

WINEMA NATIONAL FOREST

FOREST PLAN MONITORING REPORT

FISCAL YEAR 1997

Prepared By
The Winema National Forest Interdisciplinary Team

September 15, 1998

Recommended by: _____ Date: _____
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Accepted By: _____ Date: _____
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EXECUTIVE SUMMARY

KEY FINDINGS

Implementation of Standards and Guidelines continues to go well. With very few exceptions appropriate standards and guidelines are being implemented and are having the intended effects.

Timber harvest activities on the Forest remain well below the levels anticipated in the original Forest Plan or the Forest Plan as amended. Several factors cause this. These include continuing appeals and litigation over virtually every timber sale that is proposed. Also the Eastside Screens (Forest Plan Amendments 7 and 8) limited the types of trees that can be harvested, but did not adjust the allowable sale quantity for the Forest accordingly. The lack of timber harvest is beginning to have major effects upon mule deer habitats which are rapidly losing the critical forage component. It also continues to depress economic activity in the area and compounds problems with other floundering sectors. The Forest intends to readdress the relationships between timber harvest, wildlife habitat, and socio-economics and revise the Forest Plan accordingly.

Wildlife populations are being affected by habitat changes. As noted above, the lack of timber harvest activity, or fire, blow-down or other natural disturbances is reducing forage for mule deer and adversely affecting populations. Activities that have occurred, including habitat improvements, have had a marginal affect, if any, on deer populations. Elk populations, on the other hand, require different types of habitat and continue to grow with sufficient forage in wet meadows and on private agricultural lands.

Threatened, endangered and sensitive species are doing well in those cases where there is sufficient information to make an informed judgement. Recovery of bald eagle has been successful. Research indicates that productivity of eagles in the Klamath Basin is the highest in the state and recovery population goals have been exceeded. Spotted owl populations are at the anticipated levels in Late Successional Reserves on the Klamath Ranger District with stable population levels of about 95 to 100 birds. Late Successional Reserves on the Chemult and Chiloquin Districts contain inadequate or marginal owl habitat and are not expected to provide for continued spotted owl populations. In general, sensitive plants have not been monitored for a long enough period to establish trends. Improvement in habitat conditions within Upper Klamath Lake offers the best potential for recovery of Lost River and Short-nosed suckers. For the Forest to contribute to this, changes would have to occur in upland and tributary management practices or through recovery from changes already made.

Forest health concerns have shifted from lodgepole pine beetle problems on the north end of the Forest, which has been well controlled, to mortality on the south end of the Forest. The western pine beetle together with mountain pine beetle caused mortality in large ponderosa pine trees used by Bald Eagles for nesting and roosting near Upper Klamath Lake. Fir engraver beetle mortality was high, but has declined on South Chiloquin and 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 was compounded by the drought which also caused the fir trees to be under much more stress than normal. Ground exams indicate that some areas had the white fir nearly eliminated from the stand. While mortality has declined with wetter weather, the dead vegetation remains. The implications for fire hazard and wildlife habitat are considerable. Timber sales are now being developed to address these issues, however the same problems that have affected the timber sale program in the past (see above) remain.

Water quality monitoring has not been extensively performed due to its high cost. Some direct measurements indicate higher water temperatures during low flow periods. This concern has also been identified by the State which has labeled some streams as "water quality limited" for this reason. Best Management Practices are being identified and carried into project development. Monitoring next year should reveal how well the BMP's are implemented on the ground and determine whether or not they are having the desired effects.

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1997 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 deter-

mines 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 the National Forest Management Act (36 CFR 219.12[k]).

Results from Fiscal Year 1996 Monitoring

There were a multitude of recommendations presented in the 1995 Monitoring Report. On September 11, 1996, the Forest Management Team considered and decided how to handle each of the recommendations. The results of this consideration were presented in the 1996 Monitoring Report. Most of the recommendations in the 1996 Monitoring Report were identical to those in the 1995 report and in this report. A key recommendation was to begin the Forest Plan revision process. Legislation prohibited this pending completion of new regulations implementing the National Forest Management Act. As of this report, those regulations have not been completed. Still, the Forest continued to develop data bases and information sources that will support development of a revised Plan when that process can move forward.

On October 9, 1996, the Forest Management Team established work priorities for fiscal year 1997. Those priorities reflected the recommendations presented in the Monitoring Report and the budget that was available to the Forest. For the most part these priorities provided for continuation of the various monitoring efforts as recommended in the 1996 Monitoring Report. Other key priorities included:

- GIS and data base development, analysis model design, scientific report reviews, reviews of eastside standards and guidelines and initial agency coordination in anticipation of beginning a Forest Plan revision.
- Continue the vegetation inventory and the Ecological Unit Inventory
- Concentrate restoration projects on basic soil and hydrologic function (priority to watersheds with domestic water supplies)
- Attempt to sell 80 mmbf of timber (estimated at 20 mmbf green and 60 mmbf salvage)
- Priorities for range management were established as: (1) permit administration, (2) permit reissuance and, (3) Allotment Management Plan development.

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 Short-nosed 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

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. Details of that implementation are being developed in consultation with appropriate agencies. The Eastside Ecosystem Management Project is still underway and only draft 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. Six 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, the Forest Interdisciplinary Team is awaiting the finalization of the Interior Columbia Basin Ecosystem Management Project so that the revision of the Winema Forest Plan can begin.

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

Ecosystem Health

- **Mule Deer**
 - ♦ Continue to analyze the effects of timber sale activities on mule deer habitat.
- **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 at such time as it is revised.
 - ♦ Coordinate with ODFW and the Tribes to refine the Forest's share of the population objectives and include the results in the Forest Plan when it is revised.
- **Fish Habitat**
 - ♦ Commit time and dollars to summarize existing stream survey data and compare existing conditions to the desired future condition.ä Implement a process for updating completed first round Watershed Analysis to incorporate new and better information on existing conditions for fisheries habitat.ä Clearly identify (based on data) which Forest streams are at or near potential for fish production, and which will require investment of funds for fish habitat or watershed improvement.
 - ♦ Continue stream surveys once a Forest-wide baseline is established through analysis of the first round of surveys. After this, resurvey a minimum of ten percent of streams annually to allow for trend assessment.

- ◆ More closely align/coordinate the work of fisheries habitat evaluation/improvement with the hydrology/watershed restoration programs.
 - ◆ Develop the means to provide for the needed aquatic work to meet Forest Plan commitments, project level support and provide for long-term protection/enhancement of TES aquatic resources.
- **Bald Eagle**
 - ◆ Develop additional nest site plans and monitoring to ensure full recovery of the eagle.
 - ◆ Continue monitoring efforts with special emphasis on effectiveness of management practices in bald eagle replacement habitat.
- **Peregrine Falcon**
 - ◆ Complete surveys and document results
 - ◆ Survey potential areas every two years.
 - ◆ Complete mapping of potential peregrine habitat as funding and priorities permit.
- **Spotted Owl**
 - ◆ 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.
- **Lost River and short-nosed Suckers**
 - ◆ Support current research efforts for listed suckers to the extent possible. Stay current on all recent sucker findings.
 - ◆ Work with other agencies and interested landowners to assess location, quantity and quality of sucker spawning and larval migration habitats.
 - ◆ Become involved in the discussions about the need to improve fish passage at the Chiloquin Dam.
 - ◆ Establish long-term Forest Plan monitoring sites to monitor effectiveness of mitigation measures applied to land management activities and watershed restoration programs. Use a Forest ID team to develop a process to select the needed number and location of these sites.
 - ◆ Increase emphasis on streamlining consultation under the ESA to ensure adequacy and consistency in mitigation measures applied for protection of listed suckers.
- **Primary Cavity Excavators**
 - ◆ Continue evaluating habitat needs on a project level.
- **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 the data into BOTSIS and WILDOBS. Improve the integration between these databases and GIS and more thoroughly evaluate this question.
 - ◆ Continue monitoring studies in progress on *Collomia mazama* and *Asarum wagneri* (Klamath); *Botrychium pumicola* (Chemult); *Calochortus longebarbatus longebarbatus* (Chiloquin); and radio-telemetry tracking study on yellow rail (Klamath). These studies will assist in evaluating trends for these species.
- **Plant and Animal Diversity**
 - ◆ No recommendations.
- **Old Growth**
 - ◆ Continue to record changes in MA-07 patches.
- **Off-Road Vehicle Use**
 - ◆ Continue to monitor ORV use as required by Executive Order.
 - ◆ Plan designated ORV trails/roads/areas as demand warrants and close areas or roads where significant resource damage is occurring or user conflicts develop.
 - ◆ Continue to work with Oregon State Parks to develop long distance Backcountry Discovery routes for ORV's.
- **Soil**

- ◆ Continue to develop a standardized monitoring program.
- ◆ Maintain records of soil conditions on EAs/EISs in progress, on recently implemented projects and on older projects are needed to determine where remedial efforts are required.
- ◆ Monitor to determine effectiveness of current mitigation efforts is needed.
- ◆ Develop site specific inventory and interpretation for project level planning. Reliance on a broad planning document such as the SRI for site specific analysis is well beyond the stated scope of the document and is misleading.
- ◆ Obtain more information on 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. ä Emphasize the relationship between soil resource damage and sale administration.
- **Riparian Area Cumulative Effects**
 - ◆ No recommendations .
- **Water**
 - ◆ No recommendations

Forest Resources

- **Developed Recreation Sites**
 - ◆ Implement measures to reduce costs and maximize efficiency in site operations
 - ◆ Continue to implement Meaningful Measures (MM).
 - ◆ Continue to defer planned trail and facility maintenance and accessibility upgrades pending funding
- **Scenery**
 - ◆ No recommendations .
- **Range Vegetation**
 - ◆ Place emphasis on permit administration.
 - ◆ Emphasize permittee responsibility for monitoring use.
 - ◆ Continue to monitor known sites of priority weeds
- **Timberland Suitability**
 - ◆ Evaluate effects upon ASQ when the data from the forest inventory becomes available.
- **Timber Inventory**
 - ◆ Proceed with the inventory as planned
 - ◆ Pursue analysis as the inventory 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**
 - ◆ Continue monitoring.
- **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.
 - ◆ Drop the priority for harvest of white fir mortality
- **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 the analysis for the Klamath Marsh area and the Southeast portion of Chemult after 1998.

- ◆ 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.ä 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**

- ◆ Continue to improve the development and application of BMPs.
- ◆ Provide adequate cross drains on the approaches to the Bear Creek crossing.
- ◆ Compare monitoring results with Soil Resource Inventory (SRI) soil types to determine if there are trends in bulk densities relative to differences in soil properties.
- ◆ Obtain tree growth measurements on sites where soil monitoring data is available.ä Pool monitoring data from the Deschutes, Fremont and Winema National Forests as a basis for establishing a base level of soil bulk density.
- ◆ Establish new management guidelines based upon compiled soil bulk density information.
- ◆ Continue to restrict grazing on Riders' Camp Meadow until acceptable vegetation conditions are achieved.
- ◆ Use practical logging systems input during the sale planning process and examine options other than uphill tractor logging whenever possible.
- ◆ Remove berms along the skid trails on the cinder cone in the Buggy Timber Sale Area and thin those slopes to a lower density than currently marked to improve the health of the residual stand and reduce the need for early reentry
- ◆ Do not burn, or otherwise manipulate, the vegetation in Research Natural Areas unless such a project is called for in the RNA's Management Plan or is part of an approved research project in accordance with MA-13 Protection S&G 3.
- ◆ In future cable/skyline harvest units, plan for landings of sufficient size to accommodate pile burning.

- **Accomplishment of Outputs and Services**

- ◆ 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.
- ◆ 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.
- ◆ 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
 - adjust the estimates of silvicultural treatments as appropriate.
 - adjust the estimates of TSI treatments as appropriate.
 - adjust the estimates of permitted livestock grazing as appropriate
 - adjust the estimates of watershed improvement work as appropriate
- ◆ Increase fuel treatment activities at least to a level that will avoid increases in treatment backlog.
- ◆ Proceed to implement and enforce the road management decisions made in the Forest Plan ROD, or modify the Forest Plan.

- ◆ 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.
 - include an estimate of wildlife habitat improvements (structures and acres) needed to meet the objectives established for the resource.
- **Budget**
 - ◆ Improve the way in which funds are accounted
 - ◆ Use consistent accounting procedures from year to year.
 - ◆ Develop a better linkage between budgets and achievement of outputs and standards and guidelines.

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**
 - ◆ Evaluation of projects using the mule deer model indicate that effects upon habitat suitability are very small. Due to the limited precision of models of this type, it is unlikely that the activities that were analyzed had any practical effect, adverse or beneficial, upon deer habitat suitability.
 - ◆ Habitat improvement projects and mitigation efforts do have a beneficial effect upon habitats, but affect relatively few acres and only certain components of the habitat. ä At the Forest-wide scale, the critical issue remains loss of mule deer forage due to increasing overstory densities. The Forest Plan anticipated significantly more timber harvest activity that would have resulted in significantly better habitat conditions for deer than are currently available.
 - ◆ The trend of a decreasing forage base continued in 1997 and is expected to continue into the future unless timber harvest activities, fires, blowdown or other impacts reduce overstory densities and lead to increased forage for deer.
- **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.
 - ◆ Districts are considering elk in project analysis and mitigating as appropriate for calving and providing migration corridors.
- **Fish Habitat**
 - ◆ Stream surveys have been completed at a satisfactory rate. However, analysis of baseline data has not progressed at a satisfactory rate. This has resulted in the inability to fully integrate fisheries habitat existing condition discussions into ongoing analysis (e.g. watershed analysis, NEPA and watershed restoration activities).
 - ◆ There has not been adequate funding for more intensive surveys needed on some stream reaches.
- **Bald Eagle**
 - ◆ The Forest has been successful in keeping management of known and potential nest sites in compliance with the recovery plan objectives.
 - ◆ 1997 productivity in the Klamath Basin met or exceeded recovery population goals.
 - ◆ Recovery of the bald eagle in the Klamath Basin has been successful.

- **Peregrine Falcon**
 - ◆ Sufficient numbers of survey results have not been reported to conduct a meaningful evaluation at this time.
- **Spotted Owl**
 - ◆ Spotted owl populations are at the anticipated levels in the Late Successional Reserves on the Klamath Ranger District. Population levels and owl recruitment have been relatively stable for the last four years with a population of about 95 to 100 birds. Fluctuations are likely related more to survey intensity and scope than to actual changes in populations.
 - ◆ Late Successional Reserves on the Chemult and Chiloquin Districts contain inadequate or marginal owl habitat and are not expected to provide for continued spotted owl population
- **Lost River and Short-nosed Suckers**
 - ◆ Historic areas of use by Lost River and short nosed suckers on the Winema National Forest are identified.
 - ◆ Critical habitat for both species has been proposed by the Fish and Wildlife Service (FWS) under the Endangered Species Act (ESA).
 - ◆ Areas of current use on the Forest (current range) are not well documented in Forest surveys.
 - ◆ Lost River suckers use areas of the Forest near springs within Upper Klamath Lake for spawning and rearing.
 - ◆ Spawning for Lost River suckers is believed to be primarily limited to the lower reaches of the Sprague and Williamson Rivers.
 - ◆ Observations of larval Lost River suckers in the Wood River and Crooked Creek suggests that spawning may also be occurring in these systems.
 - ◆ The Forest continues to collect, monitor and use current findings in the literature on suckers.
 - ◆ The Forest prepares biological assessments for all projects that "may effect" either listed suckers or their proposed critical habitats.
 - ◆ Literature pertinent to the life history needs of listed suckers is utilized in preparation of these biological assessments and the subsequent ESA consultations with the FWS.
 - ◆ Implementation of land management decisions made on the Winema NF which may effect listed suckers occur only after ESA consultations.
 - ◆ The Forest reviewed and made recommendations for mitigation measures for projects where effects to suckers or their habitats were different than described in NEPA documents.
 - ◆ Design of planned activities are generally resulting in the expectation of some level of improvement (upward trend) in habitat condition for listed suckers (e.g. reduced sediment yield, improved water quality or discharges).
 - ◆ Currently used cattle allotments which may effect sucker habitat were assessed by a Forest ID team using the "Proper Functioning Condition Analysis" (BLM). All visited sites were found to be in proper functioning condition.
- **Primary Cavity Excavators**
 - ◆ Interim Eastside Screens were implemented in the Region for areas outside of the range of the northern spotted owl.
 - ◆ Snag and down wood requirements are being met during activities.
 - ◆ Snags have been created to increase snags to levels required by Forest Plan Standards and Guidelines.
 - ◆ Districts are evaluating cavity excavator habitat needs on a project level.
- **Pileated Woodpecker and other MR Species**
 - ◆ The Solomon Butte Pileated Woodpecker Reserve boundary was adjusted slightly in conjunction with the Ranch House Timber Sale EA.
 - ◆ The Forest was a cooperator in regional neotropical migratory bird monitoring.
 - ◆ Approximately 200 green trees were inoculated with heart rot fungus in the John Timber Sale area to create snags as part of an ongoing study.
 - ◆ The marten study continued in FY97. A new standard contract clause was developed this year to maintain slash pile for marten on timber sales. The clause was approved

by the Regional Office and will be used in future timber sales.

- ◆ Goshawk surveys were conducted to protocol in the Yoss House, Bay House, and Dagwood Planning areas.
- ◆ The Dagwood Planning Area on the Chiloquin Ranger District was surveyed to protocol for the second year for owls. A total of 2,095 acres of potential habitat was surveyed. Detections were down (-1) for Great Horned Owls, up (+5) for Northern Pygmy Owl, up (+1) for Flammulated Owl, unchanged for Northern Spotted Owl and up (+5) for Great Gray Owl.
- Sensitive Species (other than previously listed)
 - ◆ 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.
 - ◆ 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
 - ◆ Not evaluated in 1997.
- Old Growth
 - ◆ The acres of protected habitats (Management Area 7) did not change in 1997.
 - ◆ The lack of any significant fires or significant removal of large trees (the Eastside Screens do not permit harvest of trees over 21 inches in diameter) indicates that the acres of old growth habitats outside of protected areas have not changed.
 - ◆ As fire protection continues to allow undergrowth to develop, the risk of loss of the existing old growth stands is expected to increase in the future unless understory vegetation is removed .
- Off-Road Vehicle Use
 - ◆ No unacceptable resource damage caused by ORV use was reported during 1997.
 - ◆ 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.
 - ◆ Chemult and Klamath RDs worked with trail users to develop an operating plan (including sign development and safety precautions) to facilitate shared trail use by mushers and snowmobilers.
- Soil
 - ◆ Soil monitoring records on the Forest indicate extensive detrimental compaction has occurred. However, very little monitoring differentiates between past activities and current methods.
 - ◆ Efforts are underway to remediate cumulative damage.
 - ◆ Monitoring on the Winema in the last 4 years has increased our knowledge of the susceptibility of soils to compaction and provided information on extent and location. Variation between soils that appear the same or are mapped the same has been identified.
 - ◆ The Forest is conducting an Ecological Unit Inventory (EUI) to assist our efforts in learning about the soils on the Forest.
- Riparian Area Cumulative Effects
 - ◆ Not evaluated in 1997.
- Water
 - ◆ Not evaluated in 1997

Forest Resources

- Developed Recreation Sites
 - ◆ Long-term use trends on the Forest continue to track with Regional and SCORP/Forest Plan projections with some minor fluctuations due to weather and site closures for facility repairs. Growth in nearly all activities have been noted with dispersed non-motorized activities increasing the fastest. One departure is that wilderness use has remained fairly level departing somewhat from the increases projected.
 - ◆ Implementation of the Accessibility Transition Plan for recreation sites has been hampered by a lack of funding. Barrier-free campsites have been developed at Aspen Point and Sunset Campgrounds with other accessibility upgrades are planned. Accessible boat dock abutments were added at all three boat launches at Lake of the Woods to provide universal access throughout the use season and abate a safety hazard. No progress was made on the completion of accessible facilities at the Wood River Day-use area. Funding to complete this project is expected in FY 1999.
 - ◆ 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.
 - ◆ The Forest has not made any progress on providing areas for OHV/ATV use, although some projects are in the planning stages. Providing showers and RV hook-ups is not currently feasible with the current funding level. Such facilities may be provided in the future by concessionaires. An EIS evaluating a downhill ski area proposal on Pelican Butte is scheduled for release in FY 1998.
- Scenery
 - ◆ Not evaluated in 1997.
- Range Vegetation
 - ◆ Of the 608,123 acres in allotments, 97,638 acres were monitored. This is less than half of those monitored in 1996. Of those monitored, 96,569 acres were at or moving toward Forest Plan Objectives (FPO), and 40 acres were not meeting FPO.
 - ◆ Of the riparian areas within allotments (41,462 acres, included in the overall totals above), 14,860 were monitored and of those acres monitored, 40 acres are not meeting or moving toward FPO.
 - ◆ An enclosure was expanded in the Dams-Switchback Allotment.
- Timberland Suitability
 - ◆ There was no change in timber land suitability acreages during FY 1997.
- Timber Inventory
 - ◆ 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.
 - ◆ 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 has improved this year to above the 80% level, which is the threshold of concern.
 - ◆ Third year survival is now also above 80%.
 - ◆ Fifth year reforestation success is 100%.
- Timber Harvest Unit Size
 - ◆ None of the 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 has dropped dramatically during 1997. This is due to the increase in precipitation, and in some areas, the near elimination of susceptible white fir.
- ◆ In many areas dead white fir will now contribute to increased fire hazards for years to come.

- **Transportation System**

- ◆ 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, public concerns must be resolved and the Forest must complete access and travel management planning and environmental analysis for selected project areas. 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. This analysis was completed in 1997 and a decision is expected in 1998. Implementation of the decision would begin in 1998. The analysis for areas adjacent to the Klamath Marsh and the southeast portion of the Chemult District will be completed after 1998.
- ◆ Agencies 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.

- **Economy**

- ◆ 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.
- ◆ County government was adversely impacted by reduced payments

Forest Plan

- **Implementation of Standards and Guidelines**

- ◆ In general, standards and guidelines are being properly implemented across the Forest although there remains room for improvement in ground disturbing activities.
- ◆ The Forest Plan includes requirements for retaining woody materials in the forest after management activities. While the related standards and guidelines are normally accomplished, it is often not easy to do. Snags, in particular, may sometimes be removed to allow safe operations in the woods. The need for safety was recognized in the original Forest Plan when the numbers of snags were established at a level that would support only 40% of the potential snag-dependent wildlife populations. The Eastside Screens (Amendment 8) temporarily revised this requirement to 100% on a portion of the Forest thus increasing the potential for conflict with safety. That conflict is reflected in the locations where insufficient snags were maintained this year.
- ◆ There seems to be a tendency toward planning vegetation management in places, such as Special Interest areas and Research Natural Areas, where such management is not called for in the Forest Plan. These activities have been halted before implementation.
- ◆ There is some difficulty in establishing a "base" level or "natural" level of soil bulk density on pumice soils. This is important because the definition of detrimental compaction is a 20% increase over this base level.
- ◆ Best Management Practices were satisfactorily identified and implemented on the timber sales that were reviewed.

- **Accomplishment of Outputs and Services**
 - ◆ The decade ASQ total is well below planned levels. Since the ASQ has been defined as a ceiling, not to be exceeded, there is no problem.
 - ◆ After six years of implementation the TSPQ is 56% below planned levels. The TSPQ would have to average over 305 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.
 - ◆ 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.
 - ◆ The six-year total harvest level is 47% below planned levels. This is well in excess of the 10% threshold of concern. With the eastside screens in place there is no prospect of reaching planned levels of harvest.
 - ◆ All silvicultural treatments 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. Regeneration harvest was scheduled on an unusually large number of acres in 1996. Most of this acreage was on the Zephyr and Mariah Timber Sales. These were both blow-down sales rather than planned regeneration harvests.
 - ◆ Reforestation is running 26% 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.
 - ◆ Timber stand improvement work is at 47% 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.
 - ◆ Fuel treatment activities are 31% below planned levels.
 - ◆ Road construction activities are 85% 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 several 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.
 - ◆ After 6 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.
 - ◆ 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.
 - ◆ Recreation construction is slightly behind schedule with 45% of the planned construction for the decade completed after 60% 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.

- ◆ Trail construction/reconstruction at 77.2 miles after 6 years is 62% of planned levels. The large trail mileage reported for 1996 involved snowmobile trails. The inter-tie trail construction is scheduled for late in the decade. The current situation is not a cause for concern.
- ◆ At 79% of planned levels, permitted livestock grazing has just reached a level of concern. The program has been declining and will probably continue to decline as permittees continue to waive their use. It is likely that some of these allotments will never be made available for use because the permittee's cost for the NEPA analysis makes reopening them too expensive. In one case the Lone Pine Fire burned the fences and the permittee's expense in replacing them could not be financially justified.
- ◆ The Forest Plan indicates an average of 10 acres of watershed improvement per year. After six years, accomplishment is well in excess of the established threshold of concern.

- **Budget**

- ◆ As the years have passed, it has become increasingly difficult to compare current year budgets to projections in the Forest Plan.
- ◆ Over the first six years of plan implementation the total budget was about 7% below Forest Plan estimates although timber management received the projected funding level 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 budget levels expected in the future 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.

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 reviews of numerous S&G's . Following that discussion is a summary of Management Area acreage changes 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 1997, several field reviews and supplementary information were used to monitor standards and guidelines:

Type 1 Reviews

- 1-1. October 3, 1996: Sheehan and Jordon: Cinder Sale, 94 Road, Zephyr Salvage, Mariah Salvage
- 1-2. October 24, 1996: Erickson, McNeil et al: Jackson and Bear Creek
- 1-3. January 6, 1997: Meurisse, Erickson, Hill et al: Soil Monitoring
- 1-4. March 28, 1997: Doremus and DePew: Bible Camp Timber Sale
- 1-5. August 19, 1997: Sheehan and Shull: Buggy and Gardener Timber Sales
- 1-6. August 22, 1997: Hill and Anderson: Buggy Timber Sale
- 1-7. August 27, 1997: Mattenberger, Anderson et al: Threemile/Sevenmile Timber Sale
- 1-8. August 27, 1997: Mattenberger and Karow: Nannie/Rock Timber Sale
- 1-9. August 27, 1997: Mattenberger and Karow: Buggy 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. The Ranch House and Willy Timber Sales were selected on the Chiloquin District, but were not reviewed. Instead, the Sycan River and the Copwood Timber Sale reviews replaced those that were randomly selected. These projects, listed below, were reviewed for compliance with Forest Plan Standards and Guidelines. In addition, the Desert Old-Growth Area was reviewed for possible management opportunities. The following projects were addressed in FY-1997:

- 2-1. November 27, 1996: Chiloquin Ranger District
 - A. Saddle Mountain Management Area 4
- 2-2. June 26, 1997: Chemult Ranger District
 - A. Neo-Tropical Bird Research
 - B. Rider's Camp Cattle Exclosure
- 2-3. August 27, 1997: Chiloquin Ranger District
 - A. Dorf Timber sale
 - B. Blue Jay Springs Research Natural Area
- 2-4. September 16, 1997: Klamath Ranger District
 - A. Fourmile Springs Allotment
 - B. Gardner Timber Sale

Other Information

- 3-1. May 22, 1997: Jahns: Pelican Timber Sale Marking
- 3-2. July 22, 1997: Karow and Merino: Road 3455 Noxious Weeds
- 3-3. September 24, 1997: Karow: Hypericum perforatum

- 3-4. July 25, 1997: Moser and Anderson: Lost Salvage Protection and cleanup
- 3-5. August 1997: Jahns: Switchblade Timber Sale Marking
- 3-6. August 21, 1997: Mann et al: Snags and Snag Management Chemult Ranger District
- 3-7. August 28, 1997: Lilienthal et al: Sycan Wild and Scenic River
- 3-8. September 4, 1997: Karow et al: Buggy Salvage Sale
- 3-9. September 4, 1997: Nannie/Rock Timber Sale
- 3-10. August 12, 1997: Giller: Fourmile Underburn
- 3-11. September 11, 1997: Giller: Gardner Timber Sale
- 3-12. September 11, 1997: Hardy: Water Developments
- 3-13. September 13, 1997: Karow et al: Gardner Timber Sale
- 3-14. Undated: Lebo: Air Quality Biomonitoring

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-1997. Codes, as noted above, for each background document are listed as references where the information is used to assess a particular S&G, goal or objective.

Timber Management

S&G 3-3, 8-8, 13-4, 13-5, 13-17, 13-23

References 1-1, 1-5, 3-1, 3-4, 3-5, 2-3, 2-4

Discussion:

A review of the completed harvest in the Cinder Timber Sale and the Zephyr Salvage Sale indicated good quality logging (S&G 13-5).

Pelican Timber Sale Units 8, 9, 11, 12, 13, 14, 18, 19 and 20 were marked to meet the prescriptive intent. Previously thinned areas in Unit 7 were adequately marked, but thick clumps needed to have more trees marked for removal. The marking in the western lobe of Unit 10 left excessive basal area (S&G 13-4).

Switchblade Timber Sale Units 14, 15, 23, 24 and 25 were properly marked in accordance with their prescriptions (S&G 13-4).

The trail and waterline in the Lost Salvage Sale were protected during the sale and were not damaged. Slash cleanup was properly completed, pending burning (S&G 8-8, 13-23).

Logging on the Buggy Salvage Sale was found to be well done.

A field review of the Dorf Timber Sale revealed that Unit 1 was left with a basal area over 200 sf/acre whereas recommended levels for this habitat are 90 to 100 sf/acre. Mortality is occurring in similarly stocked stands nearby.

Field reviews of the Gardner Timber Sale revealed that :

- ◆ residual stand damage (Unit 165) was less than 5%
- ◆ area impacted by skidding was excessive (Unit 176E estimated at 70%)
- ◆ Insufficient snags (2) were retained (Unit 176E)
- ◆ Unit 203 had excessive residual tree damage (20-30%) caused during falling
- ◆ A skid trail in unit 176A damaged the roots of one of the few remaining large ponderosa pine
- ◆ Logging system design was done by a qualified person (S&G 13-5)
- ◆ Green trees were left in Unit 221A to meet the green tree retention standard on page C-41 of the Northwest Forest Plan.
- ◆ The landing and temporary road into Unit 221A had been ripped in accordance with S&G 3-3

Roads

S&G 3-4, 12-16

References 1-1, 1-2, 1-4

Discussion:

On October 3, 1997, the 94 Road was in need of maintenance. Maintenance was being delayed in the hope of rain which would provide moisture levels for proper grading. In addition one culvert was noted as plugged.

A review of a culvert installation on Bear Creek indicated that it had been properly installed to pass bedload and woody debris, but that one adjacent slope was unstable. Erosion control fabric and seeding was recommended. Road approaches to the Bear Creek crossing were inadequately cross drained.

Road 029 in the vicinity of the Bible camp HTR Timber Sale had some muddy areas, large ruts and rocky areas.

Wildlife

S&G 4-11, 4-18, 4-22 (Forest Plan, page 4-49, 50)

References 1-1, 2-2, 2-3, 3-6, 3-8, 3-9, 3-12

Discussion:

A pre-harvest review of the Mariah Salvage Sale indicated that the actual wildlife leave areas were not properly displayed on the sale area map. The problem was referred to the Sale Administrator (S&G 4-18).

A publication entitled Relationships Between salvage Logging and Forest Avifauna in Lodgepole Pine Forest of the Central Oregon Pumice Zone displays the first 3 years of research results in this area. The study is showing very little difference in species and numbers between harvested and unharvested areas.

A snag management review on the Chemult District revealed that:

- ◆ post-harvest surveys are identifying areas of low snag density so that habitat can be created
- ◆ three-toed and black-backed woodpeckers are using these areas
- ◆ a comparison of blasting out tree tops with introduction of fungi found that the latter approach is cheaper and produced better habitat.

Field monitoring is performed for compliance with S&G 4-22. Walk-through monitoring is performed to an established protocol as a part of hazard surveys for compliance with the eastside screens.

Some coarse woody debris had been left as part of the Bible Camp Hazard Removal Sale, but apparently some of it had been cut for firewood by campers (S&G 4-22). Coarse woody debris requirements were met in Unit 64 of the Nannie Timber Sale.

A September 1997 review of several water developments revealed the following (S&G 4-11):

Development	Condition	Salt	Use
7 Up Spring	Full, good	Yes	Light deer and elk
Gooseneck Guzzler	Good	2 Blocks	light elk
Switchback Guzzler	Good	No	Light
Chilly Guzzler	Good	1 block	Light elk
Buck Peak Guzzler	Good	1 block	Light deer

Riparian Ecosystems

S&G 12-10 (Forest Plan, page 4-74)

References 1-2

Discussion:

Construction of hydrologic improvements in Jackson Creek resulted in some unplanned ground disturbance. It was expected that the areas would revegetate quickly. (S&G 12-10).

A review of the streamside management zone in Unit 173 of the Gardner Timber Sale indicated a need to fine tune riparian management area objectives with practical logging systems input during sale planning.

Late Successional Reserves

S&G NWFP page C-12

References 3-8, 3-9

Discussion:

During a field review of the Buggy Salvage Timber Sale, it was revealed that the purposes for the sale included:

- 1) reduce threat to life and property caused by high levels of fuels,
- 2) improve forest health and
- 3) maintain late successional characteristics.

This is in accordance with the direction on page C-12 and the discussion on page B-7 of the NW Forest Plan.

During a field review of the Nannie Timber Sale, it was revealed that the treatment for Unit 64 was designed to reduce fuel levels and to precommercially thin areas around large ponderosa pine. While this probably did not improve the stand for nesting/roosting/foraging habitat for spotted owls, it did reduce the fuel loading.

Scenic Resources

S&G 11-3, MA-2: Scenic #1

References 3-8, 3-9, 3-13

Discussion:

A landscape architect chose the trees to take along the Highway 140 section of the Buggy Salvage Timber Sale so that the visual quality objective was met (S&G 11-3). The visual quality objective was met in :

- ◆ Bible Camp Hazard Removal Sale
- ◆ Nannie Timber Sale Units 64 and 70B
- ◆ Gardner timber Sale Units 165, 176E, 203, 176A

Cultural Resources

S&G 2-5, MA-4D

References 1-2, 2-1

Discussion:

A cultural resources monitor was on-site during channel work on Jackson Creek. A field review on the Saddle Mountain Cultural Resource Area revealed that a District Interdisciplinary Team was considering management activities within the area to reduce fire risk. In a letter dated November 27, 1996, Forest Supervisor Castaneda stated that "Although this area is within the Yawheewood EA area, we

have no plans to undertake any activities in MA-4 and that should be made clear."

Cultural sites (railroad grade and can dumps) in Unit 15 of the Bible Camp Hazard Removal Sale resulted in additional landings and confusion on the part of sale administrators as to which can dumps to protect. Since all dumps were protected, S&G 2-5 was met.

Soil and Water

S&G 12-1, 12-5

References 1-3, 1-6, 1-7, 1-8, 1-9, 3-7

Discussion:

There is some difficulty in establishing a "base" level or "natural" level of soil bulk density on pumice soils. This is important because the definition of detrimental compaction is a 20% increase over this base level.

A review of a unit that had been withdrawn for the Buggy Timber sale revealed:

- ◆ slopes of 33 to 40% were too steep for the planned harvester-forwarder
- ◆ heavy spoil displacement, cuts and berms from previous logging
- ◆ slight erosion in skid trails in the drainages

A field review of the Threemile/Sevenmile Timber Sale (Ref 1-7) revealed that:

- ◆ All mitigation and BMPs are being properly applied
- ◆ Soil moisture is measured before harvest activity begins
- ◆ Slopes over 35% were not tractor logged
- ◆ Very little ground disturbance occurred in the cable corridors of Unit 165.

A field review of the Nannie/Rock Timber Sale (Ref 1-8) revealed that hydrologic mitigation measures were being implemented during the operation. Specifically:

- ◆ Mitigation 3: Waterbars were being placed in corridors
- ◆ Mitigation 5: Drainages were protected in accordance with the Forest Plan
- ◆ Mitigation 24: Skyline corridors were waterbarred

A field review of the Buggy Timber Sale (Ref 1-9) revealed that Best Management Practices and mitigation measures had been specifically identified for the project and were being applied. Specifically:

- ◆ Mitigation 18: Heavy equipment did not enter the buffer around riparian areas
- ◆ Mitigation 21: The slope break of the meadow was well within the buffer area
- ◆ Mitigation 22: Harvesting within the Riparian Reserve was beneficial to the Riparian Reserve
- ◆ Mitigation 23: Areas where riparian species (e.g. aspen) were present were not harvested or entered with heavy equipment
- ◆ Best Management practices were followed in Unit 15.

A field review of the Bible Camp Hazard Removal Sale revealed that the contractor was held to the 17% soil moisture restriction. This area was to be logged over snow or frozen ground, in part to reduce sediment entering Varney Creek. Due to weather conditions and the timing for removal of hazard trees, this was not done (S&G 12-5).

An August 19, 1997 field review and meeting with representatives of The Nature Conservancy began cooperation between that organization and the Forest Service on techniques to reconnect the Sycan River to its floodplain (S&G 12-1).

Protection

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

References 3-10, 3-11

Discussion:

The Four Mile Underburn was completed in the Spring of 1997. By August plants and brush had resprouted, 30% of the small white fir had died (as planned) and little or no soil damage was evident.

Fire hazards were not appropriately reduced on the Gardner Timber Sale even after hand piling. The landings were not large enough so piles were within 25 feet of residual trees. Burning the piles will probably kill adjacent trees.

Range

S&G 9-1

References 2-2

Discussion:

Grazing beyond acceptable standards has been reported at Riders' Camp in both the 1995 and 1996 Monitoring Report. A new fence was installed in 1996 and is now keeping cattle out while allowing entry by deer and elk. Riparian vegetation has occupied many of the previously bare areas and is stabilizing stream banks.

Noxious Weeds

S&G 8-14

References 3-2, 3-3

Discussion:

Yellowstar Thistle was removed from along Road 3455 in 1996. More was found and pulled during 1997.

A patch of St. John's-wort (*Hypericum perforatum*) was reported about 2.7 miles up Road 3400-350.

Air Quality

S&G Goal 1 (Forest plan, page 4-2)

References 3-14

Discussion:

In 1997 the Forest began a long-term air quality monitoring program using lichen communities as indicators of pollution.

Management Area 10: Big Game Winter Range

S&G Wildlife & Fish #2, Protection #1

References 2-3

Discussion:

A field review of the Dorf Timber Sale Area revealed that:

- ◆ Burning and timber stand treatments affected about 50% of the whole area and was limited by cover requirements for big game (S&G: Wildlife & Fish 2).
- ◆ The area was burned in April/May and by August 27 the manzanita and bitterbrush (about 30%) were already sprouting (Protection 1). This is more than expected, probably due to high moisture levels.

Management Area 13: Research Natural Areas

S&G Minerals and Energy #4, Protection #3

References 2-3

Discussion:

A field review of the Blue Jays Springs Research Natural Area revealed:

- ◆ Although not permitted (S&G: Minerals and Energy 4), some firewood cutting still happens
- ◆ A management plan has not yet been completed as required in the Forest Plan (page 4-156).
- ◆ A District Team was considering a proposal to burn part of the area, contrary to Protection S&G #3.

Recommended Actions

- ◆ The problem with an unstable slope on Bear Creek should have been handled by Best Management Practice R-5, Road Slope and Waste Area Stabilization thus: continue to improve the development and application of BMPs.
- ◆ Provide adequate cross drains on the approaches to the Bear Creek crossing.
- ◆ Compare monitoring results with Soil Resource Inventory (SRI) soil types to determine if there are trends in bulk densities relative to differences in soil properties.
- ◆ Obtain tree growth measurements on sites where soil monitoring data is available (e.g. stratify sites by compaction classes of low, moderate and severe).
- ◆ Pool monitoring data from the Deschutes, Fremont and Winema National Forests as a basis for establishing a base level of soil bulk density.
- ◆ Establish new management guidelines based upon compiled soil bulk density information.
- ◆ Continue to restrict grazing on Riders' Camp Meadow until acceptable vegetation conditions are achieved.
- ◆ Use practical logging systems input during the sale planning process. Examine options other than uphill tractor logging whenever possible.
- ◆ Remove berms along the skid trails on the cinder cone in the Buggy Timber Sale Area and thin those slopes to a lower density than currently marked to improve the health of the residual stand and reduce the need for early reentry
- ◆ Do not burn, or otherwise manipulate, the vegetation in Research Natural Areas unless such a project is called for in the RNA's Management Plan or is part of an approved research project in accordance with MA-13 Protection S&G 3.
- ◆ In future cable/skyline harvest units, plan for landings of sufficient size to accommodate pile burning.

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. 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 were displayed and discussed in the FY-95 Forest Monitoring Report. The following table displays the acreage changes since 1996:

MANAGEMENT AREA ACREAGE CHANGES

MA Name	MA Code	1996 Acres	1998 Acres	TOTAL CHANGE 1996-1998
Yamsay Mtn.	01A	8,458	8,458	0%
Brown Mtn.	01BLSR	3,313	3,313	0%
Pelican Butte	01C	7,429	7,429	0%
	01CLSR	<u>3,769</u>	<u>3,769</u>	
	Total	11,198	11,198	
Developed	02	1,093	1,093	
Recreation	02LSR	<u>1,876</u>	<u>1,876</u>	0%
	Total	2,969	2,969	
Scenic	03A	13,268	13,268	
Foreground	03AMAT	<u>8,015</u>	<u>8,015</u>	0%
Retention	Total	21,283	21,283	
Scenic	03B	16,448	16,448	
Foreground	03BMAT	<u>4,447</u>	<u>4,447</u>	0%
Partial Retention	Total	20,895	20,895	
Scenic	03C	32,467	32,467	
Midground	03CMAT	<u>26,291</u>	<u>26,239</u>	+0%
Partial Retention	Total	58,698	58,706	(8 acres)
Special Areas	04	17,914	17,914	0%
Sycan River	05	2,268	2,268	0%
Mt Thielsen	06A	26,036	26,036	0%
Sky Lakes	06B	44,358	44,049	-1% (309 acres)
Mountain Lakes	06C	22,990	22,990	0%
Old Growth	07	21,456	21,456	0%
More Old Growth	07OG	22,835	22,835	0%
Riparian Areas	08	38,897	38,897	
	18LSR	5,830	5,830	+0%
	18MAT	<u>11,355</u>	<u>11,380</u>	(25 acres)
	Total	56,082	56,107	
Eagle Nest and Recovery Sites	09A	3,529	3,529	
	09ALSR	943	943	+0%
	09AMAT	<u>2,555</u>	<u>2,565</u>	(10 acres)
	Total =	7,027	7,037	

MANAGEMENT AREA ACREAGE CHANGES

(Continued)

MA Name	MA Code	1996 Acres	1998 Acres	TOTAL CHANGE 1996-1998
Eagle	09B	1,934	1,934	
Replacement	09BLSR	2,289	2,289	+0%
Habitat	09BMAT	<u>5,395</u>	<u>5,401</u>	(6 acres)
	Total	9,618	9,624	
Eagle Winter	09CLSR	2,201	2,201	
Roost	09CMAT	<u>193</u>	<u>193</u>	0%
	Total	2,394	2,394	
Big Game	10	39,631	39,631	0%
Winter Range				
Timber	12	461,571	461,571	-0%
Production	12MAT	<u>82,680</u>	<u>82,559</u>	(121 acres)
	Total	544,251	544,130	
Research	13	1,470	1,470	0%
Natural Areas	13LSR	<u>1,169</u>	<u>1,169</u>	
	Total	2,639	2,639	
Upper Williamson	15	38,557	38,577	+0% (20 acres)
Late Successional Reserves	16	57,909	57,909	0%
Lakes	LAKE	518	518	0%

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 no Management Areas that have changed acreage in excess of 5%. All acreages were the same in 1998 as they were in 1997.

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, technically, 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. The lack of timber harvest activity is also having adverse effects upon mule deer habitat and the local economy as discussed in section E.

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 six years of implementation the TSPQ is 56% below planned levels. The TSPQ would have to average over 305 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. The lack of timber harvest activity is having adverse effects upon mule deer habitat and the local economy as discussed in section E.

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 six-year total harvest level is 47% 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: 44% below planned levels
- Overstory Removal: 85% below planned levels
- Regeneration Harvest: 106% above planned levels
- Selection Harvest: 61% below planned levels
- Salvage Cut - Lodgepole: 73% below planned levels

With a threshold of concern at 25% from planned levels, all silvicultural treatments 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. Regeneration harvest occurred on an unusually large number of acres. Most of this activity occurred on the Zephyr and Mariah Timber Sales. These were both blow-down sales rather than planned regeneration harvests.

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 appro-

priate.

Reforestation

Findings: Reforestation is running 26% 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 47% 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 31% below planned levels. A 10% variation from planned levels is cause for concern.

Recommendations: There was an 8% increase in this activity over the 1995 level however that increase is not sufficient to eliminate backlogs in a timely fashion. The Forest's inability to complete analysis in accordance with the National Environmental Policy Act has slowed the fuel treatment program. 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 85% 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 6 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 60% 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 77.2 miles after 6 years is 62% of planned levels. The large trail mileage reported for 1996 involved snowmobile trails. The inter-tie trail construction is scheduled for late in the decade. The current situation is not a cause for concern.

Recommendations: No special recommendation.

Permitted Livestock Grazing

Findings: At 79% of planned levels, permitted livestock grazing has just reached a level of concern. The program has been declining and will probably continue to decline as permittees continue to waive their use. It is likely that some of these allotments will never be made available for use because the permittee's cost for the NEPA analysis makes reopening them too expensive. In one case the Lone Pine Fire burned the fences and the permittee's expense in replacing them could not be financially justified.

Recommendations: Ideally, the allotment management plans should be completed and certain allotments permanently closed. Whether or not financing is available to do that in a timely fashion, the Forest Plan should be revised to reflect the realities of this program.

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.

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 six 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 Pacific Northwest Forest Plan, the Winema National Forest Plan should be modified to project more realistic estimates of accomplishment.

Monitoring Item: Budget

Monitoring 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 seventh year of the Forest Plan (FY 1991 - 1997), both the 1997 expenditures and the seven 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.

Because of the reduction in the timber harvest program, there are fewer dollars collected and fewer dollars available to spend. These funds were spent on projects within a timber sale area. The biggest funding reduction is in the fish, wildlife, threatened and endangered, range and timber stand improvement programs. It is hard to know, in the budget area, if the Forest Plan 'other resource projects' were driven by a timber cut program or not.

Collection agreements have increased, making additional dollars available for recreation and road maintenance. These dollars are for specific projects that the forest would not have been able to fund. Our cooperators are willing to pay for this work to be done. The Forest received funding for restoration projects in 1996. Additional appropriated road maintenance funding was received to accomplish some backlog work. 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). 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	7 Year Average	Percentage Difference
Recreation	\$1,086,200	\$637,300	-41%
Fish, Wildlife, T&E Species	\$810,900	\$528,100	-35%
Range	\$269,200	\$167,800	-38%
Lands & Minerals	\$284,800	\$204,900	-28%
Facilities	\$1,553,600	\$1,096,200	-20%
Timber Management	\$7,536,800	\$7,263,300	-4%
Soil, Water, Air	\$367,300	\$188,200	-49%
Protection & Law Enforcement	\$1,835,500	\$1,672,300	-9%
Administration & Planning	\$1,920,000	\$2,504,200	+30%
TOTALS	\$15,664,300	\$14,262,300	-9%

Evaluation: Over the years, it has become increasingly difficult to compare current year budgets to projections in the Forest Plan because of the changes in accounting systems. For example, administration and planning show a 30% increase, when the changes are simply a shift in accounting methods. In 1995, coding

systems changed to allow overhead costs that were formerly associated with resource areas to be coded as administration (overhead). This has the apparent effect of reducing resource budgets and increasing overhead expenses, but really it represent a truer charge-as-worked cost. Nonetheless, we can see that over the first seven years of plan implementation the total budget is about 9% below Forest Plan estimates. This is the first year of the seven years of the plan that timber management has fallen below the Forest Plan estimate. The drop in this program is in timber stand improvement.

The availability of fewer Trust Funds is affecting all programs on the Forest. The budget levels expected in the future 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. These problems should be resolved.

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 INFRASTRUCTURE instructions. Collect customer comments obtained through visitor contacts and from fee envelopes, public meetings, and correspondence. REALM 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 generally about the same as 1996 for most categories and for most activities. Both developed site use and the camping activity, however, dropped about 3% from the previous year which is probably weather related. Most campgrounds were at or near capacity on holidays and weekends with overall occupancy at fee sites running from 35% to 90% during the managed season. Campgrounds traditionally used by hunters were again overcapacity during hunting season. No resource damage or conflicts were reported due to this short term overuse, except for at Jackson Creek where some riparian zone encroachment is occurring due to lack of traffic controls.

Visitor use reporting is now done through the INFRASTRUCTURE database with use data recorded for all sites and areas from FY 1994 through FY 1997. Reports can now be run to summarize use by site or area. Since reports have not yet been developed to summarize use by activity, a PC-based spreadsheet has been developed locally to permit activity analysis and to provide input for economic analysis.

Feedback received from visitors to developed sites has been predominately favorable concerning facilities provided, condition and cleanliness of facilities, and the quality of the setting. In general, many would like us to leave everything as it is. This was especially important to visitors to Digit Point CG. The vast majority of campers at Lake of the Woods approved of the concessionaire operation. They found that the sites were quieter and the facilities cleaner with the increased on-site presence offered by the concessionaire. Some complaints were heard about the new fee being charged for day-use, especially at Fourmile Lake which was included in the concessionaire permit in 1997. The concessionaire operation has continued to meet and/or exceed our O & M standards and has proved to be very cost effective.

Specific positive comments were received concerning the accessible facilities at Wood River, the new snow/picnic shelter at Walt Haring Sno-park, the expansion of the Fourmile Lake Trailhead and Horsecamp, and the operation of Rocky Point Resort.

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

- ◆ Group camping areas available by reservation.
- ◆ Additional areas to ride mountain bikes, all terrain vehicles (ATV's) and motorcycles off system roads and places to camp and ride ATV's/OHV's.
- ◆ Downhill skiing opportunities.
- ◆ Camping and picnic sites with accessible toilets, water and power reserved for use by people with disabilities.
- ◆ Facilities designed for camping with stock and equestrian and wagon trails.
- ◆ Shower facilities & electrical hook-ups in major campgrounds.
- ◆ Additional warming shelters for snowmobilers and cross-country skiers.

A number of complaints were again received about the winter high water level that occurred at Great Meadow during early 1997. This eliminated a large portion of the snowmobiling season at this site. During the fall of 1997, the drainage ditch was cleaned out to facilitate winter run-off from the area. A number of projects were completed in 1997 to meet visitor needs, remedy complaints, and repair flood damage. The Cherry Creek snowmobile bridge, a victim of the 1996 floods, was replaced and extensive bank stabilization was completed at the Aspen Point Day-use area. Reconstruction of the Fourmile Lake Trailhead and Horsecamp was begun and an informal horsecamp was built at Rye Spur Quarry to provide the additional stock facilities requested by users. A new snow shelter, Walt's Cabin, was added at Haring Sno-park. Other projects are planned for FY 1998 in response to user requests and suggestions.

Evaluation and Follow-up

Long-term use trends on the Forest continue to track with Regional and SCORP/Forest Plan projections with some minor fluctuations due to weather and site closures for facility repairs. Growth in nearly all activities have been noted with dispersed non-motorized activities increasing the fastest. One departure is that wilderness use has remained fairly level departing somewhat from the increases projected.

Implementation of the Accessibility Transition Plan for recreation sites has been hampered by a lack of funding. Barrier-free campsites have been developed at Aspen Point and Sunset Campgrounds with other accessibility upgrades are planned. Accessible boat dock abutments were added at all three boat launches at Lake of the Woods to provide universal access throughout the use season and abate a safety hazard. No progress was made on the completion of accessible facilities at the Wood River Day-use area. Funding to complete this project is expected in FY 1999.

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.

The Forest has not made any progress on providing areas for OHV/ATV use, although some projects are in the planning stages. Providing showers and RV hook-ups is not currently feasible with the current funding level. Such facilities may be provided in the future by concessionaires. An EIS evaluating a downhill ski area proposal on Pelican Butte is scheduled for release in FY 1998.

Recommended Action

Since funding for operation and maintenance is lagging behind Forest Plan levels, measures to reduce costs and maximize efficiency in site operations need to be implemented to maintain the quality of the experience being provided at our developed sites. A Recreation Program Strategy has been developed by a Forest Team to improve program cost effectiveness. An Implementation Guide is being finalized in FY 1998, which will outline cost reduction measures, review Forest Plan direction, assess implementation progress, refine priorities in light of reducing budgets, and recommend areas that should be reevaluated in the Forest Plan revision process. The Forest is also continuing to implement Meaningful Measures (MM). This process will facilitate identifying costs to meet standards, prioritizing sites & areas and determining where to invest resources, as well as identifying cost savings across the Forest. MM will be used as a tool to implement the Recreation Program Strategy. Generally, monitoring indicates that management direction is being followed and Forest Plan goals are being met as well as possible within present funding levels. However, with reduced funding, some planned trail and facility maintenance and accessibility upgrades will be continued 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

No unacceptable resource damage caused by ORV use was reported during 1997. A change in Oregon State Statutes in late 1995 that permits ORV use on level 1 and 2 roads (unless closed by order) may have dispersed use and not forced riders to use more fragile off-road areas.

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. Chemult and Klamath RDs worked with trail users to develop an operating plan (including sign development and safety precautions) to facilitate shared trail use by mushers and snowmobilers.

Evaluation

None.

Recommended Action

Continue to monitor ORV use as required by Executive Order. Plan designated ORV trails/roads/areas as demand warrants and close areas or roads where significant resource damage is occurring or user conflicts develop. Continue to work with Oregon State Parks to develop long distance Backcountry Discovery routes for ORV's.

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

Overall scenic viewshed condition ratings were not conducted this year using 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 Actions

- ◆ Continue to monitor effects of vegetative management activities.
- ◆ Continue photographic monitoring through use of the Camera Point Photography System.
- ◆ Continue coordination with The Nature Conservancy and the Fremont National Forest on monitoring of on-Forest and off-Forest effects upon the scenic quality of the Sycan Wild and Scenic River.

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

Chemult District uses the ITAC mule deer model on all large analysis areas.

Chiloquin District reported using mule deer model runs for several areas during FY97. See Table 1. Chiloquin District also conducted some preliminary analysis of winter range on the District. A report will be prepared in FY98.

**Table 1
 Mule Deer Model HSI
 Chiloquin Ranger District
 FY97**

Area	Area (acres)	HSI by Alternative					
		Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6
Hog House	66,000	.27	.26	.26	.26	-	-
Bay House	14,380	.37	-	-	-	-	-
Ranchhouse	13,387	.36	.28	.28	.17	-	-
Rosie	15,810	.32	.32	.32	.32	.32	.32
Deep Meadow	77,818	.39	.35	.36	.36	-	-

About 45 guzzlers were maintained in FY97 by a combination of District personnel and Oregon Hunters Association volunteers. Maintenance included fence repair and guzzler parts replacement. Bitterbrush was planted on the Chiloquin Ranger District in FY 1997. The following table indicates the areas and acres planted.

Table 2
Bitterbrush Planting
Chiloquin Ranger District
FF-97

Timber Sale Area	Management Area	Plant Spacing	Acres Planted
Short T.S.	MA10 (winter range)	8 x 8	85
Boundary T.S.	MA 10 (winter range)	10 x 10	102
Mouse 2 T.S	MA12 (timber)	20 x 20	130

On the Chiloquin Ranger District mitigation for mule deer on all projects includes:

- ♦ retaining cover patches for screening
- ♦ retaining fawning cover
- ♦ retaining travel corridors
- ♦ proposing road closures
- ♦ rejuvenating forage
- ♦ seasonal restrictions as appropriate

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. The reports of this study are expected late in FY98.

In the 1997 Annual Coordination Meeting between ODFW and the Forest, ODFW reported that census flights in the Sprague Unit resulted in 28 deer per 1/2 hour of flight compared to the Gerber/Campbell Unit which resulted in 400 deer per 1-1/2 hour flight. The ODFW estimate of winter numbers in the Sprague Unit is 750 animals. The winter management objective is 4,200 animals. Their speculations of causes are that summer forage is poor and that the winter range is now subdivisions.

Evaluation

Evaluation of projects using the mule deer model indicate that effects upon habitat suitability are very small. Due to the limited precision of models of this type, it is unlikely that the activities that were analyzed had any practical effect, adverse or beneficial, upon deer habitat suitability. Habitat improvement projects and mitigation efforts do have a beneficial effect upon habitats, but affect relatively few acres and only certain components of the habitat. At the Forest-wide scale, the critical issue remains loss of mule deer forage due to increasing overstory densities. The Forest Plan anticipated significantly more timber harvest activity that would have resulted in significantly better habitat conditions for deer than are currently available. The trend of a decreasing forage base continued in 1997 and is expected to continue into the future unless timber harvest activities, fires, blowdown or other impacts reduce overstory densities and lead to increased forage for deer.

Recommended Actions

Continue to analyze the effects of timber sale activities on mule deer habitat.

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. Chemult District identifies and protects special use areas such as calving areas and wallows. In the Panhandle area elk use areas were identified. These were generally associated with water developments. In the Sugarpine area elk travel corridors were identified. These were associated with riparian stringers.

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. 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 at such time as it is revised. Coordinate with ODFW and the Tribes to refine the Forest's share of the population objectives and include the results in the Forest Plan when it is revised.

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

Fish Habitat Capability - Basinwide surveys (Region 6 Level II inventories) have been completed on most perennial streams on the Forest. Limited analysis of the stream survey data has been completed (most streams are lacking the Executive Summary and Stream Report utilizing survey data). As a result, most fish habitat capability estimates in use are largely subjective, rather than quantitative (supported by the Regional survey protocol).

To facilitate fisheries analysis, the Forest is implementing Regional guidance in moving a core set of attributes from the existing stream survey database to the GIS environment. This will allow graphical displays of key fish habitat attributes. The use of personal computer (PC) based programs to analyze existing stream survey data is also ongoing and is similarly expected to improve quantitative assessment of fisheries habitat.

The Forest conducted 4 miles of stream survey in 1997. No new stream surveys were planned for 1998.

Flood Assessment - Forest assessments of the floods of early 1997 are that these floods have not significantly affected fish habitat capability on the Forest.

Effects of fish habitat structures - In the recent past the Forest has implemented a small number of fish habitat improvement projects (e.g. instream structures). The project locations for this work were not well documented. As a result, the protocol for monitoring the effectiveness of these structures has not been implemented. The Forest continues to work with the Ranger Districts to develop a list of site locations for future monitoring of these structures. Findings will be reported after monitoring occurs.

Fish numbers, species composition and age structure - Fish numbers, composition and age structure are not

generally assessed in current Forest inventories. Species presence and composition is only addressed through the presence/absence data provided through snorkel observation sporadically conducted as a part of the basin-wide stream surveys. The exception to this is Threemile Creek where detailed electrofishing and underwater visual observations has allowed close estimates of bull trout numbers and age structure.

Cumulative Effects of Activities on fish habitat and aquatic ecosystems - Currently there are few tools available to the Forest for high precision cumulative effects analyses. The Forest has completed a number of watershed analysis (*Federal Guide for Watershed Analysis*). These watershed assessments, when revised with quantitative analysis of fisheries surveys (expected to begin in early FY99) will provide for improved rationale for project level cumulative effects assessments. Good quantitative assessments of current conditions have not been available for most project specific NEPA documents where fisheries habitat is an issue. As a result, cumulative effects assessments to date have been based upon qualitative assessments.

There are a number of streams on the Forest where aquatic ecosystems are known to be at risk from cumulative effects (Federal, State and private activities). Many of these have been identified by the State of Oregon (303(d) Water Quality Limited). The Forest has begun to address these 303(d) streams in project level planning. For example, the lower Sycan River is heavily dewatered and experiences both low discharges, high sediment levels and high summer water temperatures. The Sprague River experiences similarly degraded water quality during summer and early fall with conditions becoming lethal, or nearly so, for salmonid species during this time.

Monitoring Bull Trout (Proposed - Federally Endangered) - In Cherry Creek, bull trout populations are believed to have been lost in the past few years, largely due to competition with non-native, introduced brook trout. Extensive electrofishing in 1997 failed to produce a single bull trout.

In Threemile Creek similar competition is showing a severely reduced bull trout population. As part of the Klamath Basin Bull Trout Working Group, the Forest is undertaking a program to remove brook trout and stabilize the remaining bull trout population. Corrective actions are being taken for actions which may effect habitat or the species. Comprehensive monitoring occurred in the summer of 1997 with a challenge cost share program between the Oregon Department of Fish and Wildlife (ODFW), Klamath Tribes and the Winema NF. This population is considered the most imperiled population of bull trout in the Klamath Province. Intensive investigations are ongoing. Habitat parameters were evaluated and monitoring for other members of the aquatic biotic community (e.g. molluscs, amphibians, and invertebrates). Results of the 1997 work is being compiled by ODFW and the Klamath Tribes. Work is planned to continue in Threemile Creek for a number of years. The Forest will be reviewing all ongoing activities within the Threemile watershed for effects under ESA in 1998.

Evaluation

Stream surveys have been completed at a satisfactory rate. However, analysis of baseline data has not progressed at a satisfactory rate. This has resulted in the inability to fully integrate fisheries habitat existing condition discussions into ongoing analysis (e.g. watershed analysis, NEPA and watershed restoration activities). There has not been adequate funding for more intensive surveys needed on some stream reaches.

Recommended Action

Goals of watershed analysis include pointing out locations which may need fish habitat improvement/watershed restoration. This is unlikely to occur however, until those performing such analysis have access to stream survey data and watershed condition inventory which has been properly collected and summarized. Thus:

- ♦ Time and dollars need to be committed to summarizing existing stream survey data and comparing existing conditions to a desired future one.
- ♦ Implement a process for updating completed first round Watershed Analysis to incorporate new and better information on existing conditions for fisheries habitat.
- ♦ The Forest needs to clearly identify (based on data) which Forest streams are at or near potential for fish production, and which will require investment of funds for fish habitat or watershed improvement.
- ♦ Stream survey should continue once a Forest-wide baseline is established through analysis of the first round of surveys. After this, a minimum of ten percent of

streams should be resurveyed annually to allow for trend assessment.

- ◆ Efforts should be undertaken by the Forest to more closely align/coordinate the work of fisheries habitat evaluation/improvement with the hydrology/watershed restoration programs. Areas where coordination might begin are in implementation of watershed condition inventory, development of Forest Plan monitoring stations, and use of a methodology for intermittent and ephemeral stream surveys.

All of the above are needed to develop an adequate profile of the watershed. Such a profile is needed as rationale for project design and mitigation. Currently there is not adequate fisheries personnel employed by the Forest to allow development of major portions of the Aquatics Program. Important areas not getting attention at this time include: macroinvertebrate monitoring (called for in the Forest Plan), high lakes inventory and assessment, mollusc inventory and assessment (required under Survey and Manage Species, Northwest Forest Plan) and quality assessments of fish presence and populations. Areas getting marginal attention include: partnerships and environmental education/outreach.

- ◆ The Forest should develop the means to provide for the needed aquatic work to meet Forest Plan commitments, project level support and provide for long-term protection/enhancement of TES aquatic resources.

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

CHILOQUIN RANGER DISTRICT

- ♦ A total of 55 nests were monitored; 23 territories were occupied. Five territories included nests on private land. The active nests were on private ownership; however, all five territories are included in Chiloquin District results.
- ♦ A total of 31 fledglings were produced on USFS, while 8 young fledged from private land nests. There was an average of 1.30 young fledged per territory. Percent success rate per occupied territory was 40%.
- ♦ The following nest sites were considered in management activities in FY97:

Analysis Area Nest/Territory	% of Area with Suitable Habitat	% of Habitat Monitored	% Meeting Plan
Bayhouse Timber	40	100	100
Wocus Bay Sale			
Hoghouse Thinning	0	100	100
Solomon Lake			
Tele fiber T.S.	5	100	100
Modoc Point EA			

- ♦ There was no known damage to nest trees.
- ♦ Chiloquin crews completed 5 routes in 1998; total by species are:

Bald Eagles	27
Golden Eagles	8
Unidentified Eagles	7
Total	42
- ♦ This is the highest count on these routes in the last five years.
- ♦ There is a possible communal roost site in the Williamson River Canyon area.
- ♦ The Klamath Basin has the highest wintering eagle populations for the state. In 1997, there were 211 total counted for the Basin; in comparison the second highest count was in the Columbia River with 138.

The following information comes from 1997 surveys conducted by Frank Isaacs:

- ♦ A total of 18 territories were occupied on Forest Service land in the Chiloquin Ranger District. The total young produced was 21 fledglings, from 16 successful nests.
- ♦ There were at least 1.27 young produced per active territory, with 1.53 young fledged per successful nest. Percent nesting success was 83% (successful nests/occupied territory = 15/18).

CHEMULT RANGER DISTRICT

- ♦ 100% of nest sites were protected from project activities
- ♦ 100% of acres were monitored/surveyed
- ♦ 100% the acres monitored met Forest Plan objectives
- ♦ No nest trees were damaged or otherwise threatened.
- ♦ No eagle habitat was treated to improve conditions.

Evaluation

The Forest has been successful in keeping management of known and potential nest sites in compliance with the recovery plan objectives. According to Isaacs and Anthony (Isaacs, F.B. and R.G. Anthony. 1997. Bald eagle nest locations and history of use in Oregon 1971 through 1997. Oreg. Coop. Wildl. Res. Unit, Oreg. State Univ., Corvallis. 18pp):

- ♦ 1997 productivity in the Klamath Basin met or exceeded recovery population goals.
- ♦ Recovery of the bald eagle in the Klamath Basin has been successful, since implementation of the Pacific States Recovery Plan.

Recommended Action

Develop additional nest site plans and monitoring 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). Continue monitoring efforts with special emphasis on effectiveness of management practices in bald eagle replacement 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.

CHILOQUIN RANGER DISTRICT

- ♦ The 3003 acre Chiloquin LSR was surveyed. No spotted owls were found during this years survey or in previous years. 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 been funded for the district, and will be produced for FY 98. The Regional Ecosystem Office team reviewed the LSR in December of 1997 and agreed that any LSR values would not be present until many years into the future and that it may be appropriate to consider relocation of the LSR. The relocation possibility will be part of the LSR assessment.
- ♦ Suitable habitat surveyed to protocol in matrix land:

Analysis Area	Total Acres	Suitable Habitat Acres	Suitable Habitat Surveyed	Suitable Habitat Monitored
Dagwood	47,646	13,314	57% (7,643 ac)	57%

- ♦ Banding - Two spotted owls were banded in 1997.
 - Two young from territory MSN #4346 were banded in T.36S, R.09E.,Sec.16. These were from a new nest stump tagged 4346-1997 and

given USFWS nest #2172. Owlet #1 received a white/blue band on the left leg; a USFWS band, number 1387-73540 on the right leg. Owlet #2 received a white/blue band on the right leg; USFWS band, number 1387-73186, on the left leg.

- One unknown adult was located but status was not confirmed since leg bands were not observed. Location was 36S-09E-04.
- A new nest numbering system was initiated this year that adds the year the nest was first located to the end of the MSN number.

Evaluation

Spotted owl populations are at the anticipated levels in the Late Successional Reserves on the Klamath Ranger District. Population levels and owl recruitment have been relatively stable for the last four years with a population of about 95 to 100 birds. Fluctuations are likely related more to survey intensity and scope than to actual changes in populations.

Late Successional Reserves on the Chemult and Chiloquin Districts contain inadequate or marginal owl habitat and are not expected to provide for continued spotted owl populations.

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.

Potential habitat has not been identified on Chiloquin for 1997 management activities. Biological evaluations made note of habitat use by nesting prairie falcons. Total management activity in 20 project areas was pre-field reviewed for suitable habitat. Some was also ground-truthed for suitability. Peregrine falcon surveys were not conducted using a protocol.

The Chemult District has no known potential or occupied peregrine habitat. No project areas were surveyed in 1997.

No surveys completed in 1997 on the Klamath District.

Evaluation

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

Recommended Action

Surveys need to be completed and survey results documented on the Winema Survey Form in order 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. Supervisor's Office personnel will complete mapping of potential peregrine habitat as funding and priorities permit.

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 areas of use by Lost River and short nosed suckers on the Winema National Forest are identified. Critical habitat for both species has been proposed by the Fish and Wildlife Service (FWS) under the Endangered Species Act (ESA).

Areas of current use on the Forest (current range) are not well documented in Forest surveys. Lost River suckers use areas of the Forest near springs within Upper Klamath Lake for spawning and rearing. Spawning for Lost River suckers is believed to be primarily limited to the lower reaches of the Sprague and Williamson Rivers. However, observations of larval Lost River suckers in the Wood River and Crooked Creek suggests that spawning may also be occurring in these systems. The distribution of shortnose suckers is similar to Lost River suckers, but the shortnose sucker appears to be more widely distributed. The Forest continues to collect, monitor and use current findings in the literature on suckers. Where possible, the Forest is participating in ongoing interagency studies on suckers.

The Forest prepares biological assessments for all projects that "may effect" either listed suckers or their proposed critical habitats. Literature pertinent to the life history needs of listed suckers is utilized in preparation of these biological assessments and the subsequent ESA consultations with the FWS. Implementation of land management decisions made on the Winema NF which may effect listed suckers occur only after ESA consultations. The Forest reviewed and made recommendations for mitigation measures for projects where effects to suckers or their habitats were different than described in NEPA documents.

To facilitate the preparation of project level NEPA, biological assessments and consultations under the ESA, the Forest is developing map products within its Geographic Information Systems (GIS). Efforts began in 1997 to link stream habitat information from the stream survey data base (Oracle Tables) with the GIS environment. Much of this work is expected to be completed in 1998.

A number of forest activities in the ongoing and planning stages were analyzed for effects to suckers. Design of planned activities are generally resulting in the expectation of some level of improvement (upward trend) in habitat condition for listed suckers (e.g. reduced sediment yield, improved water quality or discharges).

Currently used cattle allotments which may effect sucker habitat were assessed by a Forest ID team using the "Proper Functioning Condition Analysis" (BLM). All visited sites were found to be in proper functioning condition.

Evaluation

The current literature on the life history needs of listed suckers suggest that improvement in habitat conditions within Upper Klamath Lake offers the best potential for recovery of these species. For the Forest to contribute to this, changes would have to occur in upland and tributary management practices or through recovery from changes already made. Others have pointed out that improvements in fish passage at the Chiloquin Dam (improved access to currently suitable spawning habitat) may offer the best short-term improvements in sucker recruitment.

The Forest continues to review all ongoing and proposed projects for potential to affect listed suckers and/or their proposed critical habitat. Most of the potential for adverse impacts from Forest activities would be from increases in sediment yield, changes in water yield/timing or increases in existing stream temperatures. These potential pathways of change are reviewed in biological assessments. Supplementing the Forest stream survey program is information collected by the Forest Water Resource Team (WRT) in support of Forest claims under Klamath Basin Adjudication. Particularly relevant to sucker life history is newly compiled information on stream discharges, stream temperatures, sediment routing and habitat discharge relationships. Suitability of some of these sites for long-term Forest monitoring is being considered.

Recommended Action

- Support current research efforts for listed suckers to the extent possible. Stay current on all recent sucker findings.
- Work with other agencies and interested landowners to assess location, quantity and quality of sucker spawning and larval migration habitats.
- Become involved in the discussions about the need to improve fish passage at the Chiloquin Dam.
- Establish long-term Forest Plan monitoring sites (as a minimum a sub-set of sites used for adjudicating Forest water claims) to monitor effectiveness of mitigation measures applied to land management activities and watershed restoration programs. A Forest ID team should be used to develop a process (considering cost) to select the needed number and location of these sites.

To reduce time spent in getting projects approved, and allow for better use of resources for research and effectiveness/ validation monitoring:

- Increase emphasis on streamlining consultation under the ESA (including development of interagency, programmatic biological assessments) to ensure adequacy and consistency in mitigation measures applied for protection of listed 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. Snag and down wood requirements are being met during activities.

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
1996	1,015*
1997	1,230*

*through fungal inoculation

Evaluation

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

Recommended Action

Continue evaluating habitat needs on a project level.

<p>Monitoring Item: Wildlife - Other Pileated Woodpecker Northern Three-Toed Woodpecker Goshawk Pine Marten</p>

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

Pileated Woodpecker

The Solomon Butte Pileated Woodpecker Reserve boundary was adjusted slightly in conjunction with the Ranch House Timber Sale EA. Chiloquin District will focus monitoring on pileated woodpeckers in FY98 in conjunction with the Copwood and Yoss House EAs.

Neotropical Migratory Birds

The Forest was a cooperator in regional neotropical migratory bird monitoring.

Northern Three-toed Woodpecker

Approximately 200 green trees were inoculated with heart rot fungus in the John Timber Sale area to create

snags as part of an ongoing study.

American Marten

The marten study continued in FY97. A new standard contract clause was developed this year to maintain slash piles for marten on timber sales. The clause was approved by the Regional Office and will be used in future timber sales.

Goshawk

On the Chiloquin District, goshawk surveys were conducted in the Yoss House, Bay House, and Dagwood Planning areas. They were conducted to protocol.

Goshawk Survey Results		
Planning Area	Acres Surveyed	New Nests Found
Yoss House	3,567	2
Bay House	2,897	0
Dagwood	8,259	2

Great Gray Owl

The Dagwood Planning Area on the Chiloquin Ranger District was surveyed to protocol for the second year. A total of 2,095 acres of potential habitat was surveyed. The following table indicates the results of the survey.

Summary of Owl Detections for the Dagwood Planning Area		
Owl Species	1997 Detections	Total Detections (1996 + 1997)
Great Horned Owl (<i>Bubo virginianus</i>)	18	37
Northern Pygmy-Owl (<i>Glaucidim gnoma</i>)	14	19
Flammulated Owl (<i>Otus flammeolus</i>)	1	1
Spotted Owl (<i>Stric occidentalis</i>)	2	4
Great Gray Owl (<i>Strix nebulosa</i>)	16	27
Unknown	1	3
Total	52	91

Evaluation

Monitoring of target and other species is occurring prior and during projects and as cooperative studies.

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.

Botrychium pumicola

In 1997, 16,138 project acres were surveyed for sensitive plants on the Chemult Ranger District. Sensitive plant Biological Evaluations were completed for 6 projects in 1997. Of these 6 projects, the Wildthings project area was the only area where sensitive plants were found. Twenty-two new sites of pumice grape-fern, *Botrychium pumicola* (BOPU) were found in the planning area, in addition to the 23 previously known sites occurring in this project area. Mitigation measures consist of excluding pumice grape-fern populations from any management activities. The new sites were located with the GPS unit. All populations within sale unit boundaries were given a 200 foot exclusion buffer. The Wildthings project was not implemented in 1997.

In addition to the 9 established monitoring sites of *Botrychium pumicola*, two additional sites were established in 1997, in previously harvested areas. All the sites were visited in 1997 and presence/absence data was recorded.

The draft conservation strategy for *Botrychium pumicola* is currently being reviewed and the final version is anticipated to be completed in the spring of 1998. A five year challenge cost share agreement between the Winema, Deschutes & Fremont National Forests and the Oregon Department of Agriculture to look at the disturbance ecology of *Botrychium pumicola* is being initiated in 1998.

Area Surveyed	Area Surveyed (Project Acres)	Percent of project acres surveyed	Inventory intensity*
Troutwood	9,778	100%	2
Yawheewood	22,670	11%	2
Hoghouse TSI	12,669	50%	2

* Inventory intensity:
 1=Drive through
 2=Walk through
 3= Sampling design or survey protocol used
 4=Survey intensity at research level

Populations Monitored

Species Code	GIS Number	Population Acres	Percent Acres Meeting Forest Plan Objectives	Previous Population Count	1998 Population Count	Population Trend ¹
ASPE4	000163	1.3	100	1000/1995	1000	S
ASPE4	000166	49.0	100	100,000/1995	100,000	S
ASPE4	000183	2.0	100	400/1995	400	S
ILBA	000192	11.6	100	400/1995	347	S
ILBA	000201	8.7	100	90/1995	37	S
ROCO2	000082	0.5	100	24/1993	0	D ²
ROCO2	000083	0.3	100	150/1994	265	I ³
ROCO2	000085	2.0	0	2279/1993	2,772	I

NOTES:

1. Population Trend
 S=stable
 D=decreasing
 I=increasing
2. Enclosure fence was constructed in 1995 to protect population from livestock grazing
3. Despite increasing numbers, this population is not being protected from heavy cattle grazing impacts. An enclosure fence is proposed, but further monitoring isn necessary on movement of this transitory annual.

Sensitive Species Management Status

Species	Known Sites	Percent Being Protected	Percent of Total and Potential Habitat Protected	Source of Impact
<i>Allium bolanderi</i> <i>var. mirabile</i>	0	--	100	
<i>Allium campanulatum</i>	9	100	100	
<i>Arabis suffrutescens</i> <i>var. horizontalis</i>	0	--	100	
<i>Arnica viscosa</i>	0	--	100	
<i>Asarum wagneri</i>	0	--	100	
<i>Astragalus peckii</i>	3	100	100	
<i>Botrychium pumicola</i>	0	--	100	
<i>Calliargon trifarium</i>	0	--	100	
<i>Calochortus longebarbatus</i> <i>var. longebarbatus</i>	87	100	100	
<i>Castilleja chlorotica</i>	0	--	100	
<i>Cicuta bulbifera</i>	0	--	100	
<i>Collomia mazama</i>	0	--	100	
<i>Eriogonum diclinum</i>	0	--	100	
<i>Eriogonum prociduum</i>	1	100	100	
<i>Gentiana newberryi</i> <i>var. newberryi</i>	0	--	100	
<i>Hazardia whitneyi</i> <i>var. discoidea</i>	0	--	100	

**Sensitive Species Management Status
(continued)**

Species	Known Sites	Percent Being Protected	Percent of Total and Potential Habitat Protected	Source of Impact
<i>Hieracium bolanderi</i>	0	--	100	
<i>Melica stricta</i>	6	100	100	
<i>Mimulus jepsonii</i>	0	--	100	
<i>Mimulus pygmaeus</i>	31	100	100	
<i>Mimulus tricolor</i>	19	12	12	cattle trespass
<i>Penstemon glaucinus</i>	1	100	100	
<i>Perideridia erythrorhiza</i>	0	--	100	
<i>Perideridia howellii</i>	0	--	100	
<i>Rorippa columbiae</i>	5	80	80	cattle grazing
<i>Silene nuda</i>	108	100	100	
<i>Thelypodium brachycarpum</i>	0	--	100	

No conservation strategies were completed in 1997.

***Calochortus longebarbatus* var. *longebarbatus* Monitoring Study**

After a high in 1995, overall *Calochortus longebarbatus* var. *longebarbatus* numbers in the study sites continue to decline. The decline may be due to a higher incidence of prolonged dormancy, rather than the death of plants. This decline was not explained by Klamath Falls, precipitation data. Although burning appeared to have a beneficial effect, no significant difference could be detected. Likewise, no significant effect of grazing could be detected. Burning and moderate levels of grazing appear to be neutral. Changes in plant numbers are idiosyncratic and inexplicable, with wide variability among sites (Goldenberg unpublished, 1997).

***Cypripedium montanum* Monitoring Study**

Plant numbers increased overall between 1996 and 1997, from 149 to 203 plants. There was no significant difference between old-growth and partial cut sites. Because not all plants may emerge each year, this increase may be only apparent and not actual. Growth rates were measured for plants in four plots. Extrapolating from this data, it takes 15 years or more for plants to reach reproductive maturity. Populations recovery from disturbance events should be very slow (Goldenberg unpublished, 1997).

Perideridia erythrorhiza

A challenge cost share agreement to develop a conservation strategy for *Perideridia erythrorhiza* was initiated between the Klamath Ranger District and the Oregon Dept. of Agriculture in 1995 and continued through 1997. The project will include a study of the taxonomy and genetics of westside and eastside populations.

Amphibians

During 1997, Buck Lake, Fourmile, and Sky Lakes were inventoried for amphibians in a cooperative study with Oregon Natural Heritage Program. 4 miles of streams were surveyed under the fisheries program. Amphibians were tagged. Reports provide management recommendations and summarize findings.

Yellow Rails

A radio-telemetry study on yellow rails was initiated in 1995 and continued into 1997. 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.

Based upon surveys of 23,285 acres, populations of sensitive plants (status and distribution) on the Chiloquin District 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

Report survey results on the Winema Survey Forms, R6 Forms, and Oregon Natural Heritage Program (ONHP) Sighting Forms and enter the data into BOTSIS and WILDOBS. Improve the integration between these databases and GIS and more thoroughly evaluate this question.

Continue monitoring studies in progress on *Collomia mazama* and *Asarum wagneri* (Klamath); *Botrychium pumicola* (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 fire history study is underway in the Cherry Creek RNA on Klamath Ranger District. 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 continued through 1997. The information gathered will show species locations and provide habitat descriptions on the Winema NF.

Yellow Rail radio-telemetry studies have occurred from 1995 through 1997 in support of the Conservation Strategy. Movement and nesting patterns for rails have been documented and information gathered. Nesting habitat descriptions have been completed.

Conservation Strategies are in progress for *Asarum wagneri* and *Perideridia erythrorhiza*.

Evaluation

As the trend for reduced harvest and decreased commercial thinning continues, the acres of early successional stages in forested types will decrease. If 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 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

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.

Evaluation

The acres of protected habitats (Management Area 7) did not change in 1997. The lack of any significant fires or significant removal of large trees (the Eastside Screens do not permit harvest of trees over 21 inches in diameter) indicates that the acres of old growth habitats outside of protected areas have not changed. As fire protection continues to allow undergrowth to develop, the larger trees may become more and more stressed until they succumb. Alternatively, understory trees, particularly fir, may die and increase fire hazards until suppression is not possible. In either case, the risk of loss of the existing old growth stands is expected to increase in the future unless understory vegetation is removed (mechanically or with controlled fire).

Recommended Action

Continue to record changes in MA-07 patches.

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

1. Is range vegetation condition being maintained or improved in stable or upward trend?
2. Are areas in unsatisfactory condition or where basic resource damage has occurred improving?
3. Are riparian objectives for vegetation condition being met?
4. Is the area of noxious weed infestations stable or decreasing?

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 608,123 acres in allotments (the difference in acres from 1994 attributable to GIS changes and exclusions in some allotments), 97,638 acres were monitored. This is less than half of those monitored in 1996. Of those monitored, 96,569 acres were at or moving toward Forest Plan Objectives (FPO), and 40 acres were not meeting FPO.

Of the riparian areas within allotments (41,462 acres, included in the overall totals above), 14,860 were monitored and of those acres monitored, 40 acres are not meeting or moving toward FPO.

An enclosure was expanded in the Dams-Switchback Allotment.

YEAR	ACRES MONITORED	ACRES NOT MEETING FPO
1993	239,511	21,900
1994	265,656	2,176
1995	273,958	100
1996	228,477	44
1997	97,638	40

Forage production was excellent across most of the Forest.

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

An environmental assessment was begun in FY97 that will terminate several allotments. The bases for termination of these vacant allotments is lack of forage, lack of improvement maintenance, and need for cost-ly analysis/NEPA/AMP before they could be made viable. The termination of these allotments does not change the availability of the land for livestock grazing depending upon analysis.

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
1996	86.2	8.3	0.0	94.5
1997	79.7	8.2	0.0	87.9
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.

Across much of the Forest livestock use monitoring was changed from ``utilization'', the measuring of what vegetation was taken by livestock, to residual stubble height, or vegetation left after livestock use.

Chemult District

Utilization was not measured on every key site due to limited funding. Key areas of past overuse or areas where it was visually difficult to assign a value were measured using stubble height transects. All key areas visited showed light use. The District found that a standard of four inches stubble height in riparian areas for Kentucky bluegrass and for hairgrass was not reasonable because ungrazed leaf length was approximately two and one-half inches on the bluegrass and four to five inches on the hairgrass. Salt was placed in some areas on the Antelope Allotment to help distribute cattle evenly across the allotment. Salt locations were mapped.

Antelope Cow/Horse Allotment Utilization				
KEY AREA	1994	1995	1996	1997
CROOKED MEADOW	51%	10%	12%	5%
JOHNSON MEADOW	6.5%	11%	30%	15%
SPROATS MEADOW	14.5%	22%	39%	20%
SQUIRREL CAMP	26%	5%	12%	5%
UPPER JACK CREEK	52%	60%	Portion Fenced	Portion Fenced
WILSHIRE MEADOW	33%	10%	14%	20%

Jack Creek Sheep/Goat Allotment Utilization				
KEY AREA	1994	1995	1996	1997
BARTLEY HDQUARTERS	4%	0%	NO MEASUREMENT	NO MEASUREMENT
CLEARY	NO MEASUREMENT	0%	NO MEASUREMENT	NO MEASUREMENT
DAVIS FLAT	28%	0%	15%	5%
HIDDEN	2%	0%	NO MEASUREMENT	NO MEASUREMENT
JACK CREEK	3%	0%	NO MEASUREMENT	NO MEASUREMENT
LILLY CAMP	35%	0%	25%	25%
LITTLE ROUND	16%	0%	15%	NO MEASUREMENT
LONG PRAIRIE NORTH	13%	0%	NO MEASUREMENT	5%
LONG PRAIRIE SOUTH	17%	0%	NO MEASUREMENT	5%
MCCARTY (NORTH)	0%	0%	0%	NO MEASUREMENT
MCCARTY (SOUTH)	24%	0%	0%	NO MEASUREMENT
O'CONNOR	9%	0%	10%	10%
PADDY'S	3%	0%	5%	NO MEASUREMENT
RAKES	5%	0%	NO MEASUREMENT	NO MEASUREMENT

UTILIZATION SUMMARY CHART

Percent Utilization

KEY AREA	1990	1991	1992	1993	1994	1995	1996	1997
Cannon Well		90	63			28	58	5
Crooked Meadow	51.8	75.4	76	37	51	10 est	12	5
Dry Meadow	85.6				60	30 est	Fenced	Fenced
Jack Creek Upper	41.1	81.4	79	65	52	60 est	Fenced	Fenced
Johnson Meadow North	38.2	71	79	12		11	30 est	15
Johnson Meadow South	43.6	73	74	6	6.5	9	25 est	5
Parker Meadow			67		50	94	44	35
Riders Camp	81.7				60	85 est	Fenced	Fenced
Sproats Meadow	78.7	90	81	27	14.5	22	39	20
Squirrel Camp	44.4	54	73	5	26	5	12 est	15
Stimpson Meadow					11.5	10 est	25 est	-
Wilshire	68.4	86.2	61.4	33	33	10	14	20

Chiloquin District

Livestock were removed early in the Dice-Crane Allotment because several meadows were not dry enough to use. In the Ray Ranch portion of the allotment the top of the dike along Hog Creek was used for trail-ing. Utilization in key areas in the Dams-Switchback Allotment ranged from 25 to 40 percent. Approximately 2.5 acres received heavier utilization than allowed. Willows showed negligible use. Proper Functioning Condition was assessed on three forks of Rock Creek. The systems were functioning at risk or in proper functioning condition. The systems functioning at risk were evaluated to be in upward

trend.

Key areas of the East Chiloquin Ridge Allotment showed less than 15 percent utilization.

Areas in the Teddy Powers area of the Yamsi Allotment exceeded utilization standards. Other areas were within standards.

The Sycan Allotment was unused. Livestock from the Black Hills Allotment on the Fremont National Forest were again observed in the Sycan River corridor.

The Applegate Sheep Allotment was in compliance with standards.

Klamath District

In the Fourmile Spring Allotment, residual stubble height was well within objectives. Woody plant species were unused. The watering site was hardened by the placement of rock, a stock tank was placed, the corral was completed, and pasture fences were moved.

The Jack Springs Allotment was vacant in 1997. There was unauthorized livestock use between the Jack Springs Allotment and Jack and Fourmile Springs and along other areas of Westside Road. Stubble height measurements were taken in the Jack Springs area to document livestock use. Livestock were well distributed in upland vegetation and timber harvest units in the Buck and Indian Allotments. The Muddy Spring water development site was fenced, and Bear Hollow was fenced.

Buck/Indian Allotments Key Area MRSH* Summary

*Median Residual Stubble Height (inches)

Area	1997
Bear Hollow	12.0
Bear Hollow North	5.5
Buck Meadow	8.0
Desolation	9.0
Jaybee	8.0
Rainbow	18.0
Spencer	20.0

Noxious Weeds

Funding was adequate to implement the Noxious Weed Treatment Environmental Assessment that was completed in 1993. The Forest completed an amendment of this EA in 1997, adding new sites for treatment. Leafy spurge along the Squaw Flat Road was scheduled for treatment, but was obliterated by county road maintenance before treatment. Diffuse knapweed and Canada Thistle was treated in Summers Quarry. The Klamath District contracted with Klamath County for herbicide treatment of Klamath Weed along Westside Road. Eighty-nine acres of noxious weeds were treated using appropriated funds, 1,108 acres were treated using CWKV funds.

Evaluation

For FY97, the Forest was well below the budget threshold where it can effectively perform adequate on-the-ground administration and meet monitoring commitments for grazing allotments.

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 (40 acres) was unacceptable. Corrective measures planned for FY97 for certain key riparian areas that have been outside of standards were implemented including fencing for some, and more intense administration and follow-up monitoring for others. Incidences of unauthorized use were 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. An annually revised schedule that assumes adequate funding follows. Vacant allotments which are proposed for termination have been removed from the schedule.

**Allotment Management Planning
Revised Schedule for 1998**

ALLOTMENT	RANGER DISTRICT	YEAR TO COMPLETE	RATIONALE FOR SCHEDULE
Antelope	Chemult	1999	Data Collected
Applegate	Chiloquin	2000	
Buck	Klamath	2000	Data Collected
Dam's Meadow/Switchback	Chiloquin	2000	
Dice-Crane	Chiloquin	2001	
E. Chiloquin Ridge	Chiloquin	2001	
Fourmile Spring	Klamath	1998	Data Collected
Indian	Klamath	2000	Data Collected
Jack Creek	Chemult	1999	
Jack Spring	Klamath	1998	Data Collected
Skellock	Chiloquin	2003	Vacant
Sycan	Chiloquin	2002	Data Collected
Yamsi	Chiloquin	1999	Data Collected

Recommended Action

Place emphasis on permit administration. Emphasize permittee responsibility for monitoring use.

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 1997.

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 was ready for use early in 1997. During 1997 and into 1998 work is underway to produce an updated current vegetation map to more accurately develop the inventory.

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 1994

Mortality (mbf)

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

Lodgepole Pine Mortality Summary 1995 through 1997

Mortality (mbf)

District	1995	1996	1997
Chemult	51	1326	22
Chiloquin	4	2795	114
Klamath	40	153	3044
Winema Total	95	4274	4180

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 tables show the number of acres by working group by silviculture treatment for fiscal years 1991 through 1997:

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

1996
Working Groups Treated
 Acres

Silviculture Treatment	Lodgepole Pine Mature 1 Story	Lodgepole Pine Mature 2 Story	Ponderosa Pine Mature 2 Story
Clearcut	553	1836	0
Seedtree cut	764	9	368
Removal cut	0	0	0

1997
Working Groups Treated
 Acres

Silviculture Treatment	
Clearcut	There were no acres treated with these treatments during fiscal year 1997.
Seedtree cut	
Removal cut	

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	1996	1997
Ponderosa Pine	87	90	94	89	90	82	67	73	83	92
Lodgepole pine	91	94	96	90	95	91	63	78	83	91
Average all species	87	88	93	84	89	83	65	73	80	84

Third Year Planting Survival Percent survival by species by year

Species	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Ponderosa pine	89	80	62	96	84	68	77	63	54	81
Lodgepole pine	93	98	76	77	86	81	88	67	52	91
Average all species	91	79	67	82	82	70	78	62	53	83

Fifth Year Reforestation Success Year of Final Harvest

Measure	1988	1989	1990	1991	1992
Acres of Final Harvest	27,945	22,523	10,430	22,636	4,892
Acres Adequately Stocked	27,108	22,117	9,041	22,485	4,892
Percent Ref. Success	98	98	87	99	100

Evaluation

First year survival has improved this year to above the 80% level, which is the threshold of concern. Third year survival is now also above 80%. Fifth year reforestation success is 100%.

Recommended Action

Continue monitoring.

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

Pest Occurrence Summary 1989 through 1997 (mbf)

CHEMULT DISTRICT	1989	1990	1991	1992	1993	1994	1995	1996	1997
Fir Engraver	64	67	21	7	14	36	13	43	54
Mt Pine Beetle(Lodgepole pine)	3514	524	98	102	197	126	51	1326	23
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	-	1
Western Pine Beetle	67	18	11	-	47	64	13	21	-
TOTAL CHEMULT	3671	611	132	299	272	283	102	1782	28
CHILOQUIN DISTRICT	1989	1990	1991	1992	1993	1994	1995	1996	1997
Fir Engraver	1882	335	1385	381	1240	821	12045	30280	36
Mt Pine Beetle (Lodgepole pine)	458	51	23	30	326	97	4	2795	114
Mt Pine Beetle (Sugar pine)	222	77	60	334	37	21	-	-	-
Mt Pine Beetle (Ponderosa pine)	-	-	161	786	59	48	575	1	10
Western Pine Beetle	970	116	205	137	361	1563	159	921	4
TOTAL CHILOQUIN	3532	579	1834	1668	2023	2550	12783	33997	164
KLAMATH DISTRICT	1989	1990	1991	1992	1993	1994	1995	1996	1997
Fir Engraver	668	1363	311	25	567	612	7621	11937	144
Mt Pine Beetle (Lodgepole pine)	36	19	-	8	3	120	40	153	44
Mt Pine Beetle (Sugar pine)	2	21	19	26	3	5	-	-	16
Mt Pine Beetle (Western white pine)	17	106	6	69	-	124	-	4	-
Mt Pine Beetle (Ponderosa pine)	-	9	3	-	1	4	2	-	1
Western Pine Beetle	492	565	197	233	209	386	13	1719	-
Douglas-fir Beetle	-	2	8	-	-	-	-	-	-
TOTAL KLAMATH	1216	2085	544	361	783	1252	7668	13813	205

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 has dropped dramatically during 1997. This is due to the increase in precipitation, and in some areas, the near elimination of susceptible white fir. In many areas dead white fir will now contribute to increased fire hazards for years to come.

Recommended Action

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. 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 no longer a priority. The rapid deterioration of small, dead white fir and its low volume per acre, create a situation where we will no longer be able to salvage much of the dead material.

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

Chiloquin Ranger District monitored soil conditions that affect soil productivity in the proposed Rosie-Dollar timber sale. Soil types were identified and compared to the Soil Resource Inventory (SRI) mapping. The main concerns identified in this monitoring project were erosion associated with roads, soil fertility, subsoiling effects, and slope stability. All 38 proposed units on this sale have been previously entered; 34 were monitored for compaction. Although rated low to moderate compaction hazard, the majority of the units measured between 10 and 14% of unit area detrimentally compacted from a single entry. This is below the Forest Plan standard of 20% of unit area. The SRI mapping was accurate in most cases. Inclusions of B soil in Units 34 and 35 were not identified in the SRI, otherwise mapping appeared more than adequate. Mass wasting after harvest was identified as a potential hazard in residual soils on steep slopes (>70%).

Site fertility in the Rosie-Dollar area has generally not been protected. Most nutrients recycle in the upper 8" of soil and are susceptible to water and wind erosion after disturbance. Specific activities that have reduced site productivity include an eroding transportation system, landings in low spots, machine piling of slash, and multiple passes of ground based equipment.

Evaluation

Soil monitoring records on the Forest indicate extensive detrimental compaction has occurred. However, very little monitoring differentiates between past activities and current methods. Efforts are underway to remediate cumulative damage.

Monitoring on the Winema in the last 4 years has increased our knowledge of the susceptibility of soils to compaction and provided information on extent and location. Variation between soils that appear the same or are mapped the same has been identified. The Forest is conducting 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.

Recommended Action

- ◆ Continue to develop a standardized monitoring program.
- ◆ Maintain records of soil conditions on EAs/EISs in progress, on recently implemented projects and on older projects are needed to determine where remedial efforts are required.
- ◆ Monitor to determine effectiveness of current mitigation efforts is needed.
- ◆ Develop site specific inventory and interpretation for project level planning. Reliance on a broad planning document such as the SRI for site specific analysis is well beyond the stated scope of the document and is misleading.
- ◆ Obtain more information on 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.
- ◆ Emphasize the relationship between soil resource damage and sale administration.

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 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

Results and Findings were not compiled for this element this year.

Recommended Action

None.

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?
- ◆ Are water resource related BMPs effective for:
 - a. Maintaining and enhancing water quality and the beneficial uses of water?
 - b. Maintaining stream channel stability and favorable conditions of flow?
 - c. Allowing compliance with State water quality requirements such as Oregon antidegradation policy for high quality waters and National Wild and Scenic Rivers.

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

The in-depth review of the use of Best Management Practices was not performed this year. Implementation was reviewed on a few projects:

- ◆ A field review of the Threemile/Sevenmile Timber Sale revealed that all mitigation and BMPs are being properly applied
- ◆ A field review of the Nannie/Rock Timber Sale revealed that, during the operation, waterbars were being placed in corridors, drainages were protected in accordance with the Forest Plan, and skyline corridors were waterbarred
- ◆ A field review of the Buggy Timber Sale revealed that Best Management Practices and mitigation measures had been specifically identified for the project and were being applied. These included: heavy equipment did not enter the buffer around riparian areas, the slope break of the meadow was well within the buffer area, harvesting within the Riparian Reserve was beneficial to the Riparian Reserve, and areas where riparian species (e.g. aspen) were present were not harvested or entered with heavy equipment.

Evaluation

In all cases that were reviewed and documented, BMPs were being properly implemented on the ground. There were no findings as to whether or not the BMPs were effective in protecting water quality.

Recommended Action

Collect and report evidence regarding the effectiveness of BMPs in protecting 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 accomplish 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 1997, 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 1997, 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 asserted 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. This analysis was completed in 1997 and a decision was made and implemented in 1998. The analysis for areas adjacent to the Klamath Marsh and the southeast portion of the Chemult District will be completed after 1998.

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.

In 1997, a formal review of the road program was conducted by the Regional Office.

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, public concerns must be resolved and the Forest must complete access and travel management planning and environmental analysis for selected project areas. 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.

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 the analysis for the Klamath Marsh area and the Southeast portion of Chemult after 1998.
- ◆ 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 1997 program: 798 jobs (Concern: less than 1,800)
- ♦ Estimated income impacts from the 1997 program: \$18,310,000 total income (Concern: less than \$50,000,000)

Community Economic Health and Conflict:

- ♦ Local income rose 5.8 percent over three years (No Concern: 15 percent threshold).
- ♦ Local population rose 1.8 percent over three years (No Concern: 15 percent threshold)
- ♦ Total jobs increased 7.2 percent while lumber and wood products jobs declined 2.5 percent over three years (No Concern: 15 percent threshold)
- ♦ Conclusion: 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.

Payments to the County:

1 1997 Payments: \$4.71 million (Concern: less than \$7.92 million - 1982\$)

1 Change from 1996 to 1997: minus 6 percent (No Concern: less than 10% decrease)

1 Conclusion: 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, still in effect, for eastside forests (screens - Forest Plan Amendment 8) which limited harvest to trees smaller than 21 inches dbh. 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.

In 1996, 28.3 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). Over 15 mmbf of this volume was harvested in 1996. Due to this activity and the Forest's regular sale program, harvest in 1996 was more than twice the 1995 harvest level.

In 1997, a series of appeals led to decisions to drop or significantly redesign some large timber sales. Thus, less volume was sold in 1997 than had been planned. Harvest levels also declined. As of April, 1998, these projects had not been readied for sale. Harvest in 1998 could reach as much as 40 mmbf, but it is more likely to fall below 1997 harvest levels.

Beyond 1998, 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. While this is a hopeful point, it is not clear whether or not it will come about or how management might otherwise be affected. In the longer term, prospects for increased timber harvest activity are poor.

The Forest Service is currently developing a Memorandum of Agreement with the Klamath Tribes that may affect timber harvest levels on Former Tribal Lands.

The Forest Management Team is currently assessing work-force needs since future budgets are expected to decline to be more in line with the timber volume prepared and sold. With lower budgets in the future, the jobs associated with those budgets will also drop. One estimate was that at least 78 direct jobs (full-time equivalents) would be lost from the Forest Service payroll alone. Indirect and induced jobs, elsewhere in the economy, will decline proportionately. County-wide, in all sectors, the total job loss associated with this downsizing effort could reach 200.

The Klamath County economy has done very well, to date, in adjusting to changes in the wood products industry. Unfortunately, declines in the algae industry may disrupt the balance that was beginning to develop. 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 as shown in the following table:

Klamath County
Growth of Transfer Payments
Year to Year
 (Adjusted for Inflation)

YEAR	% Change	Transfers in 1982\$	Percent of Total Income
1990	-	\$125,134,000	20.7%
1991	+7.5%	\$134,390,000	22.4%
1992	+6.6%	\$145,772,000	22.9%
1993	+4.0%	\$149,585,000	23.0%
1994	+5.6%	\$158,445,000	24.1%
1995	+6.9%	\$169,370,000	25.2%

This can be expected to continue as long as retirement plans can continue to support more and more retirees.

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.

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 (now under construction), the Pelican Butte Ski Area (if developed) and the Tribal Gaming Facility (opened in July 1997) will all provide a certain level of recreation capacity, but they are also likely to generate associated demand to be served by other providers. 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 1997 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 less than \$1 million in 1997. The owl guarantee provided \$7.56 million (\$4.71 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 X 0.25 X \$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 around \$1,000,000 per year at that time. Note that even though the percentage in the formula declines by 3% per year, the decline in current year dollars is somewhat higher than that and, when inflation is considered, the decline is around 6% per year. Because the

major portion (82.5% percent) of receipts that feed the 25% fund come from timber sales and other forest products, under current law it is necessary for these 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. The President has promised to put forth legislation to accomplish this. 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.