

WINEMA NATIONAL FOREST
FOREST PLAN MONITORING REPORT
FISCAL YEAR 1995

Prepared By

The Winema National Forest Interdisciplinary Team

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**WINEMA NATIONAL FOREST
FOREST PLAN MONITORING REPORT
1995 Fiscal Year**

A. Introduction

Background

Monitoring and evaluation comprise the management control system for the Forest Plan. They provide information to the decision-maker and the public about the progress and results of implementing the Forest Plan. Monitoring and evaluation have distinctly different purposes and scopes. In general, monitoring is designed to gather the data necessary for evaluation. During evaluation, data provided through monitoring are analyzed and interpreted.

The Forest Plan monitoring plan identifies the key activities and effects to be tracked during implementation of the Forest Plan to ensure that activities conform to standards and guidelines and that outputs satisfy the objectives of the plan. Key items were selected based upon the requirements of NFMA, the importance in relation to resolution of issues (as discussed in the Record of Decision) and the likelihood that a deviation found in monitoring would cause a change in the Forest Plan.

The Winema Forest Plan lists 32 separate monitoring elements with over 100 individual monitoring questions to be answered during implementation of the Plan. Several of the identified questions require long-term monitoring efforts or require an organized research project. These questions are not addressed in this report.

The first monitoring item, "Implementation of Standards and Guidelines," is intended to assure that all of the forest-wide and management area standards and guidelines in Chapter 4 of the Forest Plan are being properly implemented. It covers important concerns in all areas of Forest management. The second monitoring item, "Outputs," includes the key Forest outputs to be tracked. It is intended to provide for a quantitative estimate of overall performance in terms of direct activities actually accomplished compared with the projections developed for the Forest Plan. Additional elements are included for those items that require a forest-wide view for appropriate evaluation. Many pieces of information are tracked in accordance with established Forest Service direction, but they are not included here because they are not considered key to monitoring or evaluating the implementation of this Forest Plan.

At intervals established in the plan, implementation will be evaluated to determine how well objectives have been met and how closely standards and guidelines have been applied. Based on this evaluation, the interdisciplinary team (ID Team) shall recommend to the Forest Supervisor such changes in management direction, revisions, or amendments to the Forest Plan as are deemed necessary. The results of evaluating the information that is gathered in the monitoring process will vary depending on the magnitude of the problem and the risk associated with it. The Forest Supervisor may take one or several of the following actions as a result of the evaluation and recommendations developed by the ID Team:

1. Take no action, after determining that objectives, standards and guidelines are being achieved.

2. Re-direct District Rangers to improve application of standards and guidelines as projects are implemented. This may involve: (1) general direction, (2) specific changes in one or several ongoing projects, (3) additional interpretation of standards and guidelines as they apply to the problem at hand, or (4) any other action with the intent of ensuring proper application of existing Forest Plan guidance.
3. Modify standards and guidelines or specific management area guidance via a Forest Plan amendment. This may involve application of a standard or guideline to a specific location or more broadly across the Forest if evaluation determines that the practice is not effective or appropriate.
4. Modify the location of a management area on the ground. Minor changes involving boundary adjustments to apply better site-specific information will be monitored to determine if cumulative effects require further evaluation. Significant changes in management area assignments may be accomplished via a Forest Plan amendment.
5. Amend the projected schedule of outputs.
6. Initiate revision of the Forest Plan. This would only occur when the Forest Supervisor determines that conditions or demands have changed significantly or when changes in RPA policies, goals, or objectives would have a significant effect on Forest programs.

This report is a compilation of monitoring results and evaluations developed by resource specialists on the Forest. The report includes recommendations for action by the Forest Supervisor to deal with problem areas indicated in the evaluation of monitoring results, as required by NFMA (36 CFR 219.12[k]).

Results from Fiscal Year 1994 Monitoring

The 1994 Monitoring Report identified many areas of concern. However, the major recommendation was to wait for further guidance from the Forest Plan for the Pacific Northwest and the Eastside Ecosystems Management Project before attempting to resolve those issues. This recognized that a Forest Plan amendment or revision would be premature while these processes were underway. Direction from the Forest Plan for the Pacific Northwest continues to evolve and be clarified. No direction has yet been received from the Eastside Ecosystem Management Project. On July 12, 1995, the Forest Supervisor and his Management Team addressed several of the recommendations presented in the FY-94 Monitoring Report. Since that time additional efforts have been underway. The following summarizes the key results of FY-94 monitoring:

Elk: Two amendments to the Forest Plan were recommended if further coordination with Oregon Department of Fish and Wildlife and the Klamath Tribes deemed them appropriate. The first would have included standards and guidelines for elk habitat management if they were determined to be necessary. The second would have included the Winema National Forest's share of population objectives once they were developed. The Forest Supervisor decided not to amend the Forest Plan, but to continue with the recommended coordination efforts. As documented in this report (Section E, Monitoring Item Results, Elk), that coordination has continued. Oregon Department of Fish and Wildlife has completed draft management objectives for elk, including population objectives, as a step toward evaluating the need for standards and guidelines. The population objectives for the Winema National Forest have been estimated. The current evaluation is that the elk objectives for the Forest are so low that it may not be necessary to develop special analysis procedures or standards and guidelines. Nonetheless, the two

recommendations from FY-94 remain in the FY-95 report. The intent is to continue coordination with Oregon Department of Fish and Wildlife and the Klamath Tribe and incorporate the results into the Forest Plan when that becomes appropriate.

Road Management: The road management scheme included in the Forest Plan was not approaching target levels in FY-1994 so it was recommended that the Forest proceed to implement and enforce the road management decisions made in the Forest Plan or modify the Forest Plan as appropriate. The Forest Supervisor decided not to modify the Forest Plan. Instead he provided direction to implement management decisions that were evolving through the Access Management Plan, Watershed Analysis and project planning. A key concern is that the Forest must provide sufficient road access so that Tribal members can exercise their treaty rights while deciding (subject to judicial review) exactly what constitutes sufficient access. Since road access levels remain in excess of the levels defined as a cause of concern in the Forest Plan, the recommendation remains in this report (Section E, Monitoring Item Results, Accomplishment of Outputs and Services, Road Access Type).

Developed Recreation: The Fiscal Year 1994 report identified major difficulties in pursuing Forest Goal 19, "Meet the demand for developed camping", due to the lack of available resources (appropriate locations and funding). Thus, it was recommended that the goal be modified. The Forest Supervisor recognized the inability of the Forest to pursue this goal and directed that it no longer be pursued although the Plan would not be amended at this time. Socio-economic monitoring for Fiscal Year 1995 suggests that demands for this type of recreation will continue to increase and this issue could become more intense as facilities like the Running Y Ranch and the Klamath Tribe's gaming facility open.

Range: The FY-1994 Monitoring Report identified several deviations from the Forest Plan. Three key issues were variations from the schedule for development of Allotment Management Plans, increased costs due to added administrative requirements, and lack of planned range output levels against which to monitor. The Forest Supervisor decided not to amend the Forest Plan to address these issues, but to carry out the necessary modifications (to schedules, costs, and target quantities) as necessary in day-to-day operations. Monitoring during 1995 revealed that budgets for the range program remained well below the levels needed to carry out planned activities insuring that the Forest is no longer capable of completing all Allotment Management Plan revisions and updates within the decade.

Threatened and Endangered Species: The FY-1994 Monitoring Report included a recommendation to split habitat improvement reporting for T&E Species from that for other species. The Forest Supervisor decided not to amend the Forest Plan and directed that this split be displayed in future Monitoring Reports. This was carried out on the output table at the end of the "Accomplishments and Outputs" portion of Section E in this report.

Watershed: The planned output values for watershed improvement work were, and continue to be, well below the levels needed, funded and accomplished. It was recommended that the Forest Plan be modified to incorporate more realistic estimates of these needs. The Forest Supervisor decided not to amend the Forest Plan, but to continue to pursue needed programs without regard to the Forest Plan estimates.

Management Area Boundary Adjustments: Management Area boundary adjustments cause the acres allocated to various uses to change. The Forest Monitoring Plan (Forest Plan, page 5-15) requires the Forest to summarize the changes each year yet this has not been done. The Forest Supervisor directed that this comparison be made and included in this Monitoring Report. It is

included in Section E, Monitoring Item Results, under Implementation of Standards and Guidelines.

Others: Many other recommendations made in the 1994 report have been implemented without further action by the Forest Supervisor. For example, several changes were made in the monitoring program including the implementation of a random selection process for Type 2 reviews and encouragement of broader field input. These changes are reflected in the "Implementation of Standards and Guidelines" portion (Section E) of this report.

Other examples:

- concerns about public safety at Lake of the Woods have been addressed;
- work with rural communities across the County has continued;
- the vegetation inventory has been completed;
- improvement has been seen in the implementation of best management practices;
- accessibility surveys led to the creation of accessible campsites at Aspen and Sunset Campgrounds at Lake of the Wood.

Key to preventing long-term resolution of many other issues is the completion of the Eastside ecosystem Management Project. If key issues at the regional and national level can be appropriately resolved, the Forest Plan can be revised to be more realistic. Until then the appropriate context within which to resolve many local issues does not exist.

B. Organization of this Report by Category

The following discussion focuses on four general topics which are addressed in terms of specific monitoring items:

Ecosystem Health. This topic addresses the key aspects of the ecosystem covered in the Winema Forest Plan. The monitoring questions in this grouping generally explore maintenance of viability, management effectiveness, and general health of physical and biological aspects of the ecosystem. Monitoring items which are used to assess ecosystem health include the following:

- Wildlife-Mule Deer
- Wildlife-Elk
- Wildlife-Fish Habitat
- Wildlife-Bald Eagle
- Wildlife-Spotted Owl
- Wildlife-Peregrine Falcon
- Wildlife-Lost River and Shortnosed Suckers
- Wildlife-Primary Cavity Excavators
- Wildlife-Pileated Woodpecker + Other MR Species
- Sensitive Species (other than previously listed)
- Plant and Animal Diversity
- Old Growth
- Off-Road Vehicle Use
- Soil
- Riparian Area Cumulative Effects
- Water

Forest Resources. This topic addresses the key areas of resource demand covered in the Forest Plan. The monitoring questions in this group generally center around the level or

quality of the resources or uses demanded from the Forest. Monitoring items used to assess this topic include the following:

- Developed Recreation Sites
- Scenery
- Range Vegetation
- Timberland Suitability
- Timber Inventory
- Regeneration Success
- Timber Harvest Unit Size
- Insects and Disease
- Transportation System

Economy. This topic is described by a single monitoring element, the Social and Economic Setting. It is concerned with the economic interaction between Forest management activities and the local communities. The monitoring questions cover the direct and indirect influence of the management of the Winema National Forest on jobs, income, and financial support to Klamath County.

Forest Plan. This topic concerns itself with the specific objectives stated in the Forest Plan. The monitoring questions deal with managing according to Forest Plan Standards and Guidelines, providing the services to the public as predicted, and doing this work under the budgets calculated. Monitoring items used to assess this topic include the following:

- Implementation of Standards and Guidelines
- Accomplishment of Outputs and Services
- Budget

The remainder of this report is organized in three sections:

Section C presents the recommendations developed by the resource specialists based upon their evaluation of the monitoring results.

Section D summarizes the findings and trends upon which the recommendations are based.

Section E presents a complete discussion of each monitoring item that was included in the Forest Plan.

For a quick overview of recommendations and findings, refer to sections C and D. To review the monitoring information that was used and see how it led to the findings and recommendations, refer to section E.

C. Summary of Recommended Actions

With five years of monitoring completed, it is time to review all of the collected data and develop recommendations to deal with the key difficulties that have been identified. There remains much uncertainty with Forest Management Direction. In many cases it has been impossible to manage in accordance with the Forest Plan due to legal and administrative exercises. In past years it has been recommended that the Forest Plan be modified appropriately as soon as guidance from the President's Northwest Forest Plan and the Eastside Ecosystem Management Project is finalized and fully litigated. It is recognized that continuing to evaluate monitoring results against benchmarks that are likely to change drastically is of relatively little value. It is also recognized that attempts to reduce uncertainty with a Forest Plan amendment, before regional and national issues are resolved, will be fruitless. At this time, the Northwest Forest Plan is being implemented and can be considered firm guidance. The Eastside Ecosystem Management Project is still underway and no direction has been received. It is not known when, or if, firm direction will come from that effort.

A general concern of the Forest Interdisciplinary Team is that the expectations presented in the Forest Plan have not been achieved even though Standards and Guidelines, as amended, have generally been followed. Five years of management under modified guidance has led the Forest into a different situation than anticipated in the original Forest Plan. It is now time to bring the guidelines of the Forest Plan into alignment with the anticipated outcomes of that management.

As discussed more fully in the following sections of this report, harvest of timber at levels far below the timber sale program quantity called for in the Forest Plan has caused the Forest to be unable to meet its goals for mule deer habitat. In addition, the very low level of economic activity generated by the low levels of timber harvest have caused many of the shifts in the local economy that the Forest Plan was originally designed to avoid. Many individuals and groups have asserted that there is significant new information available that would invalidate some of the basis for the Forest Plan. For these reasons and others as discussed below, **it is now recommended that the Forest Plan revision process begin immediately.**

Recommended actions in each of the four topic areas are as follows:

Ecosystem Health

● Mule Deer

- Test the monitoring model technique that was developed with the Fremont NF and ODF&W.
- Increase timber harvest and commercial thinning to provide forage for deer as projected in the FEIS.
- Effectively close roads for mitigation of disturbance to deer.

- **Elk**

- In coordination with ODFW and the Tribes, determine whether elk habitat analysis procedures or standards and guidelines are necessary; if it is so determined, develop habitat objectives and standards and guidelines for elk habitat management east of Hwy 97 for inclusion into the Forest Plan as an amendment.
- Coordinate with ODFW and the Tribes to refine the Forest's share of the population objectives and include the results in the Forest Plan as an amendment.

- **Fish Habitat**

- Continue stream surveys until all streams are completed and a Forest-wide baseline is established.
- Provide funding to analyze already collected invertebrate samples.
- Develop a system for the location and a schedule for collection of aquatic invertebrate samples.
- Though changes in stream miles, fish species present, etc. are apparent from the survey data compared to the information in the FEIS, no amendment or revision is recommended until all streams have been surveyed and a baseline established.
- Begin sampling for forest aquatic species described in the Northwest Forest Plan (Forest Plan Amendment 9) on a systematic and priority of need basis.

- **Bald Eagle**

- Continue monitoring efforts with special emphasis on effectiveness of management practices in bald eagle replacement habitat.
- Continue development of bald eagle nest site plans.

- **Peregrine Falcon**

- Collect survey results on the Winema Survey Form
- Survey potential areas every two years.

- **Lost River and shortnosed Suckers**

- Continue investigation and monitoring so appropriate decisions about habitat protection and species recovery can be made.
- Continue to cooperate with the US Fish & Wildlife Service's Ecosystem Restoration Office, Natural Resource Conservation Service, and private landowners to protect and enhance a key stream system within the proposed critical habitat for both Lost River and short nose suckers.

- **Primary Cavity Excavators**

- Emphasize post-project monitoring for snag levels.

- **Pileated Woodpecker and other MR Species**

- ▶ Continue monitoring for Forest Plan compliance.

- **Sensitive Species (other than previously listed)**

- ▶ Report survey results on the Winema Survey Forms, R6 Forms, and Oregon Natural Heritage Program (ONHP) Sighting Forms and enter of the data into BOTSIS, WILDOBS, and GIS.
- ▶ Continue monitoring studies in progress on *Collomia mazama* and *Asarum wagneri* (Klamath); Bopu (Chemult); *Calochortus longebarbatus longebarbatus* (Chiloquin); and radio-telemetry tracking study on yellow rail (Klamath).

- **Plant and Animal Diversity**

- ▶ Continue documentation of survey results for animal and plant surveys on TES survey forms for entry into databases and GIS.

- **Old Growth**

- ▶ Develop attribute-based stand characteristic data base from which any definition of "old growth" can be extracted rather than relying on surveys to find stands that meet a particular definition.

- **Off-Road Vehicle Use**

- ▶ Install traffic management signs prohibiting motorized use at the main entry points into the Yamsay Mountain Area.
- ▶ Continue to monitor as required by Executive Order. Monitor areas where user conflicts may occur.
- ▶ Plan designated ORV trails/roads/areas as demand warrants and close areas or roads where significant resource damage is occurring or user conflicts develop.

- **Soil**

- ▶ Maintain records of soil conditions on EAs/EISs in progress, on recently implemented projects and on older projects to identify remediation needs.
- ▶ Determine effectiveness of current mitigation efforts.
- ▶ Determine the effect of measured compaction on vegetative growth.
- ▶ Study other ecosystem components, such as mycorrhizae and their relationship to forest health in the pumice zone in conjunction with the Deschutes National Forest and PNW Research.

- **Riparian Area Cumulative Effects**

- ▶ Fence Rider's Camp meadow again in 1996 with the fence being rebuilt to higher standards. Tighten administration to assist the permittee in meeting Forest Plan Standards and Guidelines.

- Study Copperfield Draw for a restoration plan to stabilize active headcuts in the main channel and revegetation.
- Continue the use of PFC assessments for all projects in and near riparian areas.
- Refine the intermittent stream survey protocol based on the field testing done by students of Rogue Community College in Grants Pass.
- All intermittent streams on the Forest which are the primary stream in that watershed should be surveyed. Priorities would be set for those streams in active planning areas. This would tie in with watershed analysis and project planning to protect and improve riparian areas across the Forest. There is no funding in FY96 to support this project.
- Continue cooperative efforts to improve the situation along Rock Creek in the Dams/Switchback Allotment.

● Water

- Implement an adaptation of the Region 5 BMP monitoring system.
- Train all personnel involved in planning of ground disturbing activities during FY96.
- Incorporate site specific BMP discussions in all project EAs and develop BMP analysis in the project record.
- Insure that BMP's are appropriately incorporated into contract documents.
- Continue WIN Inventory. Obtain funding for WIN restoration projects.
- Districts monitor 50 percent of activities for BMP implementation and effectiveness in 1996 and forward this information to the Supervisor's Office for incorporation into the FY96 monitoring report.
- Continue monitoring key water quality parameters on Lake of the Woods and Miller Lake to establish trends in water quality.

Forest Resources

● Developed Recreation Sites

- Implement measures to reduce costs and maximize efficiency in site operations to maintain the quality of the experience being provided at our developed sites.
- Closely monitor the concessionaire's operations at Lake of the Woods and require adjustments if needed.
- Implement Meaningful Measures (MM) for all sites on the Forest by the end of 1996.

● Scenery

- No recommendations.

● Range Vegetation

- Continue range analysis and AMP development within budget limitations.
- Follow up on the fencing project(s) to assure that they will achieve objectives.

- Rest the Ray Ranch (Hog Creek) portion of the Dice Crane Allotment for a period of time to allow riparian vegetation recovery.
- Continue to update the noxious weed site and treatment database.
- Continue to monitor known sites of priority weeds to determine changes in distribution.

● **Timberland Suitability**

- Evaluate potential effects on Allowable Sale Quantity when data from the forest inventory becomes available.

● **Timber Inventory**

- Allow the timber inventory to proceed as planned and pursue analysis as the information becomes available.
- Continue to salvage excessive lodgepole mortality as it occurs. When the new timber inventory is available for use, review the planned harvest program in lodgepole pine to see if more of the green lodgepole pine should be planned for harvest during this decade.

● **Regeneration Success**

- Closely monitor plantations established in FY94 for fill-in planting in 1996 to ensure reforestation success in 5 years.
- Evaluate those areas of the Lone Pine Fire that are planted on harsh sites to determine whether or not understocked areas should be taken out of the suitable timber base and if current stocking is acceptable.

● **Timber Harvest Unit Size**

- No recommendation.

● **Insects and Disease**

- Increase stocking level control silviculture treatments on the Klamath Ranger District to protect the remaining large ponderosa pine trees which are used by the Bald Eagle.
- Salvage as much of the white fir mortality as possible.

● **Transportation System**

- Continue to monitor the levels of open roads available for passenger car and high clearance vehicle access.
- Continue to work towards resolution of concerns regarding road closures and road obliteration, with the Klamath Tribes.
- Complete access and travel management analysis in the Lone Pine Fire area, Klamath Marsh area, and the Southeast portion of Chemult in FY 97, with involvement of the Klamath Tribes, Oregon Department of Fish and Wildlife, and interested agencies and the public.
- Select future priority areas for analysis of access and travel management.
- Continue to work with the Klamath Country Trails Committee, and other interested groups, to develop more opportunities for All-terrain vehicles (ATV's) and 4-Wheel drive vehicles.

- Continue to work with individuals, regarding road access needs or concerns, in compliance with National Environmental Policy Act.

Economy

- Continue existing monitoring efforts at the current intensity.
- Work closely with local interests via the Community Action Teams, the County Overall Economic Development Program, and other programs to smooth the shift away from reliance on the lumber and wood products sectors.
- Support appropriate initiatives that will provide developed campgrounds within the south and central portions of the County.
- Examine opportunities to increase timber harvest in FY-98 and beyond.
- Revise the Forest plan to reflect realistic social, economic, and management situations.

Forest Plan

● Implementation of Standards and Guidelines

- Use the latitude available in the Inland Native Fish Strategy (Forest Plan amendment 9) to manage riparian areas. This will allow careful management to insure that the desired condition of riparian areas is maintained over time.
- Re-examine the direction in the Eastside Screens (Forest Plan amendments 7 and 8) that requires retention of 100% snag habitat levels in areas of managed forest. Retention of snag habitats in excess of the 40% level, specified in the original Forest Plan, may create hazards to forest workers and could lead to the elimination of all management in those areas or the removal of designated leave trees during harvest operations (thus violating the screens).
- Modify snag management guidelines (S&G's 4-18 through 4-20) to clarify how surrounding, non-harvest, areas contribute to snag habitat and to incorporate science-based guidance that defines which trees are likely to die after a fire.
- Modify S&G 4-22, Dead and Down Woody Material, to include an appropriate maximum and minimum number of logs per acre (considering habitat needs as well as desired utilization levels, fire hazard and other factors) rather than just a minimum.
- Instigate research efforts that will (1) evaluate the effects of soil compaction on long-term productivity, (2) improve understanding of the interaction of soil, seedlings, and environment as it affects reforestation and site productivity and (3) evaluate the cumulative effects on soil productivity by ground-based timber harvest equipment.
- Implement S&G 3-7 ("Existing roads not needed for future transportation purposes shall be closed and returned to vegetative productivity.").
- Provide additional guidance, perhaps by being more restrictive on the range of silvicultural prescriptions that are acceptable, to be sure that timber management goals of the Forest Plan, as modified, are achieved in an economical manner.

- Maintain Trails in Wilderness Areas to meet the objectives of S&G 10-12 or modify the S&G and recognize the resultant effects.
- In Semi-Primitive Nonmotorized areas (MA-1) where off-road vehicles are to be excluded and in other locations, such as developed recreation sites, where vehicles are to be kept on roads, effective exclusion measures should be implemented or the S&G's should be modified appropriately and the resultant effects recognized.
- Provide a reminder memo or training, as needed, to ensure that all construction and reconstruction projects are planned and implemented in accordance with the R-6 Recreation, Facilities, and Trails Development Process (S&G 10-4).
- Reexamine the role of silviculture in management of Late Successional Reserves (LSR's) and provide additional guidance, if necessary, to make sure that any desirable timber harvests can be structured to be economically feasible. If active management is found to be undesirable, adjust desired future condition descriptions to reflect the lack of such management. If active management is found to be desirable and can be scheduled, consider returning LSR's to the suitable timber base.
- Remove locally established limits on the diameter of trees allowed to be harvested in LSR's so that silvicultural prescriptions can be applied which implement the direction in the NW Forest Plan and ideas expressed in the LSR Assessment.

● **Accomplishment of Outputs and Services**

- Revise the Forest Plan to reflect new information developed by the Eastside Ecosystem Management Project and the NW Forest plan and adjust the Timber Sale Program Quantity appropriately.
- Revise the Forest Plan to adjust the ponderosa pine sold estimate as appropriate
- Revise the Forest Plan to adjust the estimates of silvicultural treatments as appropriate.
- Revise the Forest Plan to adjust the estimates of timber stand improvement activities as appropriate.
- Increase fuel treatment activities to at least a level that will avoid an increase in treatment backlog.
- Proceed to implement and enforce road management decisions made in the Forest plan Record of Decision, or modify the Forest plan as appropriate.
- When the Forest Plan is next modified, include an estimate of range improvements (structures and acres) needed to meet the objectives established for the resource.
- When the Forest Plan is next modified, include an estimate of wildlife habitat improvements (structures and acres) needed to meet the objectives established for the resource. Split this out between "threatened and endangered species" and "other species".
- Modify the Forest Plan to include more realistic estimates of watershed improvement work.

● Budget

- ▶ Revise the Forest Monitoring Plan to incorporate budget considerations into the analysis performed by each resource specialist as is done for Range Vegetation.
- ▶ Use the All Resources Reporting System as the basis for evaluating budget impacts upon outputs and the achievement of Standards and Guidelines, unless the system is altered so that it does not provide consistent information from year to year.

D. Summary of Findings and Trends

With five years of monitoring completed, long term trends are becoming more clearly defined. Key among the general findings is that timber harvest levels have been well below those expected with full implementation of the Forest Plan. This continues to have serious adverse effects upon the local economy and will adversely affect long-term habitat conditions for certain wildlife species unless the trend makes a rapid reversal.

Key findings and trends in each of the four topic areas are as follows:

Ecosystem Health

● Mule Deer

- To meet the mule deer objectives stated in the Forest Plan will require an increase in harvest and commercial thinning to provide forage for deer as projected in the FEIS and will also require effectively closed roads for mitigation of disturbance.
- Harvest restrictions and an inability to resolve road closure issues leads one to the conclusion that mule deer habitat objectives will not be met in the foreseeable future.

● Elk

- Elk populations will continue to grow. Populations may reach the stage where unacceptable agricultural damage occurs before any competitive interaction with mule deer occurs. However, it is still too early to determine interactions with deer.
- The proportioned numbers of elk on the Forest to achieve state management objectives are so low that it might not be necessary to develop special analysis procedures or standards and guidelines for elk habitat management.
- The recommended actions from the 1994 Monitoring Report were not completed.
- Districts are considering elk in project analysis and mitigating as appropriate for calving and providing migration corridors.

● Fish Habitat

- There are no detectable changes in fish numbers, species composition, or age structure.
- In general, populations appear healthy and vigorous in most systems.
- The Sprague River experiences degraded water quality during summer and early fall. Conditions become lethal or nearly so, for salmonid species during this time. Salmonid populations are in decline on this system and rough fish populations have increased.
- 3 Mile Creek, on Klamath District experienced a significant debris torrent this winter. The morphological structure of the system changed drastically. This creek contains the most critical population of bull trout in the Klamath Province. Initial evaluations indicate that some of that population may have

been lost or displaced. This system is constrained by a Forest Service road. The road certainly contributed to the intensity of this debris torrent.

- Species composition in the Cherry Creek system is moving to favor introduced brook trout at the expense of native bull trout. Age structure is also poor for bull trout in both Three Mile Creek and Cherry Creek. Fecundity of brook trout is saturating the gene pool and recruitment to the bull trout population is in serious decline!
- Aquatic invertebrate samples have been collected at numerous locations on the Forest. Analysis of all the samples has not occurred due to lack of funding. A systematic sampling scheme has been developed and baseline stations will be established throughout the Forest this summer.
- There is growing concern regarding endemic mollusc populations. Initial surveys were conducted last summer and numerous (30-40) new, previously un-described species were discovered on the small portion of the Forest that was inventoried.

● **Bald Eagle**

- Efforts are being made to keep management of known and potential nest sites in compliance with the recovery plan objectives.
- Additional nest site plans and monitoring are needed to ensure full recovery of the eagle.
- The intent of Forest Plan management requirements in eagle habitat is to provide habitat conditions suitable for bald eagle colonization. The monitoring plan developed in FY93 in affiliation with Oregon Eagle Foundation will help the Winema National Forest personnel determine if this is the case.
- To determine the effectiveness of bald eagle replacement habitat management on the Forest improved/additional monitoring needs to take place.

● **Peregrine Falcon**

- Some surveys have been completed in association with projects developed on the three Ranger Districts. Potential habitat exists on the Chiloquin and Klamath Ranger Districts.
- Sufficient numbers of survey results have not been reported to conduct a meaningful evaluation at this time.

● **Lost River and Shortnosed Suckers**

- Historic use areas in the Klamath Basin, including the Winema National Forest, have been delineated on maps for future study.
- A cooperative study, in conjunction with BOR, Klamath Tribe, and Fremont NF, is underway to assess genetic differentiation between members of the Lost River and shortnosed suckers.

● **Primary Cavity Excavators**

- ▶ Interim Eastside Screens were implemented in the Region for areas outside of the range of the northern spotted owl. EAs contain these screens as standards and guidelines. The screens are new enough that there has been no opportunity for post-sale compliance monitoring.
- ▶ Snags have been created to increase snags to levels required by Forest Plan Standards and Guidelines.

● **Pileated Woodpecker and other MR Species**

- ▶ Suitability surveys are occurring on part of the Forest. Habitat suitability indices are not being used to rate suitability.
- ▶ Insufficient monitoring does not allow for a forest-wide evaluation.

● **Sensitive Species (other than previously listed)**

- ▶ Individual site locations of sensitive plant and animal species are protected and/or mitigation measures are taken to prevent adverse impacts due to management activities on all Forest project activities.
- ▶ Long-term trend studies are needed to determine if plant and animal species density and distribution are being maintained or increased on the Forest.
- ▶ On Chiloquin Ranger District, populations of sensitive plants (status and distribution) appear to be stable. On Chemult Ranger District, data is insufficient to determine population trends for sensitive plants. In all cases, additional information is needed and must be assessed over a five to ten year time-frame to determine long-term sensitive species population distribution and status trends.
- ▶ Monitoring studies on *Collomia mazama* and *Asarum wagneri*, on Klamath Ranger District, will provide some data regarding trend for these species. An attempt to determine sensitive species trends at this point would be based solely on observation and would be completely subjective.

● **Plant and Animal Diversity**

- ▶ As the trend for reduced harvest and decreased commercial thinning continues, the acres of early successional stages in forested types will decrease. As uneven-aged management is implemented habitat edge will decrease. As edge and early successional stages in the forested habitat types decreases so will the populations of species that are dependent upon early successional stages and upon edge. However, represented mid- and late successional stage forests should increase as will species associated with those stages.
- ▶ Plant associations and plant and animal associated species are recorded on Forest TES survey forms and entered into a BOTSIS database and GIS. The WILDOBS database is being utilized to document animal occurrence and habitat data. These data will assist in the evaluation of long-term trends in plant and animal distribution and diversity

● Old Growth

- In 1990 the Forest completed a survey of old growth to be selected for additional needs as determined by the ROD. This was not an inventory as such and stands surveyed for potential selection did not necessarily meet the Forest Plan definition (mature one or two-storied stands), the R6 definition (10 large trees per acre, etc.), or Hopkin's draft definitions. Lodgepole was not surveyed and has, to date, not been inventoried. Acreages of 24,400 acres of ponderosa pine and pine associated working groups that approximate Hopkin's draft definitions were reserved through Amendment 3 to the Forest Plan for purposes other than for MR species.
- All old growth MR sites on Klamath Ranger District were dropped when the President's Forest Plan was adopted. They were replaced by 60,860 acres of LSR.
- Most watersheds on the Klamath Ranger District exceed 15% old growth, however Spencer Creek is close to the minimum.
- Winds on the Chemult District blew down several stands reserved for old growth. This is addressed more thoroughly in wildlife monitoring.

● Off-Road Vehicle Use

- ORV use was noted within the Yamsey Mountain Semi-primitive Recreation area during August. Motorized vehicle use is excluded from this area in the Forest Plan, but closure signs have not been installed.
- The only resource damage caused by ORV use was reported at Jackson Creek (see page 32).
- Some use conflicts have been noted between nonmotorized and motorized winter trail users. These are minimized by designating trails or areas for nonmotorized use only or by clearly indicating where shared use can be expected. No other conflicts have been reported.

● Soil

- Of the 83 units monitored on the Chemult District, only 1 met the Regional standard of detrimental compaction over less than 20 percent of the area. On an acreage basis, roughly 4000 acres exceeded a 20 percent increase in bulk density. 61 percent of the area monitored does not meet the Regional standard.
- Some of the units on the Chiloquin District that show the greatest degree of detrimental compaction consist of soil groups listed by the SRI to be less susceptible (specifically the A and B group soils).
- Of the ten units sampled in the Hog and Yoss watersheds, four exceeded the Forest Plan Standards and Guidelines for detrimental compaction, four units are approaching the standard and two are well below the standard. Thus, 40 percent exceed the standard and 60 percent meet the standard.
- Monitoring of the fire rehabilitation structures on the Quick Fire was inconclusive. Even though we had a moderate snowpack that came early and stayed late, melting across the Forest was gradual and produced only a small amount of runoff. Runoff in the winter of 95/96 has been more significant and the in-channel structures have functioned well to detain sediment.

- Soil conditions in Rider's Camp meadow were monitored in 1994 and were estimated to be poor. Compaction and some pedestaling was evident throughout the meadow. We did not quantify the amount of compaction but observation indicated more than 20 percent of the soil was in a detrimental condition due to compaction. Severe erosion of the channel banks is continuing.
- On the Gopher Timber Sale, harvest occurred on soil group "D"; loamy coarse sands formed in volcanic ash. Where snow depth was at least 24" over frozen ground, compaction remained below the threshold of concern. However, standards were exceeded when operations continued during snowmelt.
- Harvest over-the-snow in the Odessa Campground sale resulted in limited increase in soil compaction, and minimal litter and topsoil displacement.
- In the Nannie Timber Sale, harvest activities detrimentally compacted an additional 4% of the selected monitored unit. Monitoring showed the cumulative detrimental compaction to total 23% of the area, just over regional standards.
- The Slick and Shave sales were monitored for compaction and displacement on 30-40% slopes. Harvest by shears caused displacement and detrimental compaction that exceeded the forest plan standards. In addition, much of the displaced soil became saturated and flowed downhill. It appears that the 35% slope standard for ground based equipment is an inadequate restriction for some soils.
- Site preparation activities continue to emphasize subsoiling. While the treatment is not extensive enough to reduce soil compaction below thresholds that exist in the Forest Plan, some alleviation is accomplished that beneficially effects seedling growth and survival.
- While monitoring records are still inadequate to assess overall soil conditions, trends on the Forest indicate ground based logging equipment is compacting pumice soil above Forest Plan Standards and Guides and above the Regional standard.

● Riparian Area Cumulative Effects

- Riparian conditions in Copperfield Draw continue to improve through putting the range permit in non-use. However, a headcut at the lower end of Copperfield Draw and another near the upper end threaten the recovery of the riparian area and the meadow.
- Riders Camp continues to decline in condition. An electric fence was installed at the beginning of the grazing season, but the fence failed and approximately one to two dozen cows used the area over the season. The permittee did not ride often enough to prevent overgrazing when approaching utilization, nor was the grazing administration adequate to protect the riparian resource from damage.

● Water

- In some cases BMP's are incorporated in the EA document and in other cases they remain in the analysis files.
- Field implementation monitoring of BMPs was absent again this year.
- A monitoring report for water quality, trophic index, and other factors was completed for Miller Lake on Chemult District and Bert, Center,

Marguarette, Trapper and Wind Lakes in the Sky Lakes Wilderness. These studies indicate that for a snapshot in time, the water quality in these lakes is acceptable.

- The Oregon Department of Environmental Quality (DEQ) published the Draft 303(D) list for comment. In the Draft listing, seven waters on the Winema were out of compliance with temperature standards. Four water bodies were listed as water quality limited for other reasons.
- The trend over the last few years has been toward more awareness of BMP's and their importance so that now they are recognized in environmental analyses.

Forest Resources

● Developed Recreation Sites

- It is expected that overall use on the Forest has continued to track with SCORP/Forest Plan projections with some minor fluctuations due to weather and site closures for facility repairs.
- As indicated in the 1994 report, the Forest will not be able to meet the demand for developed site camping in the Lake of the Woods complex.
- Accessibility surveys and a Transition Plan has been developed for all developed recreation sites.
- Expanding and upgrading facilities at Williamson River Campground remains a priority project to meet accessibility standards, upgrade the water system, and provide additional capacity for campers in the US 97 corridor. There is an opportunity to partnership with Oregon State Parks in providing trails, trailheads, and additional camping capacity in the Spring Creek-Williamson River area.
- Planning of additional trails outside of wilderness as requested by users is continuing.
- Shelters were planned for construction at Great Meadow and Walt Haring Sno-parks during 1995. Unfortunately, bids received exceeded available funds. A multi-season shelter is planned again at Walt Haring Sno-park in 1996 using carry-over funds. The Great Meadow shelter will be added to the Forest CIP project schedule.
- Construction of accessible fishing platforms and boardwalk at Wood River Day-use Area will continue through a partnership with Integral Youth Services in 1996.

● Scenery

- No follow-up photography has been completed this year at camera point monument locations established to monitor scenery. Photographs taken on field trips are available for future evaluation processes and comparisons.
- The Dead Indian Road, State Highway 62, Silver Lake Road and Miller Lake Road were to have had a viewshed implementation guide completed by 1995. These guides have not been completed due to limited budgets.
- Sunset Campground, Lake of the Woods VIS and Work Center, Fourmile Lake Campground, Miller Lake Recreation Area (which includes Digit Point Campground) and Corral Springs Campground were to have had Vegetative

Management Guides completed by 1995. Because a lodgepole salvage sale (Buck Timber Sale) was implemented in the Corral Springs area, a rehabilitation plan was developed in 1994 which includes planting of potted trees in the campground in lieu of a vegetative management guide. The other guides have been delayed due to limited budgets.

- Overall scenic viewshed condition ratings were not completed this year using updated existing visual condition datum available in the geographical information system. The reason is that there was not sufficient management activity resulting in created openings within viewsheds to make a significant difference from the trend results calculated for 1994.

● Range Vegetation

- Of the 263,953 acres in allotments, 24,152 acres were monitored. Of those monitored, 24,052 acres were at or moving toward Forest Plan Objectives (FPO), and 100 acres were not meeting FPO.
- Of the riparian areas within allotments (41,542 acres), 8,497 were monitored and of those acres monitored, 100 acres are not meeting or moving toward FPO.
- Riparian areas identified as not moving towards FPO in Antelope Allotment in 1994 were fenced but fencing was not effective. The fence was upgraded in the fall of 1995 (FY96).
- Forage production was excellent across most of the Forest because it was a wet year. Livestock turnout was delayed on many allotments because of wet conditions.
- With the fifth year of the Forest Plan completed, no AMPs have been completed. Range analysis data has been completed for five allotments. No AMP development is in progress.

● Timberland Suitability

- There was no change in timber land suitability acreages during FY 1995.

● Timber Inventory

- The mixed conifer inventory has been completed but analysis of the data was not accomplished for the preparation of this report. The new inventory information will come available in time for the Forest Plan revision.
- Mortality in lodgepole pine has greatly declined. In 1984 nearly 50 million board feet were dying. Now, the lodgepole pine mortality is less than one million board feet per year. This indicates that the lodgepole pine mortality is not sufficient to maintain the planned salvage program in lodgepole pine of 40.2 million board feet per year.

● Regeneration Success

- First year survival is improved this year.
- Third year survival is down a little, reflecting some of the harsh sites encountered in the Lone Pine Fire area.
- A drop in fifth year survival is the result of about 1200 acres of 1990 plantations being burned in the Lone Pine Fire. These areas are being reforested and will

be tracked by the year of replanting in the future. Other than these acres, fifth year survival is about 98%.

● **Timber Harvest Unit Size**

- No regeneration units exceed harvest unit size limitations.

● **Insects and Disease**

- The mountain pine beetle and western pine beetle activity is at near normal levels across the forest. The western pine beetle together with mountain pine beetle continues to cause mortality in large ponderosa pine trees used by Bald Eagles for nesting and roosting near Upper Klamath Lake.
- Fir engraver beetle mortality is very high on South Chiloquin and remains high on Klamath District. The fir engraver is very closely associated with root rot diseases. This normal relationship has been compounded by the drought which has also caused the fir trees to be under much more stress than normal. We can not assume a major increase in root disease at this time just because the fir engraver has shown an increase in activity.
- Ground exams indicate that some areas are having the white fir nearly eliminated from the stand. The implications for fire hazard and wildlife habitat are considerable.

● **Transportation System**

- In 1995, Passenger car and High Clearance access available was within the 10% threshold. (Refer to Monitoring Item-Road Access Type under the Monitoring Item: Accomplishment of Outputs and Services)
- In 1995, Intermittent road access available was outside the threshold. (Refer to Monitoring Item - Road Access Type under the Monitoring Item: Accomplishment of Outputs and Services).
- The Klamath Tribes have expressed concerns regarding road closures and road obliteration. These concerns are related to road closures infringing upon treaty rights for access, a concern that there is not adequate east-west open road access, and a concern that the Forest has not adequately involved the Klamath Tribes in road closure decisions.
- The Oregon Department of Fish and Wildlife has expressed the need to reduce the amount of open roads, in both specific areas and generally across the forest.
- The Forest is currently working with the Klamath Tribes, Oregon Department of Fish and Wildlife, and interested publics regarding analysis of access and travel management in the Lone Pine fire area and for areas adjacent to the Klamath Marsh.
- The Klamath Country Trails Committee has expressed the need for more use opportunities for All-terrain vehicles (ATV's) and 4-Wheel drive vehicles on the forest.
- Other public comments have been received regarding roads and road access, but they have been specific to an individual road need, and the concern or access need was resolved with the individual.
- No formal program reviews were conducted during FY 95.

Economy

- Intense conflict related to changing Forest Service management was averted by activity in other sectors of the local economy and changing demographics. There remains a "local control" undercurrent that could erupt with any additional Forest Service actions which adversely affect the local economy, but the likelihood of such an eruption seems to be diminishing as other sectors of the economy grow and as immigrants bring in new ideas.
- A 14.9% increase in total jobs is on the borderline of a level that could cause strain on local infrastructure.
- The Klamath County economy has done very well, to date, in adjusting to changes in the wood products industry. The total income, population and total jobs indicators all show positive changes that are not large enough to cause disruptions in the local economy.
- The declining rate of growth in transfer payments may indicate a slowing in the influx of retirees to the area.
- The loss of much of the lumber production capacity in Klamath County means that increased sawlog sales on the Winema National Forest will primarily benefit residents in Jackson, Douglas and Deschutes Counties rather than residents of Klamath County.
- Prospects for increased tourism coupled with demand for developed recreation come as developed campgrounds on the Forest are nearing capacity. This could become an arena of conflict unless the Forest Service can develop additional facilities or work with other parties to provide them.
- The owl guarantee is critical for the county. Unless significant changes in Forest management are made, payments to the County are likely to be well under \$2,000,000 per year when the owl guarantee expires.

Forest Plan

● Implementation of Standards and Guidelines

- In general, standards and guidelines are being properly implemented across the Forest.
- Additional research-based information is needed about the relationship between soil compaction and vegetative response.
- In some cases timber sales are designed and implemented to leave far in excess of the snag habitat levels called for under the eastside screens.
- In specific locations, retention of down woody material to meet standards and guidelines may create excessive fire hazard.
- Some timber harvest contracts include language that could void utilization standards in an effort to achieve S&G's for down woody material.
- In some cases boundary tags on old timber sales are not being removed.
- Significant tree mortality is occurring over a wide area of the Chiloquin District.
- Insufficient timber volumes were marked for removal on the Giddyup timber Sale to effectively culture ponderosa pine, because of limitations on the size of trees that were removed.
- Vehicles are being used off of roads in some inappropriate places.
- Some trails in the Sky Lakes Wilderness need maintenance work.
- One construction project was not planned and implemented in accordance with the Region 6 Recreation, Facilities, and Trails Development Process.

- Without regeneration harvest (group selection), sizeable areas of Late Successional Reserves will not be able to provide their desired function into the future.

● Accomplishment of Outputs and Services

- The decade total allowable sale quantity is well below planned levels.
- The Timber Sale Program Quantity is 55% below planned levels.
- The rate of dead lodgepole pine harvest is 34% below planned levels.
- The volume of ponderosa pine sold is 46% below planned levels.
- Silvicultural treatments, with the exception of regeneration harvest, are from 58% to 82% below planned levels.
- Reforestation is 33% ahead of planned levels.
- Timber stand improvement work is at 49% of planned levels.

- Fuel treatment activities are 25% below planned levels and backlogs are increasing.
- Trail construction/reconstruction is at 22% of planned levels. Construction of the inter-tie trail late in the decade should bring this element to planned levels.
- At 87% of planned levels, permitted livestock grazing has not reached a level of concern.

● Budget

- Political decisions have affected budget priorities and expenditures. Ecosystem management, watershed analysis, water rights and timber are changes in programs occurring after the Forest Plan was signed. These shifts in funding categories make it difficult to directly track year-to-year changes in comparison to Forest Plan estimates.
- Total budget dollars are below Forest Plan levels. Output levels are also generally below Forest Plan levels, but for reasons other than insufficient budgets (see Monitoring Item: Accomplishment of Outputs and Services).
- In range management and scenery, funding levels limited accomplishments.
- Monitoring indicates that budget levels are sufficient to meet the standards and guidelines in the Forest Plan at the current output levels (see Monitoring Item: Standards and Guidelines) which are well below the outputs levels for key resources projected in the Forest Plan.

E. Monitoring Item Results

This section of the report summarizes the results and evaluations of each monitoring item in the order presented in the Monitoring Plan section of the Forest Plan (page 5-7).

Monitoring Item: Implementation of Standards and Guidelines

This Monitoring Item addresses Standards and Guidelines (S&G's) as well as changes in Management Area acreages. The first part of this section discusses the review of numerous S&G's . Following that discussion is a summary of Management Area acreage changes and and evaluation of them.

STANDARDS and GUIDELINES

Type 2 field reviews (Forest Plan, page 5-14) are performed and documented by teams which include members of the Forest Management Team. Type 1 reviews are performed and documented by teams made up of at least one Supervisor's Office Specialist and a District counterpart. These reviews and other pertinent information are used to monitor the implementation of Standards and Guidelines.

In 1995, several field reviews and supplementary information were used to monitor standards and guidelines.

Type 1 Reviews

- 1-1. January 25, 1995: Sheehan and Anderson: Swamp, Russky and Hazard Tree Salvage
- 1-2. February 8, 1995: Lilienthal et al: Crater and Quick Timber Sales
- 1-3. February 8, 1995: Sheehan and Anderson: Odessa Timber Sale, Hazard Tree Salvage
- 1-4. February 9, 1995: Christopher and Anderson: Hazard Tree Salvage
- 1-5. May 25, 1995: Sheehan and Jahns: Odessa, Fox, Crystal Springs, Grumpy etc.
- 1-6. June 2, 1995: Sheehan et al: Forest Health
- 1-7. June 20, 1995: Sheehan and Anderson: Giddyup, Nannie, Helirock Timber Sales
- 1-8. July 3, 1995: Sheehan and Bennett: Dorf Timber Sale
- 1-9. September 6, 1995: Sheehan et al: First Salvage Sale
- 1-10. September 18, 1995: Sheehan and Rietman: Canby Salvage Sale
- 1-11. August 29, 1995: Frost et al: Corral Springs Campground and Haring Snopark Shelter
- 1-12. September 14, 1995: Rietman and Parker: Jackson Creek Campground Silviculture
- 1-13. September 22, 1995: Rietman and Jahns: Cold Springs Timber Sale

Type 2 Reviews

This year two projects on each Ranger District were randomly selected from a pool of all projects on the Forest. These projects were supplemented with an additional project and reviewed for compliance with Forest Plan Standards and Guidelines. The following projects were reviewed:

- 2-1. July 19, 1995: Chemult Ranger District
 - A. Reforestation linked with soil monitoring
 - B. Sou'wester Salvage and Recovery
- 2-2. August 10, 1995: Chiloquin Ranger District
 - A. Buckhorn Fire Salvage
 - B. Quick Fire Salvage
 - C. Wocus Underburn (added)

- 2-3. September 19, 1995: Klamath Ranger District
 - A. Camp McLoughlin Improvements
 - B. Pothole Blasting and Eagle Perch Installation

Other Information

- 3-1. February 3, 1995: Krommes: Lake of the Woods Hazard Tree Removal
- 3-2. February 23, 1995: Christopher: Odessa Timber Sale
- 3-3. March 16, 195: Christopher: Hazard Tree Salvage Sale
- 3-4. August 17, 1995: Fred Weaver: Yamsey Mtn. Trail ORV Use
- 3-5. September 2, 1995: Doug Bright: Skylakes Trail Maintenance
- 3-6. September 5, 1995: Castaneda et al: Range Management (Chiloquin District)
- 3-7. May 2, 1995: Frazier and Johnson: Timber Mortality
- 3-8. May 3, 1995: Frazier and Johnson: Butler Meadow Area
- 3-9. May 3, 1995: Frazier and Johnson: Ridge Spring and Powerline Pond
- 3-10. May 10, 1995: Frazier: Lone Pine Area
- 3-11: May 5, 1995: Wine: Chiloquin Ranger Station Site

Discussion

Each different Standard and Guideline that was discussed in one of the documents noted above, is summarized below. This highlights the situation with regard to each S&G that was addressed during FY-1995. Codes, as noted above, for each background document are listed as references where the information is used to assess a particular S&G.

Soil and Water

S&G: 12-5 (Forest Plan, page 4-73)

3-10 (Forest Plan, page 4-44)

References: 1-1, 2-1, 2-2, 3-1

The Forest Management Team examined the soil conditions at several sites on the Chemult District. It was found that in pumice soils, it is difficult to discern displacement due to the similarity in color of in-place and disturbed soil and the propensity of pumice to float back into place. Puddling did not seem to be a problem, but probing and bulk density testing did reveal detrimental compaction as defined by the S&G. Such conditions were identified in thickets that apparently had no human activities in them as well as in areas where logging activities were known to have occurred. The discussions revealed that considerably more information about the mechanics and effects of soil compaction is needed. While it seems obvious that compaction in pumice soils is caused by logging equipment and other vehicles, natural processes which cause compaction are unknown, but could involve snow load, wildlife, and falling trees. One site that was logged in 1980, site prepped in 1983 and machine planted in 1984 was seen to have a healthy stand of 15 foot tall trees on it. Available research suggests that the growth of this stand will slow in a few years as a result of compaction. Further research is needed to describe just what is a "natural" condition of this type soil in terms of compaction and to discern the effects of compaction on other resources such as vegetation.

The need for additional information in this area was discussed in the Forest Plan (pages 2-10 and 2-11):

- Evaluate the effects of soil compaction on long-term productivity
- Improve understanding of interaction of soil, seedlings, and environment as it affects reforestation and site productivity.

- Evaluate the cumulative effects on soil productivity by ground-based timber harvest equipment.

The need for this information remains.

The review of underburning in the Wocus Butte area on the Chiloquin District revealed negligible effects upon soils.

The Quick Fire Salvage Sale was designed (and later implemented) with helicopter logging and designated skid trails to prevent detrimental effects on the soils. This is in accordance with the Forest Plan. As of February 3, 1993, the hazard tree removal efforts in the Lake of the Woods area was being done over three feet of snow and there was no evidence of soil damage or soil contact. This is in accordance with S&G 12-5.

A Type 1 review on January 24 revealed that there was a potential for violating S&G 3-10 (Forest Plan, page 4-44) on the Swamp Timber Sale (haul under unfavorable weather conditions). The District Ranger was cautioned not to compromise the resource to accommodate purchaser efficiency.

A review on September 14 (see Recreation, below) revealed serious compaction problems at the Jackson Creek Campground.

More details on the FY-1995 soil monitoring effort is included in the Monitoring Item: "Soil", near the end of this report.

Riparian Area Management

S&G: Management Area 8 - Riparian Areas (Forest Plan, page 4-136), Inland Native Fish Strategy TM-1

References: 1-7, 2-1, 2-2

The Forest Management Team examined an area along Seller's Creek to identify issues related to riparian area management under the temporary screens (Forest Plan Amendments 7, 8 and 9). This area is in the midst of a larger area that had been logged in response to an insect infestation that had killed up to 90 percent of the trees. It was recently relogged to remove blowdown. In the face of all this activity, the riparian area remained in a desirable condition. Various requirements for cultural resources, wildlife and riparian values seemed to effectively maintain this area. The area around the crossing of road 9409 was found to be generally in accordance with the desired future condition expressed in the Forest Plan (Page 4-136). Continued management under the screens, will eventually cause the riparian area to move away from that condition. As snags blow down, they will fall in the streambed and may eventually interfere with the flow of water while increasing fire hazard and suppressing regeneration. The type of management envisioned in the original Forest Plan would allow activities to maintain the desired future condition whereas the guidance in the screens does not. Due to the temporary nature of the screens, this should not be a problem. In addition, Timber Management S&G TM-1 (Inland Native Fish Strategy, page A-7) provides latitude in exception "b" to resolve this issue.

The segment of the riparian area discussed above, was easily definable. Another segment was much more difficult to define due to flatter ground where water flows can spread out. There was no identifiable channel, no riparian vegetation, and no water, at the time of the review. This situation points out the difficulty in defining riparian areas and Management Area 8 in some places.

On a June 20 field trip it was found that the riparian areas were well marked in the proposed Giddyup, Nannie, and Helirock Timber Sale units.

Snag Management

S&G: 4-18, 4-19, 4-20, 4-21 (Forest Plan, page 4-50)

References: 1-2, 2-1, 2-2, 3-10

Standing snags in the area of the Sou'wester Salvage Sale remained at the 100% snag habitat level (S&G 4-18 as modified by the screens), but sizes were limited and, due to the lack of large green trees, opportunities for snag recruitment are limited. Current management will focus on retaining the existing snags as long as possible and getting regeneration started. There will be at least a 25 year period during which this area will be devoid of snags. Continued management under the direction in the Forest Plan should get the area into compliance with snag guidelines in the long run. Due to insect damage and subsequent blowdown nothing can be done to prevent a shortage of snags for the next couple of decades.

The Buckhorn fire took place in 1992 and was salvaged in 1993. The salvage prescription left all trees with any green needles on them. In addition snag habitat levels were calculated without regard to snags in non-harvest areas. At the time of the review essentially all of the trees that were left were dead. Thus there were snags well in excess of S&G 4-19 as modified by the Eastside Screens. This created a very difficult management situation with a high fire risk to the regenerated stand. A similar situation was designed into the Quick Fire Salvage Sale where snags were estimated to be over the 200% habitat level. After the review, the Forest Supervisor advised the Management Team to calculate snag levels using areas outside of cutting units as well as within units as prescribed in the Forest Plan. In addition the Management Team was advised to use a scientifically supported approach to estimating which trees will die after a fire (i.e. those with less than 20 to 30% green crown).

Eighty-eight, large diameter, snags were retained in the foreground area of Highway 140 in the Crater Fire Salvage Sale (harvested 1991). This year it was noted that only one of these large snags had fallen. Most of the small diameter snags had fallen. An examination of an area west of Lone Pine Road, on the edge of the Lone Pine Fire, along a scab area (Section 3) revealed that all the conifer snags, including some about 10 inches in diameter were on the ground with rotted roots.

Dead and Down Woody Material Management ■ Organic Residues

S&G: 4-22, 4-23 (Forest Plan, page 4-51 and 4-52) and 12-8 (Forest Plan, page 4-74)

References: 1-9, 2-1, 2-2

An area of the Sou'wester Salvage Sale was examined for retention of down woody materials. Contract specifications were found to be in agreement with the Forest Plan S&G's as modified by the screens (S&G 4-22 #4). Contract administration will be used to assure proper distribution of this material. Several small fires have occurred in this area since the blowdown and the fire risk will remain high until the blowdown is removed. The situation in this area was created by a fire about 120 years ago that burned thousands of acres and left an even-aged lodgepole pine forest. Management in accordance with the Forest plan should result in conditions that are more stable for the long term.

There should be plenty of remaining material to create slash piles in accordance with S&G 4-23. In addition the District plans to implement some of the initial findings of the Marten Study by leaving one large slash pile per ten acres.

The Quick Fire Salvage sale was designed to leave 10 tons per acre of small woody material on the ground in accordance with S&G 12-8. This required retention of all 9" dbh and smaller trees plus tops and limbs. In this location, this level of organic material could create excessive fire hazard. The S&G provides latitude for professional judgement in attempts to reach this level of organic material.

On the First Salvage Sale, it was noted that the contract language (Special Provision C6.404) calls for "15 or more" pieces to be left to meet Forest Plan guidance for down woody material. While this wording would cause S&G 4-22 to be met, it raises the concern that utilization standards (S&G 13-26) could be voided. An upper limit on the range of down woody material would resolve the concern.

Fire Management

S&G: 8-6 (Forest Plan, page 4-59)

References: 2-2

The Management Team examined an area on Wocus Butte that had been underburned. The primary purpose of the burn was to reduce fire hazard with secondary benefits to wildlife and stand health. This was found to be in accordance with the Forest Plan direction.

Deer and Elk Habitat

S&G: 4-11 (Forest Plan, page 4-49)

References: 2-2

Among the purposes of burning three units on Wocus Butte (see Fire Management, above) was the improvement of forage for wildlife. Toward this goal, the District was able to retain live bitterbrush plants with a spacing of about 200 feet and expose some mineral soil for regeneration of bitterbrush without removing all organic material. This effort had secondary benefits to stand health when an occasional tree torched during the burn. It was found that trees with mistletoe tended to provide ladder fuels for the fire and burned more often. The resultant light thinning effect should reduce stress on the stand and improve its chances of surviving an attack of pine beetles which seems to be getting started in this area.

Native American Rights and Claims

S&G: 7-1, 7-2, 7-3 (Forest Plan, page 4-58)

References: 2-2

The Klamath Tribe was invited to field review the Wocus Burn project on the Chiloquin District on several occasions. The Tribal biologist did review the project before and after the burn and indicated that the results were good.

The burning near the top of Wocus Butte was carefully planned and executed to prevent damage to the cultural sites in the area and to protect the view from those sites.

Cliffs, Caves, and Talus Habitat ■ Cultural Resources

S&G: 4-24 (Forest Plan, page 4-52) and S&G 2-5 (Forest Plan, page 4-42)

References: 2-2

The rock outcrop on the Buckhorn Fire Salvage sale was buffered out to 300 feet. This is in excess of the 200 foot buffer prescribed in the Forest Plan for protection of this type of habitat for wildlife. Cultural Resources S&G 2-5 requires avoidance or mitigation of adverse effects upon cultural sites. There are cultural sites atop the outcrop which are protected by the additional buffer width, so this arrangement does meet the requirements of the standards and guidelines. After the review, the Management Team was advised, by the Forest Supervisor, that care must be taken to consider long term conditions and effects upon these sites when prescribing mitigation measures.

Cultural Resources

S&G: 2-1 and 2-5 (Forest Plan, page 4-42)

References: 2-2, 2-3

Timber harvest was not allowed within a tree length of cultural sites in the Quick Fire Salvage Sale area. This is in accordance with the Forest Plan. One site on the sale was buffered to 100 feet to better accommodate current use.

The old buildings at Camp McLoughlin will not be altered until they are reviewed by an archaeologist.

Scenic Resources

S&G: 11-3, 11-6 (Forest Plan, page 4-72), MA-3B, Scenic 1 (Forest Plan, page 4-107)

References: 1-2, 1-3, 2-2

Individual snags were to be left along the highway corridor on the Quick Fire Salvage Sale. It may be necessary to remove some of these snags for safety purposes during logging. If this happens, it may be difficult to achieve the desired visual quality objective. A Type 1 review will be conducted in FY-96 to document the results.

The Quick Fire Salvage Sale was developed quickly and without a Landscape Architect's assistance, as required by S&G 11-3. This was corrected late in the process and some modifications were made to accommodate scenic resources in accordance with the Management Area S&G's. The Landscape Architect helped mark the snags to be retained in the scenic corridor of the Williamson River Road. Forty-one trees were marked for retention. Snags were grouped with consideration for helicopter logging and to maximize visual effects and spatial distribution. In accordance with S&G 11-6, the leave trees were marked on the back with only a vertical mark on the front base of each tree.

Units 44 and 46 of the Slick Timber Sale (Klamath Ranger District) were found to have boundary tags from the Mom Timber Sale and the Lick Timber Sale, respectively, which are both closed. These should have been removed after completion of the sales in accordance with S&G 11-6.

Special Uses

S&G: 5-6, 5-10 (Forest Plan, page 4-55)

References: 2-3

Camp McLoughlin, on Lake of the Woods, is operated under a special use permit by the Boy Scouts of America. The Management Team review revealed that the operation was consistent with the developed recreation emphasis for that area (S&G 5-10). When the Boy Scouts proposed a series of improvements for the area, the Klamath Ranger District prepared an Environmental Assessment in accordance with the Forest plan (S&G 5-6). The NW Forest Plan (Amendment 5, to the Winema Forest Plan) permits retention of the camp in accordance with S&G's for Multiple-Use Activities Other Than Silviculture at page C17 of the Record of Decision.

Watershed and Habitat Restoration

S&G: MA-8 (Forest Plan, page 4-137)

RM-2, WR-1 (NW Forest Plan Record of Decision pages 34 and 36)

References: 2-2

The various proposed projects at Camp McLoughlin (shore-line stabilization, replacement of pit toilets, relocation of camp sites etc.) would not affect late-successional reserves, but would be habitat improvements consistent with the S&G's on pages C17 and C34 of the NW Forest Plan Record of Decision. Creation of potholes and installation of eagle perches between the Westside Road and the Upper Klamath National Wildlife Refuge was found to be consistent with the

desired future condition of MA-8A (Forest plan, page 4-139) and Wildlife and Fish S&G 3 in the Management Area 8 general guidance (Forest plan, page 4-137).

Integrated Pest Management

S&G: 8-11, 8-12 (Forest Plan, page 4-59)

References: 1-6, 3-1, 3-7

Hazard trees were removed from locations around Lake of the Woods in the winter and early spring of 1995. Root rots (*Armillaria ostoyae* and *Heterobasidion annosum*) were found in stumps and logs after the trees had been felled as had been expected. Borax treatments were used on stumps to prevent the entry of *Heterobasidion annosum* into new areas. The removal of the hazard trees and their replacement with species that are more resistant to the root rots aims to control this problem in a way that is consistent with the developed recreation management prescribed for the area. This is consistent with S&G 8-11 and 8-12.

Field reviews on May 2 and June 2 indicated significant tree mortality over a large area of the Chiloquin District. Average mortality appeared to be at the 20% level with up to 50% mortality in the old-growth stands. Mortality is primarily white fir with some ponderosa pine. The District was encouraged to use silvicultural treatments to deal with the situation in accordance with the Forest Plan (S&G 8-12). It was also noted that significant mortality was occurring in stands which have had the overstory removed and the understory thinned.

Raptors and Colonial Nesting Birds

S&G: 4-10 (Forest Plan, page 4-48)

References: 3-1

During a review of the Hazard Tree Sale at Lake of the Woods it was found that the logging operation was being performed within the time requirements of the biological evaluation in accordance with S&G 4-10

Facilities

S&G: 3-3, 3-7, 3-10, 3-11, 3-24, 3-25 (Forest Plan, page 4-44 and 4-45)

References: 1-4, 1-8, 3-11

During a review of the Hazard Tree Sale at Lake of the Woods it was found that in some places (near log decks on the Westside Road) the ditchline and cutbanks were damaged and logging slash was found in the ditchline and on the road. This was to be corrected in accordance with S&G 1-4.

A lot of non-system roads were observed in the Dorf Timber Sale area. Many of these should be returned to vegetative productivity in accordance with S&G's 3-3 and 3-7.

Insufficient maintenance (i.e. lack of gravel) was noted in the driveway near the Lone Pine Building on the Chiloquin Ranger Station grounds. Such problems are to be identified during condition surveys (S&G 3-25) and corrected in accordance with S&G 3-26.

Timber

S&G: 13-3, 13-6, 13-26 (Forest Plan, pages 4-78 and 4-82)

References: 1-5, 1-7, 1-10, 3-2

There was an abundance of slash generated from the Slick Timber Sale unit adjacent to Road 3610. The Ranger District is working with the purchaser to utilize this material in accordance with the Forest Plan (S&G 13-26).

A review of the proposed Giddyup Sale marking revealed insufficient removals to effectively culture ponderosa pine. The EA indicated volumes around 400 mbf, but that was not reflected in

the marking. Treatments anticipated in the Forest Plan (pages 4-32 and 4-33) were developed to achieve multiple resource goals while still being practical to manage. If insufficient volumes are removed for the purposes of the treatment or insufficient volumes are removed for economic practicality, the goals of the Forest Plan can not be achieved.

Nannie Unit 37 was scheduled for tractor yarding. Slopes were in the range of 28 to 32% so this is in accordance with S&G 13-6.

A September 18 field review suggested that the Canby Salvage Sale could be regeneration harvested due to it's being lodgepole pine around 150 years old. This would be consistent with S&G 13-3 and the Regional Guide, as referenced in the Forest plan.

A timber faller was seriously injured by a falling tree on the Odessa Timber Sale. There were a large number of dead trees designated for retention and for removal in the area of the accident. As discussed on page 25 of the 1994 Monitoring Report, the numerous dead trees were retained for snags and a continuing supply of down material. This was in excess of the 40% snag habitat level that was defined in the Forest Plan and which was based, in part, on the level of snags that could be safely retained. While the contractor is ultimately responsible for logging safety, it may be possible to encourage the use of equipment such as a machine shear with a protective canopy in situations like this where terrain permits.

On a March 16 visit to the Hazard Tree Salvage Sale, it was noted that sale administration, logging operations, and utility operations were all being carefully coordinated so as to operate in a safe manner. This is a remarkable achievement given the complexity of the situation among the summer homes at Lake of the Woods.

Recreation

S&G: 10-4, 10-6, 10-12, MA-1C, MA-2A (Forest Plan, pages 4-70, 4-90 and 4-96)

References: 1-11, 3-4, 3-5

On August 17, there was evidence of ORV use on the Yamsey Mountain Trail and no signs prohibiting this activity were seen. This is not in accordance with MA-1A, Recreation S&G 3.

On September 2, a number of inadequately maintained waterbars were seen on trails in the Sky Lakes Wilderness (Sevenmile Trail, Pacific Crest Trail, Trail 981 and Grass Lake Trail). This is not in accordance with S&G 10-12. (Note: repair work is being done in FY-96)

Corral Springs Campground is in MA-2A and is minimally developed. A field review on August 29 confirmed that the site, after rehabilitation, now conforms to the roaded natural recreation opportunity spectrum category as required in the Forest Plan (MA-2A, Recreation S&G #1). Potable water is not supplied. This is in accordance with the Forest Plan (MA-2, Recreation S&G #2). The site was found to be barrier free in accordance with S&G 10-6. A retaining wall was built on the site without consultation with an engineer or landscape architect. This is **not** in accordance with S&G 10-4.

The Walt Haring Snopark was examined on August 29. A shelter has been proposed. At the review, the shelter was realigned to improve accessibility in accordance with S&G 10-6. At the same time, it was revealed that users often move the table at the accessible picnic site into the shade thus creating a barrier to people with handicaps. It is expected that the construction of the accessible shaded picnic spot will eliminate this problem.

Off road vehicle use is occurring in the Jackson Creek Campground in violation of S&G 10-11. A field review on September 14 revealed that off-road vehicle use was severely compacting soils and apparently leading to a great deal of stress on the trees. No silvicultural treatment will be

effective in improving the overall situation until compaction damage to the feature trees is halted by containing vehicle use to appropriate areas.

Late Successional Reserve Management

S&G: NW Forest plan ROD pages C-9 through C-21, 13-1 (Forest Plan page 4-78)

References: 1-13, "Late Successional Reserve Assessment for RO227, RO228, and RO229 on the Klamath ranger District, Winema National forest"

An LSR Assessment for LSR's in the Klamath Ranger District has been completed in compliance with the S&G's on page C-11 of the Record of Decision of the NW Forest Plan.

A sizeable area of Late Successional Reserve (LSR) on the southwest slopes of Pelican Butte was found to be ready for some regeneration harvest if continuation of this habitat into the future is desired. This potential for habitat degradation is recognized in the LSR assessment (page 24). For the first few sales in the LSR, trees over 18" in dbh have been excluded from harvest. While a group selection type harvest (e.g. 1/6 of the area with 30 year entries) would permit the desired regeneration, the size limit makes this type of treatment impossible (most trees are over 18"). Such regeneration harvest could be acceptable under the S&G's (NWFP page C-12 and C-13), to the extent that it was designed to reduce the risk of large-scale disturbances and met with the approval of the Regional Ecosystem Office. The LSR assessment envisions regeneration harvest in stands infected with *Armillaria* root rot (page 32 and 36) and for late successional enhancement (page 37) in groups of from two to nine acres. Harvest is acceptable under S&G 13-1(2) if the project were designed to enhance other (non-timber) resource values. While no S&G's are violated by limiting harvest to trees less than 18" diameter, this requirement may limit the ability of the Forest to maintain desired LSR conditions over the whole LSR for the long term.

Range

S&G: 9-2, 9-18, 9-26 (Forest Plan page 4-62, 4-67, 4-69)

References: 3-8, 3-9, 3-6

Water from Butler Spring has been diverted into a large tank with a outlet valve for filling of water tankers for fire suppression. This bypasses a stock tank. Unless a line officer has excepted this stock tank from maintenance requirements, it is not being maintained in accordance with S&G 9-26.

On May 3, it was noted that the fence around Ridge Spring was damaged. The District Range Conservationist was notified so that it could be maintained in accordance with S&G 3-8. At the same time it was noted that Powerline Pond was low on water and could be leaking. This pond may not be needed. The need for this pond can be reevaluated in accordance with S&G 9-18 or it can be maintained in accordance with S&G 9-26.

A September 5 field review found that forage utilization on the Dams Meadow-Switchback Allotment and the East Chiloquin Ridge Allotment were in accordance with S&G 9-2 (light to moderate use except in a couple of localized areas).

MANAGEMENT AREA ACREAGES

The Winema National Forest has implemented an electronic Geographical Information System (GIS). The "map of record" depicting the Management Areas on the Forest is maintained in that system. The initial mapping was installed in the system and made available in 1992. This section describes the changes seen from 1992 to 1993, as the Forest Plan was initially implemented and

the changes seen from 1993 to 1996 when significant amendments were made to the Plan. The following table displays the acreages:

MANAGEMENT AREA ACREAGE CHANGES

MA Name	MA Code	1992 Acres	1993 Acres	1996 Acres	TOTAL CHANGE 1992-1996
Yamsay Mtn.	01A	8,478	8,488	8,458	0%
Brown Mtn.	01B	3,320	3,313	01BLSR 3,313	0%
Pelican Butte	01C	11,199	11,198	01C 7,429 01CLSR 3,769 Total = 11,198	0%
Developed Recreation	02	2,934	2,957	02 1,093 02LSR 1,876 Total = 2,969	+1% (23 acres)
Scenic Foreground Retention	03A	24,991	25,934	03A 13,268 03AMAT 8,015 Total = 21,283	-15% (3,708 acres)
Scenic Foreground Partial Retention	03B	24,107	24,082	03B 16,448 03BMAT 4,447 Total = 20,895	-13% (3,212 acres)
Scenic Midground Partial Retention	03C	77,170	83,443	03C 32,467 03CMAT 26,291 Total = 58,758	-24% (18,412 acres)
Special Areas	04	17,714	17,916	17,914	+1% (200 acres)
Sycan River	05	5,111	2,268	2,268	-56% (2,843 acres)
Mt Thielsen	06A	25,901	26,036	26,036	+1% (135 acres)
Sky Lakes	06B	44,060	44,048	44,358	+1% (298 acres)
Mountain Lakes	06C	22,997	22,989	22,990	0%
Old Growth	07	35,228	34,523	21,456	-39% (13,772 acres)
More Old Growth	07OG	24,373	24,371	22,835	-6% (1,538 acres)
Riparian Areas	08	46,902	47,908	08 38,897 18LSR 5,830 18MAT 11,355 Total = 56,082	+20% (9,180 acres)
Eagle Nest and Recovery Sites	09A	6,964	7,027	09A 3,529 09ALSR 943 09AMAT 2,555 Total = 7,027	+1% (63 acres)
Eagle Replacement Habitat	09B	9,763	9,739	09B 1,934 09BLSR 2,289 09BMAT 5,395 Total = 9,618	-1% (145 acres)

MA Name	MA Code	1992 Acres	1993 Acres	1996 Acres	TOTAL CHANGE 1992 TO 1996
Eagle Winter Roost	09C	1,943	1,944	09CLSR 2,201 09CMAT <u>193</u> Total = 2,394	+23% (451 acres)
Big Game Winter Range	10	39,848	39,844	39,631	-1% (217 acres)
Timber Production	12	565,181	561,650	12 461,571 12MAT <u>82,680</u> Total = 544,251	-4% (20,930 acres)
Research Natural Areas	13	2,698	2,697	13 1,470 13LSR <u>1,169</u> Total = 2,639	-2% (59 acres)
Upper Williamson	15	38,407	38,490	38,557	0%
Late Successional Reserves	16	0	0	57,909	New MA
Lakes	LAKE	2,381	2,382	518	-78% (1,863 acres)

Boundary adjustments resulting from better field data can affect the acreages displayed in the GIS. For that reason the acreage of a Management Area must change by a minimum of 5% before it is considered cause for concern. There are ten Management Areas that have changed acreage in excess of 5%. These are discussed below.

From implementation of the original map of record in 1992 to 1993, changes were relatively minor. The net acreage of the Forest decreased by 1,577 acres as the result of a land exchange. Viewshed mapping was updated, resulting in some acreage shifts. The largest change was a 6,270 acre increase in middle ground (MA 03C). These acres came from MA 12 (3,427 acres) and MA 5 (2,843 acres). The change in MA 5 came with Amendment 4 to the Forest Plan (Sycan Wild and Scenic River Management Plan). That amendment revised the boundary of the scenic corridor from a fixed width, as in the original Forest Plan, to a variable width that better reflected the geography of the area. The only other notable change was an increase of 1,006 acres (2%) in MA 8 (Riparian Areas). This resulted from the initiation of more refined field mapping of these areas.

Major changes occurred with the adoption of Forest Plan Amendment 5 (Northwest Forest Plan). This amendment overlaid the concept of Late Successional Reserves (LSR's) and Matrix lands on top of the Management Areas which were in effect prior to the amendment. Where the original Management Areas were more restrictive than the guidance for LSR's they retained their original identity, but were tagged as being within LSR's. Where the LSR guidance was more restrictive, the acres were placed in the new Management Area 16. Since matrix designation had little effect upon the existing management areas, most of them retained their original designations, but were tagged as being within matrix lands. An exception occurred with lakes where, under the definition of riparian reserves in the Northwest Forest Plan, Four Mile Lake and Lake of the

Woods were assigned to Management Areas 18MAT and 18LSR respectively. Only Miller Lake remains in the 'Lake' Management Area.

The major acreage decreases are attributable to the creation of Management Area 16 from portions of Management Areas 03A, 03B, 03C, 07, 07OG, and 12. The decrease in Management Area 5 is discussed above.

A 9,180 acre increase (20%) in riparian areas resulted from new definitions in Amendment 5 (including direction to include lakes in riparian reserves, see above) and refined field work in accordance with Forest Plan direction (page 4-236 of the Forest Plan).

Since all of the significant changes (those in excess of 5% of a Management Area's Forest-wide acreage), individually and cumulatively, were addressed in one of several amendments to the Forest Plan, they are not of concern and no special recommendations are warranted.

Monitoring Item: Accomplishment of Outputs and Services

The findings and recommendations related to each of the monitored items are discussed below. A table which displays the accomplishments from 1991 through 1995 follows the narrative.

Allowable Sale Quantity:

Findings: The decade total is well below planned levels. Since the ASQ has been defined as a ceiling, not to be exceeded, there is no problem. It should be noted, however, that the ASQ is calculated as the base level of harvest necessary to produce a non-declining flow of timber for the long term as required by law. Harvest below the level of the ASQ is likely to reduce the availability of sawtimber, for the use of future generations, from projected levels.

Recommendations: Revise the Forest Plan so that appropriate consideration can be given to the loss of future options associated with the current management direction and to establish an appropriate ASQ.

Timber Sale Program Quantity:

Findings: The threshold of concern is a level 25% below planned accomplishment. After five years of implementation the TSPQ is 55% below planned levels. One component of the TSPQ is the harvest of dead lodgepole pine which is discussed below. Without the dead lodgepole pine component, the TSPQ would be 61% below planned levels. If no further excessive lodgepole pine mortality is anticipated, it would be necessary to harvest about 204 mmbf per year for the next five years to achieve Forest Plan objectives. If lodgepole pine mortality were to continue, the TSPQ would have to average over 258 mmbf per year for the next five years to achieve Forest Plan objectives. Current litigation, planning exercises, and administrative screens make it unlikely that this objective can be achieved.

Recommendations: Revise the Forest Plan to reflect new information developed by the Eastside Ecosystem Management Project and the NW Forest Plan and adjust the TSPQ as appropriate.

Dead Lodgepole Pine Sold

Findings: In board foot measure, the rate of dead lodgepole pine harvest is 34% below planned levels. Although this exceeds the 10% threshold of concern, it is not a major problem because, as noted in the Record of Decision, the rate of harvest is very dependent upon the rate of mortality in lodgepole pine. The rate of mortality has been dropping below projected levels as discussed in the Insects and Disease monitoring item and the Timber Inventory monitoring items.

Recommendations: No special recommendation.

Ponderosa Pine Sold

Findings: The very limited amount of harvest of ponderosa pine during 1994 and 1995, due to administrative screening processes, brought the 5-year total harvest to a level 46% below planned levels. This is well in excess of the 10% threshold of concern. With the screens in place there is no prospect of reaching planned levels of harvest.

Recommendations: Revise the Forest Plan to reflect new information developed by the Eastside Ecosystem Management Project and the NW Forest Plan and adjust the ponderosa pine sold estimate as appropriate

Silvicultural Treatments

Findings:

- Commercial Thins: 58% below planned levels
- Overstory Removal: 82% below planned levels
- Regeneration Harvest: 6% above planned levels
- Selection Harvest: 66% below planned levels
- Salvage Cut - Lodgepole: 77% below planned levels

With a threshold of concern at 25% from planned levels, all silvicultural treatments except regeneration harvest are of concern. The low level of lodgepole pine salvage is a result of lower mortality than anticipated and is consistent with the rationale for harvest discussed in the Forest Plan Record of Decision. The results of these activity levels are reflected in the concerns expressed with regard to the mule deer, plant/animal diversity, and socio-economic monitoring items. Current planning exercises, litigation, and administrative screens make it unlikely that planned activity levels can ever be reached.

Recommendations: Revise the Forest Plan to reflect new information developed by the Eastside Ecosystem Management Project and the NW Forest Plan and adjust the estimates of silvicultural treatments as appropriate.

Reforestation

Findings: Reforestation is running 33% ahead of planned levels. This is in excess of the 10% threshold. Prior to the 1993 and 1994 reforestation efforts on the Lone Pine burn area, reforestation was running only 13% above planned levels. With the low number of acres being harvested, reforestation should decline and fall below planned levels before the end of the planning period.

Recommendations: No special recommendation.

Timber Stand Improvement

Findings: TSI work is at 49% of planned levels. A 10% variation from planned levels generates concern. These levels of TSI are also reflected in the mule deer and plant/animal diversity monitoring items. The combination of current litigation, planning efforts, and administrative screens makes it unlikely that this activity will reach planned levels.

Recommendations: Revise the Forest Plan to reflect new information developed by the Eastside Ecosystem Management Project and the NW Forest Plan and adjust the estimates of TSI treatments as appropriate.

Fuel treatment:

Findings: Fuel treatment activities are 25% below planned levels. A 10% variation from planned levels is cause for concern.

Recommendations: Backlogs are believed to be increasing although hard numbers are not available. It appears that the only reason for not reaching planned levels is the lack of management interest in achieving those levels. It is recommended that fuel treatment activities increase at least to a level that will avoid increases in treatment backlog.

Road Construction/Reconstruction:

Findings: Road construction activities are at 93% below planned levels. A 10% variation from planned levels is cause for concern. Forest roads are constructed only when needed and not on the average yearly schedule of the Forest Plan. With the lower timber harvest levels of the last three years the demand for new roads has been well below that anticipated in the Forest Plan. The reduction of the Capital Improvement Program for Roads and lack of funding for road reconstruction projects has resulted in less road reconstruction than anticipated in the Forest Plan.

Recommendations: No special recommendations.

Total Road System and Road Access Management:

Findings: After 5 years, the Forest road system is 13% larger than planned. The level of concern is a 5% deviation from planned levels. In general, the reduction of the Total Forest Road System through road obliteration and road closures, to meet the objectives in the Forest Plan, has not yet begun. The objectives can be achieved over the remainder of the Plan Period. The excess road system has effects on other Forest resources such as mule deer habitat.

Recommendation: Proceed to implement and enforce the road management decisions made in the Forest Plan ROD, or modify the Forest Plan.

Road Access Type:

Findings: Passenger car access is at 95% of planned levels, high clearance access is at 111% of planned levels and intermittent access is at 117% of planned levels. A variation of more than 10% from planned levels is cause for concern, so only passenger car access is at an acceptable level. The reasons for this situation are the same as those described for the Total road system monitoring item above.

Recommendation: Proceed to implement and enforce the road management decisions made in the Forest Plan ROD, or modify the Forest Plan.

Developed Recreation Construction

Findings: Recreation construction is slightly behind schedule with 45% of the planned construction for the decade completed after 50% of the decade. With no additional construction scheduled for the next year or two, this item should fall further behind schedule until near the end of the decade when new construction should cause it to reach the planned level.

Recommendations: No special recommendation.

Trail Construction/reconstruction

Findings: Trail construction/reconstruction at 27.7 miles after 5 years is 22% of planned levels. The inter-tie trail construction is scheduled for late in the decade so the current situation is not a cause for concern.

Recommendations: No special recommendation.

Permitted Livestock Grazing

Findings: At 87% of planned levels, permitted livestock grazing has not reached a level of concern.

Recommendations: No special recommendation.

Range Improvements

Findings: Since planned levels were not stated in the Forest Plan, there is no way to evaluate progress.

Recommendations: When the Forest plan is next modified, include an estimate of range improvements (structures and acres) needed to meet the objectives established for the resource.

Wildlife Habitat Improvements

Findings: Since planned levels were not stated in the Forest Plan, there is no way to evaluate progress.

Recommendations: When the Forest Plan is next modified, include an estimate of wildlife habitat improvements (structures and acres) needed to meet the objectives established for the resource. Split this out between "threatened and endangered species" and "other species" so that the relative stress being given to the two areas can be displayed.

Watershed Improvement Work

Findings: Since planned structures are not noted in the Forest plan, progress can not be evaluated. The Forest Plan indicates an average of 10 acres of improvement per year. After five years, accomplishment is well in excess of the established threshold of concern.

Recommendations: Due to increased emphasis on watershed improvement as a result of the President's Plan for the Pacific Northwest Forests, the Forest Plan should be modified to project more realistic estimates of accomplishment.

Monitoring Item	Plan	1991	1992	1993	1994	1995	Remaining for Plan Period
Allowable Sale Quantity MMCF/year		19.4	15.8	2.0	21.5	2.0	6.2
							29.3 MMCF per year
Timber Sale Program Quantity							
MMCF/year	34.7	23.7	8.8	31.8	2.9	6.7	54.6 MMCF per year
MMBF/year	166.8	119.2	49.0	158.6	16.3	33.5	258.3 MMBF per year
Dead Lodgepole Pine Sold							
MMCF/year	11.5	6.1	6.3	9.9	0.9	2.4	17.9 MMCF per year
MMBF/year	40.2	30.8	36.5	48.7	4.2	12.6	53.8 MMBF per year
Ponderosa Pine Sold							
MMCF/year	8.8	6.0	1.5	18.1	0.9	2.3	11.8 MMCF per year
MMBF/year	53.9	30.2	7.7	91.3	4.4	11.6	78.8 MMBF per year
Silvicultural Treatments (Acres/Year)							
Commercial Thins	2,700	2,300	0	200	549	2,688	4,253 Acres per year
Overstory Removal	1,600	900	200	200	162	0	2,908 Acres per year
Regeneration Harvest	500	200	100	0	1,285	1,054	472 Acres per year
Selection Harvest	8,400	7,400	800	2,500	619	2,851	13,966 Acres per year
Salvage Cut - Lodgepole	13,700	6,700	6,300	100	0	975	24,585 Acres per year
Reforestation (Acres/Year)	6,400	7,833	6,590	9,204	10,137	8,951	4,257 Acres per year
Timber Stand Improvement (Acres/Year)	14,400	6,660	7,265	8,644	8,181	6,032	21,443 Acres per year
Fuel Treatment (Acres/Year)	27,600	30,961	23,286	14,236	25,469	9,497	34,510 Acres per year
Road Construction/Reconst (Miles/Year)							
Forest Road Program	22	2.0	2.3	2.0	2.7	6.7	204.3 miles remaining
Timber Purchaser Roads	31	27.6	0.0	0.0	0.0	0.0	282.4 miles remaining
Total Road System (Miles)	5,517	6,200	6,200	6,208	6,208	6,208	691 miles to be reduced
Road Access Management (Miles)							
Open for Use	-	4,932	5,030	5,106	4,938	4,938	Not projected
Closed to Use	-	1,268	1,170	1,102	1,270	1,270	Not projected
Road Access Type (Miles)							
Passenger Car	510	490	490	483	483	483	Need 27 more miles
High Clearance Vehicle	2,120	2,376	2,376	2,361	2,360	2,360	Need 240 fewer miles
Intermittent Access	2,887	3,345	3,345	3,365	3,365	3,365	Need 478 fewer miles
Developed Recreation Construc (PAOT)	695	90	140	80	0	0	385 PAOT (55% left)
Trail Construction/Reconst (Miles)	124	1.0	15.0	4.1	7.5	0.1	96.3 Miles (78% left)
Permitted Livestock Grazing (AUM)	13,000	13,000	13,000	14,418	10,102	6,090	14,732 AUM each year
Range Improvements							
Structures	-	11	5	6	0	10	No value established in the Forest Plan
Acres	-	2	13	10	0	0	
Wildlife Habitat Improvement							
Threatened & Endangered Species							No value established in the Forest Plan
Structures		0	45	0	0	25	
Acres		115	130	25	299	172	
Other Species							No value established in the Forest Plan
Structures		2,834	516	255	549	1,533	
Acres		320	2,618	979	2,624	3,379	
Watershed Improvement Work							
Structures	-	na	na	na	2	13	No value established
Acres	10	72	9	na	107	292	None

Monitoring Item: Budget

Objective:

Document the costs associated with carrying out the planned management prescriptions as compared with costs estimated in the Forest Plan

Monitoring Questions:

Is funding sufficient to implement the Forest Plan?

Threshold of Concern:

Annual variation of more than 20 percent from Forest Plan amount, five-year average variation of more than 10 percent, or insufficient funds to implement the Forest Plan.

Results and Findings:

This the fifth year of the Forest Plan (FY 1991 - 1995), both the 1995 expenditures and the four year average were reviewed to consider the affects of expenditures on implementation of the Forest Plan. Political decisions have affected the budget priorities and expenditures. Ecosystem management, watershed analysis, water rights and timber are changes in programs occurring after the Forest Plan was signed. These shifts in funding categories make it difficult to directly track year-to-year changes in comparison to Forest Plan estimates.

Total budget dollars are below Forest Plan levels. Output levels are also generally below Forest Plan levels, but for reasons other than insufficient budgets (see Monitoring Item: Accomplishment of Outputs and Services). Exceptions are in range management and scenery where funding levels limited accomplishments (see Monitoring Item: Range Vegetation and Monitoring item: Scenery). Monitoring indicates that budget levels are sufficient to meet the standards and guidelines in the Forest Plan at the current output levels (see Monitoring Item: Standards and Guidelines) which are well below the outputs levels for key resources projected in the Forest Plan.

Dollars were all converted to 1982 dollars for comparison purposes.

BUDGET EXPENDITURES BY RESOURCE

(1982 Dollars)

Resource Area	Forest Plan	4 Year Average	FY-1995
Recreation	\$1,086,200	\$769,600	\$469,300
Fish, Wildlife, T&E Species	\$810,900	\$557,000	\$627,100
Range	\$269,200	\$166,500	\$296,300
Lands & Minerals	\$284,800	\$246,700	\$170,600
Facilities	\$1,553,600	\$1,220,800	\$950,200
Timber Management	\$7,536,800	\$8,386,000	\$5,660,100
Soil, Water, Air	\$367,300	\$980,500	\$143,600
Protection & Law Enforcement	\$1,835,500	\$1,770,400	\$1,156,600
Administration & Planning	\$1,920,000	\$1,766,400	\$3,211,300
TOTALS	\$15,664,300	\$15,863,900	\$12,685,100

Evaluation:

As the years have passed, it has become increasingly difficult to compare current year budgets to projections in the Forest Plan. For example, administration and planning shows a large increase for FY-1995 when the changes were simply in the manner of accounting. In 1995, coding systems were changed to allow overhead costs that were formerly associated with projects, and thus resource areas, to be assigned to administration. This had the apparent effect of reducing resource budgets and increasing overhead expenses when, in reality, nothing had changed. Nonetheless, we can see that over the first four years of plan implementation the total budget was close to Forest Plan estimates although timber management received more funding than anticipated while other programs received less. This was, in part, due to increasing costs of activities required before harvest could occur. With significantly lower timber outputs than projected, the unit costs for this work rose dramatically.

The fiscal 1995 budget is 20% less than the four year average. This seems to be a developing trend with additional reductions of up to 15% anticipated for FY-97 and FY-98. Clearly, these budget levels are insufficient to manage the Forest as described in the Forest Plan. There are, however, other reasons, including implementation of the NW Forest Plan amendment and the Eastside Screens/Inland Fish amendments, behind lowered outputs. These amendments did not revise Forest Plan budget estimates.

Recommended Action:

Budget analysis, as required by the Forest Monitoring Plan, has not been a realistic measure of whether or not direction in the Forest Plan is being achieved. Key problems have been the way in which funds are accounted, changes in accounting procedures, and an imprecise link between budgets and achievement of outputs and standards and guidelines. It is therefore recommended that the Forest Monitoring Plan be revised to incorporate budget considerations into the analysis performed by each resource specialist as was done for Range Vegetation this year. This will allow an integrated look at the relationship between budgets and accomplishments. It is also recommended that the All Resources Reporting System, as it is formalized, be used as the basis for evaluating budget impacts upon outputs and the achievement of Standards and Guidelines. It is not known whether the All Resources Reporting System will report data consistently from year to year. If not, it may be necessary to develop a Forest-specific scheme for developing consistent budget figures for monitoring purposes.

Monitoring Item: Developed Recreation Sites

Monitoring Objective:

Determine if developed site capacity is adequate to meet demand and if facilities and services are responsive to customer expectations and desires. Determine if unacceptable resource damage is occurring because of visitor use or facility design.

Monitoring Questions:

Is additional site capacity needed to met the demand for developed camping?

Are customer needs being met?

Is unacceptable resource damage occurring?

Threshold of Concern:

Visitor use exceeds 90 percent of practical maximum capacity for the season. Customer feedback indicates that desired facilities and services compatible with the ROS class and development level are NOT being provided or adequately maintained. Significant resource damage, such as vegetation loss or soil erosion, has occurred or a negative trend has been noted.

Suggested Sampling Methods:

Monitor level of use and condition of facilities throughout the use season. Use systematic sampling techniques to periodically measure use. Report actual use annually per Regional Recreation Information System (RRIS) instructions. [INFRASTRUCTURE replaces RRIS in 1996.] Collect customer comments obtained through visitor contacts and from fee envelopes, public meetings, and correspondence. Resource Staff and Recreation Specialist conduct field reviews of developed sites annually to assess facility and site condition.

Monitoring Type:

Effectiveness

Results and Findings:

Total reported recreation use on the Forest was down about two percent from 1994. Developed public site use and dispersed area use reported for Klamath District increased, but all other use categories by District were down slightly. This includes reduced use at developed private sites (Klamath District), wilderness (Chemult and Klamath Districts), and dispersed areas (Chemult and Chiloquin Districts) and developed sites (Chemult and Chiloquin Districts). Increased dispersed use on the Klamath District was noted last fall by large groups seeking more secluded & less restricted camping.

Although 1994 use data has been converted to INFRASTRUCTURE from RRIS and 1995 use data has been entered into the new data base, no reports are available at this time to extract use figures by activity and site/area. Therefore an analysis of use by activities and comparison to Forest Plan and SCORP projections will not be completed for this monitoring report. Demand for developed

camping reportedly continues to exceed capacity at Lake of the Woods campgrounds for portions of the year, as well as at numerous other smaller campgrounds during deer hunting season.

Forest-wide feedback received from developed site users has been predominately favorable concerning facilities provided, condition and cleanliness of facilities, and the quality of the setting. Most critical comments pointed out minor repair and cleanup needs which were generally corrected quickly. Specific negative comments were directed at the hand pump at Williamson River CG (hard to operate), the flooding of the snowmobile play area at Great Meadow, logging in the L.O.W. Rec. Residence Tract and at Odessa CG, and the fencing at Head of the River that restricted camping during hunting season. One complaint was received concerning the perceived exclusive use of the Rocky Ford area by tribal members. Customer complaints concerning late night traffic, illegal activities, and loud, boisterous behavior have also become more common, especially in the Lake of the Woods Complex.

Specific positive comments were received concerning the development of accessible facilities at Wood River, the new Romtec toilets at several sites, the new High Lakes Trail and the availability of hiking/biking trails from sites at Lake of the Woods. Numerous comments were received in praise of clean facilities and grounds and the scenic settings Forest-wide.

Some customers indicated that some additional facilities and services were needed:

- Group camping area available by reservation.
- Additional areas to ride mountain bikes, all terrain vehicles (ATV's) and motorcycles off system roads.
- Camping and picnic sites with accessible toilets, water and power reserved for use by people with disabilities.
- Facilities designed for camping with stock.
- Shower facilities & electrical hook-ups in major campgrounds.
- Snow shelters at Haring and Great Meadow Sno-parks.
- Increased Forest Service presence (security, law enforcement and visitor information) at developed sites.
- Reduced speed limits on Lake of the Woods and Miller Lake.

Existing and planned recreation facilities and practices within riparian areas are being evaluated under President's Forest Plan and expected Eastside management guidelines. Some site relocations and the use of visitor or traffic control measures have been completed to meet Riparian Management Objectives. Several sites at Corral Springs CG were relocated away from riparian areas, closed sites were revegetated, and the remaining sites upgraded in 1995. A new fence was constructed at Head of the River CG to prevent vehicle traffic and camping in the adjacent meadow and riparian zone. Alternatives are being developed to deal with a similar situation at Jackson Ck. CG where uncontrolled vehicle use is leading to soil compaction and overstory mortality. Sections of the Miller Lake Trail were relocated to protect the lakeshore. Additional resource problem areas may be identified during the watershed analysis process (and follow-up to early FY 1996 flood events) and corrective actions planned.

Evaluation and Follow-up:

Use trends on the Forest were not analyzed for this report since use summary reporting is not yet available for the INFRASTRUCTURE data base. It is expected that overall use on the Forest has continued to track with SCORP/Forest Plan projections with some minor fluctuations due to weather and site closures for facility repairs. Refer to reports from previous years for latest identified trends.

As indicated in the 1994 report, the Forest will not be able to meet the demand for developed site camping in the Lake of the Woods complex. The Forest Plan schedules the addition of a group camping area in the first decade. This facility would meet the needs for a group camping area and serve as an overflow camping area when not reserved. However, funding in the near future will be very limited and use at existing facilities is currently causing use levels on the Lake which approach or exceed capacity for water activities.

Accessibility surveys and a Transition Plan has been developed for all developed recreation sites. This plan prioritizes and schedules all the improvements needed to upgrade recreation sites on the Forest to meet accessibility standards. A project to complete the highest priority planned improvements at sites at Lake of the Woods was submitted as a proposed addition to the R-6 Recreation Facility Capital Investment Program (CIP) in 1995, but was not selected. This project included upgrading of campsites, family and group picnic sites, boat launches, core facilities and travelways. One site was upgraded (with water, power & sewer) in 1995 in conjunction with relocating the host site in Sunset CG. A similar site upgrade is planned in Aspen Pt. CG in 1996. Other projects will be scheduled in the R-6 or Forest Small Project CIP at the earliest opportunity, but funding for construction projects is expected to be very limited. (Note: two additional sites were made accessible during FY-96 and two more are scheduled for FY-97.)

Expanding and upgrading facilities at Williamson River Campground remains a priority project to meet accessibility standards, upgrade the water system, and provide additional capacity for campers in the US 97 corridor. There is an opportunity to partnership with Oregon State Parks in providing trails, trailheads, and additional camping capacity in the Spring Creek-Williamson River area.

Planning of additional trails outside of wilderness as requested by users is continuing. The first phase of construction of the High Lakes Trail from Fish Lake to Aspen Point CG is scheduled to be completed by July 1996. Phase II construction from Aspen Point to Great Meadow Sno-park was constructed last summer. Reconstruction of a portion of Fourmile Lake CG to accommodate camping with stock and the construction of a horse group camping area and associated tie trails is planned to begin in the fall of 1996. The construction of a trail, trailhead and horse camp in the Yamsay Mtn. area has been deferred while the mountain is evaluated as a Traditional Cultural Property.

Shelters were planned for construction at Great Meadow and Walt Haring Sno-parks during 1995. Unfortunately, bids received exceeded available funds. A multi-season shelter is planned again at Walt Haring Sno-park in 1996 using carry-over funds. The Great Meadow shelter will be added to the Forest CIP project schedule.

Construction of accessible fishing platforms and boardwalk at Wood River Day-use Area will continue through a partnership with Integral Youth Services in 1996. Testing of accessible trail surfacing treatments at the site in co-operation with San Dimas Technical Development Center will also continue. A multi-year monitoring program to determine effectiveness of treatment types is in place.

Recommended Action:

The Forest Plan Goal to "meet the demand for developed camping" doesn't appear to be attainable. At Lake of the Woods, where most developed camping on the Forest occurs, adding additional sites may lead to exceeding resource capacity. Expansion of other sites on the Forest (Williamson River CG) and continuing to market underutilized sites (Digit Point CG) will not be enough to meet the expected demand. Funds to expand sites will be increasingly difficult to obtain with the emphasis on deficit reduction and urban Forest sites. Re-directing visitors to permittee and other agency sites may only help somewhat to fill some demand niches. For example, group camping may be provided for at Resorts or Collier State Park.

Since funding for operation and maintenance is lagging behind Forest Plan levels, measures to reduce costs and maximize efficiency in site operations will need to be implemented to maintain the quality of the experience being provided at our developed sites. In 1996 the Lake of the Woods Complex (Sunset CG, Aspen Point CG, and Rainbow Bay Day-use Area) will be operated by a concessionaire. All users questioned last summer opposed this move, probably expecting the shift to result in increased prices and reduced quality of services. To ensure that we continue to meet customer needs, we will need to closely monitor the concessionaire's operations and require adjustments if needed.

Meaningful Measures (MM) should be implemented for all other sites on the Forest by the end of 1996. This process should facilitate identifying costs to meet standards, prioritizing sites & areas and determining where to invest resources, as well as identifying cost savings across the Forest. Trails and wilderness will be added in 1997.

Generally, monitoring indicates that management direction is being followed and Forest Plan goals, except as noted above, are being met as well as possible within present funding levels. However, with reduced funding, trail and facility maintenance will be continue to be deferred or not accomplished to MM standards. No other immediate program or direction changes are recommended.

Monitoring Item: Off-Road Vehicle Use

Monitoring Objective:

Determine if unacceptable resource damage and/or user conflicts are resulting from ORV use.

Monitoring Questions:

Is ORV use occurring in areas where prohibited or restricted?

Is ORV use causing unacceptable resource damage in areas where use is permitted?

Are conflicts occurring between motorized and nonmotorized uses and between motorized use and wildlife?

Threshold of Concern:

Unacceptable damage is noted.

Suggested Sampling Methods:

Monitor use and site conditions through field observation and review public comments concerning ORV use.

Results and Findings:

ORV use was noted within the Yamsey Mountain Semi-primitive Recreation area during August. Motorized vehicle use is excluded from this area in the Forest Plan, but closure signs have not been installed.

Except in the Jackson Creek area (see page 32), no unacceptable resource damage caused by ORV use was reported.

Some use conflicts have been noted between nonmotorized and motorized winter trail users. These are minimized by designating trails or areas for nonmotorized use only or by clearly indicating where shared used can be expected. No other conflicts have been reported.

Evaluation:

None.

Recommended Action:

Install traffic management signs prohibiting motorized use at the main entry points into the Yamsay Mountain Area.

Continue to monitor as required by Executive Order. The passage of a new State Law in late 1995 permits ATV/ORV use on all public roads in Oregon not maintained for passenger car use. This may result in user conflicts and safety concerns in some areas if such use increases. Monitor areas where conflicts may occur.

Plan designated ORV trails/roads/areas as demand warrants and close areas or roads where significant resource damage is occurring or user conflicts develop.

Monitoring Item: Scenery

Monitoring Objective:

Assure that the visual quality objectives are being achieved across the Forest.

Monitoring Questions:

Are the allocated visual quality levels being achieved?

Threshold of Concern:

When the percentage of created opening exceeds the standards and guidelines for retention and partial retention visual quality levels on a viewshed basis.

When desired target diameters and mix of tree species are not being achieved.

When scenic management objectives are traded off to implement other resource activities in the scenic management areas.

Suggested Sampling Methods:

Viewshed reviews will include a comparison of anticipated and actual effects.

Viewsheds may be assessed using computer analyses for predictions of project implementation effects as well as verification after project completion.

Predicted changes in condition of scenic viewsheds will be assessed on a cumulative project basis and created openings recorded by size (acres) and estimated time of release (year) in TRI/GIS or other available geographic information system.

Management Reviews and reports will be made at least annually.

Camera point photography will be used to visually monitor scenic condition across the Forest over time. This requires establishment of a network of long-term camera point monument locations. Monitoring photography will be completed on a 3- to 5-year frequency. Special attention will be paid to the condition of scenery as viewed from identified travel routes affecting other agencies or interested parties such as Crater Lake National Park.

Monitoring Type:

Effectiveness

Results and Findings:

No follow-up photography has been completed this year at camera point monument locations established to monitor scenery. Type 2 monitoring reviews have been completed and documentation letters are on file. Type 1 individual and informal monitoring trips have been completed between Forest and District personnel. Photographs taken on these field trips are available for future evaluation processes and comparisons.

According to the "Viewshed Implementation Guide Schedule" in Table B-4 of the Forest Plan, the Silver Lake Road and Miller Lake Road are priority 1 for development of a viewshed implementation guide in the first five years of the planning period. This is the fifth year of the planning period. Two reasons have contributed to the pace of development of this guide. First, the management of the Forest lands have been in limbo for various reasons, and second, these guides have not been high enough in overall priorities to be funded with the limited budgets available.

In Table B-5 of the Forest Plan, Miller Lake Recreation Area (which includes Digit Point Campground) and Corral Springs Campground are listed as priority 1 for completion of Vegetative Management Guides in the first five years of the planning period. Because a lodgepole salvage sale (Buck Timber Sale) was implemented in the Corral Springs area, a rehabilitation plan was developed in 1994 which includes planting of potted trees in the campground in lieu of a vegetative management guide. A guide for Miller Lake Recreation has been delayed because it has been identified on the District as a lower priority.

According to the "Viewshed Implementation Guide Schedule" in Table B-4 of the Forest Plan, the Dead Indian Road and State Highway 62 are priority 1 on the Klamath District for development of a viewshed implementation guide in the first five years of the planning period. Viewshed guide development has been delayed due to limited budgets.

In Table B-5 of the Forest Plan, Sunset Campground, Lake of the Woods VIS and Work Center and Fourmile Lake Campground are priority 1 for Vegetative Management Guide development within the first five years of the planning period. Similar reasons apply to the pace of vegetative management guide development as the pace of viewshed guide development.

Overall scenic viewshed condition ratings were not completed this year using updated existing visual condition datum available in the geographical information system. The reason is that there was not sufficient management activity resulting in created openings within viewsheds to make a significant difference from the trend results calculated for 1994.

Recommended Action:

None.

Monitoring Item: Wildlife-Mule Deer

Monitoring Objective:

Assure that habitat objectives are met.
Validate habitat assumptions.

Monitoring Questions:

What are the cumulative effects of open roads, alterations in cover, alterations of forage, livestock competition, water developments, and cover/forage distribution on deer habitat suitability?

Threshold of Concern:

A cumulative decrease of habitat suitability greater than 5 percent over five years.

A cumulative decrease of any one of the habitat suitability index factors greater than 5 percent over five years.

Suggested Sampling Methods:

Develop baseline data to determine changes in mule deer habitat suitability based on Interagency Technical Advisory Committee (TAC) Mule Deer Model on random sample township-sized areas.

Initially survey Forest over three-year period. Complete resurvey every three years.

Cooperate with research study to determine causes of mule deer decline.

Monitor forage condition, trend, production and utilization in riparian areas, winter range, and summer range bitterbrush communities. Complete analysis within five years, resurvey and analyze changes after next five years.

Monitoring Type:

Implementation, Effectiveness, Validation

Results and Findings:

In major projects on the two districts affected by the Consent Decree with The Klamath Tribes, deer habitat is always addressed. The overall rate of timber harvest and thinning is not rapid enough to provide the forage base to meet the projections of mule deer habitat and mule deer population response in the FEIS. The overall result of reduced timber harvest and reduced commercial thinning will be a reduced forage base for mule deer and ultimate decreases in mule deer populations.

Further complications in the management of mule deer habitat is the failure of the Forest to fully implement road closures to mitigate disturbance of mule deer. Many roads that will eventually be closed are still usable and being used. Some members of the Klamath Tribes have expressed concerns regarding road closures and road obliteration on former reservation lands because they feel that closed roads interfere with their subsistence hunting rights.

Chiloquin District reported mule deer model runs for several areas during FY95. Only existing condition was reported, no modifiers were used.

The model was used on the following analysis areas:

Analysis Area Name	Acres	Pre-project HSI	Post-project HSI
Shaws	1500	.29	.22
Dorf Alt. 3	7018	.39	.37
Total	8518		

In FY95 the primary habitat improvement projects specifically designed for deer on the Chiloquin District were bitterbrush planting in the Lone Pine fire area. The purpose of the planting of 1,006 acres in 1995 was to accelerate the regrowth of browse. Several monitoring surveys of plantings were conducted to determine planting success. Following is a report of those surveys:

I. Spring Survey; April, 1995.

- a) 1993 plants: 363 acres, 3% over-winter mortality.
- b) 1994 plants: 590 acres, 9% over-winter mortality.

II. 1995 Plants:

- a) Transects set up to monitor bitterbrush planted in April, 1995.

Eleven (11) sets of transects were established in April/May across 1042 hand-planted, winter range acres with initial measurements taken.

- b) Survival/Vigor monitoring on all these transects in May, June, July, August, September and October. End-of-growing season transects (October) indicate that bitterbrush survival was at 87%.

- c) Three (3) transects were established to monitor 150 machine-planted acres in April, 1995. These transects on summer/transitional range were later monitored once at the end-of-growing season (October) and results indicate 85% survival.

- d) Five hundred and seventeen (517) permanent, 1/50th acre plots were established on 1461 acres of hand-planted, mule deer summer/transitional in October to monitor planting success. Results indicate survival in a range of 56% to 73% with success probably closer to the higher value.

III. 1994 Plants:

- a) Eleven (11) sets of transects monitored over 590 acres indicated 23% success a year and a half after planting. This was an end-of-growing season survey conducted in October, 1995. These were on mule deer winter range.

- b) Three hundred seventeen (317), permanent 1/50th acre plots were surveyed on 1006 acres of bitterbrush-planted summer/transitional range in August 1995. Results indicate 11% survival after approximately 15 months of being planted.

IV. 1993 Plants:

In 1993 monitoring plots were established in blocks utilizing mostly 1/50th acre plots. Results indicate 59% survival over 377 acres (312 acres winter range, 65 acres transitional range) 2 1/2 years after planting. This end-of-growing season survey was in October, 1995.

V. Pre-stocking Surveys:

These surveys took place on mule deer winter, transitional, and summer range to determine the need for bitterbrush planting on various areas of the Lone Pine Wildfire Area. Approximately 11,655 acres were surveyed using non-permanent, 1/50th acre plots to determine the need for bitterbrush planting. The survey indicated an average of 62 natural bitterbrush/acre (range 0-186/acre). Surveys were done in June, July and August 1995.

The Chiloquin District continued an intensive deer sightings program (FFC - Fawn Finders Club) targeting fawn locations and behavior at the time of sighting. This resulted in several hundred fawn and doe sightings which help to identify fawning areas on the District.

Mitigation, seasonal restriction periods, other analysis and recommendations conducted for mule deer on the Chiloquin District totaled approximately 500 person hours and affected 224,388 acres.

The Klamath District monitored nine water developments, all of which were full and functional. The District also closed ten roads which benefits habitat.

The Forest is a cooperator with the Fremont N.F. and Oregon Department of Fish and Wildlife in a study on the Fremont N.F. for development and validation of a model. Preliminary indications of the study are that the forage base has dwindled because of ingrowth of white fir. Approximately 400 person hours were spent on coordination and field work by Forest personnel.

Evaluation:

The sample monitoring technique specified above was available but unused in 1995. In the interim, the Districts were asked to provide information on a project basis on the components of the mule deer model, i.e. Habitat Suitability Index (HSI) if calculated, amount of hiding cover, roads density, etc.

To meet the mule deer objectives stated in the Forest Plan will require an increase in harvest and commercial thinning to provide forage for deer as projected in the FEIS and will also require effectively closed roads for mitigation of disturbance. Harvest restrictions and an inability to resolve road closure issues leads one to the conclusion that mule deer habitat objectives will not be met in the foreseeable future.

Recommended Actions:

Test the monitoring model technique that was developed with the Fremont NF and ODF&W.

Increase timber harvest and commercial thinning to provide forage for deer as projected in the FEIS.

Effectively close roads for mitigation of disturbance to deer.

Monitoring Item: Wildlife-Elk

Monitoring Objective:

Determine habitat use by elk in relationship to the level of use, distribution of use, and period of use. Use in conjunction with the results of the elk study to determine if there are conflicts with mule deer management and ultimately to determine habitat management objectives for both elk and mule deer.

Monitoring Questions:

Are there conflicts with habitat use between mule deer and elk?

Threshold of Concern:

Competition detrimental to mule deer exhibited.

Less than 75 percent of the habitat requirements of elk met by deer habitat management.

Suggested Sampling Methods:

Review progress and results of interagency elk study east of HWY 97.

Determine and document elk and deer habitat usage at the project level.

Monitoring Type:

Effectiveness

Results and Findings:

The south central elk telemetry study was completed in FY93. The study identified gross calving and wintering areas on the Forest.

No evaluation of deer/elk competition was done in 1994.

ODFW completed draft management objectives for elk. The following table gives a rough estimate of population objectives on the Forest on an pro-rated by acreage basis.

Estimated elk management objectives (population) for the Winema N.F.

Elk Management Zone	Est. Area (sq. mi.)	Winema (sq. mi.)	Percent Winema	Zone M.O.	Winema M.O.
W.Ft. Rock/Indigo	2,397	177	7	4700	329
E.Ft. Rock/Paulina	3,418	317	9	1600	144
Keno/W. Sprague	1,168	348	30	700	210
So. Central	4,214	768	18	3000	540
Total					1223

Note: Acres for W. Ft. Rock and Indigo are estimated assuming that W. Ft. Rock is 1/3 of Ft. Rock and that Indigo is approximately the same size as Ft. Rock.

Acres of calving and winter range were determined using areas mapped in the South Central Elk Study entered into GIS. Acres of calving areas, winter range, and overlap between both on the Forest are tabulated below.

Calving area	109,864 acres
Winter range	29,927 acres
Both	3,800 acres

Elk was identified as an issue in an appeal by The Klamath Tribes.

Chemult District planned three elk migration corridors totaling 790 acres in FY95.

On Klamath District elk calving areas were identified in the Nannie-Rock Analysis Area. Restrictions on timber harvest were placed on ten units for elk calving.

Evaluation:

Elk populations will continue to grow. Populations may reach the stage where unacceptable agricultural damage occurs before any competitive interaction with mule deer occurs. However, it is still too early to determine interactions with deer.

The proportioned numbers of elk on the Forest to achieve state management objectives are so low that it might not be necessary to develop special analysis procedures or standards and guidelines for elk habitat management.

The recommended actions from the 1994 Monitoring Report were not completed.

Districts are considering elk in project analysis and mitigating as appropriate for calving and providing migration corridors.

Recommended Action:

In coordination with ODFW and the Tribes, determine whether elk habitat analysis procedures or standards and guidelines are necessary; if it is so determined, develop habitat objectives and standards and guidelines for elk habitat management east of Hwy 97 for inclusion into the Forest Plan as an amendment.

Coordinate with ODFW and the Tribes to refine the Forest's share of the population objectives and include the results in the Forest Plan as an amendment.

Monitoring Item: Fish Habitat

Monitoring Objective:

Assure that fish habitat objectives are met.

Monitoring Questions:

Is the fish population changing in terms of numbers, species composition, or age structure?

Threshold of Concern:

Monitoring questions 1 and 2: Any decline (over 3 years or more) of fish numbers or numbers of fish species.

Suggested Sampling Methods:

Develop baseline data to determine changes in fish habitat capability based on standard Region 6 method developed by Hankin and Reeves.

Initially survey all Forest streams during a five year period. Approximately five percent of the stream miles will be resurveyed annually. These stream miles will be well distributed and should focus on the most sensitive habitat.

Monitor all habitat improvement projects in the first, second, and fifth year following project completion to evaluate structural and functional success.

Monitor at least 20 percent of the structures annually. Monitoring of structures will include the installation of photo points.

Develop baseline stations for aquatic invertebrate sampling. Approximately 25 stations will be established. Half of the aquatic invertebrate sites will be monitored annually.

Monitoring Type:

Effectiveness & Validation

Results and Findings:

There are no detectable changes in fish numbers, species composition, or age structure. In general, populations appear healthy and vigorous in most systems. The Sprague River experiences degraded water quality during summer and early fall. Conditions become lethal or nearly so, for salmonid species during this time. Steps have been taken on Forest to improve those systems that contribute to the Sprague River. Unfortunately, many of the problems on the Sprague result from activities on private land. Salmonid populations are in decline on this system and rough fish populations have increased.

On Forest, fishery population trends are static, with the notable exception of the Cherry Creek Bull Trout population. Species composition in that system is moving to favor introduced brook trout at the expense of native bull trout. Age structure is also poor for bull trout in both Three Mile Creek and Cherry Creek. Fecundity of brook trout is saturating the gene pool and recruitment to the bull trout population is in serious decline.

We are on the threshold of population viability, maybe beyond, for bull trout on Threemile Creek and Cherry Creek. Corrective action has been taken and additional actions and more comprehensive monitoring is planned for this spring/summer (1996). This is the most imperiled population of bull trout in the Klamath Province. Intensive investigations are on going. Habitat parameters will be evaluated and structure effectiveness will be monitored.

Personnel from the Wineman National Forest served as key technical members on the Bull Trout Working Group. This is a multi-agency group with the stated goal of recovering bull trout populations in the Klamath Province. Through the efforts of this group a recovery plan was published this month with specific plans for beginning recovery of the species. This plan has been held up as a national model of an interagency effort to recover a species and preclude the need for listing under the Endangered Species Act.

Forest-wide, Hankin-Reeves sampling will continue this summer. However, that methodology primarily reflects morphological conditions. Additional monitoring and permanent photo points and transects were placed last spring/summer. These additional practices are intended to evaluate and monitor other members of the aquatic biotic community (e.g. molluscs, amphibians, and invertebrates).

The Forest conducted 20 miles of physical stream survey in 1995. Data analysis is not complete but is in progress. Quantitative fish population information is not gathered in the surveys conducted.

Structures (root wads, and complex structures) were placed in Lake of the Woods. Permanent monitoring points were established and will be evaluated this season.

An intensive morphological, hydrologic, and biological survey of Threemile Creek will be completed this summer. The population appears to have suffered mortality or displacement due to flood actions this winter and spring.

Aquatic invertebrate samples have been collected at numerous locations on the Forest. Analysis of all the samples has not occurred due to lack of funding (Note: funding became available in FY-96). A systematic sampling scheme has been developed and baseline stations will be established throughout the Forest this summer. There is growing concern regarding endemic mollusc populations. Initial surveys were conducted last summer and numerous (30-40) new, previously undescribed species were discovered on the small portion of the Forest that was inventoried. Inventory and monitoring procedures for mollusk species are being developed and the Aquatic Program Manager is serving on the Interagency Survey and Manage Team in that regard.

Evaluation:

Establishment of baseline information is progressing at a satisfactory rate. More intensive surveys are needed for some stream reaches. Monitoring of fish habitat improvements is at a rate above the minimum standards. Aquatic invertebrate sampling is taking place, systematic methodology is being established this summer. Analysis of the samples is still not adequate.

Recommended Action:

Many forest streams are at or near potential for fish production and will require no investment of funds for fish habitat improvement. Others, particularly those bearing TES species, will be prioritized and aquatic habitat improvement methodology will be employed. In all but the most urgent of needs, or when only minor actions that will not result in a irretrievable commitment of

resources are needed, further habitat improvement will not be employed in fluvial systems until watershed analysis is complete.

Stream survey must continue until all streams are completed and a Forest-wide baseline is established. Protocol and methodology for intermittent and ephemeral stream surveys was developed in FY 94. The process will be refined this season and intermittent stream inventory will continue until an adequate profile of the watershed is developed.

Provide funding to analyze already collected invertebrate samples. Develop a system for the location and a schedule for collection of aquatic invertebrate samples.

Though changes in stream miles, fish species present, etc. are apparent from the survey data compared to the information in the FEIS, no amendment or revision is recommended until all streams have been surveyed and a baseline established.

Begin sampling for forest aquatic species described in the ROD on a systematic and priority of need basis.

Monitoring Item: Wildlife-Bald Eagle

Monitoring Objective:

Assure that Recovery Plan objectives for bald eagle are being met.

Monitoring Questions:

Is the bald eagle population approaching recovery objectives?

Are all known and identified potential nest sites protected in accordance with the Recovery Plan?

Has a site plan for each nest site been written?

Are nest sites producing young?

Is the winter roost receiving use?

Is management of bald eagle replacement habitat producing stand conditions that meet objectives for large trees?

Is replacement area habitat receiving use by bald eagle?

Threshold of Concern:

Monitoring questions 1 and 2: Active nest site is unoccupied 2 years in succession. If unoccupied for 2 years in succession determine the causes and correct the situation if possible.

Monitoring question 2: Any site not protected. More than 10 percent sites with unfinished site plans two years after implementation. Monitoring question 1: More than a 10 percent decline of the bald eagle population in the Klamath Basin.

Monitoring question 4: Decrease of winter roost use greater than 20 percent over previous 2 years average.

Monitoring question 5: Silviculturally treated replacement areas not releasing or achieving growth rates as anticipated after five years implementation.

Monitoring question 6: No use of replacement area within 10 years of implementation.

Suggested Sampling Methods:

Continue Annual Interagency survey of nest sites in the Klamath Basin.
Continue annual winter roost surveys.

Field survey potential nest sites, resurvey at two-year intervals.

Field survey replacement habitat, resurvey at five-year intervals.
Survey treated replacement area growth rates at five-year intervals.

Monitoring Type:

Implementation, Effectiveness, & Validation

Results and Findings:**KLAMATH RANGER DISTRICT**

On the Klamath Ranger District there were twelve occupied territories in 1995 producing 18 young. That equals 1.5 young per occupied territory. This exceeds the Recovery Plan objective of 1.0 fledged young per pair of adults. The success rate was 83% which exceeds the Recovery Plan objective of 65% per occupied site. Other Recovery Plan objectives, seem to be improving. All nest sites have been protected from project activity.

CHILOQUIN RANGER DISTRICT

On Chiloquin Ranger District a total of 19 territories were occupied. Two territories (Agency Lake/Klamath Agency and Steiger Butte) included nests on private land. The active nests for both territories in 1995 were on private ownership; however, both territories were included in Chiloquin district results.

Total of 17 individual nests were occupied on USFS, 2 nests were on private land (see above note on territory).

Total young produced was 13 fledglings on USFS, 2 fledglings from private land nest(s).

There were 1.46 young fledged per territory. Percent success rate per occupied territory was 42%.

The following nest sites were considered in management activities in FY95:

Analysis Area	Nest/Territory	% Suitable Habitat	% of Habitat Monitored	% Meets Plan
Wocus Underburn	Wocus Bay	100	100	100
Bluehorse EA	Military Crossing	100 (13 % in BECA)	100	100
Yamsi Allotment EA	Bull Pasture/ Williamson River	60 (12% in BECA)	100	100
Skellock/Deep Allotment EA	Military Crossing	50-60 (6% in BECA)	100	100
Applegate Allotment EA	Wocus Bay Soloman Lake	50 (5% in BECA)	100	100
Eastside Thinning	Dams Canyon	100	100	100

There was no known damage to nest trees. Nest number 464 Soloman Lake has extensive badger activity at base of tree. Possibility of weakened root system.

Eastside Thinning = 1845 acres - Reason for treatment: thin sapling and/or pole sized timber to encourage the growth of large trees in the stand. Project was done for silviculture as benefitting function department. Indirect effect will increase bald eagle replacement habitat in 100+ years.

Wocus Underburn = 589 acres - Reason for treatment: Underburn to reduce fuels. Natural fuels hazard reduction was the benefitting function department. Indirect effects will improve bald eagle nesting and roosting habitat.

Total acres treated that will benefit bald eagle habitat = 2434.

The Bluehorse Fire Ecology EA proposes to burn/treat 18,389 acres of suitable and potential replacement bald eagle habitat. Analysis for the EA was done in FY95, and acres were reported for analysis only. If the project is signed and implemented, treated acres will be included in FY96.

CHEMULT RANGER DISTRICT

Number of occupied territories or nest sites (include also known unoccupied and previously known but not relocated in 1995) were two.

Number of young produced per territory/site and percent success rate per occupied site were 1 young produced and 0 young produced or .5 young per occupied site which is below Recovery Plan objectives of 1.0 young per occupied site.

Number of nest sites protected from project activities and percent project acres monitored/surveyed and percent of those meeting Forest Plan objectives is 100% for each.

Number of nest trees damaged and other threats were none.

Percent eagle habitat treated to improve conditions, type of treatments, and reason for treatment and cause of problem/condition were none.

Evaluation:

Efforts are being made to keep management of known and potential nest sites in compliance with the recovery plan objectives. Additional nest site plans and monitoring are needed to ensure full recovery of the eagle. Thirty-two nest site plans are needed and thirteen have been completed (five for Klamath RD, two for Chemult RD, and six for Chiloquin RD). Finalization of eight of these thirteen plans has occurred and finalization of the remaining five plans is in progress.

The intent of Forest Plan management requirements in eagle habitat is to provide habitat conditions suitable for bald eagle colonization. The monitoring plan developed in FY93 in affiliation with Oregon Eagle Foundation will help the Winema National Forest personnel determine if this is the case.

To determine the effectiveness of bald eagle replacement habitat management on the Forest improved/additional monitoring needs to take place.

Recommended Action:

Recovery of the bald eagle in the Klamath Basin has been successful in recent years, since implementation of the Pacific States Recovery Plan. Continued monitoring efforts are needed with special emphasis on effectiveness of management practices in bald eagle replacement habitat. Additional efforts are also needed in the development of bald eagle nest site plans (thirteen have been completed to date) to ensure all practical measures are taken to maintain existing nest habitat.

Monitoring Item: Spotted Owl

Monitoring Objective:

Assure that the Forest meets and maintains its share of habitat sufficient to maintain viable populations of spotted owl.

Monitoring Questions:

Is designated spotted owl habitat occupied by a pair of reproductively successful spotted owls in any given year?

How correct are the assumptions and outcomes of implementing standards and guidelines?

What is spotted owl population trend?

Is potential habitat being surveyed?

Threshold of Concern:

Any decline in the running five-year average of occupancy rate and numbers of pair from the previous five-year average.

Any designated habitat area fails to produce fledged birds in the last 3 years.

Suggested Sampling Methods:

Use methods detailed in R5/R6 Spotted Owl Inventory and Monitoring Handbook monitoring 50 percent of designated habitat annually.

Monitor 20 percent of habitat outside of designated habitat areas annually.

Monitoring Type:

Implementation, Effectiveness, & Validation

Results and Findings:

Now that the LSR's and CHU's are in place with management direction, the past shifts in owl management strategy should be less frequent. There will be some fine-tuning through the LSR assessments and watershed analysis to meet site specific needs.

KLAMATH RANGER DISTRICT

Portions of all 3 LSRs (Late Successional Reserves) designated in the President's Forest Plan on the Klamath Ranger District were surveyed in 1995 for the northern spotted owl. Two of the LSRs were occupied by at least one reproductive pair of spotted owls in 1995. LSR RO228 was not technically occupied, but 2 pairs that once resided within the LSR have moved just outside the boundary into Mountain Lakes Wilderness Area. A total of 8 activity centers were located within LSR 227 and 3 activity centers within LSR229 in 1995. Of these 11 activity centers, 4 were pairs that produced young.

On the Klamath Ranger District, during 1995, approximately 32,000 acres of suitable spotted owl habitat were surveyed to survey protocol. An additional 9,000 acres (approximation) were surveyed not to survey protocol. This was accomplished through a variety of ways, including contract surveys, co-

operative agreements with the BLM on a population density study area, and research studies by Frank Wagner of Oregon State University. A total of 24 activity centers were confirmed on the Klamath RD. A total of 7 pairs produced young. All 24 activity centers located in 1995 on Klamath RD have been protected from project activity by seasonal restrictions. Project acres, on the Klamath RD, have been surveyed/monitored at 100% level in 1995.

Watersheds surveyed include Threemile, Sevenmile, Fourmile, Rock, Nannie, Switchback, and Cold Springs.

CHILOQUIN RANGER DISTRICT

The Chiloquin LSR was not surveyed. The location and habitat type for the LSR is inappropriate, and does not meet the intent for any of the LSR, old-growth habitat species. An LSR assesment has not been funded for the district, and any amendment to the LSR/matrix complex is not feasible without an LSR assessment (per informal conversations with USFWS personnel).

Suitable habitat surveyed to protocol in matrix land:

Analysis Area	Total Acres	Suitable Habitat Acres	Percent Suitable Habitat Surveyed	Percent Suitable Habitat Monitored
Dagwood EA	47,646	13,314	100	100
Hill T.S.	282	282	100	100
Total Acres	47,928			

One activity center confirmed (site 3995) - resident single status as defined by protocol standards. District biologists suggest that the resident single status may be inappropriate in this area. The activity center is within 1.5 miles of a nest site (number 3106). The area (Chiloquin Ridge) has fragmented, variable canopy closure and cover for spotted owls. Dispersal areas and travel corridors are likely larger than typical definitions of west-side habitat. The resident single detections were likely one of the owls from site 3106, although this was not confirmed.

Spotted owl monitoring from 1990-1995 has shown seasonal movements of spotted owls up to 5.0 miles from the nest site, in a non-nesting year. This includes adult and subadult owls. A subadult owl was located and captured approx. 4.5 miles north from nest site 3106 in 1995. An owl was detected approximately 1.5 miles south of nest site 4346; a red/white/red striped band was seen on left leg, which was a color used since 1991 to band juvenile spotted owls. A juvenile spotted owl was banded with this color at nest site 4346 in summer of 1992.

Banding -Three spotted owls were banded in 1995:

- male received a solid yellow band on the left leg; a USFWS band, number 1387-73200, on the right leg.
- male received a solid yellow band on the right leg; USFWS band, number 1387-73199, on the left leg.
- subadult was banded in T.35S.,R.08E.,Sec.16. It was believed to be a male (based on weight = 580 g.). A solid orange band on the left leg, and a USFWS band, number 1387-60832, on the right leg was used.

CHEMULT RANGER DISTRICT

Nest R231 had single resident owl #2245 and reproduction confirmed for owls #2246 with 2 young. R232 had pair detected, but occupancy unconfirmed. R233 had no responses. Matrix within .5 miles around LSR's also surveyed with no responses.

15,561 acres were surveyed to protocol, none not to protocol. Contractors surveyed 10,893 acres and Forest Service personnel surveyed 4,668 acres.

Two activity centers were confirmed and protected from project activities. Pair #2246 produced 2 young.

There were no projects in suitable habitat.

Evaluation:

Spotted owl monitoring has been completed at a fairly high level for the past six years on the Klamath Ranger District. It is expected that the level of monitoring will decrease in the future due to the establishment of LSR's and the completion of baseline inventories for most of the district. The work being done by Frank Wagner for OSU will taper off as that project nears completion. Surveys on Chemult and Chiloquin continue as appropriate. Also, more effort will have to be spent on other survey and manage species in the future.

Recommended Action:

Continue monitoring and population counts in accordance with regional direction.

Reassess the location and habitat type for the Chiloquin Late Successional Reserve. Consider establishing the LSR in a more appropriate location, such as the Chiloquin Ridge area, and provide funding to evaluate and establish the LSR and to complete the LSR assessment.

Monitoring Item: Peregrine Falcon

Monitoring Objective:

Determine peregrine falcon use on the Winema N.F., assure that areas that are found to be used by peregrine falcon are maintained and protected.

Monitoring Questions:

Are surveys being conducted to locate nest and roost sites?

Threshold of Concern:

If found, note any reduction in use by peregrine falcon.

Suggested Sampling Methods:

Survey every potential peregrine nesting habitat every two years to determine and evaluate use.

Investigate specific reports of peregrine falcon.

Co-operate with any Crater Lake National Park studies that may determine peregrine feeding areas.

Monitoring Type:

Implementation

Results and Findings:

Some surveys have been completed in association with projects developed on the three Ranger Districts. Potential habitat exists on the Chiloquin and Klamath Ranger Districts.

CHILOQUIN DISTRICT

Potential habitat has not been identified on Chiloquin for 1995 management activities. Biological evaluations made note of habitat use by nesting prairie falcons. One new prairie falcon nest was located, and one nest was monitored during planting near the nest. Total management activity acres in 1995 were approximately 233,460 acres all of which were pre-field reviewed for suitable habitat. A certain percentage was also ground-truthed for suitability. Peregrine falcon surveys were not conducted using a protocol.

CHEMULT DISTRICT

Number of acres potential habitat and number of these acres surveyed for peregrine and survey results: nothing for 1995.

Percent project acres surveyed/monitored in 1995 and percent protected/ meeting Forest Plan objectives: nothing for 1995.

KLAMATH DISTRICT

No surveys completed in 1995.

Evaluation:

Sufficient numbers of survey results have not been reported to conduct a meaningful evaluation at this time.

Recommended Action:

Survey results on the Winema Survey Form are needed to evaluate the potential for peregrine falcons on the Forest.

Survey potential areas every two years. Pelican Butte area has been indicated as an area where peregrine have been seen.

Monitoring Item: Wildlife-Lost River and Shortnosed Suckers

Monitoring Objective:

To identify Lost River and shortnosed sucker habitat on the Forest and to assure habitat is maintained or improved.

Monitoring Questions:

What are the habitat requirements for suckers on the Forest?

Threshold of Concern:

Any detrimental impact to habitat.

Suggested Sampling Methods:

Participate in the cooperative sucker study currently underway.

Survey and document habitat use on the Forest.

Monitoring Type:

Effectiveness & Validation

Results and Findings:

Historic use areas in the Klamath Basin, including the Winema National Forest, have been delineated on maps for future study. A cooperative study, in conjunction with BOR, Klamath Tribe, and Fremont NF, is underway to assess genetic differentiation between members of the Lost River and shortnosed suckers.

Evaluation:

Habitat requirements for the Lost River and shortnosed Suckers have been defined in the report entitled Life History and Status of Catostomids in Upper Klamath Lake, Oregon, a cooperative study (1990). The areas of historic use need further investigation and habitat use and management need to be monitored.

Recommended Action:

As indicated, additional investigation and monitoring is needed before conclusion about habitat protection and species recovery can be made. We have worked closely with US Fish & Wildlife Service in the development of recommendations for proposed critical habitat for both sucker species. Consultation under section 7 of the Endangered Species Act has been stepped up. Open and reciprocal dialog has been developed regarding a wide array of Forest activities that may effect sucker habitat or populations.

A cooperative project was developed between US Fish & Wildlife Service's Ecosystem Restoration Office, Natural Resource Conservation Service, private landowners, and the Winema National Forest to protect and enhance a key stream system within the proposed critical habitat for both Lost River and shrot nose suckers.

Monitoring Item: Wildlife-Primary Cavity Excavators

Monitoring Objective:

Assure that the number, size, and distribution of old growth habitat, green trees, and snags meet the habitat capability objective of 40 percent or greater potential population.

Monitoring Questions:

Are snags and replacement trees being left in the right numbers, sizes, and distribution on lands available for timber removal?

Threshold of Concern:

More than 10 percent of the surveyed areas have less than 90 percent of the described trees and snags.

More than 10 percent decrease in snag numbers shown in consecutive forest-wide timber inventories (done every 10 years).

Cavities are not being created to support a viable population of secondary cavity users.

Suggested Sampling Methods:

Examine habitat on 20 percent of timber sales within one year of sale closure per district annually.

Evaluate timber inventory plot data each ten year period.

Establish and measure transects to measure longevity of snags and woody material in areas where fuelwood is gathered. The monitoring interval is every two years.

Monitoring Type:

Implementation

Results and Findings:

Interim Eastside Screens were implemented in the Region for areas outside of the range of the northern spotted owl. These screens require 100% snag levels. EAs contain these screens as standards and guidelines. The screens are new enough that there has been no opportunity for post-sale compliance monitoring.

Snags have been created to increase snags to levels required by Forest Plan Standards and Guidelines. Following is a table summarizing snag creation by year.

Fiscal Year	Snags Created
1990	1,154
1991	2,612
1992	48
1993	0
1994	514
1995	1,157

The Klamath District surveyed the Nannie-Rock analysis area for snags using informal methods (non-protocol survey). Snag density is very high in this area, over 100% of potential population requirements. OSHA is uncomfortable leaving snags in proposed helicopter harvest units, so snag clumps will need protection in this area.

The Chiloquin District implemented the first stage of a topping project that will top 350 standing snags. The District also developed a long-term snag and dead and down transect methodology, and field tested the procedure on a potential timber sale area - no results were reported.

Evaluation:

Due to low level of funding, funds were not allocated for woodpecker use.

Districts are evaluating cavity excavator habitat needs on a project level.

Recommended Action:

Emphasize post-project monitoring for snag levels.

Monitoring Item: Wildlife - Other
Pileated Woodpecker
Northern Three-Toed Woodpecker
Goshawk
Pine Marten

Monitoring Objective:

Assure that habitat that will meet or exceed the Forest share of that needed to meet viable populations of pileated woodpecker is provided and maintained.

Monitoring Questions:

Are the number of areas identified in the plan being maintained?

Are the areas meeting the definition of suitable habitat as specified in the Forest plan?

Threshold of Concern:

Habitat suitability is less than minimum standards.

Decline of more than 15 percent is detected.

Habitat area numbers and distribution less than minimum requirements.

Decline of more than 20 percent in occupancy or reproduction success (nest failure).

More than 25 percent difference in size requirements, distribution requirements, or habitat definition criteria between current pileated research and habitat as specified in the plan.

Suggested Sampling Methods:

Monitoring question 1 and 2: Examine 50 or 25 percent of the habitat areas annually (depending on the year) to sample for maintenance of habitat effectiveness for pileated woodpeckers (including both the 300 acres of designated old growth habitat and the 300 acres of foraging habitat). Establish permanent plots for sampling habitat capability; use Habitat Suitability Index Model (Schroeder 1982) or similar credible suitability index. A potential sampling scheme may consist of randomly selecting four permanent transects (or equivalent plots) per habitat area. At 500 foot intervals along each transect characterize habitat for pileated woodpeckers. Along the transect route, the observer will also note feeding cavities, nest/roost cavities, and actual sightings. Monitoring of spotted owl areas will include incidental gathering of pileated data since SOHAs also qualify as pileated woodpecker habitat. Pileated areas will be sampled for pine marten habitat data. Record sightings and sign of other wildlife species noticed along the transects. Examine sites where natural occurrences such as windthrow or fire may have affected the sites. Examine affected habitat areas within a year after the event. Examine 10 percent of habitat areas annually to sample for occupancy and productivity of pileated woodpecker. Use

tape recorded territorial calls and drummings to elicit responses for pileated woodpeckers. Search areas for nests to determine productivity (see Mellen 1987 for methods).

Monitoring Type:

Implementation and Effectiveness.

Results and Findings:

The Klamath District monitored for goshawks in a co-operative study with the BLM. About 14,000 acres of potential goshawk habitat were inventoried. Chiloquin District surveyed 4,040 acres for goshawk to protocol in FY95. Several new goshawk nests were found on Klamath District, two new nests were found on Chiloquin District. Several other raptor nests were found in surveys.

Habitat suitability indices were not used in surveys of habitat.

Protocol methods (snag survey protocols, etc.) were used.

In 1992, the Forest undertook GIS review of the size and spacing of MR units. The following table indicates the number of MR units and total acreages.

MR species in GIS	No. Units* in Plan	No. Units	Difference
Pileated	33	28	+ 5
Marten	78	51	+ 27
Three-toed	245	215	+ 30
Goshawk	214	87	+127

Unit size was not less than that specified in the Forest Plan for a specific species, however, some units are larger than the minimum size specified. Unit spacing was not greater than that specified in the Forest Plan for a species, however, some units are closer together than the maximum distance specified in the Forest Plan.

On Chemult District three black-backed woodpecker patches were destroyed by wind, three patches were moved to a better site. On Chiloquin District eighty acres of MA7 were identified to be moved to more appropriate location targeting goshawk and pileated woodpecker. Approximately 400 acres were removed from MA7 (2 management areas) due to the Northwest Forest Plan. All MA7 sites were dropped and replaced by 60,860 acres of LSR by the Northwest Forest Plan.

Five female marten produced young on approximately 5,712 acres. One hundred fifty nine rest sites and 15 maternal dens were found during the marten study.

Evaluation:

Suitability surveys are occurring on part of the Forest. Habitat suitability indices are not being used to rate suitability. Insufficient monitoring does not allow for a forest-wide evaluation.

Recommended Action:

Continue monitoring for Forest Plan compliance.

Monitoring Item: Sensitive Species (other than previously listed)

Monitoring Objective:

Assure that sufficient habitat is maintained or enhanced on the Forest for plants, birds, mammals, fish, reptiles and amphibians, and invertebrates listed for the Forest on the Regional Forester's Sensitive Species List so that management will prevent the sensitive species from becoming candidate species for the Federal Threatened and Endangered Species List.

Monitoring Questions:

Are sensitive animal and plant species density and distribution being maintained or increased on the Forest?

Suggested Sampling Methods:

Annual surveys of known sensitive species locations for two consecutive years out of every five years.

Monitoring Type:

Effectiveness & Validation

Results and Findings:

Individual site locations of sensitive plant and animal species are protected and/or mitigation measures are taken to prevent adverse impacts due to management activities on all Forest project activities.

Chemult Ranger District

1) Number of acres surveyed/monitored: birds (goshawk, crane/loons) - 47,572 + 600 = 48,172 acres, plants - 26,277 acres, and no mammals or amphibian acres surveyed.

Percent project acres surveyed/monitored in 1995: 100% of potential habitat was surveyed for birds and plants. The following percentage is what was suitable to survey within projects: birds - 78%, plants - 2.2%

Percent project acres protected/meeting Forest Plan objectives. The information is provided by species group (ie. plants, amphibians, mammals, birds). For birds - 100% and for plants - 100%.

2) Percent sensitive species site locations protected from activities by species group. Percent total potential and known habitat protected from activities, by species group is 100%

3) Number of known crane nest sites and number protected from activities is none.

4) Summary of monitoring studies and status of and/or summary of completed Conservation Strategies are none.

5) Number of BE's completed by species group are 12 (6 animals and 6 plants).

Chiloquin Ranger District

Wildlife:

1) Total acres surveyed for 1995 management activities = 233,460. The number reflects analysis area acres. Biological evaluations were prepared for the following proposed management actions:

Analysis Name	Acres	Comments
Copwood	7,718	Field work completed for BE. EA not signed.
Ranchhouse	13,393	Field work began for BE prep in 1995. EA not signed.
Quick Fire Salvage Sale	1,013	Harvested FY95 & FY96
Dorf Timber Sale	7,018	EA signed - action not implemented
Yamsi Allotment Permit Re-Issuance EA	54,363	Permit issued - EA not signed
Skellock/Deep Allotment Re-Issuance EA	39,995	Permit issued - EA not signed
Applegate Allotment Permit Re-Issuance EA	86233	Permit issued - EA not signed
Bluehorse Fire Ecology EA	18389	Field work completed for BE. EA not signed.
FY95 Thinning Program	4632	
Taylor Salvage Timber Sale	52	
Wocus Underburn	589	Units burned FY95 & FY96
Misc. BE's for Categorical Exclusions, other departmental projects	25	
Spring Creek Trail EA	40	EA not signed - updates to BE in 1995
Total Acres	233,460	

2) There are no identified terrestrial wildlife sensitive species sites on the district. All identified potential suitable habitat for sensitive species is protected with management activity buffers.

3) There are no known sandhill crane nests on the district. Adjacent private land has reported nesting cranes, as has the Klamath Marsh National Wildlife Refuge. Perennial wet meadows and marsh-like areas are protected from management activities.

4) There are no monitoring studies or conservation strategies in progress for terrestrial wildlife species.

5) Total number of biological evaluations prepared in FY95 = 23. Number includes BEs for Categorical Exclusions, requests from other departments through specialist work orders, and EA analysis. Total number also includes aquatic species reports.

Plants

1) Number of acres surveyed/monitored:

88,488	acres contract
<u>14,289</u>	acres FAC
102,777	acres total

Percent project acres surveyed/monitored in 1995: 99% of the acres surveyed were project acres. 558 acres out of 102,777 were not project acres.

Percent protected/meeting Forest Plan objectives: 7.5% of the acres surveyed met forest plan objectives by having a BE written in fiscal year 1995 for the surveys. Eventually all but 558 acres will meet forest plan objectives, by having a BE written for the surveyed areas. 558 acres were surveyed for reasons not associated with a project, such as solely for the purpose of determining the existence of a specific plant species.

2) Percent sensitive species site locations protected from activities by species group:

Species	No. sites	Total Acres	% Protected Acres	% Protected Sites
CALOL	86	1855.37	98	94
ALCA	4		99	75
ASPE	2		100	100
CACH	0		-	-
CIBU	0		-	-
ERPR	1		100	100
MEST	6		100	100
MIPY	35	26	85	86
MITR	11	23	99	73
PEGL	2		100	100
PEER	0		-	-
PEHO	0		-	-
ROCO	5		0	0
SINU	52	86	96	89
THBR	0		-	-

Of 204 total sensitive plant populations, 25 sites or 88% are protected from activities.

Percent total potential and known habitat protected from activities: of 6966.79 acres in potential or known sensitive plant habitat, 6,817 acres or 98% are protected from activities. Refer to table above for individual species breakdown.

4) Summary of monitoring studies and status of and/or summary of completed Conservation Strategies:

A Conservation Strategy was completed for *Calochortus longebarbatus* var. *longebarbatus*.

A draft of the Conservation Strategy for *Rorippa columbiana* was issued for review by ODA, as part of a CCS project, for the *Rorippa columbiana* on the Chiloquin District.

A monitoring study on *Calochortus longebarbatus*, begun in 1993, was continued in 1995. Plots on 5 sites were taken and number of vegetative and flowering stems recorded on each plot. Grazed and ungrazed plots were compared and no significant difference was found between the two treatments.

5) Number of BE's completed:

29 BE's were completed for sensitive plants.

Note:

ALCA = *Allium campanulatum*

ASPE = *Astragalus peckii*

CACH = *Castilleja chromata*

CALOL= *Calochortus longebarbatus* var. *longebarbatus*

CIBU = *Cicuta bulbifera*

ERPR = *Eriogonum prociduum*

MEST = *Melica stricta*

MIPY = *Mimulus pygmaeus*

MITR = *Mimulus tricolor*

PEGL = *Perideridium erthrorhiza*

PEHO = *Perideridium howellii*

ROCO = *Rorippa columbiae*

SINUI= *Silene nuda* var. *insectivora*

THBT = *Thelypodium brachycarpum*

Klamath Ranger District

In 1995 on the Klamath RD, 2,500 project acres were surveyed for sensitive plants. An additional 4,000 acres were surveyed in the Sky Lakes Wilderness and Brown Mountain Semi-primitive Recreation area. Sensitive plant BE's were completed for 6 projects and provided 100% compliance with the Forest Plan. Sensitive plants were located in 2 of the project areas addressed by BE's in 1995. Mitigation measures were not needed to protect sensitive plant species in those project areas. Neither of the projects were implemented in 1995. None of the past projects requiring sensitive plant mitigation measures were implemented in 1995, therefore monitoring for compliance was not completed.

Monitoring of *Collomia mazama* demographic plots and *Silene nuda* ssp. *insectivora* experimental burn plots continued in 1995.

A draft conservation strategy for *Collomia mazama* is currently in the review stage. A draft strategy for *Asarum wagneri* will be completed in spring, 1996. A challenge costshare agreement to develop a conservation strategy for *Perideridia erythrorhiza* was initiated with Oregon Dept. of Agriculture in 1995. The project will include a study of the taxonomy and genetics of westside and eastside populations.

A radio-telemetry study on yellow rails was initiated in 1995 and will continue into 1996. Results of this study will demonstrate habitat use (movements/home range) and number of calling males. Additionally, results will provide information on habitat variables and nesting activities/characterization.

Evaluation:

Long-term trend studies are needed to determine if plant and animal species density and distribution are being maintained or increased on the Forest.

On Chiloquin Ranger District, populations of sensitive plants (status and distribution) appear to be stable. On Chemult Ranger District, data is insufficient to determine population trends for sensitive plants. In all cases, additional information is needed and must be assessed over a five to ten year time-frame to determine long-term sensitive species population distribution and status trends.

Monitoring studies on *Collomia mazama* and *Asarum wagneri*, on Klamath Ranger District, will provide some data regarding trend for these species. An attempt to determine sensitive species trends at this point would be based solely on observation and would be completely subjective.

Recommended Action:

Reporting of survey results on the Winema Survey Forms, R6 Forms, and Oregon Natural Heritage Program (ONHP) Sighting Forms and entry of these data into BOTSIS, WILDOBS, and GIS are needed to evaluate this question.

Continue monitoring studies in progress on *Collomia mazama* and *Asarum wagneri* (Klamath); Bopu (Chemult); *Calochortus longebarbatus longebarbatus* (Chiloquin); and radio-telemetry tracking study on yellow rail (Klamath). These studies will assist in evaluating trends for these species.

Monitoring Item: Plant and Animal Diversity

Monitoring Objective:

Assure that all native and desirable introduced or historic plant and animal species and communities, and all seral stages of terrestrial, aquatic, and edaphic plant associations are provided in a distribution and abundance to assure species diversity and viability.

Monitoring Questions:

What is the present distribution and proportion of seral stages by plant association?

- a. How do they compare to past distributions?
- b. What distribution and proportion is expected in the future?
- c. What are the trends?

What are the trends in overall species diversity on the Forest?

- a. Are there trends in species richness?
- b. Are there relationships to management practices and direction?
- c. Are there relationships with natural processes or events?

Threshold of Concern:

Any decrease in the number of plant communities or animal species is a matter of concern. Thresholds and requirements of individual species (such as fish, woodpeckers, spotted owl) have been established and will be monitored.

Suggested Sampling Methods:

Use the resource inventory to determine plant association and seral stage and assess the presence/absence of selected common wildlife species.

Continue to complete Winema TES Survey forms and BOTSIS, use "RESURV", stake tree plots, stand exams, silvicultural visits, unit exams, and ecoplots to map plant associations and existing seral stages. These exams are ongoing and used to update data bases. With the installation of GIS the process will be streamlined and can be efficiently used to display the distribution of seral stages. Sensitive wildlife and plant survey results will be used to evaluate population abundance and trends in density.

Information combined from the above sources on species abundance and distribution will be used to evaluate the trends in species richness and distribution.

Monitoring Type:

Effectiveness & Validation

Results and Findings:

Timber harvest and commercial thinning has not occurred as projected in the FEIS.

A satellite imagery inventory which provides tree species composition, stand structure, and non-tree vegetation was completed and entered into GIS in 1994. Timber survey information from 1953 has been entered into GIS. A comparison of the information requires the development of a crosswalk between the two years. This is in progress.

The Forest participated in a co-operative bat habitat survey in 1994. This resulted in confirming the presence of several bats and in the location of high probability bat habitat. Also, as a result of the survey, a small cave was located along the Sycan River. A bat monitoring and survey project is planned for FY96, as a continuation of this study.

A fire history study is underway in the Cherry Creek RNA on Klamath RD. This study will help us understand the role of fire and possible effects on changes in species richness and diversity, in that area.

Amphibian studies occurred in 1994 and will continue through 1996. The information gathered will show species locations and provide habitat descriptions on the Winema NF.

CHILOQUIN RANGER DISTRICT

Monitoring studies and status of and/or summary of completed Conservation Strategies

A Conservation Strategy was completed for *Calochortus longebarbatus* var. *longebarbatus*.

A draft of the Conservation Strategy for *Rorippa columbiae* was completed in cooperation with ODA as part of a CCS project.

A monitoring study on *Calochortus longebarbatus*, begun in 1993, was continued in 1995. Plots on 5 sites were taken and number of vegetative and flowering stems recorded on each plot. Grazed and ungrazed plots were compared and no significant difference was found between the two treatments. Monitoring will occur in FY96.

An establishment record for Blue Jay RNA was initiated. Completion is expected in 1996.

Evaluation:

As the trend for reduced harvest and decreased commercial thinning continues, the acres of early successional stages in forested types will decrease. As uneven-aged management is implemented habitat edge will decrease. As edge and early successional stages in the forested habitat types decreases so will the populations of species that are dependent upon early successional stages and upon edge. However, represented mid- and late successional stage forests should increase as will species associated with those stages. This should be monitored.

Plant associations and plant and animal associated species are recorded on Forest TES survey forms and entered into a BOTSIS database and GIS. The WILDOBS database is being utilized to document animal occurrence and habitat data. These data will assist in the evaluation of long-term trends in plant and animal distribution and diversity.

Recommended Action:

The cave on the Sycan River is located within the Wild & Scenic River corridor, so further protection will not be necessary.

Continue documentation of survey results for animal and plant surveys on TES survey forms for entry into databases and GIS.

Monitoring Item: Old Growth

Monitoring Objective:

Assure that the old growth reserved as old growth meets Forest Plan objectives.

Monitoring Questions:

How much old growth remains (in case preserved old growth is destroyed)?

Threshold of Concern:

More than 10 percent difference between assumed acreage and actual acreage at the end of five years.

Suggested Sampling Methods:

Field inventory to determine baseline acres of ecologically significant old growth on the Forest by the end of the second year of implementation.

Annually determine old-growth acres remaining in noted Management Areas.

Field review old-growth retention practices every three years.

Monitoring Type:

Effectiveness

Results and Findings:

In 1990 the Forest completed a survey of old growth to be selected for additional needs as determined by the ROD. This was not an inventory as such and stands surveyed for potential selection did not necessarily meet the Forest Plan definition (mature one or two-storied stands), the R6 definition (10 large trees per acre, etc.), or Hopkin's draft definitions. Lodgepole was not surveyed and has, to date, not been inventoried. Acreages of 24,400 acres of ponderosa pine and pine associated working groups that approximate Hopkin's draft definitions were reserved through Amendment 3 to the Forest Plan for purposes other than for MR species.

All old growth MR sites on Klamath Ranger District were dropped when the President's Forest Plan was adopted. They were replaced by 60,860 acres of LSR.

Most watersheds on the Klamath Ranger District exceed 15% old growth, however Spencer Creek is close to the minimum.

Winds on the Chemult District blew down several stands reserved for old growth. This is addressed more thoroughly in wildlife monitoring.

Evaluation:

No evaluation can be made.

Recommended Action:

Develop attribute-based stand characteristic data base from which any definition of "old growth" can be extracted rather than relying on surveys to find stands that meet a particular definition.

Monitoring Item: Range Vegetation

Monitoring Objective:

Assure that range condition is in an upward trend in all allotments and particularly in riparian areas.

Monitoring Questions:

Is range vegetation condition being maintained or improved in stable or upward trend?

Threshold of Concern:

Monitoring question 1 and 2: Greater than ten percent of any allotment area outside riparian areas exhibits downward trend of site integrity or forage quality for more than two consecutive years.

Monitoring question 3: Any riparian area shows downward trend for more than two consecutive years.

Monitoring question 1, 2 and 3: Range vegetation utilization is 10 percent or greater than that which is authorized for more than two consecutive years. Monitoring question 4: Area of noxious weed infestation is increasing at rate of greater than 5 percent in five years.

Suggested Sampling Methods:

Reestablish and establish permanent condition and trend transects in key areas (particularly riparian areas) of all allotments; read one-third of the transects on each allotment annually.

Establish forage production and utilization studies; monitor annually. Field review Oregon Department of Agriculture and Klamath County acre estimates of noxious weed infestation annually.

Monitoring Type:

Effectiveness

Results and Findings:

Overall

Of the 263,953 acres in allotments (the difference in acres from 1994 attributable to GIS changes and exclusions in some allotments), 24,152 acres were monitored. Of those monitored, 24,052 acres were at or moving toward Forest Plan Objectives (FPO), and 100 acres were not meeting FPO.

Of the riparian areas within allotments (41,542 acres, included in the overall totals above), 8,497 were monitored and of those acres monitored, 100 acres are not meeting or moving toward FPO.

Riparian areas identified as not moving towards FPO in Antelope Allotment in 1994 were fenced but fencing was not effective. The fence was upgraded in the fall of 1995 (FY96).

YEAR	ACRES MONITORED	ACRES NOT MEETING FPO
1993	239,511	21,900
1994	265,656	2,176
1995	273,958	100

Forage production was excellent across most of the Forest because it was a wet year. Livestock turnout was delayed on many allotments because of wet conditions.

With the fifth year of the Forest Plan completed, no AMPs have been completed. Range analysis data has been completed for five allotments. No AMP development is in progress.

Following is a summary of budget expenditures for the range program on the Winema National Forest in 1994 dollars:

RANGE PROGRAM - BUDGET EXPENDITURES
(Thousands of 1994 Dollars)

YEAR	DN1/DL1	DN22/DL22	DN23	TOTAL
1991	96.3	5.6	0.6	102.3
1992	43.1	3.4	3.9	50.4
1993	313.6	4.7	2.1	320.4
1994	187.8	1.9	0.0	189.7
1995	256.4	0.0	0.0	256.4
Forest Plan Projection	331.4	46.0	30.1	407.5

Note: Numbers do not include ET113, DN24, KV, or Ecosystem Restoration Office (ERO) funds. DN22/DL22 and DN23/DL23 do include Range Betterment Funds.

The average budget of the five years from 1991 through 1995 was 45% of that projected as needed by the Forest Plan. This is far outside the 20% variation threshold. The largest budget, 1993, was 79% of the Forest Plan projection which is still outside the threshold.

Chemult District

1995 Utilization Report Antelope Allotment

LOCATION	PERCENT UTILIZATION
1. North Johnson Meadow	11%
2. South Johnson Meadow	9%
3. Parker Meadow	94%
4. Whilshire	10%
5. Sproats	22%
6. Cannon Well	28%
7. Dry Meadow (estimate)	30%
8. Riders Camp (estimate)	85-90%

UTILIZATION SUMMARY CHART Percent Utilization

KEY AREA	1990	1991	1992	1993	1994	1995
Cannon Well		90	63			28
Crooked Meadow	51.8	75.4	76	37	51	10 est
Dry Meadow	85.6				60	30 est
Jack Creek Upper	41.1	81.4	79	65	52	60 est
Jack Creek Jamison	68.7		75			
Johnson Meadow North	38.2	71	79	12		11
Johnson Meadow South	43.6	73	74	6	6.5	9
Parker Meadow			67		50	94
Pumice Meadow	87.2	90				30 est
Riders camp	81.7				60	85 est
Riparian Off 8829		86.6				
Sellers Marsh	54.6	72.4				
Sproats Meadow	78.7	90	81	27	14.5	22
Sproats Meadow Lower				43		
Stimpson Meadow					11.5	10 est
Squirrel Camp	44.4	54	73	5	26	5
Wilshire	68.4	86.2	61.4	33	33	10

Chiloquin District

On September 5, 1995 a team consisting of Bob Castaneda, Kent Russell, Charlie Hicks, Ken Woodman, and Richard Cleveland looked at forage utilization and range administration on the Dam's/Switchback and East Chiloquin Ridge Allotments on the Chiloquin District. "Permit administration was excellent and forage utilization was light to moderate overall, well below forest plan levels. There were two localized areas of heavier use, but were not a problem. Looked at mitigation projects. One in upper Rock Creek was questioned as to need."

Klamath District

The 1995 grazing season was atypical for Fourmile Spring and Jack Spring Allotments. Utilization distribution within both allotments was significantly different than what could be expected under a more normal grazing regime. Grazing in the Fourmile Spring Allotment was atypical due to fence construction, change in water sites, and an unexpected change in season of use. Within the Jack Spring Allotment, grazing was limited to a two week period in October.

In the Fourmile Spring Allotment five permanent photo plots were established and photos taken before turn-on and within one week of livestock removal. Utilization levels did not exceed 40% for herbaceous material and 30% for woody plant species. Vegetation transects were not established in 1995 because of the atypical grazing regime. All permanent fences have been constructed and a new watering site was identified.

In the Jack Springs Allotment utilization levels did not exceed 40% for herbaceous material and 30% for woody plant material.

No unauthorized livestock use was observed to occur on either allotment.

Noxious Weeds

Funding was insufficient to implement the Noxious Weed Treatment Environmental Assessment that was completed in 1993. The Forest manually treated 18,500 acres of noxious weeds in FY95 using predominately CWKV funds to treat bull thistle, canada thistle, and musk thistle in the Lone Pine Fire area. A few acres of dalmatian toadflax, dyers woad, and spotted knapweed were also manually treated on both the Chiloquin and Klamath Districts.

GIS input was not implemented in 1995, though the paper atlas and database were updated.

Dalmation toadflax was identified on the Chemult Ranger District, purple loosestrife was detected south of Klamath Falls, and yellow starthistle was detected on the Forest above Hagelstein Park.

Site monitoring, measuring extent and density of infestation, was conducted on an area infested by spotted knapweed north of the town of Chiloquin. The area of infestation is .26 acres. The highest density was .25 plants/sq. ft. The average density across the site was .14 plants/sq. ft.

Evaluation:

Review results indicate that, except for a couple of sites, on-the-ground administration is excellent and that, generally, range condition is improving.

Range forage condition trends are within the threshold of concern for both uplands and riparian areas.

Utilization on uplands is acceptable across the Forest. Utilization in some riparian areas (100 acres) was unacceptable. Corrective measures were planned for FY96 for certain key riparian areas that have been outside of standards including fencing for some, and more intense administration and follow-up monitoring for others. Fencing of areas identified in the FY94

Monitoring Report occurred but was not successful, particularly at Rider Camp. An administrative decision to heavily graze the Ray Ranch (Hog Creek) portion of the Dice Crane Allotment resulted in unacceptable impacts to the riparian area. Unauthorized use occurred on several areas and was handled administratively.

The Forest is no longer capable of completing all AMP revision/updates within the decade. The Forest is significantly out of compliance with Range Objective on page 4-12 of the Forest Plan which states "Revise, update, and implement all allotment management plans to meet Forest Plan objectives." Budgets below the threshold have caused postponement of AMP development to the point that revisions/updates of all AMPs is no longer feasible within the planning period. Costs have increased since 1990 due to PETS species survey and consultation and cultural resources survey requirements. A revised schedule that assumes adequate funding follows.

Allotment Management Planning Revised Schedule

ALLOTMENT	RANGER DISTRICT	YEAR TO COMPLETE	RATIONALE FOR SCHEDULE
Antelope	Chemult	1996	Data Collected
Bear	Chemult	2000	Vacant
Three Creeks	Chemult	2000	Vacant
Jack Creek	Chemult	1997	
Applegate	Chiloquin	1998	
Dice-Crane	Chiloquin	1999	
Deep Creek	Chiloquin	1997	Data Collected
Skellock	Chiloquin	1997	Data Collected
Yamsi	Chiloquin	1996	Data Collected
Sycan	Chiloquin	2000	Data Collected
Coyote-Bucket	Chiloquin	2002	Vacant
Long Prairie	Chiloquin	2000	Vacant
E. Chiloquin ridge	Chiloquin	1999	
Dam's Meadow/Switchback	Chiloquin	1998	
No Name	Chiloquin	2001	Vacant
Buck	Klamath	1998	
Indian	Klamath	1998	
Fourmile Spring	Klamath	1996	Data Collected
Jack Spring	Klamath	1997	Data Collected

Recommended Action:

Continue range analysis and AMP development within budget limitations.

Follow up on the fencing project(s) to assure that they will achieve objectives.

Rest the Ray Ranch (Hog Creek) portion of the Dice Crane Allotment for a period of time to allow riparian vegetation recovery.

Continue to update the noxious weed site and treatment database.

Continue to monitor known sites of priority weeds to determine changes in distribution.

Monitoring Item: Timberland Suitability

Monitoring Objective:

Validate and increase the resolution of the timberland suitability assessment for the Forest.

Determine if lands identified as unsuitable for timber production have become suitable (36 CFR 219.12(k)(5)(ii)).

Ensure that timber harvest is not occurring on unsuitable lands to meet the allowable sale quantity.

Monitoring Questions:

Is the timberland suitability assessment correct for all forested acres?

Threshold of Concern:

Any timber harvest occurring on unsuitable timberland unless the harvest is necessary to meet some other resource objective.

The suitable land base changes more than 30,000 acres.

Suggested Sampling Methods:

Timberland suitability will be reviewed and updated as needed as a part of project level planning. All changes in timberland suitability will be documented and coordinated with S.O. specialists. The accumulative changes can be summarized yearly.

Monitoring Type:

Effectiveness & Validation

Results and Findings:

There was no change in timber land suitability acreages during FY 1995.

Evaluation:

This summary of the current timberland suitability for the Winema National Forest is based upon the layers we have currently completed in the Geographic Information System (GIS). This summary relies heavily on the Vegetative Plant Community layer mapping. The new Vegetation Inventory was not available to make this summary and this new vegetation inventory will definitely give us better information for making the stratifications between forested and non-forested lands.

Completion of the President's Forest plan changed the suitability layer. The GIS analysis of the changes has been completed. Under current direction there are 725,523 acres of suitable timberlands on the Winema National Forest. This is an increase of about 5000 acres over the original Forest Plan acres.

Recommended Action:

The increase in suitable acres is not great relative to the total and is not likely to change ASQ. The increase in acres will also be offset by restrictions reducing the yields on suitable acres. These should be evaluated when the data from the forest inventory becomes available.

Monitoring Item: Timber Inventory

Monitoring Objective:

Verify the current inventory of green lodgepole pine sawtimber. Also verify the inventory of green mixed conifer sawtimber.

Monitoring Questions:

Is the lodgepole pine continuing to die at a rate that can support the planned salvage programmed?

Threshold of Concern:

The planned or projected inventory of either the mature lodgepole pine working group or the mature mixed conifer working group varies by more than 25 percent of the revised inventory.

Suggested Sampling Methods:

The scheduled re-inventory of the Forest.

Monitoring Type:

Effectiveness & Validation

Results and Findings:

The Forest has been working toward the new vegetation inventory for a couple years. New vegetation maps based upon satellite imagery have been received. The 3.4 mile inventory grid has been completed and the 1.7 mile grid has been completed. The raw data should be processed and made ready for use by the end of FY-1996.

The new timber inventory is based upon a 1.7 mile fixed grid. Nested within and part of the 1.7 mile grid is a 3.4 mile grid specifically designed to develop the information needed to complete the RPA assessment. The plots within the 3.4 mile grid were taken in the summer of 1993. Some plots on the 1.7 mile grid were taken during the summer of 1994. The remaining plots on the 1.7 mile grid were taken in the summer of 1995.

Lodgepole Pine Mortality Summary 1986 through 1995

Mortality (mbf)

District	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Chemult	24371	11008	28170	3514	524	98	102	197	126	51
Chiloquin	355	320	2355	458	51	23	30	326	97	4
Klamath	85	594	30	36	19	-	8	3	120	40
Winema Total	<u>24811</u>	<u>11922</u>	<u>30555</u>	<u>4008</u>	<u>594</u>	<u>121</u>	<u>140</u>	<u>140</u>	<u>343</u>	<u>95</u>

Evaluation:

The new timber inventory is progressing on schedule. The main question that the inventory was needed to answer was the amount of volume in the mixed conifer working group on suitable timber lands. The mixed conifer inventory has been completed but analysis of the data was not accomplished for the preparation of this report. The new inventory information will come available in time for the Forest Plan revision. This revision has been delayed in order to incorporate Eastside EIS direction.

Mortality in lodgepole pine has greatly declined. In 1984 nearly 50 million board feet were dying. Now, the lodgepole pine mortality is less than one million board feet per year. This indicates that the lodgepole pine mortality is not sufficient to maintain the planned salvage program in lodgepole pine of 40.2 million board feet per year.

Recommended Action:

The inventory should proceed as planned and analysis should be pursued as the information becomes available.

The lodgepole pine mortality will not maintain the current lodgepole pine salvage program. The Forest will continue to salvage excessive lodgepole mortality as it occurs. When the new timber inventory is available for use, we will need to review the planned harvest program in lodgepole pine to see if more of the green lodgepole pine should be planned for harvest during this decade.

Monitoring Item: Harvest Unit Size

Monitoring Objective:

Verify that timber harvest units meet the standards and guidelines for size and dispersion.

Determine whether maximum size limits for harvest areas should be continued (36 CFR 219.12(k)(5)(iv)).

Monitoring Questions:

Did any of the harvest units exceed the size or dispersion limitation in the standards and guidelines?

Were exceptions to the standards and guidelines properly documented and reviewed?

Are unit size restrictions needed to achieve other resource coordination requirements?

Threshold of Concern:

Any harvest unit which creates an opening larger than 40 acres.

Suggested Sampling Methods:

Annual review of the STARS data base and project level environmental assessment documentation.

Monitoring Type:

Implementation & Effectiveness

Results and Findings:

The following table shows the number of acres by working group by silviculture treatment for fiscal years 1991 through 1995:

1991
Working Groups Treated
Acres

Silviculture Treatment	Mixed Conifer Immature	Mixed Conifer Mature 2 Story	Ponderosa Pine Mature 2 Story
Clearcut	9	20	35
Seedtree cut	0	9	0
Removal cut	0	9	0

1992
Working Groups Treated
Acres

Silviculture Treatment	
Clearcut	There were no acres treated with these treatments during fiscal year 1992.
Seedtree cut	
Removal cut	

1993
Working Groups Treated
Acres

Silviculture Treatment	Lodgepole pine Mature 1 Story	Pine Associated Mature 1 Story	Ponderosa Pine Immature	Ponderosa Pine Mature 1 Story
Clearcut	0	0	0	0
Seedtree cut	526	1,647	397	13,933
Removal cut	0	0	0	0

1994
Working Groups Treated
Acres

Silviculture Treatment	Lodgepole pine Mature 1 Story	Pine Associated Mature 1 Story	Ponderosa Pine Immature	Ponderosa Pine Mature 1 Story
Clearcut	0	0	0	0
Seedtree cut	0	187	0	1,098
Removal cut	0	0	0	0

**1995
Working Groups Treated
Acres**

Silviculture Treatment	Lodgepole pine Mature 1 Story	Pine Associated Mature 1 Story	Ponderosa Pine Immature	Ponderosa Pine Mature 1 Story
Clearcut	0	0	0	0
Seedtree cut	0	0	130	802
Removal cut	0	0	0	0

Evaluation:

None of the regeneration units exceed harvest unit size limitations.

Recommended Action:

No action needed

Monitoring Item: Regeneration Success

Monitoring Objective:

Verify that all regeneration cutting units and other deforested acres are reforested in a timely manner.

Verify that all regeneration units are reforested within the time period specified in 36 CFR 219.7 (c) (3)

Monitoring Questions:

Are all even-aged regeneration harvest units reforested within 5 years of clearcutting or within 5 years of the final removal cut for all seed tree and shelterwood treatments?

Are all uneven-aged harvest units reforested within 5 years if the treatment reduces the residual stocking below minimum levels?

Threshold of Concern:

Anytime a reforestation unit, either even-aged or uneven-aged management, is not reforested within 5 years.

Anytime first year planting success is below 80 percent. Anytime third year planting success is below 70 percent.

Suggested Sampling Methods:

First, third, and fifth year regeneration stocking surveys.

Monitoring Type:

Implementation

Results and Findings:

First Year Planting Survival

Percent survival by species by year

Species	1988	1989	1990	1991	1992	1993	1994	1995
Ponderosa pine	87	90	94	89	90	82	67	73
Lodgepole pine	91	94	96	90	95	91	63	78
Average for all species	87	88	93	84	89	83	65	73

Third Year Planting Survival

Percent survival by species by year

Species	1988	1989	1990	1991	1992	1993	1994	1995
Ponderosa pine	89	80	62	96	84	68	77	63
Lodgepole pine	93	98	76	77	86	81	88	67
Average for all species	91	79	67	82	82	70	78	62

Fifth year Reforestation Success

Year of Final Harvest

	1988	1989	1990
Acres of Final Harvest	27,945	22,523	10,430
Acres Adequately Stocked	27,108	22,117	9,041
Percent Ref. Success	98	98	87

Evaluation:

First year survival is improved this year. Third year survival is down a little reflecting some of the harsh sites encountered in the Lone Pine Fire area. The drop in fifth year survival is the result of about 1200 acres of 1990 plantations being burned in the Lone Pine Fire. These areas are being reforested and will be tracked by the year of replanting in the future. Other than these acres fifth year survival is about 98%.

Recommended Action:

Plantations established in FY94 need to be closely monitored for fill-in planting in 1996 to ensure reforestation success in 5 years. Those areas of the Lone Pine Fire that are planted on harsh sites need to be evaluated to determine whether or not understocked areas should be taken out of the suitable timber base and if what stocking is there is acceptable.

Monitoring Item: Insects and Disease

Monitoring Objective:

Determine the level of pest activities on the Forest so that programs can be modified as necessary to prevent unplanned losses.

Monitoring Questions:

Is rot root damage increasing?

Threshold of Concern:

Anytime a forest pest reduces plantation stocking levels within 25 percent of minimum stocking levels.

Loss of growth or mortality in excess of 10 percent above normal losses.

Suggested Sampling Methods:

Annual insect and disease surveys, field reviews, and biological evaluations.

Monitoring Type:

Effectiveness

Results and Findings:

Winema National Forest
Pest Occurrence Summary
 1989 through 1995
 (mbf)

CHEMULT RANGER DISTRICT	1989	1990	1991	1992	1993	1994	1995
Fir Engraver	64	67	21	7	14	36	13
Mt Pine Beetle (Lodgepole pine)	3514	524	98	102	197	126	51
Mt Pine Beetle (Sugar pine)	2	-	-	176	5	58	1
Mt Pine Beetle (Western white pine)	-	1	-	-	-	-	-
Mt Pine Beetle (Ponderosa pine)	24	1	2	14	9	-	25
Western Pine Beetle	67	18	11	-	47	64	13
TOTAL CHEMULT	3671	611	132	299	272	283	102

Winema National Forest
Pest Occurrence Summary
1989 through 1995
(mbf)
(continued)

CHILOQUIN RANGER DISTRICT	1989	1990	199 1	199 2	199 3	1994	1995
Fir Engraver	1882	335	138 5	381	1240	821	12045
Mt Pine Beetle (Lodgepole pine)	458	51	23	30	326	97	4
Mt Pine Beetle (Sugar pine)	222	77	60	334	37	21	-
Mt Pine Beetle (Ponderosa pine)	-	-	161	786	59	48	575
Western Pine Beetle	970	116	205	137	361	1563	159
TOTAL CHILOQUIN	3532	579	183 4	1668	2023	2550	12783

KLAMATH RANGER DISTRICT	1989	1990	199 1	199 2	199 3	1994	1995
Fir Engraver	668	1363	311	25	567	612	7621
Mt Pine Beetle (Lodgepole pine)	36	19	-	8	3	120	40
Mt Pine Beetle (Sugar pine)	2	21	19	26	3	5	-
Mt Pine Beetle (Western white pine)	17	106	6	69	-	124	-
Mt Pine Beetle (Ponderosa pine)	-	9	3	-	1	4	2
Western Pine Beetle	492	565	197	233	209	386	13
Douglas-fir Beetle	-	2	8	-	-	-	-
TOTAL KLAMATH	1216	2085	544	361	783	1252	7668

Evaluation:

The information presented above is summarized from the yearly aerial survey conducted by Forest Pest Management in the Regional Office, State and Private Forestry. The values in this report should not be looked at as being precise, because they are determined from aerial observation, but the values are a good indication of trends and magnitude.

The mountain pine beetle and western pine beetle activity is at near normal levels across the forest. The western pine beetle together with mountain pine beetle continues to cause mortality in large ponderosa pine trees used by Bald Eagles for nesting and roosting near Upper Klamath Lake.

Fir engraver beetle mortality is very high on South Chiloquin and remains high on Klamath District. The fir engraver is very closely associated with root rot diseases. The root rots generally stress the tree and then the fir engraver can successfully attack and kill the tree. This normal relationship has been compounded by the drought which has also caused the fir trees to be under much more stress than normal. We can not assume a major increase in root disease at this time just because the fir engraver has shown an increase in activity.

Ground exams indicate that some areas are having the white fir nearly eliminated from the stand. The implications for fire hazard and wildlife habitat are considerable.

Recommended Action:

Stocking level control silviculture treatments need to be increased on the Klamath Ranger District to protect the remaining large ponderosa pine trees which are used by the Bald Eagle. Stocking level control will reduce the stress on the remaining ponderosa pine trees and eliminate the accelerated mortality from western pine beetle and by the mountain pine beetle.

Salvage of the white fir mortality is becoming a priority. The rapid deterioration of small, dead white fir, its low volume per acre, and the widespread mortality create a situation where we will not be able to salvage much of the dead material. This is creating a situation where significant changes are taking place in stands covering many acres.

Monitoring Item: Soil

Monitoring Objective:

Assure that soil productivity (chemical, biological, and physical soil properties) is maintained at levels capable of supporting the forest resources.

Monitoring Questions:

Is erosion, displacement, or compaction occurring?

Threshold of Concern:

Compaction, displacement, puddling, or severely burned conditions exceed 20 percent of the activity area, including roads, skid trails, and landings. Detrimental compaction, according to the Regional standards, is defined as an increase in bulk density of 20 percent or more.

Organic residues and biological and chemical properties are adversely altered by timber harvest and site preparation, resulting in reduced soil productivity.

Tree growth is less than acceptable levels.

Suggested Sampling Methods:

Visual surveillance and instrumentation monitoring to determine extent of compacted, displaced, and severely burned soil.

Visual surveillance to determine residue cover for soil erosion protection and nutrient carry over. Cumulative soil condition survey.

Methods to be developed by PNW Experiment Station for monitoring the effects of organic residues on soil biological and chemical properties will be utilized. For monitoring of tree growth, refer to "Monitoring Element: Timber - Growth Response to Silvicultural Treatment."

Monitoring Type:

Effectiveness

Results and Findings:

A standard protocol for monitoring detrimental soil conditions was adopted for the Forest. Chemult monitored 6534 acres using this protocol. All of the units monitored were harvested using ground based equipment. Soil probes were calibrated against bulk density determined by laboratory testing. Of the 83 units monitored, only 1 met the Regional standard of detrimental compaction over less than 20 percent of the area. On an acreage basis, roughly 4000 acres exceeded a 20 percent increase in bulk density. Of the 6534 acres monitored, this means 61 percent of the area does not meet the Regional standard.

Chemult is to be commended for the effort put forth in soil monitoring this year. Future monitoring will include information on which SRI unit each of the transects was in, specific harvest method and silvicultural prescription. As the database for this information expands, we

hope to be able to pinpoint which soils are most susceptible to compaction and formulate prescriptions and remedial treatments to bring the soil resource into compliance with Forest Plan Standards and Guidelines.

Chiloquin monitored soils as a part of the Watershed Analysis effort. From the conclusion of the soil scientist's report:

"Some of the units that show the greatest degree of detrimental compaction consist of soil groups listed by the SRI to be less susceptible (specifically the A and B group soils)."

Of the ten units sampled in the Hog and Yoss watersheds, four exceeded the Forest Plan Standards and Guidelines for detrimental compaction, four units are approaching the standard and two are well below the standard. This equates to 40 percent exceed the standard and 60 percent meet the standard.

Monitoring of the fire rehabilitation structures on the Quick Fire was inconclusive. Even though we had a moderate snowpack that came early and stayed late, melting across the Forest was gradual and produced only a small amount of runoff. Runoff in the winter of 95/96 has been more significant and the in-channel structures have functioned well to detain sediment.

Soil conditions in Rider's Camp meadow were monitored in 1994 and were estimated to be poor. Compaction and some pedestaling was evident throughout the meadow. We did not quantify the amount of compaction but observation indicated more than 20 percent of the soil was in a detrimental condition due to compaction. Severe erosion of the channel banks is continuing. Riders Camp continues to be grazed although no monitoring was reported by the District.

Soil compaction continued to be an issue on the Klamath District. In 1994, monitoring was conducted to determine if over-the-snow logging effectively prevented compaction on pumice soils. Some of the monitoring was completed in 1995 on Gopher Timber Sale. Harvest occurred on soil group "D"; loamy coarse sands formed in volcanic ash. Where snow depth was at least 24" over frozen ground, compaction remained below the threshold of concern. However, standards were exceeded when operations continued during snowmelt. In addition, a similar monitoring exercise was initiated on the Swamp Timber Sale on glacial alluvium. The effectiveness will be determined when logging is completed.

Harvest over-the-snow in the Odessa Campground sale resulted in limited increase in soil compaction, and minimal litter and topsoil displacement.

In the Nannie Timber Sale, harvest activities detrimentally compacted an additional 4% of the selected monitored unit. Monitoring showed the cumulative detrimental compaction to total 23% of the area, just over regional standards.

Slick and Shave were monitored for compaction and displacement on 30-40% slopes. Harvest by shears caused displacement and detrimental compaction that exceeded the forest plan standards. In addition, much of the displaced soil became saturated and flowed downhill. It appears that the 35% slope standard for ground based equipment is an inadequate restriction for some soils.

All new sale offerings now include C6.425 which limits operations of off skid trails when soil moisture is greater than 17% as determined by speedy soil moisture meter. This practice was initiated based upon monitoring from previous years. Site preparation activities continue to emphasize subsoiling. While the treatment is not extensive enough to reduce soil compaction

below thresholds that exist in the Forest Plan, some alleviation is accomplished that beneficially effects seedling growth and survival.

In years past, C6.425 has been used to limit ground based operations when soil moisture exceeded 17 percent. While tractor operations should certainly be curtailed when soil moistures are conducive to compaction, Chiloquin District in particular found the 17 percent rule to be too limiting to prevent compaction. Sale administrators found damage was occurring on some pumice soils at lower soil moistures and had no way to limit the operation. The use of this clause has been dropped in order to allow the sale administrators to make a call in the field.

Klamath and Chemult districts soil monitoring has exceeded that of prior years. In addition reporting has been more complete.

Evaluation:

While monitoring records are still inadequate to assess overall soil conditions, trends on the Forest indicate ground based logging equipment is compacting pumice soil above Forest Plan Standards and Guides and above the Regional standard.

Recommended Action:

The Forest continues to develop a standardized monitoring program. Records of soil conditions on EAs/EISs in progress, on recently implemented projects and on older projects are needed to determine if remedial efforts are required. Monitoring to determine effectiveness of current mitigation efforts is needed. More information is needed on the effect of measured compaction on vegetative growth. Other ecosystem components, such as mycorrhizae and their relationship to forest health in the pumice zone should be studied in conjunction with the Deschutes National Forest and PNW Research.

The Forest is contracting an Ecological Unit Inventory (EUI) to assist our efforts in learning about the soils on the Forest. The EUI includes information on soils, potential natural vegetation, geology and geomorphology. Data for soils is consistent with the National Cooperative Soil Survey. As the inventory is completed, monitoring sites can be referenced to correlated soils, allowing more input to management recommendations.

Monitoring Item: Riparian Area Cumulative Effects

Monitoring Objective:

Determine whether the unique and valuable characteristics of riparian areas, including water quality, wildlife habitat and fish habitat near or within riparian ecosystems, are being maintained or improved.

Monitoring Questions:

Is long-term riparian and channel health being maintained, or if not in good condition, being improved; and is channel structure and function adequate to safely pass peak flows, maintain late season base flows, and provide fish habitat?

Threshold of Concern:

Decrease in structure and function of channels and flood plains.

Decrease in quantity, quality, and diversity of riparian plant communities and wildlife habitat.

Riparian areas and streams not correctly identified.

Suggested Sampling Methods:

Permanently installed terrestrial, biological, and stream channel transects and photo point documentation. Approximately 15 to 20 representative locations. Each location will be measured once every 4 years and will be tracked over duration of many decades.

Field check a representative sampling of riparian areas affected by project work before and after projects.

- a. Post-project sampling soon after project completion.
- b. Post-project-project sampling 2 to 5 years after project completion.

Riparian area survey.

Also see monitoring elements for Fish Habitat, Water, Wildlife, Range, and Diversity.

Monitoring Type:

Effectiveness

Results and Findings:

Riparian conditions in Copperfield Draw continue to improve through putting the range permit in non-use. Willow and grasses have begun to colonize the channel bottom. However, a headcut at the lower end of Copperfield Draw and another near the upper end threaten the recovery of the riparian area and the meadow. A topographic survey of the lower end of Copperfield will aid in the design of stabilization structures with additional vegetative controls.

Riders Camp continues to decline in condition. An electric fence was installed at the beginning of the grazing season, but the fence failed and approximately one to two dozen cows used the area over the season. The permittee did not ride often enough to prevent overgrazing when approaching utilization, nor was the grazing administration adequate to protect the riparian resource from damage.

Forest personnel received training in using the BLM's "Process for Assessing Proper Functioning Condition of Riparian Areas" (PFC). This is an interdisciplinary process to determine if riparian areas are functioning, functioning at risk with a trend, or not functioning. PFC was used in limited areas in this first field season to determine impacts of range permitting on riparian areas for permit re-issuance. As the Forest continues to implement PFC assessments, we will be able to establish a baseline and trend for riparian areas as well as target resources more efficiently for restoration.

Evaluation:

Riparian monitoring reported by the Districts for FY95 was inadequate to make predictions about overall riparian trends.

As part of the aquatic program and in conjunction with terms and agreements from Section 7 consultation under the Endangered Species Act, permanent monitoring sites were established in critical riparian areas throughout Chiloquin Ranger District. Historic condition and trend transects were located and re-read. New condition and trend transects (utilizing established R-6 protocol) were established and base line data is being collected. Channel morphology cross sectional measurements established in conjunction with some of these sites. Permanent photo points were placed in key locations throughout the riparian corridors. Base data will be collected for three consecutive years and then trend data will be collected every 5 years there after.

Recommended Action:

Rider's Camp meadow will be fenced again in 1996 with the fence being rebuilt to higher standards. Grazing permit administration needs to be tightened to assist the permittee in meeting Forest Plan Standards and Guidelines.

Management of the Forest Camp meadow appears to be maintaining high quality riparian conditions.

Copperfield Draw is being studied for a restoration plan to stabilize active headcuts in the main channel and revegetation. While the health of the willow population continues to improve, there are too few to provide the stabilization need to prevent further downcutting.

Continue the use of PFC assessments for all projects in and near riparian areas. It is imperative to use the interdisciplinary approach to PFC assessments to keep the quality control and integrity high.

An intermittent stream survey protocol was tested on the Forest. The survey protocol gives us basic geomorphic data. Refinements to the survey are being made based on the field testing done by students of Rogue Community College in Grants Pass. All intermittent streams on the Forest which are the primary stream in that watershed should be surveyed. Priorities would be set for those streams in active planning areas. This would tie in with watershed analysis and project planning to

protect and improve riparian areas across the Forest. There is no funding in FY96 to support this project.

A cooperative agreement was developed between a range permittee, the Ecosystem Restoration Office, Natural Resource Conservation Service, and the USFS to fence and rehabilitate riparian areas along Rock Creek in the Dams/Switchback Allotment. This system was in a degraded condition. It is in mixed private and federal ownership. The permittees are very active and progressive. However it was determined that conditions were not recovering as quickly as was desired. A riparian fence is being constructed this summer, gradient control structures will be placed in channel this fall, head cuts will be stabilized next summer, and extensive monitoring will be conducted. This system supports an isolated, native population of sensitive red band trout and exhibits connectivity to occupied habitat of endangered sucker species. This is a very good example of multiple partner cooperative effort with benefits to range productivity, water quality, riparian function, and fishery populations.

Monitoring Item: Water Quality

Monitoring Objective:

Determine Best Management Practice (BMP) Implementation and Effectiveness.

Determine whether water quality is maintained or improved and associated beneficial uses of water are adequately protected.

Determine whether stream channel stability of favorable conditions of stream flow is maintained.

Determine compliance with State requirements in accordance with the Clean Water Act for protection of the waters of the State of Oregon, including the anti-degradation policy for high quality waters and wild and scenic rivers.

Monitoring Questions:

Are water resource-related Best Management Practices (BMPs) being properly identified, implemented, and documented?

Threshold of Concern:

Fewer than 90 percent of BMPs required in standards and guidelines and prescriptions are included in environmental assessments, contracts, and project plans.

Fewer than 90 percent of planned BMPs are being implemented in activities.

Water quality and channel condition are insufficient to maintain existing beneficial uses of water.

Suggested Sampling Methods:

The field implementation of site-specific BMPs will be monitored to some extent for each project.

A "Best Management Practice Check List" will be developed for each activity unit (from "General Water Quality Best Management Practices," USFS Region 6, November 1988).

BMP items included in environmental analyses, contracts, and project plans will be recorded on the BMP checklist. Completion of each BMP will be recorded on BMP checklist for each activity unit.

Where BMPs are not implemented or are ineffective, mitigation measures will be planned, implemented, and monitored.

Information will be documented in a check list and/or narrative format and stored in the project records.

Results will be analyzed to assess compliance with the Forest Plan.

Monitoring Type:

Implementation.

Results and Findings:

Environmental documents submitted for review included nine from Chemult, one from Klamath and none from Chiloquin District. The Elk Timber Sale EA was selected at random for review. BMPs were included as an easily available appendix to the EA. Forty-six BMPs were listed for implementation. The document was reviewed to see if BMPs addressed concerns raised in the EA and the Elk Timber Sale contract was reviewed to check if implementation of the BMPs was adequately planned for.

The following BMPs were included in the EA and were adequately addressed in the EA:

T-1: Timber Sale Planning Process

T-2: Timber Harvest Unit Design

R-1: General Guidelines for the Location and Design of Roads

F-1: Fire and Fuel Management Activity

These BMPs were included in the EA and are scheduled for implementation in the timber sale contract:

T-11: Tractor Skid Trail Location and Design, CT6.4

T-13: Erosion Prevention and Control Measures During Timber Sale Operations, BT6.6

T-15: Log Landing Erosion Prevention and Control, BT6.63

T-16: Erosion Control on Skid Trails, BT6.64

T-18: Erosion Control Structure Maintenance, BT6.66

T-19: Acceptance of Timber Sale Erosion Control Measures Before Sale Closure, BT6.66

T-21: Servicing and Refueling Equipment, BT6.34

T-22: Modification of the Timber Sale Contract, BT8.3, CT8.3

R-7: Control of Surface Road Drainage Associated with Roads, CT5.42

R-17: Water Source Development Consistent with Water Quality Protection, T891.02F

R-18: Maintenance of Roads, CT5.4

R-19: Road Surface Treatment to Prevent Loss of Materials, CT5.42, CT5.42

R-21: Snow Removal Controls to Avoid Resource Damage, CT5.42, CT5.42

R-23: Obliteration of Temporary Roads, CT5.1

W-4: Oil and Hazardous Substance Spill Contingency Plan and Spill Prevention Control and Countermeasures Plan, CT6.341

These BMPs were included in the EA and not site specific or are inadequate in some other way:

T-4: Use of Sale Area Maps for Designating Water Quality Protection Needs

- There are no water quality protection needs designated on the sale area map. If this isn't necessary, don't use the BMP.

T-7: Streamside Management Unit Designation

- There are no areas indicated on the sale area map for water quality protection. Unit 2 has two potentially intermittent streams within the unit. Other units appear to avoid the need for SMUs through avoidance of water resources. Either eliminate the BMP from the document or state clearly that it was implemented through unit design.

T-17: Meadow Protection During Timber Harvesting

- This is included as a standard contract provision, BT6.61, but site specific meadows should be listed in the EA or appendix as part of the BMP.

T-20: Reforestation

- This BMP is not generally appropriate for unevenaged prescriptions where natural regeneration is the only avenue for reforestation.

R-6: Dispersion of Subsurface Drainage Associated with Roads

- Dispersion of surface drainage is included with standard contract provisions. If you anticipate a subsurface drainage problem associated with a wet meadow crossing or a mid-slope road, this BMP needs to address this by site specifically, otherwise, eliminate the BMP.

R-20: Traffic Control During Wet Periods

- It is not clear when traffic is controlled and how this is anticipated to protect the soil and water resources.

R-22: Restoration of Borrow Pits and Quarries

- There is no mention of this in the EA. If restoration is required, be specific about where this is taking place.

F-2 and F-4: Consideration of Water Quality in Formulating Prescribed Fire Prescriptions and Protection of Water Quality During Prescribed Fire Operations

- Prescribed Fire is not considered in the EA.

W-1: Watershed Restoration

- Watershed restoration is not addressed in the EA.

W-7: Water Quality Monitoring

- There is no monitoring plan in the EA, nor is it clear where water quality would be monitored.

W-9: Surface Erosion Control at Facility Sites

- BMP is not site specific.

Rec-1 through Rec-7: Recreation BMPs

- These are not site specific and it is not clear why they are being included in a timber sale EA.

Rec-8: Protection of Water Quality within Developed and Dispersed Recreation Sites

- This BMP is specific to recreation uses. The appropriate BMP for this EA was already included in R-17.

VM-3: Revegetation of Surface and Disturbed Areas

- Not site specific, nor is it included in the contract.

VM-4: Soil Moisture Limitations for Tractor Operations

- This is not included in the contract and there will be no way to implement it.

The Elk Timber Sale was partially logged in 1995 and is expected to be complete in 1996. During the field season of 1996, BMPs will be checked in the field for implementation and effectiveness. It is important to be site specific to comply with the Clean Water Act. When the area is monitored, site specific BMPs will be critical to evaluate implementation and effectiveness.

In some cases BMP's are incorporated in the EA document and in other cases they remain in the analysis files. The key is that they be incorporated in contract documents and implemented in the field. Field implementation monitoring of BMPs was absent again this year. Apparently, Districts did not follow the recommendation made last year to monitor 50 percent of the activities implemented because no reports have been made.

A monitoring report for water quality, trophic index, and other factors was completed for Miller Lake on Chemult District and Bert, Center, Marguarette, Trapper and Wind Lakes in the Sky Lakes Wilderness. These studies indicate that for a snapshot in time, the water quality in these lakes is acceptable. Further monitoring is necessary to establish any trends in the water quality over time.

The Oregon Department of Environmental Quality (DEQ) published the Draft 303(D) list for comment. In the Draft listing, the following waters on the Winema were out of compliance with temperature standards:

- Spencer Creek
- Sycan River
- Trout Creek
- Cherry Creek
- Rock Creek (D3)
- Threemile Creek
- Williamson River

These additional parameters were also listed as water quality limiting on the listed water body:

- Clover Creek: sediment
- Spencer Creek: biological criteria, habitat and flow modification, sediment
- Rock Creek (D3): habitat modification
- Threemile Creek: habitat modification

These listings are based on data supplied by the Forest either through the adjudication process or watershed analyses. It will be incumbent on the Forest to continue to monitor these waters to assist DEQ in refining the listings or to show improvement in the listed water quality parameters. The DEQ has targeted the Klamath Basin for the development of Total Maximum Daily Loads (TMDLs).

Evaluation:

The trend over the last few years has been toward more awareness of BMP's and their importance so that now they are recognized in environmental analyses. More training sessions will be planned for FY96 to help insure that BMP's are appropriately identified during project planning, incorporated in contract documents and carried out in the field.

Recommended Action:

The recommendation from last year to implement an adaptation of the Region 5 BMP monitoring system still stands. In addition, training for all personnel involved in planning of ground disturbing activities will be scheduled for FY96.

Incorporate site specific BMP discussions in all project EAs and develop BMP analysis in the project record. Insure that BMP's, whether documented in the analysis file or in the EA, are appropriately incorporated into contract documents.

Continue WIN Inventory. Obtain funding for WIN restoration projects.

Monitor 50 percent of activities for BMP implementation and effectiveness in 1996. Districts must forward this information to the Supervisor's Office for incorporation into the FY96 monitoring report.

Continue monitoring key water quality parameters on Lake of the Woods and Miller Lake to establish trends in water quality.

Monitoring Item: Transportation System

Monitoring Objective:

To ensure that the Transportation system is serving the needs of the public and is providing adequate access for accomplishment of the Forest Plan Goals and Objectives.

Monitoring Questions:

Is the Transportation system being managed and maintained to meet Forest Plan Goals and Objectives?

Threshold of Concern:

1. The miles of Passenger car, High Clearance, and Intermittent road access are within + or - 10 percent of the Forest Plan Levels.
2. Public concerns have indicated that adequate road access is not being provided to meet public needs.
3. Program Reviews have indicated that road access on the Forest is not adequate for accomplishment of the Forest Plan Goals and Objectives.

Suggested Sampling Methods:

Annual update and review of data, evaluation of public concerns or input received, results of environmental analysis, and program reviews.

Monitoring Type:

Implementation

Results and Findings:

In 1995, Passenger car and High Clearance access available was within the 10% threshold. (Refer to Monitoring Item-Road Access Type under the Monitoring Item: Accomplishment of Outputs and Services)

In 1995, Intermittent road access available was outside the threshold. (Refer to Monitoring Item - Road Access Type under the Monitoring Item: Accomplishment of Outputs and Services). The Klamath Tribes have expressed concerns regarding road closures and road obliteration. These concerns are related to road closures infringing upon treaty rights for access, a concern that there is not adequate east-west open road access, and a concern that the Forest has not adequately involved the Klamath Tribes in road closure decisions. The Oregon Department of Fish and Wildlife has expressed the need to reduce the amount of open roads, in both specific areas and generally across the forest. The Forest is currently working with the Klamath Tribes, Oregon Department of Fish and Wildlife, and interested publics regarding analysis of access and travel management in the Lone Pine fire area and for areas adjacent to the Klamath Marsh.

The Klamath Country Trails Committee has expressed the need for more use opportunities for All-terrain vehicles (ATV's) and 4-Wheel drive vehicles on the forest.

Other public comments have been received regarding roads and road access, but they have been specific to an individual road need, and the concern or access need was resolved with the individual.

No formal program reviews were conducted during FY 95.

An Access and Travel Management Implementation Guide and Implementation Plan was completed in FY 93, to guide access and travel management analysis on the Forest. Access and travel management analysis is being done for selected priority areas. In FY 95, access and travel management is being analyzed for the Lone Pine fire area, for areas adjacent to the Klamath Marsh, and in the Southeast portion of Chemult Ranger District.

Evaluation:

The levels of open roads available for passenger car and high clearance vehicle access is adequate. The amount of passenger car and high clearance vehicle access is within the thresholds and there has been no public comment that access was not adequate.

The levels of Intermittent road access available are outside the threshold, resulting in more open roads than are needed for public, administrative, and project access. Before the levels of open roads can be reduced, concerns of the Klamath Tribes must be resolved and the Forest must complete access and travel management planning and environmental analysis for selected project areas. Analysis for access and travel in the Lone Pine Fire Area, areas adjacent to the Klamath Marsh, and the Southeast section of Chemult District is planned to be completed in FY 97.

Klamath Country Trails Committee, and other interested groups, have expressed the desire for more use opportunities for All-terrain vehicles (ATV's) and 4-Wheel drive vehicles on the forest. Where appropriate, and subject to Management area goals and objectives, it is felt that more opportunities can be provided for ATV and 4-Wheel drive uses.

Other public comments have been received regarding individual road needs or road access concerns. These are being dealt with and resolved as they occur, in accordance with National Environmental Policy Act requirements.

Recommended Action:

Continue to monitor the levels of open roads available for passenger car and high clearance vehicle access.

Continue to work towards resolution of concerns regarding road closures and road obliteration, with the Klamath Tribes. Complete access and travel management analysis in the Lone Pine Fire area, Klamath Marsh area, and the Southeast portion of Chemult in FY 97, with involvement of the Klamath Tribes, Oregon Department of Fish and Wildlife, and interested agencies and the public. Select future priority areas for analysis of access and travel management.

Continue to work with the Klamath Country Trails Committee, and other interested groups, to develop more opportunities for All-terrain vehicles (ATV's) and 4-Wheel drive vehicles.

Continue to work with individuals, regarding road access needs or concerns, in compliance with National Environmental Policy Act.

Monitoring Item: Social and Economic Setting

Monitoring Objective:

Consider the effects of National Forest Management on communities adjacent to or near the Winema National Forest.

Monitoring Questions:

Is the total Forest program similar in job and income impacts to the Forest Plan estimates?

Is the socioeconomic structure of the local area changing in a way which could lead to conflicts between the community and the Forest or to problems related to Forest management issues?

Are National Forest returns to the county lower than historic levels and adversely affecting County government?

Threshold of Concern:

Annual "total job" estimate of less than 1,800 jobs or "total income" less than \$50 million (1982 dollars).

Identifiable community problems that can be linked to changes in Forest Service programs.

Annual 25 percent fund disbursements to the State (for re-distribution to the County) less than \$7,920,000 (1985 through 1989 average expressed in 1982 dollars) or a 10 percent decline from the previous year.

Suggested Sampling Methods:

Develop an estimate of total jobs and income associated with the actual Forest program each year using the same process as used in developing the Forest Plan estimates. This involves updating the estimates of actual use levels and re-calculating the total jobs and total income using IMPLAN job and income coefficients. Document key differences in outputs which adversely affect jobs and income.

Collect data on key socioeconomic indicators then develop a subjective analysis of the current socioeconomic situation and associated trends based upon the data. Co-operate with the Economist at the State Division of Employment in this analysis.

Monitoring Type:

Effectiveness & Validation

Results and Findings:

National Forest programs form an integral part of the local economy. When these programs change, the local economy is affected. This element is designed to track changes in Forest Service effects on the local economy as well as the general health of the economy.

Forest Service Programs:

- Estimated job impacts from the 1995 program: 776 jobs (Concern: less than 1,800)
- Estimated income impacts from the 1995 program: \$18,700,000 total income (Concern: less than \$50,000,000)

Community Economic Health and Conflict:

- Local income rose 7.6 percent over three years (15 percent threshold). Local population rose 3.7 percent over three years (15 percent threshold)
- Total jobs increased 14.9 percent while lumber and wood products jobs declined 3.1 percent over three years (15 percent threshold)
- While the changes to the Forest Products industry that were caused by changing Forest Service management could have led to intense conflict, that was averted by activity in other sectors of the local economy and changing demographics. There remains a "local control" undercurrent that could erupt with any additional Forest Service actions which adversely affect the local economy, but the likelihood of such an eruption seems to be diminishing as other sectors of the economy grow and as immigrants bring in new ideas. The 14.9% increase in total jobs is on the borderline of a level that could cause strain on local infrastructure.

Payments to the County:

- 1995 Payments: \$5.29 million (Concern: less than \$7.92 million - 1982\$)
- Change from 1994 to 1995: minus 5 percent (No Concern: less than 10% decrease)
- County government was adversely impacted by reduced payments

Evaluation:

In 1991 and 1992 the national economy was in the midst of a recession. The recession resulted in a reduced demand for lumber. This, in turn, reduced the amount of timber harvested below levels that would be seen in a robust economy. The national economy gradually improved in 1993 and demand for wood products began to slowly rise. The opportunity to supply more wood from the region has become limited because of declining volumes under contract and lower volumes of timber being sold. For these reasons, the price of stumpage rose dramatically as evidenced by prices ranging from \$330 to \$740 per thousand board feet for the fire-damaged timber salvaged from the Lone Pine area.

The Forest Service had the opportunity to capture more of these high prices, but failed to do so. Instead the Winema National Forest began to implement interim direction for eastside forests (screens - Forest Plan Amendment 8) which limited harvest to trees smaller than 21 inches dbh. Similar limits were administratively applied to other areas of the Forest as well. At the same time concerns for soil compaction and other impacts led sale designers to require expensive logging systems, including helicopter logging. Simultaneously, management shifted the Forest emphasis to "forest health" which often translated into salvage and thinning of relatively small trees. Some sales involved simply removal of slash piles. The result, in 1995, was the sale of some low valued products and several sales including Helirock (4.7 mmbf), Repot II (2.3 mmbf), Ruffday II (1.3 mmbf) and Dip Fiber (2.1 mmbf) that failed to sell at auction. The way in which these sales were developed gives little indication as to the values that could have been obtained had green sawtimber been made available in accordance with the original Forest Plan direction.

There are three factors which may lead to change in this situation. First, 35.9 mmbf of sales, that had been on hold due to litigation over Forest Plan Amendment 3, were directed by Congress to be

awarded (referred to as Section 318 sales). Most of this volume is likely to be harvested in 1996. For this reason harvest activity for 1996 will probably be similar to that seen in 1995. Second, the Eastside Screens, that currently limit harvest to trees under 21 inches dbh and attempt to maintain management options for certain amenities, may be lifted when the Eastside Ecosystem Management Project produces its Record of Decision or the Forest Plan is revised. Third, sales being developed in the Copwood Planning Area on the Chiloquin District are aimed at removing much of the fir understory. Many of these trees will be valuable for plywood. If these sales are well designed and the approach is applied more broadly (there are around 250,000 acres in a similar condition) significant economic activity could be generated over the next decade. While these are hopeful points, it is not clear whether or not they will come about. The local economy will continue to be an area of concern into the foreseeable future.

The Klamath County economy has done very well, to date, in adjusting to changes in the wood products industry. The total income, population and total jobs indicators all show positive changes that are not large enough to cause disruptions in the local economy. Nonetheless, impacts upon individuals may be significant. At the personal level, while we are seeing more jobs and larger total incomes, many new jobs pay less than \$10 per hour and can not be considered 'family wage' jobs. While the trend appears to be toward families with multiple workers, the per capita income in Klamath County has risen nearly 16%, in real terms (accounting for inflation), in the decade from 1983 to 1993 although it lags behind both the national and state levels. We are also seeing a continuation of growth in transfer payments. These payments grew by 7.5% from 1990 to 1991, 6.6% from 1991 to 1992 and 4.0% from 1992 to 1993 (in real terms). The declining rate of growth in transfer payments may indicate a slowing in the influx of retirees to the area.

The loss of much of the lumber production capacity in Klamath County means that increased sawlog sales on the Winema National Forest will primarily benefit residents in Jackson, Douglas and Deschutes Counties rather than residents of Klamath County. The sale of fir, that is suitable for plywood, is more likely to benefit Klamath County. There are efforts underway to develop "comprehensive treatment" projects on the Forest which may provide increased opportunities for local contractors to perform pre-commercial thinning and other activities. Employment in lumber and wood products will not increase in the future without some kind of assurance that the Forest Service will sustain a larger timber sale program. Such assurance is unlikely, but as opportunities to supply materials to the industry arise, they should be pursued.

Prospects for increased tourism coupled with demand for developed recreation come as developed campgrounds on the Forest are nearing capacity. This could become an arena of conflict unless the Forest Service can develop additional facilities or work with other parties to provide them. Developments such as the Running Y Ranch, the Pelican Butte Ski Area and the Tribal Gaming Facility will all provide a certain level of recreation capacity, but they are also likely to generate associated demand that will want to be served by other providers. The Forest Plan schedules the addition of a group camping area at Lake of the Woods in the first decade. This facility would meet the needs for a group camping area and serve as an overflow camping area when not reserved. However, funding in the near future will be very limited and recreation use at existing facilities is currently causing excessive use levels on the Lake. The Forest should begin looking for opportunities to address this issue. It is critical to remember that as demographics and use patterns shift more toward these types of recreationists, it will become increasingly difficult to find support for the sale of timber.

Year to year changes in payments to the State have been quite variable. The decline from 1989 to 1990 was stopped with the institution of the "owl guarantee" in 1991. A further decline occurred from 1991 to 1992 with reductions in the level of guaranteed payments. The sale of the Lone Pine

fire salvage sales in 1993 boosted receipts well above the owl guarantee due to the large volume and high values of the timber. From 1993 to 1994 receipts dropped back to levels similar to those prior to the Lone Pine Sales with less timber volume and lower valued products being sold. From 1994 to 1995 receipts continued their gradual decline with reductions in the owl guarantee as the Forest continued to offer small amounts of low valued timber. Without the owl guarantee, the Winema's contribution to the County would have been \$1.7 million (\$1.10 million in 1982 dollars) in 1995. The owl guarantee provided \$8.16 million (\$5.29 million in 1982 dollars). Clearly, the owl guarantee is critical for the county.

As currently legislated, the owl guarantee is based upon a five year average of actual receipts. For 1996 the Winema National Forest will be at the 79% level. Thus the State, for distribution to Klamath County, will be guaranteed to receive 79% of 25% of the base five-year-average (1986 through 1990) gross receipts ($0.79 \times 0.25 \times \$39,781,256.73 = \$7,856,798.20$). The guaranteed level will decline by 3% per year to 2003. Through 1998, the guarantee will be the payment, regardless of actual receipts. From 1999 through 2003, the payment will be the larger of 25% of gross receipts for the year or the guarantee. After 2003 the guarantee will disappear and payments will be based upon receipts alone. Unless significant changes in Forest management are made, payments to the County are likely to be well under \$2,000,000 per year at that time.

Because the major portion (96 percent) of receipts that feed the 25% fund come from timber sales, under current law it is necessary for timber receipts to increase if adverse consequences to the county are to be avoided. However, until 1999, the payment will equal the owl guarantee regardless of the actual receipts. Thus, there is nothing the Forest Service can do to alter payments to the County until after FY-98. Congress may alter the law to provide payments on some other basis or to permit additional use fees. Such action could resolve this concern.

Recommended Actions:

Continue existing monitoring efforts at the current intensity.

Work closely with local interests via the Community Action Teams, the County Overall Economic Development Program, and other programs to smooth the shift away from reliance on the lumber and wood products sectors.

Support appropriate initiatives that will provide developed campgrounds within the south and central portions of the County.

Examine opportunities to increase timber harvest in FY-98 and beyond.

Revise the Forest plan to reflect realistic social, economic, and management situations.