

MENDOCINO NATIONAL FORESTS

FISCAL YEAR 1997 (FY 97) MONITORING AND EVALUATION REPORT For Monitoring Activities Conducted from 10/1/96 to 9/30/97

OVERVIEW AND BROAD CONCLUSIONS

Chapter V of the Mendocino National Forest Land and Resource Management Plan includes direction regarding monitoring and evaluating the implementation of the management direction in the Forest Plan. This chapter includes 62 monitoring objectives. Twenty-four of those objectives were accomplished to some degree, 19 are not required annually, and 13 may require decisions from the Regional Ecosystem Office regarding methods, timing, and standards to be fully implemented. The most thorough monitoring activities accomplished in FY 97 were in the areas of Heritage Resources and Threatened, Endangered, and Sensitive Plants programs. Monitoring objectives related to some types of facility maintenance needs were also relatively thorough. Eighteen of the objectives were monitored at the full Plan level, though analysis of results could be improved for most of them. Overall, the Forest program of work was funded at 74% of the Plan level.

Broad conclusions cannot be drawn from the monitoring and evaluation process used to produce this report. However, Forest personnel are utilizing more interdisciplinary teams to conduct monitoring, and the comparison of results to actual requirements is improving. Monitoring information for entire resource program areas were not available for evaluation, therefore, this report documents only a portion of the efforts made in FY 97.

Trends or problems in specific areas have been noted. Four of five timber sales reviewed for snag and coarse woody debris retention may have fallen short of guidelines for an apparent variety of reasons. Increased monitoring of snags and CWD may have occurred due to a perception that we were having difficulty meeting the standards and guidelines. The selection of sales to review was not random, and the methods to determine actual amounts tended to be ocular estimates. Therefore, specific conclusions regarding how we are implementing the standards and guidelines and the possible reasons for failure cannot be drawn from the current data. A specific, statistically valid sampling method to draw specific conclusions and to make specific corrective recommendations should be developed and implemented in order to accurately identify problem areas.

Many monitoring objectives can be met by utilizing the results of required oversight and reporting such as harvest inspector daily reports and reforestation stocking surveys. There are many opportunities to utilize professional observations which lead to proposed actions or program development. Information from these sources are often not documented or are otherwise unavailable. Examples include road maintenance needs whereby system roads are regularly driven and maintenance needs are noted on maps or retained in memory. Two monitoring objectives may be satisfied if the observers were to document their best estimate of the cause of the maintenance problems (e.g. heavy traffic during the wet season, water bar failure, an aging culvert, normal use patterns, etc.).

Full utilization of data from traditional efforts or collecting additional data during traditional efforts should be a desirable practice, where possible, in a time of reduced budgets and personnel. At this time there are no mechanisms for making the information available to an interdisciplinary team for an evaluation of the results.

SUMMARY OF MONITORING ACTIVITIES AND EVALUATION OF RESULTS

The following information reflects some of the monitoring activities which took place in FY 97 and is organized by major resource or program areas. Information includes a summary of the monitoring, a brief description of the evaluation, and the location of the supporting documentation. Additional information regarding future monitoring efforts is included where available. A comparison of actual and predicted outputs for selected resource areas, is located in Appendix 1.

AIR QUALITY

Monitoring Objective: Determine trends in Air Quality Resource Values within Class I Wilderness areas.

Visibility monitoring concluded in FY 96. An automated camera was stationed on Leech Lake Mountain and recorded images of Black Rock Mountain during the summers of 1991 through 1996. An analysis of the visibility in relation to land management activities which may affect visibility within the Yolla Bolly-Middle Eel Wilderness has not been conducted to date. Documentation is located in the hydrology files at the Supervisor's Office.

Monitoring Objective: Assure that all prescribed fires are conducted in compliance with air quality regulations.

Burn plans are developed for each prescribed fire and include requirements which will result in each fire meeting air quality regulations. In addition, pre and post fire evaluations are required to be recorded in the burn plans. The evaluations are conducted by the burn boss at the project site. Two of the seven burn plans for FY 97 included the pre and post burn evaluations, and both fires occurred within the burn prescription achieving the desired objectives of the project. One project in close proximity to a Class I wilderness area did not include measures to ensure that smoke did not enter the wilderness, and the pre and post burn evaluation was not documented. Records are available in District fire management files, and the dispatch files in the Supervisor's office.

ECONOMICS

Monitoring Objective: To validate total planned costs for Plan implementation.

The following table shows the Plan versus actual budgets in 1997 dollars. The "Other" category includes general administration, ecosystem planning/inventory/monitoring, watershed, range, heritage resources, and other miscellaneous programs.

Category	Plan Level (M\$)	Actual (M\$)	% of Plan Level
Fire	4,009	2,844	71
Timber	2,636	3,264	124
Roads	2,707	1,350	50
Recreation	2,501	879	35
Wildlife	715	483	68
Other	4,699	3,949	84
Total Budget	17,268	12,769	74
Suppression	1,823	229	13
Total Cost	19,091	12,998	68

The total budget and total cost of implementing the Forest Plan in FY 97 were within the 35% variation standard set for this monitoring objective. Of the large categories included, only the roads and recreation areas fell outside the 35% range. The cost of fire suppression was only 13% of predicted and the acreage burned by wildfire was only 1% of predicted, as opposed to 415% and 338% the previous year. On an acreage basis, the cost of fire suppression in FY 97 was \$9,745 per acre, compared to FY 96 of \$108 per acre, and as compared to the predicted cost of \$880 per acre.

FACILITIES

Monitoring Objective: To determine the adequacy of road design and management in relation to user safety.

Thirteen accident reports were completed by Forest Service personnel. Seven of the accidents occurred on Forest Service maintained roads or sites; three occurred on county maintained roads; and three occurred on state highways. Seven accidents were attributable to driver error on the part of Forest Service personnel. Three accidents were attributable to driver error on the part of private citizens, and three accidents were caused by uncontrollable and unavoidable events (black ice, rock thrown by passing vehicle). Most of the accidents attributable to driver error could have been avoided by taking the time to clear the road of an obstacle or by walking an impassible road rather than attempting to drive. Reports are located in the Personnel files at the Supervisor's Office.

Monitoring Objective: To determine the effectiveness of road design and maintenance in promoting stability.

The standard for this monitoring objective is "acceptable road maintenance costs". The road maintenance budget for FY 97 was \$801,000, and 2,480 miles were maintained (MAR 91.2). The Forest-wide cost per mile would then be \$323 per mile with some roads needing little maintenance and a few roads needing extensive maintenance. Predicted maintenance costs developed for the Forest Plan were \$1,022 per mile for arterial and collector roads (wider, higher standards) and \$531 per mile for

local roads. To determine the effectiveness of road design, cost by road or road segment may be more revealing.

The watershed analysis reports for the Thomes and Brisco Creeks watersheds identified roads as major contributors of sediment, and have determined that lack of funding leading to inadequate road maintenance will be an impediment to attaining ACS objectives in these watersheds. Information is located in the watershed analysis records and the engineering records at the Supervisor's office.

Monitoring Objective: To determine facility maintenance and replacement needs, and energy consumption.

Four bridges were inspected and all maintenance records were reviewed in FY 97. Immediate repair needs to protect the Beaver Creek bridge from an active landslide were identified. While a contract for the repair work was prepared by the Federal Highway Administration, bids for the repair work exceeded the projected amount. Modification of the contract or allocation of additional funds for the project may be necessary. Inspection reports are located in the engineering files at the Supervisor's Office.

Transportation facilities are evaluated for maintenance needs though records were not available. During the Thomes and Brisco Creeks watershed analysis, existing condition of roads, their impacts to other resources, and potential maintenance needs were evaluated. The report concludes that the current budget for maintaining roads within the Black Butte watershed may not be adequate and is an obstacle to attainment of ACS objectives.

An engineering firm was contracted to evaluate sewage treatment options for the Lake Red Bluff Recreation Area. The Plan calls for connecting the facilities at the site to the City of Red Bluff's sewage system. It was determined that in order to prevent the build-up of methane gas in the connecting system, 10,000 gallons of water would have to be pumped through the system each day. This would result in high energy costs of pumping and the inefficient use of water.

FIRE AND FUELS MANAGEMENT

Monitoring Objective: To determine if the terrestrial and aquatic resources are being managed according to the standards and guidelines.

Six fuel treatment projects within the Forest were reviewed for compliance with various standards and guides for protecting aquatic and terrestrial resources. Five of the projects were fuel treatments following timber harvest, and one project was a fuel break construction. The five timber sales were evaluated specifically for retention of prescribed amounts of coarse woody debris. Sample plots were utilized for only one of the five projects. Whether measured or simply observed, coarse woody debris was not retained in prescribed amounts in the five project areas. No results of achievement of fuel reduction objectives were documented for these projects. Documentation of the results for the sixth project, fuel break construction, focused on planning, funding sources, and costs rather than standards and guidelines. Documentation is located in the Grindstone Ranger District files.

Monitoring Objective: To evaluate the effectiveness of Forest Plan standards and guidelines in affording appropriate protection to other resources from adverse effects resulting from the use of prescribed fire.

Effectiveness monitoring conducted during FY 97 included an evaluation of the effectiveness of Best Management Practices designed to protect water quality from the effects of prescribed burning. Two sites were evaluated and the BMPs were found to be fully successful on one of the sites. The second site included burning within an SMZ which is not consistent with the BMPs and resulted in a minor amount of sediment eroding from the streambanks into the channel. Documentation is located in the hydrology files at the Supervisor's Office.

Two prescribed burn projects on the Grindstone District were evaluated for their effectiveness in achieving the planned objectives (e.g. causing less than 10% tree mortality; consuming greater than 50% of the brush cover). Both projects were implemented as planned and were effective in achieving the project objectives. Documentation is located in the Grindstone Ranger District files.

Monitoring Objective: To provide a comparison of actual and predicted acreage loss from wildfire.

Approximately 23.5 acres of National Forest lands were burned by wildfire in FY 97. The estimated annual losses is 2,027 acres averaged over a ten year period, and the current two year average (after two full years of implementing the Plan) is 34,284 acres. The model used to estimate future wildfire losses utilizes a combination of fire history and planned management activities. The fire history data input to the model included only the 1970 to 1985 time period, a notably inactive time period compared to the records spanning 1909 to the present. In the past decade alone, the Mendocino has experienced two of the largest fires in this Forest's recorded history. Records are stored in the fire management files at the Supervisor's office.

HERITAGE RESOURCES

Monitoring Objective: To assure that heritage resource values are given appropriate consideration in project planning and design.

The objective was met through Forest's compliance with the National Historic Preservation Act (NHPA) and heritage resources input provided in compliance with the National Environmental Policy Act. Supporting documentation is found in "Mendocino National Forest Heritage Resources Annual Report 1997" for those undertakings covered by the Forest's Programmatic Agreement for Section 106 compliance (NHPA), and Heritage Resource project files for those undertakings where compliance with NHPA required project-specific consultation with the State Historic Preservation Officer. Each action taken must be evaluated for effects to heritage resources.

Heritage resources were not given appropriate consideration for one timber sale project when the project boundary was changed following the planning phase. While a site occurred within the new area, an archaeologist determined that the site was not affected. A site within a tree planting project was not protected; however, it too was not affected.

Monitoring Objective: To determine the extent of effects of management activities on heritage resources.

Twenty-two archaeological sites were monitored during or after project implementation. Standards and guides were implemented and effective in protecting 20 sites. During two timber sales, protection measures for two sites identified in the contract were not followed. One site was not affected. Another site was affected and \$3,000 was collected from the timber sale purchaser for evaluation of the site. Documentation is included in the "Mendocino National Forest Heritage Resources Annual Report 1997".

Monitoring Objective: To determine the extent and effects of vandalism on heritage resources.

Nine archaeological sites were evaluated for vandalism. One site that had been subjected to illicit artifact collection was documented and Law Enforcement personnel have been periodically patrolling this site and two other sites in close proximity. Another site was inadvertently affected when a private citizen travelled off of a snow covered road and became mired in the mud. No action was taken. Information is contained in the "Mendocino National Forest Heritage Resources Annual Report 1997".

Monitoring Objective: To determine the extent of natural degradation of heritage resources.

Monitoring was not undertaken because there were no reported occurrences.

RANGE

Monitoring Objective: To assure compliance with forage utilization standards specified in Forest Plan.

Utilization monitoring was measured on nine allotments in 15 locations. The records are located in each District's files. Seven allotments were in full compliance; and two allotments met the dryland standards and riparian standards for part of the area, and did not meet the riparian standards in specific areas. Utilization checks are currently being conducted for FY 98.

Monitoring Objective: To assure that permitted livestock use is managed consistent with Forest Plan direction.

Non-compliance problems were checked on seven allotments. The records are located at each District office. The results varied from full compliance on three allotments; 80% compliance with additional work needed on three allotments; and 50% compliance with plan objectives on one allotment. Examples of non-compliance include cattle drifting outside allotment boundaries and into rest pastures, salt placed in the wrong locations, cattle on the allotment before and/or after permitted dates, and failure to meet grazing utilization standards.

Monitoring Objective: To determine current condition and trend of grazed rangeland ecosystems.

Information from eight condition and trend transects was collected in FY 97. The information will be analyzed and reported in the FY 98 monitoring and evaluation report.

Monitoring Objective: To assure that permitted livestock use is managed consistent with attainment of aquatic conservation strategy objectives.

Condition and trend studies have not been set up in riparian areas within range allotments. An interdisciplinary team is needed to select the location and objectives for the study prior to establishment.

Monitoring Objective: To determine the effectiveness of allotment management in reducing conflict with other resource values and uses.

Three allotments were evaluated by an interdisciplinary team. Solutions and monitoring were proposed to reduce conflicts. A cattle guard was constructed in 1998 to reduce conflicts between livestock grazing and T&E plants. Monitoring was conducted to ensure that T&E plant species habitat was not degraded on two allotments.

Monitoring Objective: To evaluate success of structural and non-structural rangeland improvements.

Four rangeland improvement projects were evaluated. Three fence projects were successful. A cattle enclosure was evaluated, and the fence was successful in providing seasonal protection for a meadow.

RIPARIAN AND AQUATIC ECOSYSTEMS

Monitoring Objective: To determine if the aquatic and riparian resources are being managed according to the standards and guidelines.

Monitoring activities were conducted on two timber sales, three allotments, three OHV events, and one water permit. One timber sale was reviewed for implementation of snag retention guidelines within riparian reserves, and the review team determined that the direction was followed. Another timber sale was checked for the presence of California red-legged frog (CRLF) and none were found. One allotment was monitored for the presence of CRLF and none were located. Two allotments were monitored for compliance with measures to protect *Howellia aquatilis* (HOAQ), a threatened aquatic plant, from grazing. Three OHV events were monitored for presence and effects to CRLF and none were noted. One water permit was monitored, and the required streamflow measuring device was not present. Records are located in the Land Management Planning, Wildlife, and Timber Management files in the Supervisor's office.

THREATENED, ENDANGERED, AND SENSITIVE (TES) PLANTS

Monitoring Objective: To evaluate the effectiveness of Forest Plan standards and guidelines in providing for the maintenance and improvement of TES plant populations on the Forest.

During FY 97, the monitoring program for TES plants was focused on monitoring the required measures for protecting *Howellia aquatilis*, a threatened plant species, from the effects of grazing. There are 78 areas of potential habitat, primarily on the Covelo Ranger District, and there are six known occurrences. The six known sites and eight potential sites were regularly monitored while cattle were grazing in the area. An additional 15 potential sites were visited at least twice during the summer, with another 15 visited at least once. While a few cattle visited one site for a short time, there were no harmful effects to any of the known sites of water howellia. Some negative impacts of grazing cattle to three potential sites were noted. A cattle guard will be installed on one road to help protect one known site and to reduce the amount of effort needed to protect the site. Information is maintained in the Forest Botany records at the Supervisor's office.

TIMBER

Monitoring Objective: To determine if the terrestrial and aquatic resources are being managed according to the standards and guidelines.

Monitoring activities were conducted on five timber sales. One timber sale was reviewed for implementation of snag retention guidelines within riparian reserves, and the review team determined that the guidelines were followed. Four other sales were lacking in snags and/or coarse woody debris, and another timber sale was checked for the presence of California red-legged frog (CRLF) and none were found. Records are located in the Wildlife files in the Supervisor's office.

In FY 97, brush and/or excess trees were removed from 2,864 acres. Over the past two years of Plan implementation, an average of 3,035 acres have been treated per year as compared to the Forest Plan level of 2,000 acres per year. However, a review of a needs report generated from the stand record card system showed an outstanding need to treat between 12,760 to 38,280 acres on one Ranger District. The range of acres is due to the fact that up to three treatments for the same acre are often prescribed. Additionally, large areas will be added to the needs report as the plantations in the Fork Fire area (68,545 acres burned in 1996) become established. Some of the reported needs may have been accomplished without updating the stand record card system. Regionally, over the last 20 years, timber stand improvement projects have not been funded at the level planned for at the project level. In FY 97 only one third of the requested projects were funded. Failure to carry out planned activities may result in a failure to achieve desired conditions and objectives. Records are available in the stand record card system, Forest Supervisor's office.

Monitoring Objective: To assure that the total volume sold during the Plan period (i.e.; 10 years) is within the Allowable Sale Quantity (ASQ) established by the Forest Plan.

The ASQ is calculated based on the standing inventory, planned management, and predicted growth of trees on the Capable, Available, and Suitable (CAS) timber landbase. The ASQ represents the maximum sustainable level of harvest from the CAS landbase. In FY 96 and FY 97 4.04 MMBF and 12.01 MMBF were sold, respectively, from the entire forested landbase sold. Currently, mechanisms for tracking volume sold from the CAS landbase alone are not in place or are not in use. As long as the ten-year average annual volume sold remains below the ASQ of 12.2 MMBF, the lack of tracking would not result in over-harvesting the CAS landbase (i.e. the ASQ would not be exceeded). The average annual volume sold for the first two years of implementing the Forest Plan is 8.02 MMBF. Records are located in the Timber Management files at the Supervisor's office.

Monitoring Objective: To assure that harvested areas are reforested within 5 years of final harvest.

The FY 97 Annual Reforestation and Timber Stand Improvement Accomplishment Report, Status of Reforestation After Final Harvest indicates that 90% of the area subjected to a final harvest between FY 1988 and FY 1992 has been adequately reforested. Reforestation is usually "certified" as meeting the prescribed stocking levels between three and five years after planting, but should be certified within five

years of final harvest. In order to respond quickly to reforestation problems, plantings are monitored using stocking surveys following the first and third growing season. In FY 97, stocking surveys were completed on 2,734 acres.

WATERSHED

Monitoring Objective: To assure watershed improvements are implemented as scheduled in the Forest Plan.

The Forest accomplished 128 acres of watershed improvements for a two year annual average of 95 acres per year. The Forest Plan called for an annual average of 350 acres per year. Reasons for the lower accomplishment include lack of funding and personnel to plan and carry out projects; and projects which are being accomplished have a high cost per acre. Records are maintained in the hydrology files at the Supervisor's Office.

Monitoring Objective: To assure Best Management Practices (BMPs) are implemented as appropriate and are accomplishing the intended purpose.

BMP implementation and effectiveness monitoring was conducted through the Regional BMPEP monitoring effort. Numbers and types of projects to monitor are set by the Regional Office Watershed Staff, and specific projects and locations to evaluate are selected following a Regional protocol. The evaluation is conducted following completion of the project by an interdisciplinary team in some cases and by individuals in other cases. Records are maintained in the hydrology files at the Supervisor's Office.

Eighteen practices were monitored on 14 projects. Many projects had multiple sites evaluated. BMPs were considered to be mostly to fully successful for the projects which were monitored. Road drainage was generally satisfactory with the exception of one cross-drain. Stream crossings were generally satisfactory with the exception four culverts and two road fills. Three sample sites did not comply with BMPs, and practices at two of the sites were causing sediment to enter stream channels.

WILDLIFE

Monitoring Objective: To determine if the terrestrial resource is being managed according to the standards and guidelines.

Twelve projects were reviewed for compliance with various standards and guides for protecting terrestrial resources. Five of the projects were timber sales, two were recreation projects, three were wildlife habitat projects, and two were brush management projects. No problems were noted for eight of the 12 projects. The timber sales were primarily reviewed for the adequacy of snag and coarse woody debris retention. Sample plots were utilized for two of the five projects. Whether measured or simply observed, coarse woody debris did not appear to be retained in prescribed amounts in three of the five

project areas. Typically, a logger will cut poor quality logs out of the felled trees and leave the "cull" in the harvest unit, and this usually results in plenty of coarse woody debris left on site. However, in one green sale, the logger decided to take the cull logs to the mill for processing which left the area deficient in coarse woody debris. In the same green timber sale area, there may not have been enough snags to meet the snag guidelines even prior to the harvest. Documentation is located in the Grindstone and Upper Lake Ranger District files.

Monitoring Objective: To determine if planned level of fisheries habitat improvement is being accomplished.

Direct habitat improvement for resident fish was planned at ten acres and five structures annually. In FY 97, habitat improvement consisted of improvement to 14.8 acres and development of one structure. Direct habitat improvement for anadromous fish was planned for 33 acres and seven structures annually. In FY 97, habitat improvement consisted of improvements to 34 acres and development of nine structures.

OTHER REVIEWS, MONITORING, AND RESEARCH

Research Objective: To determine the effect of seasonality of burn, soil moisture and temperature on chaparral vegetation in the Mendocino National Forest.

Research was conducted within prescribed burn areas in 1993 and 1994, and the report of the results was published in FY 97. The author, Danielle Le Fer, determined that "a large part of the seed bank survives when heated (to 90 C or above) under dry conditions, but germination is significantly affected for many species heated under wet conditions (*Adenostoma*, *Camissonia*, *Galium*, *Epilobium*, *Malacothrix*, *Emmenanthe*)." The researcher's observations of increasing rates of seed germination for buck brush (*Ceanothus cuneatus*) subjected to increasing amounts of moisture and heat may be of particular interest to those interested in deer herd management. Observations of decreased herbaceous and shrubby species diversity with increased moisture and heat corresponded with the species-specific seed absorption rates for water.

Monitoring Objective: To determine the effectiveness of various erosion control measures applied to the Fork Fire burn area immediately following the fire.

Several monitoring efforts were conducted to determine the effectiveness of various erosion control measures, they include observations, germination studies, erosion plots, and vegetation density sampling. The results indicate that all erosion control measures were effective except for vegetative cover (natural, native seeding, oat seeding). No vegetation became established in enough abundance and at the right time to reduce surface erosion during the first wet season following the fire. Erosion during the first year was ten times more than the second year post fire. Chopped rice straw was an effective erosion control measure where used. Information is located in the hydrology and botany files in the Supervisor's office.

Monitoring Objective: To determine our progress in implementing certain standards and guidelines with specific time requirements.

The Forest Plan calls for the completion of a suitability analysis for the Black Butte River, Cold Creek, and the lower portion of Thomes Creek for possible inclusion in the Wild and Scenic Rivers System within two years of Forest Plan approval. The Plan also calls for completing Study Reports and Legislative Environmental Impact Statement (EIS) for those rivers found to be suitable for inclusion, and make final recommendation decisions within three years of Plan approval. The first action should have been completed in FY 97 and the second action in FY 98. Each year, the Mendocino receives \$4,000 to 5,000 earmarked for administration of existing Wild & Scenic Rivers. The suitability study would cost an estimated \$15,000 to \$20,000, and the Legislative Environmental Impact Statement would cost another \$5,000 to \$8,000 if we participated in a Region-wide EIS process. If the Mendocino were to develop an individual EIS, the cost would be approximately \$12,000 to \$20,000.

Neither action has been initiated due to lack of funding. These types of actions would be funded from recreation funds, and for FY 96 and FY 97, recreation funding has been at 37% and 35% of Plan level respectively. The funds which we receive are primarily spent on managing, maintaining, and re-building existing recreation programs and sites. In the meantime, the outstandingly remarkable values found along and in these creeks have been, and will continue to be protected until the suitability analysis is completed.

Monitoring Objective: To determine the population of adult summer steelhead in the Middle Fork Eel River drainage holding habitat.

California Department of Fish and Game and Forest personnel conducted the 31st annual survey of 25 miles of the Middle Fork Eel and tributaries aimed at counting the number of adults in the holding area. The survey includes mapping the location and numbers of fish and recording temperatures, flows and the presences of barriers. Incidents of illegal fishing is also recorded. Information is located in the Wildlife files in the Supervisor's Office.

Monitoring Objective: To determine the density of the population of juvenile steelhead at two standard stations in the Middle Fork Eel River.

California Department of Fish and Game and Forest personnel conducted the eighteenth annual survey of two standard stations in the Middle Fork Eel aimed at determining the density of juvenile steelhead. The figures are used to determine the success of year classes and determine the survival rate from year to year. The information is located in the Wildlife files in the Supervisor's Office.

Data Collection Objective: To determine the summer water temperatures in the Middle Fork and Black Butte River watersheds.

Forest personnel set out over 15 continuous temperature recording devices throughout the watersheds. The Forest is working with other agencies to collect information on the condition of the anadromous fish habitat. The information is located in the Wildlife files in the Supervisor's Office.

PROPOSED ACTION PLAN

1. Develop a timeline and strategy for completing the FY 98 M&E report prior to FY 99 field season.
2. Develop an active LRMP monitoring strategy for the FY 99 field season.
3. Develop and utilize a monitoring form to encourage documentation of monitoring activities and objectives.
4. Develop and implement a statistically valid sampling procedure to determine whether or not snag and coarse woody debris standards have or have not been met. Interview Forest personnel to assist in determining the factors which may have prevented the attainment of snag and coarse woody debris objectives (if determined to have occurred). Develop necessary processes and/or policies to ensure that adequate snag and coarse woody debris is protected through all phases of project implementation.
5. Evaluate alternative sewage treatment options at the Lake Red Bluff Recreation Area. Amend the Forest Plan if less expensive (lower energy consumption) and more environmentally acceptable alternatives exist.
6. Update the watershed improvement needs list.
7. Develop and implement a strategy to establish condition and trend studies in riparian reserves within active grazing allotments.
8. Complete mapping of all land allocations in the Geographic Information System. Perform an analysis to determine if there are significant changes to the effects and outputs of implementing the Forest Plan, given the improved analysis capabilities of a spatial data base.
9. Pursue funding for completing the suitability analysis and Legislative EIS for Wild & Scenic River designation of Black Butte, Cold, and lower Thomes Creeks.
10. Evaluate the usefulness of comparing actual with predicted Plan costs.
11. Formally evaluate proposed changes to the research and technical needs lists.

FOLLOW-UP TO PREVIOUS YEAR ACTION PLAN

The update NFMAS for the entire burn history and an assessment of the model's accuracy for the Mendocino National Forest is nearly complete. Information should be available for the FY 99 monitoring report.

An analysis of the effects of snow plowing roads was conducted for the CY 1998 to 2003 Road Maintenance and Repair Activities decision. Project design standards were developed to ensure resource protections, particularly water quality.

An evaluation of the need to amend the Forest Plan to adjust the visual quality objectives (VQOs) in the Ski Hi area was conducted during the planning of the Town timber sale. The Forest Supervisor decided to alter the VQOs for this sale only, which does not constitute a Forest Plan amendment. There are many beneficial projects which could be negatively affected by permanent increases in VQOs--most notably fuel reduction and fire prevention activities.

Data collected over several years to determine Air Quality Resource Value trends in the Yolla Bolly-Middle Eel Wilderness includes amphibian sightings and water samples taken from wilderness lakes to determine acidity. This data has not been completely evaluated, however, preliminary results indicate that levels of acidity are not increasing and sightings of amphibians are not decreasing.

The watershed improvement needs inventory is updated as new problems or needs are identified. However, updates to remove projects or reduce the size of projects have not occurred. For example, observations made by the Forest Hydrologist indicate that some of the large, high elevation areas previously identified as needing active intervention to recover from sheep and cattle grazing in the late 1800s through the 1920s are improving at desired rates since recent changes in requirements for range permits (primarily in the area between Bald and Hull Mountains). Small sites within this area still require active restoration.

No adjustments to the suitable timber landbase have been made to date. We are currently mapping interim riparian reserves, and once the mapping is complete, an analysis of the suitable timberland base will be completed.

UPDATE OF RESEARCH NEEDS

Changes to consider include:

1. Remove identified research needs to evaluate the economic feasibility of timber harvest designed for increased water yield, and continued research on the effects of logging and road construction on sediment delivery, runoff, and water quality. There is either adequate existing research or measures to increase water yield conflict with current direction designed to protect threatened and endangered species.
2. Add the development of a sediment budget study of various watersheds on the Forest to the list of technical needs.

3. Coordinated updates to soil mapping have been completed and should be removed from the technical needs. Add to the technical needs a link between the soil maps in the GIS to the text of the soils reports.
4. Continued research on the effects of prescribed burning and other management activities on landslide potential is still needed. Adequate research regarding the effects of timber harvesting and road construction may exist.
5. Add an update of the landslide or land instability risk map through the use of aerial photos to the technical needs.

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PUBLIC PARTICIPATION AND DISCLOSURE

The public has not been actively involved in the monitoring efforts or the development of this year's report. This report will be made available to the public on request and will be mailed to those individuals and organizations on the mailing list for the Schedule of Proposed Actions.

APPENDIX 1

**ANNUAL OUTPUTS
PLANNED AND ACTUAL**

Resource Elements	Base Year 1989	Plan Decade 1	Actual FY 1997
Total Public Recreation (M-RVD)	789	1,040	3,608
Open, Usable OHV Areas (M-Acres)	26.2	0	0
Roads and Trails Open to OHV Use, Summer & Winter (Miles)	235	321	246
Roads and Trails Closed to OHV Use, Summer & Winter (Miles)	355	380	293
Bald Eagle (Pairs)	1	3	0 ¹
Peregrine Falcon (Pairs)	3	3	2 ²
Deer (M-Deer)	31.0	30.2	31.0 ³
Direct Habitat Improvement (Acres)			
all species except T&E	1,193	3,602	680
resident fish except T&E	6	10	14.8
anadromous fish	20	33	34
Direct Habitat Improvement (Structures)			
all species except T&E	14	21	11
resident fish except T&E	7	5	1
anadromous fish	18	7	9
Grazing (M-AUM)	12.3	8.0	13.4
Allowable Sale Quantity			
(MMCF)	8.00	1.84	1.77 ⁴
(MMBF)	53.6	12.2	12.04 ⁴
Reforestation (Acres)	6,468	581	1,050
Timber Stand Improvement (Acres)	2,412	2,000	2,864
Fuelwood (M-Cords)	3.5	4.1	0.6
Watershed Improvement (Acres)	5,433	350	128
Mineral Operating Plans	0	1	0
Land Acquisition	0	400	0

¹ A pair of eagles did return to the Forest, however, their nest site could not be located and success of reproduction could not be verified.

² Surveys were conducted at two of the three occupied sites.

³ Reported numbers are based on a relationship between the amount of suitable habitat within the Forest and an estimate of the amount of habitat required to support an individual. Large changes in habitat occurred with the Fork Fire in August of 1996 as well as with growth of the vegetation since the last inventory in 1981. The effects of these changes will be evaluated when the update to our vegetation database is complete.

Resource Elements	Base Year 1989	Plan Decade 1	Actual FY 1997
Road Construction (Miles)	10.0	3.1	5.7

Resource Elements	Base Year 1989	Plan Decade 1	Actual FY 1997
Road Reconstruction (Miles)	27.0	13.1	44.9
Road Maintenance	2,463	2,463	2,480
Total Fuel Treatment (Acres)	4,078	5,781	3,603
fire related fuel treatment	447	2,600	1,622
timber related fuel treatment	3,185	581	360
other fuel treatment	446	2,600	1,621
Area Burned by Wildfire (Acres)	2,636	2,027	24
Forest Service			
Private	4	4	4
	2	2	2
Administrative Sites			
Forest Service Owned	28	17	
Leased	4	4	
Total Budget (MM\$ 1997)	19.30	17.27	12.77
Total Cost (MM\$ 1997)	21.90	19.09	13.00