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Shasta-Trinity
National Forest

Fiscal Year 2004

Monitoring and Evaluation Report



Musk Thistle

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Summary of the 2004 Forest Monitoring Results

Current Trends and Highlights

- Partnerships are becoming increasingly important to help us accomplish our goals. As budgets decline, we are constantly exploring new ways of doing business to “get the work done” in more non-traditional ways.
- Many new centralized databases are improving our accountability and the ability to monitor more consistently forest wide.
- Best Management Practices (BMPs) for water quality are being implemented at the rate of 80% with an 80% rate of effectiveness. The trend over the past 5 year’s shows an improvement in timber harvest BMPs and a decline in road related BMPs.
- Projects to improve fish passage within the Trinity River Basin are beginning to show increased range expansion for coho and the other salmonid species.
- Several years of below average precipitation have contributed to the mountain pine beetle outbreak and subsequent mortality of trees on the Forest, especially in the McCloud Flats area.
- Increased thinning of timber stands is helping to reduce fire hazard, especially in the Wildland Urban Interface (WUI). However, the limited amount of regeneration harvest is creating a forest unable to provide for the originally planned long-term sustained yield of commercial timber.
- The road maintenance budget is also declining and we are only able to maintain about 15% of our roads. We are getting more frequent complaints about road conditions from the public. To avoid health and safety issues it is likely that more roads will have to be closed in the future.
- Trends in law enforcement issues include an increase in fuelwood and timber theft, marijuana gardens, recreation violations, vehicle and boat break-ins, vandalism and theft of property. Several vacancies in the organization need to be filled to help deal with these trends.
- Forest biologists are spending the majority of their time working through the increased complexity of requirements for analysis and consultation with other agencies and, as a result, have less time for building programs.
- A new trend in heritage resources is the increased interest of Native American tribes in heritage resources on National Forest lands. The Tribes are also getting more involved with partnerships and other agreements to help protect and evaluate sites.

Contribution to the National Strategic Plan

The USDA Forest Service Strategic Plan for Fiscal Years 2004-2008 displays six conservation goals for the Nation’s forests and grasslands. The six goals are based on four current threats to conservation - growing fire danger due to hazardous fuel buildups; the spread of invasive species; loss of open space; and unmanaged recreation, particularly the unmanaged use of off-highway vehicles. The goals of the Strategic Plan include:

1. Reduce the risk from catastrophic wildland fire
2. Reduce the impacts from invasive species
3. Provide outdoor recreation opportunities
4. Help meet energy resource needs
5. Improve watershed condition
6. Other mission related work

During 2004 the Shasta-Trinity National Forest made contributions toward all of these goals. These results can be found in the Monitoring and Evaluation report under each respective topic. The goal we are highlighting in 2004 is goal #2: Reduce the impacts from invasive species.

Reduce the Impacts from invasive species

Damage to natural resources from noxious weeds has emerged as a nationwide federal land management issue in the past decade. The Shasta-Trinity Forest Plan was signed before noxious weeds became an important management consideration on California national forests, so while the Plan requires an integrated pest management program, the Forest is guided more specifically by the National Strategic Plan, and by the Region 5 Northern Province Noxious Weed Strategy, signed in 2001.

Since 2001 the Forest has conducted weed inventories at the province and project levels, migrated data to the NRIS invasives database, and initiated prevention strategies through education and project-level mitigation such as vehicle washing, and manual treatment.

A selected group of high-priority weed species is targeted for suppression and eradication. The Forest accomplishes most weed treatment through partnership projects, and participates in the Shasta, Trinity, and Siskiyou Weed Management Areas.

In 2004 ca. 2250 acres of dyer's woad, spotted knapweed, diffuse knapweed, musk thistle, yellow starthistle, rush skeletonweed, and Scotch broom were treated manually on STNF using a variety of funding sources and partners.



Implementation of Forest Plan Standards and Guidelines Summary of Results

Physical Environment

Soil and Water

BMPs: Best Management Practices (BMPs) for protection of soil and water resources were monitored in accordance with the regional protocols provided in “Investigating Water Quality in the Pacific

Southwest Region: Best Management Practices Evaluation Program (BMPEP) User's Guide" dated June, 2002. Of the 55 BMP applications monitored 44 were implemented effectively, and 11 were not effective. Site specific recommendations were made for the sites where BMPs were found to not be effective.

Soil Quality: A Soil Quality Standard monitoring program was conducted to determine if soil porosity (compaction) standards were met in forest management activities on sensitive soils. This monitoring effort showed that Late Successional Reserve (LSR) areas can be selectively thinned to reduce understory competition without sacrificing site quality if careful planning, proper timing of entry, low impact harvesting equipment, and good sales administration are utilized.

Watershed Restoration: Three types of watershed restoration projects were monitored in FY 2004. One of these sites collected pre-project background data, while the other two collected post-project data for evaluation of project effectiveness. Both of the latter monitoring efforts produced useful information for improvement of future projects of their type.

Biological Environment

Fisheries Management

Sport Fisheries: Two hundred and fifty-five acres of lake were restored in fiscal year 2004, while 48 acres were inventoried. Fish utilization abundance was determined for treatment structures within the restored acreage. Overall, fish abundance ranged from three to ten times greater in these treatment areas compared to untreated control areas.

Restoration of summer steelhead and spring-run Chinook salmon habitat in the S. Fork Trinity River Basin: Summer steelhead adults have been counted every year (going back to 1978) via snorkeling in the Trinity River mainstem tributaries of Canyon Creek, the N. Fork, and the New River. The Forest has taken the lead for these surveys from the Department of Fish and Game since 1990. Annual results can provide differences of orders of magnitude when comparing years. Despite this wide variability, greater numbers of adults appear to have been counted during the most recent half of the survey period compared to the initial period of years ending in 1990.

Protection, maintenance, and improvement of wild trout and salmon habitat: The Forest has been monitoring the population and habitat status of redband trout annually since 1990. The overall population trend for the fish appears to be one of general stability rather than upward or downward population movement. Range expansion for coho and the other salmonid species on the Trinity Forest is occurring methodically now via the effort to upgrade numerous fish passage sites affected by the Forest road network.

Trends: A general trend Forest-wide regarding fisheries monitoring is the gradual decrease in the effort dedicated to monitoring and an increase in planning and consultation activities. The guidelines to write the Forests' biological assessment are extremely detailed and lengthy compared to the process utilized in the 1990's. ESA consultation has grown so that more than half the Trinity Forest fish biologists' time is taken up in consultation with National Marine Fisheries Service (NMFS), and not with routine fish program and aquatic resource management activities.

Wildlife (Threatened and Endangered)

Generally, forest monitoring in wildlife has emphasized threatened and endangered species, especially the bald eagle. The number of the bald eagles has increased and even exceeds the expectation originally proposed in the recovery plan for Shasta Lake.

Monitoring of northern spotted owls has focused on regional or population level monitoring through the demographic studies conducted by researchers throughout the region. Although Forest level survey work has continued, and historical sites are regularly monitored on both sides of the Forest, the surveys are not comprehensive enough to track Forest level population fluctuations accurately.

Peregrine falcon monitoring continued in 2004. One of two historical Shasta sites was monitored and it appeared to be abandoned. The Trinity side found 3 of 8 territories to be in active nesting status. Nest searches were completed on all 33 goshawk territories in 2004 using GPS. Four territories were occupied with nesting pairs.

Wildlife Management: Trends in Monitoring Diversity

As our concern for greater diversity of species has increased over the last 25 years, so has the complexity and expense of field monitoring. A short time ago, agency wildlife biologists would have primarily concerned themselves with monitoring a handful of species known to be exploited or of particular interest to the public. However, with a global concern for declining species we now find ourselves committed to maintaining the conditions necessary to sustain all species that may be dependent on our public lands.

The technical demands of monitoring population trends of more than a thousand vertebrate species and a vast number of invertebrate and vegetative species, are daunting, and virtually impossible under declining budgets. Dr. Jared Verner estimated that to monitor just one forest for the pileated woodpecker would cost as much as \$1 million per year. Because populations vary naturally under typically fluctuating weather patterns, predator/prey patterns and other factors, year to year fluctuations are usually difficult to differentiate from background patterns. Although we can monitor the trends of some subsets of selected species, the significance of the patterns we might see are frequently uninterruptible without additional data.

Botany

Eleven new populations of sensitive plants were found and documented in FY 2004. No sensitive plants on the Shasta-Trinity were proposed for listing by USFWS. Mitigations were developed for eight projects in FY 2004 to lessen or eliminate project impacts to sensitive plants. In general, mitigations were implemented as written and were effective.

Noxious Weeds

Monitoring occurs at both the project and landscape level. Results indicate that programs are modestly successfully at implementing associated province objectives in prevention, inventory, and education. Problems remain in timeliness and success of treatment at the appropriate scale.

Resource Management Programs

Fire and Fuels

In 2001 The Shasta-Trinity NF established a Forest Fire Management Plan. This document provides guidance from the Forest Plan combined with national fire plan direction. Monitoring of vegetation projects was a high priority across the region and nation. The Shasta-Trinity (along with most R5 forests) established two long-term monitoring plots through a regionally funded program. These will be visited over time to assess the effectiveness of various fuels treatment activities. The forest continues to provide site-specific monitoring information on every prescribed burn project.

Trends: National Fire Plan Direction - Program Emphasis Changes 1999-2004: In 2000 the national direction in the Fire/Fuels programs shifted with the intent of improving strategy, tactics and planning with the goal of reducing large-scale catastrophic fire events across the landscape. Two primary directional documents capture the overall direction for the nation. One document is titled, “Protecting People and Sustaining Resources in Fire-Adapted Ecosystems – A Cohesive Strategy” (October 2000). The second directional document is “10-yr Comprehensive Strategy Implementation Plan” (May 2002).

Timber Management

In FY2004 the Forest was funded to offer 61.8 MMBF of timber and exceeded this target with an offering of 70 MMB. This is 85% of the 82 MMBF allowable sale quantity in the Forest Plan. The Forest exceeded the intermediate and salvage cutting objectives in FY 2004, but cut below the acres specified in the Forest Plan for regeneration harvest. Monitoring has shown that with limited regeneration cutting occurring 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 2004 were at 6% of the 3500 acre objective in the Forest Plan due to the current emphasis on thinning and salvage. The Forest certified about 94% of the regeneration harvest acres that occurred in FY 1999 as being adequately stocked and meeting Forest Plan objectives. The Forest accomplished 69% of the timber stand improvement specified in the Forest Plan due to reduced funding.

Biomass

Although no targets for biomass were established in the Forest Plan, about 20 million board feet of biomass (chips) were sold in FY 2004. Biomass opportunities will continue to be explored.

Facilities Management: Roads

There are approximately 6500 miles of roads on the Forest. Over the past 5 years only 15-25% of those roads have received any type of maintenance. The road maintenance budget is declining and it is expected that the maintenance level will drop to 10-15% in the next few years. This is having a direct effect on soil and water quality as can be seen in the BMP (Best Management Practices) monitoring results. We are also getting more complaints about road condition from the public. More roads will have to be closed to avoid critical health and safety issues in the future.

Gains have been made recently in the area of road inventories and accountability. The forest now has a much better picture of its road assets and conditions with more up-to-date records and improved accountability.

Forest Pest Management

Yearly aerial surveys are conducted to monitor and develop a database of mortality statistics on the Forest. Mortality was very high during 2004, especially in the pine stands of the McCloud Flats. Several years of below average precipitation contributed to the mountain pine beetle outbreak and subsequent mortality of trees. Approximately 13 million board feet of salvage was designated and removed in FY 2004 and a similar amount is planned for harvesting in FY 2005.

Range Management

2004 range readiness and utilization checks were conducted to standard on all 13 active allotments. Results of this monitoring effort indicated that these allotments meet or are moving towards meeting existing standards and management concepts. Special management of selected riparian areas continued and included the use of electric fencing, hardwire fencing, and diligent distribution monitoring. This effort was directed towards meeting the Forest-wide Aquatic Conservation Strategy and also included monitoring of some riparian areas within the two allotments on the Trinity side that have been determined by the National Marine Fisheries Service as MALAA (May Affect Likely to Adversely Affect) for listed anadromous fish species.

Trends: Over the past 10 years, five allotments have remained vacant on the Forest. Once an allotment is vacant, it cannot be available for a new permittee, until the appropriate NEPA documentation has been completed. In the 1995 Rescission's Act all Forests were required to complete NEPA for all range allotments by 2010. The Forest has begun working on analysis and surveys required for NEPA. Completing range NEPA for all Forest allotments will be the emphasis for the next 5 years.

Public Use and Information Programs

Wild and Scenic Rivers

With the use of completed implementation guides and public/partner assistance, the wild and scenic character of designated rivers is continually improving. Landownership issues (encroachment of structures on National Forest lands due to faulty land surveys, and vice versa) in the Trinity River corridor continue to accumulate due to a lack of lands funding.

Wilderness

The primary focus of the Forest is on meeting enough components of the 10-year Wilderness Stewardship Challenge Wilderness to put all of the five wilderness areas into category of “managed to standards.” Also, Implementation Schedules (WIS) is being used to implement direction from the Forest Plan. A Fire Use Plan is currently being developed for the Trinity Alps Wilderness. The change from “fee demo” to the requirements of the Federal Lands Recreation Enhancement Act helps maintain public service in the Mt. Shasta Wilderness. Wilderness boundary management is conducted

on an as-needed basis, with a significant backlog of un-posted boundary. Wilderness information programs, including the new “electronic kiosk” for the Trinity Alps, help get necessary information wilderness visitors.

Recreation

Recreation Partnerships: In 1995 the forest celebrated partnerships. In 2004 the forest recognizes that partnerships play an integral in meeting the challenges of managing public lands in a new century. There is a strong emphasis on partnerships, volunteerism and hosted programs. The forest will continue to work on maintaining and expanding existing partnerships, developing new partnerships, exploring new ways of doing business and determining the most efficient means for accomplishing program objectives, including providing safe, quality recreation opportunities and meeting the diverse needs of the recreating public.

Off Highway Vehicle (OHV) Route Designation Process: In 1995, the forest recognized a need to identify and develop OHV trails. In 2004, the Pacific Southwest Region developed an *OHV Route Designation Guidebook* for National Forests in California. This guidebook includes a five step OHV Route Designation Strategy for developing a broader, larger scale designated route system. The forest will continue to implement this strategy and will actively promote public participation in the development and maintenance of a sustainable designated OHV route system.

Trails (General): The forest plan doesn’t currently include standards and guidelines specifically for trails, other than the Pacific Crest Trail. There are over 1300 miles of trail on the forest. Poorly located or poorly maintained trails degrade resources. With increased use, trails require an increased emphasis. The forest will continue to promote partnerships and pursue supplemental sources of funding to increase the number of miles of trail maintained to standard, reduce the forest’s deferred maintenance backlog and to provide greater protection of forest resources.

Visual Quality

The 2004 visual quality program focused on the design needed to: (1) upgrade several developed recreation sites (2) collaborate in the development for Volcanic Legacy Scenic Byway signing, and (3) monitor scenery for vegetation management projects. Construction and upgrade of the recreation sites will begin in FY2005. Scenic Byway signs will be fabricated as soon as possible.

Heritage Resource Management

In FY04, 34 heritage resources were examined and reported on. The monitoring was done on four Ranger Districts. In several cases, damage to monitored sites was noted from timber harvesting.

Trends: Over the past decade the funding for heritage projects has decreased significantly. The funding for other program areas has decreased also, resulting in fewer Section 106 needs. These two trends have resulted in less acres surveyed for heritage resources, and fewer new heritage resources recorded. Less dollars has also resulted in fewer heritage Section 110 projects (e.g., enhancement of sites), National Register evaluations, etc.

The trends noted above will remain in the years ahead, although the decrease in funds and number of projects has probably leveled out. A newer trend is the increased interest of Native American tribes - both federally recognized and not - in resources on NF lands.

Law Enforcement

In 2004, we saw a significant increase in the number of marijuana gardens on the Forest, and the number of plants eradicated. Almost all of the gardens are associated with drug trafficking organizations. There is also an increase in vandalism and theft of both private and public property. This includes resource damage due to OHV use, and a significant amount of fuelwood/timber theft. The forest also experiences a significant amount of recreation-related violations.

Trends: Without a larger law enforcement workforce, the Forest will be responding after the fact to violations, rather than having a proactive law enforcement program.

Appendix A: Implementation of Forest Plan Standards and Guidelines

Appendix A provides background information for the 2004 Monitoring and Evaluation Report. It is organized by resource areas and evaluates the use of key standards for each area.

Physical Environment

Soil and Water

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: Evaluation procedures vary greatly based upon the management activity evaluated, but the overall evaluation process is similar. The type and number of management activities evaluated each year on the Forest are assigned by the Regional Office. The specific management activity sites evaluated are randomly selected from project pools. The criteria for sample pool development has been standardized by the Region for each activity type and are described in the BMP User's Guide (2002).

All BMP evaluations were carried out by unit hydrologists and/or hydrologic technicians. Whenever possible evaluators were accompanied by unit personnel responsible for implementing the BMP (i.e. range conservationist, contracting officer, etc.). Follow-up office reviews of each BMP occurred with the evaluator and appropriate department representative in those cases when a representative could not accompany the evaluators to the field.

Results: The table below shows the specific BMPs that were monitored in FY 2004. Of the 55 BMP applications monitored, 44 were found to be effective in their application and 11 were not. Most of the BMP applications not found to be effective were related to road maintenance issues.

Recommendations:

- Ensure road contract inspector training and certification of watershed personnel. Ensure BMP training for all engineers
- Include fuel breaks to 100' on each side of road on all maintenance work.
- Open roads that are closed by brush, down trees or rock so maintenance can occur and public has access.
- Upgrade areas repaired during sub-standard "emergency" fixes, such as stacked pipes
- If wet weather timber operations are expected guarantee which roads will be used and permanent and prescribe rocking for use during the winter.

- Begin upgraded watershed road inventories on uncovered watersheds or begin inventorying over on the oldest project areas. Include info for future RAPS, especially all unclassified roads and trails. Tie in with the OHV surveys for FS efficiency during further budget cutbacks.
- Include larger “permanent” rolling dips as part of the total preventative maintenance prescription to prevent road surface rilling.
- Include trails in finished decommissioning product if appropriate. An excavator can easily accomplish this on the way out.
- Close timber sale roads for wet weather and re-open for public firewood cutting the following summer.
- Repair, decommission or hydro-close the several roads found with pipe failures.

2004 BMP Evaluations on the Shasta-Trinity National Forest

Practice	Number of Sites Evaluated	Number of Sites Implemented	Number of Sites Effective
Road Surface, Drainage and Slope Protection	4	1	2
Stream Crossings	3	1	1
Control of Sidecast Material	3	1	1
Landings	6	6	6
Timber Sale Administration	1	1	1
Meadow Protection	1	1	1
Streamside Management Zones	3	3	3
Skid Trails	4	4	4
Road Decommissioning	2	2	2
Suspended Yarding	4	4	4
Servicing and Refueling	1	1	1
In-Channel Construction Practices	2	2	1 + N/A
Temporary Roads	3	3	3
Water Source Development	1	1	1
Snow Removal	4	3	3
Management of Roads during Wet Weather	1	0	0
Developed Recreation Sites	3	3	3
Range Management	1	1	1
Prescribed Fire	3	2	2
Common Variety Minerals	1	1	1
Vegetation Manipulation	1	1	1
Revegetation of Surface Disturbed Areas	1	1	1
Dispersed Recreation Sites	2	2	2
Totals	55	44	44

Site specific recommendations were made for the sites where BMPs were found to not be effective.

The following table provides the combined results of the BMPEP monitoring conducted from 1999 to 2003 in order to provide a comparison with the results for 2004. In 2004 80% of the sites monitored found that BMPS were both implemented and effective. The totals for the previous five years show that 71% of BMPS were implemented and 84% were effective. Looking at individual results shows that timber harvest BMP implementation has improved and road related BMP implementation continues to be a problem area. The results have been reported annually to the Forest and the Regional Office.

Summary of BMPEP Monitoring Results from 1999 to 2003

Form	Practice	Number of Sites Evaluated	Number of Sites Implemented	Number of Sites Effective
T01	Streamside Management Zones	19	15	17
T02	Skid Trails	27	15	26
T03	Suspended Yarding	14	13	14
T04	Landings	34	27	33
T05	Timber Sale Administration	3	3	3
T06	Special Erosion Control & Veg	1	1	1
T07	Meadow Protection	10	10	10
E08	Road Surface, Drainage and Slope Protection	16	8	9
E09	Stream Crossings	13	6	6
E10	Road Decommissioning	6	2	3
E11	Control of Sidecast Material	10	4	4
E12	Servicing and Refueling	0	0	0
E13	In-Channel Construction Practices	5	5	5
E14	Temporary Roads	8	6	8
E15	Rip Rap Composition	2	1	1
E16	Water Source Development	0	0	0
E17	Snow Removal	6	5	5
E20	Management of Roads during Wet Weather	1	0	0
R22	Developed Recreation Sites	5	5	5
G24	Range Management	4	3	3
F25	Prescribed Fire	10	9	10
M26	Mining Operations (Locatable Minerals)	3	1	2
M27	Common Variety Minerals	3	1	1
V28	Vegetation Manipulation	4	4	4
V29	Revegetation of Surface Disturbed Areas	0	0	0
R30	Dispersed Recreation Sites	4	4	4
	Totals	208	148	174

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

Data Location: The results of the BMP monitoring are stored in the Regional BMPEP Database as well as on a Forest database. The Forest Headquarters Office, Redding, CA also has the original data collection forms.

Soil Quality Standards and Soil Productivity

Forest Plan Standards: Implement forest soil quality standards as they relate to soil productivity and soil porosity. (Ref: Forest Plan 4-25e. Forest Soil Quality Standards, in relation to soil porosity).

Objectives: To determine if soil porosity (compaction) standards were met in forest management activities on sensitive soils. Forest Service guidelines require at least 90% of the total porosity found under undisturbed or natural conditions. Porosity is evaluated between 4 and 8 inches below the surface for soils with tree and shrub potential. A 10% reduction in total soil porosity corresponds to a threshold soil bulk density that indicates detrimental soil compaction.

Methods: Five 100 foot transects were taken across each monitoring unit and data averaged and evaluated for the unit. Data collected focused on disturbance class, soil strength, bulk density and soil moisture. From May to September data was collected each month. The transect locations were randomly selected on a representative unit in the Iron Canyon Late Successional Reserve (LSR) thinning project.

Results: Bulk density cores and penetrometer readings were analyzed in the Pacific Southwest Experimental Station laboratory in Redding, CA. All methods of sampling were statistically analyzed and results showed that in two disturbance classes; light and moderate (66% of area) soil compaction did not exceed forest soil quality standards but on heavy disturbed areas (34% of area) compaction was at the threshold (11% +/- 2%) for forest soil quality standards for porosity.

Recommendation: This monitoring effort shows how soil moisture and timing of entry is critical for successful implementation of soil quality standards in regards to soil porosity. This monitoring effort shows that LSRs can be selectively thinned to reduce understory competition without sacrificing site quality if careful planning, proper timing of entry, low impact harvesting equipment, and good sales administration are utilized. This monitoring effort will be continued to evaluate pre-thinning soil porosity, post-thinning soil porosity and moisture status on sites that will be thinned in the subsequent years. This data will provide quantitative values for proper soil moisture to insure soil porosity thresholds will not be exceeded on fine textured soils.

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

Where is data located: Shasta-Trinity National Forest Headquarters, Redding, CA.

Watershed Restoration

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

Monitoring Objectives: To establish baseline conditions prior to restoration implementation. 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: Some larger projects have specific methods outlined in their monitoring plans. Other monitoring efforts include subjective on-site evaluations and photo point monitoring. Contracts through contract administration were monitored. The Forest monitored implementation of road decommissioning 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: Trout Creek Wetland Restoration Project: Pre-project monitoring began in 2002 with the installation of a series of water wells dug to a depth of 25 feet. These wells are set in a straight row perpendicular to the present stream channel. They are measured annually to record the ground water level. This baseline data will be used to compare to post project data in order to monitor the effects of the project on the level of the water table.

Tate Creek Restoration Project: Post project monitoring continued on Tate Creek. Monitoring efforts consisted of evaluating the effectiveness of riparian planting and changes in the stream channel configuration. Results indicate that willow cuttings were largely successful in all areas of saturated soil in the spring. Minor channel adjustments continue while the overall channel realignment continues to hold its form.

South Fork Management Unit Road Decommissioning Monitoring: Site visits to a number of completed decommissioning projects resulted in a number of observations about achieving the desired results from the planning stage through implementation. The complexity of procedures and conflicting authorities continue to hamper efforts to achieve desired results in every situation.

Recommendations: Ensure road contract inspector training and certification of watershed personnel. Ensure BMP training for all engineers. Include larger "permanent" rolling dips as part of the total preventative maintenance prescription to prevent road surface rilling. Include trails in finished decommissioning product if appropriate. An excavator can easily accomplish this on the way out. Continue monitoring of watershed restoration activities.

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

Data location: Shasta-McCloud Management Unit, McCloud California.

Biological Environment

Fisheries Management

Sport Fisheries

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 Objective: To determine fish response and abundance related to habitat improvement treatments compared with untreated areas in Shasta and Trinity Lakes.

Results: Two hundred and fifty-five acres of lake were restored in fiscal year 2004, while 48 acres were inventoried. Fish utilization abundance was determined for treatment structures within the restored acreage via scuba diving along with underwater photography (20 underwater brush

structures, 15 willow plantings and two acres of seeding). Overall fish abundance ranged from three to ten times greater in these treatment areas compared to untreated control areas.

New WEB Fishing Page: A Shasta-Trinity National Forest ‘fishing page’ website has been established during the past few years and is viewable at:

<http://www.fs.fed.us/r5/shastatrinity/recreation/st-main/st-fishing/index.shtml>.

The majority of links originating from the welcome page deal with recreational fishing opportunities on and near the Forest. The webpage was established in response to both a National and Regional ‘RECFISH’ initiative (Recreational Fishery Resources Conservation Plan) that began in 1997. An AM radio station (530 khz) is also locally broadcasting current fishing opportunities and other timely Forest outdoor news in the general Weaverville area as an outcome of this initiative.

Summer Steelhead and Spring-Run Chinook Habitat

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 channel cross section geometry and bedload particle size, since these physical processes affect biological health. Previous inventories completed in the 1980s and 1990s did not provide us with sufficient focus to detect trend changes.

Results: Four sites received repeated monitoring in 2002 and 2003, including the determination of spawning gravel permeability. Four additional sites expanded the sampling program. Funding shortfalls, unfortunately, prevented continuation of this monitoring in 2004. Ideally, trend monitoring will provide the most confident results if sampling can be done annually to eventually determine a ‘moving average’ trend line.

South Fork Trinity River spring Chinook salmon adult surveys have been conducted repeatedly since 1998 via snorkeling and the counting of spawning redds. The California Department of Fish and Game coordinates this survey and staff from the Forest participate every year.

Summer steelhead adults are also counted every year (going back to 1978) via snorkeling in the Trinity River mainstem tributaries of Canyon Creek, the North Fork, and the New River. The Forest has taken the lead for these surveys from the Department of Fish and Game since 1990. Annual results can provide differences of orders of magnitude when comparing years. Despite this wide variability, greater numbers of adults appear to have been counted during the most recent half of the survey period compared to the initial period of years ending in 1990.

Wild Trout and Salmon Habitat

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

1. **Shasta Forest: McCloud River Redband Trout.** The ongoing interagency renewal of the Redband Trout Conservation Agreement strongly confirms interest in conserving, enhancing, and above all preventing the Federal listing of this species by all affected parties. Recent sampling in various McCloud River tributaries by Department of Fish and Game personnel have yielded individual redband trout in previously unsuspected locations. Department staff is

going to urge expansion of current maps in the Agreement to indicate additional areas of redband trout refugia.

- a. The Forest has been monitoring the population and habitat status of redband trout annually since 1990. Six recurring sampling sites exist in Trout Creek, two in Tate Creek and the McCloud River, and a single site in Sheepheaven Creek. This stream appears to harbor the most genetically pure strain of redband trout as per sampling and analysis by the University of California at Davis, Ca. The overall population trend for the fish appears to be one of general stability rather than upward or downward population movement.
 - b. Habitat quality monitoring has also continued with water temperatures documented at three locations on Trout Creek, three sites on the McCloud River, and a single site each on Moosehead, Edson, Tate, and Swamp Creeks. Readings are collected hourly with the goal of capturing any daily warm water temperature peaks that could either stress or threaten the lives of nearby redband trout.
 - c. A final monitoring report has been completed by district staff for a Tate Creek Restoration Project. Pre and post project channel cross-sections, topographic surveys, and photographic points comprise the bulk of the data collected for the report.
 - d. A draft habitat mitigation monitoring plan has been prepared for an upcoming Trout Creek Restoration Project.
2. **Trinity Forest: Coho Salmon** is a federally listed ‘Threatened’ species. Information that follows generally applies to all species of wild trout and salmon occurring in the Trinity River on this Forest except for the discussion of Endangered Species Act consultation.
- a. The National Marine Fisheries Service has estimated the size of the population of wild coho salmon in the Trinity River basin to be only 200 adult fish. Despite Trinity fish being ‘lumped’ genetically into a larger population totaling 10,000 individuals, the urgency of protecting and enhancing the current small population of Trinity fish is crucial.
 - b. Range expansion for coho and the other salmonid species on the Trinity Forest is occurring methodically now via the effort to upgrade numerous fish passage sites affected by the Forest road network.
 - c. Adverse affects to coho salmon and it’s (and all salmonid) habitat could potentially result from multiple use activities conducted by the Forest. Prevention of such effects are ensured through ESA consultation with the National Marine Fisheries Service (NMFS). Detailed biological assessments must be written and concurred with by NMFS prior to initiating any activity that could harm either the fish or its habitat.

Regarding timber sales, the ESA consultation process takes virtually months to achieve NMFS’ concurrence. The guidelines to write the Forest’s biological assessment is extremely detailed and lengthy compared to the process utilized in 1998, the time of the previous Forest monitoring report.

ESA consultation has now grown regarding time and workload commitment such that more than half the Trinity Forest district fish biologists' time is consumed by such consultation, and not with routine fish program and aquatic resource management activities.

Threatened Endangered and Sensitive (TES) Species

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.

Listed/Proposed Threatened and Endangered Species for the Shasta-Trinity National Forest Administrative Unit (Candidates Included)

Type	Scientific Name	Common Name	Category	Critical Habitat
Plants	<i>Arabis macdonaldiana</i>	McDonald's rockcress	E	N
	<i>Orcuttia tenuis</i>	slender Orcutt grass	T	P
Invertebrates	<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	T	N
	<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	T	Y
	<i>Pacifastacus fortis</i>	Shasta crayfish	E	N
Fish	<i>Chasmistes brevirostris</i>	shortnose sucker	E	Y
	<i>Deltistes luxatus</i>	Lost River sucker	E	Y
	<i>Hypomesus transpacificus</i>	delta smelt	T	Y
	<i>Oncorhynchus kisutch</i>	S. OR/N. CA coho salmon	T	Y
	<i>Oncorhynchus mykiss</i>	Central Valley steelhead	T	P
	<i>Oncorhynchus mykiss</i>	Northern California steelhead	T	Y
	<i>Oncorhynchus tshawytscha</i>	CA coastal chinook salmon	T	Y
	<i>Oncorhynchus tshawytscha</i>	winter-run chinook salmon	E	Y
Amphibians	<i>Rana aurora draytonii</i>	California red-legged frog	T	Y
Birds	<i>Brachyramphus marmoratus</i>	marbled murrelet	T	Y
	<i>Coccyzus americanus</i>	Western yellow-billed cuckoo	C	N
	<i>Haliaeetus leucocephalus</i>	bald eagle	T	N
	<i>Strix occidentalis caurina</i>	northern spotted owl	T	Y
Mammals	<i>Martes pennanti pacifica</i>	Pacific fisher	C	N

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(PE) Proposed Endangered Proposed in the Federal Register as being in danger of extinction

(PT) Proposed Threatened Proposed as likely to become endangered within the foreseeable future

(E) Endangered Listed in the Federal Register as being in danger of extinction

(T) Threatened Listed as likely to become endangered within the foreseeable future

(C) Candidate which may become a proposed species Habitat Y = Designated, P = Proposed, N = None Designated

* Denotes a species Listed by the National Marine Fisheries Service

Examples of Monitoring

1. Peregrine Falcon Monitoring - Shasta N.F.

Objective: Monitor historical sites to conform nesting or occupancy.

Methods: Used Region 5 peregrine protocol as a guide for monitoring individual, known peregrine habitat. Several visits were made to each site.

Results and Recommendations: One of two historical sites were monitored in FY 2004 (summer of 2005). Biologists did not confirm occupancy or breeding and the site appeared to be abandoned for this year. Recommend continue yearly monitoring.

Data location: Mt. Shasta and McCloud Ranger Station wildlife offices.

Public Involvement: Information is shared with California Department of Fish and Game and adjacent land owners.

2. Peregrine Falcon Monitoring - Trinity N.F.

Objective: Cooperate with the State to meet objectives of State Listed Species.

Methods: District biologists surveyed 8 peregrine territories to establish status.

Results and Recommendations: Of the 8 territories, 3 were in active nesting status, one was occupied by a prairie falcon and the rest inactive. Continue cooperative venture.

Data location: Hayfork Ranger Station.

Public Involvement: Information is shared with California Department of Fish and Game and adjacent land owners.

3. Spotted Owl monitoring - Shasta N.F.

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

Methods: During FY 2004, 35,000 acres of suitable owl habitat were surveyed on the Shasta McCloud Management Unit (SMMU). This included 7 projects and 22 historical territories. Region 5 spotted owl survey protocol was utilized and historical 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 5 territories. Owl nesting activity was lower than 1989-1997 monitoring results. Recommend continuing monitoring owl territories and projects to assess breeding status.

Data location: statewide Strix database and the Mt. Shasta and McCloud Ranger District wildlife offices.

4. Spotted Owl monitoring - Trinity N.F.

Objective: Monitor proposed projects to determine presence as required to complete projects during limited operating period.

Methods: During FY 2004, about 10,000 acres of suitable owl habitat were surveyed on the South Fork Management Unit (SFMU). In cooperation with the OHV owl disturbance study, we monitored more than 50 activity centers, finding active occupancy in sixteen of those. T&E habitat was evaluated by reviewing vegetation maps, aerial photos and conducting some field work.

Data location: Yolla Bolla and Hayfork District wildlife offices.

5. Bald Eagle Nest and Tree Monitoring – Shasta NF

Objective: Determine nest occupancy and breeding at 20 nest sites at Shasta Lake.

Methods: Conduct at least 3 visits per nest to determine productivity and nest success. as per Pacific State Bald Eagle Recovery Plan direction.

Results and Recommendations: During 2004, 19 territories were occupied at Shasta Lake. Of the total number of occupied territories, 13 territories were successful and 19 chicks were fledged from 13 active successful nests. We met the objective of 1 chick fledged per occupied territory and exceeded the 65% objective for nest success (72%). This success is due to monitoring by FS personnel during the nesting season and implementation of a Forest Order enabling us to close and/or restrict access to any nest territory that we feel is likely to be impacted by visitors. Sites are providing essential habitat for breeding. Continue yearly monitoring.

Data location: Shasta Lake Ranger District Office (Shasta-Trinity National Recreation Area Unit).

6. Trinity Lake/Lewiston Lake Bald Eagle monitoring

Objective: Ensure land management activities will not threaten bald eagle nesting on the lakes.

Methods: Each site was visited at least three times to determine nesting success. Data was collected on the number of bald eagles at Trinity Lake in mid-January. The number of eaglets produced from 13 known nest sites was also collected. GPS location was recorded at 12 sites.

Results and Recommendations: Recommend the GPS be used exclusively in the future for recording locations.

Data location: **Weaverville Ranger Station.**

7. Maintain Goshawk Territories

Objective: McCloud Ranger District contains approximately 33 historical nesting territories. Nest searches were completed on 25 of the 33 territories in FY 2004. 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 24 goshawk territories. Information was shared with California Department of Fish and Game and adjacent land owners.

Results and Recommendations: Nest searches were completed in 25 territories and all were located with GPS to improve the accuracy of location in GIS. One territory was occupied with a nesting pair. The validity of the 100-acre core territories will be visited on a project-by-project basis. Recommend to continue monitoring 100-acre nest territories.

Data location: Mt. Shasta Ranger District wildlife office.

Public Involvement: Information is shared with California Department of Fish and Game and adjacent landowners.

Late-Successional Reserves

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 provide guidelines to meet desired conditions.

Methods: A comprehensive forest-wide late-successional reserve assessment (LSRA) was completed in 1999. This LSRA was produced by an interagency core team, including USFWS and the Bureau of Land Management. The LSRA was a significant undertaking, covering 18 LSRs and 6 Managed Late-successional Areas (MLSAs). One additional LSR, Clear Creek, was completed in 1998. All of these assessments used methodology provided by the Regional Ecosystem Office (REO) and the Record of Decision for the Northwest Forest Plan.

Results: These assessments have been used extensively in project design and planning. The LSRA stressed the need to treat unacceptable fuel hazards and over stocked stand conditions.

Recommendations: Continue use of the LSR assessment and update at periodic intervals.

Public Involvement: The public was informed of the LSR Assessment's progress.

Data location: Supervisor's Office, Redding, California and the Shasta-Trinity website at <http://www.fs.fed.us/r5/shastatrinity/publications>

Botany

Monitor Projects

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. GIS botany coverages are updated periodically as needed.

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: Eleven new populations of sensitive plants were found and documented in FY 2004. Field surveys are performed for all large projects; a few small or dispersed projects that are likely to have no effect on sensitive plants, because of lack of suitable habitat or lack of expected impacts from the proposed action, 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. Mitigations were developed for eight projects in FY 2004 to lessen or eliminate project impacts to sensitive plants. In general, mitigations were implemented as written and were effective.

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.

Data location: Project NEPA files, HQ and district botany files, GIS coverages, California Natural Diversity Database (Dept. of Fish & Game) files.

Conservation Strategies

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 2004.

Results: The conservation strategy process for serpentine endemics of the Rattlesnake Terrane (Yolla Bolla and Hayfork RDs) moved forward with completion of the Rattlesnake Terrane Soil Survey, which produced a detailed GIS coverage and soil map unit descriptions. Also in 2004, the Forest entered into an agreement with the Univ. of California at Davis to produce suitable habitat models for the Rattlesnake Creek Terrane serpentine endemic plants, using our soil survey data and existing plant population distribution data to correlate sensitive plant distribution with soils and other environmental variables.

Recommendations: Continue to focus on multi-species, rather than single species strategies. Continue with the Rattlesnake Creek Terrain conservation strategy and look next to the Shasta-McCloud Management Unit for an opportunity for a multi-species strategy.

Public Involvement: No public involvement.

Where is data located: Headquarters and District sensitive plant files. Soil survey data is posted on Shasta-Trinity website at <http://www.fs.fed.us/r5/shastatrinity/publications/trinity-serpentine.shtml>.

Noxious Weeds

Participate in County Program

Northern Province Noxious and Invasive Weeds Program Strategy Objective/Action Item: 2A. Northern Province Forests will actively participate in county Noxious Weed Management Areas with other agencies and interested parties.

Monitoring Objective: To review compliance with Northern Province Weed Program Strategy, and effectiveness of our collaboration with other stakeholders in managing invasive plants.

Method: Phone conversations with district and Klamath NF noxious weed coordinators; review of files at the Forest Headquarters.

Data Collected: Weed Management Area MOUs signed by Forest Supervisor; attendance by Forest Service representatives at WMA meetings and other events; informal contacts with WMA participants.

Results: Shasta-Trinity Forest Supervisor signed Memoranda of Understanding establishing Shasta and Trinity Weed Management Areas. Shasta-Trinity weed program coordinators participated in Siskiyou, Shasta, and Trinity Weed Management Areas, including steering committee for the Shasta Weed Management Area.

Recommendations: Continue regular involvement with Siskiyou, Shasta, and Trinity Weed Management Areas.

Public Involvement: Weed Management Areas include federal, state, county, and local agency representatives, non-profit groups, and private stakeholders.

Data location: Weed Management Area MOUs are on file at County Agriculture offices, the Forest Headquarters and district weed program files.

Databases

Northern Province Noxious and Invasive Weeds Program Strategy Objective/Action Item: 1B. Develop and implement automated databases for the storage and retrieval of information on noxious weeds. Ensure that the forests implement Forest Service inventory and monitoring protocols and that data is gathered and shared consistently across units and Forests.

Monitoring Objective: To review compliance with corporate inventory & monitoring procedures, and use of corporate databases for invasive plants.

Method: Review of Forest Headquarters' files.

Data Collected: Proportion of existing invasive plant records in corporate GIS layers and entered into NRIS Terra Invasives database.

Results: 90+% of all legacy (pre-2004) invasive plant records were migrated into NRIS Terra in 2004. 70+% of legacy spatial records were digitized as shapefiles in ArcGIS.

Recommendations: Continue entering tabular and spatial invasive plant data into NRIS Terra annually.

Public Involvement: None

Data location: Electronic data on local and regional servers; hard copy data in district and Forest Headquarters' files.

Biological Diversity

Snag Retention

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 all areas where the baseline level of snags met the minimum standards. 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.

Data location: Data is in NEPA documents at the Ranger stations.

Wildlife Management

Neotropical birds

Forest Plan Standard: Manage habitat for Neotropical migrant birds to maintain viable population levels. (Ref: Forest Plan page 4-29, #25.c)

Objective: Continue to survey and band breeding birds at the White Bar station.

Methodology: Bird population and habitat data were collected at White Bar on the Trinity River. Mist nets and point counts are conducted 3 times from May-August according to the MAPS protocol. Twelve years of surveys have been completed at the station. Over 1500 individuals have been surveyed at Sims and around 60 species of birds were tagged over the 12 year period.

Results and Recommendations: Results are integrated into national MAPS (Migratory Avian Productivity Surveys) data at the Patuxent Research Center.

Where is data located: Big Bar Ranger Station.

Habitat Improvement

Forest Plan Standard: A combination of even-aged and uneven-aged timber management practices will be used to achieve desired wildlife goals and objectives and to maintain healthy, vigorous stands. (Ref: Forest Plan page 4-66, #5).

Objective: Design project to improve elk habitat in Reynolds Basin.

Method: Visual assessment of existing elk habitat.

Results and Recommendations: Three hundred acres of elk habitat improvement for FY 2004.

Data location: Reynolds Basin EA and Mt. Shasta Ranger Station.

Resource Management Programs

Fire and Fuels

Hazard Fuels and Reintroduction of Fire

Forest Plan Standard: 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 d).

Fuels Monitoring Example 2004 – Green Mountain

Objective: Monitor (A) environmental analysis process and (B) post-burn summaries to insure that fuels reduction objectives are being met.

Methods: (A) The environmental evaluation for a fuels treatment project is based on a fuels inventory and/or a photo series comparative analysis taken at the project site.

(B) Each project burn plan contains a summary of monitoring elements. The results for each element are evaluated by the burn boss to determine if burn objectives were met. Burn plans are prepared for every proposed burning project. They are designed to meet the fuels objectives and mitigations described in the environmental analysis 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, Forest Fire Management, Air Quality Management District and Redding Interagency Command Center.

Results: Monitoring evaluation of the Green Mountain Project showed that target accomplishments were 75-95% successful. Both the consumption rates and scorch heights were within acceptable limits. Team members found that the project favorably met the objectives.

Recommendation: Team members recommend continuation of program and monitoring. Funding and personnel are not currently available to conduct optimal pre and post-burn inventories. Acquire additional funding for future programs.

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.

Data location: Burn plans are located at the local management unit offices, the Forest Headquarters Office in Redding, and RICC (Redding Interagency Command Center). Post-burn summaries are located at the local Management Unit Offices.

Activity Fuels

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. (Ref: Forest Plan, page 4-17)

Monitoring Objectives: (2004 example project – Cooper Gulch hand piles - TRMU)

Evaluate the effectiveness of prescribed fuel treatments to adequately treat excess activity fuels within various site-specific resource and environmental constraints.

Methods: All areas were visited prior to logging during the NEPA stages. Fuels inventories, photo series assessment and team expertise were used to estimate the count of activity fuels likely to be generated on a unit-by-unit basis for project area. If there was to be no reforestation (e.g., thinning) activity fuels were treated to meet hazard reduction objectives. In areas where reforestation was to take place, fuels specialists and silviculturists worked together to prescribe the appropriate method of fuel treatment. All treatments, both for hazard reduction and site-prep were developed and refined by interdisciplinary teams for each project.

Results: When possible a post-burn fuels inventory was taken, otherwise a visual site assessment was performed. For the 2004 Cooper Gulch area 42 acres of prescribed activity fuels treatments by hand piling and burning were successfully implemented.

Recommendation: Funding and personnel are not currently available to conduct optimal pre and post-burn inventories. Acquire additional funding for future programs.

Public Involvement: Local citizens groups routinely review timber sales on the unit.

Data location: Burn plans are located at local Management Unit Offices, Forest Headquarters Office in Redding and, RICC (Redding Interagency Command Center). Post-burn summaries are located at the local Management Unit Offices.

Timber Management

Allowable Sale Quantity

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 2004 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).

Results: The timber volume offered for sale in FY 2004 totaled 70.0 MMBF. This was 8.2 MMBF above the funded target of 61.8 MMBF, but still below the 82.0 MMBF allowable sale quantity as stated in the Forest Plan. The average annual timber volume offered for sale since the signing of the Forest Plan in 1995 is about 58.4 MMBF, or about 71% of the ASQ.

Recommendations: Continue monitoring annually to determine the average annual output for the 10-15 year period of the Plan.

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

Data location: STARS data and the FY 2004 Timber Information Management (TIM).

Silvicultural Systems

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 2004 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 Environmental Assessments (EAs) and contracts sold in FY 2004.

Data Collected: Volume and acres of regeneration cutting and intermediate (thinning) and salvage cutting in FY 2004 timber sales.

Results: The Forest did not meet annual regeneration cutting objectives, but exceeded the intermediate and salvage cutting objectives in FY 2004, as follows:

	Forest Plan Objective	FY 2004 Accomplishment
Regeneration Cutting-Volume (MBF)	66,000	1,800
Regeneration Cutting-Acres	3,500	195
Intermediate Cutting-Volume (MBF)	12,000	55,166
Salvage Cutting-Volume (MBF)	4,000	13,000

Recommendations: In order to meet long-term sustained yield timber objectives as specified in the Forest Plan, the Forest would have to place additional emphasis on regeneration cutting in the future

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

Data location: Timber sale EAs and contracts are located at the Forest Headquarters in Redding.

Reforestation

Forest Plan Standard: Achieve stocking standards of well distributed trees within five years of final harvest 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 2004 Silvicultural Accomplishment Report. Information on regeneration status was taken from the FY 2004 Forest Service Activity Tracking System (FACTS) database.

Data Collected: FY 2004 reforestation acres accomplished. FY 1999 regeneration harvest acres certified for reforestation in FY 2004.

Results: Reforestation acres accomplished in FY 2004 totaled 195 acres. This is about 6% of the 3500 acres projected in the Forest Plan because the Forest has emphasized thinning and salvage more than regeneration cutting during the past few years.

Recommendations: Continue monitoring annually.

Public Involvement: No direct involvement.

Data location: The FY 2004 data resides in the National FACTS database.

Timber Stand Improvement (TSI)

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: Determine if timber stand improvement goals are being met.

Method/Collection: Information on TSI accomplishment from the FY 2004 FACTS database.

Results: TSI acres accomplished in FY 2004 totaled 3651 acres. This was less than the 5300 acres (69%) 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.

Data location: The FACTS National Database.

Biomass

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/Collection: Information on biomass volume offered and sold was compiled through the review and collection of volume data from timber sale contracts sold in FY 2004.

Results: No volume targets for biomass were established in the Forest Plan. Actual accomplishment in FY 2004 was about 14,000 (20%) MBF of biomass sold as part of the Forests' regular timber sale program of 70,000 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, and other funding sources along with timber dollars to remove biomass.

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

Data location: Timber sale contracts are located in the Supervisor's Office in Redding, CA.

Facilities Management

Road Maintenance

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.

Data Collected: based on a total of 6500 miles of forest roads

1. Miles of roads maintained in 2004:

High clearance roads	363.6
Passenger vehicle roads	495.4
Total	856.0 miles of road maintenance
2. Total miles of road construction in 2004 = 6.2 miles
3. Total miles of road decommissioned in 2004 = 14.2 miles

Results: Results show that current funding is insufficient to maintain roads at target operational levels. In 2004 only 15% of forest roads received some type of maintenance and only 10% were maintained to standard.

Recommendations: Due to lack of funding health and safety issues have become the overriding consideration for road maintenance. More roads will need to be decommissioned and "deinvested" in the future unless funding increases.

Public Involvement: informal contacts and public comments and complaints.

Data location: Engineering Department at the Supervisor's Office in Redding, CA.

Dams and Bridges

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 do not pose a threat to public health and safety.

Method: Visual inspection following process as required by manual.

Data Collected: Bridge inspection and dam monitoring reports were completed in 2004 by the Forest bridge and dam inspector.

Results: Forest is in compliance with required inspection frequency. Inspection results are shared with the District Rangers and Assistant Forest Engineers. All operating dams and bridges are up to

standard. Based on load analyses, a bridge may be posted for a reduced weight limit and maintained at that new standard.

Recommendations: Routine maintenance of bridges is performed by road maintenance crews. Major repairs are prioritized and completed as funding permits. Forest has replaced several non-standard bridges through the deficient bridge program. Some small dams need to be removed from the system and the stream channels put back to more pre-dam conditions. However this is a low priority as the dams do not currently impound any water.

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

Data location: Engineering department in the Supervisor's Office in Redding, CA.

Potable Water Sources

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.

Data Collected: All potable water sources were tested during 2004. Monthly Bac-T tests were taken and sent to a lab which calls within 24 hours if a poor result is found. The Forest Service then calls the State within 24 hours to agree on the mitigation that will be followed. There are approximately 50 sites that are monitored on the Shasta-Trinity National Forest.

Results: The program is being monitored according to regulations; water quality is being maintained to standard. The Forest Service Manual 7400 (Public Health and Pollution Control Facilities) was updated in August of 2004 to require more extensive documentation for drinking water facilities. Each forest must now maintain a computer-based Drinking Water System inventory for each drinking water system, including physical data, treatments, and monitoring results. This database will be completed by the end of 2005.

Recommendations: Continue monitoring to standard and fully implement new inventory database. Request the Big Bend Fire Station to clarify the monitoring procedures for the CDF well at that station. More interagency coordination is needed to keep testing up to standard.

Public involvement: If substandard results are found from testing, the site is posted until it is cleaned up. The public can also fill out complaint forms that are available in recreation facilities. To-date, no complaints have been filed about drinking water.

Data location: Engineering department in the Supervisor's Office in Redding, CA.

Note: Costs for the drinking water program are continuing to rise. The Public Health Services Federal Task Unit now deploys certified engineers to do the sanitary surveys on the forest. Forest Service employees are no longer permitted to clean water tanks. Instead, a 3-person certified crew must be contracted to clean the tanks.

Forest Pest Management

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: 1994 to 2004

Year	Pine Acres*	Fir Acres*	Mixed Conifer Acres*	Total Mortality Acres*	% Ave. Apr. 1 Snowpack**
1994	15,259	10,871	0	26,130	50
1995	5,080	553	3,327	8,960	170
1996	7,712	3,242	514	11,468	90
1997	7,557	6,464	5,531	19,552	55
1998	0	0	99	99	150
1999	0	0	0	0	130
2000	4,608	0	0	4608	100
2001	45,363	1,638	1,753	48,754	55
2002	27,068	2,213	50	29,331	100
2003	56,566	20,632	364	77,562	65
2004	24,952	23,438	5,153	53,544	85

*Acres of conifer mortality estimated from annual aerial surveys.

** Percent of average April 1 water content in Sacramento River drainage snowpack measured on April 1 of that year from CA Dept. Water Resources.

Snow Pk = Percent of average April 1 water content multiplied by 1,000 in Sacramento River drainage measured on that April 1 by CA Dept. of Water Resources Snow Survey.

There is a clear trend for the total number of acres of conifer mortality on the Shasta-Trinity NF to increase as the water content of the snowpack decreases, and *vice versa*. The magnitude of changes in acres of mortality depends both on the magnitude of the yearly departure from normal, as well as the trajectory of the trend in the recent past. Unless it follows a trend of several consecutive above-normal years of snowpack, a snowpack with less than 100% of the average April 1 water content will result in conifer mortality visible from the aerial survey.

Decreases in visible conifer mortality in 1998 and 1999 are attributed to abundant precipitation during the El Nino and La Nina years of 1997 and 1998. The large increases in visible conifer mortality during 2001 and 2003 are attributed to winter drought conditions.

Recommendations: Continue monitoring

Data location: Supervisor's Office, Redding, CA. For more information regarding the Forest Health in California, refer to the Forest Pest Conditions In California - 1998 published by the California Forest Pest Council.

Web site: Information is now available on the Web at: www.r5.fs.fed.us/fp/index.htm.

Range Management

Sustainability of Forage

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 Standards, page 4-22)

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: Four of the Forest 17 allotments were vacant, thus information monitored was based on 13 active allotments. Of these 10 were monitored more intensely than the others. Information can be found in the Annual Grazing Statistical Reports, which is available in the Forest Supervisors Office.

Both hardwire and electric fence systems were maintained on seven allotments in an effort to monitor use and exclude livestock from riparian areas. Range readiness checks were made on all of the 13 active allotments. Distribution of livestock use, utilization checks and suitability of range within 10 allotments was checked to determine if management objectives and Forest standards and guidelines were being met.

Overall Results

Standard or Objective	Activity	Accomplishments
Provide for proper management of selected riparian areas	Riparian areas monitored and/or protected	9 sites/ 64 acres
Designate lands that are suitable for livestock grazing	Determination of suitability	1,909 acres
Ecosystem analysis, NEPA documents and annual operation instructions is the primary tool for implementing management actions	Annual Operating Instruction carried over from previous year	13 allotments
WA & NEPA documents shall be prepared to bring authorized grazing use in conformance with Forest Plan objectives	Supporting documentation and surveys in preparation for an EA	1 Report 2 field surveys
Verify range readiness, proper utilization and distribution on active allotments.	Range readiness, utilization and distribution checks done on all 13 allotments	13 allotments

Results: Yearly utilization measurements indicate that some areas might be able to sustain higher utilization levels while others may need less utilization. Use in two key areas exceeded utilization standards, however overall results were determined to be consistent with Forest Plan standards and guidelines. This year, there were two reports of fence damage caused by vandalism, and one report from wildlife. Monitoring on both of the MALAA allotments indicated little livestock use of riparian

areas that interface with anadromous habitats, and little if any of this use took place during key life phases of the species.

Recommendation: Continue to monitor range condition, suitability and utilization each year. Continue to work with permittees and cooperating agencies in development and implementation of Annual Operating Instructions.

Coordinate with Other Organizations

Forest Plan Standard: Coordinate rangeland activities with other agencies, organizations and individuals having an interest in the management of the rangeland resource where it is appropriate. (Ref: Forest Plan Standards, page 4-22, #f)

Objective/Method: Determine by review of program records if rangeland activities are being coordinated with other agencies, organizations and individuals as appropriate.

Results: Annual operating plans were developed through coordination with the permittees. In addition, the livestock advisor from the Shasta County Cooperative Extension office and a biologist with the U.S. Fish and Wildlife Service worked with the Forest in developing the annual operating plan for an allotment on the Shasta side. Permittees were required to maintain allotment structures, including electric fences. Permittees were also responsible for maintaining proper distribution of their livestock.

Recommendation: Continue to work with permittees and cooperating agencies in development and implementation of Annual Operating Instructions.

Public Use and Information Programs

Wild and Scenic Rivers

Forest Plan Standard: Protect the existing character within established boundaries of designated Wild and Scenic Rivers, and 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: Management Plans are complete for all designated rivers. These plans are used to address specific issues, such as improved public access. Proposed rivers are being addressed through the project planning process. Otherwise, both existing and proposed rivers are places where the Forest Service and partners come together to implement actions, such as the annual National Rivers Cleanup Day.

Results: Access (Big Flat and Pigeon Point) and annual cleanup projects have helped significantly to improve the wild and scenic character of the Trinity River. A Section 7 is being conducted for Canyon Creek, a proposed river, pursuant to the Trinity 1-8 mining proposal. CalTrans continues to propose actions (i.e., curve widening) for Hwy 299, that must be analyzed for affects on the Trinity River. Due to long-standing problems with the land survey along much of the Trinity River, encroachments of private features onto National Forest System lands, and vice versa, continue

to be identified. Private landowners also approach the Forest seeking access to their lands. Land ownership issues cannot be immediately resolved due to budget limitations, and thus are prioritized.

Recommendations: Continue to conduct high priority projects and maintain active community involvement.

Data location: Weaverville Ranger District Office and Forest Headquarters, Redding, CA.

Wilderness

Develop Direction

Forest Plan Standard: Develop wilderness direction to guide annual programs and long-term strategic actions in the Forest's 5 wildernesses. (Ref: Forest Plan page 4-29, #24a).

Method: Nationwide, a 10-Year Wilderness Stewardship Challenge has been initiated to ensure that all wilderness areas are meeting common objectives that will result in quality wilderness. Components of the strategy include addressing noxious weeds, fire ecology, environmental education, Forest Plan direction, and campsite inventories.

Results: Wilderness Implementation Schedules (WIS) have been developed to implement direction from the Forest Plan. A Fire Use Plan is currently being developed for the Trinity Alps Wilderness. The Forest is focusing other efforts on meeting the 10-year Wilderness Stewardship Challenge.

Recommendations: Continue to implement the 10-year wilderness strategy, including elements in the implementation schedules and Limits of Acceptable Change monitoring.

Data location: Supervisor's Office, Redding, California and District Offices.

Encroachment Sites

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

Method: Wilderness boundary posting is an on-going forest program. Posting is routinely conducted in conjunction with specific projects, such as timber sale activity adjacent to Wilderness for Forest Service and private lands timber management.

Results: Between 1998 and 2004 approximately 50 miles of wilderness boundary was posted. The focus was on the Trinity Alps Wilderness (Coffee Creek) and the Mt. Shasta Wilderness (east side near the Pilgrim Creek snowmobile area). Other areas of potential encroachment are monitored and posted.

Recommendations: Continue program.

Data location: Supervisor's Office, Redding, California.

Visitor Information

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: Seasonal wilderness rangers meet visitors and provide them with information. Pamphlets and signs are also posted at all trailheads. Recreation Opportunity Guides (ROGs) are available either in hard copy form or on the Forest website. The Trinity River Management Unit is utilizing an “electronic kiosk” to disseminate wilderness information, education, and permits.

Results: The various methods of sharing information on wilderness behavior and ethics are being used. Problem areas still exist, requiring alternate approaches. For example, a temporary campfire closure order has been established for the high lakes in the headwaters of Canyon Creek and the Stuarts Fork.

Recommendations: Continue using proven methods and exploring/development new ways of disseminating information to wilderness users. Monitor the effectiveness of the campfire closure order before making a decision as to whether to implement for a longer period of time.

Data location: Ranger District Offices.

Water Quality

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: Sampling has not been done between 1998 and 2004.

Recommendations: Eliminate this standard and only conduct water monitoring in areas of known problems.

Data location: Weaverville Ranger District and the Supervisor’s Office, Redding, California.

Recreation

Partnerships

Forest Plan Standards: Promote partnerships with user groups to assist in the operation, maintenance, and development of recreation sites and facilities (Ref: Forest Plan, page 4-23, r)

Method: Recreation staff and members of the forest Recreation Fee Board of Directors participated in on-going discussions related to the maintaining and expanding of existing partnerships, developing new partnerships, exploring new ways of doing business and determining the most efficient means for accomplishing program objectives, including providing safe, quality recreation opportunities and meeting the diverse needs of the recreating public.

Results: In 2004, the forest maintained partnerships with the Shasta Lake Improvement Project Partnership, the Shasta and Trinity Houseboat Owners Associations, the Backcountry Horsemen of America, the California Conservation Corps (CCCs), the Backcountry CCCs, the Redding Dirt Riders, the Sierra Club, Trail Weavers and The Watershed Research and Training Center. These partners assist the forest in operating, maintaining and enhancing recreation sites (and/or trails) for forest visitors. The majority of the developed sites in the National Recreation Area continue to be managed by concessionaires.

Recommendations: Continue to promote partnerships and explore ways to improve efficiency.

Public Involvement: Direct involvement with partners/stakeholders, other forests, other agencies and interested community members.

Data location: Supervisor's Office, Redding, California.

Off Highway Vehicle (OHV)

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 continued to implement the five step OHV Route Designation Strategy in 2004.

Recommendations: Continue to implement the five step OHV Route Designation Strategy outlined in the *OHV Route Designation Guidebook* for National Forests in California. Promote increase public participation in the OHV route designation process.

Public Involvement: Direct involvement with motorized and non-motorized user groups, other state and federal agencies and local community members occurred in 2004.

Data location: Supervisors Office, Redding, California

Pacific Crest Trail (PCT)

Forest Plan Standard: Provide a safe, usable, and convenient passage through the project area or a reasonable detour during the entire period of project activities. As a minimum, detours will consist of temporary route markers and a four foot wide travel way cleared of vegetation. Tread work will only be performed to allow safe stock passage. (Ref: Forest Plan, page 4-23, #16 b.2)

Method: In 2004 the California Conservation Corps (CCCs) and the Back Country Horsemen (BCH) helped to open up a large portion of Section O of the PCT (running roughly from Burney Falls to Castle Crags). The crews got weathered out before they could finish the last segment of the Section.

Recommendations: Perform the work needed to completely open up Section O of the PCT. This infamous section of trail has received little maintenance over the past few years and has served as serious impediment to "through" hikers traveling from Mexico to Canada. Once open, provide regular maintenance on the sections of the PCT that cross the forest. Continue to promote safety on the PCT by providing safe, useable and convenient passage, by providing the appropriate level of training needed for individuals performing trail maintenance work and by enforcing the use of Personal Protective Equipment (PPE) while performing trail maintenance activities.

Public Involvement: Direct involvement with the California Conservation Corps, the Back Country Horsemen of America, the Pacific Crest Trail Association and "through hikers."

Data location: Supervisors Office, Redding, California.

Visual Quality

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: The 2004 visual quality program focused on the design needed to: (1) upgrade several developed recreation sites (including but not limited to Bushytail, Minersville campgrounds and Fairview boat ramp), (2) collaborative involvement in the development for the Volcanic Legacy Scenic Byway, and (3) the monitoring of scenery for vegetation management projects. Construction and upgrade of the recreation sites will begin in FY2005.

Results: Projects will be monitored for implementation of proposed objectives.

Recommendations: Continue development and implementation of proposals.

Public Involvement: Public involvement was achieved through the NEPA comment process and community interest group participation in the development of the Volcanic Legacy Scenic Byway improvements.

Data location: Recreation and visual quality program office, Supervisor's Office.

Heritage Resource Management

Evaluation of Sites

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.

Methods: The FY 04 Heritage Report for the Department of the Interior was completed and submitted to the Regional Office and the FY 04 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, monitoring results and mitigation of adverse effects.

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

The monitoring done for the Section 106 Agreement will vary from year to year as needed by project work. Condition surveys for deferred maintenance is based on an annual target and data entered in INFRA.

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

Data location: Heritage program office, Supervisor's Office.

Compliance with Section 106

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 Forest's 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 04 Department of the Interior Report and the FY 04 Annual Report for the Section 106 Programmatic Agreement describe Forest compliance with Section 106.

Data Collected: Monitoring was recorded at 34 historic properties around the Forests. No protection plans were prepared during FY 04.

Results: In FY 04, 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.

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.

Data location: Heritage program office, Supervisor's Office.

Law Enforcement

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 the number of reported incidents on a yearly basis.

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

Results and Recommendations:

LEIMARS annual statistics for Shasta-Trinity NF

Incidents, Warnings, Citations and Arrests

FY 2001	1,557
FY 2002	1,912
FY 2003	1,897
FY 2004	2,223

2004 has seen an increase in the number of marijuana gardens on SHF, and the number of plants eradicated. We have also seen an increase in vandalism and theft of both private and public property. This includes resource damage due to OHV use, range allotment fences and a significant amount of fuelwood/timber theft. The forest also experiences a significant amount of recreation-related violations.

It is increasing difficult for the forest to adequately deal with these increases. The law enforcement workforce has shrunk on the Forest to 1 Patrol Captain, 4 Law Enforcement Officers, and 1 Reserve Law Enforcement Officer. Without a larger law enforcement workforce, the Forest will be responding after the fact to violations, rather than having a proactive law enforcement program.

Social and Economic Environment

Hayfork Adaptive Management Area

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.

1. O&C Research on effects to NSO. Effects of Off-Highway Vehicles on Northern Spotted Owls (*Strix occidentalis caurina*).

The goal of this study is to assess the disturbance effects of Off-Highway Vehicles (OHV) on the federally threatened northern spotted owl (*Strix occidentalis caurina*; NSO). Information is needed on the effects of OHV use on northern spotted owl stress levels, behavior, and nesting success. Results of this study would assist landowners in managing OHV use in NSO habitat. Results of the 3-year study will be available in 2006.

2. Post Mountain Stewardship Agreement. During 2004 a map of the collaborative area was drawn and an agreement was made with the Watershed Research and Training Center to facilitate collaboration and monitoring. Monitoring results will be reported in subsequent years.

3. The Hayfork AMA guide was completed in 2004. It will be available on the Forest website by the end of 2005.

Community Development/Partnerships

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.

Shasta-Trinity National Forest Resource Advisory Committees (RACs)

In FY04 there were 21 RAC projects funded in Trinity County for a total of \$1,136,505. Projects included fuels implementation, fuels reduction, trail maintenance and watershed restoration.

The Shasta RAC awarded \$309,090 for FY04 and leveraged an additional \$423,610. Additionally, the Shasta RAC has awarded over \$1.7 million since 2001 and leveraged an additional \$2.2 million for a total of \$3.9 million.

Through the approval of 34 RAC projects since 2001 the SHF has assisted in creating approximately 40 jobs (part-time/full-time).

Post Mountain Stewardship Agreement

The Shasta Trinity entered into its first Stewardship Agreement. The Agreement is between the USDA Forest Service and the Watershed Research and Training Center (WRTC) for the Post Mountain Area. During FY04 the WRTC completed a “Contractor Capacity Questionnaire,”

Shasta Dam Feasibility Study

In preparation for the potential enlargement of Shasta Dam, the Forest worked as a cooperative agency with the Bureau of Reclamation Project Management Environmental Study Team and the Project Coordination Team.

County Weed Management

In FY04, the Forest continued active participation in the Siskiyou, Shasta, and Trinity County Weed Management Area working groups. Projects include resulted in 46 acres of manual treatment of diffuse knapweed, spotted knapweed, musk thistle, rush skeleton weed, and dyer’s wood. RAC grants totaling \$45,550 to Shasta County for noxious weed eradication along 49 miles (594 acres) of CalTrans highways in and adjacent to Shasta-Trinity NF were awarded.

Float Trip

The Shasta-Trinity National Forest sponsored a Trinity River float trip with BLM to provide floating opportunities to physically and mentally disabled youth and young adults. Approximately 250 people participated. This effort is being documented by the Smithsonian to potentially be displayed in association with one of the Smithsonian’s exhibits.

Tribal Government Program

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 are signed with the Pit River Tribe, the Shasta Nation, the Redding Rancheria, and the McCloud Wintu. 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 04, consultation continued with Native Americans for projects such as timber sales, special use permits and recreation site improvements.

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 Sec 106 PA Heritage Resource Management Report for FY 04 prepared by the Forest Archeologist.

Recommendation: Continue consultations and partnerships at current level.

Public Involvement: Direct involvement with tribes.

Data location: Supervisors Office, Redding, California

Appendix B: Forest Monitoring Scales

Shasta-Trinity National Forest 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 database 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.

Appendix C

Location of Supporting Documentation

The supporting information for this report is on file at the Forest Headquarters and the Ranger District Offices. Refer to Appendix A for specific documents and their location by functional area.

Shasta-Trinity National Forest Headquarters

3644 Avtech Parkway
Redding, CA 96002
(530) 242-2360

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

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John Schuyler	Wilderness
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Forest Website

A notice of the FY 2004 Monitoring and Evaluation Report will be posted on the homepage of the forest website. The entire report will be available for review on the forest website at:

<http://www.fs.fed.us/r5/shastatrinity/publications/>