MONITOR

Results are within the threshold of variability listed in Forest Monitoring Guide or indicate that more data is needed to evaluate results. .

CHANGE OR CLARIFY MANAGEMENT PRACTICES

Results are outside the threshold of variability listed in the Forest Monitoring Guide and an evaluation of the situation indicates the need to change practices to comply with the Forest Plan.

FURTHER EVALUATION/DETERMINE ACTION

Results are inconclusive indicating that additional monitoring and evaluation is needed.

INITIATE ADJUSTMENT OF THE FOREST PLAN

Results are inconsistent with the Forest Plan or the Forest Plan direction is unclear. Followup action is to initiate the Forest Plan Adjustment process.

TABLE 1 - SUMMARY OF RECOMMENDED ACTIONS

MONITORING ITEM	RESULTS ACCEPT/ CONTINUE TO MONITOR	CHANGE OR CLARIFY MGMT PRACTICES	FURTHER EVALUA- TION NEEDED	INITIATE FOREST PLAN ADJUSTMENT
BIOLOGICAL AND FOREST HEALTH				
CHANGES IN SOIL PRODUCTIVITY	X			
WATER QUALITY	X			
WATERSHED BMPS	X			
RIPARIAN AREAS	X			
INSECTS AND DISEASE	X			
RESOURCES AND SERVICES TO PEOPLE				
RECREATION EXPERIENCE	X			
RECREATION TRAIL USE	X			
SEMPRIMITIVE RECREATION	X			
OFF-ROAD VEHICLE USE			X	
VISUAL QUALITY OBJECTIVES		X		
WILDERNESS	X			
HERITAGE RES PROTECTION		X		
HERITAGE RES COMPLIANCE	X			
TRANSPORTATION SYSTEM	X			
MINERALS	X			
RANGE IMPROVEMENTS	X			
LIVESTOCK PERMITTED		X		
UTILIZATION OF FORAGE			X	
RIPARIAN & RANGE CONDITION	X			
DEER AND ELK WINTER RANGE			X	
PRIMARY CAVITY EXCAVATORS			X	
OLD GROWTH DEPENDENT SPECIES			X	
MANAGEMENT INDICATOR SPECIES			X	
T, E & S SPECIES	X		X	
FISHERIES	X		X	
RE STOCKING OF LANDS	X			
TIMBER YIELDS	X			
LAND SUITABILITY	X			
DISPERSAL OF UNITS	X			
SILVICULTURAL PRACTICES	X			
SOCIAL AND ECONOMIC				
NEPA COMPLIANCE	X			
STANDARDS AND GUIDELINES	X			
COORDINATION WITH ADJACENT LANDOWNERS	DELETE DEFERRED			
COST COMPARISON				
ECONOMIC EFFECTS			X	
MODEL ASSUMPTIONS X				
COMMUNITY EFFECTS	X			

MONITORING RESULTS AND EVALUATION

This section summarizes the results of monitoring and evaluation conducted during fiscal year 1993, which ran from October 1, 1992 to September 30, 1993. In 1990, the Forest developed a detailed Forest Plan Monitoring Guide consisting of monitoring instructions and a monitoring schedule. Not all items identified in the Forest Plan are scheduled to be monitored every year.

CHANGES IN SOIL PRODUCTIVITY

Forestwide Goal

Soil productivity is maintained or enhanced over time. NFMA requires monitoring of changes on productivity of the land (36 CFR 219.12).

Purpose of Monitoring

To determine if the Forest is meeting standards and guidelines and to assess the effectiveness of soil management and conservation practices.

Standard

The total acreage of all detrimental soil conditions should not exceed 20 percent of the total acreage with the activity area including landings and system roads. Consider restoration treatments if detrimental conditions are about 20 percent or more of the activity area.

Summarized Results

Various harvest units across the forest were monitored to determine the percentage of detrimental soil conditions within each activity area. The following timber sales (TS) were monitored:

Colville District (Hosmer TS):

- Unit 1, 27 acres, 1% detrimental soil conditions
- Unit 7, 41 acres, 1% detrimental soil conditions
- Unit 15, 44 acres, 2% detrimental soil conditions

Newport District (Trimble TS):

A total of 13 harvest units were monitored. Four units exceeded 20% detrimental soil conditions, with the highest percentage estimated at 29% detrimental soil conditions.

Republic District (Hardscrabble TS):

- Unit 1, 30 acres, 26% detrimental soil conditions
- Unit 2, 35 acres, 34% detrimental soil conditions
- Unit 3, 24 acres, 21% detrimental soil conditions
- Unit 4, 25 acres, 9% detrimental soil conditions
- Unit 6, 20 acres, 21% detrimental soil conditions
- Unit 7, 23 acres, 23% detrimental soil conditions
- Unit 8, 11 acres, 25% detrimental soil conditions

Evaluation

In each of the units monitored, the area in landings, skid trails, and system roads made up a large percentage of the detrimental soil conditions within the activity area. In most cases the detrimental soil condition identified was compaction and levels which in many units exceeded the 20% maximum prior to followup soil restoration treatment. Other detrimental soil conditions such as displacement, puddling, and severely burned soils represented a small percentage of the total.

Recommended Action

Results Acceptable/Continue to Monitor. Consistent with Forestwide Standards and Guidelines, restoration treatment with a winged subsoiler is recommended for temporary roads, landings, and skid trails within harvest activity areas where detrimental soil compaction has occurred. Prior to treating skidtrails within the interior of harvest units, a hydrologist or soil scientist should be consulted to ensure that the restoration treatment does not result in increased soil displacement or loss of soil productivity.

Further evaluation of the monitoring procedure is recommended to resolve field-level questions regarding the use of the transect method.

WATER QUALITY, INCLUDING CUMULATIVE EFFECTS

Forestwide Goal

To ensure that current Forest water quality meets established Washington State water quality criteria.

Purpose of Monitoring

To determine if implementation of the Forest Plan results in maintaining or improving water quality within established standards and guidelines.

Standard

Water quality will meet or exceed Washington State Water Quality Criteria.

Summarized Results

Water quality data was collected at 39 sites on the Forest for the following parameters: fecal coliform levels; specific conductance; dissolved oxygen; pH; water and air temperature; turbidity and aesthetic values. Data collected from 21 selected baseline sites indicated little change from previous years. Washington State Water Quality Criteria are being met.

Data from eight fecal coliform sites indicated elevated levels in grazed watersheds, but also in an ungrazed control watershed. As a result of past monitoring results which showed elevated fecal coliform levels, a more intensive sample was conducted in South Fork of Chewelah Creek (a grazed watershed) this year in an attempt to determine the nonpoint source. Rocky creek (an ungrazed watershed) was selected as a control watershed and sampled at the same frequency. Elevated fecal coliform levels were recorded

between June and October in the South Fork of Chewelah Creek watershed downstream of the meadow area, although Washington State Water Quality Criteria were met. This time period coincides with the period that livestock were grazing in the meadow area of the watershed. Upstream, the levels remained at low background levels throughout the summer. In Rocky creek, elevated coliform levels were noted during June. The sample site is located downstream of a flat gradient area with lots of beaver activity and beaver are assumed to be the source. Elevated coliform bacteria levels were not recorded for Rocky Creek during 1992 monitoring.

Several watershed characterization sites were monitored for flow and suspended sediment during spring runoff. No unusual data were recorded and analysis of the flow data is ongoing.

Water temperature monitoring occurred at seven locations to identify possible temperature concerns. While some erratic results were noted, high temperatures were within normal ranges.

Evaluation

Measurements in South Fork Chewelah Creek indicate that livestock use in the watershed is contributing to elevated coliform bacteria levels, although Washington State Water Quality Criteria are being met. Other water quality data collected in South Fork Chewelah Creek showed no apparent change from background conditions.

Recommended Action

Results Acceptable/Continue to Monitor. Elevated coliform bacteria levels in South Fork Chewelah Creek indicate the need to continue to monitor and evaluate coliform bacteria levels in grazed and ungrazed watersheds. The monitoring data have been discussed with the District Range Specialist for the purpose of exploring opportunities of reducing coliform bacteria levels by modifying grazing practices within the watershed.

WATERSHED BEST MANAGEMENT PRACTICES (BMPs)

Forestwide Goal

To comply with State requirements in accordance with the Clean Water Act for protection of the waters of the State of Washington through planning, application, and monitoring of Best Management Practices (BMP's).

Purpose of Monitoring

To ensure that Forest Plan standards and guidelines are being met during project implementation through application of appropriate Best Management Practices.

Standard

Forest Plan Standards and Guidelines for selecting and implementing Best Management Practices (see Chapter 4, Forest Plan).

Summarized Results

In 1993, timber sale and road construction project NEPA documents, contract provisions, and on-the-ground implementation were monitored using ocular observations to track the implementation and effectiveness of BMP's. Best Management Practices monitored included: erosion control measures on skid trails, streamcourse protection, revegetation of areas disturbed by harvest activities, protection of unstable lands, and limitations on the operating period of timber sale activities.

All of these projects had appropriate BMP's in place in the NEPA documents and all BMP's were implemented on the ground. At times, it was difficult to discern which contract provisions were being used to implement specific BMP's. Some BMP's, although 100% effective at the time of implementation, appeared to have lost some of their effectiveness due to subsequent factors. For example, the BMP's of revegetating road fill slopes were not functioning as effectively as when first installed due to the fact that the erosion control grasses had not fully occupied exposed soil surfaces. Similarly, in some cases surface drainage struc-

tures (waterbars/drain dips) had been partially breached by vehicle travel subsequent to the completion of the project.

In one instance, on the Old Home Timber Sale on the Sullivan Lake Ranger District, the Forest Service and timber purchaser agreed to allow winter yarding. Monitoring of this sale during operations revealed that soil displacement and disturbance were much reduced when compared to logging activities during the normal operating season. Although BMP's specific to winter yarding were not included in the environmental assessment, the combination of effective implementation of timber sale contract provisions and the reduced impact of winter yarding itself produced very positive results.

During the monitoring trip however, inadequate road drainage was observed on Forest Service Road 462 and as a result of the visit, timber haul was temporarily suspended while surface drainage was installed.

Several BMP's were monitored on a harvest unit in the S. Fk. Lost Creek drainage on the Newport district. Channel conditions were stable and there was no bare soil in the riparian area adjacent to the unit. Channel conditions indicated no evidence of disturbance from the harvest unit.

Evaluation

Forest Standards and Guidelines designed to implement the State requirements in accordance with the Clean Water Act for protection of the waters of the State of Washington through planning, application, and monitoring of Best Management Practices (BMP's) are being met. Although BMP's are being implemented and are effective at the time of implementation, some loss in BMP effectiveness is occurring after 2-3 years, especially for fillslope revegetation and surface drainage structures. Winter yarding, even without specific BMP's, is a valuable tool to reduce soil displacement and disturbance when contract provisions are implemented effectively. One caution area is to ensure that winter haul routes have adequate surface drainage in place, especially if haul is going to occur during wet periods.

Recommended Action

Results Acceptable/Continue to Monitor. Consider the need to review and possibly update site-specific BMP's during the contract preparation stage of project implementation. Also consider the need to conduct additional monitoring and possibly modification of BMP's after the first 2-3 years to evaluate effectiveness. Recommend that future monitoring be conducted for projects with winter yarding requirements as well as for those to be operated during the normal operating season to provide additional information on effects of each system.

RIPARIAN AREAS

Forestwide Goal

Provide and manage riparian plant communities that maintain a high level of riparian dependent resources.

Purpose of Monitoring

To determine if Forest Plan standards and guidelines are being followed to ensure riparian area characteristics are maintained or improved through the implementation of projects, thereby protecting the riparian ecosystem.

Summarized Results

Riparian areas were monitored using ocular observations at the same time as the Best Management Practices (Monitoring Item 25B). Monitoring of timber sale areas near or adjacent to riparian areas showed that in several cases timber sales have intentionally avoided harvesting in riparian areas to protect riparian resources.

Observations of road crossings during road construction showed that minor sedimentation into streams was occurring. The minor extent of

this sedimentation was due in part to the low streamflows occurring at the time. Sedimentation was also observed at road crossings on native surface roads that are experiencing travel during wet periods.

Although some ocular observations of livestock use of riparian areas were made, the percent of livestock-related bare soil was difficult to estimate for the entire extent of the riparian area since impacts tended to be concentrated in specific locations, especially at road crossings and other points that provide access to water.

Evaluation

Overall, riparian area standards and guidelines are being met. Timber harvest activities did not appear to have any observable impact on riparian ecosystems, especially where harvesting in the riparian area was avoided.

Some sedimentation into streams is occurring at road crossings, especially where drainage is occurring directly from native road surfacing into streams. In some cases, concentrated livestock use at road crossings is exposing bare mineral soil which can increase sedimentation to the streams. Increased sedimentation can be expected at newly-constructed road crossings until erosion control seeding becomes effective.

Recommended Action

Results Acceptable/Continue to Monitor. The Forest needs to evaluate and possibly modify the monitoring procedure for estimating percent livestock-related bare soil. Monitoring and reporting this parameter on the basis of the entire length of the riparian area is not practically feasible and can produce misleading results. Potential improvements to this monitoring procedure should be linked closely with Monitoring Item 19 - Condition of Riparian and Range Resources.

Monitoring Results, Evaluation, and Recommended Actions

Watershed condition inventories scheduled for completion in 1994 are expected to result in identification of areas needing restoration. The results of these surveys could assist in identifying areas to monitor in the future. Several problem areas identified during this year's monitoring work were reported to the road maintenance crew for erosion control treatment in 1994.

INSECTS AND DISEASE POPULATIONS

Forestwide Goal

To prevent major losses to insects and disease pathogens.

Standard

To maintain insect and disease populations at endemic levels.

Summarized Results

Monitoring was based on acres of mortality. Concerns regarding insect and disease activity remain high on the Forest. Most projects include a forest health alternative that proposes treating high risk areas, and many projects are proposed because of insect and disease activity. The two categories that are of highest concern are dwarf mistletoe in Douglas-fir, and root diseases. These pathogens are very active on the Forest.

Defoliators: Spruce budworm activity has fallen off dramatically in 1993 due primarily to climatic factors. 5,300 acres were defoliated in 1993 as compared to 146,600 in 1992.

Bark Beetle/Root Disease: Activity from bark beetles in Douglas-fir and grand fir affected 1,500 acres in 1993. Mountain pine beetle infested 7,700 acres of lodgepole pine in 1993, up from 3,400 and 3,800 acres in 1991 and 92 respectively.

Dwarf Mistletoes: Mistletoe infections in Douglas-fir are of particular concern on the west half of the Forest.

Evaluation

Defoliators: The area entomologist cautions however that population reductions of spruce budworm this year does not mean epidemic, or near epidemic, populations will not return. Forest structure and composition is essentially unchanged, with a large proportion of the Forest still identified as high-risk (P. Flanagan, 1993 personal communication).

Bark Beetle/Root Disease: This year's level of bark beetles in Douglas-fir and grand fir has been relatively constant over the last few years. In most instances on this Forest, bark beetle activity occurs in root disease centers. Forest structure and composition indicate high risk to losses from these agents in certain areas. Again, alternatives prioritizing treatment of these areas are included in most timber sale planning.

Mountain pine beetle activity in lodgepole pine is a future concern, due to expansive areas across the Forest created from burns in the 1920's and 30's. This concern was addressed in the recently completed CROP report. The focus is to treat these areas and break up areas of uniform susceptibility.

Dwarf Mistletoes: Stand structures and composition have developed that favor rapid spread of this agent. Silvicultural treatments focused at reducing mistletoe spread continue to be proposed. The other species of most concern across the Forest is western larch dwarf mistletoe. Mistletoe infections on other species appears to be of local concern, but not a widespread concern.

Recommended Actions

Results Acceptable/Continue to Monitor. Continue to focus timber harvest activities in areas that are high risk to insects and diseases. Monitor acres of high risk areas treated, or proposed for treatment in individual projects. Establish patterns of historical variation for each pest/pathogen category, and determine whether current activity is outside this range of variation. Continue monitoring spruce budworm populations through larval sampling.

RECREATION USER EXPERIENCE AND PHYSICAL SETTING

Forestwide Goal

To ensure a spectrum of dispersed and developed recreation opportunities are provided on the Forest, as described in the Forest Plan management area descriptions.

Purpose of Monitoring

To determine if the Forest is meeting recreation opportunity spectrum (ROS) guidelines regarding site conditions and user satisfaction.

Standard

Desired physical, social and managerial settings for each ROS class should be met.

Summarized Results

Visual observation, personal contacts, fee collection records and random sample surveys were completed for all fee sites on the Forest and approximately 40% of the non-fee and dispersed sites. The Forest identified specific days for districts to collect visitor use information for developed and dispersed recreation with varied results across the Forest. User satisfaction surveys through trail registration cards and personal contacts were completed for most developed sites and trailheads on the Forest.

Generally, weekend use for campgrounds reaches 80-100% of capacity with most developed sites near the Spokane area reaching 100% on most weekends. Over 9000 people visited the Spokane I&E office. Wood permits and map sales increased by nearly 2000 each. Dispersed recreation continues to increase. An increasing problem is the conflicts of winter logging and associated plowing and groomed snowmobile trails. Cooperative efforts with the timber sale purchaser has in some cases resolved these situations.

Evaluation

Results for the most part showed visitor/user satisfaction to be good. Most comments were positive and indicated that user satisfaction was aligned with expectations of the users. Some specific areas that were mentioned: reconstruction needs at Pierre Lake, restore Summit Lake to a maintained developed site. The physical, social and managerial settings for the roaded natural recreation opportunity spectrum class appears to have exceeded guidelines and site conditions.

Other ROS class monitoring appear to be within variability limits. The physical, social and managerial settings for these other ROS classes appear to meet guidelines and site conditions to provide a broad spectrum of ROS settings.

The Forestwide objective of bringing developed sites up to standard is progressing slowly due to a shortage of funding for this work. Reports of deteriorating structures, water lines and vault toilets are on the increase. Weekend capacity of many developed sites is being exceeded. Heavy maintenance of improvements is being accomplished on some districts as budgets allow. Major replacement and reconstruction of recreation sites is falling behind due to the lack of capital improvement program funding. Improvements to signing, host sites, accessibility, and interpretation have been made when opportunities and funding are available.

Recommended Action

Results Acceptable/Continue to Monitor: Results of site-specific monitoring and recreation reports indicate further evaluation is needed. Inventories, evaluations and management strategies need to be developed to address numbers and types of users, resource damage and user conflicts. Specific areas include Middle Fork Calispel, Tacoma Creek, North Fork Chewelah Creek, and No Name Lake.

Monitoring Results, Evaluation, and Recommended Actions

RECREATION TRAIL USE

Forestwide Goal

To provide for a spectrum of recreational experiences and trail development within each recreation opportunity spectrum (ROS) class.

Purpose of Monitoring

To determine if the Forest Plan standards and guidelines are being met and to assess the effects of trail use.

Standard

Capacity of each ROS class should be within 90 percent of the physical, social and management setting criteria.

Summarized Results

Monitoring consisted of visual inspections, trail counters and visitor contacts. Trail use was found to be within 90 percent of the ROS class criteria. Trail counters were located on 20 individual trails on Colville, Newport, Republic and Kettle Falls Districts. All Districts reported that trail registration card comments indicated that users had a positive experience. Non-system trails such as the Divide and Mystic trails are receiving use.

Trail use has increased up to 50% on some Newport Ranger District trails.

Evaluation

Monitoring indicates that Forest Standards and Guidelines are being met.

Recommended Action

Results Acceptable/Continue to Monitor. Pending available funding, recommend that future planning be focused on winter recreation trails - both cross-country and snowmobile, as well to determine needs for special improvements such as warming huts and snopark areas.

Continue to develop and implement a system across the Forest for assessing non-system trails like the Divide and Mystic trails (both of which are currently being assessed in conjunction with timber sale analyses) for the purpose of determining future additions to the Forest Trail System.

SEMI-PRIMITIVE SETTING

Forestwide Goal

To manage these areas to protect the existing natural character and provide opportunities for dispersed, nonmotorized and motorized recreation experiences.

Purpose of Monitoring

To ensure the desired physical, social, and managerial setting for each recreation opportunity spectrum (ROS) class is achieved and that these areas remain in an unroaded condition.

Standard

The desired physical, social, and managerial setting for the ROS class should be achieved.

Summarized Results

Monitoring was conducted through the use of observations and trail counts. Several trail counters were installed along various trails. Trail registration cards indicated visitor satisfaction with the recreation experience.

Evaluation

Observations and trail counts were completed indicate that ROS class criteria is being met. The use in the area and trail maintenance met requirements for semi-primitive Non-motorized Recreation.

Recommended Action

Results Acceptable/Continue to Monitor.

OFF-ROAD VEHICLE USE

Forestwide Goals

To ensure off road vehicles (ORV) are used on the Forest in an appropriate manner, compatible with other Forest uses, and as prescribed in management area objectives.

Purpose of Monitoring

To determine if Forest Plan standards and guidelines are being met and to assess the effects of ORV use.

Standard

Off-road vehicle (ORV) use will meet appropriate Forest Plan Standards and Guidelines.

Summarized Results

Over 150 motorcycles and ATV's were observed in Middle Fork Calispel and Tacoma Creek drainages on holiday weekends. Of the users checked, 90% were not in compliance with State and Federal Laws including spark arrestors and required permits. There are no facilities for these users in this area and use is occurring in dispersed sites, within riparian areas, and on roads.

Trails created by ORV use within the LeClerc Creek area, Old West Branch Campground, and Muddy Creek Powerline area are causing some resource damage.

Evaluation

ORV use within dispersed sites, on roads, and within riparian areas is resulting in some unsafe conditions and varying degrees of resource damage. Resource damage in the LeClerc Creek, Old West Branch Campground, and Muddy Creek Powerline areas is apparent but still at acceptable levels. An increasing problem on some multi-purpose trails is the use of 4-wheel drive vehicles on existing trails designed for single track vehicles.

Recommended Action

Further Evaluation/Determine Action. Although monitoring indicated that some resource damage is occurring, the results are inconclusive due to a lack of consistency in defining acceptable levels of resource damage specifically attributed to ORV use. It is recommended that the monitoring procedures pertaining to the effects of ORV use on other resource values be evaluated and that additional monitoring be conducted.

VISUAL QUALITY OBJECTIVES

Forestwide Goal

To maintain or enhance scenic qualities on the Forest, with emphasis on scenic viewsheds and foreground and middleground areas seen from sensitive view areas as prescribed by the Forest Plan.

Purpose of Monitoring

To ensure the Forest Plan visual quality objectives are being met.

Standard

Forest Plan Standards and Guidelines for meeting visual quality objectives.

Summary of Results

Ocular observations were made for several current timber sales. Mitigation measures for protecting trails are not consistently being included in timber sale environmental assessments. Management within foreground and middleground areas is in most cases meeting or exceeding visual quality objectives. In some cases, visual quality objectives within modification areas are not being met.

Evaluation

Forest Plan visual quality objectives are generally being met with the exception of management activities within some areas with a modification visual quality objective.

Monitoring Results, Evaluation, and Recommended Actions

Recommended Action

Change or Clarify Management Practices. Management direction regarding how to achieve visual quality objectives for trail corridors within or near harvest areas requires clarification. Develop a process for rating Sensitivity Level III trails for the purpose of identifying appropriate mitigation measures for use Forestwide with a goal of implementing by summer of 1994.

Recommend that Forest Landscape Architect provide training on the Forest to increase understanding of how to meet visual quality objectives for modification areas.

WILDERNESS

Forestwide Goal

To preserve the wilderness characteristics of the Salmo-Priest wilderness in conformance with existing legislation.

Purpose of Monitoring

To ensure the wilderness is being protected or enhanced.

Standard

Forest Plan Standards and Guidelines/Minimum limits of acceptable change.

Summarized Results

Two wilderness rangers completed monitoring of the standards for resource and social indicators set forth in the draft LAC/WIS Plan (Limits of Acceptable Change/Wilderness Implementation Schedule). Campsite density, condition and solitude standards have not yet approached the variability threshold. The standard for solitude while travelling was not met for a single day during the 4th of July weekend.

Evaluation

Monitoring the standards and guidelines outlined in the draft Limits of Acceptable Change for the Salmo-Priest Wilderness during 1993 indicated that standards are being met or exceeded.

Recommended Action

Results Acceptable/Continue to Monitor. Monitoring in 1993 should be used to evaluate the appropriateness of the draft LAC standards and Wilderness Implementation Plan which are expected to be finalized in 1994.

WILD AND SCENIC RIVERS

Forestwide Goal

To protect the outstanding remarkable values of the Kettle River that contribute to its eligibility as a potential Wild and Scenic River.

Purpose of Monitoring

To determine if the Forest Plan standards and guidelines for protection of the Kettle River are being met.

Standard

Resource condition or level of activities should not lower the potential for Wild and Scenic River designation and must meet or exceed the Forest Plan standards and guidelines.

Summarized Results

No management activities occurred or were planned during FY 93 within the Kettle River corridor.

Recommended Action

Results Acceptable/Continue to Monitor.

HERITAGE RESOURCE PROTECTION

Forestwide Goal

Protection of significant archaeological and historical properties by monitoring annually 5% of documented sites on the Forest.

Purpose of Monitoring

To ensure management prescriptions for these sites are being accomplished. To document

Monitoring Results, Evaluation, and Recommended Actions

instances of property destruction due to human-caused or natural deterioration.

Summarized Results

Number of properties monitored:	35
Total number of Forest properties:	1150
Percentage of properties monitored:	3%

Evaluation

The monitoring goal of 5% was not met.

The majority of properties monitored were associated with recently completed timber harvest activities. Monitoring results indicate that:

- 1) Properties located within or adjacent to on-going or recently completed timber harvests areas are being vandalized in spite of being protected from direct effects of from harvest activities.
- 2) Significant properties are being adversely impacted by by unmitigated natural deterioration.

Other properties monitored included those within areas receiving a fairly high level of public use (such as developed and dispersed campsites, along trails and roads, etc). Sites within this category generally were found to have had noticeable levels of adverse change due to erosion, natural deterioration (of historic structures), along with a certain amount of vandalism.

Monitoring results confirm the need to complete site management plans for each of our significant heritage properties.

Recommended Action

Change or Clarify Management Practices. Monitoring indicates that management direction is being improperly applied in some cases due to a lack of clarity. Current management direction should be evaluated and adjusted if necessary with particular

attention to the need to identify a process for evaluating and sorting out significant properties from those which have little or no educational or recreational value and for documenting site management direction.

The varying quality of unit monitoring activities and reports indicates the need to 1) clarify procedures for reporting monitoring results; and 2) introduce training and education to standardize methods and results. Funding in FY94 has already been allocated to each Ranger District to accomplish this training.

HERITAGE RESOURCE COMPLIANCE ACTIVITIES

Forestwide Goal

Monitor all project documents for completion of heritage resource management compliance requirement.

Purpose of Monitoring

Ensure all compliance mandates are being met in a consistent and timely manner.

Summary of Results

Total number of Section 106 project reports:	54
Number of these reporting effect* to properties:	52
Number of these reporting adverse effect*:	4
Number of new heritage properties documented:	110
Number of these properties considered NRHP-eligible:	58

Evaluation

Compliance field work and reporting varied in quality but compliance standards are being met.

Monitoring Results, Evaluation, and Recommended Actions

Recommended Action

Results Acceptable/Continue to Monitor. To improve consistency and quality in reporting, it is recommended that the Forest investigate alternatives for improving compliance. In addition, it is recommended that the Forest Archaeologist conduct additional training of Cultural Resource Technicians.

TRANSPORTATION SYSTEM MANAGEMENT

Forestwide Goal

To determine if total open road mileage meet objectives established in the Forest Plan.

Purpose of Monitoring

To measure the effectiveness of closing new roads and to calculate miles of open road.

Standard

The total miles of roads open to public travel should not exceed mileage listed on page 4-30 of the Forest Plan.

Summarized Results

Road Maintained for:	Forest Plan Mileage	FY91 actual	FY92 actual	FY93 actual
Passenger Car	849	801	716	683
High Clearance Vehicle	2,500	2,409	2,350	2,299
Total	3,349	3,210	3,066	2,982

Evaluation

Forest Plan standards are being met. Due to a significant decrease in the number of timber sales being sold, the number of constructed, reconstructed and closed road miles is decreasing. The reduction in the number of timber sales is also

reducing the number of miles of road maintained by timber purchasers resulting in increased road maintenance accomplishment through appropriated funding which is also declining. Some roads are no longer maintained for passenger cars or are being closed to prevent further roadbed deterioration and resource damage, thus continuing the downward trend of the last three years of decreasing Forest access, especially for passenger cars. This downward trend is affecting opportunities for dispersed recreation activities such as firewood cutting, berry picking, dispersed camping, and driving for pleasure.

Recommended Action

Results Acceptable/Continue to Monitor. If future monitoring indicates that the downward trend in appropriated road maintenance funding and the timber sale program is continuing, an adjustment in management direction may be needed.

MINERALS

Forestwide Goal

Provide opportunities for mineral exploration and development, while integrating those activities with the planning and management of other forest resources, protecting surface resource values and meeting area objectives.

Purpose of Monitoring

To determine if the Forest is meeting standards and guidelines as provided in the Forest Plan.

Standards

Forest Plan Standards and Guidelines for mineral exploration and development.

Summarized Results

In addition to district field reviews, the Forest mining geologist visited 5 sites on the Forest for the purpose of monitoring reclamation compliance. Those reviews and District reports indicated that 100 percent of the land disturbed by mineral operations has been reclaimed as prescribed within 2 years.

A complete review of district mineral files shows that 36 CFR 228(A) timeframes were met on 21 of the 23 Plans of Operation or 91 percent of the time.

Mitigation measures were generally accepted by mineral proponents. Although most measures were met voluntarily, a few requirements needed administrative presence to ensure compliance. Three administrative appeals were received on NEPA decisions for two minerals projects during FY 1993. Decisions in both cases were affirmed by the reviewing officers without discretionary review.

Evaluation

The results of minerals monitoring for the 1993 show that the threshold criteria have been successfully met. While minerals is not specifically noted as an ICO in the Forest Plan, this monitoring item is supportive of issues involving the management of amenity resources and communities economics.

Recommended Action

Results Acceptable/Continue to Monitor.

RANGE IMPROVEMENTS

Forestwide Goal

All range improvements planned and financed shall be constructed to Forest Service standards and maintained as described in the annual Permitted Plan instructions.

Purpose of Monitoring

To ensure that utility, safety, and aesthetic values are protected in construction of improvements and that economic requirements are met and maintained measured in miles and number of improvements monitored.

Standard

All construction is expected to meet the established standards as set forth in Forest Service Handbook

2209.22. All prescribed maintenance is to be performed.

Summarized Results

All improvements were monitored by the Districts during installation to insure conformance with standard provided in Range Improvement Handbook or other standard practices for project not covered in the FSH. Copies of the Range Improvement Data Sheet, FS-2200-127 are contained in the files.

Supervisor's Office level monitoring was done on all Districts. Copies of documentation are contained in the files. A total of 7 different new fencing projects and 4 water development installations were visited during the 1993 field season. The quality of construction was generally good, although several projects did not meet construction standards outlined in FSH 2209.22 nor were improvements always listed in the maintenance section of the permits following completion. A lack of permittee participation was evident on some projects. At least two segments of fence were identified that will likely be a barrier to wildlife. In some cases, four-wire fences were constructed in interior areas where three-wire fences would have sufficed.

Evaluation

The past two years of monitoring have indicated that goal of achieving permittee involvement in planning and constructing improvements is not always being met and that construction standards are not always being adhered to. Both of these shortcomings potentially affect the future commitment and ability to maintain improvements under the permit.

Recommended Action

Results Acceptable/Continue to Monitor. All new construction and reconstruction should conform to the standards in effect with permittees invited to participate in the process.

Develop a technology sharing process for information pertaining to construction of improvements to ensure compliance with FSH 2209.22 standards.

Monitoring Results, Evaluation, and Recommended Actions

LIVESTOCK PERMITTED

Forestwide Goal

The Forest will permit 35,000 animal unit months (AUMs) annually, plus or minus 10 percent.

Purpose of Monitoring

Determine the ability of the Forest and the permit system to meet the output level of the Plan.

Standard

Permitted AUMs should not fall more than 10 percent below the desired level.

Summarized Results

In 1993, 29,726 AUMs of grazing were authorized by the Colville National Forest under term permit and 790 AUMs were authorized under temporary permit for a total of 30,516 AUMs.

A total of 684 AUMs of authorized non-use was granted and in addition several allotments are currently vacant due to recent cancellations, and a sheep allotment has been vacant for some time.

Evaluation

The monitoring results show that 1993 AUMs of grazing are 3% (984 AUMs) below the threshold

of variability (10%) established for this monitoring item.

Recommended Action

Change or Clarify Management Practices. Initiate action to fill vacant allotments by accomplishing forage analysis and allotment management planning on vacant allotments which have potential capacity.

UTILIZATION OF FORAGE

Forestwide Goal

The Forest's forage resource will be used according to Forest Plan standards and guidelines.

Purpose of Monitoring

To meet proper use standards in the Forest Plan ensuring that the forage resource is maintained in a healthy and productive state.

Standard

Forage utilization should not exceed what is prescribed in the Forest Plan standards and guidelines. The Colville National Forest Monitoring Guide contains a schedule determining when a specific allotment should be monitored.

Monitoring Results, Evaluation, and Recommended Actions

Summarized Results

The following table summarizes forage utilization estimates based on field sample points. The last two columns in the table show the sample points that met the utilization standards in the Forest Plan and those which did not meet those standards.

District	Allotment	Methods Used	Pts Meeting S&G's	Pts Not Meeting S&G's
Colville	Smackout	Ht/Wt & Cages	6	2
	N.Fk.Chew.Cr.	"	6	2
	S.Fk.Chew.Cr.	"	5	1
Kettle Falls	Bangs	Ht/Wt	1	1
	CC Mountain	"	1	1
	Nancy Lake Ellen	"	1	0
Newport	Ruby	Cages	2	2
Republic	Trout Creek	Cages	3	0
	Bamber	Ht/Wt	1	0
	Tonata	Ht/Wt & Cages	10	2
	Swan Lake	"	9	1
Sullivan Lake	Tiger Hill	Ocular	2	1

Evaluation

Forage utilization monitoring on some Districts was accomplished only in some areas and not in every pasture on both upland and riparian areas as prescribed in the Forest Monitoring Guide and reinforced in the Forest range administration standards packet developed in May of 1993. Some allotments monitored were not scheduled for monitoring and others that were scheduled were not monitored.

Although the results show that 49 sample points were within Forest Plan utilization standards and 14 were not, the results are considered inconclusive due to lack of a consistent methodology of locating sample points within allotments or pastures.

Recommended Action

Further Evaluation/Determine Action. The current method of sampling forage utilization is inconclusive and needs to be evaluated and modified. The present procedures of locating sample points, which often results in samples being concentrated in areas of high use, is not providing reliable monitoring information on the amount and distribution of forage utilization at the pasture or allotment scale. It is suggested that monitoring procedures be modified to allow a more unbiased sample of forage utilization within larger scale areas while still recognizing the need to sample areas receiving high use.

CONDITION OF RIPARIAN AND RANGE RESOURCES

Forestwide Goal

To ensure that range ecosystem types, within all range allotments, are in satisfactory condition. Satisfactory condition is defined as being at least fair condition with an upward trend based upon site potential.

Purpose of Monitoring

To provide evidence that management activities are effective and the resource is capable of producing forage on a sustained yield basis without deterioration of the resource.

Standards

No range type within an allotment or unit may be in less than satisfactory condition.

Summarized Results

This item was not monitored in 1993 due to funding constraints.

Evaluation

N/A.

Recommended Action

Change or Clarify Management Practices. Initiate full vegetative analysis on allotments according to the revised Allotment Management Planning sched-

Monitoring Results, Evaluation, and Recommended Actions

ule. Resume monitoring frequency to at least one allotment per District in 1995.

DEER AND ELK HABITAT AND POPULATIONS

Forestwide Goal

To manage habitat to meet big game management objectives per Management Prescriptions 6 and 8, pertinent Forest Plan Standards and Guidelines, Desired Future Conditions, and Forest Plan Appendix B.

Purpose of Monitoring

To determine if:

- I-1. Cover units on managed winter ranges are being maintained as defined in Management Prescriptions 6 and 8 (30% of cover stands west of Kettle Crest and 20% of cover stands east of Kettle Crest to be maintained in snow intercept thermal cover);
- I-2. Distances between cover units are being maintained an average of 600 feet or less;
- I-3. Winter ranges are being maintained toward cover/forage ratios of 50:50.
- I-4. Open road densities are being maintained below the prescribed levels on Management Areas 6 and 8 (Road densities not to exceed .4 mi/mi² on all elk winter range and mule deer winter range in Ferry County. Road densities not to exceed 1.5 mi/mi² on the rest of deer winter range areas.).

Standard

Habitat condition and trend will not be allowed to deteriorate for more than 3 years or more than 5% in any one Wildlife Management Unit (Resource Shed).

Summarized Results

- I-1 **Availability of snow intercept thermal cover**

Nine winter range areas, totaling at least 21,609 acres, on four ranger districts were evaluated to determine if snow intercept cover was available as prescribed in the Forest Plan. None of the evaluated areas met the minimum objectives.

- I-2 **Distribution and distance between cover units**

Ten analysis areas, totaling 22,549 acres, on four ranger districts were evaluated, with only two areas (20%) meeting this objective.

- I-3 **Cover/forage ratios**

Four districts monitored 10 winter range projects which totaled 22,549 acres. None of these areas met cover/forage ratio objectives.

- I-4 **Open road densities**

Eleven areas totaling 22,958 acres on 4 districts were evaluated. Four of these winter ranges (36%) met road density objectives.

Evaluation

I-1. Monitoring indicates that availability of the snow intercept thermal cover component of big game winter range cover has not reached the levels identified in the Forest Plan. However, the low levels of snow intercept thermal cover availability (specifically on the nine sample areas) appears to be caused primarily by natural limitations within these designated winter ranges, and are not the result of recent management activities.

I-2. Monitoring results from the Colville, Kettle Falls and Republic Ranger Districts indicate difficulty in achieving the desired distances across forage areas, as a result of large naturally open areas rather than by management activities. Results from Sullivan Lake and Newport Ranger Districts indicate this objective is being met. Overall, the difficulty in achieving this objective indicates that current forage availability and habitat effectiveness projections made in the Forest Planning process may not be realized.

I-3. Information from the Republic and Kettle Falls Ranger Districts indicate cover/forage ratios with significantly lower amounts of cover than desired. Large open areas in the western portion of the Forest create situations where it may never be possible to develop the desired level of thermal cover stands. On the east side of the Forest, the Newport Ranger District reports winter ranges are moving toward the desired 50:50 ratio but presently have an over-abundance of cover. These monitoring results indicate that the cover/forage ratio, especially in the western portion of the Forest, is not as anticipated in the Forest Plan.

I-4. Access management activities on Republic and Sullivan Lake Ranger Districts should continue, as they are providing success at meeting Plan objectives. Additional emphasis on reducing winter range road densities on Colville and Kettle Falls Ranger Districts is needed.

Recommended Action

I-1. Further Evaluation/Determine Action. Monitoring results indicate that some revision of management direction may be needed. Forest Plan standards (p. 98, 106) prescribe specific minimum levels of snow intercept cover, which may not be realistic in all circumstances. A suggested solution is to eliminate the minimum requirements for snow intercept cover, and replace them with direction to maximize this component of cover stands whenever possible. In project planning, Districts should promote practices which result in improved snow intercept cover levels. Practices such as underplanting or selective harvests could promote development of snow intercept thermal cover. Additionally, direction is needed to allow Districts to use ecosystem management principles to view winter range management from a larger landscape perspective and consider the function and value of existing stands providing snow intercept thermal cover currently outside designated winter range areas (Management Areas 6 and 8). The Forest should manage the "biological" winter range, as determined by the needs of deer and elk, not just the areas mapped as Management Area 6 and/or 8.

I-2. Further Evaluation/Determine Action. Monitoring indicates that further evaluation of this area is needed. The Forest Plan standard regarding maximum distances across forage areas was designed to ensure that created forage areas do not become so large as to preclude big game use. New GIS computer technology is perhaps a better method to assess the amount of useable forage areas within winter ranges. The Forest should evaluate the need to replace the standard for maintaining a 600-foot maximum distance across forage areas with a standard for managing useable foraging area. Because a single percentage of effective forage area would not be applicable across the Forest, Forest Plan direction should be to maintain or improve the existing percentage of effective forage acres for respective winter range areas. Land management activities, especially in the western portion of the Forest, should continue to strive for forage areas which are effectively used by big game. In areas which are naturally open, retaining patches or stringers of trees may help reduce sight distances. In such instances, managing for hiding cover may also be an appropriate course of action.

I-3. Further Evaluation/Determine Action. Management direction for the cover/forage habitat component may be needed. The cover/forage ratio objective for winter ranges should remain at 50:50. However, where the 50:50 ratio is unattainable due to natural open conditions, management should be directed toward increasing the amount of cover to the extent possible. In project planning, promote practices (thinning, underplanting, fertilization) which may result in improved cover/forage ratios and use ecosystem management principles to manage the "biological" winter range.

I-4. Results Acceptable/Continue to Monitor. However, to fully achieve this objective, the Forest needs to actively pursue more opportunities to close or restrict access to roads within winter ranges. If no projects are planned within an area which would provide K-V funds or other opportunities to close roads through the timber sale program, other funding sources should be sought.

Monitoring Results, Evaluation, and Recommended Actions

Overall, current achievement of Forest Plan desired conditions for big game winter range is low. Much of this is due to pre-existing or natural conditions which were not fully accounted for in the Plan. Modifying Plan standards for winter range could more accurately reflect what is actually possible given natural conditions. However, any modifications would have to be done in a manner that does not lower the original expectations or population objectives of the Forest Plan. Greater application of ecosystem management concepts would also help improve conditions for wintering big game. As evidenced by comments from the U.S. Fish and Wildlife Service during informal consultations, increased emphasis on "biological" winter range is needed to fully manage big game habitat.

PRIMARY CAVITY EXCAVATORS

Forestwide Goals

To maintain standing dead and defective trees and down trees for habitat for primary cavity excavators as provided in the Forest Plan.

Purpose of Monitoring

To determine whether or not snags or defective trees that provide suitable habitat for primary cavity excavators are being maintained as prescribed by the Forest Plan within timber harvest units, and if these densities are being maintained throughout the harvest rotation of these stands.

Standard

Maintain sufficient standing dead and defective and down dead trees to support at least 60% of the potential populations of primary cavity excavators.

Summarized Results

Generally, the practice of retaining 2 snags/acre (and other criteria) post-harvest has been used to achieve the standard of maintaining 60% of potential populations of primary cavity excavator species. Three Ranger Districts reported monitoring 19 timber harvest units on 4 sale areas using these criteria. Of these 19 units, 16 (84%) met the 2 snags/acre

criteria. Pre-sale surveys were conducted on 29 units across three Ranger Districts. Twenty three of these units (79%) met the 2 snags/acre criteria. Two districts reported no monitoring of this item.

Evaluation

The available monitoring data from 3 districts suggests that compliance with the 2 snags/acre criteria is good. No data was available on the size or quality of these snags. Data for snag longevity and snag losses due to other sources (fuels treatments, firewood collection) were also not available. Whether the 2 snags/acre are retained throughout the rotation cannot be determined at this time.

Recommended Action

Further Evaluation/Determine Action. Further evaluation/updating of the 60% potential population standard and the number of snags necessary to meet that standard is needed. This evaluation should be based on the most recent research information available. Monitoring activities should also be expanded to track snag habitat availability and quality through time for a variety of management practices. The information gathered should include the size and species of retained wildlife trees. This recommendation was presented in the FY92 Monitoring Report, but no action has been taken yet. Effectiveness monitoring on both natural and created snags is also needed to provide better information regarding habitat preferences of different species of cavity excavators. Tracking of snag habitat availability through harvest, post-harvest treatment, firewood collection and natural processes is needed to fully determine whether we are providing snag habitat at the desired levels. The Forest Plan provides for creating snag habitat to augment available snag habitat in areas identified as being deficient. The need for creating snags, and the monitoring of those snags, should be considered in all KV plans. However, it must be recognized that creating snags is of limited benefit considering the cost per snag and the number of snags which may need to be created to meet population objectives. Creating snags should not become a tool to mitigate the unnecessary loss of natural snags. Efforts to maintain existing snags generally provide higher quality habitat at a lower cost.

OLD GROWTH DEPENDENT SPECIES

Forestwide Goal

To ensure essential habitat is being provided for wildlife species that require old-growth forest components, and diversity of such wildlife habitats and plant communities is maintained in accordance with Forest Plan direction.

Purpose of Monitoring

To determine whether or not old-growth habitat is being managed in sufficient quantity and quality to maintain viable populations of old growth dependent species and to meet management objectives for the barred owl indicator species.

Monitoring reports for marten and pileated woodpeckers have been moved from Management Indicator Species to this Monitoring Item. This was done to provide a more comprehensive analysis and assessment of monitoring for old growth dependent species.

Standard

MA-1's (and associated foraging areas), and pileated woodpecker and marten MR's are maintained as described in the Management Prescription and Forest-wide Standards and Guidelines.

Summarized Results

Thirteen MA-1's (20% of Forest total) were evaluated. None met Forest Plan objectives, primarily due to the absence or low amount of mature or old growth stands. Four areas were reported to be less than the 600-acre minimum size.

Three Ranger Districts reported monitoring 30 marten MR's (10% of Forest total). None met Forest Plan standards. Like the MA-1's, this was largely due to a deficiency in mature and old growth stands.

Two Ranger Districts reported monitoring 7 pileated woodpecker MR's (14% of Forest total). Information to determine achievement of standards was available

for only one of these areas. This pileated MR did not meet standards due to a deficiency in mature and old growth stands.

Five MA-1's on 2 Ranger Districts were monitored for the presence of barred owls. Of these, 3 had positive results during hooting surveys.

Evaluation

None of the old growth habitat management areas evaluated this year met the desired conditions. These results indicate that habitat network for old growth dependent species (barred owls, marten and pileated woodpecker) has not yet developed as envisioned by the Forest Plan.

Until the desired network of MA-1's and MR's develops, it may be necessary to accurately inventory all available mature and old growth stands within project planning areas to determine the availability of suitable habitat. To ensure appropriate levels of habitat are being maintained to meet the needs of these species, substitute areas may need to be retained until stands on the network have had time to develop the desired characteristics. The ongoing old-growth inventory may be helpful in this area.

Because of the small sample size and variability in response rates during this year's barred owl surveys, the results are considered inconclusive. Concerns have also been expressed by district biologists that calling for barred owls is not a worthwhile effort due to the high mobility of the barred owl and the fact that barred owls use a variety of habitats (see FY92 Monitoring Report regarding monitoring population levels vs. presence of a species).

Recommended Action

Further Evaluation/Determine Action. Continue to inventory areas to determine the suitability of any nearby MA-1's, marten and pileated woodpecker habitat areas. If deficient in suitable habitat, consider the value and function of suitable habitat outside of MA-1's and MR's. Analyze old-growth inventory data. In addition, the Forest should review the usefulness of the hooting survey technique for barred owls.

MANAGEMENT INDICATOR SPECIES

Forestwide Goal

To manage habitat in compliance with Forest Plan standards and guidelines for pileated woodpecker, northern three-toed woodpecker, Franklin's grouse, blue grouse, raptors and great-blue heron, beaver, furbearers, waterfowl, northern bog-lemming, marten, and unique habitat components.

Purpose of Monitoring

To monitor the amounts of habitat for the management indicator species and to evaluate the effectiveness of these habitats through utilization and population trends.

Standard

Defined management objectives and Standards and Guidelines must be met.

Summarized Results

I-1. Marten and Pileated Woodpecker Habitat
See Old-Growth Dependent Species section in this report.

I-2. Franklin's Grouse/Lynx Habitat
Four Ranger Districts evaluated 11 projects totaling in excess of 60,000 acres. None met the standards for Franklin's grouse/lynx habitat.

I-3. Blue Grouse Habitat
None of the Districts reported any monitoring for implementation of blue grouse standards. Several Districts reported that they did not have any post-Forest Plan sales which prescribed winter roost retention.

I-4. Raptor and Great Blue Heron Habitat
The Kettle Falls and Colville Ranger Districts each monitored 1 site after project completion to determine effects on raptors and great blue heron. A heron rookery on the Colville District retained usefulness, while a goshawk nest on the Kettle Falls District did not.

E-2. Lynx/Marten Track Surveys

The Kettle Falls and Republic Ranger Districts reported conducting furbearer (marten and lynx) track counts. The route run on the Kettle Falls District resulted in observations of tracks both times it was run. On Republic, 1 track count out of 5 yielded observations of tracks.

Evaluation

I-2. Franklin's Grouse/Lynx Habitat

A lack of young (<20 year old) lodgepole pine is cited as the primary reason for not meeting standards for Franklin's Grouse and Lynx habitat. Excessive road densities were also cited. These monitoring results indicate that existing Franklin's grouse/lynx habitat quality is not meeting the conditions envisioned in the Forest Plan.

I-4. Raptor and Great Blue Heron Habitat

Because the sample size for retention of raptor/heron nests was so small, the results are considered inconclusive.

E-2. Lynx/Marten Track Surveys

Although track surveys did indicate presence, the small sample size and large number of variables inherent in these surveys prevents real meaningful interpretation of the results.

Recommended Action

I-2. Franklin's Grouse/Lynx Habitat

Further Evaluation/Determine Action. Further evaluation of the habitat needs of lynx is warranted. The Washington Department of Fish and Wildlife (in cooperation with others) is developing lynx habitat recommendations which incorporate the latest information on lynx biology and habitat requirements to assist in maintaining viable populations. Emphasize regeneration of lodgepole pine in Franklin's grouse/lynx emphasis areas during timber sale planning. Where regeneration cannot be completed by timber harvest, develop alternate regeneration methods such as prescribe burning and seek supplemental funding in order to comply with Forest Plan objectives.

I-3. Blue Grouse Habitat

Further Evaluation/Determine Action. Because there were no data to measure this year, no conclusions can be drawn. It may be necessary to review the list of sales which are active on the Forest to determine which sale units will provide this kind of information. Monitoring direction can then be forwarded to the appropriate Ranger District in order to obtain these results as quickly as possible.

I-4. Raptor and Great Blue Heron Habitat

Further Evaluation/Determine Action. The evaluation of available information was not conclusive, and additional information is needed. The Forest should continue to protect nest sites and monitor the effectiveness of mitigation measures. Additional consideration for active goshawk nests may be warranted. At the Kettle Falls site, buffers as indicated in the FEIS were implemented but the site was still abandoned. Additional information is needed to determine if this prescribed buffer size is effective.

THREATENED, ENDANGERED AND SENSITIVE SPECIES

Forestwide Goal

Habitats for threatened, endangered and sensitive species will be protected and managed as provided for by Forest Plan Standards and Guidelines. Assess whether the above direction is providing the anticipated and desired results.

Purpose of Monitoring

To determine whether:

- I-1 Habitat for caribou is being managed to provide seasonal components to support the Forest's portion of a fully recovered population;
- I-2 Habitat for grizzly bear is being managed as directed in the Interagency Grizzly Bear Guidelines and the Forest Plan;
- I-3 Habitat for bald eagles is being managed in accordance with the national policy, Recovery Plan, and Forest Plan;
- I-4 Any occurrences of gray wolves, peregrine falcons, or other T&E species are being documented, their activities monitored, reported to other responsible agencies, and

essential habitats are being managed in compliance with recovery plans;

- I-5 Sensitive species lists for the Forest are current and updated as new information becomes available. Pertinent information is being collected and submitted to the proper agencies;
- I-6 Pertinent Biological Evaluations, consultations, etc. are being conducted and they include the required information to ensure Forest activities do not adversely affect the status or survival of and TES species.

Standard

No reduction in population is acceptable. No more than a 2% reduction in modeled habitat suitability.

Summarized Results

I-1 Caribou habitat

Only Sullivan Lake Ranger District has designated caribou habitat. They did not have any projects which could be monitored for this item.

I-2 Grizzly bear habitat

Only Sullivan Lake Ranger District has designated grizzly bear habitat. They did not have any projects which could be monitored for this item.

I-3 Bald eagle habitat

Only Sullivan Lake Ranger District reported any projects which were monitored for compliance with the Bald Eagle Recovery Plan and Management Guidelines. Six projects were monitored, all met the requirements.

I-4 Wolf reports being investigated

The Districts totaled 19 wolf reports. Eighteen of these were investigated. The only one not investigated, on the Kettle Falls District, was not field checked due to new snowfall which would have obliterated any potential wolf sign.

I-5 Maintenance of Sensitive Species List & distribution of information

Information on TES plant and animal sightings has been forwarded to the Washington Natural Heritage Database and Washington Department of Wildlife. The Forest has been 100% effective in compliance with this monitoring item.

Monitoring Results, Evaluation, and Recommended Actions

I-6 Biological Evaluatlons being conducted as prescribed

The Districts reported a total of 76 BE's prepared for timber sales, thinning projects, mining claims, special uses and habitat projects. All were in compliance with established direction.

E-2 Number of sensitive species sited monitored

The Forest completed examinations of 52 sensitive plant sites. This comprised 26% of the 1993 known sensitive plant locations. No effectiveness monitoring of sensitive animal sites was conducted.

Evaluation

I-2. During the course of the year, informal consultation with the Fish and Wildlife Service has resulted in modifications to the way we are being asked to assess effects to grizzly bear habitat. Instead of finding "No Effect" based on being outside established recovery areas and within Management Situation 5 of the Interagency Grizzly Bear Guidelines, we have been asked to assess effects to grizzly bear habitat components such as denning and spring foraging habitats. We have also been advised that the determination of "not likely to adversely effect" may be more appropriate in instances where activities are planned in potential grizzly bear habitat outside the Recovery Area.

I-3. Although Sullivan Lake was the only Ranger District reporting this monitoring item, in reality all projects on the Forest are reviewed for effects to existing and potential bald eagle habitat during the Biological Evaluation process.

I-4. None of these investigations revealed conclusive evidence of wolf presence. These investigations do not indicate that wolves are not on the Forest. The large home range and secretive nature make the success of any such investigation very improbable. In fact, the Colville Ranger District reported possible howling responses to howling surveys and the Newport Ranger District reported possible wolf scat found.

I-5. The Regional Office updates the Regional Sensitive Species List and distributes TES information to the appropriate sources. No changes were

made in the Sensitive Species List so it remains current.

I-6. During informal consultation with the U.S. Fish and Wildlife Service, several improvements to Forest BE's were suggested. As mention previously in item I-2, analysis to potential grizzly bear habitat should be refined to included assessments to habitat components and gray wolf effects analysis for potential habitat should include assessments to the forage base, denning and rendezvous habitat and seclusion areas. Particular emphasis has been placed on road densities, road closures and effects to "biological" winter range. These concerns are expected to play an increasing role in land management decisions.

E-2. The prescribed number of sensitive plant locations were monitored, but the majority were locations in which no disturbing activity was anticipated. Baseline data on sensitive plant populations is being collected, but many of these projects have not yet been completed.

Recommended Action

I-2. Results Acceptable/Continue to Monitor. Insure that the district biologists are aware of the latest recommendations from the U.S. Fish and Wildlife Service to ensure compliance with protocol and increase efficiency of Biological Evaluation reviews.

I-3. Further Evaluation/Determine Action. Monitoring direction for bald eagle habitat needs to be clarified so all districts understand which projects are to be monitored and what parameters should be monitored.

I-4. Results Acceptable/Continue to Monitor.

I-5. Results Acceptable/Continue to Monitor.

I-6. Further Evaluation/Determine Action. Forest-wide biologist review of latest concerns and requested analysis for both grizzly bear and gray wolf is suggested. Providing complete information packages, including these assessments, is necessary to ensure efficient review during informal consultations with the U.S. Fish and Wildlife Service.

FISHERIES

Forestwide Goals

To manage fish habitat and populations, as directed in the Forest Plan, to meet the projected "desired future condition" and projected habitat improvements.

Purpose of Monitoring

- I-1 To determine if fisheries Standards and Guidelines are being applied to timber sales;
- I-2 To determine if the timber sale program on the Forest is helping to achieve the desired future condition for fisheries habitat;
- I-3 To determine if fish habitat improvement projects are being planned, funded, and implemented as described in the Forest Plan;
- I-4 To determine if fish habitat capability is improving in streams where habitat improvement projects are being implemented.

Standard

Habitat condition should not vary more than 50% from what was expected in the project analysis.

Summarized Results

I-1&2 Percentage of Timber Sales Which Are Implementing Plan Standards and Achieving DFC

District	# Sales Evaluated	Total Acres	% Sales Meeting Standards	Comments
Colville	3	?	100%	
Kettle Falls	7	45008	100%	Small sales not in acreage
Newport	1	?	100%	Trimble Sale; inadequate riparian buffer
Republic	1	194	100%	Hardscrabble acreage

I-1&2 Percentage of Timber Sales Which Are Implementing Plan Standards and Achieving DFC (continued)

District	# Sales Evaluated	Total Acres	% Sales Meeting Standards	Comments
Sullivan Lake	2	20620	100%	

? = Data unavailable

- = Not applicable

I-3. Number of Fisheries Improvement Projects Implemented

District	# of Completed Structures
Colville	0
Kettle Falls	15
Newport	23
Republic	22
Sullivan Lake	0
FOREST TOTAL	60

I-4 (E-1). Percentage of Improvement Projects Producing Desired Effects

District	# Projects Inventoried Responses	% Projects With Positive Comments
Colville	0	-
Kettle Falls	0	-
Newport	3	100%
Republic	0	-
Sullivan Lake	?	?

Monitoring Results, Evaluation, and Recommended Actions

Evaluation

I-1. All 5 Ranger Districts reported that each timber sale evaluated was in compliance with Forest Plan standards. There is some concern that more biologist input is needed in the design of stream crossings.

I-2. Four Ranger Districts report that timber sales that were monitored were assisting in meeting Desired Future Condition (DFC) although the Newport District reported that the sale they monitored had inadequate riparian buffers. Monitoring responses for this item may not be providing a complete assessment of the condition of fisheries habitat quality. Accelerated sedimentation and the effects on fisheries habitat continues to be a concern for district biologists. Methods for determining what level of sedimentation is detrimental to aquatic species have not been refined. The rule of thumb of 35% embeddedness as the threshold of concern for fisheries habitat quality is being observed in some stream segments during Hankin/Reeves stream surveys. Continued effort in assessing the sedimentation question by the Forest Fisheries Biologist and Hydrologist will help improve the quality of assessments for fisheries habitat.

I-3. In Appendix B of the Forest Plan (p. B-1) 94 structures (check dams, boulder placement, etc.) were anticipated to be completed by the Forest each year. During FY93 the Forest completed 60 structures, or 64% of the anticipated accomplishment. Cooperative funding and Challenge Cost Share projects (CCS) comprise a primary method of funding these project accomplishments.

I-4 (E-1). The only monitoring of a completed improvement project occurred at the Newport Ranger District. Monitoring indicated that project objectives were met.

Recommended Action

I-1. Results Acceptable/Continue to Monitor. Continue to apply Forest Plan standards. When designing stream crossings, actively pursue biologist input to address fisheries concerns.

I-2. Further Evaluation/Determine Action. Incorporate regional suggestion and develop a more comprehensive description of DFC's for fisheries. Providing supplemental information regarding desired fisheries

habitat may allow a more comprehensive evaluation of management practices. This recommendation was also made in the FY92 Monitoring Report. Some items which may be included are pool:riffle ratios, large organic debris rates, streambank stability objectives and levels of embeddedness. Information from the Tri-Forest fisheries project may help provide some of these parameters for local streams. Continue fisheries biologist and hydrologist efforts at resolving questions about effects of sedimentation.

I-3. Further Evaluation/Determine Action. Prepare cost estimates for out-year project structures in order to request sufficient funding. Districts should be encouraged to develop both Watershed Improvement and CCS projects to help meet structural improvement objectives. Recommend that future monitoring reports include the number of structures completed through such projects to assess how we are meeting assigned targets. Continue to stress development of Watershed Improvement projects and CCS cooperative projects for fisheries.

I-4 (E-1). Results Acceptable/Continue to Monitor. Encourage Ranger Districts to conduct monitoring to determine whether projects are having beneficial effects as planned.

RE STOCKING OF LANDS

Forestwide Goal

The National Forest Management Act (NFMA) requires that regeneration of harvested units must occur within 5 years. Tree stocking should be sufficient to meet Forest Plan yield projections.

Purpose of Monitoring

To determine if harvested lands are being restocked in a timely manner with the proper number, type, and species of trees to meet National Forest Management Act restocking of lands requirements and Forest Plan projections of future yields.

Standard

Harvested stands should be regenerated within 5 years and stocked to meet 90 percent of potential yields.

Monitoring Results, Evaluation, and Recommended Actions

Summarized Results

Although 5-year regeneration has been tracked since NFMA was enacted, 1993 was the first year that 5-year stocking levels following timber harvest have been reported as part of the Forest Plan Monitoring process. This new reporting requirement, along with the implementation of an activity tracking database, will enable Districts to more closely monitor, and achieve, the certification of units within the five-year NFMA timeline. Ninety percent of plantations harvested five years ago have been certified as meeting NFMA stocking standards. In 1988, final removal harvest occurred on 5789 acres. By the end of FY93, 5275 of those acres (91%) had been certified as satisfactorily stocked. The remaining 514 acres are expected to be certified in FY94 and FY95 as a result of natural reproduction.

After a unit is planted, the success of the planting is monitored, at a minimum, the first and third year after the seedlings are planted. Survival, as well as stocking levels (trees per acres) is monitored. Survival and growth results for 1993 showed an average of 93% survival the first year following harvest and an average of 80% survival the third year following harvest (see table).

Plantation Survival and Growth

First Year	Acres	Percent
Total area planted	5,245	100
Average survival		93
Survival by species:		
Ponderosa pine		93
Western larch		88
Douglas-fir		97
Englemann spruce		97
Lodgepole pine		96
Western white pine		95

Third Year	Acres	Percent
Total Sampled	5,006	100
Average survival		80
Survival by species:		
Ponderosa pine		80
Western larch		74
Douglas-fir		85
Englemann spruce		78
Western white pine		82
Certified as restocked with one treatment (planting)		92

In 1993, 5245 acres were planted and 752 acres were regenerated using natural regeneration methods. Over one million seedlings were planted including Douglas-fir, western larch, ponderosa pine, western white pine, Englemann spruce, and lodgepole pine. Planting was accomplished April through June. Natural regeneration occurred with and without site preparation. Site preparation methods included prescribed burning and machine piling.

Evaluation

NFMA standards for restocking of lands following timber harvest are being met. Although the data may suggest that stocking levels are below levels sufficient to meet Forest Plan yield projections, this may be misleading due to high numbers of natural seedlings that are present but do not meet height requirements necessary to be recorded as established trees. There is some indication that stocking levels of planted trees are declining due to less intensive site preparation methods which reduce site impact and result in higher amounts of woody debris retained on site but also create fewer suitable planting spots.

Recommended Action

Results Acceptable/Continue to Monitor.

TIMBER YIELDS

Forestwide Goal

To ensure yields from harvested lands are sufficient to meet Forest Plan projections.

Monitoring Results, Evaluation, and Recommended Actions

Purpose of Monitoring

To validate whether actual yields resulting from harvest are meeting Forest Plan projections.

Standard

Actual yields should be within 5 percent of projected yields.

Summarized Results

This item is scheduled to be monitored during the Five-year Plan review.

LAND SUITABILITY

Forestwide Goal

To ensure harvest activities are scheduled only on lands meeting the timberland suitability criteria displayed in Appendix B of the Final EIS.

Purpose of Monitoring

To ensure programmed harvest activities are only taking place on suitable lands.

Summarized Results

During the timber sale planning process, all proposed harvest units are evaluated for suitability. No harvest units during FY93 were withdrawn because the land did not meet suitability requirements due to regeneration difficulties.

Evaluation

The timber sale planning process is the proper vehicle for evaluating suitability of proposed harvest units. Lands are being identified and withdrawn from timber harvest when appropriate. The effect of these withdrawals on the overall landbase available for timber management is not known.

Recommended Action

Results Acceptable/Continue to Monitor. Although a recommendation was made in last year's monitoring report to build a GIS layer to track changes in suitability, this project was not considered a high priority at this time.

SIZE AND DISPERSAL OF HARVEST UNITS

Forestwide Goal

Harvest unit layout, with respect to size and dispersal of openings, will adhere to the Forest Plan standards and guidelines.

Purpose of Monitoring

To ensure projects are meeting Forest Plan standards and guidelines and that any proposals for exceptions to unit size limitations follow the notice and review requirements on the National Forest Management Act regulations.

Summarized Results

In FY93, no requests were made to exceed the 40-acre size limitation for regeneration harvests. Forest and District reviews of planned activities indicate that the Districts are adhering to Forest Plan standards and guidelines related to size and dispersal of openings.

Evaluation

Harvest unit layout has been consistent with Forest Plan guidelines.

Recommended Actions

Results Acceptable/Continue to Monitor.

SILVICULTURAL PRACTICES BY MANAGEMENT AREA

Forestwide Goal

To ensure that areas treated on the Forest are consistent with the Forest Plan projections presented in table 4.10 of the Forest Plan.

Purpose of Monitoring

To ensure that treatments are consistent with the Forest Plan. This is the second year that this monitoring item was evaluated by the timber sales through gate 6 in STARS, or, sales which have

been awarded. In previous years, this item was evaluated by acres harvested. Acres harvested in FY93 contain timber sales sold both before and after Plan implementation. Sales sold prior to Plan implementation were not designed under the current management guidelines and therefore were not included in the monitoring results.

Summarized Results

Timber Sale Acres Awarded By Management Area (MA)

MA	Forest Plan Projection			Actual Award Acres		
	EAM	UAM	Total Acres	EAM	UAM	Total Acres
2	200	100	300	1	0	1
3A	0	100	100	98	244	342
5	1700	1100	2800	70	167	237
6	500	400	900	34	0	34
7	5200	0	5200	583	558	1141
8	1600	0	1600	161	0	161
TO-TAL	9200	1700	10900	947	969	1916
% of Proj. Acres				10%	57%	

EAM = even-aged management
 UAM = uneven-aged management

Of the 947 acres of even-aged treatment, 41 acres (4%) were accomplished using the clearcutting method. Of the timber sales sold and awarded in 1993 that had acreage in management areas 2, 3A, 5, and 6 (see above table), 67% of the planned harvest is uneven-aged. In management area 7, where all harvest methods are permitted, 49% of the harvest is uneven-aged management and 51% is even-aged. In management area 8, even-aged management is preferred and all harvest was accomplished using even-aged systems.

Evaluation

Timber production and harvesting was a major issue in the development of the Forest Plan. As a response to this issue, standards and guidelines were developed for harvest methods in the different

management areas. Unevenaged management is emphasized in management areas 2, 3A, 5, and 6. Harvest by silvicultural method is significantly below Forest Plan projections for all methods.

Recommended Action

Results Acceptable/Continue to Monitor. This is the second year this item has been measured against acres awarded. In both years, the acreages have been considerably lower than Forest Plan projections. If this trend continues, projected managed stand yields for future rotations will not be met.

COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT

Forestwide Goal

The analysis and documentation developed for all projects will meet the requirements of the National Environmental Policy Act.

Purpose of Monitoring

To ensure the conditions of NEPA are being met.

Standard

All project environmental analysis and documentation must meet Federal, agency, and Forest standards for NEPA compliance.

Summarized Results

Eight of 10 Forest Supervisor NEPA decisions made to authorize timber sales were appealed during FY93 (Tom/Roes, Elbow, Hoki, Parker, Boulder, Graham/Donaldson, Kelard, Longsnake, Lower Cedar and Lost Tiger/Granite timber sales). Two of 5 District Ranger NEPA decisions made to authorize timber sales were appealed (Chip-N-Dale, Middle Fork, Butte Creek, Rocky Creek Riparian, and Spock timber sales). In addition, a District Ranger NEPA decision made to authorize a mining operations plan (Phelps Dodge Torada #1) was also appealed. All of these decisions were upheld during the Regional Office reviews. In addition to these decisions subject to appeal, 14 small salvage sales were exempted from appeal under appeal regulations.

Monitoring Results, Evaluation, and Recommended Actions

The quarterly Schedule of Proposed Actions, required under the 1992 Forest Service regulations for NEPA projects, has been compiled and mailed on time throughout 1993 to a mailing list of over 300 groups and individuals. The listing has added information on the status of projects for tracking of decision dates. Projects listed include all NEPA projects from special uses to timber sales, recreation, wildlife, land exchange and other projects implementing the Forest Plan.

The Ranger Districts and Forest Leadership Team also monitored implementation of NEPA projects on the ground with their interdisciplinary teams to assess effectiveness of mitigation and planning as designed. Also, maintenance inspections of sale administrators are done yearly to review implementation of the timber sale contract and compliance with the NEPA document.

Evaluation

Analysis and documentation for projects is meeting the requirements of the National Environmental Policy Act.

Recommended Action

Results Acceptable/Continue to Monitor.

COMPLIANCE WITH FOREST PLAN STANDARDS AND GUIDELINES

Forestwide Goal

Forest Plan standards and guidelines are implemented where appropriate and result in the desired future condition described in the Forest Plan.

Purpose of Monitoring

To determine if Forest Plan standards and guidelines are implemented and meet the objective of protecting the resource values identified in the Forest Plan.

Standard

Forest Plan standards and guidelines and management area prescriptions should be implemented and the actual on the ground results should approximate predicted results in the Forest Plan.

Summarized Results and Evaluation

The Forest Leadership Team reviewed one Forest Supervisor authority project per Ranger District on the ground and each Ranger District reviewed 1-2 timber sales projects to monitor compliance with a variety of resource standards. Some items reviewed included road maintenance and damage by firewood cutters, implementation of silvicultural prescriptions, impact of timber harvest on trails and effectiveness of protection measures, and soil and water resource protection. The Newport Ranger District identified a need to further study mechanical harvesting standards. Other findings included the observation that post-sale firewood cutting was creating impacts to temporary roads in some cases, and that the review and tracking process for KV projects needed to be improved.

Evaluation

Monitoring indicated that Standards and Guidelines are being met.

Recommended Action

Results Acceptable/Continue to Monitor.

COORDINATION WITH ADJACENT LAND-OWNERS

Forestwide Goal

Determine if effects of Forest activities are affecting adjacent landowners.

Purpose of Monitoring

Meet the requirements of the National Forest Management Act by ensuring the effects of National Forest management on land, resources, and communities adjacent to the National Forest are considered.

Standards

The analysis of proposed Forest activities should include consideration of effects on adjacent landowners.

Summarized Results

This item is required as part of NEPA compliance for any new project. Districts and the Supervisor's Office headquarters maintain mailing lists which are updated periodically.

Evaluation

Requirements are being met.

Recommended Action

Other Recommendations. Recommend this monitoring item be deleted as it is covered under NEPA compliance item #1.

COMPARISON OF ACTUAL AND PLANNED IMPLEMENTATION COSTS

A comparison of actual and planned costs was not performed for FY93. The 1992 monitoring report contained a recommendation to evaluate further by incorporating a unit cost analysis into the Five-year Forest Plan review which is further recommended in this report.

ECONOMIC EFFECTS OF PLAN IMPLEMENTATION

Forestwide Goal

To produce Forest goods and services in the most cost-efficient way consistent with providing net public benefits.

Purpose of Monitoring

To note significant changes in payments to counties and returns to the U.S. Treasury from Forest Plan projections in dollars.

Standard

Variations of more than plus or minus 15% will be explained or reconciled.

Summarized Results

Returns to Government

The Forest Plan estimated that under full implementation of the Plan (including the harvest of 123.4 MMBF of allowable sale quantity), total revenue or total returns to government would be \$12.4 million (1982 dollars). Actual returns to government for FY 1993 was \$6.0 million (1982 dollars).

Payments to States

The Forest Plan also estimated that full implementation of the Plan would produce \$3.1 million in payments to states (1982 dollars). Table 4.2 shows that the less than full Plan implementation (which included a harvest of 69 MMBF) for fiscal year 1993 produced a payments to states of \$1.4 million (1982 dollars). Payments to states is approximately 25 percent of the revenues received from timber, recreation, minerals, range, and land stewardship programs.

Evaluation

Forest Plan estimates of revenues and payments to states will not be realized until average stumpage values from timber harvested are \$98.25 (1982 dollars) and total ASQ timber harvest is 123.4 MMBF. According to the planning models used during the planning process, the returns to government related to timber would be roughly \$12.33 million (1982 dollars), which reflects an average stumpage value of \$98.25. Stumpage values used in the Forest Planning model, FORPLAN, were developed using 1977 to 1982 average values for the Forest, but using Regional Office guidelines and formulas.

However, the actual average stumpage value from timber harvested on the Forest from 1977 to 1982 was \$81.81 per MBF (1982 dollars). The expectation that timber stumpage values would continue to increase at 1977 to 1982 rates did not occur until FY93. The average stumpage value from timber harvested on the Forest from 1983 to 1992 was \$44.86 per MBF (1982 dollars). For FY93, the actual average stumpage value from timber harvested was \$81.12 (1982 dollars or \$122.41 in 1993 dollars). This represents a 27 percent increase over the FY92 average stumpage value of \$62.49 (1982 dollars).

Monitoring Results, Evaluation, and Recommended Actions

Recommended Action

Further Evaluation. Due to increasing demands for eastside timber, stumpage bidding prices have increased dramatically during FY94. Recent stumpage bidding prices are averaging close to \$300 per MBF (1993 dollars). It now appears that stumpage values will surpass the values used in FORPLAN. Even so, harvest volumes in the near future are not likely to reflect full Plan implementation. Therefore, returns to government and payments to states as predicted by the Forest Plan still may not materialize.

PLANNING MODELLING ASSUMPTIONS- PRIMARILY FORPLAN

Forestwide Goal

To produce Forest goods and services in the most cost efficient way consistent with providing net public benefits.

Purpose of Monitoring

To determine if FORPLAN modelling assumptions reflect actual Forest conditions.

Summarized Results

The spatial disaggregation by resource shed of the FORPLAN model was completed. The spatially disaggregated model was also validated with respect to the

FORPLAN harvest constraints, i.e. all of the constraints or requirements, from dispersion to management requirements for MIS species were met for each resource shed. Table 1 shows, by resource shed, the harvest acres and volumes that resulted from spatial disaggregation process. Table 2 shows some of the more important FORPLAN outputs resulting from the spatial disaggregation, but aggregated on a Forestwide basis.

Monitoring Results, Evaluation, and Recommended Actions

Table 1 Period One Harvest MBF Volume by Resource Shed and District

DISTRICT	RESOURCE SHED	ACRES	MBF
COLVILLE	11	1,162	19,818
COLVILLE	12	3,877	64,964
COLVILLE	13	737	7,453
COLVILLE	14	394	5,539
COLVILLE	15	312	3,318
COLVILLE	16	306	2,808
COLVILLE	17	2,074	26,862
COLVILLE	18	4,268	65,547
COLVILLE	19	1,157	15,550
	TOTAL	14,287	211,859
KETTLE	21	3,755	54,912L
KETTLE	22	4,937	67,502
KETTLE	23	2,679	43,026
KETTLE	24	100	981
KETTLE	25	4,300	45,245
KETTLE	26	2,035	29,733
KETTLE	27	1,251	9,088
KETTLE	28	1,944	23,686
	TOTAL	21,001	274,173
NEWPORT	31	2,202	33,528
NEWPORT	32	3,562	49,839
NEWPORT	33	11,649	158,003
NEWPORT	34	5,333	84,245
NEWPORT	35	228	3,889
	TOTAL	22,974	329,504
REPUBLIC	41	3,474	39,925
REPUBLIC	42	1,029	8,684
REPUBLIC	43	3,313	28,631
REPUBLIC	44	21	109
REPUBLIC	45	2,760	27,187
REPUBLIC	46	2,477	24,534
REPUBLIC	47	4,859	48,689
REPUBLIC	48	260	1,769
REPUBLIC	49	3,139	32,899
	TOTAL	21,332	212,427
SULLIVAN LK.	51	2,606	29,997
SULLIVAN LK.	52	114	976
SULLIVAN LK.	53	4,245	28,880
SULLIVAN LK.	54	1,492	18,250
SULLIVAN LK.	55	641	3,870
SULLIVAN LK.	56	3,857	62,433
SULLIVAN LK.	57	362	3,559
SULLIVAN LK.	58	238	4,059
SULLIVAN LK.	59	3,301	52,677
	TOTAL	16,856	204,701

Table 2 Results of FORPLAN Spatial Disaggregation

OUTPUT	UNITS	PERIOD	AMOUNT
CUMULATIVE PNV REVENUE	M\$	15	152,634
LOGGING COSTS	ANNUAL M\$	1	28,448
RETURNS TO GOVT	ANNUAL M\$	1	16,094
BUDGET EXPENSE	ANNUAL M\$	1	12,354
NET REVENUE	ANNUAL M\$	1	8,919
MINIMUM LEVEL	ANNUAL M\$	1	3,435
LONG TERM SUS YLD	TOTAL ACRES	1	73,023
CLEARCUT HARVEST	MCF	16	41,783
SHELTERWOOD HARV	ANNUAL ACRES	1	6,060
UNEVEN AGE HARV	ANNUAL ACRES	1	1,006
OVERWOOD REMOVAL	ANNUAL ACRES	1	1,700
TOTAL HARVEST	ANNUAL ACRES	1	879
	ANNUAL ACRES	5	9,645
	ANNUAL ACRES	10	16,011
	ANNUAL ACRES	15	17,361
TOTAL HARVEST	ANNUAL ACRES	15	15,035
	ANNUAL MMBF	1	123
	ANNUAL MMBF	5	152
	ANNUAL MMBF	10	189
	ANNUAL MMBF	15	194

NOTE: Although a nondeclining even flow constraint was placed on total cubic feet harvested, total board foot harvest may decline in following decades. This occurs because the relationship between cubic and board feet is not linear. It is a function of diameter.

Evaluation

This disaggregation is only implementable if the assumptions that were used during the development of the original model remain valid. Because this is very likely not the case due to changing costs, changing timber values, changes in management practices, etc. However, this disaggregation is useful for sensitivity testing, analyzing changes in outputs as inputs are changed, analyzing the effects of additional requirements (such as watershed cumulative effects) and for use as a benchmark if different models are used.

Recommended Action

Further Evaluation. The upcoming five-year plan review requires a determination of whether conditions on the ground or demands by the public have changed significantly to warrant a revision of

the Forest Plan. The recommended course of action is to validate and/or update FORPLAN model assumptions and inputs pertaining to costs, timber values, silvicultural treatments, and yields during the five year plan review.

COMMUNITY EFFECTS

Forestwide Goal

Produce Forest goods and services in the most cost efficient way consistent with providing net public benefits.

Purpose of Monitoring

To track various economic characteristics and report any noticeable relationships between the economic health of the surrounding economies and Forest Plan implementation.

Monitoring Results, Evaluation, and Recommended Actions

Standards

Variations beyond plus or minus 15% will be explained or resolved.

Summarized Results

Economic characteristics of the area most influenced by the Colville National Forest, specifically

Ferry, Stevens, and Pend Oreille counties were included in the monitoring. Spokane and King County and Washington State data was included for comparison purposes. Spokane was included because it is the closest metropolitan area. King County was included because of its considerable influence on the state economy.

Monitoring Results, Evaluation, and Recommended Actions

Table 3 displays annual calendar year averages of population, labor force, total employment, unemployment rate, median income and per capita income. Table 4 displays annual calendar year averages of total covered employment by industry.

Table 3 Socioeconomic and Demographic Characteristics for Selected Counties and State - Annual Averages by Calendar Year.

County	Ferry	Pend Oreille	Stevens	Spokane	King	State
Population 2/						
1985	6,000	8,900	30,100	354,300	1,346,400	4,384,100
1990	6,295	8,915	30,948	361,364	1,507,319	4,866,692
1993	6,900	10,100	33,400	383,600	1,587,700	5,240,900
Labor Force 1/						
1985	2,570	3,670	11,110	159,000	722,800	2,091,000
1990	3,321	3,299	12,229	172,217	895,817	2,517,008
1993	3,213	3,703	12,957	186,150	901,408	2,646,200
Employment 2/						
1985	2,210	3,080	9,580	146,400	676,900	1,921,000
1990	3,008	2,831	11,038	162,217	863,175	2,383,358
1993	2,819	3,233	11,517	174,158	844,483	2,443,075
Unemployment Rate 2/						
1985	14.0	16.1	13.8	7.9	6.4	8.1
1990	9.4	14.2	9.7	5.8	3.6	5.3
1993	12.3	12.7	11.1	6.4	6.3	7.7
Income (1993 Dollars)						
Median Family 3/						
1985	22,992	20,422	25,697	29,078	39,627	34,759
1990	30,646	25,096	27,995	29,817	41,965	35,974
1991	30,718	24,712	27,887	29,871	42,386	36,195
Per Capita 4/						
1985	11,596	12,309	13,273	16,626	23,514	19,033
1990	13,305	14,370	14,170	17,908	26,141	20,693
1991	13,138	14,571	14,229	17,840	26,286	20,660

Source:

1/ Washington State Office of Financial Management, "Population Trends for Washington State," 1989-1993.

Washington State Employment Security Department, "Annual Demographic Information," 1989-1993.

2/ Employment includes agricultural and nonagricultural. Source is monthly Washington State Employment Security "Labor Market" publications, 1989-1993. All employment related data is from revised reports unless otherwise noted.

3/ Washington State Office of Financial Management, "Population Trends for Washington State", 1989-1993.

4/ Washington State Employment Security Office, "Annual Demographic Information", 1988-1991.

Table 4 Annual Average Covered Employment by Industry and County

County	Agr. Forest-ry Fishing	Mining	Const.	Manu- factur.	Trans. & Public Utilities	Trade	Fi- nance Insur. & Real Estate	Services	Gov't	Other	Total
Ferry											
1984	**	**	23	258	16	172	15	114	419	106	1,123
1990	29	367	0	229	13	273	22	227	595	43	1,798
1992	22	327	23	227	30	303	na	186	682	25	1,825
Pend Oreille											
1984	15	na	50	936	25	220	30	214	667	17	2,174
1990	23	0	76	394	75	210	44	160	760	14	1,857
1992	25	14	76	386	65	325	60	177	904		2,032
Stevens											
1984	48	184	210	1,979	161	1,241	152	1,194	1,598		6,767
1990	140	124	258	1,945	325	1,314	190	1,410	1,986		7,691
1992	138	142	160	2,094	251	1,381	200	1,569	2,226		8,161
Spokane											
1984	472	245	6,311	17,464	5,784	35,764	7,571	29,763	20,937		124,311
1990	1,001	346	6,831	19,344	6,912	40,321	8,617	38,388	24,530		146,289
1992	1,162	270	8,134	18,902	7,068	41,358	8,875	43,675	26,283		155,727
King											
1984	na	na	na	na	na	na	na	na	na	na	na
1990	9,119	393	48,488	171,349	60,481	222,313	65,796	228,118	117,303		923,360
1992	9,232	412	46,528	161,362	60,842	220,720	64,550	236,752	125,668		926,066
State											
1984	na	na	na	na	na	na	na	na	na	na	na
1990	82,480	3,671	112,400	365,954	105,879	511,904	114,092	471,993	375,145		2,143,518
1992	83,765	3,329	112,788	342,768	106,851	527,051	116,815	511,417	400,881	4,139	2,205,665

Notes:

1/ Information provided in Forest Plan Environmental Impact Statement.

** Not reported to avoid disclosure of information about single (or a few) firms.

na Not available.

Source:

Washington State Employment Security Department, "Employment and Payrolls in Washington State by County and Industry", Annual Averages and Quarterly Reports, 1989-1993.

Covered employment is recorded for those firms etc. whose employees are covered by the Washington Employment Security Act.

Data was provided for 1984 or 1985 because the economic data reported in the EIS is for 1985. Implementation of the Forest Plan began in 1989, but assuming at least a one year lag between implementation and the time that impacts, if any, were first noticed, 1990 data was reported to provide comparisons over time. The most current information was provided whenever possible.

Evaluation

Table 3 shows that for the tri-county area, Pend Oreille county experienced the highest rates of growth in population, labor force, employment and the greatest decrease in unemployment since 1990, 13, 12, 14 and -10 percent, respectively. Of the three counties, Ferry county experienced the poorest gains with respect to jobs. Ferry county showed a declining employment rate of 6 percent and an increase in the unemployment rate of 30 percent since 1990. However, employment opportu-

Monitoring Results, Evaluation, and Recommended Actions

nities were not strong in any of the three counties during 1993. For 1993, all three counties experienced total unemployment rates of 11 to 13 percent. For comparison, the unemployment rates for Spokane county and Washington state were 6 and 8 percent, respectively.

Table 3 also shows median household (the point at which half of all households have more income and half have less) and per capita (average per person) income information. Per capita income for the three counties remained relatively unchanged from 1990 to 1991. The average per capita income for the tri-county area for 1991 was \$13,979. In the tri-county area, Pend Oreille county experienced the highest per capita income for 1991, \$14,571, and also exhibited the greatest gain in per capita income from 1990 to 1991 (1.4 percent). For comparison, the state average per capita income was \$20,660. Out of 39 counties, the rankings of Pend Oreille, Stevens, and Ferry counties with respect to per capita income are 37th, 38th, and 39th, respectively. Spokane county ranked 15th and King county ranked 1st. Median

incomes for the tri-county area also remained relatively unchanged from 1990 to 1991. Of the three counties, Ferry county experienced the highest median income for 1991, \$30,718. With respect to rankings, Ferry, Stevens and Pend Oreille counties ranked 14th, 26th, and 35th, respectively. Spokane county ranked 17th and again King county was 1st.

Table 4 displays annual average covered employment by industry and by county for the tri-county area. The government sector produced the greatest increase in jobs in Ferry, Pend Oreille and Stevens counties, from 1990 to 1992, 87, 144, and 240, respectively. The sectors which lost the most jobs in Ferry, Pend Oreille and Stevens counties were services (41), transportation & public utilities (10), and construction (98).

Recommended Action

Results Acceptable/Continue to Monitor.

ACCOMPLISHMENTS

This section of the Forest Monitoring Report is a summary table of a selected list of basic outputs, effects and activities. It is not intended to cover everything but to give the reviewer a comparison of Forest Plan projections with actual fiscal 1993 accomplishments.

Accomplishments

Table 5 Resource Outputs, Environmental Effects, Activities and Costs. Comparison of Actual and Planned.

Outputs, Effects, Activities and Costs	Unit of Measure	Plan Ann Avg	FY 89	FY 90	FY 91	FY 92	FY93
Developed Recreation Use	MRVD	365	357	341	398	406	409
Non-Wild Disp Rec (inc WFUDs)							
Roaded	MRVD	725	782	282	609	910	836
Unroaded	MRVD	119	194	68	169	196	219
Wilderness Use	MRVD	2.4	5.9	2.8	2.9	1.2	1.2
Trail Const/Reconst	MILES	26	23	22	25	7	12.2
Developed Site Const/Reconst	PAOT	354	240	220	270	60	155
Wildlife Habitat Improvement							
Acres	ACRES	1,925	496	1,147	2,707	3,110	641
Structures	QUANT	1,140	38	703	520	727	186
Fish Habitat Improvement							
Acres	ACRES	11	7	125	39	39	16
Structures	QUANT	84	30	170	116	124	20
Range Permitted Grazing	AUMs	35	35.1	34.8	33.9	33.3	30.5
Range Struct Improvements/Fences	MILES	5	10	6	9	10	10
Range Struct Improvements/Water	QUANT	10	5	12	10	14	14
Range Nonstruct Improvements	ACRES	1,127	300	235	556	160	34
Timber ASQ (offered for sale) 1/	MMBF	123.4	121	127	96	26	13.5
Timber Harvested (excludes fuelwood)	MMBF	na	133.0	95.0	114.0	82.0	69.2
Fuelwood 1/	M CORDs	17.9	12.8	12.6	6.9	7.8	3.0
Reforestation: 2/							
Planted	M ACRES	4.2	4.0	5.2	5.0	4.3	5.2
Natural	M ACRES	2.8	0.1	0.7	0.3	1.7	0.8
Timber Stand Improvement	M ACRES	2.7	1.4	1.7	2.2	3.3	2.6
Improved Watershed Condition	ACRES	12	23	30	15	20	

na..not available

RVDs denotes Recreation Visitor Days; WFUDs denotes Wildlife and Fish Users Days; AUMs denotes Animal Unit Months; BTUs denotes British Thermal Unit.

Note: Recreation use for FY 90 was estimated using new sampling and recording system. For FY 91, the new system produced usage data that was known to be invalid. Therefore, recreation use for FY 91 was estimated based on past trends. This produced RVD and WFUD counts and subsequent employment and income impact estimates which can not be compared to previous years.

FOOTNOTES:

1/ Figures for the Plan represent estimates of supply available. Does not represent amount demanded or collected.

2/ Acres of reforestation also includes natural regeneration that occurs after sites are scarified by timber sale operators during logging and subsequent slash disposal.

Table 5 (Continued)

Outputs, Effects, Activities and Costs	Unit of Measure	Plan Ann Avg	FY 89	FY 90	FY 91	FY 92	FY93
Minerals (operating plans) 3/	QUANT	150	74	76	69	50	74
Energy Minerals 4/	MMMBTU	0	0.013	0	0	0	0
Non-Energy Min (82\$) 4/	MM\$	4.6	0	3.2	7.5	2.7	4.5
Art & Collector Rd Reconst	MILES	10	5	4	5	3	16
Bridges	QUANT	1	0	1	0	0	1
Timber Purch Const/Reconst	MILES	98	94	119	79	22	108
Public Use Suitable Roads 5/							
Passenger Car	MILES	849	899	866	789	716	683
Hi Clearance Vehicle Only	MILES	2,500	2,528	2,671	2,407	2,350	2,299
Roads Closed to Public Use	MILES	1,126	339	360	736	930	1,024
Total Forest Road 10/	MILES	3,745	3,938	3,898	3,941	3,996	4,006
Total Forest Budget (82 \$) 6/	MM\$	17.5	11.3	11.6	13.3	13.6	12.6
Total Forest Revenue (82 \$)	MM\$	12.4	9.2	6.3	7.4	6.3	6.0
Change in Jobs 7/	QUANT	598	734	(73)	378	43	(60)
Change in Income (82 \$) 7/	MM\$	9.0	10.7	(0.2)	5.9	4.5	2.5
Payments to States (82 \$) 8/	MM\$	3.1	1.9	1.4	1.7	1.6	1.4
Acres Harv by Prescription 9/							
Clearcut	M ACRES	4.6	3.6	2.7	3.0	2.6	2.1
Shelterwood	M ACRES	2.3	2.6	1.6	1.8	1.0	1.8
Uneven-age Management	M ACRES	1.7	0	0.1	0.8	0.6	0.3

na..not available

9.6 6.2 4.4 5.0 4.2 2.0

FOOTNOTES:

3/ Includes operating plans, Notice of Intent, prospecting permits, material sales, free-use permits, and leases involving locatable, leasable, and salable minerals.

4/ The figures are relative values based upon minerals accessibility and are not intended to be accurate estimates of mineral production.

5/ The days available for public use would vary even though the miles do not.

6/ Does not include budget for Job Corps Center.

7/ Changes in number of jobs and income are presented as change from BASE scenario to the first decade of PLAN implementation or to the current fiscal year.

8/ Does NOT include portion of Kaniksu N.F. administered by Idaho Panhandle N.F. that is in Washington State.

9/ Does not include the final removal cut of shelterwood prescriptions or the overstory removal on remove now and remove next condition classes.

10/ The figure of 3,745 miles is correction of a typing error in the Forest Plan. The mileage stated in the Plan was 4,745.

Financial Report

FINANCIAL REPORT

This section of the Monitoring and Evaluation report describes financial characteristics for the Colville National Forest for fiscal year 1993. This section includes a description of the sources and uses of Forest's funds and a comparison of the proposed Forest Plan budget (described in the

Environmental Impact Statement) to actual fiscal year expenditures.

Table 6.1a presents the sources and uses of funds, for each program, by the Forest for FY93. An annual summary (FY1989-1993) of the same information is provided in Table 6.1b.

Table 6.1a Sources and Uses of Funds for Fiscal Year 1993 (1993 Dollars), Colville National Forest.

	Timber 3/	Recreation	Wildlife	Water & Soil	Minerals	Range	Land	Total
A. REVENUE 1/ Regular Program	8,837,818	100,451			221	42,600	6,973	8,888,061
B. OPERATIONS/ MAINTENANCE COSTS	8,938,074	781,768	343,912	105,918	64,455	307,523	587,311	11,128,961
C. ALLOCATION OF CAPITAL IMPROVEMENTS								
Structural Improvements		125,238	102,220	58,149		23,878		309,483
Nonstructural Improvements			53,702			64,457		118,159
Roads	571,628	1,614,718					121,979	2,508,325
Trails		180,108						180,108
Buildings & Facilities	22,585	40,148	24		3,400	(82)	66	66,149
Other Improvements								
TOTAL IMPROVEMENTS	594,223	2,180,208	155,948	58,149	3,400	66,251	122,045	3,182,222
TOTAL OPER, MAINT, IMP	9,532,297	2,941,978	499,858	164,067	67,855	395,774	709,358	14,311,163
D. GENERAL ADMINISTRATION 2/ CASH FLOW	1,450,071 (2,144,552)	308,393 (3,147,918)	67,145 (587,003)	15,124 (178,191)	8,549 (78,183)	52,218 (405,390)	71,168 (773,551)	2,112,327 (7,435,448)
E. PAYMENT TO STATES NET CASH FLOW	2,102,912 (4,247,484)	25,113 (3,173,031)	(587,003)	(178,191)	55 (78,238)	10,650 (416,040)	1,743 (775,294)	2,140,473 (9,575,922)

1/ Revenues also include monies from special-use permits.

2/ Total Forest general administration and cash flows are greater than the sum of the individual program general administration costs and cash flows. General administration costs which could not be allocated to the various resource programs were added to the Forest Total.

3/ All timber data is from TSPIRS.

NOTE:

a) TSPIRS doesn't include the cost of Law Enforcement or Land Management Planning, so it is not included above.

b) 25% fund is based on regular collection.

Table 6.1b Summary of Annual Sources and Uses of Funds (1993 dollars).

	TIMBER	RECREATION	WILDLIFE	WATER & SOIL	MINERALS	RANGE	LANDS	TOTAL
REVENUE								
1989	13,714,032	93,887	13,943	0	2,118	45,881	5,886	14,477,692
1990	9,334,624	75,588	3,902	0	127	48,748	7,240	9,984,097
1991	11,038,281	79,216	0	0	127	51,313	8,964	11,863,898
1992	9,614,975	89,244	0	0	149	47,268	4,577	9,756,213
1993	8,637,816	100,451	0	0	221	42,800	6,973	8,988,061
OPERATIONS/MAINTENANCE COSTS								
1989	6,519,483	677,970	243,384	84,862	71,782	190,300	687,391	8,475,152
1990	5,295,288	680,157	282,712	25,692	87,380	200,645	480,071	7,051,944
1991	6,435,848	677,049	247,537	108,780	98,042	209,282	488,135	8,264,632
1992	7,309,330	678,959	223,788	50,398	94,187	258,738	637,480	9,250,858
1993	8,938,074	781,788	343,912	105,918	64,455	307,523	587,311	11,128,961
CAPITAL IMPROVEMENTS								
1989	617,190	409,279	248,058	38,526	2,095	125,343	1,508	1,440,000
1990	408,208	453,223	381,757	49,357	909	50,745	1,139	1,323,337
1991	748,627	510,381	296,149	44,468	383	43,055	85,035	1,728,098
1992	652,285	444,735	207,770	28,235	102	58,417	77,999	1,489,543
1993	594,223	2,180,208	155,948	58,149	3,400	68,251	122,045	3,182,222
GENERAL ADMINISTRATION								
1989	1,328,285	165,631	77,018	18,859	11,251	48,427	102,837	2,162,088
1990	1,516,451	180,901	88,864	10,594	12,643	36,601	68,534	2,265,113
1991	1,542,550	330,678	78,474	3,292	12,232	34,519	51,402	2,277,432
1992	1,732,857	226,930	83,728	6,730	9,934	41,255	49,688	2,262,722
1993	1,450,071	306,393	67,145	15,124	8,549	52,216	71,168	2,112,327
PAYMENTS TO STATES								
1989	3,062,267	23,472	0	0	817	11,495	1,472	3,119,343
1990	2,297,162	16,698	0	0	0	12,188	1,713	2,329,957
1991	2,601,875	19,604	0	0	32	12,828	2,241	2,638,781
1992	2,383,837	22,311	0	0	37	11,817	1,144	2,419,147
1993	2,102,912	25,113	0	0	55	10,650	1,743	2,140,473
NET CASH FLOW								
1989	2,166,787	(1,182,485)	(568,440)	(142,248)	(83,627)	(329,584)	(787,322)	(1,334,888)
1990	(180,485)	(1,237,592)	(733,332)	(85,642)	(100,605)	(251,831)	(544,603)	(3,504,415)
1991	(288,819)	(1,458,898)	(820,180)	(156,520)	(110,582)	(248,351)	(617,849)	(3,727,041)
1992	(2,463,335)	(1,281,882)	(485,268)	(85,381)	(104,110)	(322,858)	(781,715)	(5,648,057)
1993	(4,247,464)	(3,173,031)	(587,003)	(179,191)	(76,238)	(416,040)	(775,294)	(9,575,922)

Operations/maintenance costs, capital improvements, general administration, and payments to states are subtracted from the revenue to give the net cash flow. The net cash flow for the Forest for FY 1993 was a negative 9.6 million dollars; an accumulation of a negative net cash flow for programs administered by the Forest.

Total Forest revenue decreased by 8 percent from FY 1992 to FY 1993. The decrease in Forest revenue was mostly due to the decrease in timber harvested during FY 1993. Timber harvested during FY 1993 was down 12.8 MMBF, or 16 percent,

from the previous year (see Table 1.2 in Chapter 1).

Timber revenues reflect current commercial market prices. Revenues from the recreation, wildlife and fish, and range programs are collected from user and permit fees which are determined by policy and not by the market. User and permit fees such as these do not cover the full costs of program management. The revenues collected from the water and soil, minerals, and land stewardship programs are also not intended to cover costs. Therefore, the timber program is the only program that is expected to produce a positive net cash flow.

Financial Report

However, FY 1989 was the last year that timber did produce a positive net cash flow. The timber program produced a positive net cash flow of over 2 million dollars in FY 1989. During FY 1993, the net cash flow for the timber program was a negative 4.2 million dollars.

As mentioned in the FY 1992 Monitoring and Evaluation Report, the extreme negative cash flows for the timber program, for 1991 and 1992, were mostly due to increases in the per unit costs of preparing and offering timber for sale. The same is true for FY 1993. While both volume offered for sale and volume harvested went down during FY 1993, total sale preparation, appeals and litigation, and timber sale planning costs increased from FY 1992 to FY 1993 (for more detail, see TSPIRS reports for FY 1992/93).

Table 6.2 shows a comparison of the projected FY 1993 budget, the actual FY 1993 budget and the projected Forest Plan budget. The timber and wilderness programs came closer than other

programs to being funded at projected 1993 levels, 91 and 104 percent respectively. With the exception of law enforcement, the cumulative expenditures from 1989 to 1993 for all programs is 36 percent of the Forest Plan 10-year total. This percentage would have been 50 percent if all programs were funded at Forest Plan levels since Plan implementation. Given the budgets of the last 5 years, not one program is within the possibility of meeting Forest Plan direction, with the exception of law enforcement.

However, the above conclusion can only truly be valid if unit or activity costs (cost per unit of output, e.g., harvest administration cost per MBF harvested) in the Forest Plan were estimated accurately. If the actual cost of doing business on the Colville National Forest were much different than those assumed by the Forest Plan, then it would not be possible to make any strong conclusions regarding Plan implementation based solely on funding levels.

Table 6.2 Comparison of Forest Plan Budget With Fiscal Year 1993 Projected and Actual. Expenditures Are Summarized By Program Level (1993 Dollars).

PROGRAM AREA	FOREST PLAN TEN YEAR TOTAL	PROJECTED FY 1993 BUDGET	ACTUAL FY 1993 BUDGET	ACTUAL AS PERCENT OF PROJECTED	CUMULATIVE FOR DECADE AS PERCENT
Timber	124,703	10,999	10,001	91	39
Facilities	48,716	5,022	2,080	41	25
General Admin	25,538	2,758	2,114	77	44
Fire Protection	17,216	1,531	1,303	85	38
Wildlife & Fish	15,948	1,038	512	49	17
Recreation	11,340	2,032	1,108	55	44
Lands	7,654	959	730	76	45
Range	5,773	467	394	84	27
Water/Soils/Air	4,345	231	166	72	19
Minerals	2,450	167	68	41	17
Wilderness	267	28	29	104	39
Law Enforcement	196	401	295	74	573
Planning 1/ Human Resources 2/	NA ---	381 -----	159 -----	42 -----	NA -----
Total 1993 \$	264,147	26,014	18,959	73	36

1/ The Forest Plan budget included Planning expenditures with all other programs.

2/ Human resources programs have been excluded from this data base because funding is provided through agencies other than US Department of Agriculture.

COOPERATION WITH OTHERS

MONITORING ITEM

Deer and Elk Habitat and
Population

Management Indicator Species

Threatened, Endangered and
Sensitive Species

Insects and Disease Populations

Heritage Resources

COOPERATORS

WA Dept. of Wildlife

WA Dept. of Wildlife

WA Natural Heritage Program
WA Dept. of Wildlife
U.S. Fish and Wildlife Service

Regional Office, USFS

State Historic Preservation Office

AMENDMENTS AND FOREST PLAN ADJUSTMENTS

There were no new Forest Plan Amendments in fiscal year 1993. The following amendments have been issued for the Colville Forest Plan since implementation began in February 1989:

<i>Amendment</i>	<i>Date</i>	<i>Nature of Amendment</i>
1	11/30/90	Clarifies Forestwide standards and guidelines for wild and scenic rivers, including the Kettle River or any other streams found to be eligible for inclusion in the wild and scenic river system.
2	1/8/92	A site-specific modification to open road densities in the Golden Harvest Creek area on the Republic Ranger District, developed in response to concerns raised by recreationists.
3	9/24/92	A site-specific adjustment of the Management Area 1 boundaries in the Gatorson Planning Area on the Kettle Falls Ranger District, designed to locate the MA-1 in more suitable habitat that better meets the needs of old growth dependent species.
4	12/7/92	A site-specific adjustment of the Management Area 1 boundaries in the Lost Tiger/Granite Planning Area on the Sullivan Lake Ranger District, designed to locate the MA-1 in more suitable habitat that better meets the needs of old growth dependent species.
5	1/28/93	A site-specific adjustment of the Management Area 1 boundaries in the Kelard Planning Area on the Republic Ranger District, designed to locate the MA-1 in more suitable habitat that better meets the needs of old growth dependent species.

The upcoming 5 year review of the Forest Plan requires a determination of whether conditions on the ground or demands by the public have changed significantly to warrant a Plan revision. However, President Clinton has chartered a team to complete an Eastside Assessment and an environmental Impact Statement concerning recommendations for the Forests of Eastern Washington and Eastern Oregon, including the Colville National Forest. When this interagency EIS is completed, the Forest will assess the changes made to our Plan and determine the need for any further amendments.