# Klamath National Forest
# Fiscal Year 2004
# Monitoring and Evaluation Report

**April 19, 2005**

# Introduction

The Fiscal Year 2004 Monitoring and Evaluation Report documents the evaluation of monitoring information related to the Klamath National Forest Land and Resource Management Plan (Forest Plan) from October 1, 2003 through September 30, 2004. Data are compared to data from past years, when appropriate. Monitoring results are emphasized rather than monitoring data. Evaluations were based on professional judgment when monitoring data were incomplete or lacking.

# Monitoring Activities and Evaluation

This section is organized by program areas as in the Forest Plan. Each section identifies program goals, summarizes the monitoring actions related to this program area, and evaluates how well program goals are being met and how closely management standards and guidelines have been followed. Program Emphasis goals can be found on pages 4-5 through 4-9 of the Forest Plan. Forestwide goals can be found on pages 4-4 through 4-5 of the Forest Plan. Monitoring elements from the Forest Plan Monitoring Plan can be found in Table 5-1 of the Forest Plan on pages 5-11 through 5-14. All Forest Plan page references relate to the version on the Forest web site, which includes all amendments and errata as of November 21, 2001.

Quantitative program accomplishments are not included in this list as they are displayed in other reports such as the Forest's Management Attainments Report.

## Physical Environment

### *Physical Environment*

**Goals:** The goals are to achieve water quality objectives through the use of best management practices, mitigate erosional effects, and treat toxic substance hazards.

**Monitoring:** Best management practices monitoring follows Regional evaluation guidelines and procedures. Timber sale activities, prescribed fire, tractor piling and mastication of brush for erosion and water quality objectives were monitored. Monitoring of hazardous materials (naturally occurring asbestos, radon, abandoned mines and landfills, etc.) is done by maintaining an inventory of known and new sites and investigating and cleaning up hazardous wastes/substances present. Hazardous abandoned mine sites are signed. Safety problems and other reclamation problems are prioritized and projects initiated and completed as funding allows.

**Results:** Fiscal year 2004 represents the thirteenth year of best management practices monitoring on the Forest. A total of 53 sites in 23 categories that include timber, roads, mining, recreation, grazing, rock pits, fuel reduction, and vegetation manipulation activities were monitored. The evaluation criteria for implementation were met on 91%

of the best management practices sites and the criteria for effectiveness were met on 98% of the sites. This represents an increase in both implementation and effectiveness compared to fiscal year 2003 results.

During project planning, the Forest uses a Cumulative Watershed Effects assessment, which provides a risk assessment tool for making management decisions, to assist in meeting water quality objectives. The Cumulative Watershed Effects assessment includes three models: surface erosion, landslide, and disturbance/peak flow. These models have been used for project-scale analyses since 1998 and refined since that time. The models were updated in 2004 to reflect recovered watershed conditions and new information about sediment delivery, based on validation monitoring of the model (USDA Forest Service 2004). A discussion of the validation monitoring that has occurred for the Cumulative Watershed Effects modeling follows.

Sediment estimates in the surface erosion model are based on a modification of the Universal Soil Loss Equation that adjusts the equation for local conditions. The modified equation was developed by Forest Soil Scientist Tom Laurent, based on empirical plot data from soil trough monitoring from 1983 through 1992. Information from the 1999 Road Sediment Source Inventory that measured sediment volume from landslides and gullies delivered to streams on 924 miles of road was used to validate this model. Results indicate that the surface erosion model predicted rates are consistent with the field measured rates (Elder 2003).

Sediment estimates in the mass wasting model are based on the landslide inventory of the Salmon River Watershed from 1944 through 1988 (de la Fuente and Haessig 1993). The landslide model assumes that areas with vegetation removed by regeneration harvesting or wildfires will recover to pre-disturbance conditions in about 40 years. The rationale behind this assumption is that the loss of root support and other hydrologic effects (such as evapotranspiration, as well as effects on snow accumulation and melt rate) caused by tree mortality and/or removal is recovered when new vegetation reaches this age. Some studies suggest that recovery of root support occurs more rapidly (Ziemer 1981). Monitoring landslide episodes are associated with higher than normal precipitation events (de la Fuente and Haessig 1993, de la Fuente and Elder 1998). The mass wasting model was found to closely predict the proportion of 1997 flood sediment from landslides that came from undisturbed land, harvested or burned land, and road corridors. It also predicted the increase in landslide rates on disturbed land relative to undisturbed land. It over predicted total landslide sediment several fold (Elder 2003a). The mass wasting model was further validated by the inventory of 4,122 landslides in the Middle Fork Eel River and measurement of sediment delivered to the stream system (Elder 2003a).

The University of California at Berkeley is working with the Forest to develop the conceptual framework of an analytical reference model to identify and understand ecological relationships, to determine how they are affected by channel conditions, and to provide a mechanism for prioritizing field studies and formulating hypotheses related to cumulative watershed effects (May and others 2004). A Pilot Study for this effort (USDA Forest Service 2003) provided preliminary stream data that tends to validate the sediment delivery assumptions of the surface erosion and mass wasting models (Don Elder personnel communication with Lynda Karns).

Modeling of net sediment "saved" due to restorative roadwork is based on findings after the 1997 flood, mostly in the Salmon Sub-basin (de la Fuente and Elder 1998). Forest monitoring has found sediment generated by road improvement work to be minor. Monitoring of "in-channel construction" and "road decommissioning" projects on the Forest between 1997 and 2002 indicates that activity-generated sediment delivered the first year averaged 0.34 cubic yards per site (values for the 80 samples ranged from 0 to 3.0 cubic yards); 67% of the sites monitored exhibited no measurable signs of sediment delivery. Channel incision and bank erosion were the most common forms of post-treatment erosion at crossings and are often attributed to failure in restoring adequate active channel width; inadequate excavation of channel to original longitudinal profile; and retention of oversteepened side-slopes or channel banks (Elder 2003b).

The Forest is cooperating with federal and state agencies such as the Water Quality Control Board to develop and review monitoring efforts related to the Environmental Protection Agency's Total Maximum Daily Load requirements. At this time, Total Maximum Daily Load evaluations are focused on conditions in the Salmon and Klamath Rivers. Refer to the following websites for more information:

http://www.waterboards.ca.gov/northcoast/programs/tmdl/klamath/klamath.html

http://www.doi.gov/klamath/Summary_of_Recent_Activities.pdf

The Forest also cooperates with the Karuk Tribe of California and the Salmon River Restoration Council in annual monitoring of stream temperatures. Stream temperature data can be found in the Klamath Resources Information System on the web:

http://www.krisweb.com/

## *Geology*

**Goals:** The goal for geology is to promote slope stability. The goal for cave management is to be consistent with legal direction. For the purposes of Forest monitoring, more specific goals have been developed and/or applied as listed here: ***1) Life and Property:*** Protect human life and property from geologic hazards (landslides, seismic and volcanic events, asbestos dust, radon gas). ***2) Aquatic Conservation Strategy Objectives:*** "Maintain and restore the sediment regime with which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate and character of sediment input, storage, and transport". Emphasis is placed on minimizing management-related landslides and maintaining natural slope stability. ***3) Unique Geologic Area:*** Protect and maintain unique geologic resources (Special Interest Areas, Research Natural Areas, caves). ***4) Restoration:*** Restore areas damaged by previous human activity (such as abandoned mines, or sediment-producing roads). ***5) Geologic Resources:*** Ensure that geologic resources (rock aggregate and earth materials, locatable minerals, groundwater) are developed in a cost-efficient and environmentally sound manner.

**Monitoring:** ***1) Life and Property:*** Systematic monitoring of landslides through field visits and air photo inventories is conducted only after landslide episodes (primarily after precipitation events). Similarly, the effects of seismic/volcanic activity are monitored only after such events occur. In the absence of such events, monitoring is limited to field personnel collecting information. Asbestos is monitored by sampling proposed aggregate or riprap sources for asbestos content, and sampling air in the vicinity of earth-disturbing

activities in asbestos-bearing earth materials. ***2) Aquatic Conservation Strategy Objectives:*** Aquatic conservation strategy objectives related to sediment and geologic standards and guidelines associated with landslide mitigation are reviewed on individual projects; the sample information can be used to make determinations at the 5th field watershed scale. ***3) Unique Geologic Area:*** The condition of cave resources over the past 8 years has been monitored primarily by the Klamath Mountains Conservation Task Force and the Shasta Area Grotto; the Forest Service has monitored only a few caves. Cave features and formations are visually monitored for damage, and bat usage is monitored in selected caves. As opportunities arise, Forest personnel monitor unique geologic areas such as Special Interest Areas on site. ***4) Restoration:*** Restoration monitoring includes determining the amount (miles or number of sites) and effectiveness of road decommissioning and restoration work including landslide stabilization and reclamation of abandoned mines. The Siskon Mine Tailings remediation project was completed and monitored in 2004, and the King Solomon Mine sediment dam removal site was also monitored in 2004. ***5) Geologic Resources:*** In 2004, three earth materials developments at the Glassups, King Solomon, and Lafayette Point sites were monitored.

**Results:** ***1) Life and Property:*** No large landslide-producing storms, seismic episodes, or volcanic episodes occurred in 2004. Work continued on the asbestos-bearing rock source inventory. Roads with asbestos-bearing rock on the running surface continue to be used by vehicles.

***2) Aquatic Conservation Strategy Objectives:*** No significant management-related landslides were reported by District or Supervisor's Office personnel in 2004. This limited landslide activity would contribute to achievement of aquatic conservation strategy sediment regime objectives over the long term at the 5th field watershed scale. Geologists routinely work on projects with the potential for disturbance, delineating unstable lands in the field.

***3) Unique Geologic Area:*** Although cave use has increased the past few years, no significant vandalism damage was reported by the Klamath Conservation Task Force or the Shasta Area Grotto. Two site visits in 2004 found the Fourmile Hill Tree Mold Geologic Special Interest Area to be in good condition.

***4) Restoration:*** In 2004, 9.39 miles of road were decommissioned in the Grider Creek Watershed Restoration Project, 11.06 in Lower South Fork Decommissioning 1 Project, and 12.04 in Lower South Fork Decommissioning 2 Project, totaling 32.5 miles of actual decommissioning; refer to ***Transportation and Facilities Management*** section. Geology personnel monitored only a few decommissioned roads in 2004 (less than 1.0 mile), as part of the King Solomon Sediment Dam Removal, Siskon Mine tailing remediation, and Lower South Fork Decommissioning 1 and 2 Projects. Implementation success was good for activities such as outsloping road surfaces and fully removing fills at stream crossings. Effectiveness was good in that no significant erosion or landslide problems were observed. Without any intense storms in 2004, the effectiveness of road decommissioning and restoration work relative to landsliding was not thoroughly tested. Most design elements such as proper outsloping, installing dips, and full removal of fills at crossings were effective at minimizing erosion. Refer to the Forest Best Management Practices report for 2004 for additional information on monitoring of road decommissioning. The King Solomon dam removal project was monitored and erosion

control repairs installed in August 2004. A water quality monitoring program was developed and implemented for the Siskon Mine tailings remediation project; refer to Siskon Mine web page for additional information:

http://www.fs.fed.us/r5/klamath/projects/projects/siskonmine/index.shtml

***5) Geologic Resources:*** Implementation and effectiveness criteria were met on the earth materials developments at the Glassups, King Solomon, and Lafayette Point sites. No water quality impacts or sedimentation occurred during rock use at these sites. The Forest obtained airborne asbestos permits for the Siskon Mine tailings remediation project, and for the Grider Decommissioning rock pits. The contractor conducted on-site monitoring at a rock pit developed for the Siskon Mine tailing remediation project. Refer to the ***Air Quality*** Section for monitoring and further details on regulatory compliance related to asbestos in rock sources.

## *Soils*

**Goals:** The goals are to maintain soil productivity and reduce management–related soil erosion.

**Monitoring:** The attributes monitored are soil cover for erosion protection, fine organic matter for nutrient cycling, coarse woody debris for biological activity, and soil disturbance for root growth. Standardized sampling methodologies developed on the Forest are used to collect the data.

**Results:** Prescribed burning, machine masticating, tractor piling, handpiling, and revegetating decommissioned roads were monitored. Soil cover levels in managed stands ranged from 82 to 99%, averaging 90% for total cover. Forest Plan soil cover guidelines were fully met in the monitored treated areas. Monitoring results show that the requirement for fine organic matter continues to be met for most treated areas (88% met). Monitoring of some underburns found that 6 to 31% of the area did not burn. Post-burn monitoring of handpile areas showed that 55% of the area did not burn. Sampling the mastication of brush-dominated plantations found total soil cover to range from 96 to 99%. Compaction and disturbance monitoring of sandy loam volcanic soils on the Goosenest Ranger District showed that the main skid trails had an 8.21% reduction in soil porosity, which is less than the Regional 10% threshold. Disturbance data showed that 11.6% of the area was in new skid trails and 18.8% was non-skid trail disturbance. Overall, the monitored harvested area met all the Regional and Forest Plan Standards and Guidelines.

## *Water Quality*

**Goals:** The goals are to provide adequate instream flows, and to maintain water table levels in wet meadows.

**Monitoring:** The best management practices program and the aquatic conservation strategy are the primary mechanisms for ensuring the maintenance of water quality. Best management practices are monitored as described under ***Physical Environment***. Aquatic conservation strategy monitoring is described in the ***Geology*** and ***Aquatic Conservation Strategy*** sections. The water quality-monitoring element is tied to the ***Physical Environment*** goal of achieving water quality objectives.

The Forest Plan does not include monitoring elements for providing adequate instream flow or maintaining water table levels in wet meadows. The Forest manages flows for domestic use, but does not control flows on rivers controlled by dams such as the Klamath River or flows on the Scott River within Scott Valley. Stream flows on the Klamath and Scott Rivers are monitored by other agencies.

**Results:** Refer to the ***Physical Environment*** and ***Aquatic Conservation Strategy*** sections for discussions of water quality results.

## *Air Quality*

**Goals:** The goals are to comply with legal requirements, and to manage prescribed fire to avoid prolonged air quality impacts to local communities. Legal requirements include the Federal Clean Air Act and the State Air Quality and Smoke Management Standards and Regulations

**Monitoring:** Smoke plumes are monitored during prescribed burning projects and complaints about smoke intrusions recorded. Monitoring compliance with the Asbestos Toxic Control Measures (Title 17, Section 93105 and 93106) consists of evaluating quarry sites in ultramafic rocks; testing for asbestos; discontinuing use of any aggregate with detectable asbestos content; and incorporating dust abatement measures during road construction, maintenance, and quarry operations in ultramafic rocks. Several road decommissioning, road maintenance, borrow source development, and stormproofing projects received permits or waivers in relation to these regulations (Grider Creek Stormproofing #2, Siskon Mine Rehabilitation Project).

**Results:** No complaints were received during prescribed burning in 2004. Fuels were treated with prescribed fire on 4,293 acres and through mechanical means (for example with a masticator) on about 1,908 acres.

Consistent with the 2000 Smoke Management Regulations in California, Smoke Management Plans for Forest projects are submitted to the Siskiyou County Air Pollution Control District to obtain permits for burning. This process was first used in the fall of 2000 and post-burn evaluations found few smoke impacts on sensitive areas.

The California and National Environmental Protection Agency air quality databases indicate that overall air quality measured by $PM_{10}$ has been good from 1999 through 2004. In the last 6 years, the more stringent California State daily $PM_{10}$ standard was exceeded a couple of times during the 2002 fire season at the Yreka monitoring station due to the Biscuit Complex Fire in southwest Oregon. Forest management activities, such as prescribed burns, have not exceeded state or federal air quality standards.

The on-going Forest rock resource inventory provides information on rock pits containing asbestos minerals. The Forest has developed a process to comply with the regulations and obtain permits from the Siskiyou County Air Pollution District for road construction, maintenance, and quarry projects in ultramafic rocks.

# Biological Environment

## *Biological Environment*

**Goals:** The goals are to manage for healthy ecosystems, provide goods and services in an environmentally sound fashion, use new knowledge, develop an integrated inventory, cooperate with other agencies, and promote awareness and appreciation of species.

**Monitoring:** The Northwest Forest Plan (NWFP) and Forest Plan initiated a management scheme which, applied over time, should result in healthy ecosystems. Monitoring of management actions is completed annually as part of the Forest Plan Implementation monitoring program conducted in a consistent manner throughout the range of the Northwest Forest Plan. Project-specific monitoring also occurs on the Forest. Except for activities that involve multiple biological resource programs, monitoring activities and results at the Regional and Forest levels are described for specific program areas within the ***Biological Environment***.

**Results:** Since the implementation of the Northwest Forest Plan, scientific understanding has increased. Results of the Forest's involvement in Northwest Forest Plan monitoring are contained in annual Northwest Forest Plan reports, which can be found on the web:

http://www.reo.gov/monitoring/reports.htm

Public awareness is an important part of ecosystem management. Forest personnel are involved in a variety of environmental education projects throughout the county to promote public awareness of species and their habitat. Efforts include the annual Siskiyou Bird Festival, Wildflower Show, Siskiyou County Schools sponsored Science Fun Day, and French Creek Outdoor School, Siskiyou Golden Fair, and noxious weed awareness. The Siskiyou County Weed Management Area Group, of which the Klamath is a prominent partner, sponsored a weed education booth at the Siskiyou Golden Fair, and a Weed Tour centered around Scott Valley in 2004. The Forest sponsored two fishing derbies for over 100 participants in 2004. Eight Siskiyou County schools participated with the Forest, California Conservation Corp, and California Department of Fish and Game to develop on-site outdoor garden classrooms.

## *Biological Diversity*

**Goals:** The goals are to manage for healthy diverse ecosystems, species habitat, and desired populations.

**Monitoring:** Monitoring focuses on species listed under the Endangered Species Act as threatened or endangered, designated by the Regional Forester as sensitive, and identified in the Forest Plan as management indicator species.

The Regional Forester's Sensitive Species List was updated in 2004, as a result of the Record of Decision to Remove or Modify the Survey and Manage Mitigation Standards and Guidelines (March 2004). In April, a number of former Survey and Manage species were added to the Sensitive Species List. New sensitive species on the Forest include fungi, mollusks, a bryophyte, and a salamander. Known locations of the new sensitive species have been incorporated into the Fauna and Flora databases. Project effects to these species and/or their habitats are evaluated in Biological Evaluations.

Management indicator species are evaluated through a review of effects of project level activities on habitat conditions. The Forest relies on monitoring efforts conducted by the state, research groups (private and federal), universities, and landbird monitoring conducted through partnerships with qualified groups to determine current habitat conditions and species presence.

In 2004, the Forest proposed changes to the project management indicator species list in the Forest Plan. The purpose of the proposed action was to improve the effectiveness and efficiency of monitoring the effects of management activities. The proposed change to the list to arose from a need to better meet the intent of management indicator species regulations. The proposed list was developed through extensive analysis, including an analysis contracted with an independent party. The results of Argonne National Laboratory's analysis are documented in "Evaluation of Candidate Management Indicator Species for National Forests in the Northern California Province" (Anthony and others 2004). The Klamath National Forest Management Indicator Species Environmental Assessment was released for comment in September 2004.

Many species require monitoring over areas larger than the Forest, which is why Northwest Forest Plan Forests cooperate in monitoring for species such as the Northern spotted owl and for aquatic conditions.

Program monitoring for terrestrial species and ecosystems included a review of annual program of work documents, project proposals and associated funding levels, discussions with wildlife biologists on the Forest, field survey results, and technical reports completed through Forest staff efforts. Monitoring for aquatic species consisted of habitat surveys and a review of Forest Plan goals, standards and guidelines, and national program goals.

**Results:** Forest Plan standards and guidelines are designed to promote recovery of threatened and endangered species and provide protection to sensitive species by protecting and improving habitat at the Forest and project scales. Planning efforts continued in 2004 for the Goosenest and Mount Ashland Late-Successional Reserves with the objectives of restoring late-successional habitat and reducing fuels. Cross training between biologists, fuels specialists, and silviculturists occurred through these planning efforts.

Efforts such as Late-Successional Reserve northern spotted owl surveys, field verification of the Forest-wide Late-Successional Reserve Assessment, and landbird monitoring serve as the best assessments of the status of late-successional habitat conditions and species associated with those habitats. Surveys for bald eagles, peregrine falcons, Swainson's hawks, burrowing owls, shrikes, goshawks, and Siskiyou Mountain salamander surveys were also completed. Long term monitoring of the golden eagles in Butte Valley indicators that territory fidelity remained constant.

**Northern spotted owl population** monitoring results and the multi-agency analysis is available in "Status and Trends in Demography of Northern Spotted Owls" on the web:

http://www.reo.gov/monitoring/trends/index.htm

Data was collected from 14 study areas in Washington, Oregon, and California, comprising about 12% of the range of the subspecies and including federal, tribal,

private, and mixed federal and private land. The average number of years of reproductive data per study area was 14 (with a range from 5 to 19); only one area had less than 12 years of data. Results were based on a total of 11,432 banded northern spotted owls and 32,054 recaptures or re-sightings of those individuals. The primary monitoring objectives were to estimate the number of young produced, apparent survival, and annual rate of population change, and to determine any trends in the population from 1985 to 2003. Other efforts will compile and summarize the status and trend of northern spotted owl habitat and develop models relating the amount and distribution of nesting habitat to occurrence of pairs and individual survival. In California, the number of young produced declined in two of the four areas sampled. Survival declined in one study area and was stable in the other three. Populations were stable in one of three areas analyzed (one California study area had insufficient data for population trend analysis). For the two populations with declines, both declined about 20% in the last decade. In the study as a whole, the greatest declines were in Washington with 7.3% per year. Oregon populations declined 2.8% per year and California 2.2% per year. Two of the sites in California are under federal land management, but none were located on the Forest. The Record of Decision for the Northwest Forest Plan predicted a 2.5% habitat loss per decade from timber harvest, but did not equate the habitat figure to a population decline. (NWFP page 46)

The Forest coordinated with the United States Fish and Wildlife Service, Timber Products Incorporated, and the National Council of Air and Stream Improvement to inventory all suitable **northern spotted owl habitat** in the Goosenest Late-Successional Reserve. The survey results will be used to plan fuels reduction treatments in the Late-Successional Reserve, increase understanding of these Late-Successional Reserves as a population source for northern spotted owls, and assist in Endangered Species Act consultation. Six pairs of northern spotted owls were located, which is consistent with draft recovery plan goals for the Late-Successional Reserve. Two pairs of barred owls and two single barred owls were detected. Additional surveys will be conducted in the Late-Successional Reserve in 2005 to further investigate the status of barred owls. Competition with barred owls has been cited as one possible contribution to the decline of northern spotted owls in the Pacific Northwest. For northern spotted owls, the amount of incidental take incurred versus the amount allowed through Endangered Species Consultation with the United States Fish and Wildlife Service is also monitored and reported. Of special note is the Uptown Project, which has been removed from the Forest's program of work. The Biological Opinion allowed incidental take of 4 pairs of northern spotted owls, 422 acres of habitat removal, and 935 acres of disturbance, which will not occur.

Monitoring of **peregrine falcons and bald eagles** indicate that the 1990 Resource Planning Act goals are being met. Peregrine falcons averaged 13 pairs during the first five years of Forest Plan implementation; the Resource Planning Act goal is 14. Bald eagles averaged 10 pairs; the Resource Planning Act goal is 5. A new active bald eagle nest at the mouth of the Scott River was discovered in early 2004. Nine bald eagle nests were verified on the Goosenest Ranger District in 2004. Initiated by the National Wildlife Federation, the midwinter bald eagle counts have been taking place since 1977. The 2004 Midwinter bald eagle count was conducted on January 8 on the Salmon River, January 9 in the Scott Valley, along the Scott and Klamath Rivers, Shasta Valley, Copco and

Irongate Lakes, and January 12 on the Goosenest Ranger District. Participating with the Forest in the count were the Six Rivers National Forest, Mendocino National Forest, United States Fish and Wildlife Service, California Department of Fish and Game, Discovery High School, and several local volunteers. All areas had an average number of bald eagles with the exception of the Goosenest Ranger District, which had a low count; refer to table below. Fish, waterfowl, carrion, and afterbirth from cows make up the majority of food items for the bald eagles in these areas. The Goosenest Ranger District had a low number of waterfowl during this count, which may contribute to the low number of bald eagles for this year.

| Area Surveyed | Bald Eagles Found |
|---|---|
| Salmon River | 1 |
| Scott Valley and Scott River | 22 |
| Klamath River (Somes Bar to Yreka) | 12 |
| Shasta Valley | 6 |
| Copco and Irongate Lakes | 8 |
| Goosenest Ranger District | 22 |

Known sites of a **Plethodon salamander** were monitored in the Scott Bar area. The known sites are thought to be occupied by *Plethodon asupaki*, a genetic group recently distinguished from *Plethodon stormi*. Additional surveys and genetic investigation will continue in 2005.

The implementation and effectiveness of project level mitigation measures are monitored to assure the maintenance of **sensitive plant populations** and/or species viability. In 2004, a historic population of *Tauschia howellii* on Siskiyou Peak that had not been revisited in 10 years was monitored to assess population and habitat conditions and determine if any habitat restoration or protection measures were necessary. Approximately 20 acres of *Tauschia howellii* habitat were inventoried. Hikers climbing to Siskiyou Peak and red fir encroachment are impacting the population. Opportunities to develop a trail to Siskiyou Peak and to cut back encroaching firs were identified and will be pursued in 2005. Populations of *Eriogonum hirtellum*, *Cypripedium montanum*, and *Cypripedium fasciculatum* were monitored on 70 acres within project areas. Monitoring found that mitigation measures (protection buffers around known populations) were usually implemented and that measures are effective in protecting populations. Over the last 10 years the majority of populations have remained stable or have increased.

Forestwide Standards and Guidelines direct sensitive plant species management to ensure the maintenance of reproducing, self-sustaining populations, and to prevent the need for the species to become listed under the Endangered Species Act. In 2004, a cooperative **habitat restoration** project was completed to conserve populations of *Horkelia*

*hendersonii* and *Lupinus aridis ashlandensis* on the Siskiyou Crest. This project was identified in the conservation agreement for these two species and completed in cooperation with the Rogue River National Forest and the United States Fish and Wildlife Service. Funding from United States Fish and Wildlife Service in Portland was combined with funding from the Rogue River National Forest to contract an excavator and other equipment to rock the parking area and along the road at Rabbit Ears on the Siskiyou Crest. Large granite boulders were used to define the parking area and prevent vehicles from causing further damage to plant habitat. Boulders were placed around the parking area in a pleasing way. Vehicle traffic has been controlled to avoid plant habitat and existing populations. Five acres of habitat have been protected and restored. Impacted areas will recover and plants will recolonize.

In 2004, the Forest and United States Fish and Wildlife Service completed a habitat restoration project to conserve populations of *Calochortus persistens* on Gunsight Ridge. This project identified in the draft conservation agreement for the species consisted of hand treating the noxious weed Dyer's woad on 22 acres along the road within and adjacent to *Calochortus persistens* populations. The 2004 monitoring of test plots established after the 2003 treatment indicated that numbers were reduced, but the Dyer's woad was not eliminated. Long-term treatment and monitoring is needed to determine if noxious weeds can be controlled and to determine if treatments are effective in conserving *Calochortus persistens* populations.

A Forest fisheries biologist participated on the Regional Fish Passage cadre in monitoring and improving **fish passage** created by road construction designs. Fish passage was improved at six sites in 2004. Additional sites were field reviewed and prioritized according to benefits to listed species. The fish ladder at Nordheimer Creek was monitored and maintained to ensure fish passage for salmon and steelhead trout and the Kelsey spawning channel was maintained.

In 2004, the Forest coordinated with multiple agencies to monitor **coho salmon spawning, fall Chinook salmon spawning,** and **spring Chinook salmon holding**. Fall Chinook spawning was monitored on 141 stream miles on the Forest and 3,764 redds were counted. Using Region 5 Stream Condition Inventory methodology, habitat on 11 miles of stream was surveyed. Forest survey crews identified the presence/absence of all fish species during habitat surveys.

Part of managing for desired populations is controlling non-desirable species such as noxious weeds, Port-Orford root disease, and gophers. Inventory and monitoring of noxious weeds is on-going. In 2004, known **noxious weeds** locations on the Forest were mapped. The Salmon River Community, Salmon River Restoration Council, and Forest Service have worked cooperatively for eight years on the eradication of knapweed in the Salmon River Watershed with significant progress towards the goal. Known locations are monitored numerous times during the year. The Forest Service has used manual methods (including hand pulling, digging, and mulching) to control various noxious weed species on other parts of the Forest for four years. Noxious weed risk assessments are completed during project planning identifying known risks as well as mitigation measures to prevent weed spread. For equipment use in contracts and fire suppression, equipment must be washed prior to entering the Forest boundaries to avoid the introduction and/or spread of noxious weeds and pathogens such as **Port Orford cedar root disease**.

Strychnine bait applied by spoon and probe methods is used to minimize **pocket gopher** damage during establishment of conifer seedlings in specified areas. Treated units were visited and bait sets searched for gopher or non-target species carcasses that may have died above ground to evaluate the potential for effects on scavengers. Of 338 acres baited in fiscal year 2004, 56 acres (17%) were monitored within 48 hours of the application. No above ground carcasses, spilled grain, or signs of digging were found. Gopher baiting on the Forest has been monitored since 1996 with no above ground carcasses or non-target species located after 1996, when four carcasses were found (Cuenca 2003). Past monitoring has resulted in improved gopher baiting techniques, such as more careful application, and increased use of the probe method of application over the spoon method, which entails less spilled grain. Monitoring results indicate that the likelihood of non-target species encountering above ground carcasses is very low.

### *Aquatic Conservation Strategy*

**Goals:** The goals are to maintain and restore all nine components of the aquatic ecosystem. The Aquatic Conservation Strategy includes four components: **1) Riparian Reserves**, **2) Key Watersheds**, **3) Watershed Analysis**, and **4) Watershed Restoration**.

**Monitoring:** **1) Riparian Reserves and 2) Key Watersheds:** At the regional scale, monitoring has occurred as part of Northwest Forest Plan implementation monitoring. At the Forest scale, implementation monitoring for Riparian Reserves and Key Watersheds consisted of a review of standards and guidelines, including site-specific Best Management Practices, related to the management and protection of Riparian Reserves and Key Watersheds during project planning. The National Oceanic and Atmospheric Administration Fisheries staff assists in designing and reviewing protection measures for Coho salmon critical habitat components during project consultation. Also refer to the ***Physical Environment*** and ***Geology*** Sections.

**3) Watershed Analysis:** Watershed analysis has been completed for the majority of the Forest as reported in previous year's Monitoring and Evaluation Reports. As proposed projects are analyzed, the information updates the watershed analyses. Cumulative Watershed Effects modeling is the primary mechanism for updating watershed level information.

**4) Watershed Restoration:** Monitoring consisted of a review of planning documents at the watershed and project scales.

**Results:** **1) Riparian Reserves and 2) Key Watersheds:** Consistent with the Northwest Forest Plan and Forest Plan, the Aquatic and Riparian Effectiveness Monitoring Plan is designed for the regional and species range scales. It is intended to characterize the ecological condition of watersheds and aquatic ecosystems, determine present watershed condition, track trends in watershed condition over time, and report on the Forest Plan's effectiveness across the region. (Reeves and others 2004). A number of publications relating to watershed effectiveness monitoring at the Northwest Plan scale can be found on the web:

http://www.reo.gov/monitoring/report_show.php?show=watershed

Northwest Forest Plan implementation monitoring since 1996 has monitored Forest projects, including Riparian Reserve standards and guidelines, as well as some key watersheds on the Forest. The results can be found on the web:

http://www.reo.gov/monitoring/report_show.php?show=implementation

Refer to ***Physical Environment*** Section for best management practices monitoring results at the Forest scale. Forest results are also included in the Pacific Southwest Region's Best Management Practices monitoring report completed in 2004 that covers the decade from 1992 to 2002. Results are provided for all best management practices combined as well as for individual best management practices, program areas, and forests. The report also outlines actions for the Regional Office and forests to execute over the next several years to maintain and improve our water quality management program. It is available on the web:

http://fsweb.r5.fs.fed.us/unit/ec/water/bmp.html

Working collaboratively with the University of California Berkeley, the Forest began a four-year study to monitor best management practice effectiveness at in-channel construction sites in 2004. Six sites on the westside of the Forest were evaluated for instream sediment characteristics and channel morphology. Located at Cecil Creek, Boulder Creek, Fox Creek, Bishop Creek, Upper Elk Creek, and Stanza Creek, the sites are being reconstructed to allow for fish passage, resulting in culverts being replaced by bottomless arches. The goal of the study is to determine the amount of sediment, if any, delivered to streams during the construction phase as well as after one, two and three winters. Site observations are that best management practices instituted with construction activities protect water quality adequately. Best management practices at two sites were not fully implemented until after construction was initiated, resulting in short term turbidity and pool infilling about 500 feet from the construction site. The turbidity and pool infilling did not occur within the range of anadromous fish. The monitoring indicates the importance of best management practices and on-site monitoring during construction activities.

**3) Watershed Analysis:** Cumulative Watershed Effects modeling provides quantitative information on watershed conditions related to 7$^{th}$ and 5$^{th}$ field watershed scales and serves to update Ecosystem Analysis documents. The model (including current watershed conditions) was updated in 2004 to reflect recovered watershed conditions and new information about sediment delivery, based on validation monitoring of the model (USDA Forest Service 2004). Refer to ***Physical Environment*** section.

**4) Watershed Restoration:** Watershed restoration is integral in aiding recovery of fish habitat, riparian habitat, and water quality (Standard and Guideline 6-46). Roadwork is a cornerstone of a watershed restoration strategy because roads deliver 40% of sediment, but comprise only 2% of total area; roads are treatable; and roadwork can reduce future risk (Elder and de la Fuente 2003). Road sediment source field inventories, jointly funded by the California Department of Fish and Game and the Forest Service were conducted on Forest Service roads from 1999 through 2001 within the Elk, Indian, Irving, Ti, Clear, Dillon, Lower South Fork Salmon River, upper Scott River, lower Scott River, and upper Beaver Creek watersheds. The inventories covered 2,028 miles of road in 108 7$^{th}$-field watersheds over 798,159 acres. This information has been used along with sediment

models in the roads analysis process (USDA Forest Service 2002) to prioritize watershed restoration work involving roads.

The Forest with its partners has made excellent progress in completing restoration projects related to roads that include decommissioning, stormproofing, and other maintenance. Examples of projects include Elk Creek Watershed Restoration approved in 2001; Summerville Roads, FY 02 Elk Creek Watershed Restoration, and No Mans, Daggett, Bear Creek Diversion Prevention approved in 2002; Grider Creek Watershed Restoration, Yoakumville Roads, Summerville II, and Stormproofing 45N19 approved in 2003. As of 2004, Lower Scott Roads and Mill/Luther Watershed Restoration are in the planning stages.

The benefits of road decommissioning include restoring hydrologic patterns, eliminating the potential for failure of high-risk fills, reducing the risk of cut bank failures, and reducing the risk of reactivation of existing landslides. The benefits of stormproofing include eliminating diversion potential, reducing the risk of failure of high-risk fills, and eliminating road ditch problems, thus decreasing landslide risk. The benefits of road maintenance include restoring surface drainage patterns, clearing pipes and ditches, and upgrading culverts to pass a 100-year flood.

### *Wildlife*

**Goals:** In addition to those stated in the ***Biological Diversity*** section, the goals are to coordinate habitat improvement with the California Department of Fish and Game and to maintain unique wildlife habitats.

**Monitoring:** Monitoring activities include those described in the ***Biological Diversity*** section, but are expanded to cover species not designated as threatened, endangered, sensitive or management indicator species, such as big game and migratory birds.

**Results:** Refer to ***Biological Diversity*** section for information on listed wildlife and management indicator species.

**Bird** monitoring continued at the three Breeding Bird Survey routes on the Forest located at Horse Creek, Cecilville, and Medicine Mountain. Data collected was added to existing data sets at Patuxent Wildlife Research Center in Maryland, where the data is used to produce an index of relative abundance of each bird species detected along the routes. As the data is processed, it will be posted on the web:

http://www.mbr-pwrc.usgs.gov/bbs.

The Seiad Valley constant effort bird mist-netting station was operated in 2004 for the 12$^{th}$ year. This monitoring provides information about adult population status, breeding status, productivity, annual adult survival, proportions of resident species, and recruitment into the adult population. The United States Geologic Service North American Bird Banding Laboratory, the Institute for Bird Populations' Monitoring Avian Productivity and Survivorship program, the Klamath Demographic Monitoring Network, and the North American Migration Monitoring Network assess the data collected. The Forest and Klamath Bird Observatory investigated the effects of prescribed underburns and wildfire on landbird abundance and diversity at sites on the Forest for the 5$^{th}$ and

final year. Over 3,823 point-count surveys were completed during this five-year effort. Results are expected in 2005.

In 2004, a Forest wildlife biologist monitored several aspects of the migratory bird program. This review served as a refresher of the 13-year history of landbird monitoring on the Forest. The program review found that Breeding Bird Surveys and point-count monitoring reports from the Klamath Bird Observatory provide useful documentation of the occurrence and habitat associations of a variety of bird species on the Forest. Many of the bird species documented at the point counts are specifically highlighted in the North American Landbird Conservation Plan and the California Conservation Plans. Many are also management indicator species in the Forest Plan. The Breeding Bird Surveys are well established nationally, an example of coordinated monitoring emphasized in the 2001 Executive Order for migratory birds, and provide Forest-level population monitoring of some current management indicator species. The Breeding Bird Surveys are well-suited to volunteers, who are experienced birders familiar with local avifauna. The Breeding Bird Survey has proven to be a very valuable source of information on bird population trends. It is a well-established program that has continued to grow as more birders and land managers become aware of it.

Surveys for golden eagles and osprey were also completed. Long term monitoring of the golden eagles in Butte Valley indicates that territory fidelity remained constant. The seven active osprey nests remained so between 2003 and 2004. The Forest monitored 12 osprey nests on the Klamath River, and three golden eagle nests on the Scott River Ranger District. Other birds were counted in January 2004 during the MidWinter bald eagle count. In addition to bald eagles, 90 red-tailed hawks, three Cooper's hawks, one sharp-shinned hawk, nine ferruginous hawks, 20 golden eagles, seven American kestrels, eight rough-legged hawks, one northern harrier, 26 great blue herons, 200 Canada geese, 70 mallards, and 230 common mergansers were seen.

Habitat improvement for Forest Wildlife Emphasis species continued in 2004. In partnership with Rocky Mountain Elk Foundation, California Deer Association, California Department of Fish and Game, the Forest improved nearly 2,300 acres of wildlife **forage habitat**. The Forest Emphasis species intended to benefit by these treatments were deer and elk. **Turkey and deer** also benefited by a 325-acre habitat improvement project. A fencing project on Salmon River District prevented further off-highway vehicle damage to a wet meadow, and encroaching conifers were removed from 205 acres of meadow habitat on Scott River Ranger District.

## *Fisheries*

**Goals:** The majority of the Forest fisheries program focuses on management and protection of listed species, as described in the Biological Diversity section. Other goals are to coordinate management internally and externally, and to increase public awareness and appreciation of aquatic resources.

**Monitoring:** Monitoring consisted of a review of Forest Plan goals, standards and guidelines, best management practices, national program goals, action items established by the 1995 Recreational Fisheries Executive Order, and numbers/types of public awareness activities.

**Results:** The Forest participates in cooperative agreements or activities with a variety of agencies and groups, including the Karuk and Yurok Tribes, Klamath Basin Fisheries Task Force, California Department of Fish and Game, the Scott River Coordinated Resource Management Partnership, the Salmon River Restoration Council, Humboldt State University, United States Fish and Wildlife Service, and the Fisheries component of the National Oceanic and Atmospheric Administration.

Public understanding of fisheries issues increased the last nine years. This is partially due to national media coverage of Klamath River Basin water and fish issues. At the local level, the Forest participated in numerous activities designed to increase public awareness of fisheries values, including the Klamath Provincial Advisory Committee, the Salmon River and mid-Klamath River annual spring Chinook and summer steelhead trout counts, and support of National Fishing Week activities.

## Resource Management Programs

### *Resource Management Programs*

**Goals:** The goals are to integrate resource needs through analysis and planning, to cooperate among resource programs to reduce costs and improve efficiency, and to develop consistent approaches for determining conditions and projecting effects.

**Monitoring:** The assessment of goal achievement was based on a review of proposed and approved projects.

**Results:** The Forest is using opportunities identified in watershed analyses, the Forest Roads Analysis, the Forest-wide Late-Successional Reserve Assessment, and other assessments to identify and prioritize integrated projects. The Goosenest Late-Successional Reserve South East Habitat Restoration project, designed to improve habitat as well as other resource objectives, was initiated in 2004 and planning is in progress.

Vegetation management projects often include multiple objectives, such as growth and yield, fuel reduction, habitat improvement, and watershed restoration. Meteor, Westpoint Heli, and Erickson Vegetation, Fuels and Road Management are integrated vegetation projects approved in 2004.

Road improvement and decommissioning projects benefit both the watershed and the transportation system. The benefits to the watershed of road decommissioning and road improvements are discussed in the ***Aquatic Conservation Strategy*** Section under **Watershed Restoration**. Decommissioning also reduces the number of road miles requiring maintenance. Refer to the ***Transportation and Facilities*** Section for road mile information. Contracts for a number of road projects approved in previous years were awarded in 2004 and implementation is underway.

Fuels projects that achieve fuel, vegetative, habitat, and watershed desired conditions are being proposed throughout the Forest, particularly around communities. Thirteen fuel projects were approved in 2004, including Sawyer's Bar Fuel Reduction Project, Garden Gulch Fuels Reduction Project, Hy-You Fuels Reduction, Ben/Horse Cultural Underburning, and a number of projects related to the Happy Camp Fire Protection Strategy. Implementation has been completed for some of the Happy Camp Fire

Protection projects and is underway for others. Fuel reduction strategies have been developed for the Happy Camp, Sawyer's Bar, and Tennant communities.

### *Scenery Management*

**Goals:** The goals listed in the Forest Plan are to conserve natural scenic character, meet Visual Quality Objectives, emphasize views from key viewing areas, conserve especially attractive landscapes, and rehabilitate areas not currently meeting standards. National goals and laws include the equal consideration of aesthetic resources with other resources, and a routine application of environmental design arts to all projects that may have aesthetic effects.

**Monitoring:** The assessment of goal achievement for the Scenery Conservation Program was based on professional judgment of Forest scenery staff specialists, public comments, and information from Regional and Forest Scenery Managers.

**Results:** ***Valued Landscape Character*** is the Forest's unique visual image and aesthetic identity that people value. This character has been enhanced in relatively small areas of the Forest, largely through vegetative thinning projects that enhance and sustain the Forest's native appearance. Many more acres are in need of similar work to perpetuate the scenery attributes people value. Widespread selective thinning and group selection activities for large areas of the Forest, when coupled with fuel reduction activities, would decrease the risk for natural disturbances of large scale and high intensity, which could seriously impact the scenic character. These activities, when consciously designed, can increase scenery attributes including the prominence of large trees, large tree canopy character, spatial variety, views penetration into the forest canopy, forest floor vegetation, bedrock features, and wildlife.

***Scenic Integrity*** is the degree of natural, unaltered appearance in the Forest. In recent years, adverse effects to integrity are less frequent and prominent with the decrease in vegetative treatment intensity such as clearcuts and seed tree cuts. Although some impacts still occurred, effects of the larger, more complex projects were mitigated to achieve Forest Plan integrity objectives (Visual Quality Objectives). Some existing effects of past management will persist for many years.

The Forest's scenery conservation program focused again this year on the Forest's more complex and sensitive projects, primarily forest health projects. Integration of scenery goals in Forest programs is becoming more routine on projects; however, low funding levels are limiting. Scenic quality often is not optimized in project considerations due to necessary integration and compromises with other resource needs. Forest landscape architects regularly support regional and national scenery conservation leaders to improve the Scenery Management System used by the Forest Service, and to enable a nationally consistent and routine application to all National Forest programs.

Key Scenery Management System principles (applied environmental design arts per the National Forest Management Act) have been applied effectively or designed for many Forest projects. Recent examples include the Medicine Lake Highlands Cultural Assessment, Goosenest Late-Successional Reserve South East Habitat Restoration, Pomeroy, Little Horse Salvage, Happy Camp Fire Protection, Meteor, Horse Heli, Saint

Clair Elk Forage, Sawyers Bar Fuel Reduction, Vista Thin, Garden Gulch Fuels Reduction, and Klamath River Hydropower Relicensing projects.

### *Recreation Management*

**Goals:** The goals are to support communities' diversification efforts, to offer a wide range of attractions, to design developed sites to support recreationists in off-site activities, to provide barrier-free access, and to implement national and regional recreational strategies.

**Monitoring:** The assessment of goal achievement for the Recreation Program was based on the professional judgment of recreation specialists, public comments, and information from Regional, Forest, and District Recreation Managers.

**Results:** Recreation use and demand continues to experience gradual, steady growth. Use is concentrated along scenic byways, rivers, lakes, and in wilderness and backcountry areas. Uncrowded and ecologically rich settings are the Forest's unique recreational assets and 'niche.'

The Forest continued to provide interpretive planning, coordination, and design services for the Shasta Volcanic National Forest Scenic Byway, including work with agency partners and community stakeholders. A Memorandum of Understanding between the many agency partners was completed. In cooperation with the Happy Camp community and the Siskiyou County Resource Advisory Committee, a grant was secured to install a "scat machine"/solid waste depository for RV usage along the State of Jefferson and Bigfoot Scenic Byways. Coordination with the Pacific Crest Trail Association increased this year on trailside vegetation management and bridge projects as well as in planning cooperative trail projects.

In partnership with local off-highway vehicle club members, the Forest initiated off-highway vehicle trail inventories this year, identifying about 62 miles of routes and 10 acres of off-highway vehicle use areas. The Forest's 250 miles of snowmobile trails, and its 2 associated snowparks received their seasonal grooming and management.

As part of the complex evaluation of the proposed 50-year relicensing of PacifiCorp hydropower facilities on the Klamath River, the Forest continued coordination with the proponent and other agencies to conserve the river's important recreational fishing, whitewater rafting, water play, and sightseeing opportunities.

The Forest makes incremental recreational facility improvements that retain valued natural character, increase visitor satisfaction, and contribute to tourism and community diversification efforts. Reconstruction of the Taylor Lake Trailhead provides safe access for standard passenger vehicles, site accessibility for people with mobility impairments, as well as new toilet, parking, picnic, and informational facilities. An accessible toilet was installed near the group campsites at Curly Jack Campground. Interpretive panels were installed at Curly Jack and Sarah Totten Campgrounds. A vegetative management plan was developed for Juanita Lake Recreation Area. An environmental assessment was completed for the development of recreation facilities at Orr Lake, and Siskiyou Resource Advisory Committee funding was secured for 2 toilet buildings to resolve resource and sanitation problems. More than 80 directional signs were installed to direct people to, and within, the Marble Mountain Wilderness. About 40 miles of backcountry

trail were reconstructed to full standard on the westside of the Forest. Over 400 miles of primary trails were opened for passage through vegetative clearing. These actions will enhance the recreational experience, increase visitor satisfaction, and increase referrals to potential visitors.

The Forest continues to increase the availability of facilities suitable for children, the elderly, and people with mobility impairments through the projects listed above. With very limited recreation budgets, the Forest invests money in high demand/high priority developed recreation sites, areas, rivers, and trails. These investments typically support off-site recreation activities at scenic byways, rivers, lakes, trails, and in wilderness and backcountry. Recreation operations and maintenance costs for key elements are regularly evaluated to improve the Forest program and provide high value services. Annual condition surveys on about 16% of recreation facilities identify budget needs to achieve standards. Developed recreation site fees collected under the national cost recovery program contribute significantly to providing onsite services and improvements, including this year's restoration of water systems, picnic tables, resource protection barriers, an accessible equestrian loading ramp, and other campsite facilities.

The Forest continues to strategically identify, acquire funds, and plan recreation projects that remove barriers to people with mobility and other disabilities. Progress continues on implementation of the Forest Accessibility Action Plan of 2000, which defined and prioritized accessibility barrier removal for its 192 recreation sites over 10 to 20 years. New facility improvements balance optimal access for people with disabilities and conservation of onsite natural setting characteristics.

The achievement of Forest recreation goals is consistent with the National, Regional, and Forest Recreation Strategies. The 1993 Forest Recreation Strategy has been reviewed and several improvements made.

### *Wilderness Management*

**Goals:** The goal is to maintain or enhance wilderness values.

**Monitoring:** The assessment is based on the professional judgment of wilderness specialists, public comments, and information from Regional, Forest, and District Recreation Managers.

**Results:** Wilderness use is primarily by recreationists and grazing permittees. Use levels are generally light compared to other wildernesses in the Region. Use continues to slightly increase.

Resource effects within wilderness are primarily due to recreational visitors, grazing use, historic fire suppression, and recent fire suppression activities. Few trailheads provide information about recreation opportunities and wilderness resource conservation measures. Fuel build-ups are increasingly high, partially due to historic fire suppression policies. The Forest's Wildland Fire Management Strategy provides criteria for determining when to allow wildland fire to burn to achieve resource goals in wilderness, rather than always suppressing it as in the past. The availability of this new tool is expected to help reduce fuel build-ups created as a result of past fire suppression. Fire ignitions in the wilderness in 2004 provided an opportunity to successfully apply this strategy in a limited fashion; refer to ***Fire Management***.

Limited campsite repair work occurs annually, including cleanup, restoration, and trash removal from fragile areas. The extent of exposed mineral soil and loss of native vegetation at many campsites indicates that localized degradation is occurring. Limited trail improvement work occurs each year, including surveys, maintenance, and reconstruction on high priority trails such as the Pacific Crest National Scenic Trail. Weed control at Turk Lake and Bear Valley, Marble Valley cabin restoration, and various lakeside campsite restoration projects were accomplished this year to address important wilderness resource problem areas. About 30 miles of trail were fully reconstructed to standard, while 300 miles were opened and vegetation cleared for the season. Much of this work was done through service contracts with groups such as the California Conservation Corps, Backcountry Horsemen, Student Conservation Association, Northwest Youth Corps and other local youth and volunteer groups. Due to limited budgets, many trails do not meet the standards for clearing, tread maintenance, signing, and trail logs. Over 80 roadside and trailside directional signs were installed within the Marble Mountain Wilderness, and planning was done for similar signs in the Russian Wilderness to be installed in 2005. Updated digital maps for the Marble Mountain and Russian Wilderness areas were completed this year, with final printing and distribution of the map scheduled for early 2005. Some roads and other inconsistent features within wilderness provide opportunities for future rehabilitation.

Management decisions regarding acceptable limits of key attributes and values, appropriate use zoning, and resource emphases are often made informally, frequently lacking the support of coordinated plans or professionally established analysis methods.

### *Wild and Scenic River Management*

**Goals:** The goal is to maintain and enhance the outstandingly remarkable values and free-flowing conditions of the Wild and Scenic Rivers.

**Monitoring:** The assessment is based on professional judgment of Wild and Scenic River specialists, public comments, and information from Regional, Forest, and District Recreation Managers.

**Results:** Refer to ***Physical Environment*** for a discussion of cooperative water quality monitoring, which will provide information pertinent to the outstandingly remarkable value of anadromous fish. The other Wild and Scenic River values appear to be in very good condition. Wild and Scenic River considerations are an increasingly prominent element of program planning and project implementation. Summary Wild and Scenic River management guides were developed and distributed for use by the Forest. Forest Wild and Scenic River assessment continued on the PacifiCorp hydropower relicensing project on the Klamath River. This project has the potential to affect Klamath River fisheries, water quality, recreation, and scenery values. The PacifiCorp hydropower relicensing work continues to generate information on whitewater rafting, angling, and flow preferences that may be useful in maintaining and enhancing Wild and Scenic River values.

Several restorative tree planting, beach clearing, and litter patrol projects were accomplished again this year through Forest coordination with river community members and the Student Conservation Assistant program. Interpretive stations were completed

for Rocky Point and Sluice Box river accesses on the Klamath Wild and Scenic River, with the support of State of California Department of Boating and Waterways funds.

### *Specially Designated Area Management*

**Goals:** The goals are to recognize special areas and values, provide information about these areas, develop partnerships for research within Research Natural Areas, and promote interpretive opportunities within Special Interest Areas.

**Monitoring:** Special Interest Areas are monitored through field visits as opportunities arise. The Research Natural Areas that are caves and Geologic Special Interest Areas are monitored as described above in the ***Geology*** section.

**Results:** Emphasis for Special Interest Areas and Research Natural Areas increased in 2004. The Forest coordinated with Pacific Southwest Research Station to complete Establishment Records for Antelope Creek Lakes and Bridge Creek Research Natural Areas in 2004; work is underway for Establishment Reports for two more Research Natural Areas. Species lists were completed for two Special Interest Areas.

### *Lands Program Management*

**Goals:** The goal from the Forest Plan and Forest's Land Adjustment Plan is to achieve a land ownership pattern that improves management options, while reducing conflicts and administrative costs. A second program goal is to administer Land Use Authorizations to minimize unauthorized use and facilitate those needs of adjacent landowners that can only be accommodated through the legal use of National Forest System lands.

**Monitoring:** Program accomplishments were examined and compared to the goal.

**Results:** The Land Adjustment Plan identifies opportunities for acquisition or disposal that will result in benefits to the government, including a more solid ownership pattern of National Forest System Lands. Action is taken when landowners express interest in working with Forest managers on an adjustment, and when there is funding to accomplish the work. Land adjustments are becoming more focused; effort is being expended on resolution of local issues using Small Tracts Act authorities rather than large adjustment projects. Ownership patterns have improved, and many of the Forest's original goals have been met. The Forest had several large cases in process during the year, but none were completed. One new case was initiated. The program contributes to the Regional goals for the lands program.

Land Use Authorizations are administered to Forest Service standards to ensure that the use of National Forest System lands for specific purposes by adjacent landowners and others are permitted and legal. The Forest has put a high priority on management of Land Use Authorizations. Focus of the program is the administration of existing permits to standard. Applications for new permits are processed quickly, and unauthorized uses are identified and brought under permit.

A high percentage of property boundaries, and an increasing percentage of wilderness boundaries have been marked to standard. Management has focused on maintenance of boundaries, primarily adjacent to ongoing management activities and wilderness. The Forest maintained 48 miles of property boundary.

Although no land acquisitions were finalized this fiscal year, the Forest negotiated for the purchase of two wilderness parcels.

### *Minerals Management*

**Goals:** The goal is to manage mineral exploration and development of surface resources to maintain environmental quality.

**Monitoring:** Minerals operations for locatable minerals are controlled by the surface use regulations. A mineral administrator periodically visits operations to ensure compliance with the approved plans of operations. Operations not in compliance with plans are cited. Leaseable minerals and minerals materials are regulated by permit and monitored for compliance with permit requirements.

**Results:** The Forest is complying with national direction to administer 100% of minerals operations to standard and will continue to do so. The Forest regulates a continuing program of small dredging and mining activities. The number of active claims and intensity of exploration fluctuates with the price of gold. Salable minerals permit numbers are static. One mine reclamation project (Siskon) was completed, and another (King Solomon) was monitored. Work on reclamation will continue as funding becomes available. The Forest worked on litigation on two minerals-related cases and two cases dealing with geothermal leasing. Some monitoring occurred on geothermal leases, but new activity was suspended. Work was done on processing a prospecting permit in the lease area.

### *Transportation and Facilities Management*

**Goals:** The goals are to provide an economical, safe, and environmentally sensitive transportation system; emphasize maintenance and restoration over new construction; and provide safe and effective administrative sites and facilities.

**Monitoring:** Much of the work in transportation management is routine and done strictly within established best management practices. Program activities are currently monitored under forest resource programs. The transportation staff works closely with Forest resource personnel to identify road-related projects that will improve watershed health and mitigate potential resource impacts. Facility conditions are surveyed on a recurring basis. Comprehensive codes and regulations are used to ensure the accomplishment of proper planning, maintenance, construction, and accessibility upgrades.

**Results:** ***Transportation:*** In 2004, 978 road miles received maintenance, exceeding the 521 miles per year of maintenance projected in Table 4-1 of the Forest Plan. Road Maintenance Objectives were met on 854 miles of road. No new roads were constructed, which is well below the 10 miles per year projected in the Forest Plan. In addition, a total of 18.7 miles of system roads and 13.8 miles of unclassified roads were decommissioned, while 88.6 miles of road were stormproofed. Every effort is made to complete all work on the ground using established best management practices, which are routinely monitored by contracting officer representatives and inspectors. An ongoing and very successful collaborative effort with the aquatic resource program focuses on combining road, resource and grant funding to complete road-related key watershed improvements. Where possible, stream crossing fills are replaced with low water crossings, open bottom

arches or rock fills to restore fish passage and minimize the potential for future sediment production.

***Facilities:*** During 2004, progress continued towards improving employee and public safety, comfort, historic preservation and accessibility of facilities. A contract was awarded to replace the 45-year old two-story barracks at the Callahan Guard Station and the Lower Station Work Center. The Callahan potable water system was repaired. The septic systems at the Callahan and Grass Lake Guard Stations and at the Oak Knoll Work Center were replaced. Design was completed to replace the Happy Camp Helibase Facility. Roofs on five historic buildings were replaced with metal shakes that simulate wood. The leased Goosenest District Office was completely renovated to provide improved accessibility and working conditions for the employees. The leased Happy Camp District Office reception area was renovated to improve accessibility and provide better service to the public. Several buildings at the Happy Camp Lower Station were painted.

## *Timber Management*

**Goals:** The goals are to implement silvicultural prescriptions to achieve desired conditions, reforest lands allocated to sustained timber production within five years of harvest, actively reforest areas damaged by extreme events (such as floods, wind, fires, insect infestations), offer the allowable sale quantity, utilize dead and dying trees, implement post-sale treatments, and manage insects and disease.

**Monitoring:** The annual Planned Timber Sale Accomplishment Report has been used for assessing the allowable sale quantity goal. The reforestation and timber stand improvement goals are assessed each year by comparing accomplishments to targets, particularly for survival and certification of planted stands. The results are documented in the Forest Service Activity Tracking System and the yearly Plantation Survival Report.

**Results:** The Forest continued its efforts to meet timber targets assigned by the Region. The Forest exceeded its assigned target in fiscal year 2004. The timber program was funded at a target level of 48,500 hundred cubic feet. The Forest offered approximately 49,100 hundred cubic feet. This volume included 33,700 hundred cubic feet of green material and 15,400 hundred cubic feet of salvage material. The majority of the sale program contains commercial thinning, sanitation, biomass, and salvage. The Forest was funded at a level lower than the allowable sale quantity. Two large sales, Westpoint and Jack Conventional, were litigated during the fiscal year. Timber sale unit costs increased as procedural requirements were complex, low volumes per acre proposed, and appeals and litigation common. Roadside hazard trees are being removed with timber sales where feasible.

The Forest continues to emphasize timber stand improvement activities. Treatments include a combination of older and younger plantations. Accomplishments are completed using both trust funds and appropriated funding. Integration with the fuels program is continuing with emphasis on treating stands within the wildland/urban interface to reduce fuel hazards. The Forest has begun to use mechanized equipment, masticators, to assist in reducing fuels while completing precommercial thinning actions. The reforestation program remains at a low level, due mostly to the lack of regeneration harvesting. Most

of the reforestation efforts are confined to interplantings of understocked plantations and the reforestation of wildfires. Survival rates are still in the acceptable range, but not as high as desired. Animal damage efforts have concentrated on controlling gopher and deer problems on some of the younger plantations.

Insect and Disease control efforts were accomplished on all the Districts. Most of the activities included thinning in plantations for bark beetle prevention efforts. Juanita Lake Campground was assessed for forest health problems and a draft vegetation management plan was developed that addressed the issues found within the administrative boundary of the campground.

A new database was instituted this year to replace the Stand Record Card System. The Forest Service Activity Tracking System was successfully installed on the Forest and will now be used for tracking all resource activities in the future. Accomplishment reporting for reforestation and timber stand improvement activities will be derived from the data.

## *Fire Management*

**Goals:** The goals are to reintroduce fire into the environment, reduce unacceptable fuel buildups, use the appropriate minimum impact suppression methods for wildfires, and develop management and protection strategies for intermixed state and private lands.

**Monitoring:** Management Attainment Reports were used in determining if acre targets were achieved. When implementing prescribed fire projects, smoke management plans are coordinated with the local air pollution control district to assure that smoke management guidelines are met; refer also to ***Air Quality*** section.

**Results:** The Forest Plan projected output for natural and activity fuel treatment is 27,108 acres per year for the first decade; however, the Forest has never been funded at this level. The Forest was assigned a target of 4,007 acres in 2004 and accomplished more than 6,200 acres. Over 58% of the accomplishments were in the wildland urban interface, helping reduce fire risk for communities and other private land. Mechanical means were used on about 30% of the fuel accomplishment acres, which contributed to smoke management efforts.

Budget fluctuations throughout the year affect the current and planned fire organization as well as other resource departments involved in integrated fuel projects. Treating areas around “communities at risk” has increased planning and implementation per acre costs dramatically.

The Forest experienced 120 fires for 71.5 acres in the 2004 fire season. Fire numbers were higher and acreage lower than the 10-year average of 117.4 fires at 2,160.3 acres. The Forest suppressed 28 human-caused fires that burned 9.65 acres and 92 lightning fires that burned only 61.85 acres. No Incident Management Teams were deployed on the Forest for the second year in a row; much of this success is attributed to the National Fire Plan.

The Forest started to implement wildland fire use for resource benefit in the Marble Mountain Wilderness in 2004. Wildland fire use for resource benefit is a permitted technique in the Forest Plan where fire is allowed to play its role in the ecosystem, rather than suppressed. The Island and Abbott fires were identified as candidates, but due to

Regional direction, were extinguished at .01 acres each. The experience was valuable as it allowed the Forest to run through the implementation process. More information on wildland fire use for resource benefit and the implementation process can be found on the following web page:

http://www.fs.fed.us/r5/klamath/fire/wildland.shtml

Prevention activities include continued involvement and establishment of fire safe councils throughout the Forest. The Forest assisted the Countywide Fire Safe Council in proposing fuel reduction projects and providing media inserts and public education. Patrols and lookouts make public contacts. Eight lookout towers were staffed. Inspections of residences throughout the Forest ensure compliance with fire codes and regulations.

### *Range Management*

**Goals:** The goals are to provide healthy ecosystems, make forage available on a sustainable basis, not retard or prevent attainment with aquatic conservation strategy objectives, provide forage to support big game objectives, and meet current livestock forage allocations.

**Monitoring:** Monitoring included the assessment of annual utilization and annual operating instruction effectiveness, specific riparian area monitoring, and long-term monitoring of vegetation changes at five-year intervals. Monitoring of randomly selected allotments occurs each year for allotments with an Endangered Species Act determination of "may affect, likely to adversely effect" for coho and steelhead salmon, for range best management practices monitoring, and for Forest Plan standards and guidelines.

**Results:** Allotment monitoring indicates movement towards the goals of providing forage for livestock and wildlife on a sustainable basis while managing grazing activities to meet aquatic conservation strategy objectives. The assessment of long-term condition indicates that range condition is improving. When permittees fail to follow the requirements in annual operating instructions, District personnel work with the permittees to achieve compliance; if that is unsuccessful, the permits are suspended or cancelled.

### *Wild Horse Management*

**Goals:** The goal is to manage for one viable wild horse herd. The population goal for the Three Sisters Herd is 10 head, while the goal for the McGavin Peak Herd is zero.

**Monitoring:** A census of total numbers, sex, and age class allows annual population estimates to be made. Population numbers are monitored and horses in excess of the population goal are removed.

**Results:** In 1995, the population estimate was 80 animals for the McGavin Peak Herd and 20 for the Three Sisters Herd. The budget did not allow any capture of horses this year. Capture efforts since 1995 have removed 71 animals from the McGavin Peak Herd and 15 animals from Three Sisters. The McGavin Peak Herd is currently estimated at 70 head and Three Sisters at 40.

## *Heritage Resource Program*

**Goals:** The goals are to sustain a progressive heritage resource program that includes the inventory of known archaeological and cultural sites, to determine the significance of each site, and to preserve eligible historic properties.

**Monitoring:** Two types of monitoring occur, related to Section 106 and Section 110 of the National Historic Preservation Act. As part of the review process for Section 106, historic properties that are potentially eligible and sites that are on the National Register of Historic Places are located and protected during project planning. After project completion, random sites are monitored to ensure that protection measures were adequate. As part of the evaluation process of properties eligible for nomination to the National Register of Historic Places for Section 110, the condition of properties is monitored and evaluated. This usually requires a single visit to monitor and possibly re-record the condition of the known archaeological sites.

**Results:** Monitoring data is reviewed each year as part of Section 106 and 110 processes, including the number and acreage of pre-project surveys, the number of sites interpreted, the number of cultural education classes held, and the number of tribes consulted. Project planning and 106 monitoring facilitate the location and protection of historic properties. The Forest's Section 110 Monitoring Plan (approved in 2000) established a higher minimum number of sites to be evaluated annually for determining significance than was identified in the Forest Plan Monitoring Plan. Section 110 monitoring continues, and is based on funding and available time. The Forest continues to enter new heritage resource reports and new archaeological site information into a national database and map sites in the Forest Geographical Information System. The Forest met the heritage database targets established by the Region.

## *Tribal Government Program*

**Goals:** The goals are to improve relationships with Indian people, develop partnerships with local Native American organizations, and emphasize increased understanding, communication, and partnerships with Indian tribes, organizations, and communities.

**Monitoring:** Monitoring consists of tracking the actions taken to improve relations with tribal groups.

**Results:** Every year the number of consultation efforts with federally recognized and non-federally-recognized tribes increases as the tribes become more politically active. With the development of mutual respect, relationships continue to improve. Agreements are developed and revised as necessary with the federally recognized tribes.

In 2004, the Forest continued government-to-government consultation efforts with the Yurok, Hoopa, Karuk, and Pit River Tribe. The Forest, the Karuk Tribe, and the Happy Camp Community are working collaboratively to address fire protection. The Forest and a member of the Karuk Tribe, presented a Cultural Awareness program to commercial and individual river users during the Karuk World Renewal Ceremonies.

In 2004, the Forest consulted and coordinated with the Klamath Tribes, Shasta Nation, and Pit River Tribe in the continuing development of the Medicine Lake Highlands Historic Properties Management Plan. An ethnobotanical (cultural use of plants)

inventory and viewshed analysis for the Medicine Lake Highlands was conducted in partnership with the Klamath and Pit River Tribes.

In general, consultation with the Karuk Tribe of California, Klamath Tribes, Shasta Nation/Shasta Tribe, Inc. (Quartz Valley), Quartz Valley Indian Reservation, Pit River Tribe, Yurok Tribe, Shasta Nation, and Forks of the Salmon Indian Council continued this past year for numerous Forest Service projects.

## Social and Economic Environment

### *Social and Economic Environment*

**Goals:** The goal is to develop partnerships with local and regional groups to emphasize environmental education, public awareness, and knowledge about Forest processes. Although not specified in the Forest Plan, the law provides a civil rights goal, which is to incorporate the expectation of non-discrimination and fairness into every program and process within the Forest. This is done through the development of partnerships with local and regional groups to emphasize the importance of consistency, nondiscrimination, environmental education, public awareness, and knowledge of Forest processes and procedures.

**Monitoring:** The goals were assessed through a review of all other programs. Classroom hours and program dollars have been used as indicators for environmental education. Information is not currently aggregated at the Forest level for employee participation in Conservation Education with external groups. However, various program areas contribute a portion of their budgets toward attainment of this national emphasis item. For civil rights, the number of complaints received, number of accomplishments in the Civil Rights Implementation Plan, number of programs represented in Title VI reporting, and number of employees attending training and briefings were reviewed.

**Results:** Efforts in cooperating with other agencies, organizations, tribes, and individuals are ongoing. The Forest cooperates with numerous partners in aquatic and terrestrial restoration projects; in surveying wildlife, fish, and rare plant habitat; in monitoring cave resources; and in maintaining snowmobile facilities. The Forest also provides environmental education programs for students and other groups in a number of resource areas. Extensive coordination and cooperation has occurred with numerous tribes; refer to ***Tribal Government Program*** section. The Forest in cooperation with other groups and agencies has assisted in securing rural development grants, in creating job opportunities and in placing workers through the rural development and community development programs.

Many Forest employees enthusiastically participate in conservation education programs in cooperation with the public schools by contributing their time and expertise in indoor and outdoor classroom education. Some resource programs contribute heavily, while others do not. Siskiyou County Public Schools personnel are conducting workshops with agency representatives and specialists to develop curriculum in various resource fields to satisfy their educational requirements. This curriculum needs to be developed to meet

Forest Service agency needs for content and resource area emphasis in line with the national program direction.

The trend in civil rights over the last seven years is towards solving issues at the lowest level, thus fewer complaints. Indications are that the increased amount of training and the establishment of the Civil Rights Implementation Team have helped incorporate the civil rights message into many Forest programs and into partnerships.

The Forest Management Team encourages respect in all areas of the work environment. The Forest Supervisor and Civil Rights Officer are proactive in discussing situations with employees to prevent issues from arising. All special use permittees and contractors are given "Equal Opportunity" posters, in English or Spanish, to post in their place of business.

### *Public Interaction and Involvement*

**Goals:** The goal is to use all opportunities to explain the Forest's role in implementing the Forest Service Mission.

**Monitoring:** Program accomplishments were assessed though a consideration of the amount of public interaction and feedback.

**Results:** The National Fire Plan with its various emphasis items, in particular working with communities through fire safe councils to reduce fire hazard, has provided the Forest with many opportunities to explain its fire control and fuel reduction programs to members of the public.

External contacts and communications with community leaders continue to improve as shown by the increased visibility of Forest programs in interactions with county officials and local community leaders as well as in Forest Service employee participation in community meetings. Increased public involvement in the last five years is indicated by the increase in telephone calls; the interest in fire safe councils; and the interest in applying for Payment to State, Fire Plan, and other grants.

In 2004, the Forest continued to improve its web site, so that it better explains how the Forest is contributing to the Forest Service mission. The Forest web site includes information on the Forest Plan, recreation opportunities, fires and fuel management, volunteer opportunities, employment opportunities, passes, permits, and grants. Information on how the Forest works towards its goals by implementing individual projects is also available on the web site:

http://www.fs.fed.us/r5/klamath/projects/

In 2004, the Forest used the new nationwide format for its Schedule of Proposed Actions, which includes links to project web pages. The Schedule of Proposed Actions continues to be posted on the Forest web page:

http://www.fs.fed.us/r5/klamath/projects/analyses/index.shtml

### *Economic*

**Goals:** The goals are to promote economic stability of local communities, develop partnerships for promoting economic stability, promote non-traditional Forest-based

resource uses, emphasize a diversity of goods and services, highlight scenery and recreational opportunities, and encourage the utilization of wood products.

**Monitoring:** Indicators for contributions by the Forest to the local economy are expenditure levels, types and funding levels of community development grant programs, and projects derived from, as well as payments to, the county through the Secure Rural Schools and Community Self-Determination Act of 2000 (Public Law 106-393). Human resource programs contribute to Forest actions to support community development

**Results:** Historically payments to states, which compensate counties for federal lands, have fluctuated based upon timber and other forest receipts. In the past, payments were based upon a formula established by Congress that resulted in a predictable, but declining, amount each year. The Secure Rural Schools and Community Self-Determination Act of 2000 established a stable payment to Siskiyou County of approximately $9 million per year for 6 years. This is the highest payment to any county in California. Eighty-five percent of the payment is dedicated to schools and roads with the remaining 15% benefiting National Forest System lands, split between projects initiated by the County and those based on Siskiyou Resource Advisory Committee recommendations.

Since 1992, community development programs have contributed significantly to economic stability and growth in Siskiyou County. During 2004, the Rural Community Assistance and National Fire Plan Grant programs were quite successful in bringing project funding into the county. Seven grants were written, totaling $221,795, with a participant contribution of $102,249.

Partnership agreements with local organizations declined from fiscal year 2003. Eleven participating agreements were completed or modified, totaling $249,644 in expenditures ($125,540 Forest, $124,104 partners). Four Challenge Cost Share Agreements were initiated with $97,126 expended ($45,461 Forest, $51,665 partners).

Partnerships and grants developed as part of the Public Law 106-393, Title II (Resource Advisory Committee Program) significantly added to the community development activities of the Forest. Ten grants totaling $324,234 ($264,977 Forest, $59,257 partners), one Cooperative Agreement totaling $33,250 ($28,000 Forest, $5,250 partner), two Wyden Agreements totaling $13,450 ($12,500 Forest, $950 partners), one Participating Agreement totaling $14,208 ($13,558 Forest, $650 partners), and one Challenge Cost Share Agreement totaling $20,000 ($10,000 Forest, $10,000 partners) were approved through the Resource Advisory Committee Program.. In addition, $124,684 was directed at Forest Service projects, which drew contributions from outside organizations of $34,030. A total of $9,043,305 was received by Siskiyou County under Public Law106-393. Of this, $678,248 was directed to projects recommended by the Siskiyou Resource Advisory Committee (Title II) and $678,248 was directed to county-initiated projects through Title III.

## Northwest Forest Plan Monitoring

Implementation monitoring on the Forest related to the Northwest Forest Plan has been ongoing for eight years. Effectiveness monitoring at the Northwest Forest Plan scale is currently in progress to test the effectiveness of the Forest Plan land allocations and standards and guidelines relating to key issues: watershed, old growth, northern spotted owl, marbled murrelet, social economic, and tribal. Monitoring documents recording the progress and results are available on the web:

http://www.reo.gov/monitoring/implementation

## Potential Forest Plan Amendments and Corrections

The Forest proposed an amendment to the Forest Plan that would change the list of management indicator species to improve the effectiveness and efficiency of monitoring management activities. An environmental assessment was completed and circulated to the public for comment on September 14, 2004; it is available on the web:

http://www.fs.fed.us/r5/klamath/projects/projects/mis/index.shtml

In 1994, the Northwest Forest Plan amended the Rogue River National Forest Land and Resource Management Plan placing the area covered by the Mt. Ashland Ski Area special use permit in the Administratively Withdrawn category. The 72-acre portion of the special use permit area on the Klamath National Forest was not addressed until 1995 when the Forest Plan Record of Decision administratively withdrew 47 acres as a Special Interest Area. In a letter dated May 7, 2004, the Klamath National Forest clarified that the entire 72 acres is administratively withdrawn to provide consistent management of the ski area and meet the intent of the special use permit.

## Public Participation Plan

A notice of the Fiscal Year 2004 Monitoring and Evaluation Report will be mailed to those on the Forest Plan mailing list. Copies will also be provided to the Klamath Provincial Advisory Committee and to anyone who requests them. The report will be posted on the Forest's web page.

## Supporting Documentation

The supporting information for this report is on file in the various resource departments in the Supervisor's Office and at ranger district offices.

## *Physical Environment*

USDA Forest Service. 2005. Best Management Practices Monitoring Report for Fiscal Year 2004.

King Solomon Mine Dam Removal Monitoring Report. 2004.

Siskon Mine Water Quality Monitoring Program Report. 2004

## *Biological Environment*

Anthony, R.G. and others. 2004. Status and Trends in Demography of Northern Spotted Owls. 1985-2003. This report is co-authored by a variety of Federal, State, academic and private sector scientists. http://www.reo.gov/monitoring/trends/index.htm

Argonne National Laboratory. 2004. Evaluation of Candidate Management Indicator Species for National Forests in the Northern California Province.

Cuenca, S. 2003. Summary Of Gopher Bait Monitoring 1996-2003, Klamath National Forest. Fort Jones, CA: U.S. Department of Agriculture, Forest Service, Scott River Ranger District. 20 p.

de la Fuente, J. and Elder, D. 1998. The Flood of 1997 Klamath National Forest Phase I Final Report. Yreka, CA: U.S. Department of Agriculture, Klamath National Forest, Internal Document November 24, 1998.

de la Fuente, J. and Haessig, P. 1993. Salmon Sub-basin Sediment Analysis. Yreka, CA: Klamath National Forest Internal Report.

Elder, D. 2003a. Evidence to Validate Cumulative Watershed Effects Models. Klamath National Forest, Yreka, California. November 27, 2003. 8 p.

Elder, D. 2003b. Summary Of First-year Erosion Delivered To Streams From Crossings/Near-channel Reconstruction and Road Decommissioning 1997 through 2002. Klamath National Forest, Yreka, California. 5 p.

Elder, D. and de la Fuente, J. 2003. Geology, Restoration and Roads: A Strategy to Prioritize Work. Powerpoint Presentation *presented* at 2003 GSA Annual Meeting in Seattle, Washington on November 4, 2003. Klamath National Forest, Yreka, California. 26 p.

Klamath Bird Observatory. 2003. Final (DRAFT) Effort Report to The Forest Service Region 5 Partner in Flight Program and the Klamath National Forest, January 30, 2004.

May, C.; Dietrich, W.; Cover, M.; and Resh, V. 2004. Linking Sediment Supply to Channel Conditions in an Assessment of Cumulative Watershed Effects for the Klamath National Forest. University of California, Berkeley, California. 45 p.

Reeves, G.H.; Hohler, D.B.; Larsen, D.P.; Busch, D.E.; Kratz, K.; Reynolds, K.; Stein, K.F.; Atzet, T.; Hays, P.; and Tehan, M. 2004. Effectiveness Monitoring for the Aquatic and Riparian Component of the Northwest Forest Plan: Conceptual Framework and Options, General Technical Report PNW-GTR-577 June 2004.

http://www.fs.fed.us/pnw/pubs/pnw_gtr577.pdf

USDA Forest Service. 1996. Late-Successional Reserve Assessment for Goosenest LSR #RC-363. Yreka, CA: U.S. Department of Agriculture, Forest Service, Klamath National Forest. http://www.fs.fed.us/r5/klamath/publications/lsr/goosenest/pdfs/titlesheet.pdf

USDA Forest Service. 1999. Klamath National Forest, Forest-Wide Late Successional Reserve Assessment. Yreka, CA: U.S. Department of Agriculture, Forest Service, Klamath National Forest.

http://www.fs.fed.us/r5/klamath/publications/lsr/forestwide2003.shtml

USDA Forest Service. 2002. Klamath National Forest, Forestwide Roads Analysis. Yreka, CA: U.S. Department of Agriculture, Forest Service, Klamath National Forest. http://www.fs.fed.us/r5/klamath/projects/analyses/forestroads/index.shtml

USDA Forest Service. 2003. Stream Monitoring Administrative Study [SMAS] Field Guide: Protocols and Methods. USDA Forest Service Pacific Southwest Region, Klamath National Forest Pilot Study, September, October and November 2003. 5 p.

USDA Forest Service, 2004. Cumulative Watershed Effects Analysis Process Paper. Quantitative Models for Surface Erosion, Mass Wasting and ERA/TOC. Klamath National Forest. July 12, 2004.

USDA Forest Service; USDI, Bureau of Land Management. 1994. Record Of Decision For Amendments To Forest Service And Bureau Of Land Management Planning Documents Within The Range Of The Northern Spotted Owl, Standards And Guidelines For Management Of Habitat For Late-Successional And Old-Growth Forest Related Species Within The Range Of The Northern Spotted Owl. Portland, OR. http://www.or.blm.gov/nwfpnepa/FSEIS-1994/NWFPTitl.htm

Ziemer, R.R. 1981. The Role of Vegetation in the Stability of Forested Slopes. *In* XVII Proceedings of International Union of Forest Research Organizations World Congress, Japan. p. 297-308.

### *Resources Management Programs*

Forest Land Surveyor Record of marked and maintained boundaries, Klamath National Forest.

Special Use Permits and related inspection reports, Klamath National Forest.

Siskiyou County Assessor. Lands Transaction Recordings.

Mineral Plans of Operations and mineral leases, Klamath National Forest.

Fiscal Year 2004 Roads Accomplishment Report, Klamath National Forest.

Rangeland Implementation Monitoring Report for Fiscal Year 2004, Klamath National Forest.

Heritage Program Annual Reports from 1996 to present, Klamath National Forest.

### *Social Economic Environment*

Civil Rights Implementation Plan, Klamath National Forest.

Grants and Agreements Log, Klamath National Forest.