

MENDOCINO NATIONAL FORESTS

FISCAL YEAR 1998 (FY 98) MONITORING AND EVALUATION REPORT For Monitoring Activities Conducted from 10/1/97 to 9/30/98

OVERVIEW

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-nine percent were monitored at the full plan level, and fifteen percent of those objectives were monitored at a partial level. Of the remaining 62%, eight are not required annually and ten 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 98 were in the areas of Heritage Resources and Fire and Fuels Management on the Grindstone Ranger District.

SUMMARY OF MONITORING ACTIVITIES AND EVALUATION OF RESULTS

The following information reflects some of the monitoring activities which took place in FY 98 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. The development of the methodology to analyze the visibility data in relation to land management activities has been discontinued. 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. Seven of the thirteen burn plans for FY 98 included the pre and post burn evaluations, all but one of the evaluated fires occurred within the burn prescription achieving the desired objectives of the projects in most cases. 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 1998 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	4,097	3,127	76
Timber	2,694	4,125	153
Roads	2,767	1,380	50
Recreation	2,556	938	37
Wildlife	731	443	61
Other	4,802	2,722	57
Total Budget	17,648	12,735	72
Suppression	1,863	1,070	57
Total Cost	19,511	13,805	71

The total budget and total cost of implementing the Forest Plan in FY 98 were within the 35% variation standard set for this monitoring objective. Of the large categories included, only the fire area fell within the 35% range. Timber was the only category that exceeded the Plan level, while all others fell below 65% of the Planned budget. The cost of fire suppression was 57% of predicted and the acreage burned by wildfire was only 21% of predicted. On an acreage basis, the cost of fire suppression in FY 98 was \$2,494 per acre, compared to FY 97 of \$9,745 per acre, and as compared to the predicted cost of \$899 per acre.

FACILITIES

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

Eight accident reports were completed by Forest Service personnel. Five of the accidents occurred on Forest Service maintained roads or sites; three occurred on county maintained roads or state highways. Seven accidents were attributable to driver error on the part of Forest Service personnel. One accident was attributable to driver error on the part of private citizens and resulted in the death of one Forest Service fire fighter and injury of two fire fighters. 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 Officer.

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 98 was \$803,000, and 1,254 miles were fully maintained (MAR 91.4). The Forest-wide cost per mile would then be \$640 per mile with some roads needing little maintenance and a few roads needing extensive maintenance. The balance of the road inventory (1,073 miles) were not maintained. Predicted maintenance costs developed for the Forest Plan were \$1,045 per mile for arterial and collector roads (wider, higher standards) and \$543 per mile for local roads. To determine the effectiveness of road design, cost by road or road segment may be more revealing.

Monitoring Objective: To evaluate the appropriateness of maintenance levels to resource management needs.

The Federal Highway Administration performed a reconnaissance and scoping effort to determine whether or not to proceed with further analysis to upgrade Forest Highway 7 (FH 7) to a paved road across the Mendocino NF. The Federal Highway Administration and cooperating agencies decided to drop the reconstruction of FH 7 from further consideration due to high project costs (\$100 million), low public support, and low traffic projections. Information is located at the Central Federal Lands Highway Division of the Federal Highway Administration in Lakewood, Colorado.

FIRE AND FUELS MANAGEMENT

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

One fuel reduction project was monitored for compliance with standards and guidelines (S&Gs) from the Northwest Forest Plan. The project consisted of a timber sale, post sale fuel treatments, and reforestation following a wind event which blew down thousands of trees. Several S&Gs were not implemented appropriately. Documentation is located in the Land Management Planning files in the Supervisor's Office.

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.

Seven 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; maintaining plant diversity). Six of the projects were implemented as planned and were effective in achieving the project objectives for the most part. Objectives for consumption of plant or woody material were only partially met on portions of two projects due to high fuel moisture and high relative humidity. One jackpot burning project met all objectives, however the relative humidity, temperature, and wind speeds occurring at the project site were not within the prescribed range for the project. No escapes occurred and fuel consumption was complete, however, there were six spot fires noted in the records. Documentation is located in the Grindstone Ranger District files.

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

Approximately 429 acres of National Forest lands were burned by wildfire in FY 98. Increases in the acres burned, over FY 97, are primarily due to a string of arson fires on the Upper Lake Ranger District. The estimated annual loss is 2,027 acres averaged over a ten year period, and the current three year average (after three full years of implementing the Plan) is 28,025 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. 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 1998" 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. No surveys had been conducted on approximately 160 acres, and the effects of the timber sale are unknown. Records are stored in the land management planning files at the Supervisor's office.

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

Forty-five archaeological sites were monitored during or after project implementation. Standards and guides were implemented and effective in protecting all 45 sites. While there was some intrusion into

two sites, no effects occurred. Documentation is included in the "Mendocino National Forest Heritage Resources Annual Report 1998".

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

Five archaeological sites were evaluated for vandalism. Three sites which had previously been vandalized showed no evidence of recent illicit excavation. Vandals were observed at one new site, however, they left the site by the time law enforcement arrived on the scene. One site was affected when an adjacent landowner damaged National Forest System lands. The landowner was cited and the Forest Service was awarded the requested damages. Information is contained in the "Mendocino National Forest Heritage Resources Annual Report 1998".

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

During FY 98, monitoring was conducted to ensure that *Howellia aquatilis*, a threatened plant species, habitat was not degraded on two allotments. 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 of the potential sites were regularly monitored while cattle were grazing in the area. A total of 107 site visits were made to determine if cattle were present, to ensure that cattle were quickly removed from the sites, and to determine if the cattle presence was affecting the habitat or plants. The results indicate that the monitoring was effective, there was no gross over-utilization of the forage in and around the howellia habitat, and the cattle were removed from the sites within the prescribed time frames. Information is maintained in the Forest Botany records at the Supervisor's office.

Monitoring was conducted to ensure that T&E plant and fish species habitat was not degraded on four allotments. Information is maintained in the Forest Range files at the Supervisor's office.

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

Utilization monitoring was measured on ten allotments in 15 locations. The records are located in each District's files. Eight 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. Information is maintained in the District range management files.

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

Non-compliance problems were checked on four 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 one allotments. 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 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. Information is maintained in the Forest Range files at the Supervisor's office.

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 three timber sales to varying degrees. None of the decision documents for the three sales included a finding of consistency with the aquatic conservation strategy objectives, which is likely to be a Forest-wide oversight. One timber sale was reviewed on the ground and was found to be inconsistent with several standards and guidelines designed to protect aquatic and riparian resources. Documentation is located in the Land Management Planning files in the Supervisor's Office.

Monitoring Objective: To determine if the aquatic, riparian, economic, and social resources are being managed according to the standards and guidelines for watershed analysis.

An interagency interdisciplinary review of all management activities occurring within the Grindstone watershed was conducted in FY 98. The review was to achieve the monitoring objective and to determine our progress in implementing certain standards and guidelines which did not require specific implementation dates. The following are a few of the findings: 1) we are using more accurate spotted owl location information and this has resulted in more 100-acre late successional reserves than estimated during the Northwest Forest Plan development; 2) certain reforestation activities have been erroneously thought to be authorized under "exemption letter" issued by the Regional Ecosystem Office; and 3) snags and coarse woody debris do not appear to meet planned levels following some timber harvesting and fuel reduction treatments (partially reported in the FY 97 report). Information is maintained in the Land Management Planning 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 98, 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 of the potential sites were regularly monitored while cattle were grazing in the area. A total of 107 site visits were made to determine if cattle were present, to ensure that cattle were quickly removed from the sites, and to determine if the cattle presence was affecting the habitat or plants. The results indicate that the monitoring was effective, there was no gross over-utilization of the forage in and around the howellia habitat, and the cattle were removed from the sites within the prescribed time frames. 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 three timber sales to varying degrees. None of the decision documents for the three sales included a finding of consistency with the aquatic conservation strategy objectives, which is likely to be a Forest-wide oversight. Trees were removed from late successional reserves under two of the timber sales without appropriate analysis or approvals. One timber sale was reviewed on the ground and was found to be inconsistent with several standards and guidelines designed to protect aquatic and riparian resources. Documentation is located in the Land Management Planning files in the Supervisor's Office.

In FY 98, brush and/or excess trees were removed from 3,234 acres. Over the past two years of Plan implementation, an average of 3,101 acres have been treated per year as compared to the Forest Plan level of 2,000 acres per year.

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 98, 14.73 million board feet (MMBF) of timber was sold from matrix (a portion of which is a part of the CAS landbase), late successional reserve, and riparian reserve land allocations. In FY 96 and FY 97, 4.04 MMBF and 12.01 MMBF were sold, respectively, from the entire forested landbase. 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 three years of implementing the Forest Plan is 9.26 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 98 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 1993 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.

WATERSHED

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

The Forest accomplished 35 acres of watershed improvements for a three year annual average of 75 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; projects which are being accomplished have a high cost per acre; and natural recovery of large areas has improved. 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 is normally 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. Monitoring through the Regional monitoring effort was not conducted in FY 98 due to an oversight. Records are maintained in the hydrology files at the Supervisor's Office.

Several projects were monitored for BMP implementation and effectiveness, but were not a part of the Regional effort. Problems identified included snow removal and associated wet road use causing erosion and road damage; tractor skidding on wet ground causing unacceptable compaction; improper stream crossings; road slope stabilization; and lack of erosion control on disturbed sites. Information is contained in the FY 98 BMP/BMPEP Report for the Mendocino N. F., and records are maintained in the hydrology files at the Supervisor's Office.

WILDLIFE

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

One timber sale and all management activities within one watershed were reviewed for compliance with standards and guidelines (S&Gs) from the Northwest Forest Plan. The timber sale complied with most S&Gs designed to protect terrestrial resources, however, approximately 160 acres included in timber sale units had not been evaluated for site specific effects. This resulted in a few trees being inadvertently removed from a 100-acre late successional reserve.

The activities and management programs applied within the Grindstone watershed were reviewed for compliance with selected S&Gs, particularly those requirements which did not have specific dates for implementation. The results indicated mixed results in the areas of interpretation of certain requirements and compliance with certain other requirements. For example, findings regarding aquatic conservation strategy objectives are not consistently being made in project decision documents nor regularly supported by a watershed analysis; memoranda from the Regional Ecosystem Office exempting certain silvicultural activities from review were mis-interpreted; and current project planning utilizes information which is more accurate than the information used during the development of the Northwest Forest Plan. Reports of these reviews are stored in the Land Management Planning files in the Supervisor's Office.

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 98, habitat improvement consisted of improvement to six acres and no structures. Direct habitat improvement for anadromous fish was planned for 33 acres and seven structures annually. In FY 98, habitat improvement consisted of improvements to 53 acres and no structures. The information is located in the Wildlife files in the Supervisor's Office.

OTHER REVIEWS, MONITORING, AND RESEARCH

Monitoring Objective: To determine the effectiveness of fisheries habitat improvement projects.

An interagency, interdisciplinary review of the Soda Creek riparian improvement project was conducted in FY 98. The results verify that the implementation of the project over a three year period was successful in stabilizing the wandering channel and providing anadromous fish habitat. Some changes to future phases of the project were identified.

An attempt to remove or reduce the size of a barrier to fish passage on the Middle Fork of the Eel River near the Asa Bean crossing was attempted in FY 97. An interdisciplinary team visited the site in FY 98 to determine if anadromous fish were making their way through or around the barrier. A small number of fish were detected in pools upstream of the barrier.

The information is located in the Wildlife and Hydrology 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 recreation funding has been between 37% and 35% of Plan level for the past three years. 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 32nd 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 steelhead survival rates in the Middle Fork Eel River.

California Department of Fish and Game and Forest personnel conducted the nineteenth 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 continued to monitor 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.

Data Collection Objective: To determine the salmon population in the Black Butte drainage.

Forest personnel surveyed portions of Black Butte River for salmon carcasses. 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 99 M&E report prior to FY 00 field season.
2. Develop an active LRMP monitoring strategy for the FY 00 field season.
3. Develop and utilize a monitoring form to encourage documentation of monitoring activities and objectives.
4. Develop and implement a strategy to establish condition and trend studies in riparian reserves within active grazing allotments.
5. 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.
6. Pursue funding for completing the suitability analysis and Legislative EIS for Wild & Scenic River designation of Black Butte, Cold, and lower Thomes Creeks.
7. Update the watershed improvement needs list.
8. Evaluate the usefulness of comparing actual with predicted Plan costs.
9. Formally evaluate proposed changes to the research and technical needs lists.

FOLLOW-UP TO PREVIOUS YEAR ACTION PLAN

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. A coordination meeting was held between the Forest Service, Glenn County Roads Department, Pioneer Resources (private landowner), California Department of Forestry and Fire Department, and the North Coast Water Quality Control Board to

discuss snow removal practices, road closures, and wet season log hauling. This meeting resulted in snow removal from fewer roads, improved removal practices, and limited travel on wet roads.

Last year's action plan called for developing and implementing a statistically valid sampling procedure to determine whether or not snag and coarse woody debris standards have or have not been met; and to develop necessary processes and/or policies to ensure that adequate snag and coarse woody debris is protected through all phases of project implementation. The sampling procedure was developed in FY 99 and the results should be evaluated in FY 00.

An evaluation of alternative sewage treatment options at the Lake Red Bluff Recreation Area and Forest Plan amendment was initiated in FY 98.

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. However, members of the public who participate on the California Coastal and Northwest

Sacramento Provincial Advisory Committees were invited to participate in two monitoring efforts related to the standards and guidelines from the Northwest Forest Plan. This report will be made available to the public on request and will be posted on the Mendocino National Forest web site.

APPENDIX 1

PLANNED AND ACTUAL ANNUAL OUTPUTS

Resource Elements	Base Year 1989	Plan Decade 1	Actual FY 1998
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	294 ⁴
Roads and Trails Closed to OHV Use, Summer & Winter (Miles)	355	380	391 ⁴
Bald Eagle (Pairs)	1	3	1
Peregrine Falcon (Pairs)	3	3	2 ¹
Deer (M-Deer)	31.0	30.2	31.0 ²
Direct Habitat Improvement (Acres)			
all species except T&E	1,193	3,602	1,850
resident fish except T&E	6	10	6
anadromous fish	20	33	53
Direct Habitat Improvement (Structures)			
all species except T&E	14	21	12
resident fish except T&E	7	5	0
anadromous fish	18	7	0
Grazing (M-AUM)	12.3	8.0	
Allowable Sale Quantity			
(MMCF)	8.00	1.84	2.30 ³
(MMBF)	53.6	12.2	14.73 ³
Reforestation (Acres)	6,468	581	1,116
Timber Stand Improvement (Acres)	2,412	2,000	3,248
Fuelwood (M-Cords)	3.5	4.1	
Watershed Improvement (Acres)	5,433	350	35
Mineral Operating Plans	0	1	0
Land Acquisition	0	400	0

¹ Two reproductive pair were confirmed, and two additional pairs with unknown reproductive status were also noted.

² 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.

³ Harvest volumes may be measured in several ways. This report reflects the volume of timber actually sold during FY 98. However, the volume reported was harvested from both suitable and non-suitable timber lands.

⁴ The majority of the changes from FY97 are the result of an improved physical inventory of existing developments or new definitions.

PLANNED AND ACTUAL ANNUAL OUTPUTS (cont.)

Resource Elements	Base Year 1989	Plan Decade 1	Actual FY 1998
Road Construction (Miles)	10.0	3.1	8.7
Road Reconstruction (Miles)	27.0	13.1	49.2
Road Maintenance	2,463	2,463	2,451
Total Fuel Treatment (Acres)	4,078	5,781	4,195
fire related fuel treatment	447	2,600	1,850
timber related fuel treatment	3,185	581	495
other fuel treatment	446	2,600	1,850
Area Burned by Wildfire (Acres)	2,636	2,027	429
Dams			
Forest Service	4	4	4
Private	2	2	2
Administrative Sites			
Forest Service Owned	28	17	29 ⁴
Leased	4	4	3
Total Budget (MM\$ 1998)	19.72	17.65	12.74
Total Cost (MM\$ 1998)	22.38	19.51	13.80

⁴ The majority of the changes from FY97 are the result of an improved physical inventory of existing developments or new definitions.