

WINEMA NATIONAL FOREST

Monitoring & Evaluation Report

Fiscal Year 1996

September 15, 1997



WINEMA NATIONAL FOREST

FOREST PLAN MONITORING REPORT

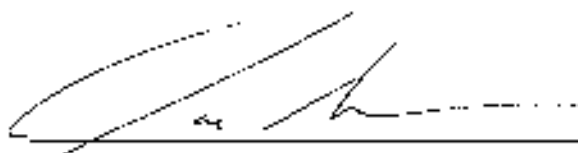
FISCAL YEAR 1996

Prepared By

The Winema National Forest Interdisciplinary Team

September 15, 1997

Forwarded by:



Date:

9/15/97

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Date:

9/15/97

Bob Castaneda, Forest Supervisor

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. This is due to several factors including 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 although other sectors of the local economy are doing reasonably well. 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, 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. Habitat improvements for lost river and short-nosed suckers would be most effective in Upper Klamath Lake which is outside of the Forest. Downstream effects have been minimal due to the low levels of timber harvest activity on the Forest. Timber sales that are currently being planned are expected to have beneficial effects on the suckers. In general, sensitive plants have not been monitored for a long enough period to establish trends.

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 continues to cause mortality in large ponderosa pine trees used by Bald Eagles for nesting and roosting near Upper Klamath Lake. Fir engraver beetle mortality is very high on South Chiloquin and remains high on Klamath District. The fir engraver is very closely associated with root rot diseases. The root rots generally stress the tree and then the fir engraver can successfully attack and kill the tree. This normal relationship has been compounded by the drought which has also caused the fir trees to be under much more stress than normal. Ground exams indicate that some areas are having the white fir nearly eliminated from the stand. The implications for fire hazard and wildlife habitat are considerable. 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 have been made and they indicate relatively high water quality across the Forest except during low flow periods when temperatures rise. This concern has also been identified by the State which has labeled some streams as "water quality limited" due to high temperatures during low flow periods. 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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WINEMA NATIONAL FOREST
FOREST PLAN MONITORING REPORT
1996 Fiscal Year

A. Introduction

Background

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

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

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

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

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

1. Take no action, after determining that objectives, standards and guidelines are being achieved.
2. Re-direct District Rangers to improve application of standards and guidelines as projects are implemented. This may involve: (1) general direction, (2) specific changes in one or several ongoing projects, (3) additional interpretation of standards and guidelines as they apply to the problem at hand, or (4) any other action with the intent of ensuring proper application of existing Forest Plan guidance.
3. Modify standards and guidelines or specific management area guidance via a Forest Plan amendment. This may involve application of a standard or guideline to a specific location or more broadly across the Forest if evaluation determines that the practice is not effective or appropriate.
4. Modify the location of a management area on the ground. Minor changes involving boundary adjustments to apply better site-specific information will be monitored to determine if cumulative effects require further evaluation. Significant changes in management area assignments may be accomplished via a Forest Plan amendment.
5. Amend the projected schedule of outputs.
6. Initiate revision of the Forest Plan. This would only occur when the Forest Supervisor determines that conditions or demands have changed significantly or when changes in RPA policies, goals, or objectives would have a significant effect on Forest programs.

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

Results from Fiscal Year 1995 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. Those decisions are summarized in the following paragraphs.

DECISIONS ON FOREST PLAN REVISION

The Ecosystems Management Staff officer was assigned to continue on the path to starting a Forest Plan revision in FY 97. Organizational needs and funding are to be pursued through normal channels. It was expected that the revision process would begin in FY 97, mesh with the Eastside Ecosystem Management Project as it becomes final (possibly in late 1997), deal with proposed revisions in the boundary for the range of the Northern Spotted Owl, and address the recommendations made in the FY 95 monitoring report that are listed below. As of the date of this report, the Eastside Ecosystem Management EIS has not been finalized so the revision process has not formally begun. The Forest ID Team is compiling and examining available data in preparation for beginning the process. The following recommendations are expected to be addressed in the Forest Plan Revision:

Recommendation: Increase timber harvest and commercial thinning for deer habitat as projected in the Forest Plan.

Decision: Reevaluate deer habitat needs as a part of the Forest Plan revision in cooperation with the Fremont National Forest.

Recommendation: Develop an attribute-based stand characteristic data base from which any definition of "old growth" can be extracted.

Decision: Ecosystems Management Staff and Resources staff will examine this option as part of the Forest Plan revision process.

Recommendations: Evaluate potential effects on Allowable Sale Quantity when data from the forest inventory becomes available. Review the planned harvest program in green lodgepole pine to see if more of the green lodgepole pine should be harvested.

Decision: Because the Districts have been harvesting green lodgepole pine under the current Forest Plan direction, and because the analysis of forest inventory data is just beginning, these issues will be examined as part of the Forest Plan revision.

Recommendation: Re-examine requirements for 100% snag levels.

Decision: Implement direction from the Eastside EIS and address this as necessary in the Forest Plan revision process.

Recommendation: Modify snag management guidelines to clarify how surrounding, non-harvest, areas contribute to snag habitat and to incorporate science-based guidance that defines which trees are likely to die after a fire.

Decision: The direction provided in the Forest Supervisor's letter of 8/25/95 will stand until this issue can be re-addressed in the Forest Plan revision process.

Recommendation: Modify S&G 4-22, Dead and Down Woody Material, to include an appropriate maximum and minimum number of logs per acre (considering habitat needs as well as desired utilization levels, fire hazard and other factors) rather than just a minimum.

Decision: Address this issue in the Forest Plan revision process.

Recommendation: Test the monitoring model technique (for mule deer) that was developed with the Fremont National Forest and Oregon Department of Fish and Wildlife.

Decision: Pursue this as part of the Forest Plan revision process.

Recommendations:

Revise the Forest Plan:

- to reflect realistic social, economic and management situations.
- to reflect new information developed by the Eastside Ecosystem Management Project and the NW Forest Plan and adjust the Timber Sale Program Quantity appropriately.
- to adjust the ponderosa pine sold estimate as appropriate
- to adjust the estimates of silvicultural treatments as appropriate
- to adjust the timber stand improvement activity estimates as appropriate
- to include an estimate of range improvements (structures and acres) needed to meet the objectives established for the resource
- to include an estimate of wildlife habitat improvements (structures and acres) split between "threatened and endangered" and "other" species
- to include more realistic estimates of watershed improvement work
- to incorporate budget considerations into the analysis resource specialists perform for the Monitoring Report.
- to use, if possible, the All Resources Reporting System as the basis for evaluating budget impacts upon outputs and the achievement of Standards and Guidelines.

Decision: Adopted.

DECISIONS ON GENERAL RECOMMENDATIONS

The following recommendations from the 1995 Monitoring Report focus on the continuation of ongoing efforts and the initiation of some activities that are required by the Forest Plan, as revised. These were adopted by the Forest Management Team subject to available funding and further consideration of relative priorities during the budgeting process.

- In coordination with ODF&W 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 management east of Hwy 97 for inclusion in the Forest Plan.
- Coordinate with ODF&W and the Tribes to refine the Forest's share of the population objectives and include the results in the Forest plan.
- Continue stream surveys until all streams are completed and a Forest-wide baseline is established
- Continue monitoring efforts with special emphasis on effectiveness of management practices in bald eagle replacement habitat.
- Collect peregrine falcon survey results on the Winema Survey Form.
- Survey potential peregrine falcon habitat every two years.
- Continue investigation and monitoring so appropriate decisions about habitat protection and recovery of the Lost River and short-nosed suckers can be made.
- Continue to cooperate with the US Fish and Wildlife Service's Ecosystem Restoration Office, Natural Resources Conservation Service, and private landowners to protect and enhance key stream systems within the proposed critical habitat for both Lost River and short-nosed suckers.
- Continue monitoring pileated woodpeckers and other management indicator species for Forest Plan compliance.
- Report survey results on the Winema Survey Forms, R6 Forms, and Oregon Natural Heritage Program (ONHP) Sighting Forms and enter the data into the Botanical Information System (BOTSIS), the Wildlife Observation Data Base (WILDOBS), and the geographical information system.
- Continue monitoring studies in progress on *Collomia mazama*, *Asarum wagneri* (Klamath), *Botrychium pumicola* (Chemult), *Calochortus longebarbatus longebarbatus* (Chiloquin) and radio-telemetry tracking study on yellow rail (Klamath).
- Continue documentation of survey results for animal and plant surveys on TES survey forms for entry into databases and GIS.
- Continue to monitor off-road vehicle use as required by Executive Order. Monitor areas where user conflicts may occur.
- Study Copperfield Draw for a restoration plan to stabilize active headcuts in the main channel and revegetation.
- Continue the use of PFC assessments for all projects in and near riparian areas.
- Continue cooperative efforts to improve the situation along Rock Creek in the Dams/Switchback Allotment.
- Continue WIN inventory. Obtain funding for WIN restoration projects.
- Continue monitoring key water quality parameters on Lake of the Woods and Miller Lake to establish trends in water quality.
- Implement measures to reduce costs and maximize efficiency in site operations to maintain the quality of the experience being provided at our developed sites.
- Closely monitor the concessionaire's operations at Lake of the Woods and require adjustments if needed.
- Continue range analysis and AMP development within budget limits.
- Follow up on fencing projects to assure that they will achieve objectives.

- Continue to update the noxious weed site and treatment database.
- Continue to monitor known sites of priority weeds to determine changes in distribution.
- Allow the vegetation inventory to proceed as planned and pursue analysis as the information becomes available.
- Closely monitor plantations established in FY 94 for fill-in planting to ensure reforestation success in five years.
- Evaluate those areas of the Lone Pine Fire that are planted on harsh sites to determine whether or not under-stocked areas should be taken out of the suitable timber base and if current stocking is acceptable.
- Continue to monitor the levels of open roads available for passenger car and high clearance vehicle access.
- Continue to work towards resolution of concerns regarding road closures and road obliteration with the Klamath Tribes.
- Complete access and travel management analysis in the Lone Pine Fire Area, Klamath Marsh Area, and the southeast portion of chemult in FY 97, with involvement of the Klamath Tribes, Oregon department of Fish and Wildlife, and interested agencies and the public.
- Select future priority areas for analysis of access and travel management.
- Continue to work with the Klamath County 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 the National Environmental Policy Act.
- Continue current monitoring of the local socio-economic conditions at the current intensity.
- Support appropriate initiatives that will provide developed campgrounds within the south and central portions of the County.
- Use the latitude available in the Inland Native Fish Strategy (Forest Plan amendment 9) to manage riparian areas. This will allow careful management to insure that the desired condition of riparian areas is maintained over time.
- Provide a reminder memo or training, as needed, to ensure that all construction and reconstruction projects are planned and implemented in accordance with the R-6 Recreation, Facilities, and Trails Development Process (S&G 10-4).

DECISIONS ON SPECIFIC ISSUES

Road and Trail Management

Recommendations:

- Effectively close roads for mitigation of disturbance to deer.
- Plan designated ORV trails/roads/areas as demand warrants and close areas or roads where significant resource damage is occurring or user conflicts develop.
- In Semi-Primitive Nonmotorized areas (MA-1) where off-road vehicles are to be excluded and in other locations such as developed recreation sites, where vehicles are to be kept on roads, effective exclusion measures should be implemented or the S&G's should be modified appropriately and the resultant effects recognized.
- Proceed to implement and enforce road management decisions made in the Forest Plan Record of Decision, or modify the Forest Plan as appropriate.
- Implement S&G 3-7 ("Existing roads not needed for future transportation purposes shall be closed and returned to vegetative productivity.").

Decision:

It is expected that this issue will be re-addressed during the Forest Plan revision. Until then, the Rangers will pursue opportunities to carry out these recommendations wherever possible.

Stream Surveys and Sampling For Aquatic Species:

Recommendations:

- Develop a system for the location and a schedule for collection of aquatic invertebrate samples.
- Begin sampling for forest aquatic species described in the Northwest Forest Plan (Forest Plan Amendment 9) on a systematic and priority of need basis.
- Provide funding to analyze already collected invertebrate samples.
- Though changes in stream miles, fish species present, etc. are apparent from the survey data compared to the information in the FEIS, no amendment or revision to the Forest Plan is recommended until all streams have been surveyed and a baseline established.
- All intermittent streams on the Forest which are the primary stream in that watershed should be surveyed. Priorities would be set for those streams in active planning areas. This would tie in with watershed analysis and project planning to protect and improve riparian areas across the Forest.
- Refine the intermittent stream survey protocol based on the field testing done by students of Rogue Community College in Grants Pass.

Decision:

The Forest Management Team supports continued work in these areas subject to funding and establishment of Forest-wide priorities. The FMT asked that Resources Staff take the lead in scheduling a presentation to the FMT. That presentation should discuss these recommendations, related programs that are on-going, and proposals for moving forward both with invertebrate sampling and stream surveys. Resources Staff was assigned the task of working with the Rangers to see if a reasonable process and program can be developed to survey intermittent streams as recommended. The Forest Management Team may provide additional guidance during the presentation discussed above. It is anticipated that the Eastside Ecosystem Management Project will result in some direction relative to these issues. That direction will be incorporated into this process as it becomes available. The decision to begin revision of the Forest Plan means that the process will move forward with the best available data (in accordance with the NFMA Regulations) even though data from some streams may be missing or incomplete.

Research Needs

Recommendations:

- Determine the effectiveness of current mitigation efforts related to soils.
- Determine the effect of measured compaction on vegetative growth.
- Study other ecosystem components, such as mycorrhizae and their relationship to forest health in the pumice zone in conjunction with the Deschutes National Forest and PNW Research.
- Instigate research efforts that will (1) evaluate the effects of soil compaction on long-term productivity, (2) improve understanding of the interaction of soil, seedlings, and environment as it affects reforestation and site productivity and (3) evaluate the cumulative effects on soil productivity by ground-based timber harvest equipment.

Decision:

The last three recommendations can not be funded with NFS dollars, only with research dollars. Ecosystems Management Staff was assigned the task of pursuing opportunities to work with research on those three recommendations. The EM Staff was assigned the task of putting together the results of monitoring soil compaction to determine how well mitigation efforts are working.

Best Management Practices and Related Documentation

Recommendations:

- Districts monitor 50 percent of activities for BMP implementation and effectiveness in 1996 and forward this information to the Supervisor's Office for incorporation into the FY 96 monitoring report.

- Maintain records of soil conditions in EA's/EIS's in progress, on recently implemented projects and on older projects to identify remediation needs.
- Implement an adaptation of the Region 5 BMP monitoring system.
- Train all personnel involved in planning of ground disturbing activities about BMP's.
- Incorporate site specific BMP discussions in all project EA's and develop BMP analysis in the project record.
- Insure that BMP's are appropriately incorporated into contract documents.

Decision:

The FMT would like to hear a presentation on these points. The FMT wants to better understand the importance of properly implementing and documenting BMP's. They would also like to hear about and discuss ways to best implement the intent of these recommendations. For example, the need for BMP's in EA's, rather than in the project files, was questioned. The presentation should address these issues, provide additional background (e.g. what is the R-5 BMP monitoring system? Are the recommended actions the most efficient way to satisfy requirements?), and propose an approach to best satisfying these needs so the FMT can establish firm direction for the Forest.

Timber Harvest

Recommendations

- Salvage as much of the white fir mortality as possible.
- Provide additional guidance, perhaps by being more restrictive on the range of silvicultural prescriptions that are acceptable, to be sure that timber management goals of the Forest Plan, as modified, are achieved in an economical manner.
- Reexamine the role of silviculture in management of Late Successional Reserves and provide additional guidance, if necessary, to make sure that any desirable timber harvests can be structured to be economically viable. If active management is found to be undesirable, adjust desired future condition descriptions to reflect the lack of such management. If active management is found to be desirable and can be scheduled, consider returning LSR's to the suitable timber base.
- Examine opportunities to increase timber harvest in FY 98 and beyond.

Decision

Taking the last recommendation first, the FMT decided that the Forest will not pursue timber harvest to support socio-economic goals, but will look at timber outputs as a consequence of managing for other purposes. In line with that decision, the FMT decided to consider salvage of white fir as a reasonable option where consistent with other resource values, but would not focus on addressing the dead white fir issue in the way the dead lodgepole pine issue was addressed in past years. The FMT recognizes the need to put up timber sales that can be sold, but wants to avoid creation of additional guidance. They noted that "designation by description" may be an approach that would make sales more economical and that this approach raises the two issues of (1) actually selling timber and (2) law enforcement. The EM Staff Officer was asked to work on developing assistance to the Rangers that would make sales more saleable without making law enforcement unnecessarily difficult.

Fuels Management

Recommendation

- Increase fuel treatment activities to at least a level that will avoid an increase in treatment backlog.

Decision

The FMT asked the Fire Staff Officer to work with the Districts to better identify the level of backlog and the trend associated with it. They also asked the Fire Staff Officer to make a

presentation to the FMT that addresses this question and proposes appropriate treatments and methods to resolve this issue.

Rural Community Assistance

Recommendation

- 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.

Decision

The FMT adopted the recommendation then asked the Rangers to provide primary contacts for the Community Action Teams in Chemult (e.g. Gary Weldon) and Chiloquin (e.g. Faith Wilkins) and the EM Staff Officer to provide the primary contact for the Bonanza Team (Jerry Haugen). In addition EM Staff (through Haugen) should continue to provide contact for County level planning efforts while working to spin-off specific functions to community volunteers or non-profit organizations as appropriate. The latter decision is designed to free up Haugen's time to allow stronger focus on analysis for the Forest Plan revision.

Meaningful Measures

Recommendation

- Implement Meaningful Measures for all sites on the Forest by the end of 1996.

Decision

The Rangers are pursuing development of meaningful measures for recreation sites this year. Meaningful measures will be developed for trails in FY 97.

Bald Eagle Nest Site Plans

Recommendation

- Continue development of Bald Eagle nest site plans.

Decision

The FMT adopted the recommendation and asked that a priority system be used to identify which site plans should be done first. It was suggested that the priority system would first look at the Management Area surrounding the nest to assess the risk of any management activity in the area. Thus nest sites in Wilderness, for example, would have a low priority for site plans. Those nests in areas with planned timber harvest activities or other potential for human interaction would be higher in priority for plans.

RECOMMENDATIONS THAT HAVE ALREADY BEEN IMPLEMENTED

Some of the recommendations that were developed based upon monitoring done in FY 95 have already been implemented. These include:

- Install traffic management signs prohibiting motorized use at the main entry points into the Yamsey Mountain area.
- Rest the Ray Ranch (Hog Creek) portion of the Dice Crane Allotment for a period of time to allow riparian vegetation recovery. [Note: it is currently resting.]
- 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. [Note: these treatments have been performed or are in progress for all applicable areas.]
- Remove locally established limits on the diameter of trees allowed to be harvested in LSR's so that silvicultural prescriptions can be applied which implement the direction in

the NW Forest Plan and ideas expressed in the LSR assessment. [Note: this direction applied to only one sale and is not expected to be repeated.]

- Maintain Trails in Wilderness Areas to meet the Objectives of S&G 10-12. [Note: the Klamath Ranger District made a concerted effort in FY 96 and completed this work.]
- Emphasize post-project monitoring for snag levels. [Note: the Forest Wildlife Biologist did Type 1 field reviews on each District during FY 96 and will be documenting the results.]
- Fence Rider's Camp meadow again in 1996 with the fence being rebuilt to higher standards. Tighten administration to assist the permittee in meeting Forest Plan Standards and Guidelines. [Note: These actions were taken during FY 96.]

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 support the mule deer study.

- **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**

- Clearly identify (based on data) which Forest streams are at or near potential for fish production and will require no investment of funds for fish habitat improvement as well as those which need aquatic habitat improvement.
- Continue stream surveys until all streams are completed and a Forest-wide baseline is established. After this, a minimum of ten percent of streams should be resurveyed annually to allow for trend assessment.
- Develop protocol and methodology for intermittent and ephemeral stream surveys and implement them until an adequate profile of the watershed is developed.
- Quantify fish populations known to exist on the Forest, and assess age structure.

● **Bald Eagle**

- Improve and increase monitoring to determine the effectiveness of bald eagle replacement habitat management.
- 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). Finalization of eight of these thirteen plans has occurred and finalization of the remaining five plans is in progress.

● **Peregrine Falcon**

- Obtain survey results on the Winema Survey Form 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.)

● **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**

- Establish long-term Forest Plan monitoring sites to adequately address the effectiveness of the Forest's habitat protection.
- Increase emphasis on streamlining consultation under the ESA and development of programmatic consultations.

- **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 of the data into BOTSIS, WILDOBS, and GIS.
- ▶ 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).

- **Plant and Animal Diversity**

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

- **Old Growth**

- ▶ 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 to determine where remedial efforts are required.
- ▶ Monitoring to determine effectiveness of current mitigation efforts.
- ▶ Perform site specific inventory and interpretation for project level planning.
- ▶ Develop 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.
- ▶ Continue the Ecological Unit Inventory (EUI) to assist our efforts in learning about the soils on the Forest.

- Emphasize the relationship between soil resource damage and sale administration.

● Riparian Area Cumulative Effects

- Continue the use of proper functioning condition (PFC) assessments for all projects in and near riparian areas, in place of intermittent stream survey. Use the interdisciplinary approach to PFC assessments to keep the quality control and integrity high.
- Continue discussions are planned to determine the need for adjustments in the fence location along Rock Creek within the Dams/Switchback Allotment based on the range monitoring results and the desire to meet the needs of all partners.

● Water

- Monitor implementation of best management practices (BMPs) through contract daily diaries and site visits. Base effectiveness on documented site observations.
- Continue to incorporate site specific BMP discussions in all project EAs and develop BMP analysis in the project record. Insure that BMP's, whether documented in the analysis file or in the EA, are appropriately incorporated into contract documents.
- Continue WIN Inventory. Obtain funding for WIN restoration projects.
- Monitor 50 percent of activities for BMP implementation and effectiveness in 1997 and forward this information to the Supervisor's Office for incorporation into the FY97 monitoring report.
- Continue monitoring key water quality parameters on Lake of the Woods and Miller Lake to establish trends in water quality.
- Use the available data on perennial streams to evaluate whether or not the streams on the Forest are generally functioning in a proper manner.
- Modify the Forest Monitoring Plan to include regular measurement and analysis of specific parameters indicative of instream water quality so that the ultimate effectiveness of best management practices can be assessed

Forest Resources

● Developed Recreation Sites

- Implement measures to reduce costs and maximize efficiency in site operations to maintain the quality of the experience being provided at our developed sites.
- 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.
- Continue to implement Meaningful Measures and use the process as a budget allocation tool in 1998.
- With reduced funding, continue to be defer or not accomplish to MM standards some planned trail and facility maintenance and accessibility upgrades

- **Scenery**
 - 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.

- **Range Vegetation**
 - Place emphasis on permit administration. Emphasize permittee responsibility for monitoring use.
 - Re-evaluate the Dams-Switchback exclosure. Complete the Fourmile water development, reconstruct the water development at Muddy Springs to a hardened site away from the spring and fence the spring.
 - Exclude grazing from the Telephone Draw/Bull Pasture/Haystack Draw area for two years to allow recovery and to protect willow recruitment.
 - Continue to monitor known sites of priority weeds to determine changes in distribution.
 - Implement the allotment management plan development schedule listed in section E, subject to obtaining sufficient financial resources:

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

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

- **Regeneration Success**
 - Evaluate those areas of the Lone Pine Fire that are planted on harsh sites to determine whether or not understocked areas should be taken out of the suitable timber base and if what stocking is there is acceptable.

- **Timber Harvest Unit Size**
 - No recommendation.

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

- **Transportation System**
 - Continue to monitor the levels of open roads available for passenger car and high clearance vehicle access.
 - Continue to work towards resolution of concerns regarding road closures and road obliteration.

- Complete access and travel management analysis in the Lone Pine Fire area, Klamath Marsh area, and the Southeast portion of Chemult in FY 1997 and 1998, with involvement of the Klamath Tribes, Oregon Department of Fish and Wildlife, and interested agencies and the public. Select future priority areas for analysis of access and travel management.
- Work with interested groups, to develop more opportunities for All-terrain vehicles (ATV's) and 4-Wheel drive vehicles.
- Continue to work with individuals, regarding road access needs or concerns, in compliance with National Environmental Policy Act.

Economy

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

Forest Plan

● Implementation of Standards and Guidelines

- Carefully consider requirements for snags and down woody materials during any future planning exercises. Any related standards must give proper consideration to the safety of woods workers and to the reality of the existing and historic relationships that are seen within the ecosystems on the Forest.
- Be continually aware of the need to keep prescribed burns within their prescriptions. Insure that employees are not penalized for delays or changes that are intended to keep those fires within their prescriptions. Be sure that appropriate resources are available and conditions are suitable before starting any prescribed burn.
- Be sure that budgets and personnel are available to support whatever level of livestock use is permitted on the Forest.
- Find ways to stabilize the implementation of the Forest Plan so that forward thinking employees do not attempt to achieve goals and policies that are being developed, but have not been adopted.

● 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

- Use the All Resources Reporting System as the basis for evaluating budget impacts upon outputs and the achievement of Standards and Guidelines, unless the system is altered so that it does not provide consistent information from year to year.

D. Summary of Findings and Trends

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

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

Ecosystem Health

● Mule Deer

- 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.
- Limited overstory removal, exclusion of fire and normal tree growth is reducing the amount of forage available for mule deer.
- The trend of a decreasing forage base continued in 1996 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 is not progressing at a satisfactory rate. Furthermore, 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.
- ▶ According to Isaacs and Anthony (1996) productivity in the Klamath Basin was the highest in the state with 1.12 young per occupied nest. Recovery population goals were also exceeded in the basin.
- ▶ Recovery of the bald eagle in the Klamath Basin has been successful, since implementation of the Pacific States Recovery Plan.

● **Peregrine Falcon**

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

● **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 populations.

● **Lost River and Short-nosed Suckers**

- ▶ A number of timber sales in the planning stage were analyzed for effects to listed suckers. If implemented all are expected to result in some amount of improvement to the existing condition of sucker habitat (reduced sediment and improved water yields).
- ▶ Currently grazed cattle allotments which may affect sucker habitat were reviewed by a Forest ID team and "Proper Functioning Condition Analysis (BLM) was conducted. All such streams were found to be "properly functioning".
- ▶ A number of smaller projects such as special use camp facilities and water source sites were reviewed for adverse impacts to suckers. Modifications were made in consultation with the FWS to assure that no adverse impacts would occur.

● **Primary Cavity Excavators**

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

● **Pileated Woodpecker and other MR Species**

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

● 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. In all cases, additional information is needed and must be assessed over a five to ten year time-frame to determine long-term sensitive species population distribution and status trends.
- Monitoring studies on *Collomia mazama* and *Asarum wagneri*, on Klamath Ranger District, will provide some data regarding trend for these species. An attempt to determine sensitive species trends at this point would be based solely on observation and would be completely subjective.

● Plant and Animal Diversity

- As the trend for reduced harvest and decreased commercial thinning continues, the acres of early successional stages in forested types will decrease.
- As uneven-aged management is implemented habitat edge will decrease.
- As edge and early successional stages in the forested habitat types decreases so will the populations of species that are dependent upon early successional stages and upon edge.
- 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.

● Old Growth

- A firm Forest-wide assessment of old growth conditions can not be made due to the lack of agreement on a definition of old growth and the lack of a suitable data base to which any given definition could be applied.
- The acres of protected habitats (Management Area 7) did not change in 1996 although the Chemult District deferred timber harvest on 1,870 acres which will temporarily protect that many additional acres. Several protected old growth stands did blow down on the Chemult District as did some additional acres in areas that were not protected.
- The lack of any significant fires or significant removal of large trees indicates that the acres of old growth habitats outside of protected areas have not changed beyond those affected by blowdown.
- 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 (mechanically or with controlled fire).

● Off-Road Vehicle Use

- No evaluation was made.

● Soil

- Soil monitoring records on the Forest indicate extensive detrimental compaction has occurred. However, very little monitoring differentiates between past activities and current methods. Chemult monitored one unit successfully and attempted 5 more using Forest protocol before and after harvest. In one unit on Chiloquin an attempt to locate old skid trails resulted in subsoiling of the whole unit. Other monitoring efforts either measured cumulative compaction on the unit and provided no information on the effectiveness of current mitigation, or spot checked the current operation but measured no cumulative effects.
- Monitoring targeted to the pumice units indicates ground based equipment is compacting pumice soil above Forest Plan Standards and Guides. Soils mapped under the "difficult to compact" categories were measured in the lab and found to be detrimentally compacted.
- Some operations were successful in limiting soil damage and met Forest Plan Standards and Guides. Displacement, puddling and erosion occurred on some ground based operations. Soil damage occurred where protective conditions such as snow or frozen ground deteriorated but equipment was not removed in a timely manner.
- Efforts are underway to remediate cumulative damage.
- Monitoring on the Winema in the last 3 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.

● Riparian Area Cumulative Effects

- As part of the aquatic program and in conjunction with terms and agreements from Section 7 consultation under the Endangered Species Act, permanent monitoring sites were established in critical riparian areas throughout Chiloquin Ranger District. Historic condition and trend transects were located and re-read. New condition and trend transects (utilizing established R-6 protocol) were established and base line data is being collected.
- Channel morphology cross sectional measurements established in conjunction with some of these sites. Permanent photo points were placed in key locations throughout the riparian corridors. A commitment to collect base data for three consecutive years and trend data every 5 years thereafter was made. The latter was not accomplished in 1996.

● Water

- Problems with having best management practices identified, documented and incorporated into contracts have been overcome.
- Generally speaking, water temperatures measured in 23 perennial streams on the Forest have remained relatively cold and stable over the years except in low water years (e.g. 1994) when temperatures tend to be higher.

- Conductivity readings from the Forest's streams indicate relatively high water quality levels.

Forest Resources

● Developed Recreation Sites

- 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 others to be completed in FY 1997. 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. Barrier-free Romtec toilets have been added at Fourmile Lake CG and Rye Spur Horsecamp. An additional fishing/viewing platform and about 100' of boardwalk were completed at the Wood River Day-use Area though a challenge cost share agreement with Integral Youth Services.
- Expanding and upgrading facilities at Williamson River Campground remains a priority project to meet accessibility standards, upgrade the water system, and provide additional capacity for campers in the US 97 corridor. There is an opportunity to partnership with Oregon State Parks in providing trails, trailheads, and additional camping capacity in the Spring Creek-Williamson River area.
- Planning of additional trails outside of wilderness as requested by users is continuing. Construction of the High Lakes Trail from Fish Lake to Great Meadow was completed in 1996. A horse group camping area was developed at Rye Spur Quarry and the access road reconstructed to accommodate horse trailers. A trail connecting the site to the Rye Spur Trail is scheduled for 1997. A portion of Fourmile Lake CG was redesigned to accommodate camping with stock and to enlarge the trailhead. This construction is also planned in 1997. The construction of a trail, trailhead and horse camp in the Yamsay Mtn. area has been deferred while the mountain is evaluated as a Traditional Cultural Property. The reconstruction of the Miller Lake Trail and the addition of a trail bridge is still on the R-6 Trail CIP list.
- A snow shelter kit was purchased for the Walt Haring Sno-park which will be installed in 1997. The building will also serve as an accessible picnic shelter during the summer.

● Scenery

- Overall scenic viewshed condition ratings were not calculated 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.

● Range Vegetation

- For FY96, the Forest fell below the budget threshold where it can effectively perform adequate on-the-ground administration and meet monitoring commitments.
- 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 (44 acres) was unacceptable. Corrective measures were planned for FY97 for certain key riparian areas that have been outside of standards including fencing for some, and more intense administration and follow-up monitoring for others.
- Resting of the Ray Ranch (Hog Creek) portion of the Dice Crane Allotment resulted in good to excellent conditions. Incidences of unauthorized use increased and was handled administratively.
- The Forest is no longer capable of completing all AMP revision/updates within the decade. The Forest is significantly out of compliance with Range Objective on page 4-12 of the Forest Plan which states "Revise, update, and implement all allotment management plans to meet Forest Plan objectives." Budgets below the threshold have caused postponement of AMP development to the point that revisions/updates of all AMPs is no longer feasible within the planning period. Costs have increased since 1990 due to PETS species survey and consultation and cultural resources survey requirements.

● Timberland Suitability

- 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.

● 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. 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.

● **Regeneration Success**

- First year survival has improved this year to the 80% level which is the threshold of concern.
- Third year survival is down a little, due to harsh sites in the Lone Pine Fire Area, and still a concern.
- It is expected that first year survival will rise in 1997, but third year survival will still be a concern due to 1994 plantings in the Lone Pine Area.
- Fifth year reforestation success is almost 100%, but may fall in 1997, again, due to the sites in the Lone Pine Fire Area.

● **Timber Harvest Unit Size**

- No regeneration units exceed harvest unit size limitations.

● **Insects and Disease**

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

● **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, concerns of the Klamath Tribes must be resolved and the Forest must complete access and travel management planning and environmental analysis for selected project areas. Analysis for access and travel in the Lone Pine Fire Area, areas adjacent to the Klamath Marsh, and the Southeast section of Chemult District is planned to be completed in FY 1997 and 1998.
- Klamath Country Trails Committee, and other interested groups, have expressed the desire for more use opportunities for All-terrain vehicles (ATV's) and 4-Wheel drive vehicles on the forest. Where appropriate, and subject to Management area goals and objectives, it is felt that more opportunities can be provided for ATV and 4-Wheel drive uses.

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

Economy

- 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. Current sale development efforts indicate that a similar amount of timber could be sold in 1997, subject to environmental reviews and appeals.
- Beyond 1997, 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. The local economy will continue to be an area of concern into the foreseeable future.
- The Klamath County economy has done very well, to date, in adjusting to changes in the wood products industry. The total income, population and total jobs indicators all show positive changes that are not large enough to cause disruptions in the local economy. Nonetheless, impacts upon individuals may be significant. At the personal level, while we are seeing more jobs and larger total incomes, many new jobs pay less than \$10 per hour and can not be considered 'family wage' jobs.
- 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.
- Unless significant changes in Forest management are made, payments to the County are likely to be well under \$2,000,000 per year when the owl guarantee ends in 2003.

Forest Plan

● Implementation of Standards and Guidelines

- In general, standards and guidelines are being properly implemented across the Forest.
- The Forest Plan includes requirements for retaining woody materials in the forest after management activities. This material is needed to maintain certain types of habitats and forest soils. 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.

- For the most part prescribed burns are very carefully done to insure that the desired management objectives are met. On rare occasions something goes awry and such fires get out of prescription.
- Even though the numbers of livestock being grazed on the Forest has been decreasing and 1996 use levels were well below half of planned levels, small lapses in management can still lead to deviations from the Standards and Guidelines. The ability to identify problems and deal with them is very dependent upon the funding available for this type of work.
- Increased emphasis on watershed planning has helped identify some problems and lead to their resolution.
- Some of the difficulties in achieving the objectives of a Forest Management Plan relate to changes in human perceptions of ecosystems and shifting management emphases over time. This showed up during a review of plans for the Copwood Timber Sale. Here, treatments are being proposed that differ significantly from those envisioned in the Forest Plan. These new proposals are trying to more directly address forest health issues in accordance with preliminary direction being established in the Eastside Forest Plan.

● 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 the review 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 1996, several field reviews and supplementary information were used to monitor standards and guidelines.

Type 1 Reviews

- 1-1. November 22, 1995: Lilienthal and Moore: Hill Salvage #4 Timber Sale Visual Quality
- 1-2. April 30, 1996: Sheehan, et al: Chemult District Timber Sale Review
- 1-3. July 12, 1996: Sheehan and Bennett: Chiloquin Sale Administration
- 1-4. August 7, 1996: Frazier and Woodman: Grazing Documentation Review
- 1-5. August 20, 1996: Frazier, Kittrell and Albin: Grazing Documentation Review
- 1-6. September 19, 1996: Frazier and Pryun-Sitter: Grazing Documentation Review

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-1996:

- 2-1. August 20, 1996: Chemult Ranger District (Restoration Projects)
 - A. State Meadow
 - B. Jamison Meadow
 - C. Davis Flat
- 2-2. September 12, 1996: Chemult Ranger District
 - A. Bear Creek Culvert (Road 2308 Objectives)
 - B. Desert Old-Growth (added)
- 2-3. June 24, 1996: Chiloquin Ranger District
 - A. Copwood timber Sale (with Klamath Province Advisory Group)
- 2-4. July 30, 1996: Chiloquin Ranger District

- A. Sycan Wild and Scenic River
- 2-5. July 18, 1996: Klamath Ranger District
 - A. Odessa Timber Sale
 - B. Jobs in the Woods - Planting

Other Information

- 3-1 November 1, 1995: Simpson: First Unit 8, 20" dbh Logs and Snags
- 3-2. November 1, 1995: Simpson and Goodwin: Fess Unit 3 Down Wood
- 3-3. November 17, 1995: Christopher and Clark: Quarry Timber Sale Marking
- 3-4. March 12 & 15, 1996: Frazier et all: Devil's Unit 9 Prescribed Burn
- 3-5 April 3, 1996: Christopher and Clark: Quick Fire Salvage Harvest Results
- 3-6. April 12, 1996: Castaneda and Sheehan: Chiloquin District Project Reviews
- 3-7. September 17, 1996: Lilienthal: Quarry Timber Sale Visual Quality
- 3-8. September 18, 1996: Shull et al: Scoria Timber Sale
- 3-9. September 25, 1996: Bright and Frazier: Switchback Fire Salvage

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-1996. 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.

Cultural Resources

S&G 2-1, 2-5, 2-6, 2-8 (Forest Plan, pages 4-42)

References 2-2, 2-5

A review of the Desert Old-Growth burn revealed that the burn was managed to protect cultural resources (S&G 2-1 and 2-5).

In accordance with the National Historic Preservation Act (and S&G 2-1), a lot of archaeological work has been done in a 25,000 acre parcel which includes the Desert Timber Sale. The focus is the Hub camp area. As a result of this work, a volunteer steward will be used to monitor the site for activities which could damage it (S&G 2-6). At the time of the review, the District was examining potential ways to interpret the area for the public in accordance with S&G 2-8. Since then, a brochure describing short interpretive walks has been made available to the public and signs have been installed.

A review of the Odessa Salvage Sale in the Odessa Campground revealed that logging equipment was kept on the existing roads to prevent potential damage to cultural resource sites in accordance with S&G 2-5.

Facilities

S&G 3-2, 3-4, 3-7, 3-12, 3-13, 3-14 (Forest Plan, pages 4-44 and 4-45)

References 2-2

The situation surrounding the washout of a 36" culvert on Road 2308 was examined. Road management objectives were in place for the road in accordance with S&G 3-2 and the road was being maintained to the established standards as per S&G 3-4. The decision was to replace the culvert with a larger pipe arch of an adequate size (S&G 3-12) and position it to allow the stream to

return to its original contour (S&G 3-13). Construction was scheduled during a low flow period in accordance with S&G 3-14.

A review of the Switchback Salvage Sale area revealed that the road along the west side of the knoll and the road on the west side of cherry Creek had been effectively closed in accordance with S&G 3-7.

Fish, Wildlife and Sensitive Plants

S&G 4-1, 4-3, 4-18, 4-22, 4-23 (Forest Plan, pages 4-47, 4-50, 4-51, 4-52)
Amendment 8, page B-11

References 1-3, 3-1, 3-2, 3-5, 3-8, 3-9

A biologist was called to the Switchback Fire Salvage Sale to provide information on sensitive plants in accordance with S&G 4-3. On-the-ground activities were appropriately changed to provide the necessary protection (S&G 4-1).

A review of Unit 8 of the First Timber Sale revealed that large snags and down logs were in place, after harvest, in accordance with S&G's 4-18 and 4-22.

A review of the western portion of the Fess Timber Sale revealed that the down woody material was sufficient to meet the requirements of Forest Plan amendment 8 (Eastside Screens).

A post-harvest review of the portion of the Quick Fire Salvage Sale adjacent to the Williamson River Road revealed that there were 85 stumps without any paint. This suggests that many of the trees to be left for snags and down woody recruitment had been removed thus leaving the area out of compliance with S&G 4-18 and 4-22. Subsequent discussions indicated that the removals were necessary for the safety of logging operations.

A review of the Scoria Timber Sale revealed that requirements for coarse woody debris, as per page C-40 of the NW Forest Plan ROD, were not met. It is expected that some mortality in the residual stand will contribute to the coarse woody debris in the future.

A post-harvest review of the Switchback Salvage Sale revealed that small piles of slash were not left across the area as per S&G 4-23.

Protection

S&G 8-10 (Forest Plan, pages 4-59)

References 2-2, 3-4

A review of the prescribed burn of Devil's Timber Sale, Unit 9 (30 acres), revealed that the burn had been hot enough to remove all duff. It had scorched bark up to 40 feet on most trees and killed most trees (80-100% canopy dead). This burn had followed harvest of the unit and was not in accordance with S&G 8-10.

The Desert Old Growth burn project was examined. Although the costs were high (\$30 to \$35 per acre for 700 acres), it was found that the final result was in conformance with all S&Gs for Ponderosa Pine Old growth (MA-7, Forest Plan page 4-128).

Range

S&G 9-3, 9-7 (Forest Plan, pages 4-63, 4-64, 4-142)

References 1-4, 1-5, 1-6, 2-1, 3-9

The Forest Range Program Coordinator reviewed documentation done for range inspections with the responsible people on each District. Documentation is generally adequate (S&G 9-7) across the Forest although there is a lack of consistency in documentation. The coordinator provided several recommendations to improve the situation.

Livestock hit the aspen in the Cherry Creek area of the Switchback Timber Sale too heavily (violation of S&G 9-3).

During a field review in the Antelope Allotment it was noted that cattle had been in the area for a month and vegetation conditions were good and in compliance with Range S&G 1 (Forest plan, page 4-142).

Recreation

S&G MA-2A (Forest Plan, pages 4-96-97)

References 2-5

A review of the Odessa Salvage Sale in the Odessa Campground revealed that the result was incompliance with the desired future condition for MA-2A as well as all of the related S&Gs.

Scenic Resources

Goal: 21 (Forest Plan Page 4-15)

S&G: 11-3, 11-7 (Forest Plan, page 4-72)

References: 1-1, 3-7

The Forest Landscape Architect participated in the field work in the preliminary development stages of the Hill Timber Sale in accordance with S&G 11-3. She also identified and recommended rehabilitation needs (S&G 11-7) in the area.

A review of the Quarry Timber sale (post harvest) revealed that vegetative screens were effective, the slash piles were not very noticeable, the remaining stand of trees was attractive and visual quality objectives were met (Goal 21).

A post-harvest review of the Scoria Timber Sale revealed that visual quality objectives were met (Goal 21).

Soil and Water

Goal MA-8C (Forest Plan, page 4-141)

Objectives: NWFP ROD Pages B-11, B-30, C-30

S&Gs: 12-5, 12-10, MA-8C and MA-8D (Forest Plan page 4-73 &74, 4-136 thru 4-143)
RM-2 (NWFP ROD, page C-34)

References 2-1, 2-5, 3-8

The riparian situation was reviewed at several locations in the Jack Creek drainage. Several projects had been identified in the State Meadow area. These projects were all designed to maintain or improve hydrologic conditions and riparian habitat in accordance with S&G 12-10. The vegetation management activities were designed in accordance with S&G 12-11. The use of prescribed fire to accomplish the goal and desired future condition for MA-8C was found to be consistent with the

protection S&G for MA-8C. The planned timber sale was found to be in compliance with the timber S&G's on Forest Plan page 4-143.

Several headcuts were observed in Jamison Meadow above the private lands. These were lowering water tables and are associated with gulying thus the area is deviating from the goal of management area 8. The District was beginning development of a project, in accordance with the goal for MA-8, that would prevent gulying or dropped water tables.

Efforts to improve conditions at Davis Flat were under way at least as early as 1953. Currently the riparian area is in good condition, but additional efforts are being developed to achieve the desired future condition for the area (MA-8B).

A post harvest review of the Scoria Timber Sale revealed that an operational limit of 20% moisture content in the soil was never reached (maximum 17%) so it was not necessary to halt operations to achieve the requirements of S&G 12-5.

A review of the Odessa Salvage Sale in the Odessa Campground, which is also within an Aquatic Conservation Area under the Northwest Forest Plan (NWFP), revealed that this complex overlay of management goals required innovative approaches to resolve. A 300 foot buffer on either side of the stream (C-30) covers much of the area although the types of management that were conducted are permitted in campgrounds (RM-2). A focus on Objective 8 (NWFP ROD Page B-11) led to a reduction of the capacity of the campground. Ultimately the project produced results in accordance with the direction in the NW Forest Plan as well as the direction for MA-2A (see "Recreation" section above).

Timber

Goal: 25 (Forest plan Page 4-18)

S&G: 13-1, 13-5, 13-22,13-26 (Forest Plan, pages 4-78, 4-81, 4-82)

References: 1-2, 2-3, 2-5, 3-6

A field review of the Zephyr Timber sale on the Chemult District revealed that logging systems were meeting the necessary objectives in accordance with S&G 13-5. Utilization of ponderosa pine down to four inch diameter was considered in discussions of the Raptor Thin sale, but rejected due the non-existent chip market at the time (S&G 13-26).

A major review of the proposed Copwood Timber Sale involved the Klamath Province Advisory Committee and the public as well as the Forest Management Team and resource specialists. The review focused on policy issues more oriented to Forest goals and objectives than to standards and guidelines. The project, as presented, clearly was designed to meet Timber goal 25. Proposed treatments were described as removing the smaller trees and leaving the larger ones. This approach would be contrary to S&G 13-22 which prefers uneven-aged management in ponderosa pine.

A review of the Odessa Timber Sale revealed that the project was designed to remove hazard trees (S&G 13-1.3) and protect the campground (S&G 13-1.2) and accomplished those objectives.

A review of the Switchback Timber Sale (marking), the Quick fire salvage Sale (post harvest) and the Bill Timber Sale (post harvest) revealed that all three sales were achieving goal 25.

A review of tree planting on the Lone Pine Restoration Project reveal compliance with the related timber objectives (Forest Plan, page 4-18).

Sycan Wild and Scenic River

References: 2-4

The Sycan River Management Plan amended the Winema National Forest Plan and included its own monitoring plan. That plan contains ten elements that were reviewed in 1996:

1. Vegetation Management

Vegetation does meet desired future condition. There have been few if any projects in the corridor that would affect vegetation. The annual pest surveys have found no insect or disease problems. Some knapweed was found in river segment 1 and treated in 1995. In river segment 2, the Nature Conservancy pulled around 600 knapweed plants.

2. Riparian Area Management

The Monitoring Plan calls for the creation of exclosures to monitor the progress of vegetation establishment. None have been installed. Prior to the development of the monitoring plan, four locations were established for monitoring of conditions in river segment 3. This monitoring indicates the plan guidelines are being met and the riparian conditions have been improving. Photo points were established in 1990 and they indicate an increase in willow growth since that time. In 1993, four miles of fence was constructed along river segment 1 to prevent livestock grazing in the riparian areas. There is a concern about feral horses encroaching on the corridor. It was reported that these horses are all owned, but unauthorized.

3. Scenic Resources

Since there has been no timber harvest in the corridor little change in scenic resource condition has occurred on either the Winema National Forest or the Fremont National Forest. Christina Lilienthal is working on a project which is defining aesthetic attributes of the corridor and mapping them using the GIS. This project includes the analysis of hundreds of photos taken by volunteers who displayed what they thought was most scenic about the area. They also provided some photos that they interpreted as 'ugly'. Christina displayed some of those photos on an 'Ugly Board'. In general the things that looked bad to the volunteers were human detrious including debris left from fish habitat improvements that were washed out.

4. Recreation Management

Recreation use is primarily related to overflow from developed campgrounds and hunting. There are at least 20 dispersed sites in river segment 1 and 21 dispersed sites in segment 3. Some hazard trees have been removed from these sites for visitor safety. This is in accordance with direction provided under Recreation Management item 7 in the Monitoring Plan. Other issues related to recreation management are discussed below.

5. Water Quality and Flow

Last year two, of four, monitoring points did not exceed water temperature standards. No sediment loading data has been collected, but the meadow below the south fork shows sediment deposits. Some sediment data was collected in the late 1970's and the early 1980's and may be available at the Fremont SO. There is also temperature data from the 1980's associated with the Sycan Allotment. This information may be useful for developing a baseline.

6. Wildlife Management

In 1995, snag inventories were completed along river segment 1 by the Bly Ranger district. This inventory showed insufficient snags for cavity dependent species. No monitoring has occurred in river segment 3.

7. Fisheries Management

Fish structures were installed in river segment 1 to form gravel bars along the banks by deposition behind the installed logs. The logs were anchored into bed rock using bolts and cables. Thirty percent of the structures have washed out. One 100 foot natural log took out several of the structures. Part of the problem was fractured bedrock which allowed the cables to pull out. Poor site selection was another factor. Much of the debris ended up in a jam at Coyote Bucket. It was suggested that both Ranger Districts be involved in future efforts like this. It was noted that wood tends to be transitory in this system, as it now operates, and that rock is a more important factor. The Section 7 procedure (FSM 2354.7) should have been used with this project, but it wasn't. It was suggested that the river plan include more specificity on locations for log structures. B channels had more debris retention than C channels yet this was not recognized in the plan. No surveys were conducted on river segment 3.

8. Proposed, Threatened, Endangered and Sensitive Species

Short nosed and long nosed suckers inhabit river segment 1. Bald eagles forage in the corridor. It was reported that two eagles fledged in the area this year.

9. Transportation Management

The Plan (page 16) suggests that river access be limited to about one access point per 5 miles of river. Since the River segment is 59 miles long that translates to about 12 access points. There is no baseline inventory of access points along river segments 1 and 3. It was reported that there are at least 20 access points along segment 1 and 21 access points along segment 3 so there is an issue concerning which, if any, to close.

10. Fire Management

There was one planned ignition by the Bly District in the upland area along river segment 1 in 1993. It reduced the probability of high-intensity, stand-replacement fire. One underburn adjacent to the corridor crept into the corridor but it is not visually apparent.

Evaluation:

In almost all cases, the standards and guidelines in the Forest Plan, as amended, are being followed. The exceptions are discussed below.

The Forest Plan includes requirements for retaining woody materials in the forest after management activities. This material is needed to maintain certain types of habitats and forest soils. 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.

The following findings relate to this issue:

- A post-harvest review of the portion of the Quick Fire Salvage Sale adjacent to the Williamson River Road revealed that there were 85 stumps without any paint. This suggests that many of the trees to be left for snags and down woody recruitment had been removed thus leaving the area out of compliance with S&G 4-18 and 4-22. Subsequent discussions indicated that the removals were necessary for the safety of logging operations.

- A review of the Scoria Timber Sale revealed that requirements for coarse woody debris, as per page C-40 of the NW Forest Plan ROD, were not met. It is expected that some mortality in the residual stand will contribute to the coarse woody debris in the future.
- A post-harvest review of the Switchback Salvage Sale revealed that small piles of slash were not left across the area as per S&G 4-23

For the most part prescribed burns are very carefully done to insure that the desired management objectives are met. On rare occasions something goes awry and such fires get out of prescription. The following is the one example found during FY-96:

- A review of the prescribed burn of Devil's Timber Sale, Unit 9 (30 acres), revealed that the burn had been hot enough to remove all duff. It had scorched bark up to 40 feet on most trees and killed most trees (80-100% canopy dead). This burn had followed harvest of the unit and was not in accordance with S&G 8-10.

Even though the numbers of livestock being grazed on the Forest has been decreasing and 1996 use levels were well below half of planned levels, small lapses in management can still lead to deviations from the Standards and Guidelines. The ability to identify problems and deal with them is very dependent upon the funding available for this type of work. One problem was identified during monitoring of standards and guidelines during FY-1996:

- Livestock hit the aspen in the Cherry Creek area of the Switchback Timber Sale too heavily (violation of S&G 9-3).

Increased emphasis on watershed planning has helped identify some problems and lead to their resolution:

- Several headcuts were observed in Jamison Meadow above the private lands. These were lowering water tables and are associated with gullying thus the area is deviating from the goal of management area 8. The District was beginning development of a project, in accordance with the goal for MA-8, that would prevent gullying or dropped water tables.

Some of the difficulties in achieving the objectives of a Forest management plan relates to changes in human perceptions of ecosystems and shifting management emphases over time. This showed up during a review of plans for the Copwood Timber Sale. Here, treatments are being proposed that differ significantly from those envisioned in the Forest Plan. These new proposals are trying to more directly address forest health issues in accordance with preliminary direction being established in the Eastside Forest Plan.

- Proposed treatments were described as removing the smaller trees and leaving the larger ones. This approach would be contrary to S&G 13-22 which prefers uneven-aged management in ponderosa pine.

Recommended Actions:

Carefully consider requirements for snags and down woody materials during any future planning exercises. Any related standards must give proper consideration to the safety of woods workers and to the reality of the existing and historic relationships that are seen within the ecosystems on the Forest.

Be continually aware of the need to keep prescribed burns within their prescriptions. Insure that employees are not penalized for delays or changes that are intended to keep those fires within their prescriptions. Be sure that appropriate resources are available and conditions are suitable before starting any prescribed burn.

Be sure that budgets and personnel are available to support whatever level of livestock use is permitted on the Forest.

Find ways to stabilize the implementation of the Forest Plan so that

- forward thinking employees do not attempt to achieve goals and policies that are being developed, but have not been adopted and
- to insure that new policies are quickly incorporated into the Forest Plan after they are officially adopted.

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 last year's report:

MANAGEMENT AREA ACREAGE CHANGES

MA Name	MA Code	1996 Acres	1997 Acres	TOTAL CHANGE 1996-1997
Yamsay Mtn.	01A	8,458	8,458	0%
Brown Mtn.	01B	01BLSR 3,313	3,313	0%
Pelican Butte	01C	01C 7,429 01CLSR 3,769 Total = 11,198	7,429 3,769 11,198	0%
Developed Recreation	02	02 1,093 02LSR 1,876 Total = 2,969	1,093 1,876 2,969	0%
Scenic Foreground Retention	03A	03A 13,268 03AMAT 8,015 Total = 21,283	13,268 8,015 21,283	0%
Scenic Foreground Partial Retention	03B	03B 16,448 03BMAT 4,447 Total = 20,895	16,448 4,447 20,895	0%
Scenic Midground Partial Retention	03C	03C 32,467 03CMAT 26,291 Total = 58,698	32,467 26,239 58,706	+0% (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	08 38,897 18LSR 5,830 18MAT 11,355 Total = 56,082	38,897 5,830 11,380 56,107	+0% (25 acres)
Eagle Nest and Recovery Sites	09A	09A 3,529 09ALSR 943 09AMAT 2,555 Total = 7,027	3,529 943 2,565 7,037	+0% (10 acres)
Eagle Replacement Habitat	09B	09B 1,934 09BLSR 2,289 09BMAT 5,395 Total = 9,618	1,934 2,289 5,401 9,624	+0% (6 acres)

MA Name	MA Code	1996 Acres	1997 Acres	TOTAL CHANGE 1996 TO 1997
Eagle Winter Roost	09C	09CLSR 2,201 09CMAT <u>193</u> Total = 2,394	2,201 <u>193</u> 2,349	0%
Big Game Winter Range	10	39,631	39,631	0%
Timber Production	12	12 461,571 12MAT <u>82,680</u> Total = 544,251	461,571 <u>82,559</u> 544,130	-0% (121 acres)
Research Natural Areas	13	13 1,470 13LSR <u>1,169</u> Total = 2,639	1,470 <u>1,169</u> 2,639	0%
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%.

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 appropriate.

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	Plan	1991	1992	1993	1994	1995	1996	Remaining for Plan Period
Allowable Sale Quantity MMCF/year	19.4	15.8	2.0	21.5	2.0	6.2	8.4	34.5 MMCF per year
Timber Sale Program Quantity MMCF/year MMBF/year	34.7 166.8	23.7 119.2	8.8 49.0	31.8 158.6	2.9 16.3	6.7 33.5	13.1 68.0	65.0 MMCF per year 305.8 MMBF per year
Dead Lodgepole Pine Sold MMCF/year MMBF/year	11.5 40.2	6.1 30.8	6.3 36.5	9.9 48.7	0.9 4.2	2.4 12.6	5.4 27.1	21.0 MMCF per year 60.5 MMBF per year
Ponderosa Pine Sold MMCF/year MMBF/year	8.8 53.9	6.0 30.2	1.5 7.7	18.1 91.3	0.9 4.4	2.3 11.6	4.9 26.6	11.8 MMCF per year 78.8 MMBF per year
Silvicultural Treatments (Acres/Year) Commercial Thins Overstory Removal Regeneration Harvest Selection Harvest Salvage Cut - Lodgepole	2,700 1,600 500 8,400 13,700	2,300 900 200 7,400 6,700	0 200 100 800 6,300	200 200 0 2,500 100	549 162 1,285 619 0	2,688 0 1,054 2,851 975	3,337 0 3,530 5,576 8,290	4,482 Acres per year 3,634 Acres per year 0 Acres per year 16,063 Acres per year 28,659 Acres per year
Reforestation (Acres/Year)	6,400	7,833	6,590	9,204	10,137	8,951	5,821	3,866 Acres per year
Timber Stand Improvement (Acres/Year)	14,400	6,660	7,265	8,644	8,181	6,032	8,930	24,572 Acres per year
Fuel Treatment (Acres/Year)	27,600	30,961	23,286	14,236	25,469	9,497	10,223	40,582 Acres per year
Road Construction/Reconst (Miles/Year) Forest Road Program Timber Purchaser Roads	22 31	2.0 27.6	2.3 0.0	2.0 0.0	2.7 0.0	6.7 0.0	0.4 2.8	203.9 miles remaining 279.6 miles remaining
Total Road System (Miles)	5,517	6,200	6,200	6,208	6,208	6,208	6,208	691 miles to be reduced
Road Access Management (Miles) Open for Use Closed to Use	- -	4,932 1,268	5,030 1,170	5,106 1,102	4,938 1,270	4,938 1,270	4,938 1,270	Not projected Not projected
Road Access Type (Miles) Passenger Car High Clearance Vehicle Intermittent Access	510 2,120 2,887	490 2,376 3,345	490 2,376 3,345	483 2,361 3,365	483 2,360 3,365	483 2,360 3,365	483 2,360 3,365	Need 27 more miles Need 240 fewer miles Need 478 fewer miles
Developed Recreation Construc (PAOT)	695	90	140	80	0	0	0	385 PAOT (55% left)
Trail Construction/Reconst (Miles)	124	1.0	15.0	4.1	7.5	0.1	49.5	46.8 Miles (38% left)
Permitted Livestock Grazing (AUM)	13,000	13,000	13,000	14,418	10,102	6,090	5,361	17,007 AUM each year
Range Improvements Structures Acres	- -	11 2	5 13	6 10	0 0	10 0	8 0	No value established in the Forest Plan
Wildlife Habitat Improvement Threatened & Endangered Species Structures Acres	- -	0 115	45 130	0 25	0 299	25 172	2 175	No value established in the Forest Plan
Other Species Structures Acres	- -	2,834 320	516 2,618	255 979	549 2,624	1,533 3,379	1,020 3,870	
Watershed Improvement Work Structures Acres	- 10	na 72	na 9	na na	2 107	13 292	0 290	No value established None

Monitoring Item: Budget

Objective:

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

Monitoring Questions:

Is funding sufficient to implement the Forest Plan?

Threshold of Concern:

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

Results and Findings:

This the sixth year of the Forest Plan (FY 1991 - 1996), both the 1996 expenditures and the six year average were reviewed to consider the affects of expenditures on implementation of the Forest Plan. Political decisions have affected the budget priorities and expenditures. Ecosystem management, watershed analysis, water rights and timber are changes in programs occurring after the Forest Plan was signed. These shifts in funding categories make it difficult to directly track year-to-year changes in comparison to Forest Plan estimates.

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

Dollars were all converted to 1982 dollars for comparison purposes.

BUDGET EXPENDITURES BY RESOURCE

(1982 Dollars)

Resource Area	Forest Plan	6 Year Average	Percentage Difference
Recreation	\$1,086,200	\$654,600	-40%
Fish, Wildlife, T&E Species	\$810,900	\$567,300	-30%
Range	\$269,200	\$181,300	-33%
Lands & Minerals	\$284,800	\$214,800	-25%
Facilities	\$1,553,600	\$1,121,900	-28%
Timber Management	\$7,536,800	\$7,554,700	0%
Soil, Water, Air	\$367,300	\$199,400	-46%
Protection & Law Enforcement	\$1,835,500	\$1,678,800	-9%
Administration & Planning	\$1,920,000	\$2,323,900	+21%
TOTALS	\$15,664,300	\$14,496,700	-7%

Evaluation:

As the years have passed, it has become increasingly difficult to compare current year budgets to projections in the Forest Plan. For example, administration and planning showed a large increase for FY-1995 and FY-1996 when the changes were simply in the manner of accounting. In 1995, coding systems were changed to allow overhead costs that were formerly associated with projects, and thus resource areas, to be assigned to administration. This had the apparent effect of reducing resource budgets and increasing overhead expenses when, in reality, nothing had changed. Nonetheless, we can see that over the first 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.

Recommended Action:

Budget analysis, as required by the Forest Monitoring Plan, has not been a realistic measure of whether or not direction in the Forest Plan is being achieved. Key problems have been the way in which funds are accounted, changes in accounting procedures, and an imprecise link between budgets and achievement of outputs and standards and guidelines. It is recommended that the All Resources Reporting System, as it is formalized, be used as the basis for evaluating budget impacts upon outputs and the achievement of Standards and Guidelines. It is not known whether the All Resources Reporting System will report data consistently from year to year. If not, it may be necessary to develop a Forest-specific scheme for developing consistent budget figures for monitoring purposes.

Monitoring Item: Developed Recreation Sites

Monitoring Objective:

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

Monitoring Questions:

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

Are customer needs being met?

Is unacceptable resource damage occurring?

Threshold of Concern:

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

Suggested Sampling Methods:

Monitor level of use and condition of facilities throughout the use season. Use systematic sampling techniques to periodically measure use. Report actual use annually per 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 higher than 1995 in all categories and for most activities. Both developed site use and the camping activity increased approximately 4.5%. Most campgrounds were at or near capacity on holidays and weekends with overall occupancy at fee sites running from 30% to 60% 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. Hunters were generally supportive of the site protection fencing at Head of the River, after the situation was explained and they were assisted in finding alternate campsites.

Use data for 1994 has been converted to INFRASTRUCTURE from RRIS and 1995 and 1996 has been entered into the new data base. Reports can now be run on all three FY's 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 Forest visitors users has been predominately favorable concerning facilities provided, condition and cleanliness of facilities, and the quality of the setting. Despite apprehension expressed in 1995, 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. The operation met and/or exceeded our O & M standards and proved to be very cost effective. Fourmile Lake Campground will be added to concession permit in 1997 to further reduce program costs.

Specific positive comments were received concerning the development of accessible facilities at Wood River, the new Romtec toilets at several sites, the new High Lakes Trail and the availability of hiking/biking trails from sites at Lake of the Woods. Wilderness trail users were favorably impressed with how quickly the extensive winter blowdown and flood damage was dealt with. Snowmobilers expressed appreciation for the new Klamath Point section of the Diamond Lake Trail, but continued to complain about the high water level at Great Meadow.

Several complaints were received about the amount of parking at Fourmile Lake Trailhead, especially for larger rigs and stock trailers. Early season electrical and water system problems at Lake of the Woods caused some unplanned expenses, but had little impact on users. A plumbing problem at Spring Creek Picnic Area also resulted in a short shut-down of the toilet facility. The Cherry Creek bridge on the Diamond Lake snowmobile trail and a log stringer and a section of tread on the Cherry Creek Trail were washed out during a winter storm. High water also caused problems at Aspen Point Picnic Area where the shoreline was severely eroded and a number of trees undermined. High water at Great Meadow made it unusable for snowmobiling for most of season and caused some erosion. Follow-up corrective actions for these problems are planned for 1997.

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.
- 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.

Evaluation and Follow-up:

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 others to be completed in FY 1997. 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. Barrier-free Romtec toilets have been added at Fourmile Lake CG and Rye Spur Horsecamp. An additional fishing/viewing platform and about 100' of boardwalk were completed at the Wood River Day-use Area though a challenge cost share agreement with Intergral Youth Services.

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

Planning of additional trails outside of wilderness as requested by users is continuing. Construction of the High Lakes Trail from Fish Lake to Great Meadow was completed in 1996. A horse group camping area was developed at Rye Spur Quarry and the access road reconstructed to accommodate horse trailers. A trail connecting the site to the Rye Spur Trail is scheduled for 1997. A portion of Fourmile Lake CG was redesigned to accommodate camping with stock and to enlarge the trailhead. This construction is also planned in 1997. The construction of a trail, trailhead and horse camp in the Yamsay Mtn. area has been deferred while the mountain is evaluated as a Traditional Cultural Property. The reconstruction of the Miller Lake Trail and the addition of a trail bridge is still on the R-6 Trail CIP list. A snow shelter kit was purchased for the Walt Haring Sno-park which will be installed in 1997. The building will also serve as an accessible picnic shelter during the summer.

Recommended Action:

Since funding for operation and maintenance is lagging behind Forest Plan levels, measures to reduce costs and maximize efficiency in site operations will need to be implemented to maintain the quality of the experience being provided at our developed sites. A Recreation Program Strategy Team has been charged with reviewing the Forest program to identify ways to increase cost effectiveness. The Team will also 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 continuing to implement Meaningful Measures (MM). This process should facilitate identifying costs to meet standards, prioritizing sites & areas and determining where to invest resources, as well as identifying cost savings across the Forest. MM is expected to be used as a budget allocation tool in 1998.

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 continue to be deferred or not accomplished to MM standards. No other immediate program or direction changes are recommended.

Monitoring Item: Off-Road Vehicle Use

Monitoring Objective:

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

Monitoring Questions:

Is ORV use occurring in areas where prohibited or restricted?

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

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

Threshold of Concern:

Unacceptable damage is noted.

Suggested Sampling Methods:

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

Results and Findings:

No unacceptable resource damage caused by ORV use was reported during 1996. 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 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.

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 Action:

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. In 1996 two areas were analyzed.

Analysis Area Name	Pre-project HSI	Post-project HSI
PDQ	.31	.37
Raptor	.38	.28

Two hundred twenty four acres of wet lodgepole were identified as fawning habitat and seasonally protected from disturbance. Mule deer corridors along riparian areas between Desert and Bear Creeks were identified and protected from harvest and burning.

Chiloquin District reported mule deer model runs for several areas during FY96. Only existing condition was reported, no modifiers were used.

The model was used on the following analysis areas:

Analysis Area Name	Acres	Pre-project HSI	Post-project HSI
Ranch House	13,400	.35	.29
Copwood	7,798	.30	.26
TOTAL	21,198		

In FY95 the primary habitat improvement projects specifically designed for deer on the Chiloquin District were bitterbrush planting. The purpose of the planting of 1,713 acres of bitterbrush and 168 acres of mountain mahogany in 1996 was to accelerate the regrowth of browse. Several monitoring surveys of plantings were conducted to determine planting success. Following is a report of those surveys:

I. Spring Survey; April, 1995.

- a) 1993 plants: 363 acres, total survival at 3rd winter, 54%.
- b) 1994 plants: 590 acres, total survival at 2nd winter, 20%.
- c) 1995 plants: 1042 acres of winter range, total survival at 1st winter, 77%.
1995 plants: 150 acres machine planted summer/transitional range, total survival at 1st winter, 78%

II. End-of-the-season survey, September 1996

- a) 1993 plants: 48% survival.
- b) 1994 plants: 17% survival.
- c) 1995 plants: 61% survival (winter range only).
- d) 1996 plants: 40% survival.

Mitigation, seasonal restriction periods, other analysis and recommendations were conducted for mule deer on the Chiloquin District in the following areas:

Analysis Area Name	Acres	Recommendation
Copwood	7,718	Operating season restriction-migration
Ranch House	13,393	Operating season restriction-migration, Road closures.
Dorf	39,995	Operating season restriction-migration
Rosie	6,000	Operating season restriction-migration, deferred grazing, road closures.
Dams-Switchback Allotment	-	Modified .25 mile of barbed wire fence to smooth wire to allow deer movement.
Bluehorse Fire Ecol.	18,389	Operating season restriction-migration.

The Forest is a cooperator with the Fremont N.F. and Oregon Department of Fish and Wildlife in a study on the Fremont N.F. for development and validation of a model. Preliminary indications of the study are that the forage base has dwindled because of ingrowth of white fir. Approximately 300 person hours of volunteer time and 120 paid hours were spent on coordination and field work by Forest personnel.

Two new guzzlers were placed in project areas, a guzzler basin was replaced and a guzzler fence was repaired.

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. While data from the latest forest vegetation inventory is not yet available for analysis, it is known that limited overstory removal (see the "Harvest Unit Size" and "Accomplishment of Outputs and Services" monitoring elements), exclusion of fire and normal tree growth is reducing the amount of forage available for mule deer. 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 1996 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 support the mule deer study.

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.

Klamath District protected 1,166 acres of potential calving habitat with a seasonal limited operating period and protected 777 acres of corridors for elk in the Threemile/Sevenmile planning area.

Chemult District identifies and protects special use areas such as calving areas and wallows. In the PDQ Sale area, a 224 acre wet lodgepole pine area was identified as a calving/fawning area and was seasonally protected.

It was noted that meadow areas of use by elk appears to conflict more with cattle grazing than with deer use.

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 have been completed on most perennial streams. On a limited number of streams, surveys have been repeated, so some trend information may become available in the near future. Limited analysis of the stream survey data has been completed. As a result, it is not possible to speak precisely to existing fish habitat capability or trend in capability at this time. The Forest is in the process of moving stream survey data currently residing in the Oracle database into the new 615 platform which will allow standardized queries and visual displays of existing data to be made in the near future. Furthermore, the Forest is following Regional Office direction to direct the surveys towards a consistent set of "core attributes" which will facilitate assessment of fish habitat capability.

In general, recent Forest activities have emphasized an "ecosystem" approach in implementing major activities (e.g. timber sales and grazing). These projects have included activities to provide for

improvements to existing conditions. While it may yet be too soon to "prove" improvement, it could be inferred.

The Forest conducted 33 miles of physical stream survey in 1996.

The Forest has inventoried flood damage from recent storms. Overall, the storms of 1996 and early 1997 have not significantly affected fish habitat capability on the Forest.

Effects of fish habitat structures - In the recent past the Forest has implemented a number of fish habitat improvement projects (e.g. instream structures). The protocol for measuring effectiveness of this work has not been properly followed. The Forest plans to do a better job of assessing this work in 1997, and report its findings.

Fish numbers, species composition or age structure - Fish numbers and age structure are not assessed in current Forest inventories. Species composition is only addressed through the presence/absence data provided through snorkel observations conducted as a part of the basinwide stream surveys.

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 following the Federal Guide for Watershed Analysis. These documents when coupled with improved fish data interpretation under 615 will provide for better cumulative effects understanding. Most project specific NEPA documents have some level of cumulative effects discussion where fisheries are an issue.

There are a number of streams on the Forest where aquatic ecosystems are known to be at risk from cumulative effects from Federal, State and private activities. Many of these have been identified by the State of Oregon and are on the 303(d) Water Quality Limited list. The Forest addresses these concerns through project level planning in seeking to improve those systems that contribute to these streams.

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. 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. In Three Mile 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 action has been taken and additional actions and more comprehensive monitoring is planned for this summer (1997). This is the most imperiled population of bull trout in the Klamath Province. Intensive investigations are ongoing. Habitat parameters will be evaluated, evaluation and monitoring other members of the aquatic biotic community (e.g. molluscs, amphibians, and invertebrates) will occur.

Evaluation:

Stream surveys have been completed at a satisfactory rate. However, analysis of baseline data is not progressing at a satisfactory rate. Furthermore, there has not been adequate funding for more intensive surveys needed on some stream reaches.

Recommended Action:

One of the goals of ongoing watershed analysis is to point out locations which need fish habitat improvement. This is unlikely to occur however, until those performing such analysis have access to stream survey data which has been properly collected. Time and dollars need to be committed to summarizing existing stream survey data and comparing existing conditions to a desired future one. The Forest needs to clearly identify (based on data) which Forest streams are at or near potential for fish production and will require no investment of funds for fish habitat improvement as well as those which need aquatic habitat improvement.

Stream survey must continue until all streams are completed and a Forest-wide baseline is established. After this, a minimum of ten percent of streams should be resurveyed annually to allow for trend assessment.

Protocol and methodology for intermittent and ephemeral stream surveys should be developed and implemented until an adequate profile of the watershed is developed.

Efforts should be taken to quantify fish populations known to exist on the Forest, and to assess age structure.

Monitoring Item: Wildlife-Bald Eagle

Monitoring Objective:

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

Monitoring Questions:

Is the bald eagle population approaching recovery objectives?

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

Has a site plan for each nest site been written?

Are nest sites producing young?

Is the winter roost receiving use?

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

Is replacement area habitat receiving use by bald eagle?

Threshold of Concern:

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

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

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

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

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

Suggested Sampling Methods:

Continue Annual Interagency survey of nest sites in the Klamath Basin.

Continue annual winter roost surveys.

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

Field survey replacement habitat, resurvey at five-year intervals.

Survey treated replacement area growth rates at five-year intervals.

Monitoring Type:

Implementation, Effectiveness, & Validation

Results and Findings:**KLAMATH RANGER DISTRICT**

Number of territories or nest sites, including known unoccupied sites and previously known (but not relocated in 1996): 15 (includes 1 new territory at Buck Lake)

Number of occupied territories or nest sites: 13 (the new site on private land on Annie Creek may be the same pair that left the Sevenmile site, but is not counted here)

Number of young produced per occupied site: 13 young = 1.0 young/occ. site on Klamath RD, compared to 0.91 yg/oc.site for the state of Oregon and 1.12 yg/oc.site for the Klamath Basin.

Percent success rate per occupied site: 9 sites produced young = 69% success on Klamath RD, compared to 60% success for the state.

Number of nest sites protected from project activities: 4 with limited operating periods.

The Forest Plan Management Area layer was updated to include all of the known nest sites, including the Buck Lake site in MA9A.

Number of nest trees damaged: There have been reports that the Rock Creek nest snag blew down in December, 1996.

Percent eagle habitat treated to improve conditions: Threemile/Sevenmile EA = 123 ac., Buggy Salvage EA = 464 ac.; which equals 04% of the bald eagle habitat on Klamath Ranger District. (Refers to acres prescribed and sold/contracted in 1996, not actual acres treated).

Type of treatments: Culturing future nest trees, thinning from below to enhance nest trees, underburning, and planting future nest trees.

Reason for treatment and cause of problem/condition: Stress caused by overstocking of nest stands and lack of suitable replacement trees of the preferred species.

An analysis of the success of the nests within the eagle area closure that was implemented in 1992 near Rocky Point showed: 13 young were fledged from 19 nesting attempts in the five years prior to the closure and 23 young were fledged from 19 nesting attempts during the five years since the closure was implemented. However, some of the nests that showed the greatest improvement were near open roads that were not affected by the closure.

CHILOQUIN RANGER DISTRICT

1. The following information is from 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).

2. The Bayhouse timber sale was the only management project area with eagle nesting activity considered in FY96. A new nest site plan was drafted for the Little Wocus Bay nest #586. The Wocus Bay nest #486 was also considered for this project. Project planning is ongoing into FY97.

CHEMULT RANGER DISTRICT

Three Creek BEEP TS will improve and maintain eagle habitat; however, no actions were taken in FY96.

Site plans for Three Creeks and Lane Ranch were finalized in FY96.

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

Number of nest trees damaged and other threats were none.

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

Evaluation:

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. 1996. Bald eagle nest locations and history of use in Oregon 1971 through 1996. *Oreg. Coop. Wildl. Res. Unit, Oreg. State Univ., Corvallis*. 18pp) productivity in the Klamath Basin was the highest in the state with 1.12 young per occupied nest. Recovery population goals were also exceeded in the basin.

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). Finalization of eight of these thirteen plans has occurred and finalization of the remaining five plans is in progress.

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.

KLAMATH RANGER DISTRICT

All 3 LSRs (Late Successional Reserves) designated in the President's Forest Plan on the Klamath Ranger District were at least partially surveyed or monitored in 1996 for the northern spotted owl. However, monitoring information is not available for all sites (see below for explanation). In addition, not all acres within LSRs were surveyed or monitored. A total of 5 activity centers were located within the LSRs in 1996 by a USFS/BLM crew. Of these 5 activity centers, 1 pair produced young.

On the Klamath Ranger District, during 1996, 11,800 acres were surveyed to survey protocol by a USFS/BLM crew. Most of these acres (11,000 ac) were surveyed to protocol within the Cold Springs Watershed. The additional 800 acres were monitored as part of a population density study on

the southern end of the district. Most of those acres were suitable habitat. This was accomplished through a variety of ways, including co-operative agreements with the BLM. Additional monitoring by as part of a research study by Frank Wagner of Oregon State University took place in 1996. However, the results from Wagner have not been available to us yet. A total of 10 activity centers were confirmed on the Klamath RD by the USFS/BLM. A total of 4 young were fledged from this 9 activity centers. USDI Fish and Wildlife Service issued a "take" permit for 2-3 spotted owl sites associated with the Buggy T.S. and Sevenmile/Threemile T.S.

CHILOQUIN RANGER DISTRICT

- 1) The Chiloquin LSR was not surveyed. The location and habitat type for the LSR appears to be inappropriate, and may not meet the intent for any of the LSR, old-growth habitat species. An LSR assessment has been funded for FY97 to determine the value of this LSR to spotted owl recovery. Initial planning for this assessment was begun in FY96, and a planning team has been selected.
- 2) Suitable habitat surveyed to protocol in matrix land:

Analysis Area	Total Acres	Suitable Habitat Acres	Percent Suitable Habitat Surveyed	Percent Suitable Habitat Monitored
Dagwood	2,665	2,665	100	100

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

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

4) Banding -Four spotted owls were banded in 1995.

A fledgling was banded in T.36S, R.08E.,Sec.4. (MSN 3106). The male received a green/white stripe band on the right leg; a USFWS band, number 1387-60960, on the left leg.

At another location (T36S-R09E-Sec.16 - MSN 4346), an adult female and two fledglings were banded. The female received a solid white band on the right leg, and USF&WS band #1387-73142 on the left; a yellow band on the right leg; USFWS band, number 1387-73199, on the left leg.

One juvenile received a red/white/red band on the right leg and USF&WS band #1387-60970 on the left. The second juvenile received a red/white/red band on the left leg and USF&WS band #1387-73144 on the right leg.

A fifth owl was detected but not banded at T36S-R08E-Sec.08 (MSN 3995). Bands were not confirmed on this owl.

CHEMULT RANGER DISTRICT

Spotted owl surveys were conducted on 11,520 acres, LSR-Boundary Butte. Results show establishment of a single resident in Boundary Butte LSR and Park Officials monitored and found pair occupancy in the Sand Creek LSR, reproductive success is unknown. There were two additional responses with unsuccessful follow-ups. Habitat on the Chemult RD is marginal at best.

Nearly all surveys needed for completing analysis for sales are complete. Existing condition for the LSR analysis was collected and dispersal habitat characterization is progressing in coordination with the USFWS. Quantification of habitat will be completed with the LSR document which has been funded in 1997.

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.

CHILOQUIN DISTRICT

All management activities conducted in FY96 were evaluated for the presence of potential peregrine nesting habitat. Potential habitat was not found; therefore, no formal peregrine surveys were conducted to protocol.

Personnel at the Supervisors Office began the process of mapping potential peregrine habitat on the entire forest this year, but the work has not been completed. Until potential habitat is identified and rated for suitability, no formal peregrine surveys will be conducted except on a project by project basis.

Two new probable prairie falcon territories were found in the badlands area, but a nest was not located.

CHEMULT DISTRICT

The Chemult District has no known potential or occupied peregrine habitat. No project areas were surveyed in 1996.

KLAMATH DISTRICT

No surveys completed in 1996.

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 have been identified. Current use on the Forest is believed to be limited to a few short portions of the main stem Sprague River which is in Forest ownership on both streambanks. Critical habitat for both species has been proposed by the Fish and Wildlife Service (FWS) under the Endangered Species Act. As a result, the Forest prepares biological assessments for all projects that "may affect" 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. These assessments, and the subsequent consultations with the FWS, are utilized in land management decisions made on the Winema which may affect these listed species.

To facilitate the preparation of project level NEPA, biological assessments and consultation under the Endangered Species Act the Forest is developing map products within its GIS (Geographic Information System) system. Efforts began in earnest in 1997 to link stream habitat information in Oracle data tables with the GIS environment. As this work is completed, the Forest's ability to analyze the effects of proposed land management activities will be enhanced.

A number of timber sales in the planning stage were analyzed for effects to listed suckers. If implemented all are expected to result in some amount of improvement to the existing condition of sucker habitat (reduced sediment and improved water yields).

Currently grazed cattle allotments which may affect sucker habitat were reviewed by a Forest ID team and "Proper Functioning Condition Analysis (BLM) was conducted. All such streams were found to be "properly functioning".

A number of smaller projects such as special use camp facilities and water source sites were reviewed for adverse impacts to suckers. Modifications were made in consultation with the FWS to assure that no adverse impacts would occur.

Evaluation:

The literature (life history needs of listed suckers) supports that improvement in habitat conditions within Upper Klamath Lake offers the best potential for recovery of these species. 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.

Information collected by the Klamath Basin Adjudication Team (USFS) is being looked at to support current land management decisions. Like the stream habitat condition inventory data, efforts are underway to integrate the work of the adjudication team into the GIS environment. Sites selected for data collection for the adjudication process are being analyzed for long-term Forest Plan monitoring. No decisions have been made as yet.

Recommended Action:

Establish long-term Forest Plan monitoring sites to adequately address the effectiveness of the Forest's habitat protection. Sites used in support of the Forest's adjudication claims may offer the best opportunity for this. The Develop an Interdisciplinary Team process to select sites which will provide adequate information to support conclusions about habitat and species recovery.

Increase emphasis on streamlining consultation under the ESA and development of programmatic consultations (including the Fremont National Forest) to insure consistency in mitigation measures applied for protection of listed suckers. This would reduce time spent in getting projects approved, and allow for better use of resources for effectiveness and validation monitoring.

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*

*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.

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

Monitoring Objective:

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

Monitoring Questions:

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

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

Threshold of Concern:

Habitat suitability is less than minimum standards.

Decline of more than 15 percent is detected.

Habitat area numbers and distribution less than minimum requirements.

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

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

Suggested Sampling Methods:

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

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

Monitoring Type:

Implementation and Effectiveness.

Results and Findings:

Chemult Ranger District

All surveys were conducted in support of outyear timber sale planning. Surveys were conducted on 5,440 acres for pileated woodpecker. There were four visual and 11 audible detections.

Goshawk surveys were conducted on 66,882 acres. Three new active and successful nests were found.

Great gray owl surveys were conducted on 3,034 acres with no detections. Three new artificial nest platforms were installed in 1996.

The American marten study is still in progress. During FY-1996:

- Martens were found resting on 1,060 occasions in 545 resting and den sites. Human-made structures (debris piles, cut stumps, cabins) accounted for 40% of the resting sites used.
- 29 maternal dens of 9 females were found (about double of the total found from 1993 through 1995)
- Earliest denning was detected on April 17 although April 23 through the first two weeks of May seems more typical.

Chiloquin Ranger District

Several project areas were surveyed for goshawk for a total of 9,587 acres. Three new nesting territories and postfledging areas were identified. In one project area four nests were found from which eight young fledged.

Thirty artificial great gray owl nest platforms were monitored for reproductive success. A total of nine young were observed at four nests. Surveys to protocol were conducted on 2,033 acres with one new territory located.

One new osprey, and five new Cooper's Hawk nests were found.

Klamath Ranger District

Approximately 900 acres of goshawk territories were monitored under an agreement with the BLM. Approximately 7,680 additional acres were surveyed. One known next was monitored.

One new osprey nest was found.

Neotropical Migratory Birds

Approximately 30 miles of Breeding Bird Survey routes were covered on Chemult and Chiloquin Districts.

Approximately 5,000 acres were studied on the Chemult District as a cooperative project between the Winema NF, Weyerhaeuser, Fremont, NF, USFWS, and ODFW to collect and monitor neotropical migratory bird data in lodgepole pine salvage stands.

Baseline information on neotrops and other landbirds was collected on Klamath District using constant effort mist-netting techniques and point counts. Three stations were monitored, each with 10 nets.

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.

Chemult Ranger District

During 1996 19 miles of streams were surveyed under the fisheries program. Added to the standardized basinwide fisheries survey were protocols for reptile and amphibian presence. Presence data alone does not allow for status of species or trend conclusions. Spotted frog population was confirmed at Jack Creek and surveys will continue in 1997.

Nine populations of *Botrychium pumicola* were monitored for the third year. Results of the presence/absence data suggest that these populations are stable (see 1996 WL/TES/Fish Report from D1 by Kittrell/O'Hara for Bopu monitoring summary).

Chiloquin Ranger District

Number of acres surveyed/monitored.

23,279	Timber sale & small projects field surveys
1	Cypripedium montanum long term population trend monitoring study
<u>2.5</u>	Calochortus burning and grazing effects monitoring study
23,285.5	Total survey and monitoring acres

100% of acres field surveyed were project funded acres.

Percent protected/meeting Forest Plan objectives.

Yawheewood T.S.	No BE written in 1996, BE to be completed in FY97
Rosie T.S.	No BE written in 1996, BE completed in FY97
P&M TSI	No BE written in 1996, BE to be completed in FY97
Small Projects	Less than 1% of total project acreage, 100% of BE's written in FY96 meeting Forest Plan objectives.

Biological evaluations were prepared for less than 1% of the total acres surveyed in FY96. Therefore, less than 1% of acres surveyed met Forest Plan objectives. 100% of acres surveyed in FY96 will meet Forest Plan objectives by the end of FY97 when BE's will be completed.

100% of sensitive plant species which fall within planned project areas are being protected through exclusion. 0% of potential and/or known plant habitat surveyed and analyzed for project biological evaluations written in 1996 is actively being protected through any measures.

Calochortus longebarbatus grazing and burning effects monitoring study. This study was begun in 1993 and data was collected in 1995 and 1996. Plots on 5 sites were taken and numbers of vegetative and flowering stems recorded on each plot in 1996. Slight increases were seen in 1996 in counted plants in the burned treatment, but decreases were seen in the grazed and control treatments. The decision to continue the study for 2-3 more years in order to better assess trends has not been made. Study information on file at Supervisor's Office.

Cypripedium montanum long term population trend monitoring study. Ten plots were established and sampled in 1996 to determine effects of management activities including ground disturbance and burning. Individual plants will be studied for growth and survival rates. See attached for study information.

Conservation strategies were initiated in 1996. The *Rorippa columbiana* conservation strategy was completed.

Fifteen Biological Evaluations were completed in 1996.

Klamath Ranger District

No known sandhill crane nest sites located, although several are suspected on or near FS lands.

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

Amphibians - During 1996 4 miles of streams were surveyed under the fisheries program. Added to the standardized basinwide fisheries survey were protocols for reptile and amphibian presence. Presence data alone does not allow for status of species or trend conclusions.

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

Evaluation:

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

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

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

Recommended Action:

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

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 will continue 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.

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

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

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

A monitoring study on *Calochortus longebarbatus*, begun in 1993 continued into 1996. Plots on five sites were taken and number of vegetative and flowering stems were recorded on each plot. Grazed and ungrazed plots were compared and no significant difference was found between the two treatments.

An establishment record for Blue Jay Springs Research Natural Area was initiated and completed in 1996.

Evaluation:

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

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

Recommended Action:

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

Monitoring Item: Old Growth

Monitoring Objective:

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

Monitoring Questions:

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

Threshold of Concern:

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

Suggested Sampling Methods:

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

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

Field review old-growth retention practices every three years.

Monitoring Type:

Effectiveness

Results and Findings:

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

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

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

Winds on the Chemult District blew down several stands reserved for old growth and some of the acreage outside of MA-7 was also in old growth condition.

Chemult District added 1,870 acres of old growth to the Desert Old Growth area to reduce fragmentation and improve connectivity to Crater Lake National Park.

The Chiloquin District modified a designated MA-07 area to a more appropriate boundary without changing acreage.

Evaluation:

A firm Forest-wide assessment of old growth conditions can not be made due to the lack of agreement on a definition of old growth and the lack of a suitable data base to which any given definition could be applied. The acres of protected habitats (Management Area 7) did not change in 1996 although the Chemult District deferred timber harvest on 1,870 acres which will temporarily protect that many additional acres. Several protected old growth stands did blow down on the Chemult District as did some additional acres in areas that were not protected. 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 beyond those affected by blowdown. 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:

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

Threshold of Concern:

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

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

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

Suggested Sampling Methods:

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

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

Monitoring Type:

Effectiveness

Results and Findings:

Overall

Of the 608,123 acres in allotments (the difference in acres from 1994 attributable to GIS changes and exclusions in some allotments), 228,477 acres were monitored. Of those monitored, 171,548 acres were at or moving toward Forest Plan Objectives (FPO), and 44 acres were not meeting FPO.

Of the riparian areas within allotments (41,462 acres, included in the overall totals above), 28,503 were monitored and of those acres monitored, 44 acres are not meeting or moving toward FPO.

Riparian areas identified as not moving towards FPO in Antelope Allotment in 1994 were fenced but fencing was not effective, however, objectives were met. The fence was upgraded in the fall of 1995 (FY96). An enclosure was completed in the Dams-Switchback Allotment. Objectives were achieved within the enclosure, but livestock redistribution caused unacceptable use in portions of the riparian area

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

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 five allotments. No AMP development is in progress.

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

RANGE PROGRAM - BUDGET EXPENDITURES
(Thousands of 1994 Dollars)

YEAR	DN1/DL1	DN22/DL22	DN23	TOTAL
1991	96.3	5.6	0.6	102.3
1992	43.1	3.4	3.9	50.4
1993	313.6	4.7	2.1	320.4
1994	187.8	1.9	0.0	189.7
1995	256.4	0.0	0.0	256.4
1996	86.2	8.3	0.0	94.5
Forest Plan Projection	331.4	46.0	30.1	407.5

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

The average budget of the five years from 1992 through 1996 was 45% of that projected as needed by the Forest Plan. This is far outside the 20% variation threshold. The largest budget, 1996, was 23% of the Forest Plan projection.

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 toe-point transects. Utilization was below Forest Plan standards this year on both allotments. The majority of key areas were below or within standards. The district successfully implemented its cow/sheep sighting program with over 20 employees filling out siting forms. This program assists with monitoring cattle/sheep movement and unauthorized use.

Antelope Cow/Horse Allotment Utilization

KEY AREA	1994	1995	1996	Avg 94-96	ACRES	%RIP
SPROATS MEADOW	14.5%	22%	39%	25.2%	194	27%
CROOKED MEADOW	51%	10%	12%	24.3%	41	6%
JOHNSON MEADOW	6.5%	11%	30%	15.8%	205	29%
SQUIRREL CAMP	26%	5%	12%	14.3%	85	12%
WILSHIRE MEADOW	33%	10%	14%	19.0%	68	10%
UPPER JACK CREEK	52%	60%	Portion Fenced		114	16%

Total riparian acres on the allotment is 3,716 so the 593 acres monitored (excluding Upper Jack Creek) represents 16% of the total riparian area.

Jack Creek Sheep/Goat Allotment Utilization

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

UTILIZATION SUMMARY CHART

Percent Utilization

KEY AREA	1990	1991	1992	1993	1994	1995	1996
Cannon Well		90	63			28	58
Crooked Meadow	51.8	75.4	76	37	51	10 est	12
Dry Meadow	85.6				60	30 est	Fenced
Jack Creek Upper	41.1	81.4	79	65	52	60 est	Fenced
Jack Creek Jamison	68.7		75				-
Johnson Meadow North	38.2	71	79	12		11	30 est.
Johnson Meadow South	43.6	73	74	6	6.5	9	25 est.
Parker Meadow			67		50	94	44
Pumice Meadow	87.2	90				30 est	-
Riders camp	81.7				60	85 est	Fenced
Riparian Off 8829		86.6					-
Sellers Marsh	54.6	72.4					-
Sproats Meadow	78.7	90	81	27	14.5	22	39
Sproats Meadow Lower				43			-
Stimpson Meadow					11.5	10 est	25 est.
Squirrel Camp	44.4	54	73	5	26	5	12 est.
Wilshire	68.4	86.2	61.4	33	33	10	14

Chiloquin District

A follow-up inspection of the Ray Ranch was conducted in FY96. Resting of the Ray Ranch (Hog Creek) portion of the Dice Crane Allotment resulted in good to excellent conditions in the meadow and along the creek. The top of the dike along the creek was used for trailing. Livestock were removed early because several meadows never dried to range readiness.

Utilization in Dams Meadow was 20% at the cages, but varied from 20% to 60% between exclosures and on private land south of the large exclosure.

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

Small areas in Telephone Draw, Bull Pasture, and Haystack Draw exceeded utilization standards. There appears to be good willow recruitment in portions of these draws.

The Sycan Allotment was unused. Livestock from the Black Hills Allotment on the Fremont were observed in the Sycan River Corridor.

The Applegate Sheep Allotment was totally in compliance.

Klamath District

In the Fourmile Spring Allotment utilization levels exceeded 40% for herbaceous material. Woody plant species were unused. The well for the watering site was drilled and artesian. Site hardening, trough placement, and corral were not completed.

In the Jack Springs Allotment utilization levels exceeded 40% for herbaceous material. Woody plant species were unused.

The Buck and Indian Allotments appeared to have not been grazed as heavily as in past years. Livestock were well distributed in upland vegetation and timber harvest units. With the exception of the Muddy Spring water development site, key areas met standards.

Noxious Weeds

Funding was insufficient to fully implement the Noxious Weed Treatment Environmental Assessment that was completed in 1993. The Forest manually treated 8,158 acres of noxious weeds in FY96 using predominately CWKV funds to treat bull thistle, Canada thistle, musk thistle, and wavyleaf thistle in the Lone Pine Fire area. Leafy spurge was discovered along the Squaw Flat road and manually treated. Diffuse knapweed was discovered and treated in Summers Quarry. Yellow starthistle was found and manually treated at Great Meadows on Klamath District. A few acres of dalmatian toadflax, and spotted knapweed were also manually treated on both the Chiloquin and Klamath Districts.

The Chemult District surveyed 3,705 acres and eradicated 55 acres of bull thistle and spotted knapweed using KV and appropriated funds.

The yellow starthistle previously detected on the Forest above Hagelstein Park was resurveyed and no starthistle was found. Leafy spurge was discovered on Squaw Flat Road, diffuse knapweed was found in Summers Quarry. Yellow starthistle and several exotic plant species was found at the rest area at Great Meadows on Klamath District.

Evaluation:

For FY96, the Forest fell below the budget threshold where it can effectively perform adequate on-the-ground administration and meet monitoring commitments.

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 (44 acres) was unacceptable. Corrective measures were planned for FY97 for certain key riparian areas that have been outside of standards including fencing for some, and more intense administration and follow-up monitoring for others. Resting of the Ray Ranch (Hog Creek) portion of the Dice Crane Allotment resulted in good to excellent conditions. Incidences of unauthorized use increased and was handled administratively.

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

Allotment Management Planning Revised Schedule

ALLOTMENT	RANGER DISTRICT	YEAR TO COMPLETE	RATIONALE FOR SCHEDULE
Antelope	Chemult	1998	Data Collected
Bear	Chemult	2004	Vacant
Three Creeks	Chemult	2004	Vacant
Jack Creek	Chemult	1998	
Applegate	Chiloquin	1999	
Dice-Crane	Chiloquin	2000	
Deep Creek	Chiloquin	2002	Vacant
Skellock	Chiloquin	2002	Vacant
Yamsi	Chiloquin	1998	Data Collected
Sycan	Chiloquin	2001	Data Collected
Coyote-Bucket	Chiloquin	2003	Vacant
Long Prairie	Chiloquin	2001	Vacant
E. Chiloquin ridge	Chiloquin	2000	
Dam's Meadow/Switchback	Chiloquin	1999	
No Name	Chiloquin	2003	Vacant
Buck	Klamath	1999	Data Collected
Indian	Klamath	1999	Data Collected
Fourmile Spring	Klamath	1998	Data Collected
Jack Spring	Klamath	1998	Data Collected

Recommended Action:

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

Re-evaluate the Dams-Switchback exclosure. Complete the Fourmile water development, reconstruct the water development at Muddy Springs to a hardened site away from the spring and fence the spring.

Exclude grazing from the Telephone Draw/Bull Pasture/Haystack Draw area for two years to allow recovery and to protect willow recruitment.

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 1996.

Evaluation:

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

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

Recommended Action:

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

Monitoring Item: Timber Inventory

Monitoring Objective:

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

Monitoring Questions:

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

Threshold of Concern:

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

Suggested Sampling Methods:

The scheduled re-inventory of the Forest.

Monitoring Type:

Effectiveness & Validation

Results and Findings:

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

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

Lodgepole Pine Mortality Summary 1986 through 1996

Mortality (mbf)

District	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Chemult	24371	11008	28170	3514	524	98	102	197	126	51	1326
Chiloquin	355	320	2355	458	51	23	30	326	97	4	2795
Klamath	85	594	30	36	19	-	8	3	120	40	153
Winema Total	24811	11922	30555	4008	594	121	140	140	343	95	4274

Evaluation:

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

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

Recommended Action:

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

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

Monitoring Item: Harvest Unit Size

Monitoring Objective:

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

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

Monitoring Questions:

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

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

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

Threshold of Concern:

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

Suggested Sampling Methods:

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

Monitoring Type:

Implementation & Effectiveness

Results and Findings:

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

1991
Working Groups Treated
Acres

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

1992
Working Groups Treated
Acres

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

1993
Working Groups Treated
Acres

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

1994
Working Groups Treated
Acres

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

1995
Working Groups Treated
Acres

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

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

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

Third Year Planting Survival

Percent survival by species by year

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

Fifth year Reforestation Success

Year of Final Harvest

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

Evaluation:

First year survival has improved this year to the 80% level which is the threshold of concern. Third year survival is down a little and is still a concern. These results reflect some of the harsh sites encountered in the Lone Pine Fire area. These sites caused first year survival in 1994 and 1995 to fall below the 80% threshold of concern for the first time since monitoring for the Forest Plan began. Those plantings reached three years of age in 1996 and are causing the figures for third year survival to be a concern. It is expected that first year survival will rise in 1997, but third year survival will still be a concern due to 1994 plantings in the Lone Pine Area. Fifth year reforestation success is almost 100%, but may fall in 1997, again due to the sites in the Lone Pine Fire Area.

Recommended Action:

Evaluate those areas of the Lone Pine Fire that are planted on harsh sites to determine whether or not understocked areas should be taken out of the suitable timber base and if what stocking is there is acceptable.

Monitoring Item: Insects and Disease

Monitoring Objective:

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

Monitoring Questions:

Is rot root damage increasing?

Threshold of Concern:

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

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

Suggested Sampling Methods:

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

Monitoring Type:

Effectiveness

Results and Findings:

Winema National Forest
Pest Occurrence Summary
 1989 through 1996
 (mbf)

CHEMULT RANGER DISTRICT	1989	1990	1991	1992	1993	1994	1995	1996
Fir Engraver	64	67	21	7	14	36	13	435
Mt Pine Beetle (Lodgepole pine)	3514	524	98	102	197	126	51	1326
Mt Pine Beetle (Sugar pine)	2	-	-	176	5	58	1	-
Mt Pine Beetle (Western white pine)	-	1	-	-	-	-	-	-
Mt Pine Beetle (Ponderosa pine)	24	1	2	14	9	-	25	-
Western Pine Beetle	67	18	11	-	47	64	13	21
TOTAL CHEMULT	3671	611	132	299	272	283	102	1782

Winema National Forest
Pest Occurrence Summary
1989 through 1996
(mbf)
(continued)

CHILOQUIN RANGER DISTRICT	1989	1990	1991	1992	1993	1994	1995	1996
Fir Engraver	1882	335	1385	381	1240	821	12045	30280
Mt Pine Beetle (Lodgepole pine)	458	51	23	30	326	97	4	2795
Mt Pine Beetle (Sugar pine)	222	77	60	334	37	21	-	-
Mt Pine Beetle (Ponderosa pine)	-	-	161	786	59	48	575	1
Western Pine Beetle	970	116	205	137	361	1563	159	921
TOTAL CHILOQUIN	3532	579	1834	1668	2023	2550	12783	33997

KLAMATH RANGER DISTRICT	1989	1990	1991	1992	1993	1994	1995	1996
Fir Engraver	668	1363	311	25	567	612	7621	11937
Mt Pine Beetle (Lodgepole pine)	36	19	-	8	3	120	40	153
Mt Pine Beetle (Sugar pine)	2	21	19	26	3	5	-	-
Mt Pine Beetle (Western white pine)	17	106	6	69	-	124	-	4
Mt Pine Beetle (Ponderosa pine)	-	9	3	-	1	4	2	-
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

Evaluation:

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

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

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

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

Recommended Action:

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

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

Monitoring Item: Soil

Monitoring Objective:

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

Monitoring Questions:

Is erosion, displacement, or compaction occurring?

Threshold of Concern:

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

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

Tree growth is less than acceptable levels.

Suggested Sampling Methods:

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

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

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

Monitoring Type:

Effectiveness

Results and Findings:

A uniform protocol for monitoring detrimental soil conditions was used again for 1996 on the Forest. In this protocol soil probes are calibrated against bulk density as determined by laboratory testing. With this method valid comparisons can be made between pre- and post-activity conditions.

Compaction is considered detrimental in pumice and ash soils when the soil bulk density is increased by 20%. This is equivalent to taking a gallon of soil and pounding an extra quart of soil into it. While soil particles do not compress, pore space does. Water holding capacity and oxygen exchange are reduced.

Two types of compaction monitoring are employed on the Winema. The first is a combination of lab bulk density measurement and a statistically predetermined number of field probes to determine the percent of ground that has been detrimentally compacted. It is intensive and repeatable, and is the preferred method for evaluating effectiveness of current mitigations. It can be used before and

after the activity to measure both historical effects and effects from the current entry. The second is a combination of field probe and soil moisture measurement used during sale administration. This method evaluates instantaneously whether equipment is causing damage and at what soil moisture content. It is instructive at the point samples are taken and has been vital in refining our knowledge of which moisture level/soil type combinations may result in soil damage.

Chemult District

Chemult continued to assess the extent of compaction from harvest activities implemented before adoption of the Forest Plan in 1990. Thirty four units, covering 2207 acres, were monitored. All of the units had been harvested by ground based equipment and all were detrimentally compacted over Forest Standards and Guidelines. Compaction ranged from 28-62% of unit areas. The average area detrimentally compacted in each unit measured was 44%. (The average correlation between field probe and lab sample was 75% - ranging from 54% to 100%).

Effectiveness monitoring was initiated on six units. Two of those units were actually harvested and post harvest monitoring was completed. The area of detrimentally compacted soil increased 7% after harvest of one unit. Markers in a portion of the other unit were disturbed by the contractor and results were not comparable.

Preliminary observations indicate that the black sands of the southwest portion of the District and the finer ash soils of the southeastern portion of the District have less resistance to severe compaction than the coarser pumice areas previously monitored.

Chiloquin District

Chiloquin continued to monitor soils as a part of the Watershed Analysis effort, following up on last year's conclusion of the soil scientist's report:

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

Two old burns and a lodgepole flat were monitored for compaction. The monitoring measured extent of detrimental compaction and ability of the published Soil Resource Inventory to predict compactability on a given site. The SRI describes "A" soils as coarse pumice that is difficult, but not impossible, to compact. The SRI also notes that units mapped as "A" soils contain inclusions. These are not delineated but may make up as much as 30% of the mapped unit. Some inclusions are finer textured soils that are susceptible to compaction.

Soil Group (SRI)	Detrimental Compaction % of unit area
"A" Unit 1	71%
Unit 2	16%
"B/H" Unit 1	30%
Unit 2	32%
"A/B" Unit 1	18%
Unit 2	23%
Unit 3	10%

The "A" soil was located in a lodgepole flat that was logged when wet with a rubber tired skidder in 1990. Unit 1 sustained detrimental compaction over 71% of the unit area. It appears to be a finer textured inclusion. Regeneration on this unit is visibly effected. The unit should be subsoiled and replanted.

Soil organic matter reserves were monitored in the three ponderosa units and found to be adversely altered. Various mechanical treatments after the fire have occurred. Adjacent unburned stands exhibit 18 inches of A-horizon development. In comparison, some treated areas retain up to 6 inches of A-horizon development, while other treatments have eliminated visible development altogether. Twelve inches of topsoil development lost due to the fire is very significant. This site warrants further study of the mechanics of soil loss after fire and into the interrelationship between organic matter and soil fertility in coarse pumice soil. It is a high priority for upcoming OIT student projects and/or PNW Station research.

Four active sales were monitored on the Chiloquin District in 1996. The Quick Fire was harvested using designated skid trails, utilizing old skid trails where they were visible. Tempco harvesters were limited to 2 passes over frozen ground or 2 feet of snow. These conditions prevent both compaction and displacement in the pumice soils. Their effects were monitored by probe as the operation progressed. When protective conditions were lost to warming weather, the operator was required to pull line. Post-harvest monitoring determined most of the unit had been compacted from previous entries. Subsoiling alleviated surface compaction by nearly 100%; 60-70% at the 22-24" depth. Of 386 acres, approximately 370 were subsoiled.

The Hill Timber Sale, (307 acres), was harvested in summer when soil moisture was near 12% below the surface. Previous monitoring has determined that detrimental compaction does not occur at these moisture levels on these soil types.

Lonepine Lodgepole soils were identified during planning to be susceptible to detrimental compaction. Equipment was limited to skid trails and landings. These were subsoiled after completion of harvest. Harvest covered 557 acres; 35 acres were subsoiled.

Switchback Salvage involved 368 harvested acres. Soil moisture was monitored and stayed at 17% or less. With these conditions skidders were restricted to skid trails but Tempco shears were allowed off based on previous years' monitoring results. Soil probing during the operation found no significant increase in detrimental compaction from this entry.

Klamath Ranger District

Klamath District measured amount of coarse woody debris by size class following a partial removal operation. Contract provision C6.404#A was implemented and tracked from EA through contract to sale administration. Coarse wood is important for nutrient recycling over the long term. The technique was successful both in terms of providing coarse woody debris greater than 20" diameter (important for nutrient recycling) and leaving acceptable fuel levels.

Compaction sampling was not done on Klamath District in 1996 although compaction has been a problem with past activities. During a Type II Review of Scoria Timber Sale skid trail density was observed to meet Forest Standards and Guidelines.

Swamp Timber Sale included areas of wetlands that were not recognized in the FONSI. These Management Area 8 Riparian Areas were identified in the EA and scheduled for harvest using ground based equipment. Equipment was limited to frozen soil and snow sufficient to prevent soil damage, and harvest began under these conditions. However, the equipment entered the wetland area late in the winter after some of the higher ground had been harvested. Protective soil conditions deteriorated and severe rutting occurred. Similar results were obtained in 1995 on Gopher Timber Sale.

Evaluation:

Soil monitoring records on the Forest indicate extensive detrimental compaction has occurred. However, very little monitoring differentiates between past activities and current methods. Chemult monitored one unit successfully and attempted 5 more using Forest protocol before and after harvest. In one unit on Chiloquin an attempt to locate old skid trails resulted in subsoiling of the whole unit. Other monitoring efforts either measured cumulative compaction on the unit and provided no information on the effectiveness of current mitigation, or spot checked the current operation but measured no cumulative effects.

Monitoring targeted to the pumice units indicates ground based equipment is compacting pumice soil above Forest Plan Standards and Guides. Soils mapped under the "difficult to compact" categories were measured in the lab and found to be detrimentally compacted.

Some operations were successful in limiting soil damage and met Forest Plan Standards and Guides. Displacement, puddling and erosion occurred on some ground based operations. Soil damage occurred where protective conditions such as snow or frozen ground deteriorated but equipment was not removed in a timely manner.

Efforts are underway to remediate cumulative damage.

Monitoring on the Winema in the last 3 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.

Recommended Action:

The Forest continues to develop a standardized monitoring program. Records of soil conditions on EAs/EISs in progress, on recently implemented projects and on older projects are needed to determine where remedial efforts are required. Monitoring to determine effectiveness of current mitigation efforts is needed.

Site specific inventory and interpretation are needed 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.

More information is needed on the effect of measured compaction on vegetative growth. Other ecosystem components, such as mycorrhizae and their relationship to forest health in the pumice zone should be studied in conjunction with the Deschutes National Forest and PNW Research. As requested by the FMT, steps were taken in 1996 to initiate research on relationships between compaction, growth and productivity on coarse pumice soils. This effort will continue in 1997.

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

The relationship between soil resource damage and sale administration needs to be emphasized.

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:

This was the first year the Forest implemented the "Process for Assessing Proper Functioning Condition for Riparian Areas" (PFC). This process and standard was not officially adopted by the Forest Service until December 20, 1996 but implementation began on the Forest with the field season of 1996.

Forest personnel received training in the BLM's "Process for Assessing Proper Functioning Condition of Riparian Areas" (PFC). This is an interdisciplinary process to determine if riparian

areas are functioning, functioning at risk with a trend, or not functioning. As the Forest continues to implement PFC assessments, we will be able to establish a baseline and trend for riparian areas as well as target resources more efficiently for restoration.

In FY95 we reported Riders Camp continued to decline in condition. An electric fence was installed at the beginning of the 1995 grazing season, but the fence failed and approximately one to two dozen cows used the area over the season. The permittee did not ride often enough to prevent overgrazing when approaching utilization, nor was the grazing administration adequate to protect the riparian resource from damage. On September 11, 1996 the FMT adopted a recommendation to fence Riders Camp again to higher standards and tighten the range administration. Riders Camp was fenced in the summer of 1996.

PFC assessments were completed on 91.3 miles of stream on the Chiloquin and Chemult Ranger Districts during project planning and watershed analysis. The table below summarizes this information:

Miles of Stream	Percent of Area Surveyed	Functional Rating
37.0	40.5	Proper Functioning
44.9	49.2	At Risk
9.4	10.3	Non-Functional

Of the streams surveyed 59.5 percent are in an unacceptable condition according to the LMP and the Regional Forester's direction of 12/20/96.

Evaluation:

As part of the aquatic program and in conjunction with terms and agreements from Section 7 consultation under the Endangered Species Act, permanent monitoring sites were established in critical riparian areas throughout Chiloquin Ranger District. Historic condition and trend transects were located and re-read. New condition and trend transects (utilizing established R-6 protocol) were established and base line data is being collected. Channel morphology cross sectional measurements established in conjunction with some of these sites. Permanent photo points were placed in key locations throughout the riparian corridors. A commitment to collect base data for three consecutive years and trend data every 5 years thereafter was made. The latter was not accomplished in 1996.

Recommended Action:

The Forest has received funding in FY 97 for the headcut stabilization in Jamison Flat and Copperfield Draw, projects identified as high priorities in the WIN inventory.

The Region requested the Forest turn over the intermittent stream survey protocol to the Region for further refinement. All of the development data and examples of completed surveys were passed to the Region in Spring, 1996. To date, no further work has been done on the protocol.

In place of intermittent stream survey, the Forest should continue the use of PFC assessments for all projects in and near riparian areas. It is imperative to use the interdisciplinary approach to PFC assessments to keep the quality control and integrity high. The FMT raised a concern about funding intermittent stream survey and/or PFC. PFC requires no additional funding to implement as a part of

project planning and watershed analysis. During the analysis phase of the project all that is needed is a commitment from at least the soil, water and botany or range experts to visit a stream at the same time instead of separately. This accomplishes more on the ground, gives the specialists more information on which to base their recommendations and meets the intent of the Regional Forester's recommendations.

An informal agreement was implemented between the range permittee, the Ecosystem Restoration Office, Natural Resource Conservation Service, and the USFS fencing off riparian areas along Rock Creek within the Dams/Switchback Allotment. This degraded system is in mixed private/federal ownership and it had been determined that conditions were not recovering as quickly as desired. A riparian fence was constructed during 1996. Continued discussions are planned to determine the need for adjustments in the fence location based on the range monitoring results and the desire to meet the needs of all partners.

Gradient control structures remain to be placed within the channel, and head cuts need stabilization. Monitoring will be need to be conducted. This system supports an isolated, native population of sensitive red band trout and exhibits connectivity to occupied habitat of endangered sucker species. This has a very good example of multiple partner cooperative effort with benefits to range productivity, water quality, riparian function, and fishery populations.

Monitoring Item: Water Quality

Monitoring Objective:

Determine Best Management Practice (BMP) Implementation and Effectiveness.

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

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

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

Monitoring Questions:

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

Threshold of Concern:

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

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

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

Suggested Sampling Methods:

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

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

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

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

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

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

Monitoring Type:
Implementation.

Results and Findings:

BEST MANAGEMENT PRACTICES

Chemult Ranger District

Best management practices were reviewed for two Environmental Assessments that were signed by District Ranger Mary Erickson during calendar year 1996. The "Environmental Assessment for Velocee Firewood Sale, Raptor Thin Timber Sale and Fuels Treatment Project, and Recommendations for Desert Old Growth Block Boundary Modification" and "Supplement #1 to the Zephyr Timber Sale Environmental Assessment" (a.k.a. Blowdown Add-on) were selected for review. For lack of a more innovative approach, these two E.A.'s will be looked at with respect to the four BMP analysis questions suggested in the request for this report: 1) Are they site specific; 2) Are they appropriate; 3) Are they available to the contract preparer and the administrator of the Federal action in question; and 4) are they evident in the contract.

Velocee Firewood/Raptor Thin T.S./Desert Old Grow Modification

Ten water quality Best Management Practices were identified for this E.A. and are geared primarily toward water quality issues related to the (at that time) proposed Raptor Thin Timber Sale. They are:

- T-1. Title: Timber Sale Planning Process
- T-2. Title: Timber Harvest Unit Design
- T-11. Title: Timber Harvest Unit Design
- T-15. Title: Log Landing Erosion Prevention and Control
- T-22. Title: Modification of Timber Sale
- R-17. Title: Water Source Development Consistent With Water Quality Protection
- R-18. Title: Maintenance of Roads
- R-20. Title: Traffic Control During Wet Periods
- R-23. Title: Obliteration of Temporary Roads and Landings
- F-1. Title: Fire and Fuel Management Activities

1) Are they site specific?

The BMP's listed above are specific to the project area level, but none of them go so far as to describe practices at a given location. One management practice is specified for a particular site but is not identified as being a BMP. This practice, the establishment of buffers along Bear Creek adjacent to a proposed harvest unit, is identified as the establishment of a Riparian Habitat Conservation Area in accordance with the requirements of the Inland Native Fisheries Strategy (INFISH) and not as a site specific application of Best Management Practice T-8 (Streamcourse Protection).

Some other BMP's are specifically identified as applying to the planning area at large. BMP's R-18 and R-20 are intended to apply to all system roads used for product removal, and R-23 is targeted toward the closure of all temporary roads constructed during timber sale operations. BMP T-2 and T-11 are addressed at the planning area level, with the former being identified as item of evaluation by the Interdisciplinary Team and the design of the latter calling for the use of existing skid trails where feasible. The description of the design for BMP R-17 states that only previously constructed, permanently designed water sources would be used if necessary.

2) Are they appropriate?

Generally speaking, the BMP's specified for this project are appropriate to prevent impacts to water quality within the planning area. There are other BMP's that could have also been added as appropriate. BMP's T-13, T-16, and T-19 deal with prevention and control of erosion during operations and the acceptance of erosion control measures prior to sale closure; while no need was identified to design site specific measures to meet the objectives of these practices, the timber sale contract contains provisions requiring that such measures be taken.

Best Management Practice R-17, water source development, is probably unnecessary for this project, given that the intent is to provide for water quality protection during the construction of water sources. As mentioned above, only existing permanent water sources will be used on the project. BMP R-23 is the least appropriate with regard to the intent of the BMP, because the EA specifically states (as does the design of the BMP) that temporary roads will be closed rather than obliterated after use.

3) Are they available to the contract preparer and contract administrator?

The E.A. states that Best Management Practices have been developed and are included in the analysis file. Past review of a number of E.A.'s at Chemult Ranger District has indicated that this is usually - but not always - the case. In this instance, as well as in the case of Zephyr E.A. Supplement #1, the BMP's were electronically filed with other assessment documents and were available, but were not filed as a hard copy in the process records. It should be noted that no difficulty was encountered acquiring hard copies of the BMP documents for preparation of this report.

4) Are they evident in the contract?

Some of the included BMP's are by their nature not evident in the contract. Those, such as T-1 and T-2, are part of the design process and not of the contractual implementation process. BMP F-1 applies to post-sale slash disposal activities and the design elements of this BMP would be included in burning prescriptions.

Many of the BMP's, particularly those that are specified for the entire planning or project area, are included as a matter of course in the standard and supplemental provisions (the B and C provisions). Provision BT6.6 deals with landing erosion prevention (T-15); modification of the timber sale contract for environmental protection (T-22) is authorized in CT8.3; requirements for road maintenance are specified in CT5.42 and CT5.43. The designated water source is identified on the sale area map and is described (as are the terms of its use) in Road Maintenance Special Project Specification T-891-02F. Requirements for closure of temporary roads are listed in CT5.1 (option 3).

Contract provisions CT6.41 and CT6.42 establish that - while mechanical harvesters may be allowed to leave skid trails to harvest included timber - skidders shall be operated on existing skid trails or on trails spaced a minimum of 100 feet apart.

Supplement #1 to Zephyr Timber Sale Environmental Assessment

This Environmental Assessment, known throughout the greater Chemult metropolitan area as "Blowdown Add-on", was prepared to develop a proposal to deal with blown-down timber identified in the northern portion of the district after the signing of the Zephyr E.A.. which was

itself directed toward the salvage of blowdown timber. Fourteen Best Management Practices were identified as being necessary to secure favorable conditions for the maintenance of water quality:

- T-1. Title: Timber Sale Planning Process
- T-2. Title: Timber Harvest Unit Design
- T-4. Title: Use of Sale Area Maps for Designating Water Quality Protection Needs
- T-11. Title: Tractor Skid Trail Location and Design
- T-15. Title: Log Landing Erosion Prevention and Control
- T-17. Title: Meadow Protection During Timber Harvesting
- T-22. Title: Modification of the Timber Sale Contract
- W-5. Title: Cumulative Watershed Effects
- VM-2. Title: Tractor Operations Excluded from Wetlands and Meadows
- R-17. Title: Water Source Development consistent with Water Quality Protection
- R-18. Title: Maintenance of Roads
- R-20. Title: Traffic Control During Wet Periods
- R-21. Title: Snow Removal Controls to Avoid Resource Damage
- R-23. Title: Obliteration of Temporary Roads and Landings

1) Are they site specific?

As was the case with the previous E.A. analyzed, the BMP's are specific to the project area level, but none have been designed to address issues at any finer degree of resolution. BMP's T-17 and VM-2 are designed to provide protection to all meadows within the planning area. Other BMP's dealing with maintenance and road-related erosion are designated as applying to all roads that will be used during project implementation.

2) Are they appropriate?

The BMP's identified for this E.A. generally are appropriate, although R-17 may not be necessary because of it's focus on construction of water sources, which is not part of the selected action. There are other BMP titles that could have been added, such as T-16 and T-19, which deals with erosion control and prevention, or W-4, which addresses oil spill prevention and control; although no site-specific concern was identified, these issues are covered by contractual provisions. There is a mitigation measure in the E.A. saying that no logs would be removed from slopes over 30% slope; if this were identified as an erosion prevention measure, it could have been included as VM-1 (Slope Limitation for Tractor Operation).

W-5 (Cumulative Watershed Effects) is included but is probably not appropriate in the sense that a cumulative watershed effects analysis was not conducted.

3) Are they available?

The E.A. identified the analysis file as being the final resting place for the BMP listing. While I was unable to find a copy there, one was available from the electronic files for the project.

4) Are they evident in the contract?

As was found during the review of the Raptor Thin BMP's, most of the practices identified in the EA are already codified as provisions that are generally included in the contract. And, as mentioned way up above somewhere, certain of the BMP's are by their nature a part of the NFMA/NEPA-driven planning process and are drivers to design of the project rather than being elements to be implemented. The primary examples of this are T-1, T-2, and W-5. Review of

the contract package for Chinook T.S., one of the three sales emerging from this E.A., indicated that contractual interpretation of the listed BMP's was the same as was revealed in the review of Raptor Thin T.S. contract.

Klamath Ranger District

Site specific BMPs were developed for Klamath and Gardner Timber Sales in the Three Mile Seven Mile Environmental Assessment. In addition, BMPs were developed for Roll Salvage and Great Meadows Hazard Tree Removal. These documents are filed with the EA Analysis File and have been included in the appropriate timber sale contract.

The Elk Timber Sale was completed in 1996. The implementation monitoring on the sale was not reported by the District. After a relatively wet winter in 96/97, monitoring of BMPs on this sale for implementation and effectiveness would be particularly beneficial.

WATER QUALITY

Data including water temperature, flows, conductivity and other parameters have been collected on the Forest's perennial streams for purposes of water rights adjudication. Since filings for water rights have now taken place, that data is available as a baseline for Forest monitoring purposes. Some of the data is useful in characterizing water quality at the point in time the data was collected. The following table displays conductivity data that was collected:

CONDUCTIVITY IN PERENNIAL STREAMS OF THE WINEMA NATIONAL FOREST

STREAM	DATE	CONDUCTIVITY (umhos)
Cottonwood Creek	7/8/92	15
Irving Creek	6/3/92	35
Jack Creek (Road 9418)	8/31/92	30
Jack Creek (Road 88)	8/31/92	110
Miller Creek	7/14/92	25
Sand Creek	6/17/92	45
Scott Creek	6/24/92	32
Sink Creek	7/9/92	20
Larkin Creek	8/19/92	80
Sprague River	9/16/92	103-118
Williamson River	7/13/92	80
Annie Creek	6/1/92	40
Billie Creek	6/15/92	20
Fourmile Creek	6/15/92	35
Rock Creek	8/4/92	50-80
Short Creek	5/13/94	40
Threemile Creek	7/28/92	40-60
Varney Creek	6/10/92	40

Conductivity is a measure of the ability of electricity to move through the water and is indicative of the amount of suspended materials in the water. Conductivities approaching zero can be associated with distilled water. Conductivities below 100 umhos are considered low, 100 to 500

medium and over 500 high. These measurements indicate relatively high water qualities across the Forest.

Water temperatures were taken in several years since 1992 in 23 of the Forest's streams. Temperatures taken at a specific stream location can vary a great deal from day to day and year to year and even from hour to hour depending upon air temperatures, shade and especially water flow levels. When examined on a year long basis and compared from year to year, temperatures have been fairly stable across the Forest except during 1994 which was a low water year.

Evaluation:

Monitoring shows that problems with having best management practices identified, documented and incorporated into contracts have been overcome. In FY-97 monitoring will begin to look at how well BMP's are implemented on the ground and whether or not they are effective at protecting water quality.

Generally speaking, water temperatures measured in 23 perennial streams on the Forest have remained relatively cold and stable over the years except in low water years (e.g. 1994) when temperatures tend to be higher.

Conductivity readings from the Forest's streams indicate relatively high water quality levels.

Recommended Action:

The Region is developing a regionwide approach to monitoring BMP effectiveness based on a protocol developed in Region 5. Until this work is completed, the Forest should monitor implementation through contract daily diaries and site visits. Effectiveness will be based on site observations and documented.

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

Continue WIN Inventory. Obtain funding for WIN restoration projects.

Monitor 50 percent of activities for BMP implementation and effectiveness in 1997 and forward this information to the Supervisor's Office for incorporation into the FY97 monitoring report.

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

Use the available data on perennial streams to evaluate whether or not the streams on the Forest are generally functioning in a proper manner.

Modify the Forest Monitoring Plan to include regular measurement and analysis of specific parameters indicative of instream water quality so that the ultimate effectiveness of best management practices can be assessed.

Monitoring Item: Transportation System

Monitoring Objective:

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

Monitoring Questions:

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

Threshold of Concern:

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

Suggested Sampling Methods:

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

Monitoring Type:

Implementation

Results and Findings:

In 1996, 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 1996, Intermittent road access available was outside the threshold. (Refer to Monitoring Item - Road Access Type under the Monitoring Item: Accomplishment of Outputs and Services). The Klamath Tribes have expressed concerns regarding road closures and road obliteration. These concerns are related to road closures infringing upon treaty rights for access, a concern that there is not adequate east-west open road access, and a concern that the Forest has not adequately involved the Klamath Tribes in road closure decisions. The Oregon Department of Fish and Wildlife has expressed the need to reduce the amount of open roads, in both specific areas and generally across the forest. The Forest is currently working with the Klamath Tribes, Oregon Department of Fish and Wildlife, and interested publics regarding analysis of access and travel management in the Lone Pine fire area, areas adjacent to the Klamath Marsh, and the southeast portion of the Chemult District.

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

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

No formal program reviews were conducted during FY 96.

An Access and Travel Management Implementation Guide and Implementation Plan was completed in FY 93, to guide access and travel management analysis on the Forest. Access and travel management analysis is being done for selected priority areas. In FY 97, access and travel management is being analyzed for the Lone Pine fire area, for areas adjacent to the Klamath Marsh, and in the Southeast portion of Chemult Ranger District.

Evaluation:

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

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

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.

Recommended Action:

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

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

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

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

Monitoring Item: Social and Economic Setting

Monitoring Objective:

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

Monitoring Questions:

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

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

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

Threshold of Concern:

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

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

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

Suggested Sampling Methods:

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

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

Monitoring Type:

Effectiveness & Validation

Results and Findings:

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

Forest Service Programs:

- Estimated job impacts from the 1996 program: 1,194 jobs (Concern: less than 1,800)
- Estimated income impacts from the 1996 program: \$30,920,000 total income (Concern: less than \$50,000,000)

Community Economic Health and Conflict:

- Local income rose 9.5 percent over three years (15 percent threshold). Local population rose 2.2 percent over three years (15 percent threshold)
- Total jobs increased 11.8 percent while lumber and wood products jobs declined 9.0 percent over three years (15 percent threshold)
- While the changes to the Forest Products industry that were caused by changing Forest Service management could have led to intense conflict, that was averted by activity in other sectors of the local economy and changing demographics. There remains a "local control" undercurrent that could erupt with any additional Forest Service actions which adversely affect the local economy, but the likelihood of such an eruption seems to be diminishing as other sectors of the economy grow and as immigrants bring in new ideas.

Payments to the County:

- 1995 Payments: \$5.00 million (Concern: less than \$7.92 million - 1982\$)
- Change from 1994 to 1995: minus 6 percent (No Concern: less than 10% decrease)
- County government was adversely impacted by reduced payments

Evaluation:

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

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

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. Current sale development efforts indicate that a similar amount of timber could be sold in 1997, subject to environmental reviews and appeals.

Beyond 1997, 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. The local economy will continue to be an area of concern into the foreseeable future.

The Klamath County economy has done very well, to date, in adjusting to changes in the wood products industry. The total income, population and total jobs indicators all show positive changes that are not large enough to cause disruptions in the local economy. Nonetheless, impacts upon individuals may be significant. At the personal level, while we are seeing more jobs and larger total incomes, many new jobs pay less than \$10 per hour and can not be considered 'family wage' jobs. While the trend appears to be toward families with multiple workers, the per capita income in Klamath County has risen nearly 16%, in real terms (accounting for inflation), in the decade from 1983 to 1993 although it lags behind both the national and state levels. We are also seeing a continuation of growth in transfer payments. These payments grew by 7.5% from 1990 to 1991, 6.6% from 1991 to 1992, 4.0% from 1992 to 1993 and 5.6% from 1993 to 1994 (in real terms). From 1990 to 1994 the contribution to income created by transfer payments rose from 20% to 23% of the total income in the County. 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, but as opportunities to supply materials to the industry arise, they should be pursued.

Prospects for increased tourism coupled with demand for developed recreation come as developed campgrounds on the Forest are nearing capacity. This could become an arena of conflict unless the Forest Service can develop additional facilities or work with other parties to provide them. Developments such as the Running Y Ranch (now under construction), the Pelican Butte Ski Area 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 that will want 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 1995 receipts continued their gradual decline with reductions in the owl guarantee as the Forest continued to offer small amounts of low valued timber. Without the owl guarantee, the Winema's contribution to the County would have been \$1.7 million (\$1.10 million in 1982 dollars) in 1995. The owl guarantee provided \$8.16 million (\$5.29 million in 1982 dollars). Clearly, the owl guarantee is critical for the county.

As currently legislated, the owl guarantee is based upon a five year average of actual receipts. For 1996 the Winema National Forest will be at the 79% level. Thus the State, for distribution to Klamath County, will be guaranteed to receive 79% of 25% of the base five-year-average (1986 through 1990) gross receipts ($0.79 \times 0.25 \times \$39,781,256.73 = \$7,856,798.20$). The guaranteed level will decline by 3% per year to 2003. Through 1998, the guarantee will be the payment, regardless of actual receipts. From 1999 through 2003, the payment will be the larger of 25% of gross receipts for the year or the guarantee. After 2003 the guarantee will disappear and payments will be based upon receipts alone. Unless significant changes in Forest management are made, payments to the County are likely to be well under \$2,000,000 per year at that time. Projecting the trend provides the estimated payments in current year dollars and in 1982 dollars as shown in Table 7. 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 (98.2% 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. 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.