

Monitoring and Evaluation Report – Fiscal Year 1997

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Forest Monitoring Activities

The implementation of the Shasta-Trinity National Forests Land and Resource Management Plan (LRMP) establishes the framework for translating management direction into goals, objectives, and standards for on-the-ground projects. Monitoring and evaluating the implementation process, effects and outputs helps determine how well the Forest Plan objectives are being met and how closely standards and guidelines are being followed.

The Shasta-Trinity LRMP incorporates the standards and guidelines from the President's Northwest Forest Plan and monitoring guidance from the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (ROD).

Shasta-Trinity National Forests Monitoring System

Monitoring Scales - Information obtained through the monitoring and evaluation system was reported at several different geographic scales including individual project areas, management areas, watersheds, and the Forest as a whole. For this report, information was collected at both the District and Forest scale with District information aggregated up to the Forest level whenever possible.

Monitoring Levels - Information for this report was derived from 3 levels of monitoring:

1. Project Environmental Analysis
2. Single Resource - Forest Program Assessment
3. Forest-wide Multiple Resource Assessment

Each level consists of two components: data acquisition and administrative review. Data acquisition refers to the collection and processing of environmental data. Administrative review refers to program analysis after the information has been evaluated and compared with Forest Plan objectives, standards, and guidelines.

The Forest data-base will be updated periodically. Each of the above levels will contribute to the process, but project level assessments will be the most often used means of insuring that District level information is incorporated into the broader Forest data-base.

Project Environmental Analysis - One of the common processes available for monitoring is project environmental analysis where on-the-ground information is compared with the existing data-base. This information is used to verify assigned management area prescriptions, projected outputs, and objectives originating from the Forest Plan for updating, if necessary.

Single Resource - Forest Program Assessment - The next level is a Forest-wide assessment of single resources and Forest programs. For example, single resources such as bald eagle habitat or anadromous fisheries are site-specific, but they may not coincide with project environmental assessments.

Forest-wide Multiple Resource Assessment - The Forest-wide scheme includes intensive field surveys and high resolution remote sensing data which provides the framework for monitoring single

resources and Forest programs. As in the other two levels, information obtained in these assessments will be used for updating the existing data-base for multiple resources and comparing results with Forest objectives.

As part of the process for FY 1997, the Shasta-Trinity established an interdisciplinary monitoring team that reviewed Chapter 4 and 5 of the Forest Plan and prioritized the standards and guidelines and management concepts that are most critical for implementation monitoring. The team built upon the monitoring work completed for FY 1996 and designed a questionnaire for use by the districts and various resource specialists. Input from the questionnaire was summarized, assessed and aggregated up to the Forest level wherever possible for inclusion into this report.

Activities monitored during FY 1997 as part of the Forest's monitoring and evaluation program included; wildlife and fisheries habitat condition and the presence of selected Threatened, Endangered and Sensitive (TES) species reforestation success, thinning and release, timber sales, and inventories of cultural sites. Outputs associated with habitat improvement projects, livestock grazing, timber products, roads, and fuel management were also monitored.

The Forest also monitored conditions from the Forest Plan including the Aquatic Conservation Strategy (ACS) objectives and Survey and Manage species for which protocols existed.

Other monitoring items included actions taken to achieve Rural Development and Community Development Program goals, completion of Watershed Analyses (WA) and Late Successional Reserve (LSR) Assessments. Actions taken to improve relationships with elected representatives of Native American Indian Tribes were also monitored.

Elements identified in Chapters 4 and 5 of the Forest Plan that were monitored and reported on a Forest-wide basis in FY 1997 included soil productivity, Best Management Practices, habitat restoration, inventories of species/habitats, inventories of special habitat components, application of selected standards and guidelines and verification of inventories of cultural sites.

Refer to the appendix for additional information on monitored activities.

Evaluation of Monitoring Results

Physical Environment

Cumulative Watershed Effects applications were monitored for consistency and use according to the intent of the process. Four applications were found to have been appropriately used in FY 1997. Best Management Practices (BMPs) for protection of soil and water resources were monitored in accordance with the regional protocol. BMPs had been implemented on all of the sites sampled and were effective on over 85 percent of the areas to which they were applied. Soil Quality Standards were found to be met on 5 of 6 sites sampled. Watershed restoration projects, monitored for implementation and effectiveness in FY 1997, provided additional information useful for future applications of several site specific restoration activities. Watershed Condition monitoring focused on trends in water temperatures across the Forests.

FY 1997 monitoring was expanded to the Shasta McCloud Management Unit (SMMU) and was maintained for the South Fork Trinity River watershed.

Biological Environment

Fisheries, Key Watershed, Aquatic Conservation Strategy: Monitoring techniques for fisheries in Shasta and Trinity Lakes were found to be successful. Strategies for monitoring and analyzing stream fisheries are more difficult and several recommendations are made for using new protocols. In the 1996 monitoring report we identified the need to move to a more holistic approach to ecosystem monitoring, especially in the aquatic area. We understood that various age classes and species of fish interact with multiple biophysical habitat elements in complex ways, and that this interaction occurs within an area where the quality and spatial distribution of habitat elements change with time in relation to natural and human disturbance. Recent peer reviewed literature suggests that habitat degradation occurs when a change in the character of disturbance processes, such as the frequency, duration, magnitude, and severity pushes these interactions outside the range of conditions in which the fish communities have evolved. In 1997 we adopted a forest level strategy using a multidisciplinary team to meet the following goal: Provide for a high probability of maintaining resident and anadromous native fish communities (including Coho and Chinook salmon, Steelhead and Redband trout) and their habitat in all major forest aquatic ecosystems.

The Forest's terrestrial biological monitoring focused at habitats within older forests and riparian areas. Forest management activities occur in these species-rich habitat. Therefore, baseline monitoring of habitat parameters, such as snag levels and canopy closure, occurred during project planning.

Terrestrial wildlife population monitoring occurred for threatened, endangered, or Forest Service sensitive species, such as bald eagle, spotted owl, and goshawk. Two multi-year bird population monitoring programs continued this year along the Trinity River and Sacramento River. Data collected during these bird monitoring programs includes breeding success. This local data becomes part of a larger state or nation-wide data set.

Monitoring for the botany program occurs at the project level and results indicate programs are successfully implementing associated standards and guidelines.

Resource Management

Fuels: Monitoring of the fuels program indicates that individual burning projects are successful in meeting standards and guidelines. Analysis is needed to establish a baseline of predicted Forest-wide wildfire intensities and spreads using a model with current conditions. This baseline can then be updated for treatments and rerun to evaluate the overall effects of treatments in meeting desired fuels conditions. In 1997 there were 1,950 acres of activity fuels burned and 2,390 acres of natural fuels burned for a total of 4,340 acres treated.

Timber: The timber volume offered for sale in FY 1997 was 98% of the 82 MMBF allowable sale quantity (ASQ) in the Forest Plan. The Forest exceeded the intermediate and salvage cutting objectives in

FY 1997, but cut below the acres specified in the Forest Plan for regeneration harvest. Monitoring has shown that with limited regeneration cutting occurring within the Matrix and AMA, the Forest is not moving towards a regulated condition which would provide for the long-term sustained yield in these areas, as specified in the Forest Plan. Reforestation acres accomplished in FY 1997 was about 30% less than the 3500 acre objective in the Forest Plan due to the current emphasis on thinnings and salvage. The Forest certified about 98% of the regeneration harvest acres that occurred in FY 1992 as being adequately stocked and meeting Forest Plan objectives.

The Forest accomplished more acres of timber stand improvement (171%) than specified in the Forest Plan due to a backlog of TSI work in plantations. Although no volume targets for biomass were established in the Forest Plan, about 25,000 MBF of biomass (chips) were sold in FY 1997. Biomass opportunities should continue to be explored as long as markets exist and funding is available.

Range readiness and utilization checks were conducted on all 22 active allotments. However, only 11 were monitored and/or administered to regional standards. Results of this monitoring effort indicated that these allotments meet or are moving towards meeting existing standards and management concepts. Eleven allotments was our agreed upon target with the region for the year. Ability to manage all active allotments to regional standards does not exist with current funding levels. Special management of selected riparian areas continued and included the use of electric fencing and diligent distribution monitoring on the part of the permittees. This later effort was directed towards meeting the Forest-wide Aquatic Conservation Strategy. These efforts also included monitoring of some riparian areas within some of the MALAA allotments on the Trinity side. This helped the Forest to monitor some allotments which are of interest to the National Marine Fisheries Service.

Public Use and Information Programs

Wilderness monitoring in the Mt. Shasta Wilderness has improved due to the fee-demo program. More wilderness rangers are covering the area and an independent report has provided additional data on customer use and satisfaction. The Trinity Alps Wilderness program is under the oversight of a board of directors from the three participating forests who meet each spring to go over the implementation schedule and monitoring needs. The fee-demo program has also improved the monitoring of standards and guidelines within the NRA. The OHV site on the Shasta NF receives a significant amount of monitoring due to its high profile, program partners and a site specific monitoring project.

Visual Quality monitoring indicates middle ground and background guidelines are being met. Evaluation of foreground projects recommends additional visual quality input before implementation in some areas. The new national standards for scenic management guidelines will be incorporated in the coming years.

In 1997 Region 5 of the Forest Service entered into a Programmatic Agreement with the State of California and the Advisory Council of Historic Preservation which allows the forest to utilize an alternative compliance process for Section 106 of the National Preservation Act. The Programmatic Agreement allows for a more flexible, timely and effective compliance process in the majority of projects.

The Forest submitted its first year's report under this agreement and was found to be meeting all the terms and conditions of the Agreement including a monitoring evaluation.

Social and Economic Environment

First year results of the Adaptive Management Area small-diameter logging demonstration project showed production costs exceeded the market value of the products. Reports state, however, it is too soon to determine if small diameter timber can be cost-effectively harvested and processed on a large-scale. The development of product lines and markets is still in its infancy, but there appears to be market potential for "custom" or "boutique" furniture and flooring, particularly using suppressed Douglas-fir. Monitoring confirmed the initial expectation that the yarding methods used would cause minimal soil disturbance. The harvesting and utilization of small diameter material appears to have potential and could enable us to improve forest health by thinning stands in a low -impact manner while providing economic benefits to the local community.

Rural Development: Sixteen grants were awarded for fiscal year 1997. Three of the sixteen grants have been completed. The remaining grants are still in progress. The Tourism Extension Agent Grant provided technical assistance to communities and counties throughout a nine county region. Funding from this grant will include sponsorship of the 1998 National Outdoor Writers Conference in Redding.

Modeling Changes to Forest Land and Resource Management Plan

The Forest conducted an analysis in FY 1997 that modeled several scenarios of increased thinning practices accompanied with decreased regeneration harvest in the matrix. The results of this study indicate that depending on the level of thinning (from heavy to light) the Forest could meet its allowable sale quantity for 11 to 24 years with higher levels of thinning and reduced levels of regeneration harvest.

Monitoring at Other Scales

The monitoring of three timber sales as part of the Northwest Forest Plan Implementation Monitoring effort concluded that the standards and guidelines from the Northwest Forest Plan were being consistently implemented according to standard.

Recommended Monitoring of Natural Resources for FY 1998:

Monitoring Item	Recommendations for Future Monitoring
Cumulative Watershed Effects (CWE)	Continue CWE monitoring
Best Management Practices (BMPs)	Continue BMP monitoring
Soil quality and productivity	Continue
Watershed restoration	Continue, increase watershed specialist input
Slope stability and watershed condition	Continue
Fisheries management	Continue
Key Watersheds	Continue, combine with Watershed Restoration
Aquatic Conservation Strategy (ACS)	Continue, expand analysis of fuels reduction, forest-level monitoring
Threatened and Endangered Species (TES)	Continue
Late-Successional Reserve Assessments (LSRA)	Continue assessment
Botany, project level	Continue field surveys, evaluate small project methods
Botany, conservation strategies	Continue , reevaluate priorities
Biological diversity	Continue
Watchable wildlife	Continue
Manage habitat for neotropical migrant birds	Continue
Improve distribution of drinking water for wildlife	Continue
Fuel treatment	Continue
Timber harvest outputs and methods	Continue
Cultural treatment, certification	Continue
Timber stand improvement	Continue
Biomass	Continue
Facilities, road maintenance	Continue
Facilities, road closure	Continue, follow formal road closure process
Facilities, bridge safety	Continue, use contracts for backlog
Facilities, water sources	Continue
Forest Pest Management (FPM)	Continue
Range condition/suitability and utilization	Continue
Chaparral	Continue
Special Areas	Continue
Adaptive Management Area programs (AMA)	Continue
Rural development, new products	Continue
Rural development, economic diversity	Continue
Community development, partnerships	Continue
Tribal government, partnership and consultation	Continue
Forest Plan implementation, NEPA	Continue
NW Forest Plan Monitoring, Province Advisory Council (PAC)	Reevaluate need with PAC

Recommended Monitoring of Public Use and Information Programs for FY 1998:

Monitoring Item	Recommendations for Future Monitoring
WILD AND SCENIC (W&S) RIVER Develop mgt. plans, using LAC for existing W&S Rivers	Continue to evaluate all proposed activities via Mgt. Plans
Protect 1/4 boundary on proposed W&S Rivers	Continue at project level according to Forest Plan
WILDERNESS Develop Implementation Guides using LAC for each Wilderness	Continue using LAC
Post potential encroachment sites	Continue program
Visitor information programs	Continue programs
Wilderness water quality	Establish protocols for yearly sampling
RECREATION Manage sites according to Recreation Opportunity Spectrum (ROS), use partnerships to assist.	Continue partnerships to assist monitoring
Provide interpretive services including recreation opportunity guides (ROGs)	Continue monitoring and development of ROGs
Identify and develop potential OHV trails	Continue partnerships to locate potential trails
Significant caves	Continue listing process
VISUAL QUALITY Determine if visual resource management (VRM) standards are being followed, and visual quality objectives (VQOs) are being met	Continue, provide more training to ID Teams, especially in area of visually sensitive foreground.
HERITAGE Inventory, evaluate site for eligibility National Register	Continue, tied to 106 Programmatic Agreement
Compliance with Section 106 for existing sites	Continue, tied to 106 Programmatic Agreement
LAW ENFORCEMENT Monitor prevention, violation, investigation	Continue
MINERALS Minerals activities	Continue, on a case by case basis

Action Plan

The following information includes a response (in italic) to last year's action items and the recommendations from the current report. Implementation depends on adequate program funding and priorities.

- Obtain clarification from the Regional Ecosystem Office (REO) on the process to be used for Survey and Manage species status reviews. *The Forest Wildlife Biologist is now a member of the Survey and Manage Core Team. She is providing clarification on Survey and Manage process directly to the Forest.*
- Develop a more systematic and quantifiable approach to measuring habitat components such as coarse woody material, snags and canopy closure. *A monitoring process has been developed for riparian areas by a District Fisheries Biologist. Continue to develop for other areas.*
- Organize and report the information collected in the customer/user satisfaction program "Serving People" at the forest-wide level so it can be evaluated next year. *Due to the low response of substantive comments, information will not be formally organized and reported.*

- Use an interdisciplinary approach to identify Limits of Acceptable Change (non-recreation standards) for the Forest so monitoring of wilderness management can occur. *The limits of acceptable change process (LAC) is the standard monitoring tool utilized in all wilderness areas.*
- Develop systems for collection, assessment and reporting data. Examples of systems needed include:

Land adjustments, and locatable minerals. *Due to low levels of activity in both of these areas, new systems are not being developed.*

Road construction and decommissioning. *The Region is working on a project to link the Transportation Information System (TIS) to the Geographic Information System (GIS). This will provide an excellent tool for tracking constructed and reconstructed system roads. The need continues to track non-system roads and decommissioned roads at the forest level.*

Forest range program standards and guidelines. *The FY 1997 report includes range standards and guidelines.*

Outside job placement resulting from human resource programs. *Placement is now reported annually.*

Accomplishments in the rural and community development programs. *These are now reported.*

Implementation and monitoring biodiversity. *Biodiversity is now reported.*

- Develop a marketing method to inform the public of recreational opportunities available on the Forest, including fishing and hunting. *The Forest has developed and maintains a web site which includes recreational opportunities such as camping, hiking and fishing. This web site can be accessed at www.fs.fed.us/r5/shastatrinity.*
- Develop a method of assessing and showing how timber harvest methods as applied to various land allocations and watersheds help in meeting Forest Plan desired conditions. A project was initiated in 1997 with Region 5 that will provide an interactive computer model to let the user choose harvest methods and spatial and temporal variables. The user will be able to watch forest landscapes grow on-screen over time. Display of results will be in a GIS format that can be analyzed in terms of desired condition. Work will continue on this project as funding is available.
- Work with the NW Sacramento and Klamath Provincial Advisory committees, other interested members of the public, and Forest specialists to improve monitoring processes related to social and economic effects. *The Forest completed a social economic study of Trinity County through a grant to the Hayfork Watershed Center. PSW also contracted with the Watershed Center for a multi-county social-economic study.*
- Become more consistent in displaying and/or including a discussion of related ecosystem analysis documents in project documentation. *A process has been implemented whereby project files now include the appropriate plan to project documents such as watershed analysis and late-successional reserve assessments.*
- Require that the type of cutting method be reported on the Harvest Record Cards in the Stand Record Card System. *This is being done.*
- Examine the timber harvest inspector daily reports to see if they can be aggregated and used to report monitoring information at the forest level. *After review by the monitoring team this recommendation was not considered to be an efficient monitoring process.*

Short-term Strategy

The Forest's short-term strategy will continue to emphasize: monitor implementation of the Forest Land and Resource Management Plan at the project level, evaluate the effectiveness of mitigation measures, evaluate current conditions and predict future landscape changes. The questionnaire developed for this year's report was based on standards and guidelines for selected management and resource areas plus appropriate forest-wide or prescription specific standards and guidelines. This method will continue to be used with some modification for next year. The FY 1998 report will be initiated during the first quarter in order to bring it into the same timing as several other yearly monitoring and accomplishment reports.

Long-term Strategy

The primary objective of the long-term strategy will be to monitor implementation over the planning period, evaluate effectiveness and validate assumptions that may require adjustments to the Forest Land and Resource Management Plan.

This strategy will be the primary mechanism for validation monitoring, but will incorporate implementation and effectiveness monitoring as well.

Potential Forest Plan Amendments

No Forest plan amendments have been proposed at this time. A potential amendment may be analyzed due to pending management recommendations for the Del Norte Salamander.

Research Needs and Projects

1. Assess and verify current and potential production for fall chinook, coho, and steelhead within the Trinity River basin using existing and potential habitats. (see #2 below)
2. Obtain a better understanding of the status and trend of aquatic Threatened, Endangered and Sensitive (TES) species and habitats and their conservation. Develop an integrated approach to aquatic TES management emphasizing ecosystem management and biodiversity. *The PSW Research Station in Arcata is conducting a study that addresses both 1 and 2. The study is entitled: "Forest Management Effects on Hillslope Processes and Fisheries (RWU-PSW-4351)." The stated objectives are to: "Develop improved ways to evaluate the risk of landslides and erosion and the timing and routing of sediment in relation to cumulative effects and anadromous and resident fish habitat" and to: "Guide habitat enhancement and restoration programs, and develop better information on the effects of stream structure and processes and stream biology on anadromous and resident fish habitat."*
3. Continue research on the social and economic value of recreation, tourism and visual resources. The Hayfork Watershed Center has done research on the socio-economic impact of contracts on

- Trinity County using funding from Pacific Southwest Station (PSW). A report is due during the summer of 1998. *Research continued during 1997.*
4. Conduct research on recreational carrying capacities, especially those capacities related to water oriented activities. *The SE Experiment Station continued this study during FY 1997 for the NRA. The River Rangers are also collecting data for the Wild and Scenic Rivers.*
 5. Conduct periodic assessments of user preference/satisfaction levels. *Recommend this item be dropped for the FY 1998 report due to duplication of reporting.*
 6. Conduct biological studies to obtain information needed to develop Conservation Strategies for sensitive plants. Such research would include studies of distribution, habitat requirements, population dynamics, and responses to management activities. These studies would include information necessary to supplement existing data to assure the continuation of reproducing plants throughout the range of the species. *The Watershed Center in Hayfork has conducted regeneration trials on Prince's Pine using a Geographical Information System (GIS) to model the distribution of non-timber resources and the impacts of harvesting.*
 7. Continue research into the characteristics and dynamics of the black stain root disease on timber stands in the McCloud Flats area. PSW-Redding monitored the abundance of the suspected insect vectors of blackstain root disease in the Spring 1996 prescribed burn at McCloud Flats. Forest Pest Management installed blackstain root disease monitoring plots in the Spring 1996 burn. It will be several years before it will be known whether spring burning has an effect on the spread of the disease. *There was no activity on this project during 1997.*
 8. Continue research on the relationships between vegetative disturbance in late-successional forests and spotted owl habitat. The objective is to attempt to establish more clearly defined thresholds of population viability. PSW-Redding is now analyzing data from a long-term study in the Upper South Fork of the Sacramento (the Eddy Mountains) to use charcoal in lake sediment to establish the long-term fire frequency. The PSW-Arcata lab has an ongoing project involving Spotted Owl habitat in the Hayfork AMA. *This research need has been modified to an objective of establishing the historic fire frequency and the long-term dynamics of ecosystems on the Forest. Lake and headwater sediment cores are providing information based on pollen and charcoal dating along with fire scar history in these areas.*
 9. Continue research on the effects of logging and road construction on sediment delivery, runoff, and water quality using localized information or other means. The Watershed Center in Hayfork in cooperation with the PSW-Redding has been studying the impacts on the soil using a small yarder. *Research continued in 1997.*
 10. Continue research on the long-term effects of timber harvest and reforestation practices on soil productivity. There is a paper being prepared reporting on the first 5 years of progress on the North American Long-Term Soil Productivity Study which will be published in the proceedings of the 18th Annual Forest Vegetation Management Conference. Although none of the 12

California sites are located on the Shasta-Trinity National Forest, the results will be applicable.
This study is completed and published.

11. Conduct research to assess the costs and effectiveness of various vegetation management treatment methods. *PSW-Redding has completed and published 3 major studies on the Mt. Shasta, McCloud and Yolla Bolla Ranger Districts.*
12. Conduct research to assess the role of fire suppression and fuels management in meeting habitat needs for different species of wildlife. PSW-Redding is analyzing data collected for a landscape level fire history in the Hayfork AMA. *Research continued in 1997.*

Report Preparers

Forest Monitoring Team:

Arlene Kallis (project leader)	Ralph Phipps (NEPA, social-economic)
Ken Coop (range)	Darrel Ranken (physical sciences)
Dave Cross (aquatics)	Ken Showalter (public use)
Paula Crumpton (biological sciences)	Jim Zander (resource management)

Extended Forest Monitoring Team:

Ken Coop	David Kehoe	Becky Rogers
Dave Cross	Ken Lanspa	Dave Schultz
Paula Crumpton	Duane Lyon	Debbie Selby
Mike Gertsch	Francis Mangels	Ken Showalter
Mary Ellen Grigsby	Bob Nelson	Dennis Thrall
Cris Hartman	Julie Nelson	David Tracy
Ed Hatakeda	Robert Olson	Scott Vaughn
Tom Hatcher	Ralph Phipps	Susie Walding
Winfield Henn	Bob Ramirez	Jim Zander
Nancy Hutchins	Teri Raml	Joe Zustak
Chris James	Darrel Ranken	

Location of Supporting Documentation

The supporting information for this report is on file at the Supervisor's Office and at Ranger District Offices. Refer to the appendix for specific documents and their locations by functional area.

Public Participation Plan

A notice of the FY 1997 Monitoring and Evaluation Report will be mailed to those on the Forest Plan mailing list. This report will also be available for review on the forest web site.

Publishing and Web site:

Our thanks are extended to Gary Chase for publishing this report and adding it to the forest web site. This document can be accessed on the internet at the following address:

www.fs.fed.us/r5/shastatrinity

Appendix

This appendix provides background information for the Fiscal Year (FY) 1997 Monitoring and Evaluation Report. It is organized by resource area. The supporting documentation for the Monitoring and Evaluation Report is at the Supervisor's Office or at the District Offices.

- **Shasta-Trinity National Forests Supervisor's Office**

3644 Avtech Parkway
Redding, CA 96002
(530) 226-2500

- **Big Bar Ranger District**

Star Route 1, Box 10
Big Bar, CA 96010
(530) 623-6106

- **Hayfork Ranger District**

P.O. Box 159
Hayfork, CA 96041
(530) 628-5227

- **McCloud Ranger District**

P.O. Box 1620
McCloud, CA 96057
(530) 964-2184

- **Mt. Shasta Ranger District**

204 West Alma
Mt. Shasta, CA 96067
(530) 926-4511

- **Shasta Lake Ranger District**

14225 Holiday Drive
Redding, CA
(530) 275-1587

- **Weaverville Ranger District**

P.O. Box 1190
Weaverville, CA 96093
(530) 623-2121

- **Yolla Bolla Ranger District**

HC01 Box 400
Platina, CA 96076
(530) 352-4211

Physical Environment

Soil and Water (1)

Cumulative Watershed Effects (CWE)

Forest Plan Standard: Determination of Cumulative Watershed Effects. (Ref. Forest Plan, 4-18a)

Objectives: To determine if the following four criteria were met during Cumulative Watershed Effects (CWE) assessments in the preparation of watershed analysis and project planning documents: (1) the calculation of watershed sensitivity, (2) the calculation of the Threshold of Concern (TOC), (3) determination of Equivalent Roaded Area (ERA) within the established TOC, and (4) coordination with adjoining landowners.

Methods: The results from four CWE analyses were examined to verify the implementation of the CWE analysis method, and to determine if the recommendations coming out of the process are consistent with the process results. The four analyses were: Upper Hayfork Watershed Analysis, and the Castle, Soda, and Shiloah NEPA documents.

Results: Upper Hayfork CWE: The Upper Hayfork Watershed Analysis CWE analyzed 59,310 acres of the Upper Hayfork Creek Planning Watershed #51. Procedures for determining watershed sensitivity, TOC and other landowner coordination were followed in the CWE for the Upper Hayfork Watershed Analysis.

Results of this analysis showed that the equivalent roaded area in the sub-watersheds had lessened considerably due to the recovery of the watershed from a large wildfire and subsequent salvage harvest activities that occurred in the 1960, scattered even-aged management in the 1970s and early 1980s and the relative absence of activity from the late 1980s to present. None of the sub-watersheds are presently approaching the ERA level of the TOC.

Results: Castle and Soda CWEs: The Castle CWE analyzed 5,113 acres in the vicinity of the lower North and Middle Forks of Castle Creek (Upper Sacramento - Planning Watershed # 11). Cumulative effects and ERA were calculated for 5 sub-basins where timber harvest was planned. The Soda CWE analyzed 1,987 acres in the Soda Creek drainage (Upper Sacramento - Planning Watershed # 11). Cumulative effects and ERA were calculated for 2 sub-basins where timber harvest activities were planned.

Procedures for determining watershed sensitivity, Threshold of Concern and other landowner coordination were followed in the CWEs for the Castle Creek and Soda Creek Watershed Analyses.

Results from the cumulative watershed effects analyses indicated that ERA would not increase appreciably as a result of planned harvest and road construction activities in the Castle Creek and Soda Creek sub-basins.

Results: Shiloah CWE: The Shiloah CWE analyzed 7,660 acres in the vicinity of Shotgun Creek (Shotgun-Slate Watershed - Planning Watershed # 18). Cumulative effects and ERA were calculated for 5 sub-basins where timber harvest activities were planned.

Procedures for determining watershed sensitivity, TOC and other landowner coordination were followed in the CWEs for the Shiloah Watershed Analysis.

The ERA in Shiloah sub-basins did not increase significantly as a result of the planned harvest activities. The proposed treatments only affected a total of 0.24 square miles in the Shiloah sale area. Equivalent roaded areas within the sub-basins only increased slightly due to the small size of the treatment units relative to the third order sub-basin areas. The largest increase in ERA was 1 percent. The resultant percent ERA for the sub-basins ranged from 1.9 - 5.5 percent. The final percent ERAs are still well within the TOC of 16 percent for all of the sub-basins.

Summary of Results: Use of the Cumulative Watershed Effects (CWE) methodology has the objective of measuring impacts of proposed management activities. Use of the CWE process is a form of monitoring watershed conditions with the objective of measuring impacts against an assumed threshold level. Monitoring the process of applying the CWE analysis ensures that watershed conditions are being considered and disclosed.

Recommendations: Continue using the CWE analysis process as a monitoring tool of watershed condition and continue monitoring the use of the CWE process to ensure that it is being used correctly.

Public Involvement: Public involvement occurs during the NEPA process for identified projects.

Where is data located: Upper Hayfork WA and CWE are located at the Hayfork Office. Castle, Soda, and Shiloah documents and CWEs are located at the McCloud Office.

Soil and Water (2)

Best Management Practices: BMPs

Forest Plan Standard: Implementation of Best Management Practices for protection or improvement of water quality. (Ref: Forest Plan 4-18 c.)

Objectives: To determine if BMPs were implemented as prescribed in the BMP handbook. To determine if BMPs were successfully implemented at selected sites where BMPs had been prescribed. To determine if the BMPs as implemented were effective for their intended purpose.

Methods: Selected sites and units from 3 timber sales were monitored to verify implementation and to determine the effectiveness of BMPs as they were applied.

Results: The table below shows the specific BMPs that were monitored in FY 1997. All of the randomly selected BMPs were found to have been implemented as planned. Of the 29 BMP applications monitored, 25 were found to be effective in their application and 4 were not. The one log landing not meeting BMP standards appeared to have inadequate drainage structures, allowing for concentration of water and resulted in rilling of the surface. Two temporary roads had inadequate drainage which resulted

in rilling of the surface. One vegetative management unit, a broadcast burn, left inadequate levels of ground cover.

Specific BMPs Monitored and Results Meeting Effectiveness Standards

Standard or Objective	Activity	Areas Sampled	Areas Met	Percent Met (%)
BMP 1.8, 1.19, 1.22	Streamside Management Zone	3	3	100
BMP 1.10, 1.17	Tractor Skidding Design	3	3	100
BMP 1.11	Suspended Yarding	1	1	100
BMP 1.12, 1.16	Landing Location	7	6	86
BMP 1.18, 1.22, 5.3	Meadow Protection	4	4	100
BMP 2.2, .4, .5, .7, .10, .23	Road Surface, Drainage	1	1	100
BMP 2.1, .4, .5, .7, .10, .23	Stream Crossings	1	1	100
BMP 2.11	Sidecast Material	1	1	100
BMP 2.16, 2.26	Temporary Roads	3	1	33
BMP 4.1, 4.2	Designated Swim Sites	1	1	100
BMP 4.3, .4, .5, .6, .9, .10	Developed Recreation	1	1	100
BMP 5.1, 5.2, 5.5	Vegetation Management	2	1	50
BMP 8.1-8.4	Range Management	1	1	100

Recommendation: Site specific recommendations were made for the sites where BMPs were found to not be effective. Temporary roads should be spot mulched where most susceptible to surface erosion problems. Continue BMP monitoring.

Public Involvement: Public involvement occurs during the NEPA process for identified projects.

Where is data located: The results of the BMP monitoring are stored in the Regional BMPEP Database as well as on a Forest database. The Forest Supervisor’s Office, Redding, CA also has the original data collection forms.

Soil and Water (3)

Soil Quality Standards and Soil Productivity

Forest Plan Standards: Implement forest soil quality standards as they relate to highly erodible soil. (Ref: Forest Plan 4-18 e. Protection of soil productivity).

Objectives: To determine if soil erosion hazard assessments were used in planning of forest management activities. To determine if ground cover and fine organic matter objectives were met after logging. Forest Service guidelines require a minimum of 51% organic material ground cover, uniformly distributed, on non-granitic soils, after harvesting activities. The percent is increased to greater than 90% on granitic soils. An exception is made on ash soils of the McCloud Flats. These soils are relatively coarse textured with a very high infiltration and permeability rates.

Methods: Three 300-foot step transects were taken across each monitored unit and the re-corded data averaged for the unit.

Results: The Standards were monitored on six non-granitic harvest units. The organic material ground cover results were: 63%, 66%, 85%, 45%, 81% and 65%. An additional seven units were monitored on the McCloud Flats. There was zero ground cover on all seven units. In order to control grass and brush competition, the District's policy is to rip and cultivate the entire unit including skid trails, landings and, in some cases, the access road leaving no ground cover. However, erosion is virtually non-existent in this area. As for soil productivity, churning of the organic matter into the soil will likely hasten decomposition, which would improve the productivity of the soil.

Recommendation: Continue monitoring soil quality standards.

Public Involvement: Public involvement occurs during the NEPA process for identified projects.

Where is data located: Forest Supervisor's Office, Redding, California.

Soil and Water (4)

Watershed Restoration

Forest Plan Standards: Identify and treat areas with degraded watershed condition. (Ref: Forest Plan 4-18 f.)

Monitoring Objectives: To determine if watershed restoration projects were implemented as planned. To determine if the watershed restoration practices implemented were effective in achieving desired results.

Methods: Contracts through contract administration were monitored. The Forest monitored implementation of field work by selecting a sample of road segments and following the monitoring methods of the Region's Best Management Practices Evaluation Process. The field sites were evaluated following the winter after the projects were completed.

Results: South Fork Management Unit. On the majority of culvert removal operations, reconstruction of the original stream channel was inadequate in that the resulting stream channel was constricted resulting in mild to severe downcutting. The contracts did not include language to specify the stream's bankfull widths. Watershed specialists visited each contractor and explained what was needed to accomplish bankfull width after pulling a culvert to restore the channel to the original natural drainage pattern. The desired result was accomplished immediately.

It was found, in most instances, where culverts were removed the slope of the resulting channel banks was too steep after the fill was removed. This caused rilling, slumping and fill failure. The solution implemented immediately was instead of specifying a numeric value for channel slope percent, each specific site was visited by watershed specialists and evaluated with the goal of matching the natural channel bank slopes above and below the crossing. The watershed specialists worked with each contractor and the desired results were accomplished.

Several minor springs were missed in the inventories and initial staking of the project. This problem caused a few spring areas to saturate ripped areas and caused rilling and gullyng. Inventories and staking

conducted in 1997 included training to identify wet area vegetation and the contract specification of adding a dip at wet areas was added to the new contracts.

Riparian willow planting survival rates were poor. Too large and old cuttings were used and planting depths were shallow. The crew that planted was inexperienced. The solution was to train crews on willow planting specifications and supply an inspector in the field daily to work with the crews.

Grass plug planting was completed to contract specifications and the survival rate was reasonable for the harsh sites that were located in an allotment area. In several areas, it appeared that many grass plugs were pulled out by cattle or deer. In the future, heavily used grazing allotment areas should not be a priority planting areas, or a short term enclosure should be considered until the vegetation has developed to a desired size.

Results: Shasta-McCloud Management Unit. Monitoring for the Still Timber Sale stream channel restoration consisted of numerous site visits and comparison of photo points.

Several of the gradient control structures that were installed in the channel to prevent further downcutting failed as a result of undercutting of the structures and bank erosion. Flows in the channel in the vicinity of the failed structures were much higher than was anticipated, in part due to the unusually wet winter.

A monitoring report evaluating the effectiveness of Burned Area Emergency Rehabilitation (BAER) projects on the Butcher Fire (1996) was prepared by Daniel Whitley in FY 1997. Site visits to the 5 dozer lines that were rehabilitated following the burn indicate that the treatments (straw mulching, debris spreading and water-barring) were effective at minimizing soil erosion from all of the lines. Native vegetation did not appear to be recolonizing the dozer lines because the soil seed bank was trapped in the dozer berms. This indicates a need to respread dozer berms wherever possible as part of the rehabilitation effort. It was also noted that some mass wasting had occurred during the winter of 1997 in the unburned areas in the vicinity of the treated lines and that no mass wasting had occurred on any of the treated lines. The rehabilitation treatments were particularly successful in that they weathered the major runoff event that occurred on January 1st, 1997.

Recommendations: For culvert removal, contracts have a watershed specialist visit each site and make specific recommendations for stream channel widths and angle of bank slope, discuss with contractor on site if possible. Provide training to those staking out road decommissioning contracts in the identification of potential spring areas requiring drainage. Provide training for spring tree planters and ensure that fresh cuttings are used. Select sites for grass plugging with care, heavily grazed areas should be avoided or fenced until grass is established. When installing grade control structures, use the channel width and size of sediment available to determine size of material for the structure's construction. Carefully key the structure into the stream bed to prevent undercutting. For future fire suppression rehabilitation projects on wildfires, recommend resspreading berms back on firelines to ensure reestablishment of native seed plants. Continue monitoring of watershed restoration activities.

Public Involvement: Public involvement occurs during the NEPA process for identified projects.

Where is data located: South Fork Management Unit, Hayfork, California and Shasta-McCloud Management Unit, McCloud California.

Soil and Water (5)

Slope Stability and Watershed Condition

Forest Plan Standards: Assess impacts of forest management on slope stability and watershed condition. (Ref: Forest Plan 4-18 i.)

Objectives: To determine what the long-term trends are for slope stability and watershed condition. There was no monitoring of trends in slope stability during FY 1997. Watershed condition trends are monitored through the evaluation of CWEs, previously discussed in this report, and by trends in water temperature, as reported below.

For water temperature the objectives of monitoring are: 1) Maintain a long-term trend monitoring program for the main channel of the South Fork Trinity River. The purpose is to assess efforts to restore fisheries of the South Fork Trinity by establishing a record of this most important water quality parameter. 2) Build a baseline data set for other rivers and streams to be used in the future for detecting changes in water temperature over time.

Methods: Hourly water temperatures at 49 locations were monitored across the Forest for the purpose of maintaining long-term data sets at some locations and establishing baseline data at other locations. Data were collected with programmable digital data recorders placed in the streams in the spring and removed in the fall. Data were then downloaded into a personal computer. Collected data were stored in spreadsheet format in both hourly and daily high-low data sets. Analysis of data includes determination of 7 day maximum temperatures, diurnal fluctuation, correlation with physical parameters in the watershed, and correlation with daily high air temperatures.

Results: Analysis of results show daily high water temperatures to be greatest in low elevation stream channels exposed to direct solar radiation. Larger channels with low gradient, shallow channel configurations show high water temperatures regardless of management intensity in the watershed upstream. The water temperature in the main channel of the South Fork Trinity River is well above ideal water temperature for cold water fish habitat. This condition results from physical exposure of the channel to direct solar radiation. Due to the width of the channel, additional riparian vegetation will not be an effective tool to reduce high water temperatures. Since this condition has historically occurred in this system, the historical fish run must have adapted to these temperatures by utilizing thermal refugia within the system. Present monitoring efforts have not discovered the nature of this refugia, if it exists.

Stream temperatures are highly correlated to air temperatures in the summer months. High summer water temperatures are naturally occurring in rivers and streams over much of the Forest. Riparian vegetation is a controlling factor on small streams but may have a less significant effect on large low gradient streams exposed to direct solar radiation.

Recommendations: Continue monitoring for trends in the South Fork Trinity River and tributaries. Continue gathering temperatures for baseline information on other streams across the Forest. Use analyzed data to determine which streams may benefit from riparian vegetation enhancement. Monitor micro habitats in the South Fork Trinity River to determine source and abundance of thermal refugia.

Public Involvement: A landowner and local resident near the confluence of Plummer Creek and the South Fork Trinity River assisted the Forest Service in gathering temperature data from South Fork and Plummer Creeks.

Where is data located: South Fork Management Unit, Hayfork, California; Shasta-McCloud Management Unit, McCloud, California, and at the Forest Supervisor's Office, Redding, CA.

Biological Environment

Fisheries Management (1)

Forest Plan Standard: Emphasize sport fisheries as a major recreation activity by expanding recreational fishing opportunities. (Ref: Forest Plan Goals, page 4-4, # 12)

Monitoring Objectives: To determine fish response and abundance to habitat improvement treatments in Shasta and Trinity Lakes.

Methods: Scuba and snorkeling. Direct observations. Sub-sample willow growing areas to determine percent survival.

Result and Recommendations: Monitored 25 structures and sub-sampled 6 acres of willow planting. Fish abundance for all age classes of bass was 2-5 times greater than untreated areas. A 20 year restoration plan is being developed for both lakes and programmed into the future.

Public involvement: The Forest has established a Shasta Lake/Trinity Lakes working group which includes the County Supervisors, U.S. Bureau of Reclamation, California Department of Fish and Game (CDF&G), California Department of Forestry and Fire Protection (CDF), local Fish and Game Commissions and local bass clubs. These groups provide oversight to the efforts on Shasta and Trinity Lakes relative to habitat improvement for recreational fishing.

Fisheries Management (2)

Forest Plan Standard: Emphasize the restoration of summer steelhead and spring-run Chinook salmon habitat in the South Fork Trinity River Basin. (Ref: Forest Plan Goals, page 4-4, #13)

Monitoring Objective: Detect changes in pool depths and density from previous inventories completed in the 1980s.

Methods: South Fork Trinity was divided into reaches from East Fork confluence to Hayfork Creek. Pools were identified using criteria, and measured for the above variables.

Data Collected: Pool density, pool width, max. pool depth, pool crest depth, and residual pool depth.

Results and Recommendations: Thirty-five miles of stream were inventoried. Data analysis is incomplete at this time. Difficulty in meshing data to 1988 data because of difference in methodology and observer differences in pool identification. Discontinue methodology used. Select specific reaches and monument pools for changes in distribution and depth over time.

Monitoring Objective: Inventory current conditions of fish habitat in selected watersheds for use in project planning and identification of potential monitoring sites.

Methods: Regional Stream Condition Inventory protocol with some modifications.

Data Collected: Pool density, pool width, length and volume, maximum pool depth, pool crest depth, and residual pool depth, canopy closure, substrate composition, channel type classification, spawning gravel fines, presence and absence of anadromous fish by size class, bankfull width, course woody debris density, and landslide enumeration.

Results and Recommendations: Fifteen miles of stream were inventoried. The high density of fines noted in Upper South Fork watershed are likely attributed to recent fires and inner gorge slides as a result of high spring runoff.

Fisheries Management (3)

Forest Plan Standard: Provide for the protection, maintenance, and improvement of wild trout and salmon habitat. (Ref: Forest Plan Goals, page 4-4, # 14)

McCloud River Rainbow Trout

Monitoring Objectives: McCloud River rainbow trout are a unique endemic fish to the McCloud River drainage. As an ongoing effort to ensure the continued survival of this fish, annual monitoring of habitat and population status are undertaken by the Forest. Monitoring of habitat improvement structures is also conducted.

Methods: Electrofishing was used this year to establish a baseline from which to monitor fish populations in future years as part of a Conservation Agreement with the California Department of Fish and Game (CDF&G) and the U.S. Fish and Wildlife Service (USFWS). Repeated habitat typing is used to monitor changes in habitat.

Data collected: Physical habitat features such as pool depth, length, and width are collected and stored in a computer database.

Results and Recommendations: One half mile of stream was monitored. There appeared to be an increase in cover and deeper water habitat due to past habitat work and wind thrown trees entering the channel during the winter of 1997-1998. Maintain existing structures and continue monitoring of fish population.

Spring Chinook and Summer Steelhead

Objectives: Annual trends in summer steelhead and spring Chinook populations were monitored. Monitoring efforts have been ongoing since 1980.

Methods: The methodology used was direct observation with mask and snorkel by two divers. Forty miles of streams were inventoried. The project was funded through the Trinity River Restoration Project.

Results: Preliminary observations indicated that there was a large variation in the number of returning adult fish on an annual basis. Some of the variability can be explained through natural variations in runoff patterns, climate, and ocean conditions which often mask management related effects. Preliminary analysis showed fluctuating patterns in the amount of summer steelhead returning to the North Fork Trinity River, New River, and Canyon Creek.

Recommendations: Continue the monitoring program.

Pipe upgrade for anadromous fish stream restoration

Monitoring Objective: To see if pipe upgrade would reduce chronic road failure at the IN09 stream crossing.

Methods: Photo sites were established for pre and post treatments.

Data Collected: Pictures of site before and after project.

Results and Recommendations: Pipe upgrade accounted for 10 miles of anadromous fish stream restoration. Design and implementation of the project met the desired goals and objectives.

Key Watersheds (1)

Forest Plan Standard: Key Watersheds are highest priority for watershed restoration. (Ref: Forest plan page 4-59, Standards and Guidelines for key Watersheds)

Shasta-Trinity NF Aquatic Restoration Strategy

Monitoring Objectives: Develop a restoration plan that would prioritize watersheds where restoration work would have the greatest benefits for aquatic resources, in the shortest period of time, for the least amount of money.

Methods: A modified delphi technique was used to review existing data, watershed conditions, adult fish returns and ash habitat. Biologists and hydrologists from a number of different agencies with extensive experience in the Upper Sacramento and Trinity Basins prioritized all of the sub-basins.

Data Collected: Existing information only was used to complete the plan.

Results and Recommendations: The strategy that resulted from this effort was adopted by the Forest Leadership Team. Other publics and agencies have also begun to use it as a basis for extensive restoration planning in many of our headwater sub-basins particularly in the South Fork Trinity. This effort has proven to be an effective tool to focus restoration efforts into areas that are most likely to provide significant results in the least amount of time for the least amount of money.

Public Involvement: Numerous agencies and public groups were interviewed for their input in prioritization. Presentations have been given to several local organizations.

Where is Data Located: South Fork Management Unit, Trinity River Management Unit and the Supervisor's Office, Redding, California.

Aquatic Conservation Strategy (1)

Forest Plan Standard: Aquatic Conservation Strategy Objectives: Implement the 9 objectives of the ACS. (Ref: Forest Plan page 4-53)

Monitoring Objective (Single Project): Establish if Terms and Conditions 1.a of the National Marine Fisheries Service (NMFS) Biological Opinion for the Forest Plan on the continued implementation of ongoing blowdown timber salvage and hazard tree removal sales is being implemented. Monitor for consistency with the ACS for salvage within the Riparian Reserves.

Methodology: Photo points and field notes were taken from points within each sale identified in NMFS Biological Opinion

Data Collected: Photo points and qualitative assessment of work following treatments.

Results and Recommendations: Study showed that salvage treatment implemented the Terms and Conditions 1.a. for NMFS Biological Opinion. A qualitative assessment indicated that fuel-loading conditions were reduced, but not sufficiently to fully meet fuel hazard objectives. Salvage/fuel treatments should be designed to more fully meet the need to reduce hazards in riparian reserves. Additional studies are needed to monitor implementation of ACS at the Forest level.

Interdisciplinary Involvement: Monitoring and evaluation was completed by fisheries specialists. Future ACS monitoring should include fuels experts and others as appropriate.

Where is Data Located: Hayfork Ranger District Office.

TES Species (1)

Forest Goals and Standards: Monitor and protect habitat for Federally listed threatened and endangered (T&E) and candidate species. Assist in recovery efforts for T&E species. Cooperate with the State to meet objectives for State-listed species. Manage habitat for sensitive plants and animals to prevent them from becoming a candidate for T&E status. Exclude management activities within occupied goshawks nest stands during the nesting period. Survey peregrine falcon and bald eagle populations and habitat to determine status and trend. (Ref: Forest Plan Goals, page 4-5 and Forest Prescription VII standards, page 4-43.)

Examples:

Willow Flycatcher & Habitat Monitoring Project.

Objective: Cooperative project with California Department of Fish and Game to identify and monitor willow flycatcher nest areas.

Methods: Predicted willow flycatcher nest areas using LANDSAT imagery in a cooperative effort with State to monitor habitats for State listed species. Timber industry officials assisted in monitoring areas on private lands.

Results and Recommendations: Several nest areas were detected using LANDSAT imagery. LANDSAT imagery can be used to find and monitor habitat for willow flycatcher. Will continue to monitor areas for willow flycatcher breeding.

Where is data located: Data from this project is located at the California Department of Fish and Game in Redding.

Maintained Goshawk Territories.

Objective: McCloud Ranger District contains approximately 34 historical nesting goshawk territories. Nest searches were completed on at least 20 territories. The standard is to protect the viability of the species and to assess individual territories on a project basis. Since 1992, 100-acre goshawk territories have been defined to include primary and alternate nest cores. During project preparation, habitat alteration is delayed or minimized in the 100-acre territories if nesting has occurred in recent years.

Methods: Walking surveys determined recent occupancy and nest success in 20 goshawk territories. Information was shared with California Department of Fish and Game and adjacent land owners.

Results and Recommendations: Twenty goshawk nest sites were visited. One territory was considered unoccupied and timber harvest is planned. One-hundred acre territories will be maintained in all recently active nest sites. Recommend to continue monitoring and maintain 100-acre nest territories for goshawks.

Where is data located: Data from this project is located at the Mt. Shasta Ranger District wildlife office.

Goshawk Management in Project Areas

Objective: To meet LRMP standard and guideline to protect goshawk viability by collecting data on the nest status and occupancy of historical goshawk territories.

Methods: Modification of Region 5 survey protocol. Walking surveys and mimicking territorial calls within 1,000 acres. Surveyed 20 historical nesting territories, 5 were in project areas. Information was shared with California Department of Fish and Game and with adjacent landowners.

Results and Recommendations: Breeding was attempted at 3 nest territories and only one pair was successful. Recommend continuing monitoring goshawk territories and consider proposing more specific standards and guidelines for maintaining habitat.

Where is data located: Data from this project and previous goshawk studies have been maintained in binders since the 1980s. The binders are located in Mt. Shasta Ranger District wildlife office.

Peregrine Falcon Monitoring

Objective: Monitored 2 peregrine eyries determine breeding status at peregrine falcon eyries.

Methods: Used Region 5 peregrine protocol as a guide for monitoring 10 acres of peregrine habitat.

Results and Recommendations: Presence of adults was detected at both eyries although breeding status was not determined. Breeding at eyries maybe unlikely. Recommend to continue monitoring eyries.

Where is data located: Data from this project is located at the Mt. Shasta Ranger District.

Spotted Owl monitoring

Objective: Monitored spotted owl nesting territories to determine breeding status and monitored projects to determine presence as required to complete projects during limited operating period.

Methods: Monitored 11,000 acres of owl habitat on the Shasta McCloud Management Unit (SMMU) at 22 spotted owl territories and 10 project areas following Region 5 spotted owl survey protocol and day searches to determine breeding status. Information was coordinated with the State of California and adjacent private landowners.

Results and Recommendations: Found 2 nesting pairs and presence of owls in 10 territories. Owl nesting activity was lower than 1989-1996 monitoring results. Recommend continuing monitoring owl territories and projects to assess breeding status.

Where is data located: Data from this project is located in the statewide database and at the Mt. Shasta and McCloud Ranger District wildlife offices.

Bald Eagle Nesting and Habitat Monitoring

Objective: Determine nest occupancy and breeding at bald eagle sites.

Methods: Visual observation for eagle nest occupancy and breeding status at 2 bald eagle sites during several visits.

Results and Recommendations: Breeding was successful at both sites. Sites were providing essential habitat for breeding. Recommend to continue yearly monitoring.

Where is data located: Data from this project is located at the Mt. Shasta and McCloud Ranger District wildlife offices.

Late-Successional Reserves (1)

Forest Plan Standard: A management assessment should be prepared for each large Late-Successional Reserve (or group of smaller Late-Successional Reserves) before habitat activities are designed and implemented. (Ref: Forest Plan page 4-37)

Monitoring Objective: Late-Successional Reserves (LSRs) were developed to protect and enhance conditions of late-successional and old growth forest ecosystems, which serve as habitat for late-successional and old growth-related species. LSR Assessments will be completed to provide for management within LSRs to meet desired conditions.

Methods: Beginning in fiscal year 1997, projects and activities within LSRs require the completion of a comprehensive LSR assessment as described in the Forest Plan, page 4-37.

Results: One comprehensive LSR Assessment (LSRA) was completed in FY 1997: the Chalk Mountain LSRA (in cooperation with the Lassen NF). The forest also assembled a team in 1997 to begin work on the Clear Creek LSRA and a programmatic LSRA for the remaining 19 LSRs and 6 MLSAs on the forest.

Recommendations: Continue work on the programmatic LSRA.

Public Involvement: The programmatic LSRA consists of an interdisciplinary/interagency team of resource specialists. The public will be kept informed of team's progress in completing this document.

Where is data located: Supervisor's Office, Redding, California.

Botany (1)

Forest Plan Standard: Analyze, mitigate, and monitor project impacts to sensitive plants. (Ref: Forest Plan pages 4-14 and 4-16, #4a, b, c, Sensitive and Endemic Plants).

Monitoring Objective: To ensure that the Forest sensitive plant program effectively maintains the viability of sensitive and endemic plants on the Forest at the project level.

Method: Biological evaluations based on preliminary potential habitat evaluation using existing soils and TES plant data; field surveys of potential habitat in the areas to be affected by project implementation. Mitigation measures are developed by interdisciplinary teams and made part of project designs. Monitoring site visits are taken 1-2 years after project implementation.

Data Collected: Population numbers, size, location, and habitat; potential project impacts and proposed mitigations. For monitoring, whether mitigations were implemented as prescribed, and whether populations recovered or persisted as predicted by BEs.

Results: Ten new populations of sensitive plants were found and documented in FY 1997. Field surveys are completed for most large projects; many small or dispersed projects (such as salvage sales) are analyzed with existing data. Plant BEs were written for 52 projects forest-wide. No sensitive plants on the Shasta-Trinity were proposed for listing by USFWS. In general, mitigations were implemented as written and were effective. A recorded flood emergency resulted in accidental impact.

Recommendations: Continue field surveys at project level. Assess forest wide effectiveness of existing data analysis of smaller, dispersed projects.

Public Involvement: Through the NEPA process. Also organizations including the California Native Plant Society and the California Department of Fish and Game are involved in reviewing status of sensitive species list.

Where is data located: Project NEPA files, SO and district botany files, GIS coverages.

Botany (2)

Forest Plan Standard: Develop at least one conservation strategy per year. (Ref: Forest Plan page 4-16, #4f)

Monitoring Objective: To review compliance with our Forest standards, and effectiveness of our collaboration with other agencies in conserving sensitive plants.

Method: Office review of sensitive plant files.

Data Collected: Number and names of conservation strategies developed and/or signed in FY 1997.

Results: A multi-agency conservation agreement for *Rorippa columbiae*, *Columbia cress* (a sensitive plant) was signed by Shasta-Trinity and other Forest Supervisors. A draft conservation strategy for serpentine endemics of the Rattlesnake Terrane (Yolla Bolla and Hayfork RDs) was developed as an outgrowth of the Upper Hayfork Watershed Analysis and Beegum Watershed Analysis.

Recommendations: Finalize strategy for serpentine endemics; seek partners and funding for implementation. Reevaluate priorities for developing conservation strategies for other sensitive plants using information available since the LRMP was published.

Public Involvement: No public involvement.

Where is data located: SO sensitive plant files.

Biological Diversity (1)

Forest Plan Standard: Snags are to be retained within the harvest unit at levels sufficient to support species of cavity-nesting birds at 40 percent of potential population levels based on published guidelines and models or a minimum average of 1.5 snags per acre greater than 15 inches in diameter and 20 feet in height. Provide specified amounts of coarse woody debris in Matrix management well distributed across the landscape: (1) Provide a renewable supply of large down logs well distributed across the Matrix (2) Coarse woody debris already on the ground should be retained and protected. (Ref: Forest Plan, page 4-61)

Objective: Survey and maintain at least minimum management requirements for dead/down, hardwoods, and snags at both pre and post-project levels.

Methods: Data collected during visual surveys for snag and dead/down densities at 6 timber sale projects. The public was involved during public scoping of NEPA.

Results and Recommendations: Dead/downed wood minimum standards were met in most areas. District policy is to leave any tree or snag deemed a hazard on site as downed wood. Continue monitoring of salvage and green sales for dead standing/down woody material.

Where is data located: Data is in NEPA documents at the McCloud and Mt. Shasta Ranger stations.

Biological Diversity (2)

Forest Plan Standard: Survey prior to ground disturbing activities. Surveys for great grey owl. (Ref: Forest Plan page 4-10.)

Objective: To implement survey and manage procedures for great grey owl within the South Bartle Watershed Analysis area at Stillwater Meadow.

Methods: Performed first year of the two year survey protocol within 1/4 mile of Stillwater Meadow using great grey owl protocol.

Results and Recommendations: Presence of great grey owl was not detected. Great grey owls are not using Stillwater meadows in 1997. Second year of survey is required to make a determination of no presence.

Where is data located: Data is in files located in the Mt. Shasta Ranger station.

Wildlife Management (1)

Forest Plan Standard: Develop sites for wildlife viewing, photography, and study. Provide pamphlets, slide shows, and other educational material that enhance the watchable wildlife and other interpretive programs. (Ref: Forest Plan page 4-29.)

McCloud River Watchable Wildlife renewing Area

Objective: To assess accuracy of directional sign placement at the watchable wildlife site.

Methods: Monitored sign placement needs for watchable wildlife viewing area along the McCloud River.

Results and Recommendation: Signing needs improvement, therefore we ordered new watchable wildlife signs. A McCloud River sign plan for all natural resources needs to be developed. Data from this project is located at the Mt. Shasta Ranger district wildlife office.

Bald Eagle Awareness Project at Shasta Lake

Objective: To increase public awareness and appreciation of the bald eagle and the aquatic ecosystem at Shasta Lake. Provide environmental education for children to increase their awareness and appreciation of the eagle and other wildlife in the forest and lake ecosystems.

Methods: The Forest Service entered into a partnership with Pt. Reyes Bird Observatory to monitor bald eagle productivity at 17 bald eagle nest sites and approximately 70 osprey nest sites at Shasta Lake. Also sponsored an Adopt-a-Bald Eagle Project with 20 grade school students from Bella Vista School.

Assisted with bald eagle habitat improvement and sponsored several field trips to learn more about eagles, endangered species and the aquatic ecosystem. Presented 2 slide shows to the Wintu Audubon Society and hosted a Bald Eagle Appreciation Day for 50+ members of the public at Shasta Lake. This day was a partnership effort with the Bureau of Reclamation, Point Reyes Bird Observatory, Jones Valley Resort and the Forest Service. Field observations, field trips, slide shows and general education for approximately 100 people. Presented our information on television and newspaper to the Redding area.

Results and Recommendations: A very successful interface with the community. Accomplished 14,000 acres of survey and gave 7-10 presentations. Worked with other agencies and schools and non-profits in this project. Continue this project after the delisting of the eagle as an excellent wildlife viewing opportunity with ecotourism benefits. Data from this project is located at the Shasta Lake District.

Public Education

Objective and Methods: Used wood duck nest boxes for conservation education presentations at two elementary schools in Trinity County. Another conservation education presentation about deer browse was given to a third school in Trinity County.

Results and Recommendations: Students and teachers learned about the environment and what needs to be done to ensure proper habitat for wildlife. Keeping the public informed concerning wildlife conditions is important for public support for wildlife management programs.

Wildlife Management (2)

Forest Plan Standard: Manage habitat for neotropical migrant birds to maintain viable population levels. (Ref: Forest Plan page 4-29)

White's Bar Banding and Censusing Station for Neotropical Migratory Birds

Objective: Monitor the landbird populations by quantifying the productivity, survival, habitat structure and bird use of riparian areas. This project is also part of the international Monitoring Avian Productivity and Survivorship (MAPS) Program. MAPS is a cooperative effort among public agencies, private organizations, and the bird banders of the continental United States and Canada to provide long-term data on population and demographic parameters for many landbird species.

Methods: Censusing was done by three, five, and ten minute point counts, according to the protocol contained in Ralph et al. (1993). Habitats were defined using the US Vegetation Cover Classification System as a guide. Mist-netting was operated one day during every ten-day period from May-August. A breeding status list was compiled by gathering anecdotal information concerning breeding and residency status for each species. Data was submitted to The Institute For Bird Populations and The Klamath Demographic Monitoring Network. Many local groups visit the banding station such as the boy scouts, local garden club, local schools, and the local Trinity Journal newspaper.

Results and Recommendations: Accomplishments include data sharing, vegetation estimates, trend and demographic monitoring and species and breeding status. Results from monitoring include frequency

and species of point count censuring, new and recaptures by species and age, correlations between habitat variables and individual bird species, and breeding bird status list. An important aspect of the project was the occurrence of specialized species living in the riparian zones. One recommendation is to expand the sample size beyond a single station. A single station can only provide data for analyses on a few species. Data from this project is located at the Big Bar Ranger District.

Monitoring of Neotropical Migrants Birds along the Upper Sacramento River and Squaw Creek

Objective: To continue the seven-year monitoring partnership with Point Reyes Bird Observatory (PRBO) in gaining information on survivorship and productivity of landbirds in riparian habitats along the Sacramento River.

Methods: Mist netting, point counts, and habitat assessment by PRBO during May-August to determine survivorship rates and population trends of key riparian landbird species along the Sacramento River.

Results and Recommendations: Monitored 140 hectares. Data was used to assess bird communities in California's riparian habitats and for National Partners in Flight efforts to develop conservation plans for avian species. There is not enough years of data yet to formulate accurate conclusions. More data needs to be collected and we'll continue the monitoring project with PRBO. Data from this project is located at the PRBO office at Stinson Beach, California and the Mt. Shasta Ranger station wildlife office.

Willow Planting

Objective: Improve riparian and shrub habitat for migratory birds along the west shore of Trinity Lake.

Methods: 2800 willows sprigs were planted in pots for later transplant into the wild. 4000 redbud seeds were collected, and grown for planting.

Results and Recommendations: The willow plants are growing well and will be transplanted when conditions are good. This two-step planting method has been successful. The willow have a better survival rate when potted before planting on the lake shore.

Wildlife Management (3)

Forest Plan Standard: Develop guzzlers, spring boxes, etc., to improve distribution and availability of drinking water for wildlife. (Ref: Forest Plan page 4-29)

Lookout Ridge Guzzler Maintenance

Objective: To insure the guzzlers operated safely and well for wildlife use.

Method: Ocular observation of two guzzlers that were weathered and hazardous to some wildlife.

Results and Recommendations: One guzzler was still functioning, the second was not functioning. The two guzzlers were repainted with marine paint and repaired. The guzzler with a ramp into the water worked better than the guzzler with a pressure valve.

Resource Management Programs

Fire and Fuels (1)

Forest Plan Standard: Activity fuels that remain after meeting wildlife, riparian, soil, and other environmental needs will be considered surplus and a potential fire hazard. The amount and method of disposal will be determined in the ecosystem analysis. Plan and implement fuel treatments emphasizing those treatments that will replicate fire's natural role in the ecosystem. (Ref: Forest Plan, page 4-17 #8 c,d)

Monitoring Objectives: Monitor environmental analysis process and post-burn summaries to insure that fuels reduction objectives are being met.

Methods: Burn plans are prepared for every proposed burning project. They are designed to meet the fuels objectives and mitigations described in the environmental analysis (EA) for the project area. Burn plans are signed by the responsible line officer and the assigned burn boss. Close coordination and monitoring is maintained between the Forest Service burn boss and the Air Quality Control Board, Forest Service Dispatch and the Sheriff's Office.

Results: The Shasta Mudflow RNA Prescribed Burn (1997) is an example of the monitoring process being followed at the project level. Resource objectives and prescribe fire objectives from the EA are clearly stated in the burn plan. PSW scientists conducted a post-burn field review of this project and stated that initial objectives were met, but additional burns are required to meet final desired results.

District personnel also conducted a post-burn field review with the Sacramento Province Advisory Committee.

In 1997 there were 1,950 acres of activity fuels burned and 2,390 acres of natural fuels burned for a total of 4,340 acres treated.

Recommendation: Continue monitoring and follow recommended sequential burning treatments.

Public Involvement: The public is closely involved with our burning program. Frequently pre-burn meeting and field trips are held with local organization. Pre-burn notices are also circulated to local post offices, newspapers and radio stations. Adjacent landowners are routinely notified of Forest Service burn projects.

There is also public education program in the schools to inform students of the fuels programs and objectives.

Where is data located: Burn plans and post-burn summaries are located at the local Ranger District Offices.

Timber Management (1)

Forest Plan Standard: Allowable Sale Quantity (ASQ). Yields from suitable lands will be chargeable toward the ASQ. The suitability of land for timber production will be field verified at the project level

using the timber suitability criteria shown in Appendix I of the Forest Plan. (Ref: Forest Plan page 4-26, #20a., and page 5-13, Timber)

Monitoring Objective: The objective is to determine if the timber sold in FY 1997 meets the ASQ level specified in the Forest Plan.

Method/Data Collected: Information on timber products offered and sold is collected at the district level and compiled at the forest level into a national database called the Sale Tracking and Reporting System (STARS). The FY 1997 Forest Management Attainment Report (MAR) is used to report forest accomplishments, including timber volume offered and sold.

Results: The timber volume offered for sale in FY 1997 totaled 80.2 MMBF. This was slightly less (98%) than the 82 MMBF ASQ in the Forest Plan. The average annual timber volume offered for sale since the signing of the Forest Plan in 1995 is 65.8 MMBF, or about 80% of the ASQ.

Recommendations: Continue monitoring annually to determine the average annual output for the 10 year period of the Plan.

Public Involvement: Public involvement occurs during NEPA at the project level.

Where is data located: STARS data and the FY 1997 Forest MAR report are located in the Supervisor's Office in Redding, CA.

Timber Management (2)

Forest Plan Standard: Silvicultural Systems/Harvest Methods. Emphasize the regeneration harvest of understocked and poorly growing stands, whether using even or uneven-aged systems. Intermediate cuttings in overstocked stands (thinning) and the salvage of dead and dying trees will also be emphasized. (Ref: Forest Plan page 4-26, #20e)

Monitoring Objective: The objective is to determine if silvicultural systems and harvest methods prescribed in FY 1997 timber sales are following the prescriptions specified in the Forest Plan.

Method: Information was compiled through review and collection of volume per acre data from individual timber sale EAs and contracts sold in FY 1997.

Data Collected: Volume and acres of regeneration cutting and intermediate (thinning) and salvage cutting in FY 1997 timber sales.

Results: The Forest did not meet annual regeneration cutting objectives, but exceeded the intermediate and salvage cutting objectives in FY 1997, as follows:

	Forest Plan Objective	FY 1997 Accomplishment
Regeneration Cutting-Volume (MBF)	66,000	9,900
Regeneration Cutting-Acres	3,500	585
Intermediate Cutting-Volume (MBF)	12,000	54,700
Salvage Cutting-Volume (MBF)	4,000	15,600

Recommendations: The Forest needs to place additional emphasis on regeneration cutting in the future in order to meet long-term sustained yield timber objectives as specified in the Forest Plan. Continuation of current silvicultural practices would require an amendment to the Forest Plan.

Public Involvement: Public involvement occurs during NEPA at the project level. Extensive public involvement occurred during the preparation of the Forest Plan.

Where is data located: Timber sale EAs and contracts are located in the Supervisor's Office in Redding, CA.

Timber Management (3)

Reforestation

Forest Plan Standard: Achieve stocking standards of well distributed trees within five years of final harvest (unless otherwise certified by a certified silviculturist as meeting ecosystem objectives) under all silvicultural methods. (Ref: Forest Plan page 4-26, #20g, and page 5-13, Timber)

Monitoring Objectives: The objectives are to 1) determine if reforestation goals are being met, and 2) determine if regeneration harvest areas are being adequately stocked within five years.

Method: Information on reforestation accomplishment was taken from the FY 1997 Silvicultural Accomplishment Report. Information on regeneration status was taken from the FY 1997 Status of Reforestation Report.

Data Collected: FY 1997 reforestation acres accomplished and FY 1992 regeneration harvest acres certified for reforestation in FY 1997.

Results: Reforestation acres accomplished in FY 1997 totaled 2439 acres. This is about 30% less than the 3500 acres projected in the Forest Plan because the Forest has emphasized thinnings and salvage more than regeneration cutting during the past few years.

Of the 3853 acres of regeneration harvest accomplished in FY 1992, 3785 acres (98%) were certified as adequately stocked in FY 1997. Sixty-eight acres were not certified due to inadequate stocking.

Recommendations: Continue monitoring annually.

Public Involvement: No direct involvement.

Where is data located: The FY 1997 Silvicultural Accomplishment Report and the FY 1997 Status of Reforestation Report are located in the Supervisor's Office in Redding, CA.

Timber Management (4)

Forest Plan Standard: Timber stand improvement projects will emphasize maintaining or improving growth, and healthy, vigorous trees, through release and thinning. (Ref: Forest Plan page 4-27, 1, and page 5-13, Timber)

Monitoring Objective: The objective is to determine if timber stand improvement goals are being met.

Method: Information on TSI accomplishment was taken from the FY 1997 Silvicultural Accomplishment Report.

Data Collected: FY 1997 TSI acres accomplished.

Results: TSI acres accomplished in FY 1997 totaled 9089 acres. This was more than the 5300 acres (171%) projected in the Forest Plan because the Forest still has TSI work in plantations created prior to the implementation of the Forest Plan.

Recommendations: Continue monitoring annually.

Public Involvement: No direct involvement.

Where is data located: The FY 1997 Silvicultural Accomplishment Report is located in the Supervisor's Office in Redding, CA.

Biomass (1)

Forest Plan Standard: Incorporate biomass opportunities into ecosystem analysis and project proposals that meet ecosystem objectives, such as dead/down material for wildlife and ground cover for soil protection, and to reduce fuel loading to complement the natural fire regime. (Ref: Forest Plan page 4-14, #3a)

Monitoring Objective: Determine if biomass opportunities have been incorporated into project proposals.

Method: Information on biomass volume offered and sold was compiled through the review and collection of volume data from timber sale contracts sold in FY 1997.

Data Collected: Volume of biomass sold in FY 1997.

Results: No volume targets for biomass were established in the Forest Plan. Actual accomplishment in FY 1997 was about 25,000 MBF of biomass sold as part of the Forests' regular timber sale program of 80,200 MBF. Biomass opportunities have been emphasized more on the east side of the Forest. This has resulted in a reduction of sawlog volume sold on the east side. Biomass opportunities have been limited on the west side of the Forest, primarily due to economic considerations.

Recommendations: In the future, greater priority should be placed on sawlog volume when allocating timber dollars (NFTM). Biomass opportunities should be multi-funded, using fuels, wildlife, EM, and other funding sources along with timber dollars to accomplish biomass removal projects.

Public Involvement: Public involvement occurs during NEPA at the project level.

Where is data located: Timber sale contracts are located in the Supervisor's Office in Redding, CA.

Facilities Management (1)

Forest Plan Standard: Schedule and perform road maintenance activities to meet management objectives. (Ref: Forest Plan page 4-16, #7a., and page 5-7, Facilities)

Monitoring Objective: To ensure that the Forest road maintenance program meets current regulations and direction.

Method: Informal sampling and on-the-ground visual inspections.

Data Collected: No formal data collected.

Results: Sampling showed that current funding is insufficient to fully maintain roads at 100% of target operational levels. System roads need to be managed and miles/levels reduced to meet resource concerns and investment protection.

Recommendations: Continued emphasis needs to be placed on drainage maintenance. Continue work on access and travel management.

Public Involvement: Through informal contacts and public comments and complaints.

Where is data located: Engineering Department at the Supervisor's Office in Redding, CA.

Facilities Management (2)

Forest Plan Standard: Closures of roads and/or selected areas, to assist in management of the Forests' resources, may be made by regulatory and/or physical devices on the road to meet management objectives for the following purposes: 1. to protect the road surface during the wet season so that maintenance and erosion are reduced; 2. to protect wildlife and/or help meet wildlife management objectives; 3. for safety, fire, and general administrative purposes; and 4. for special closures per Code of Federal Regulations (CFR). (Ref: Forest Plan page 4-16, #7e)

Monitoring Objective: To ensure that the correct road closure process is followed in accordance with current regulations and direction.

Method: Closure Plan review.

Data Collected: Forest road closure plan(s).

Results: Roads were subject to closure in FY 1997 due to unplanned major storm events in January. Closures were due to slides and bridge/culvert washouts.

Recommendations: Continue monitoring. Formal road closure process needs to be followed to ensure correct procedures are followed.

Public Involvement: Public notification and feedback reviewed.

Where is data located: Supervisor's Office, Engineering and at engineering zone offices at Mt. Shasta, Hayfork and Weaverville Ranger Stations.

Facilities Management (3)

Forest Plan Standard: Inspect dams and bridges at prescribed intervals and provide the maintenance necessary to keep them safe. (Ref: Forest Plan on page 4-16, #70)

Monitoring Objective: To ensure facilities are being inspected to determine that they do not pose a threat to public health and safety.

Method: Visual inspection utilizing forest inspection process as required by manual.

Data Collected: Bridge inspection/dam monitoring reports by the Forest bridge inspector.

Results: Due to a major storm event and attendant damage, we attempted to visually inspect all affected structures. This was accomplished. The formal yearly inspection schedule wasn't maintained due to this event.

Recommendations: Maintenance needs to be made more of a priority. Improvements are needed. Need to contract bridge inspections to catch up and ensure schedule is met.

Public Involvement: Posted information and public comments due to closures.

Where is data located: Engineering department in the Supervisor's Office in Redding, CA.

Facilities Management (4)

Forest Plan Standard: Monitor potable water sources and designated swimming areas according to the Safe Drinking Water Act and other regulatory health requirements. (Ref: Forest Plan page 4-16, #7p.)

Monitoring Objective: To ensure potable water sources provide water safe for public and employee use.

Method: Discussions with engineer who maintains program documents.

Data Collected: Bac-T Testing, water sample test results are part of normal programs. These were randomly checked and discussed.

Results: Program is being monitored according to regulations.

Recommendations: Continue monitoring program.

Public Involvement: Public was not involved in monitoring but was notified as required of poor test results.

Where is data located: Engineering department in the Supervisor's Office in Redding, CA.

Forest Pest Management (1)

Forest Plan Standard: Implement an integrated pest management (IPM) program to maintain or reduce forest pest impacts to acceptable levels and to maintain or enhance forest health and vigor. (Ref: Forest Plan page 4-18 #b)

Monitoring Objectives: Conduct yearly aerial surveys to monitor and develop a database of mortality statistics on the Forest.

Results:

Conifer Mortality on the Shasta-Trinity National Forests

Year	Pine Acres	Fir Acres	Mixed Conifer Acres	Total Mortality Acres
1994	15,259	10,871	0	26,130
1995	5,080	553	3,327	8,960
1996	7,712	3,242	514	11,468
1997	7,557	6,464	5,531	19,552

For more information regarding the Forest Health in California, refer to the Forest Pest Conditions In California - 1997 published by the California Forest Pest Council.

Recommendations: Continue monitoring

Where is data located: Supervisor’s Office, Redding, CA

Range Management (1)

Forest Plan Standard: Manage rangeland vegetation and livestock grazing activities in order to meet and/or provide for desired ecosystem conditions, including the sustainability of forage for livestock and wildlife and the attainment of the Aquatic Conservation Strategy and proper management of Riparian Reserves. (Ref: Forest Plan Goals, page 4-5 and Forest Plan Standards, page 4-22)

Key questions include:

- Is range condition and utilization being monitored and are Forest Plan range standards and guidelines being applied and let in riparian as well as upland areas?
- Is land suitable for livestock grazing being identified and appropriate management concepts being applied?
- Are the appropriate procedures and documentation being used in range planning, administration and monitoring?

Objective: Determine if rangeland ecosystems are healthy, if livestock/wildlife forage is available on a sustainable basis and if proper management of this resource and its associated attributes is occurring.

Methods: Two of the Forests 24 grazing allotments were vacant, thus information monitored was based on 22 active allotments. Information can be found in the Annual Grazing Statistical Report which is kept in the Forest Supervisors Office.

Both hard wire and electric fence systems were put in on four allotments in an effort to monitor use and management of riparian. Range readiness checks were made on each of 22 active allotments. Distribution of livestock use, utilization checks and suitability of range within several allotments was checked to determine if management objectives and Forest standards and guidelines were being met. 10 existing condition and trend transects were reread so that present ecological rangeland condition and vegetative composition could be assessed and compared to previous results. Annual operating plans were developed through coordination with the Permittees and local county extension service agents. Permittees were required to maintain allotment structures, including electric fences. Permittees were also responsible for maintaining proper distribution of their livestock. Basic standard for utilization included taking half and leave half of the current years growth on key plant species. To help in this effort, small cages were used in some areas for comparison purposes. Photos were taken in many areas of representative allotments for analysis and comparative purposes. The photos are compared to similar photos from previous years. Some allotments on the Trinity side include areas that are composed of annual rangelands. An ocular estimate of residual vegetative matter was made in representative areas. Some also include portions of transitory range, many of which were monitored to determine amount lost to succession.

Overall Results:

Standard or Objective	Activity	Accomplishments
Provide for proper management of selected riparian areas.	Riparian areas monitored and/or protected.	16 sites/75 acres
Designate lands that are suitable for livestock grazing	Determination of suitability	3,500 acres
Ecosystem analysis, NEPA documents and Annual Operation instructions is the primary tool for implementing management actions.	Annual Operating Instructions prepared and/or carried over.	22
WA & NEPA documents shall be prepared to bring authorized grazing use into conformance with Forest Plan objectives	Preparation of NEPA documents	Began work on WA/NEPA package for Manzanita/Sailor Bar
Verify range readiness, proper utilization and distribution on active allotments.	Range readiness, Utilization & Distribution checked	22 Allotments
Proper range allotment administration to regional/provincial standard including above items plus additional work	Range readiness, Utilization & Distribution checked to Provincial full standard	6-11

Yearly utilization measurements indicate that some areas might be able to sustain higher utilization levels while others may need less utilization. While use in some riparian areas exceeded utilization standards, overall results were determined to be consistent with Forest Plan standards and guidelines. The ecological status information collected will be correlated with integrated vegetative inventories and management plans for the respective allotments. Difficulty was encountered in several areas on the part of the Permittees to maintain riparian electric and/or hard wire fence enclosures because some fences were damaged by wildlife and vandalism. Data collected from re-reading of old Condition and Trend transects was not analyzed during FY 1997. Little use of riparian areas used by listed species of anadromous and little if any of this use took place during key life phases of the species. Primary areas included livestock stream crossings areas that coincided with spawning areas.

Recommendations: Continue monitoring. Examine how range monitoring can be incorporated into the interdisciplinary monitoring of projects. Conduct an analysis of selected C&T range transect data collected in FY 1997 and compare to data from the same transects collected over the past 30-45 years. Continue to work with and include Permittees in development and implementation of AOI. Need to develop information on and better understand the relationships of grazing livestock in wet to very wet areas early in season. Need to work closely with NMFS in monitoring and management of allotments the interface with anadromous habitats. Need to develop and implement timely process for completing reissue of permits.

Chaparral (1)

Forest Plan Standard: Assess brushfields for multi-resource management opportunities, and develop project plans for treatment. (Ref: Forest Plan page 4-16).

Weaverville Chaparral Pre-Burn Monitoring

Methods: Through ocular observation, many of the shrub fields were found to be decadent and of less value to wildlife than they would be if they were burned. Public scoping took place when the proposed action was developed.

Results and Recommendations: Approximately 2,700 acres are scheduled for burning next year.

Horse Mountain Prescribed Burn Post-Monitoring

Methods: Six photo-points were established and photos were taken before treatment to document vegetative condition and species composition. The area was also flown over after treatment to determine that objectives were met (soils, hydrology, geology, wildlife, fuels). Photo-point locations were documented via GPS unit and photos were taken at each site to record condition at site before and after burning.

Results and Recommendations: Six photopoints were established in representative vegetative conditions, both within and outside of riparian zones to measure effectiveness of implementation. This monitoring represented vegetation in the entire 3000-acre project area. Method worked well. Will be used in future prescribed burn projects. Need to burn more acres within the Shasta Unit NRA to improve forest health, wildlife habitat and reduce risk of fire. The project met implementation objectives. Future programs will include considerations for fall burning.

Where is data located: Data from this project is located at the Shasta Lake District fuels office within the Horse Mountain project files.

Town Mountain Prescribed Burn

Methods: After the project was implemented, the area was revisited to see if project objectives had been met. The area was photographed before and after in selected areas. Representative vegetative areas and riparian areas were visited after project completion to see if resource concerns were successfully addressed and that project objectives were met. Photos were taken.

Results and Recommendations: The area could have been burned hotter in the upland areas and the ephemeral riparian zones to completely consume some of the smaller diameter flashy fuels and accomplish wildlife objectives more fully. 1200 acres were burned. A representative portion of the project was visited to measure effectiveness of treatment. We will attempt a fall burn in FY 1999 to see if we can more closely approach meeting wildlife objectives while meeting the intent of other resource concerns.

Where is data located: Data from this project is located in project files at Shasta Lake District and in the Forest Soils office.

Special Areas (1)

Forest Plan Standard: Research Natural Areas. Develop a management plan for each RNA to safeguard the particular values while encouraging intended uses. Prescription X. (Special Area Management, standard and guide #7, p. 4-49).

Monitoring Objective: To document progress in RNA planning and raise awareness of the RNA program at the District level.

Method: Phone and mail communication with Regional Office, PSW Station and Ranger District staff.

Data Collected: Status of current RNA planning documents.

Results: Establishment Record was signed (by Regional Forester, Station Director, and other line officers) for Devils Rock-Hosselkus RNA. McCloud Ranger District continued to refine the management plan for Shasta Mud Flow RNA.

Recommendations: Continue monitoring development of RNA management plans.

Public Involvement: No public involvement.

Where is data located: Supervisor's Office and Regional Office files.

Public Use and Information Programs

Wild and Scenic Rivers (1)

Forest Plan Standard: Develop Management Plans, using the limits of acceptable change process (LAC) for the existing Wild, Scenic and Recreation Rivers. (Ref: Forest Plan, page 4-28 #23)

Method: An Implementation Guide was completed for the wild and scenic segments of the mainstem Trinity River below Trinity Dam, New River, and the North Fork Trinity River (July 1996).

Results: All existing portions of Wild and Scenic Rivers on the Shasta-Trinity NFs have management guidelines in place that utilize the limits of acceptable change process (LAC).

Recommendations: Continue to evaluate all proposed projects in terms of the standards and guidelines of the Wild and Scenic River documents.

Public Involvement: Public comments were received and incorporated in both documents.

Where is data located: Weaverville Ranger District.

Wild and Scenic Rivers (2)

Forest Plan Standard: Protect the existing character within a 1/4 mile boundary on either side of the proposed Wild and Scenic Rivers pending the outcome of their formal classification by Congress. (Ref: Forest Plan page 4-28, #23 Wild and Scenic Rivers)

Method: The final forest plan recommended 6 study rivers for national wild and scenic river designation. These rivers include: Hayfork Creek from Nine Mile Bridge to the confluence of the South Fork Trinity River, the upper segments of the North Fork and South Fork Trinity River, Beegum Creek from Round Bottom to Forest boundary Section 5, Virgin Creek and Canyon Creek. All projects within the 1/4 mile boundary of these river segments are evaluated in terms of the need to protect the wild and scenic character of the proposed river. The forest also participates in the National Rivers Cleanup Day. This is an annual event on the Trinity River that is joined by many local residents, guides, other partners and Forest Service employees.

Results: The 6 river segments are being protected for wild and scenic designation.

Recommendations: Continue project evaluation and community involvement.

Public Involvement: The public was involved with the study and recommendation of the 6 river segments and the events of the National Rivers Cleanup Day.

Where is data located: Weaverville Ranger District Office.

Wilderness (1)

Forest Plan Standard: Develop Wilderness Plans for each Wilderness using the limits of acceptable change (LAC) process. Designate management zones and allocate transition, semi-primitive, primitive, and pristine opportunity classes as defined in Appendix Q. (Ref: Forest Plan page 4-29, #24a).

Method: Wilderness Implementation Schedules (WIS) will be developed to implement direction from the Forest Plan.

Results: The Trinity Alps Wilderness, the Mt. Shasta Wilderness and the Castle Crags Wilderness all have schedules in place or nearing completion. The limits of acceptable change process (LAC) is the standard monitoring tool utilized in all wilderness areas.

Recommendations: Continue to implement the wilderness implementation schedules with the LAC process of monitoring.

Public Involvement: Public comments were received and incorporated in the development of the wilderness implementation schedules.

Where is data located: Supervisor's Office, Redding, California and District Offices.

Wilderness (2)

Forest Plan Standard: Post potential encroachment sites on the boundaries of the five Wildernesses within five years of Plan implementation. (Ref: Forest Plan page 4-29, #24b)

Method: Wilderness boundary posting is an on-going forest program.

Results: Areas of potential encroachment are monitored and posted. Recommendations: Continue program.

Where is data located: Supervisor's Office, Redding, California.

Wilderness (3)

Forest Plan Standard: Initiate visitor information and education programs that interpret and emphasize values and behavior that protect wilderness resources. Post regulations, orders, and/or permits outside the Wilderness boundaries. (Ref: Forest Plan page 4-29, #24f).

Method: Trailheads are used to post wilderness information. Wilderness rangers also provide information.

Results: All trailheads have wilderness information and educational material available to wilderness users designed to protect wilderness resources. Wilderness rangers are employed seasonally at the Trinity Alps Wilderness and year-round in the Mt. Shasta Wilderness to monitor conditions and provide additional information to visitors.

Recommendations: Continue programs.

Public Involvement: Public comments are received by the wilderness rangers.

Where is data located: Ranger District Offices.

Wilderness (4)

Forest Plan Standard: Maintain surface and sub-surface waters at the "high quality level" as defined by U.S. Environmental Protection Agency standards. (Ref: Forest Plan page 4-29, #24h).

Method: Conduct yearly sampling.

Results: Samples were collected in 1997. Results have not been completely analyzed, although they are expected to be within the range of defined high quality levels.

Recommendations: Establish protocols for yearly sampling and analysis as funding allows.

Where is data located: Weaverville Ranger District.

Recreation (1)

Forest Plan Standard: Manage developed recreation sites according to the Recreation Opportunity Spectrum (ROS) classes listed in Appendix F. Promote partnerships with user groups to assist in the operation, maintenance, and development of recreation sites and facilities (Ref: Forest Plan, page 4-23, #16 a., r.)

Monitoring Objective: Determine if ROS classes are being achieved and partnerships are being promoted.

Method: On-going monitoring by recreation staff and concessionaires.

Results: Forest-wide, it is reported that developed sites are being managed according to ROS classes. The majority of the developed sites within the National Recreation Area are currently managed by concessionaires. Concessionaires manage sites for compliance with ROS classes. Other partners in recreation on the forest include the Good Sam Club, the Youth Conservation Corps and the Hayfork Recreation and Tourism Group and the Mt. Shasta Service Unit. All these partners are instrumental in maintaining and enhancing recreation sites for forest visitors.

Recommendations: Continue partnerships.

Public Involvement: Direct involvement with partners.

Where is data located: Supervisor's Office, Redding, California.

Recreation (2)

Forest Plan Standard: Provide interpretive services to direct visitors to their recreation destinations, to facilitate understanding of resource management activities, and to acquaint them with unique or special features on the Forests and the function of forest ecosystems. Complete a recreation opportunity guide (ROG) for each ranger district. Highlight special places, theme areas, and unique recreation opportunities. (Ref: Forest Plan, page 4-23, #16 g., k.)

Monitoring Objective: Determine if interpretive services are being provided and ROGs are available for each ranger district.

Results: All frontline district receptionists are trained to provide interpretive services and help direct visitors to the areas that best meet their interests. Approximately 40,000 visitors were met at NRA facilities in 1997. The NRA also provided special interpretive programs from Memorial Day through Labor Day. Recreational staff reports that every district on the forest maintains recreation opportunity guides for many different features on each district. The districts also update these guides as needed and develop new guides as funding and personnel are available.

In 1997, the Shasta-Trinity NF also joined an interagency and community sponsored effort to initiate the development of the California Welcome Center in Anderson, California.

Recommendations: Continue providing interpretive services and participation in the California Welcome Center.

Public Involvement: Direct involvement with public.

Where is data located: Ranger District Offices.

Recreation (3)

Forest Plan Standard: Cooperate with the State, other agencies, and user groups to identify potential OHV trails. Where compatible with management objectives, develop segments of OHV trails that support the concept of a statewide OHV trail system. (Ref: Forest Plan, page 4-23, #16 f.)

Method: The Forest is working with other agencies and user groups to locate the potential Shasta-Trinity NF portion of the California Back Country Discovery Trail.

Results: When completed the forest will submit the group's proposal in a nomination package

Recommendations: Continue partnership work to locate trail.

Public Involvement: Direct involvement with OHV user groups and communities.

Where is data located: Ranger District Offices

Recreation (4)

Forest Plan Standard: Initiate the "significant caves" listing process in accordance with section 4(b)(1)(A) of the Federal Caves Resource Protection Act of 1988. (Ref: Forest Plan, page 4-23, #16 w.)

Method: Over 50 caves will be evaluated for listing by the forest.

Results: The listing process was initiated in 1997.

Recommendations: Continue listing process.

Public Involvement: Users nominated many of the potential significant caves.

Where is data located: Supervisor's Office, Redding California.

Visual Quality (1)

Forest Plan Standard: Maintain a diversity of scenic quality throughout the Forests, particularly along major travel corridors, in popular dispersed recreation areas, and in highly developed areas. (Ref: Forest Plan Goals, page 4-5)

Monitoring Objective: Assess integration of visual quality standards in forest management activity.

Method: Informal evaluation by Forest Landscape Architect.

Results: Observations indicate that visual quality objectives for diversity of scenic quality are being met in most projects affecting middle ground and background areas on the Forest. An example of excellent integration of visual quality standards was the Highway 89 forest health project initiated in

1997. Thinning and other treatments were implemented along the highway and visual quality was maintained and/or improved throughout the project.

An analysis of project types indicates that visual quality objectives are met on ERFO projects, construction of administrative sites and recreational special use permits. Projects dealing with land exchange, electronic sites, NRA fuels reduction projects (on private land) and some wildlife projects in visually sensitive areas need more attention to visual quality standards. It was pointed out that goals for visual quality standards need to be set at high levels due to the nature of human experience. A relatively small area of below standard visual quality can leave a relatively large impression in a person's memory of their recreational experience on the Forest.

Recommendations: Provide more visual quality training to ID teams where management activities are being proposed, especially in areas of visually sensitive foreground.

Public Involvement: Shasta County is directly involved with visual quality coordination in the Shasta NRA.

Where is data located: No formal studies have been prepared, recommendations are based on professional experience.

Heritage Resource Management (1)

Forest Plan Standard: Proposed projects will comply with inventory procedures, evaluate sites for eligibility to the National Register of Historic Places (NRHP), and mitigate adverse effects to eligible sites. (Ref: Forest Plan, page 4-16, 6. Heritage Resources, d, e, i.)

Monitoring Objectives: To determine the effectiveness of the inventory guidelines in the Forest Plan, to monitor Forests' progress in evaluating places for the National Register as required by the National Historic Preservation Act; and to determine if Forests' mitigation of adverse effects follows current direction.

Prior to FY 1997, inventory requirements varied from project to project, following the requirement of 36 CFR 800 to identify all places eligible for the National Register. Beginning in FY 1997, the Forest's inventory procedures were changed by a programmatic agreement with the State of California. The agreement specifies that all undertakings must be surveyed intensively, rather than the variable procedures described in the Forest Plan guidelines. Prior to FY 1997, the Forests attempted to evaluate as many places as possible that were in project areas, depending on funding. 36 CFR 800 required that all historic places in projects be evaluated for the Register. In FY 1997, the new programmatic agreement eliminated this requirement, but did require that a number of properties be evaluated each year as negotiated by the two agencies.

Methods: The FY 1997 Heritage Management Report was completed and submitted to the Regional Office and the FY 1997 Annual Report for the Section 106 Programmatic Agreement was completed and submitted to the State of California. Both of these documents address compliance with inventory procedures, evaluation of sites for eligibility to the NRHP and mitigation of adverse effects.

Data Collected: There were 57 projects inventoried during FY 1997 for a total of 28,137 acres surveyed. From these surveys, 47 sites were recorded and 20 sites were evaluated for eligibility to the NRHP. No projects were conducted in FY 1997 that required mitigation of adverse effects.

Results and Recommendation: Based upon monitoring reviews by the State of California and the FS Regional Office, the Forest is complying with the inventory standards described in the Agreement.

The number of sites evaluated for eligibility for the Register was sufficient for FY 1997. The number of places to be evaluated in future years is guided by a Section 110 plan agreed to by the Forest and the State. Current evaluation efforts are limited by budgets. Funding sources need to be identified to pay for evaluations

For more information related to accomplishments of these objectives, refer to both the FY 1997 Heritage Resource Management Report and the FY 1997 Annual Report for the Section 106 Programmatic Agreement prepared by the Forest Archeologist.

Public Involvement: Public involvement occurs during NEPA at the project level.

Where is data located: Heritage program office, Supervisor's Office.

Heritage Resource Management (2)

Forest Plan Standard: For Prescription XI sites, achieve full compliance with Section 106 and develop required protection plans. (Ref: Forest Plan, page 4-50, D3, D12)

Monitoring Objectives: To ensure that Forests' program of work is in compliance with Section 106 and 36 CFR 800. Determine if plans have been completed for significant heritage resources and determine if sites are being monitored sufficiently.

Methods: Both the FY 1997 Heritage Management Report and the FY 1997 Annual Report for the Section 106 Programmatic Agreement describe Forest compliance with Section 106.

Data Collected: Monitoring was recorded at 35 historic properties around the Forests, most of which were Prescription XI sites. No protection plans were prepared during FY 1997.

Results: In FY 1997, the vast majority of projects fell under the Programmatic Agreement for Section 106. Based on the monitoring of sites, the Forest appears to be in compliance with the Programmatic Agreement of Section 106. Reviews by the State Historic Preservation Office and Region 5 support this conclusion. A few sites were noted to have been subject to vandalism and damage; these are being further monitored.

Recommendation: Section 106 compliance appears to be in compliance with the requirements of the Programmatic Agreement and other direction at the present time. In some cases monitoring sites needs to be more frequent and priority of monitoring needs to be given to Prescription XI sites within proposed actions.

Interdisciplinary Involvement: Information resulting from archaeological studies is being shared with other specialists preparing watershed studies.

Public Involvement: Public involvement occurs during project level NEPA.

Where is data located: Heritage program office, Supervisor’s Office

Results Table:

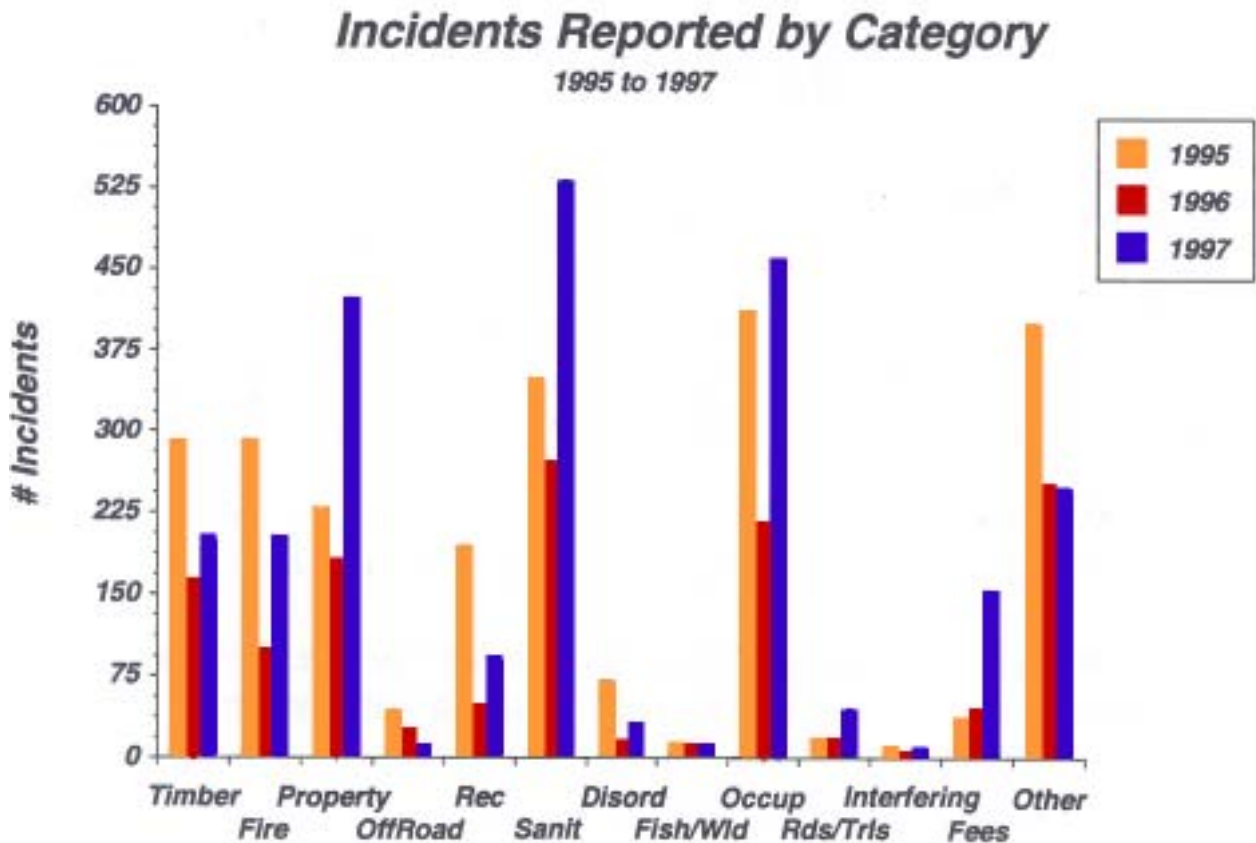
Standard or Objective	Number	Acres/Sites
Conduct a cultural resource survey before all ground-disturbing activities.	57 projects	28,137 acres
Evaluate sites for eligibility to the National Register	47 recorded	20 evaluated

Law Enforcement (1)

Forest Plan Standard: Protect the public interest by a thorough and aggressive program of violation prevention, violation detection, investigation and apprehension of violators and the presentation of cases for prosecution. (Ref: Forest Plan page 4-21, #13)

Monitoring Objectives: Monitor number of reported incidents on a yearly basis.

Methods: Data is recorded yearly by Law Enforcement staff in the LEMARSs report.



Results: The number of incidents recorded over the past 3 years indicate a large jump in 1995, an overall drop in 1996 and an upward trend again in 1997. The peaks in 1995 were due primarily to counting incidents recorded by concessionaires at Shasta Lake, and the Shasta County Sheriffs of Boating and Safety. In 1996 incidents recorded by these two groups were not counted by the Forest, hence the

apparent drop from 1995. In 1997, with more consistent reporting guidelines, additional staffing, and reinstated training for Forest Protection Officers, the data more accurately and consistently reflects trends of incidents and violations. As the incident reporting system stabilizes over the next few years, better analysis and recommendations will be possible.

In spite of the reporting difficulties, one can still see the areas of highest incidents on the forest. They are violations of sanitation, occupancy and property (vandalism).

Recommendation: Continue monitoring.

Where is data located: Supervisor's Office, Redding, California

Social and Economic Environment

Adaptive Management Area (1)

Small Diameter Demonstration Project

Forest Plan Standard: Development, demonstration, implementation, and evaluation of monitoring programs and innovative management practices that integrate ecological and economic values. (Ref: Forest Plan, page 4-69, Technical Objectives).

Monitoring Objective: To report implementation and effectiveness of actions that lead towards the goals and objectives for the Hayfork Adaptive Management Area.

Monitoring was conducted to determine: 1) if small diameter timber can be cost-effectively harvested and processed, 2) if markets exist or can be developed to fund future small diameter harvest activities, 3) to examine the impacts on soils and residual stands from use of the modified yarder; and 4) to examine internal processes and administrative barriers encountered to implement this project.

Methods/Data Collection: To determine the cost-effectiveness of harvesting and processing small diameter materials, the following data was collected by the Watershed Training and Research Center: 1) volume of timber harvested in different categories; 2) number of truck loads and average weight per load; 3) production time and cost for falling, yarding, sorting, and milling; and 4) production costs for value-added materials. To determine the impact on soils and vegetation the following data was collected; 1) photo-points before and after treatment; 2) transect lines and cover plots to sample ground cover; and 3) counting and estimating damage to residual trees and flagging them for future monitoring. To examine internal processes, the acting AMA Coordinator interviewed employees involved in this project at the District, Forest and Regional Offices.

Results and Recommendations: First year results show production costs exceeded the market value of the products. However, there are many opportunities to improve production costs. It is too soon to determine if small diameter timber can be cost-effectively harvested and processed on a large-scale. The development of product lines and markets is still in its infancy. But there appears to be market potential for "custom" or "boutique" furniture and flooring, particularly using suppressed Douglas-fir. Monitoring

confirmed the initial expectation that the yarding methods used would cause minimal soil disturbance. The successful implementation of this project will enable us to more efficiently implement the next demonstration we undertake. In summary, the harvesting and utilization of small diameter material appears to have potential and could enable us to improve forest health by thinning stands in a low-impact manner while providing economic benefits to the local community.

Public Involvement: This project was a partnership between the Hayfork Watershed Research and Training Center and the Forest Service. Since almost every aspect of this project was a demonstration, there was tremendous interest in the project. The Watershed Center and the Forest Service have hosted countless field trips to the project and mill site. In addition, the Watershed Center produces a newsletter to keep people informed about this and other projects.

Rural Development (1)

Forest Plan Standard: Cooperate in the research and development of rural economic opportunities for new forest products consistent with existing law, financial realities, and known environmental constraints. (Ref: Forest Plan, page 4-5 #26).

Monitoring Objective: Assess effectiveness of N.W. Forest Plan Economic Adjustment Initiative.

Method: Administration of a Rural Community Assistance Grant to complete a field demonstration study in cooperation with the South Fork Management Unit and the Forest Service Forest Products Laboratory. The task was to examine the economic feasibility of harvesting small diameter logs and developing value added manufacturing steps and markets

Results: Documented in the final reports on this demonstration study.

The study found that the small diameter logs have many of the same superior characteristics of old growth timber and therefore appear to have potential in flooring and furniture markets.

The ecosystem effects are generally a reduction in fuel hazards and risk to stand losses to wildfire.

Recommendations: A comprehensive study needs to be completed to fully understand the feasibility of utilization of small diameter logs.

Public Involvement: Cooperation with the Watershed Research and Training Center.

Where is data located: Shasta-Trinity National Forests Supervisor's Office and Hayfork Ranger Station.

Rural Development (2)

Forest Plan Standard: Work with rural communities to help diversify their economic base (Ref: Forest Plan, page 4-5 #7).

1. Monitoring Objective: Assess effectiveness of N.W. Forest Plan Economic Adjustment Initiative.

Method: Sixteen grants were awarded for fiscal year 1997. Reviewed final reports for grants awarded.

Results: Three of the 16 grants have been completed. The remaining grants are still in progress. The Tourism Extension Agent Grant provided technical assistance to communities and counties throughout a nine county region. Results of this grant include sponsorship of the National Outdoor Writers Conference in Redding, CA (hosting over 300 writers, generating tourism articles concerning the area).

Recommendations: The Tourism Extension Agent program appears to potentially provide a technical support and marketing role for rural communities.

Public Involvement: Broad based public meetings at key development stages.

Where is data located: Shasta-Trinity National Forests Supervisor's Office and Hayfork Ranger Station.

2. Monitoring Objective: Report the findings of USDA Forest Service Grant #R5-14-96-8, LINKAGES THROUGH SOFT INFRASTRUCTURE, Phase III, Final Report.

Method: The Report was funded by a grant through the U.S. Forest Service to monitor the local economic impacts to the community of Hayfork, CA cumulatively from projects implemented by the Forest Service on the Trinity National Forest.

Results: Documented in the final report. The study confirmed several key assumptions including, the high level of unemployment, poverty, and low income level based on median households in Trinity County. The study also confirmed that a small portion of contracted project work is realized by Trinity County businesses.

Recommendations: Continue monitoring economic impacts of projects including identifying measuring, and evaluating local economic benefits derived from National Forest activities.

Public Involvement: Cooperation with the Watershed Research and Training Center.

Where is data located: Shasta-Trinity National Forests Supervisor's Office and Hayfork Ranger Station.

3. Monitoring Objective: Develop and implement communication plan to share the key goals of the "Strategic Marketing Plan for Northern California Tourism and Outdoor Recreation" with community leaders throughout the Province.

Method: Held a series of broadbased community meetings in Northern California to present the key opportunities and issues of the plan.

Results: These informational briefings reached 10 communities and over 250 people. Responses from attendees helped develop action plans for the issues and opportunities identified in the strategy. Grants were awarded and partnerships developed which resulted in tourism promotion brochures for scenic byways, off-road vehicle routes, regional trail systems and recommended new routes for additional scenic byways.

Public Involvement: Tourism and recreational organizations, user groups and other governmental agencies including BLM, State Parks, National Park Service, and the US Fish and Wildlife Service.

Where is data located: SO and Regional County and Community Tourism organizations.

Community Development (1)

Forest Plan Standard: Emphasize the development of partnership programs through coordination with interested public and agencies (Ref: Forest Plan, page 4-5 #28).

Monitoring Objective: Assess the progress in developing partnerships with interested public and agencies.

Method: Personal interview and anecdotal information from partnership participants.

Results: Continuation of McCloud River Coordinated Resource Management Coalition. Developed public access to outstanding white water boating opportunities for an area that was previously land locked by all land ownership. Pioneered development of a habitat management strategy adopted by all landowners within the McCloud River corridor for enhancement of Red Band Trout.

Formation and implementation for the Grassy Flats Coalition and Upper Clear Creek Watershed Coalition. Pioneered citizen, private industrial, and public land agency involvement in development of watershed assessment for the Grassy Flats and Upper Clear Creek Watersheds.

Continuation of the Mt. Shasta Fee Demonstration Coalition. Developed a broad based volunteer citizen group to perform key maintenance and cleanup tasks for recreation sites along the Everitt Memorial Highway. Expectations have been exceeded.

Recommendations: Prepare and implement a Red Band Trout habitat enhancement plan. Complete the watershed analysis for Upper Clear Creek. Continue implementation of recommendations from the Grassy Flats Watershed Analysis.

Public Involvement: Broad based involvement. Public participation began in the analysis phases of project development and continued through key steps in the process.

Where is data located: McCloud River at McCloud Ranger Station. Grassy Flats at Hayfork Ranger Station. Upper Clear Creek at Weaverville Ranger Station. Everitt Memorial Highway at Mt. Shasta Ranger Station.

Tribal Government Program (1)

Forest Plan Standard: Develop partnerships with Native American tribes and consult with Native Americans at the planning and project level of analysis. (Ref: Forest Plan page 4-4 #7, and page 4-50 #4)

Monitoring Objectives: The objective of monitoring the Tribal Government Program is to determine if partnerships and the consultation process are established and serving to improve relationships, communication and understanding between the Forest Service and Indian people.

Methods: MOUs have been signed with the Pit River Tribe, the Shasta Nation, the Redding Rancheria, and the McCloud Wintu. Participating agreements have been signed with the Pit River Tribe and the Local Indians for Education, Inc. Annual meetings are held with recognized tribes and Native Americans are consulted during scoping and watershed analysis where there are issues of concern.

Results: In FY 1997, about 20 projects consulted with Native Americans, such as timber sales, special use permits, electronic repeater projects, etc. Several watershed studies were completed in FY 1997 that involved scoping with Native Americans. The Forest implemented several projects with the Pit River tribe on the McCloud Ranger District during FY 1997. These were developed as part of a participating agreement with the tribe. Projects involved the reintroduction of Native vegetation.

Native American consultations have been productive in resolving issues arising during project planning. Some projects were modified following consultations. Native Americans are interested in both historical places and areas of current use on the Forest. The Pit River Tribe, the McCloud Wintu and the Hayfork Wintu are the most actively involved tribal groups.

For more information related to these objectives, refer to the Heritage Resource Management Report for FY 1997 prepared by the Forest Archeologist.

Recommendation: Continue consultations and partnerships at current level.

Public Involvement: Direct involvement with tribes.

Where is data located: Supervisors Office, Redding, California

Monitoring at Other Scales

Forest Plan Implementation

Monitoring Objective: Disclose Forest highlights concerning the NEPA process.

Methods: Informal review of Forests Schedule of Proposed Actions, environmental log, and appeal log.

Results: The Forest initiated a variety of projects for implementation under the NEPA process ranging from the issuance of special use permits, timber harvest, fuels treatments to the improvement of chaparral. No Environmental Impact Statements were prepared in FY 1997. All projects were designed to be consistent with the direction from the Shasta-Trinity National Forests Plan. No non-significant amendments were proposed or issued.

The Schedule of Proposed Actions (SOPA) was issued to approximately 270 interested individuals or groups.

An administrative appeal pursuant to 36 CFR 215 was filed on one project decision notice. The Responsible Official's decision was affirmed.

Recommendations: Continue to incorporate policies and procedures to improve implementation of the NEPA process and documentation.

Northwest Forest Plan Monitoring

Three timber sales were monitored on the Shasta-Trinity NFs as part of the Northwest Forest Plan (NWFP) Implementation monitoring effort. The purpose of this monitoring was to determine whether or not the standards and guidelines from the NWFP were being consistency implemented on these timber sales.

The monitoring review teams consisted of Province Advisory Council (PAC) members and other invited members of the general public. The three sales reviewed were Divide Helicopter and Happy Camp Mt. Blowdown (Klamath Province Big Bar District), and Mud Thin (NW Sacramento Province, McCloud District).

A brief summary report of the monitoring of these three sales follows:

Divide Helicopter Timber Sale Field Review Report

I. Brief Description of Project: purpose and which units were selected and why:

This was a “pre-NW Plan” sale (original NEPA done in 1985) that was modified after implementation of the NW Plan to conform with the new standards and guidelines of the Plan. The sale consists of about 2 MMBF of regeneration cutting (green tree retention), in 4 separate cutting units. Yarding will be done by helicopter. No new road construction is planned. No logging or other sale activity had occurred at the time of the monitoring field review. The entire sale area is within the Hayfork AMA. Matrix standards and guidelines were applied in the AMA for this sale. One GTR unit, which was adjacent to a riparian reserve area, was selected for field review by the team. GTR and riparian reserves were the key standards and guidelines that the team identified for review.

II. Summary of Findings:

All of the applicable standards and guidelines were met or exceeded, according to the District’s response to the questionnaire. The review team agreed in all cases. Of the 129 questions in the timber sale questionnaire, 5 were answered “exceeds,” 23 were “meets,” and 101 were “N/A.”

III. Highlights of the Review:

Participation by the timber purchaser’s representative was very helpful during the review by providing input from a different perspective.

The District Representative was very knowledgeable about the sale and was able to provide valuable answers to the team’s questions and concerns.

PAC member attendance was very low, which indicates a need to evaluate the benefit of this activity to the PAC.

It was suggested by the Review Team that a follow-up monitoring review should be done at the completion of the logging of the sale, either as part of the NW Plan Monitoring, or as part of Forest Plan monitoring.

Happy Camp Mountain. Blowdown Timber Sale Implementation Monitoring Field Review Report

I. Brief Description of Project: purpose and which units were selected and why:

The primary purpose of this sale was to reduce fuel concentrations by salvaging windthrown timber in a Late-Successional Reserve (LSR). The sale was sold under the “Salvage Rider.” The sale included about 195 MBF of timber in 8 separate cutting units. Yarding was done by tractor. No new roads were constructed. All logging and slash treatment had been completed at the time of the monitoring field review.

One salvage unit, which included a riparian reserve area, was selected for field review by the team. Salvage in the LSR and riparian reserves, and snag and coarse woody debris retention, were the key standards and guidelines that the team identified for review.

II. Summary of Findings:

All of the applicable standards and guidelines were met, except one, according to the District’s response to the questionnaire. The Review Team agreed with the District’s answers in all cases, except one, which they felt should be “exceeds” instead of “meets.” Of the 129 questions in the timber sale questionnaire, 1 was answered “exceeds,” 26 were “meets,” 1 was “fails,” and 101 were “N/A.”

III. Highlights of the Review:

Participation by the logger of the sale was very helpful during the field review by providing input from the logger’s perspective.

The District Representatives were very knowledgeable about the sale and were able to provide valuable answers to the team’s questions and concerns.

Again, PAC members were not widely represented at this field review.

Mud Thin Timber Sale Implementation Monitoring Field Review Report

I. Brief Description of Project: purpose and which units were selected and why:

The primary purpose of this sale was to commercially thin 90-100 year old natural stands. This treatment was part of a Forest Health/Fuels Reduction Project.

The sale included 4200 MBF on 827 acres on matrix lands. Yarding was done by tractor and no new road construction was involved. About half of the sale had been logged at the time of the monitoring field review.

II. Summary of Findings:

All of the applicable standards and guidelines were met or exceeded, according to the District's response to the questionnaire. The review team agreed in all cases. Of the 129 questions in the timber sale questionnaire, one was answered "exceeds," 26 were "meets," and 102 were "N/A."

III. Highlights of the Review:

Participation by the timber purchaser's representative was very helpful during the field review by providing input from the purchaser's and logger's perspective.

The District representative was very knowledgeable about the sale and was able to provide valuable answers to the team's questions and concerns. Some review team members suggested that participation in the field review by other District personnel, such as marking crew and other specialists, would have been valuable.

The review team agreed that the sale was consistent with the NW Plan standards and guidelines. Sale objectives were met and enough dollars were available from the sale to accomplish the post-sale fuel reduction work.

1997 Shasta-Trinity National Forests Program Accomplishments Table

Ecosystem Analysis	
Forest Resource Management EAs	13
Watershed Analysis	4
Facilities Recreation EAs	31
Late Successional Reserve Assessments	1
Timber Management	
Timber Volume Offered for Sale	80.2 MMBF (5.6 GTR)
Timber Volume Harvested	46 active sales of 49.5 MMBF
Fuels Reduction (BD/KV acres)	4340 acres
Timber Stand Improvement (acres)	9089 acres
Reforestation (acres)	2439 acres
Christmas Tree Permits Issued	5306 permits
Firewood sold	7407 cords
Wildlife	
Threatened/Endangered/Sensitive (TES) Species:	
Habitat Structures Installed	10 structures
Habitat Restoration/Enhancement	10 acres
Habitat Inventoried	313,000 acres
Other Wildlife:	
Habitat Structures Installed	11 structures
Habitat Restoration/Enhancement	1300 acres
Habitat Inventoried	2000 acres
Fisheries	
Anadromous Fisheries (includes TES):	
Habitat Restoration/Enhancement	87 miles
Stream Inventory	80 miles
Inland Fisheries (includes TES):	
Habitat restoration/enhancement	150 acres and 2 miles
Monitor inland riparian habitat	35 miles

Shasta-Trinity National Forest

Range	
No. of Cattle Grazed	2000
No. of Active Grazing Allotments	22
No. of Permittees	24
Horses	20
Sheep	1000
Beefalo	40
Improvements, non-structure	10 acres
Improvements, structures	3 structures
Noxious weed treatment	185 acres
Engineering	
Road Construction	3.24 miles
Road Maintenance	1,928 miles
Road Reconstruction	9.82 miles
Roads Decommissioned	5.6 miles
Fire	
Forest Wildfires	161
Total acres Burned by Wildfires	140 acres
Prescribed Fire	4340 acres
Human Resources Program:	
Youth Conservation Corps (YCC) (enrollee wks.)	224
Senior Community Service Employment Program (SCSEP) (enrollee hrs.)	27,827
Soil/Water/Air	
Water Quality Monitoring	29 BMP sites
Ecological Unit Inventory	325,405 acres
Other National Forest Facts:	
Receipts Paid to Counties	\$6,393,356
Receipts From (in dollars):	
Timber Sales	6,463,326
Recreation Special Uses	1,413,952
Recreation User Fees	70,026
Power	99,924
Grazing Fees	4,550
Land Use Permits	75,609
Forest Plan Allocations:	
Matrix	23%
Adaptive Management Areas	8%
Riparian	13%
Late Successional Reserves	25%
Administratively Withdrawn areas	7%
Wilderness	24%

