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Monitoring and Evaluation Report

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Introduction

Background

The Rogue River National Forest Land and Resource Management Plan (Rogue River Forest Plan) became effective in 1990 (USDA Forest Service 1990*b*). The Siskiyou National Land and Resource Management Plan (Siskiyou Forest Plan) became effective in 1989 (USDA Forest Service 1989*b*).

These Forest Plans provide direction for integrated management of the resources of each National Forest. Forest Plans are implemented through projects designed to be consistent with their direction and land allocations. Monitoring is an integral part of the Forest Plan. Projects and programs are monitored for consistency with the plan and to test the validity of the plan itself. There is provision for amendment of the Forest Plan where monitoring shows a need for change or when changes in laws and regulations occur.

On April 13, 1994, the Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (Northwest Forest Plan) was signed by the Secretary of Agriculture, Mike Espy and the Secretary of the Interior, Bruce Babbitt. The Northwest Forest Plan amended the Rogue River and Siskiyou National Forest Land and Resource Management Plans and provided new direction for management of the natural resources of the Forests (USDA Forest Service and USDI Bureau of Land Management 1994*b*).

This ecosystem plan, also known as the Northwest Forest Plan, was significant because it provided a watershed-based approach to management of Federal lands within the range of the northern spotted owl. The future management of late-successional and old-growth forests, recovery of the northern spotted owl and an Aquatic Conservation Strategy to restore aquatic ecosystems are central parts of this Plan. Whenever the term “Forest Plan” is mentioned in this document, it refers to the Rogue River and/or Siskiyou National Forest Land and Resource Management Plans as amended by the Northwest Forest Plan.

In December 2003, the Forest Service Washington Office approved administrative consolidation of the Rogue River and Siskiyou National Forests. Reference is made throughout this Monitoring Report to the Rogue River-Siskiyou National Forest as applicable. When reference is made to the Rogue River Forest Plan or land management direction applicable to the Rogue River National Forest, the phrase Rogue River National Forest continues to be utilized. When reference is made to the Siskiyou Forest Plan or land management direction applicable to the Siskiyou National Forest, the phrase Siskiyou National Forest continues to be utilized.

Throughout this report, reference is made to certain organizational units of the Forest as Ranger Districts. Reference is made to the Powers Ranger District, the Gold Beach Ranger District (former Chetco and Gold Beach Ranger Districts), the Wild Rivers Ranger District (former Illinois Valley and Galice Ranger Districts), the High Cascades Ranger District (former Prospect and Butte Falls Ranger Districts), and the Siskiyou Mountains Ranger District (former Applegate and Ashland Ranger Districts).

Monitoring reports track implementation of the forest plans. This report documents selected monitoring efforts and evaluation of forest plan implementation during fiscal year (FY) 2013 (October 1, 2012 to September 30, 2013). This report generally covers Forest Plan monitoring elements and is a summary of selected reports and monitoring efforts. It is not a report of all of the programs or program accomplishments on the Forest.

Forest plan monitoring is an ongoing process. The Rogue River-Siskiyou National Forest is continuously monitoring and evaluating new information and changing conditions. Monitoring activities and results have been summarized in annual monitoring reports for several years. This report is the latest of several Forest Plan Monitoring and Evaluation Reports previously prepared for each National Forest. These documents are available to the public upon request.

Forest Plan Monitoring Strategies

The Monitoring Strategy for the **Rogue River National Forest** became effective in 1990 with the signing of the Forest Plan. Chapter 5 of the Rogue River Forest Plan contains a summary of the monitoring and evaluation of Forest Plan implementation. The monitoring strategy was based on that summary and on the detailed monitoring worksheets contained in the planning record.

The Rogue River National Forest Monitoring Strategy Update is a distillation and improvement of the key components of the 1990 strategy. The strategy defines the items to be monitored and contains the Forest goals, outputs and desired future conditions, key monitoring questions, units of measure, frequency, proposed monitoring methods, standards, and assigned responsibilities.

The Monitoring Strategy Update was completed in January 1997, and is available as a separate document from the Rogue River-Siskiyou National Forest Supervisor’s Office. Monitoring and Evaluation Reports for the Rogue River National Forest have been based on this Monitoring Strategy Update since 1997.

The monitoring strategy for the **Siskiyou National Forest** first became effective in 1989 with the signing of the Forest Plan. Chapter 5 of the Siskiyou Forest Plan contains a summary and table for the components of the monitoring and evaluation program. The monitoring and evaluation program for the Siskiyou National Forest has been guided by that document since 1989 and several annual reports have been prepared and are available upon request.

Monitoring Strategy for FY2013

The last monitoring report prepared by the Rogue River-Siskiyou National Forest was for FY 2012. This report will cover monitoring for FY 2013. New regulations were promulgated in the 2012 Planning Rule (77 Fed. Reg. 21,162 (2012)) requiring the Forest to implement the new forest plan monitoring requirements within 4 years from effective date of the new rule or, as soon as practicable, to meet the provisions of title 36 Code of Federal Regulations (CFR) § 219.12(c)(1). The Forest expects to comply with these new requirements by 2016, unless unique circumstances (e.g. litigation, major fires, or other demands that create major demands on the local workforce) require delay of implementation. Until such time as described above, forest monitoring will comply with requirements of the 2010 planning rule. The requirements introduced in 2010 require "a description of the plan area's contribution to the achievement of applicable outcomes of the Forest Service national strategic plan."

> 36 CFR 219.11 (f) Annual monitoring and evaluation report. The responsible official must prepare a monitoring and evaluation report for the plan area within 6 months following the end of each fiscal year. The report must be maintained with the plan documents (Sec. 219.30(d)(5)), and include the following: (1) A list or reference to monitoring required by the plan; and (2) A summary of the results of monitoring and evaluation performed during the preceding fiscal year and appropriate results from previous years. The summary must include: (i) A description of the progress toward achievement of desired conditions within the plan area; and (ii) A description of the plan area's contribution to the achievement of applicable outcomes of the Forest Service national strategic plan.

Federally appropriated funding for monitoring and monitoring reports has been minimal over the previous few years. As with previous monitoring reports, reporting is done on specific elements of the respective monitoring strategies, rather than preparing a complete report on all monitoring elements. The goal of this approach is to provide meaningful data on elements actually monitored, rather than to generate incomplete information on all elements. In addition, several specific inventory and monitoring projects were conducted in FY 2013, with appropriated funding. This report includes summaries of those projects.

Monitoring and Evaluation

Monitoring and evaluation in the Pacific Northwest Region (Region 6) is designed to be reactive to the major transformation molding the agency nationally, and inherent to society as a whole. The scope and importance of activities on or near the national forests have become significant to "everybody." In this context, monitoring exists to serve management. For that reason, the Rogue River-Siskiyou National Forest and Region 6 strives to put monitoring and evaluation in the context of "adaptive management."

For the purpose of this report, Forest Plan monitoring is done to measure progress in Forest Plan implementation. It consists of gathering data, making observations, and collecting and disclosing information. Monitoring is also the means to determine how well objectives of the Forest Plan are being met, and how appropriate the management standards and guidelines are for meeting the Forest's outputs and providing environmental protection. Monitoring is used to determine how well assumptions used in the development of the Forest Plan reflect actual conditions.

Monitoring and evaluation may lead to changes in practices or, provide a basis for adjustments, amendments, or Plan revisions. Monitoring is intended to keep the Forest Plan dynamic and responsive to change. Upon evaluation of the data and information, determinations are made as to

whether or not planned conditions or results are being attained and when they are within Forest Plan direction. When a situation is identified as being outside the limits of acceptable variability, changes may need to occur.

While monitoring and evaluation comprises the control system over management activities on the Forest, each has a distinctly different purpose. Monitoring is gathering information and observing management activities. Forest Plan monitoring on the Rogue River-Siskiyou National Forest has been organized into four levels:

Implementation Monitoring is used to determine if the objectives, standards, guidelines, and management practices specified in the Forest Plan are being implemented. In other words, “Did we do what we said we were going to do?”

Effectiveness Monitoring is used to determine if the design and execution of the prescribed management practices are effective in meeting the goals, objectives, and desired future condition stated in the Forest Plan. Simply stated, “Are the management practices producing the desired results?”

Baseline Monitoring is designed to characterize the existing or previously existing condition for comparison with future monitoring or predicted conditions. In some cases this can refer to an initial inventory or set of measurements taken at the beginning of monitoring efforts. This type of monitoring is useful as a starting point or comparison for the other types of monitoring and can form a basis for trend detection.

Validation Monitoring is used to determine whether data, assumptions, and coefficients used to predict outcomes and effects in the development of the Forest Plan are correct. Again, stated another way, “Are the planning assumptions valid, or are there better ways to meet Forest Plan goals and objectives?”

Evaluation is the analysis and interpretation of the information provided by monitoring. Evaluation is the feedback mechanism identifying whether there is a need to change how the Forest Plan is being implemented to comply with existing direction or whether there is a need to change Forest Plan direction itself through amendment or revision.

Typically, several years of effectiveness and validation monitoring results are needed to permit meaningful evaluation of trends against baseline data. For this reason, this report contains few results on the effectiveness of the standards and guidelines or the validity of Forest Plan models and assumptions. It emphasizes the question, “Did we do what we said we were going to do?” as well as reporting progress that is being made on answering questions of effectiveness and validation.

Monitoring Results

Part One: Selected Forest Plan Items for the FY 2013 Report

This section presents the results and evaluation of the selected Forest Plan monitoring items that were monitored during FY 2013, for the Rogue River and Siskiyou National Forests. Each monitoring item is briefly described by the monitoring category, group and the individual goals and objectives that comprise the monitoring item. Also brought forward are selected monitoring questions from the monitoring worksheets, based on the respective monitoring strategies. Based on these questions, results and evaluations are presented, including recommendations. Note that monitoring items are sometimes reported in this document separately for each national forest, yet together according to the selected element. Recommendations are applicable to both national forests, unless otherwise noted.

Physical Resources

Monitoring Item – Air Quality

Goal(s), Monitoring Question(s):

The goal for the Rogue River National Forest is to reduce total suspended particulates (TSP) produced by prescribed fire to 56 percent of the base year production level. This goal is to be reached within ten years from the base year, which is 1991. Total TSP for 1991 was 39,708 tons (56 percent of the base year is 22,236 tons). The goal for the Siskiyou National Forest is 7,300 tons or less produced on an annual basis. The monitoring questions include:

- Is Best Available Technology (BAT) as defined by the Oregon State Implementation Plan (SIP), being utilized?
- Are management activities meeting the requirements of the Oregon SIP?
- Are tons of yearly TSP production on a downward trend toward the 2001 goal?
- Siskiyou NF: Does Total Suspended Particulate produced from planned ignitions exceed 7,300 tons Forest-wide annually?

Findings and Evaluation:

Rogue River National Forest

Results of monitoring show that BAT is being used. Review of project plans show a trend in the use of treatment methods other than prescribed fire. Management activities were in compliance with the Oregon State Implementation Plan (SIP).

For FY 2013 approximately 1,658 acres were burned with prescribed fire and approximately 16,909 tons of fuel consumed. This equates to 273 tons of TSP produced. The annual trend is clearly downward and far below the 2001 maximum production goal of 22,236 tons. With the planned increase in hazardous fuels reduction projects in the near future, TSP production may increase, but it should still remain well below the 22,236 ton goal (56 percent of the 1991 base year TSP). This portion of the Forest met all Smoke Management Guidelines and experienced no intrusions. Based on these findings, monitoring indicates that management direction is being achieved.

Siskiyou National Forest

For FY 2013 approximately 462 acres were burned with prescribed fire and approximately 4,739 tons of fuel consumed. This equates to 99 tons of TSP emitted from these burns. Even on an annual basis this is far below the threshold of 7,300 tons. With the planned increase in hazardous fuels reduction projects in the near future, TSP amounts may increase, but should still stay well below the 7,300 ton threshold of concern. This portion of the Forest met all Smoke Management Guidelines and experienced no intrusions. Based on these findings, monitoring indicates that management direction is being achieved.

Recommendations:

Based on these findings, monitoring indicates that management direction for air quality is being achieved on the Forest.

Monitoring Item – Soil Productivity

Goal(s), Monitoring Question(s):

The goal for the Rogue River National Forest is to maintain and/or enhance the physical, chemical, and biological properties of Forest soils at a level capable of sustaining the long-term demands of a wide variety of Forest users and healthy ecosystems. The goal for the Siskiyou National Forest is to maintain and/or enhance long-term productivity of the forest, primarily by mitigating the impacts of management activities and rehabilitating soils that have been impacted by management and natural events. Retention of coarse woody debris (CWD) helps maintain long-term site productivity. This is accomplished by requiring the use of standards and guidelines and other mitigation measures designed to protect soil productivity on all projects. Forest Service Manual 2520.2 and R-6 Supplement 2500-90-1 provide guidance.

Specific objectives include (1) Plan and conduct land management activities to minimize reductions of soil productivity potential caused by detrimental compaction, displacement, puddling, and severe burning. Maintain nutrient capital on forest and rangelands at acceptable levels. (2) Plan and conduct land management activities so soil loss from accelerated surface erosion and mass wasting, caused by these activities, will not result in an unacceptable reduction in soil productivity or water quality. The monitoring questions include:

- What effects are management activities having on soil properties, especially potential long term cumulative effects?
- Are the soil Standards and Guidelines being employed at the project level? Are they effective?
- Are coarse woody debris guidelines being used in project design? Are these guidelines effective?

Findings and Evaluation:

Consistency reviews of timber sale layout and/or contract review was completed on three sales (Tooth timber sale on the Gold Beach Ranger District, and Wrangler and Homestead timber sales on High Cascades Ranger District) to assure that the projects are meeting soil and water resource protection objectives, as specified in the project planning documents. The needed changes were reported and carried out to meet the protection objectives.

Best Management Practices monitoring was conducted on the reclamation of the Runwet Placer mining claim in the Althouse Creek sub-watershed on the Wild Rivers Ranger District.

Components of the National BMP Protocol related to soil productivity include evidence of soil erosion or sedimentation from reclamation activities, as well as a review of planning and implementation documents to determine if required design features to protect soil productivity were carried forward to implementation. The operator filled in sample pits and ponds, re-contoured the landscape and spread stockpiled topsoil, obliterated a temporary road and scattered woody debris, and applied an approved seed mix and planted native trees and shrubs. There was no evidence of soil erosion or sedimentation in the reclamation area. All design features for soils had been appropriately carried forward and implemented.

Detailed soil disturbance monitoring data was collected utilizing the Forest Soil Disturbance Monitoring Protocol (Page-Dumroese et al., 2009), on Whisker Unit 1-2, High Cascades RD. This 80 acre unit was recently commercially thinned under the Big Butte Springs Timber Sales FEIS, and underburned in FY13 to manage treatment fuels. In addition, this unit is on coarse-textured, excessively drained soils that should maintain a higher level of organic matter to aid in soil moisture retention and improved soil productivity. During the project analysis for the Big Butte Springs FEIS, it was estimated that 64% of the area was recovering from historic detrimental soil disturbance (Big Butte Springs unit 68, of which Whisker unit 1-2 is a part).

Table 1. Percentage of Whisker Unit 1-2 in each soil disturbance severity class.
Sample selection size for a 75% confidence level.

	Severity Class 0	Severity Class 1	Severity Class 2	Severity Class 3
# of Occurrences	3	18	9	6
% Disturbance	8	50	25	17

Approximately 17 percent of the unit showed severe indications of soil disturbance (severity class 3), with a distinct change in soil structure at approximately 9 to 12 inches down to a massive, strongly compacted structure compared to soils immediately outside the area of disturbance. Four of these sites were associated with temporary roads or main skid trails. One site was associated with a heavily used livestock trail accessing a guzzler, and one was a burned out tree bole.

Many of the severity class 2 sites were determined to be evidence of historic soil disturbance since recent disturbance was not evident. They displayed some increased penetration resistance over baseline undisturbed soils, but soil pits did not show evidence of rooting limitations, and they appear to be on a recovering trajectory and not severe enough to be detrimental to soil productivity.

Tweezing out the prescribed fire effects, results indicated that approximately 64% of the unit experienced a low severity burn, 33% was unburned, and approximately 3% experienced high severity impacts (statistically extrapolated from one recorded measurement, where a decomposed stump burned out). No moderate burn severity conditions were recorded. The size of the high severity burn location was much smaller than the 100 square feet needed to qualify as a detrimental soil disturbance per FSM 2520 R-6 Supplement 2500-98-1. The only bare soil observed in the unit was associated with main skid trails, a livestock trail, and the burned out stump, and accounted for approximately 11% of the unit area. No erosion or displacement from underburn activities was observed. This monitoring concluded that prescribed burning met all of the soil protection mitigations needed to maintain adequate levels of organic matter, effective ground cover, and protection of soil productivity.

In conclusion, timber sale operations as well as the prescribed fuels treatment met the objectives of maintaining and protecting long term soil productivity, and were within Forest Plan standards and guidelines.

Recommendations:

Based on these findings, monitoring indicates that management direction for soil productivity is typically being achieved on the Forest with implementation of recent/current projects. Impacts from legacy activities before the establishment of the current standards and guidelines typically do not meet what is now expected for maintaining soil productivity, and these legacy impacts have the potential to result in cumulative impacts to soil productivity, but this is dependent upon the persistence of the impacts based on the inherent soil capabilities at each site. Continue to collect soil disturbance data on differing sites across the forest to compare inherent capacities of unique soils, cumulative impacts to soil productivity, and to assure that implementation of standards and guidelines are providing adequate protection to long term soil productivity.

Biological Resources

Monitoring Item – Silvicultural Harvest Methods

Goal(s), Monitoring Question(s):

The Forest goal is that areas of vegetation management (silvicultural treatments) are in compliance with the management objectives and assumptions contained in the forest plans. A goal of ecosystem management and the Northwest Forest Plan is to reduce the amount of clear-cutting. The monitoring questions include:

- Are the harvest methods being implemented as portrayed in the forest plans? What are the silvicultural methods being used? How much clear-cutting is occurring?
- Do silvicultural prescriptions and processes follow the Forest Plans' standards and guidelines?

Findings and Evaluation:

With the implementation of the Northwest Forest Plan in 1994, the amount and type of timber sales have changed dramatically compared to previous decades. As a consequence, harvested acres on the Rogue River-Siskiyou National Forest have been greatly reduced from the Forest Plan projections.

Rogue River National Forest

The Rogue River Forest Plan estimated annual total harvest acreage at 8,120 acres and about 120 million board feet. Analysis under the Northwest Forest Plan resulted in a revision of this estimate to about 26 million board feet (MMBF) annually, on about 1,800 acres. The 26 MMBF figure is described as the probable sale quantity (PSQ) and is scheduled form lands allocated as Matrix and Adaptive Management Area.

The harvest acreage for the Rogue River side of the Rogue River-Siskiyou National Forest was 396 acres in FY 2013. Please see the monitoring item on "Contribution to Forest Products Industries" for more detailed information on timber volumes offered. Prescriptions for vegetation management projects were reviewed and found to comply with Forest Plan requirements. In FY 2013, silvicultural systems included:

Table 2. Silvicultural harvest methods on the Rogue River side of the Rogue River-Siskiyou National Forest

Silvicultural harvest method	2013 treatment acres
Commercial thinning	396 acres
Overstory removal	0 acres
Selection harvest	0 acres
Salvage cut	0 acres
Reforestation	66 acres
Timber stand improvements	51 acres

Source: Forest Service Activity Tracking System (FACTS)

Siskiyou National Forest

The Siskiyou Forest Plan estimated annual total harvest at about 158.4 million board feet. Analysis under the Northwest Forest Plan resulted in a revision of this estimate to about 24 MMBF annually.

The harvest acreage for the Siskiyou side of the Rogue River-Siskiyou National Forest was 490 acres in FY 2013. Please see the Monitoring Item on "Contribution to Forest Products Industries" for more detailed information on timber volumes offered. Prescriptions for vegetation management projects were reviewed and found to comply with Forest Plan requirements. In FY 2013, silvicultural systems included:

Table 3. Silvicultural harvest methods on the Siskiyou side of the Rogue River-Siskiyou National Forest

Silvicultural harvest method	2013 treatment acres
Commercial thinning	490 acres
Overstory removal	0 acres
Selection harvest	0 acres
Salvage cut	0 acres
Reforestation	0 acres
Timber stand improvements	122 acres

Source: Forest Service Activity Tracking System (FACTS)

Recommendations:

Based on these findings, monitoring indicates that management direction for silvicultural harvest methods is being achieved on the Forest.

Monitoring Item – Insect and Disease Activity

Goal(s), Monitoring Question(s):

The Forest goal is to protect resources and values from unacceptable losses due to destructive pests. Monitor levels and activity of Forest pests to identify or predict when and where they will hinder the attainment of management objectives. The monitoring questions include:

- What are the current levels and activities of key Forest pests and their trends? Are destructive insect and disease organisms threatening management objectives?
- Are management activities affecting insect and disease levels and what is the foreseeable trend?

Findings and Evaluation:

Tree Mortality from Annual Aerial Detection Surveys

In the annual Pacific Northwest Aerial Detection Survey, trained observers fly with a pilot in a small fixed-wing airplane from July through September. The observers are familiar with forest vegetation types, tree species, and insects and diseases. They are trained to recognize mortality and damage caused by various insects and diseases from the air. The observers locate areas of tree mortality and sketch those locations onto maps as coded points or polygons. All pockets of current-year tree mortality are attributed with causal agent (usually insect-caused) and either an estimate of the total number of recently-killed trees or an estimated number of recently-killed trees per acre. Mortality in the midstory or understory that is obscured by dominant or codominant trees is not usually recorded.

Table 4. Bark beetle and woodborer related tree mortality detected in Annual Aerial Detection Surveys on the Rogue-River-Siskiyou National Forest, 2009 to 2013

Year	Number of trees killed	Acres affected
2009	1,055	1,734
2010	12,528	15,454
2011	9,622	11,206
2012	5,301	7,315
2013	10,504	4,191

Insect-related mortality mapped on the Rogue River-Siskiyou National Forest from 2009-2013 was attributed to the following agents: Douglas-fir beetle in Douglas-fir, flatheaded fir borer in Douglas-fir, fir engraver in true firs, mountain pine beetle in lodgepole pine, sugar pine, western white pine and whitebark pine, and western pine beetle, and pine engraver in ponderosa pine. In 2013, 71 percent of the mapped mortality (7500 trees killed) was due to mountain pine beetle in lodgepole pine on the High Cascades RD. This is a significant increase from 2012 when 2258 dead lodgepole pines attributed to mountain pine beetle were mapped. Mortality caused by fir engraver in true firs, flatheaded fir borer in Douglas-fir and western pine beetle in ponderosa pine accounted for 15 percent, five percent, and four percent of the trees killed, respectively.

Aerial Detection Survey maps are available in PDF format from 2003 to the present at http://www.fs.usda.gov/detail/r6/forest-grasslandhealth/insects-diseases/?cid=stelprdb5294941. Aerial Detection Survey data from 1948 to the present are available for download from this website in GIS format.

Bark Beetles and Woodborers Monitoring and Treatment

In FY13, USFS Forest Health Protection Prevention/Suppression/Restoration funding was used to thin, pile, and burn trees on 120 acres on the Siskiyou Mountains Ranger District within the Applegate and Ashland Watersheds. The purpose of the treatments was to reduce the risk of infestation by pine bark beetles. Cause and extent of any post treatment mortality will be evaluated in the future.

Surveys were conducted by Forest Health Protection staff in the Ashland Research Natural Area on the Siskiyou Mountains Ranger District to evaluate bark beetle and woodborer risk. This area is proposed for treatment in FY14 using USFS Forest Health Protection Prevention, Suppression, or Restoration funding. Average tree densities were at the top of or well above recommended and

project target density for ponderosa pine relative to bark beetle risk. Pine health monitoring was also begun in a portion of the Butcherknife-Slate Timber Sale on the Wild Rivers Ranger District.

Thinning prescriptions to reduce the risk of bark beetle and flatheaded fir borer mortality are being incorporated into timber sale and fuel reduction prescriptions across the forest.

Other Mortality Agents

A non-native pathogen, *Cronartium ribicola*, the cause of white pine blister rust, causes substantial mortality of regenerating western white pine and sugar pine on moist high hazard sites. It also causes substantial topkill and branch dieback on larger trees, weakening them and increasing their susceptibility to bark beetle attack. White pine blister rust is also present in whitebark pine stands on the forest where it has the potential to severely reduce that species' success. Whitebark pine was recently designated a Sensitive Species. Activities to reduce impacts of white pine blister rust include planting rust-resistant western white pine and sugar pine as a part of reforestation efforts and pruning young trees. Cone collections to assess rust-resistance in whitebark pine are underway on the forest. The Southwest Oregon Forest Insect and Disease Service Center recently published a report on the Status of Sugar and Western White Pines on Federal Forest Lands in Southwest Oregon: Inventory Query and Natural Stand Survey Results (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5447311.pdf).

Native root diseases and dwarf mistletoes cause substantial growth loss and mortality on the Rogue River-Siskiyou National Forest. Prescriptions to reduce the impacts of these diseases are incorporated into timber sale and fuel reduction prescriptions across the forest where appropriate. In FY13 the 21-year remeasurement of eight permanent plots established to evaluate the spread, intensification, and mortality associated with Douglas-fir dwarf mistletoe was completed on the Rogue River-Siskiyou National Forest. Results indicate that 1) diseased Douglas-firs categorized as suppressed or intermediate crown-class had a much higher level of mortality than large diameter, upper-crown-class individuals, 2) diameter growth of Douglas-firs in (Broom Volume Rating (BVR) classes 1, 2, and 3 was similar to that of non-diseased Douglas-firs after 10 years while diameter growth of Douglas-firs in BVR class 4 was moderately affected, and severely affected for Douglas-firs in BVR classes 5 and 6, 3) height growth of Douglas-firs in BVR classes 1, 2, and 3 was similar to that of non-diseased Douglas-firs after 10 years and Douglas firs in BVR class 5 actually lost height (on average) due to dead tops breaking off. The height growth of Douglas-firs in BVR classes 5 and 6 was severely affected after ten years, 4) mortality was spread throughout all BVR classes, and in general was significantly more than in non-diseased Douglas-firs. More than 50 percent of trees rated BVR 6 in 2002 were dead within 10 years.

Port-Orford-Cedar Root Disease Monitoring and Treatment

Port-Orford-cedar is an ecologically and economically important tree species. Its natural range is geographically limited to southwestern Oregon and northwestern California. Port-Orford-cedar is affected by a non-native root pathogen, *Phytophthora lateralis*. The pathogen causes Port-Orford-cedar root disease and is nearly always fatal to the tree it infects.

In 2012, a multiyear inventory project mapping Port-Orford-cedar and Port-Orford-cedar root disease was completed on all USFS land within the range of Port-Orford-cedar in Oregon and California. Live Port-Orford-cedar canopy closure and the number of live and dead Port-Orford-cedar by size class were estimated from aerial photography and then ground-truthed. Based on these inventory data, 93,216 acres with Port-Orford-cedar are estimated to occur on the Rogue River-Siskiyou National Forest; 6.7 percent are infested by *P. lateralis*.

Current-year mortality of Port-Orford-cedar attributed to *P. lateralis* is mapped during annual Aerial Detection Surveys. In 2013, 173 recently-killed Port-Orford-cedars on 251 acres were detected. All mapped mortality occurred in locations of known root disease.

Data on the effectiveness of vehicle washing and roadside sanitation in decreasing spread potential of Port-Orford-cedar root disease were published in the Western Journal of Applied Forestry (West. J. Appl. For. 27(4) 2012). Replicated trials showed that operational washing treatment can greatly reduce *P. lateralis* inoculum on vehicles that have been exposed to infested soil in locations with very high levels of disease. Monitoring results showed that operational sanitation treatments of infested roadsides can lead to greatly reduced levels of *P. lateralis* inoculum over a number of years. Decline in inoculum becomes most substantial in years 4 to 12 after treatment.

Sudden Oak Death Monitoring and Treatment Projects

Phytophthora ramorum, the cause of sudden oak death, is an aggressive non-native pathogen that threatens the ecological integrity of tanoak forests in coastal southwestern Oregon and the economic health of Oregon's nursery and timber industries. It was first detected in Oregon in 2001 and on the Rogue River-Siskiyou National Forest in 2006. *Phytophthora ramorum* is an Oomycete, a water mold that affects above-ground plant parts of numerous trees, shrubs and forbs. The pathogen is well adapted to the mild, wet conditions of the Pacific Northwest. It forms sporangia (sacs of spores) on infected leaves or twigs which spread in wind and rain and can release swimming zoospores that germinate and infect the plant when conditions are moist. *Phytophthora ramorum* also makes thick-walled resting spores (chlamydospores) in infected plant parts, which allow it to survive heat and drought and to persist for months in soil and plant debris.

In cooperation with Oregon Department of Forestry, Oregon Department of Agriculture, and USDI Bureau of Land Management, Coos Bay District, the Rogue River Siskiyou has been participating in the Oregon sudden oak death program since 2001. The program goal is to slow spread by: 1) early detection and rapid eradication of new infestations that are epidemiologically important; 2) reducing inoculum levels wherever practical through cost-share projects and best management practices, and; 3) improved education and outreach to prevent spread by humans.

Phytophthora ramorum is subject to both state (ORS 603-052-1230) and federal (7 CFR 301.92) quarantine regulations. State and Private Forestry, Forest Health Protection, has been cooperating with the State of Oregon since 2001 to eradicate and contain the pathogen when it is found. 264 square miles of coastal Curry County are currently regulated (ORS 603-052-1230 and 7CFR 301.92). This area includes approximately 50,000 acres of the Rogue River-Siskiyou National Forest.

Newly detected disease centers outside of a Generally Infested Area are treated as quickly as possible using a combination of injected herbicide of tanoaks, cutting, piling, and burning known infected hosts, and cutting, piling, and burning adjacent tanoaks and some shrub species believed exposed to inoculum. On all ownerships affected, about 5000 acres have been treated. Approximately 86 acres of treatment were done on the Rogue River-Siskiyou National Forest prior to 2013.

In 2013, new sudden oak death infestations were discovered in the E. Fork Winchuck and the Wheeler Creek drainages of the Winchuck River Watershed, and along Wilson Creek and at Nook Bar on the Chetco River. Treatments were completed at the Wilson (4.6 acres) and E. Fork

Winchuck (7 acres) sites. Known infected trees were cut and burned. All tanoaks surrounding the known infected trees were injected with herbicide to prevent sprouting. All tanoaks immediately surrounding the known infected trees were cut, piled and burned. Pacific rhododendron, and evergreen huckleberry within 50 feet of the known infected trees were also cut, piled, and burned. Treatment of the Nook Bar and New Wheeler Creek Sites was deferred to FY14. The Chimney Camp Trail #1279 remained closed to the public to prevent the spread of the pathogen via soil movement.

Monitoring data indicate that while *P. ramorum* is extremely difficult to eradicate; it is possible to eradicate the pathogen from some sites. Several factors including timeliness, thoroughness, and type of treatment are critical to success. Data also indicate that the Oregon effort is slowing the spread of the pathogen relative to areas that have not been treated. Special projects in FY13 included continued evaluation of pathogen survival and vegetation response to eradication treatments post-treatment and monitoring soil along Redwood Nature Trail #1111. Efforts to keep the public informed about Sudden Oak Death include participating with cooperators in public meetings in Brookings and Gold Beach, stakeholder meetings in Salem, and the production of educational materials for a wide array of audiences including a revised "Stop the Spread" publication aimed at special forest products permitees and the general public. (http://www.oregon.gov/odf/privateforests/docs/ec1608%20revived%20April%202013.pdf)

Recommendations:

The POC ROD plan amendment includes: a) Standards and Guidelines for General Direction applicable everywhere and Management Practices optional for projects, b) a Risk Key, and c) Identification of 7th field watersheds, which require implementation of Management Practices if the management activity introduces appreciable additional risk to the POC in that watershed.

Continue to monitor and aggressively treat *P. ramorum* if detected on National Forest System lands. Continue to plant/interplant with rust resistant five-needle pines to maintain these minor species on the landscape and provide species diversity for the Forest. Continue to improve integration between forest health and fuels treatments to maintain forest health, reduce the fuels hazards where possible, and to improve the resiliency to insect and disease outbreaks and wildfire effects across the Forest.

Monitoring Item – Anadromous and Resident Fish Habitat

Goal(s), Monitoring Question(s):

The Forest goal is to provide and maintain habitats with diversity and quality, capable of recovering populations of resident and anadromous salmonid fish species to their potential. Monitoring questions are:

- Are the quantity and quality of rearing pools and coarse woody material being generated in the stream channel adequate for fish habitat to address objectives of potential?
- Are Forest Plan goals, objectives, and desired conditions for anadromous and resident salmonid fish being achieved? Are management activities consistent with ACS objectives?
- How effective are fish habitat improvement projects on stream channel configurations?

Findings and Evaluation:

Introduction

The FY 2013 report highlights the accomplishments in aquatic restoration for the top five priority watersheds on the Forest: East Fork Illinois River, Grayback Creek, and Sucker Creek (Wild Rivers Ranger District), Elk River (Powers Ranger District), and Elk Creek (High Cascades Ranger District). Project work was implemented in Grayback Creek, Sucker Creek and Elk Creek watersheds. The long-term goal for restoration of the high priority watersheds includes riparian forest and aquatic systems resilient to disease, insects, fire, and flood events.

This report outlines the implementation of projects which set the aquatic and riparian systems in the top priority watersheds on a trajectory toward recovery. The selection of priority aquatic/riparian watersheds was based on the relative importance of these watersheds for anadromous fish, water quality, the current health and resilience of these watersheds, and the predicted responsiveness of the watershed to restoration treatments. This approach focuses time, funding, projects, and partnerships more efficiently and effectively.

High priority treatments include, but are not limited to, streambank and channel stabilization, surface-flow restoration, improvement or decommissioning of roads, removal of fish barriers, placement of instream large wood, thinning and planting in young-age riparian stands, removal of non-native plant species within riparian areas, underburning in outer riparian areas, and mining violation enforcement. These projects will be the focal point for aquatic restoration on the Forest over the next few years.

Sucker Creek Channel and Floodplain Restoration Project

The final section of the Sucker Creek Channel and Floodplain Restoration-Phase 2B was completed on the Wild Rivers Ranger District. The project area is located within a 0.5 mile section of Sucker Creek where the channel and floodplain have been heavily altered by past mining on Forest Service-managed lands. The effects of these activities have impacted habitat for coho salmon, an ESA threatened fish, Chinook salmon, steelhead trout, stream temperature, and sediment. This monitoring report presents channel morphology data collected in July through August 2013 on NFS lands and does not include data from the restoration work on private lands upstream. Vegetation, temperature, and fish population monitoring data were collected between 2009 and 2013 on private and NFS lands.

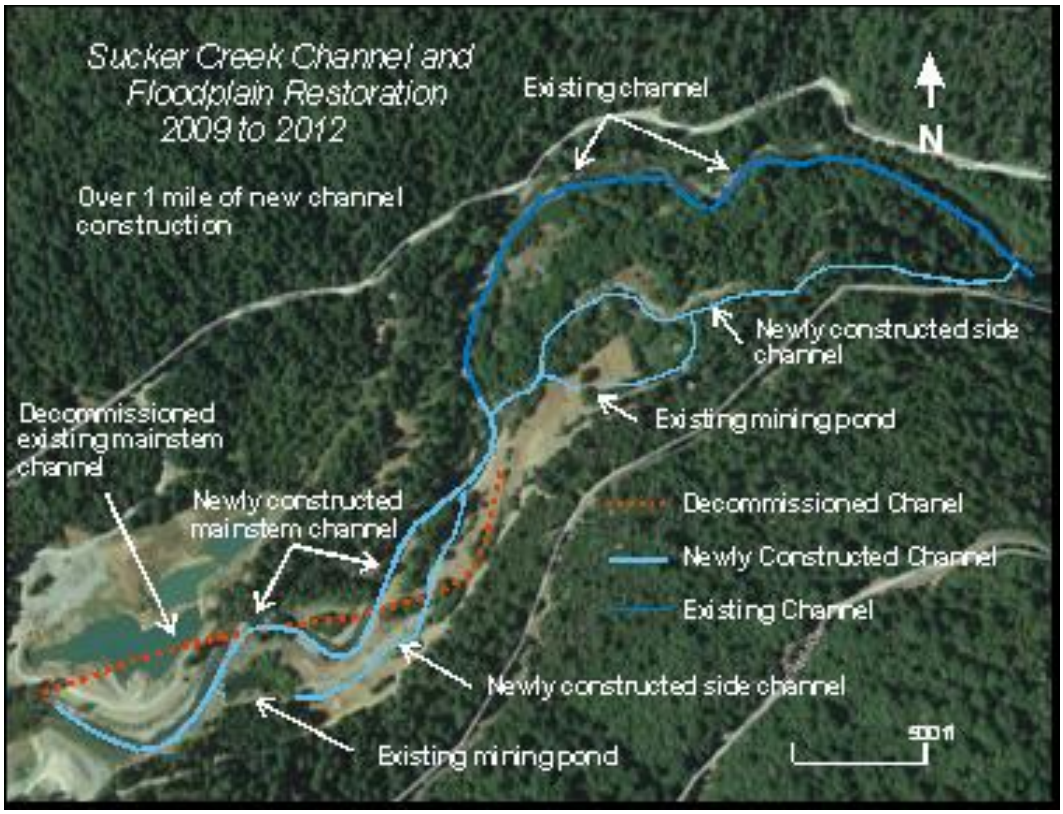

Figure 1. Complete Sucker Creek Channel and Floodplain Project

The results of monitoring of the mainstem of Sucker Creek restoration show the important fluvial geomorphic processes occurring in this reach. Because restoration was recently completed (2011 and 2012) relative to the data collected in this report, future monitoring will be required to determine the long-term response of the ecosystem to the restoration.

Since completion of the main channel restoration, the site experienced several bankfull or higher flow events. The highest flow event occurred on 12 December 2012 with a discharge of 5,480 cfs, measured at USGS gages 14375100 located approximately 2 miles downstream of the project site. The gage showed flows over 5,000 cfs during a January 2012 storm event also.

Comparison with a flood frequency analysis performed at the project site estimates these flows approximate a 5yr return interval.

Processes and changes that were observed in 2013 are summarized below:

Mainstem channel: Some changes were observed in the morphology of the restored stream channel over the last year. The restored channel is expected to be somewhat dynamic and adjustable. The restored main channel shows areas of sediment size sorting, depositional areas along point bars and high flood area, scour at log jams and pools, and recruitment of wood.

These processes may continue to occur as the channel continues to adjust. In some areas, the restored channel is entrenched and lacks floodplain connectivity. These areas may experience high shear stress during flood events and may cause additional channel change. The entrenchment was the result of a design trade-off that disturbed less of the streambanks and left a mature riparian forest largely intact. Constructing a large floodplain in this area would have reduced stream shade and removed riparian overstory. Most of the channel on NFS land had low

entrenchment values and high floodplain connectivity. Designed wood structures are functioning as anticipated and should continue to maintain deep pools and provide quality fish habitat.

Side channels and off-channel habitat: The side channel constructed along the mainstem has little or no flow during low water summer/fall conditions and was designed, in part, to provide flood relief during high flow events. No major changes have been observed in side channel morphology in the 2011 and 2012 constructed sections. The 2009 constructed side channel has changed significantly in some areas due to deposition, aggradation, sediment size sorting and channel migration. The channel is expected to be dynamic and adjustable. These processes may continue to occur as the channel continues to adjust.

Streambed sediments: Changes in the sediment size distribution among channel features have occurred and are within the range estimated in the pre-project design. Future bankfull or greater flow events should further sort streambed sediments and provide additional spawning and rearing habitat for fish.

Stream temperature: More data need to be collected under a range of flow regimes to discern what impact, if any, the project had on maximum stream temperatures in this reach. About 1,200 feet of main channel on private land now currently lack any type of vegetative shade while another ~700 feet of main channel are now heavily shaded due to channel relocations. Some portions of the channel have been narrowed while other wetted portions of the channel are wider than reference sections downstream. Establishing riparian vegetation, particularly on private land, will be important in long-term shade recovery in this section.

Coho Salmon production: The restored area on NFS lands is heavily used by coho salmon throughout their entire life history. The area provides increased complex spawning, oversummering, and overwintering habitats with high floodplain connectivity throughout much of the restored area, with the mainstem used primarily for summer rearing and secondarily for spawning and winter rearing; and the side channels, alcoves, and ponds used primarily for spawning and winter rearing, and secondarily for summer rearing. The restored area on NFS lands, along with Grayback Creek, continues to be one of the most productive spawning areas for threatened coho salmon on the Rogue River-Siskiyou National Forest. The section of Sucker Creek relocated on private lands provides little habitat benefit for Coho Salmon. The full design of this section was never completed. After completion of the mining operation on private land, the streambanks were to be pulled back to establish floodplain relief. This never occurred and the channel remains entrenched causing constructed habitat features to not function properly.

Riparian planting and noxious weeds: In general, more work needs to be done to improve riparian planting survival and noxious weed invasion. Survival rates are below benchmarks, especially when assessing seedlings over 2 years old. Active watering, mulching, and mechanical removal of noxious weeds would aid in plant survival and long term riparian ecosystem recovery. Mycorrhizae did not appear to have any effect on plant survival, and if no differences in growth can be discerned, should be discontinued in future plantings at similar sites.

Overall, changes to the ecosystem as a result of restoration activities are working to improve the overall function of the ecosystem on NFS lands. The channel has maintained its designed form, even during two relatively high water runoff years, and the beneficial fish habitat created during restoration has been maintained. Future monitoring will be needed to assess the projects resiliency and effectiveness, particularly after the restored reach experiences higher (greater than 2-5 year return) flood flow events.

In FY 2012 the final phase of mainstem realignment was completed with the construction of 650 feet of the new Sucker Creek channel though a previously mined forested section. Completed

channel features included three pools with large wood complexes, three riffles and glides and an alcove/pool (figure 6). Large wood installation included 120 pieces to construct instream large wood complexes and floodplain stabilization structures. All of the imported streambed material totaling 2,000 cubic yards of riffle rock and 500 cubic yards of glide material came from screening the mining tailings in the project area. A total of 10 acres of floodplain was created by filling in the old existing channel and stabilized it with large wood along with removing mining tailing for use as streambed material. The final 300 feet of side channel was constructed to connect the side channel created in FY 2011 to the new mainstem.

Figure 2. White sweet clover invasion of planting areas at Sucker Creek 2012.

Figures 3 & 4. Seven naturally-formed pools post construction and point bar formations.

Applegate River Gravel Supplementation Project

The objectives and purpose of the project was too increase quantity and quality of spawning habitat for TES fishes in a gravel-depleted reach of the Applegate River below Applegate Dam. This pilot project was recommended in a 2011 gravel augmentation feasibility study and a sediment transport study of the Applegate River.

Excavator operators distributed gravel at three sites in the Applegate River on National Forest System lands: one mile below Applegate Dam, at Flumet Flat Campground and next to Star Ranger Station. Project material consisted of 175 cubic yards of washed spawning-sized gravel (25 dump-truck loads). Rearing habitat for juvenile fishes was also created by excavating pools and placing large wood with rootwads in a side channel in addition to adding spawning gravel. The side channel bed elevation was lowered for its entire 200-foot length to ensure adequate water depth over spawning gravels during the spawning seasons. The Forest salvaged almost 100 juvenile Coho Salmon , five lamprey and a few steelhead trout were removed out of this side channel before project implementation.

Gravel is indispensable raw material for salmon and steelhead to spawn. The nests — redds — in which salmon lay their eggs need an adequate supply of gravel the size of a plum. Dams such as those on the Applegate River block the natural flow of gravel. Most river systems, generally speaking, are not spawning limited, unless they either have a high head dam, historically splash dammed or unless they're so incised that they are cut off from their sediment supply. The Chinook Salmon in some sections of the Applegate River spawn on top of each other. Supplementing gravel back to the river is intended to avoid the spawning overcrowding, where one fall Chinook Salmon will raid the redd of another in search of scarce gravel.

Fall Chinook Salmon were noted spawning a month after the project was completed. Steelhead and threatened Coho Salmon benefit from the addition of gravel, but this project will help them in other ways too. Unlike Chinook Salmon, which swim back to the ocean months after spawning, steelhead and Coho Salmon young are reared near their spawning beds for 11/2 years or more before returning to salt water. They need cool water year round and hiding places from summer predators. Coho Salmon prefer to rear in side channels, like the one near Flumet Flat, where the Forest placed trees that are more than 50 feet long and with attached rootwads.

The project was funded primarily through a grant from Title 2 of the Secure Rural Schools and Community Self Determination Act, a federal law providing funding to many western rural counties in lieu of timber payments. The Applegate River gravel supplementation project is the second of its kind in the Rogue basin. Monitoring results showed an increased in natural production of fall Chinook and Coho Salmon

and summer and winter steelhead trout. Less salmon and steelhead redd superimposition was observe directly below Applegate Dam due to more abundant spawning gravel downstream.

Figure 6. Post Project (immediately after implementation): Finished side channel upper end. Gravel and large wood with rootwads placed in the side channel in addition to adding spawning gravel.

Figure 7. Post Project (fall season): Fall Chinook spawning in project area utilizing the spawning gravels and large wood placed during project implementation. .

Multi-District Stream Nutrient Enhancement Project – salmon out-planting

Multiple partnerships with Gold Beach and Central Point ODFW offices, Upper Rogue Watershed Council, Coastal Conservation Association, Stream Restoration Alliance of the Middle Rogue, Middle Rogue Steelheaders and Oregon State University. These annual projects occurred along three miles of anadromous fish bearing stream; 500 hatchery coho salmon were planted in Elk Creek tributaries (Sugarpine and Bitterlick Creeks) High Cascades RD; 300 hatchery coho salmon carcasses were tossed in Taylor Creek, Wild Rivers RD; and 100 brood stock Chinook salmon carcasses (from the Chetco River) were planted in Quail Prairie Creek; Gold Beach RD.

Humboldt State and Southern Oregon University students braved the elements during monitoring to test the chemical and biological response of carcasses

Forest-Wide Monitoring for Project Development and Implementation:

- Monitoring of timber sales associated road impacts from haul and ensuring project design and BMPs were implemented, Gold Beach RD and Powers RD.
- QA/QC, monitoring layout of landslide hazard zones and Riparian Reserves for the Ashland Forest Resiliency Project, review of tree marking in potentially sensitive areas, Siskiyou Mountains RD.
- Grayback Thin Restoration implementation and post-treatment photo monitoring, Wild Rivers RD.
- Sucker Creek Mainstem Channel Restoration Project: pre/post project monitoring (Rosgen Level III, photo points, water temperature, and fish habitat surveys), Wild Rivers RD.
- Rock Creek Channel and Fish Habitat & Riparian Restoration (2008-2010): post project photo monitoring, post-project pebble counts and post-project snorkeling survey, Powers RD.
- Johnson Creek Channel Restoration (2011), Powers RD: pre-project photo monitoring.
- Hawk Creek, Sugar Pine and Bitter Lick Creek Fish Habitat Restoration (2005-2008), High Cascades RD: post-project photo monitoring.
- Hunter Creek Restoration Project (2008), Gold Beach RD: post-project photo monitoring.

- Coho and steelhead spawning, and presence/absence surveys were completed for escapement estimates on Wheeler Creek (Winchuck River 5th), Gold Beach RD; Bitter Lick and Sugarpine Creeks (Elk Creek 5th), High Cascades RD; Sucker and Grayback Creeks (Sucker Creek 5th), Wild Rivers RD; and Beaver and Palmer Creeks (Upper Applegate 5th), Siskiyou Mtns. RD. Surveys were coordinated with Central Point and Gold Beach ODFW biologists.
- R6 Level II stream surveys (25.4 miles): Powers RD: Blackberry Ck; Gold Beach RD: Mislatnah Creek, Wild Rivers RD: Shan Ck, SF Galice Ck, Page Ck; High Cascades RD: SF Little Butte Ck. Funding totaled $31.2K NFIM & NFWF).
- Fish presence & absence surveys (19.4 miles) at various locations throughout the forest were conducted to increase accuracy of the Forest GIS fish distribution layer.

POST-PROJECT: Sucker Creek Mainstem Channel Monitoring with our partner, Nancy Smebak, Illinois Valley Watershed Council, in channel constructed in FY10 on private land.

Future Restoration Efforts

In FY 2013, work continued on the Watershed Restoration Action Plans (WRAPs) jointly completed with our multi-partnerships in the RRSNF five priority watersheds under the National Watershed Condition Framework (WCF). In particular, East Fork Illinois River watershed was completed and a restoration project is expected to be initiated along the Upper East Fork Illinois and Dunn Creek subwatersheds in FY-14.

Recommendations:

Based on these findings, monitoring indicates that management direction is being achieved on the Forest.

Monitoring Item – Threatened, Endangered, and Sensitive Species: Spotted Owl

Goal(s), Monitoring Question(s):

The Forest goal is to maintain a well distributed, genetically viable population of northern spotted owls across the Forest, while retaining clusters of connectivity of nest sites and dispersal habitat across the landscape. This goal includes following the Standards and Guidelines contained in the Northwest Forest Plan, and compliance with the Endangered Species Act. The monitoring questions include:

- Are the quantity and quality of spotted owl habitats being retained in accordance with the standards and guidelines?
- Are the Forest Plans' goals, objectives, and desired conditions for spotted owl habitat being achieved?
- What is the population status, nest occupancy, breeding status, reproductive status and trend for the foreseeable future?

Findings and Evaluation:

High Cascades Ranger District

The High Cascades Ranger District is located in a spotted owl demography study area which is monitored on an annual basis by OSU Experiment Station in conjunction with District biologists. This has been an ongoing effort since 1990. All surveys were conducted to protocol, and were located in both the Matrix and Late-Successional Reserve (LSR) land allocations.

Spotted owls were detected at 60 of the 171 sites we visited in 2013. Among the sites that were surveyed to protocol, pairs were detected at 36 sites, single owls were detected at 4 sites, and owls of unknown social status were detected at 20 sites. The percentage of sites where spotted owls were detected on the study area (35%) represented a 7.0% decrease from 2012. There were 89 sites with continuous survey effort between 1992 and 2013, and banded spotted owls were detected at 30% of these sites in 2013.

The number of spotted owl pairs we located in 2013 was the fewest detected during the study. More spotted owls may have been paired than we could determine by protocol, however, since there were a large number of sites where owls were detected but social status could not be assigned according to protocol.

In 2013 productivity decreased relative to 2012, and no nests appeared to have failed. Higher levels of precipitation and cooler temperatures in the early nesting season are both associated with decreased productivity in the southern Cascades so the mild weather and low snowpack might have been a factor in the high nest success that we documented. Barred owls are known to have disrupted spotted owl nesting at individual territories on the study area in the past and more nest failures might have been expected given the continuing increase in the cumulative number of historic spotted owl territories with barred owl detections. We did not observe an effect of barred owl density on spotted owl nesting success in 2013.

Productivity in 2013 was similar to that observed in 2009-2010 in that the number of young fledged per pair declined from 2012 but not steeply. However, the annual total number of young produced on the study area has declined as fewer spotted owl pairs are located, either nesting or non-nesting.

Overall while little spotted owl habitats has been downgraded or removed from forest activities it seems that owls continue to decline due to other factors such as barred owls or delayed reaction to past cutting of owl habitats. While the Forest had over 400 known pairs in the early 1990s it is likely that we may only still have approximately 40 percent of those sites still exist on the forest. (Dugger et al. 2013)

Siskiyou Mountains Ranger District

While the Siskiyou Mountains Ranger District is not located within a demographic study area, there are recent surveys for some of the historic locations, primarily associated with the Ashland Forest Resiliency Project. Spotted owls occupied approximately 40 percent of the sites visited.

Gold Beach, Powers, and Wild Rivers Ranger Districts

No significant owl surveys have been conducted on the Siskiyou Portion of the Forest. In 1989, there were 40 sites where northern spotted owls had been detected. In 2012, there were 179 spotted owl activity centers established where resident single or pair status was determined on the Siskiyou National Forest over the last 20 years since the Siskiyou Forest Plan.

Summary and Conclusions

Since the Forest Plans were published in 1989 and 1990, surveys have located many more sites on the Rogue River side of the Rogue River-Siskiyou National Forest. From 1990 to 1994, known locations roughly doubled from approximately 100 sites to almost 200 known pair or resident single locations across the Forest. This was far above the number of owl sites that were thought to be needed for viability at the time the 1990 Rogue River Forest Plan was published. In addition, the Northwest Forest Plan allocated many more lands and habitat across the Forest for spotted owl management.

Since 1990 habitat has increased and timber harvest within suitable habitat has decreased markedly from what was projected. There are approximately 540 historic and current northern spotted owl sites on the Forest (209 sites on the High Cascades Ranger District, 82 sites on the Siskiyou Mountains Ranger District, and 245 sites on the Wild Rivers, Gold Beach, and Powers Ranger Districts) as well as approximately 360,000 acres of suitable habitat. However, across the Forest spotted owl detections at known sites have declined by approximately 50 percent since 1994. Given the numbers of historic and known sites and the amount of extant habitat on the Forest, it is likely that the numbers of spotted owls on the Rogue River side of the Forest still constitute a viable population at this time.

Recommendations:

Based on these findings, monitoring indicates that management direction for the spotted owl is being achieved on the Forest.

Monitoring Item – Threatened, Endangered, and Sensitive Species: Bald Eagle and Peregrine Falcon

Goal(s), Monitoring Question(s):

The Forest goal is to maintain genetically viable populations of bald eagles and peregrine falcons, for the subpopulation on the Rogue River-Siskiyou National Forest. This objective will be met by following the standards and guidelines contained in the Northwest Forest Plan, and in compliance with the Endangered Species Act. The monitoring questions include:

- Are the quantity and quality of bald eagle and peregrine falcon nest sites and habitats being retained in accordance with the standards and guidelines?
- Are the Forest Plans' goals, objectives and desired conditions for bald eagle and peregrine falcon habitat being achieved?
- What is the population status, nest occupancy, breeding status, reproductive status, and trend for the foreseeable future?

Findings and Evaluation:

Several raptor species on the Forest are monitored for occupancy and breeding success on an annual basis. These species include the bald eagle and peregrine falcon. On the High Cascades Ranger District, annual raptor surveys include monitoring for up to 8 historic and current peregrine falcon sites and 2 bald eagle sites; 1 bald eagle and 1 peregrine falcon site on the Siskiyou Mountains Ranger District; 1 peregrine falcon site on the Powers Ranger District; and 5 bald eagle and 3 peregrine falcon sites on the Gold Beach Ranger District.

Bald eagle

Bald eagles specifically use mature conifer or old growth habitat, preferably along large rivers and major tributaries. The estimated amount of currently suitable bald eagle habitat within the bald eagle habitat base on the Siskiyou side of the Rogue River-Siskiyou National Forest, where the bald eagle is a management indicator species (MIS) is 107,894 acres. This figure has not been changed measurably in recent years, but is projected to increase over the next 5 decades within Late-Successional Reserves.

There are currently five territories (Bushy Bar, Copper Canyon, Libby, Quosatana, and Watson) on the Gold Beach Ranger District along the Rogue River, which are monitored annually. Productivity at four of the nest sites (Copper Canyon, Libby, Quosatana, and Watson) averages 1.03 young per year, which equals the 5-year average for all of Oregon. In 2013, the nest sites resulted in the successful fledging of 5 eaglets. Of the two historic eagle sites on the High Cascades Ranger District that are monitored annually, pairs were present at both sites, but no new young were observed. There is one historic eagle site at Applegate Lake on the Siskiyou Mountains Ranger District that is monitored annually. However, no successful nesting has occurred at this site for several years.

Bald eagles were removed from the threatened species list by the US Fish and Wildlife Service in 2007. Bald eagles are protected through the Bald Eagle and Golden Eagle Act and are identified as a sensitive species on the Regional Foresters Sensitive Species list.

Peregrine falcon

State-wide, the peregrine falcon seems to be stable and increasing in a few areas. There are 11 peregrine falcon monitoring areas that the Forest monitored in FY 2012 (South Cascades and Siskiyou/Umpqua zone).

The South Cascades zone encompasses the area south of the Lane-Douglas county line, east of Interstate 5, and west of the Klamath Basin, including Crater Lake National Park. A total of 6 peregrine sites were monitored in the South Cascades zone on the High Cascades Ranger District. Annual monitoring at the 5 existing peregrine falcon sites was successful and 6 young were fledged.

The Siskiyou/Umpqua zone includes the area west of Interstate 5 and south of the Lane-Douglas county line, excluding the coast. The Siskiyou/Umpqua zone includes the Gold Beach Ranger District. Three (3) peregrine falcon nest sites were monitored in FY 2013 with 4 young were fledged. Two young were fledged, again, from a peregrine falcon site on the Siskiyou Mountains Ranger District.

Recommendations:

Based on these findings, monitoring indicates that management direction is being achieved on the Forest. In 2007 the bald eagle was removed from federal listing as threatened under the Endangered Species Act, the peregrine falcon was also delisted in 1999. Both bald eagles and peregrine falcons are now being managed as a Sensitive species on Forest Service lands.

Resources and Services to People

Monitoring Item – Off-Road Vehicle Use

Goal(s), Monitoring Question(s):

The goal is to provide motorized, off-road vehicle recreation opportunities that are compatible with the environmental setting, minimize adverse impacts on the land and resources, and control conflicts with other user groups of the National Forest System (NFS) lands. The monitoring questions include:

- Is the Forest providing off-road motorized recreation experiences that meet the needs of the public?
- Are unacceptable resource impacts occurring as a result of off-road vehicle use?

Findings and Evaluation:

There are currently about 3,180 miles of NFS Roads that allow mixed use, 240 miles of NFS Trails that allow motorized use, and 274,670 acres of the Forest that are open to cross country travel. Increased demand for motorized use, lack of designated areas/routes, has led to resource damage and social impacts, user conflicts, and safety concerns.

Recommendations:

The Forest released the Draft Supplemental Environmental Impact Statement (DSEIS) for the implementation of the 2005 Travel Management Rule in November 2011. Following release of the Record of Decision and (ROD) publication of the Motor Vehicle Use Map (MVUM) in 2014, roads and trails identified on that map will be designated as open to motor vehicle travel. All other roads, trails, and forest lands will be closed to motor vehicle travel. The MVUM will specify the classes of vehicles and, if appropriate, the times of year for which use is authorized. It will be updated and published annually and/or when changes to the Forest's transportation system are made. These numbers listed above may change with implementation of the 2005 Travel Management Rule.

Monitoring Item – Forest Transportation System

Goal(s), Monitoring Question(s):

The goal is to provide the roads necessary for management of the Forest's various resources, assuring that the mileages of roads open to safe passenger car use approximate Forest Plan levels, assuring that there is not an excessive number of roads, and that needed roads do not fall below maintenance standards. The monitoring questions include:

- What is the total mileage of roads on the Forest transportation System? How does this compare to the Forest Plan projections?
- What is the mileage of roads by each of the various road maintenance levels? Is this system effective at meeting the needs of the resources and the public?

Findings and Evaluation:

Policy changes in the last fifteen years have had a profound effect on how roads have been managed compared to when the thresholds of concern were formulated in the Rogue River and Siskiyou Forest Plans. In the past the primary purpose for road construction, reconstruction, and maintenance on the Forest was to enable timber harvest. With declining timber harvest came declining budgets for road maintenance. Reduced timber harvest levels have resulted in the need for significantly less miles of new road construction and reconstruction than anticipated in the forest plans. Also, the Forest has not had the means or ability to maintain its road system to the standards and maintenance levels of the past. This situation is being duplicated in Forests across the Nation, prompting the Forest Service to initiate a national Road Management Policy. This policy shifts our focus away from developing new roads to managing the existing road system with an emphasis on managing for the minimum road network necessary to accomplish current Forest Management objectives.

Rogue River-Siskiyou National Forest

The Forest decommissioned 1.5 miles of road in FY 2013, as part of the Applegate-McKee Bridge Legacy Roads Project on the Siskiyou Mountains Ranger District. No new road construction occurred on the Forest in FY 2013. The Forest reconstructed 40.7 miles of road in FY 2013.

Table 5. Transportation system activities on the Rogue River-Siskiyou National Forest

	2013
Roads decommissioned	13.8 miles
Roads constructed	0 miles
Roads reconstructed	23.8 miles

Recommendations:

Though much of the road system is not at the levels predicted in the Forest Plans, the differences can be explained by changes instituted with the Northwest Forest Plan and changing policies. Adjustments should be made during the next Forest Planning effort to reflect current road management policy.

Monitoring Item – Mineral Development

Goal(s), Monitoring Question(s):

The goal is to provide for exploration, development and production of a variety of minerals on the Forest in coordination with other resource objectives, environmental considerations, and mining laws. The monitoring questions include:

- In providing for locatable and saleable minerals, are Forest Plan standards and guidelines for other resources being met? Are they effective?

Findings and Evaluation:

All Notice of Intents and Plan of Operations are reviewed and responded to in accordance with the Rogue River and Siskiyou Forest Plans, as amended. See table 7 for the number of recreation mining permits issued, Notice of Intents (NOIs) and Plans of Operation (PoOs) processed, and active claims reported in FY 2013.

Table 6. Mineral development on the Rogue River-Siskiyou National Forest in FY 2013

	FY 2013
Notice of Intents processed	7
Plan of Operations processed	4
Recorded Claims	1086

Recommendations:

Based on these findings, monitoring indicates that management direction for mineral development is being achieved on the Forest. However, the number of claimants developing their claims is dependent on the location and quality of the mineral deposit and market price fluctuations.

Monitoring Item – Land Ownership

Goal(s), Monitoring Question(s):

The goal is to achieve a pattern of land ownership that best supports resource goals, improves the efficiency of resource management, and demonstrates effective forest management. The monitoring questions include:

- Is the Forest making progress in meeting the goals of the Land Adjustment Plan? Are Standards and Guidelines being met?

Findings and Evaluation:

The Landownership Adjustment Plan for the Forest is no longer current. Developed in the early 1990s the landownership adjustment plan is out of date relative to current landownership management area objectives and priorities. The Northwest Forest Plan (1994) amended the Rogue River (1990) and Siskiyou (1989) Forest Plans which changed land management area designations and thereby will change the focus of the original land adjustment plan. There have been no updates to the Forest Land Adjustment Plan since implementation of the Northwest Forest Plan.

The Forest land adjustment program continues to be active. Currently, based in part on Northwest Forest Plan direction and objectives, Forest acquisitions and land adjustments are focused primarily on riparian, stream restoration opportunities, or specially designated areas. Acquisition of two parcels is underway to acquire lands within the original location of the Pacific Crest Trail, a National Recreational Trail. Those parcels are commonly known as Brown Mountain North, consisting of 82 acres and Brown Mountain South, consisting of 49 acres. Federal ownership of these parcels is expected during FY-14.

The Forest is currently involved in efforts to sell administrative sites and facilities excess to the Forest's need; the Butte Falls Ranger’s house (.75 acres) sold February 12, 2013, and the L Street Administrative site continues to be processed for a future sale (expected FY-15).

In addition to land title, the Forest maintains survey boundary marking to delineate ownership lines for the protection and integrity of federally owned lands. To this end, the Forest maintained 9 miles of national forest boundary lines and marked 0.5 miles of national forest boundary not previously posted with markers.

Recommendations:

Based on these findings, monitoring indicates that management direction for land ownership is being achieved on the Forest.

Monitoring Item – Special Uses

Goal(s), Monitoring Question(s):

The goal is to issue special use authorizations for occupancy and use of the land in a manner consistent with the purposes of the National Forest System and the Forest Plans. The desired future condition is that all existing special use permits are consistent with the Forest Plan standards and guidelines, and FSM & FSH Direction. The monitoring questions include:

- Are special use permits consistent with the Forest Plan standards and guidelines?

Findings and Evaluation:

The special use permits prepared on the Forest are found to be consistent with the Forest Plan objectives. Approximately 412 special use permits were managed in FY 2013 (see table 8).

Table 7. Special use permits issued on the Rogue River-Siskiyou National Forest in FY 2013

	Recreation	Lands	Total
Special use permits managed	207	205	412
New permits issued	15	4	19
Permit renewals issued	16	3	19
Short term permits issued	24	2	26

Recommendations:

Based on these findings, monitoring indicates that management direction for special uses is being achieved on the Forest.

Monitoring Item – Land Suitability

Goal(s), Monitoring Question(s):

The goal is to manage for timber resources only on lands where technology exists to assure regeneration success within a specified time period. The monitoring questions are:

- Are timber management activities confined to suitable lands?
- Are unsuitable lands properly classified? Has a change in technology affected suitability classification?

Findings and Evaluation:

Rogue River National Forest

All timber sale harvest areas are routinely assessed for suitability for regeneration harvest. These assessments usually encounter slightly more area of unsuitable lands than was recognized in the Rogue River Forest Plan. Regeneration harvest is not prescribed on lands that have been verified as unsuitable. Some adjustments were made to the land base in the first few years of Forest Plan implementation.

There have not been any adjustments made to the land base in the last 5 years (2008-2012). Amount of such lands are felt to be insignificant at this time, but these changes are being tracked and will be incorporated into Forest Plan revision. There has been no change in technology that has or would affect land suitability classifications.

Siskiyou National Forest

The Siskiyou Forest Plan has a threshold of 10,000 acres change in suitability classification for the first 10 years. Monitoring shows there are no changes beyond the threshold. The Northwest Forest Plan substantially reduced the land base for programmed timber harvest. It also adjusted the level of timber harvest for the Siskiyou National Forest (24 MMBF/year).

Recommendations:

The overall finding is that results are acceptable, management direction is being achieved and current practices need to continue. There is a recommendation to incorporate the summation of land suitability changes at the end of the ten-year planning period or during Forest Plan revision.

Monitoring Item – Timber Offered For Sale

Goal(s), Monitoring Question(s):

The goal is to manage for timber resources and long term harvest levels, as directed by the Forest Plan. The monitoring question is:

- Is the Forest offering the volume of chargeable and non-chargeable timber, as assumed in the allowable sale quantity (ASQ) and the timber sale program quantity (TSPQ)?

Findings and Evaluation:

Rogue River National Forest

Under the Rogue River Forest Plan, the TSPQ was 123.0 million board feet (MMBF) or 22.81 million cubic feet (MMCF) per year. Various factors associated with old-growth and late-successional habitat, court injunctions, lawsuits and new land management decisions (i.e., the Northwest Forest Plan) have changed the amount of timber offered for sale. Under the Northwest Forest Plan, 26 MMBF has been determined to be the probable sale quantity (PSQ) for the Rogue River portion of the Rogue River-Siskiyou National Forest.

Table 8 shows the timber offered for sale and harvested since 1990. The table includes both chargeable and non-chargeable volume. In addition to density management thinning to promote forest health, timber volume comes from stand treatments designed for fuels reduction, wildlife habitat improvement, riparian area improvement, danger tree removal and salvage of dead timber.

Table 8 also shows the average offer for the last four years is substantially below the PSQ for the Rogue River portion of the Forest.

Table 8. Timber volume offered for sale and harvested on the Rogue River side of the Rogue River-Siskiyou National Forest

Fiscal year	Volume offered (MMBF)	Volume harvested (MMBF)
1990	197.1	134.3
1991	52.4	95.4
1992	7.3	62.8
1993	10.5	61.2
1994	14.7	47.0
1995	26.3	28.8
1996	22.2	20.4
1997	25.1	30.5
1998	19.7	19.1
1999	2.6	11.1
2000	0.6	10.6
2001	0.8	2.5
2002	6.4	14.0
2003	8.9	8.9
2004	0.3	8.0
2005	17.4	7.8
2006	19.1	4.0
2007	38.1	12.1
2008	46.8	10.7
2009	5.5	10.3
2010	11.0	13.9
2011	17.2	13.1
2012	16.2	12.4
2013	17.8	41.03
Total	583.9	679.9
Average	24.3	28.3

Siskiyou National Forest

Under the Siskiyou Forest Plan, the TSPQ was 160 million board feet (MMBF) or 28.4 MMCF per year. Various factors associated with old-growth and late-successional habitat, court injunctions, lawsuits and new land management decisions (i.e., the Northwest Forest Plan) have changed the amount of timber offered for sale. Under the Northwest Forest Plan, 24 MMBF has been determined to be the PSQ for the Siskiyou National Forest.

Table 10 shows the timber offered for sale and harvested since 1990. The table includes both chargeable and non-chargeable volume. In addition to density management thinning to promote forest health, timber volume comes from stand treatments designed for fuels reduction, wildlife habitat improvement, riparian area improvement, danger tree removal and salvage of dead timber. Table 9 also show that the average offer for the last four years is substantially below the PSQ for the Siskiyou portion of the Forest.

Table 9. Timber volume offered for sale and harvested on the Siskiyou side of the Rogue River-Siskiyou National Forest

Fiscal year	Volume offered (MMBF)	Volume harvested (MMBF)
1990	137	120.0
1991	58	63.0
1992	2	50.0
1993	3	11.0
1994	8	12.0
1995	16	17.0
1996	28	56.0
1997	28	37.0
1998	24	20.0
1999	18	26.0
2000	1	13.0
2001	1.5	3.1
2002	14.3	1.3
2003	9.7	6.9
2004	72.2	18.9
2005	28.3	48.9
2006	27.8	23.3
2007	31.0	20.6
2008	15.6	4.2
2009	49.9	5.7
2010	14.7	7.3
2011	21.5	17.7
2012	19.7	28.0
2013	10.6	26.4
Total	639.8	637.3
Average	26.7	26.6

Recommendations:

Based on these findings, monitoring indicates that management direction for timber offered for sale is being achieved on the Forest on average.

Social and Economic

Monitoring Item – Payments to Counties

Goal(s), Monitoring Question(s):

The goal is to promote community and economic stability, viability, and development for the affected counties, in relation to timber harvest receipts. The monitoring questions include:

- What changes are occurring in the levels of payments to local counties surrounding the Rogue River-Siskiyou National Forest operations?

Findings and Evaluation:

Table 10 indicates that payments to counties are gradually declining over time. The losses coincide with reduced timber harvests and a reduction in overall reduced receipts of timber being sold. Long-term legislative relief at the National level is not forthcoming and legislative action is limited to one-year authorizations.

Table 10. Payments to counties

County	Fiscal year 2012	Fiscal year 2013
Del Norte County, California	$102,899	$103,371
Siskiyou County, California	$109,376	$99,682
Coos County, Oregon	$276,042	$272,921
Curry County, Oregon	$2,392,854	$2,413,481
Douglas County, Oregon	$615,435	$640,292
Jackson County, Oregon	$2,119,536	$2,095,634
Josephine County, Oregon	$1,584,041	$1,640,253
Klamath County, Oregon	$276,430	$327,572
Total	**$7,476,613**	**$7,593,206**

Recommendations:

The overall finding is that the results are in accordance with current laws and management direction. Legislation is changing, extended, or modified in order to assist counties with revenues lost due to reduced harvests. Current practices and monitoring should continue.

Part Two: Special Inventory and Monitoring Projects for FY 2013

Ashland Forest Resiliency Project Monitoring – Siskiyou Mountains Ranger District

The Record of Decision for the Ashland Forest Resiliency (AFR) project was signed in October 2009. The Forest Service analyzed AFR as an authorized hazardous fuels project pursuant to Sections 103 and 104 of the Healthy Forests Restoration Act of 2003. Section 102(g)(5) of the HFRA instructs the Forest Service to establish a collaborative multiparty monitoring, evaluation, and accountability process when significant interest is expressed in such an approach.

In June 2009, under a National Forest Foundation grant, The Nature Conservancy hosted community members and other interested stakeholders to collaborate on a multiparty monitoring strategy for the AFR project. The Multiparty Monitoring Strategy considered other ongoing or already planned monitoring and highlighted desired supplemental monitoring. Great emphasis was placed on implementation monitoring for which the Multiparty Monitoring Strategy proposed a technical and public review process to improve conformity with Project guidelines and to enhance quality control. This strategy also identified stakeholder values and priorities for the desired baseline and longer term effectiveness monitoring. In addition to helping inform the community about the effects of ongoing work in the watershed, data collected will also provide feedback to guide adaptive management of the AFR Project.

The AFR project is being implemented under a stewardship agreement between the Forest Service, the City of Ashland, The Nature Conservancy, and Lomakatsi Restoration Project. This is a ten year agreement in which workers will thin trees, brush and conduct controlled burns to help restore forest resiliency and protect Ashland's community and its domestic water supply from the effects of high severity wildland fire. The agreement initially includes dedication of over 6 million dollars of American Recovery and Reinvestment Act (stimulus) dollars, plus matching funds pledged by each partner.

Stakeholders have developed several monitoring priorities: water quality and quantity; aquatic habitat; large tree retention and survival; late successional habitat; birds as indicators; herbaceous recovery and response; and fire histories. Multiparty monitoring has involved cooperators from the U.S. Forest Service, The Nature Conservancy, Klamath Bird Observatory, the City of Ashland, the National Park Service, Southern Oregon University (SOU), the USFS Pacific Northwest Research Station, and the USFS Pacific Southwest Research Station. The partnership launched a new multipage website and science delivery portal: ashlandwatershed.org (a copy of the Multiparty Monitoring Strategy is posted on the website).

Wildlife Monitoring

A pellet study in the watershed conducted in the early 1990s suggested that northern spotted owl (NSO) diets are roughly 50/50 flying squirrels and dusky-footed woodrats, but little to nothing is known about the distribution and abundance of these critical prey items in the watershed. AFR fuel reduction/restoration treatments will avoid NSO nesting sites but may well alter habitat for both squirrels and woodrats. Baseline data on these two species could provide context for evaluating AFR treatment effects and/or the population dynamics of all species concerned over larger spatial scales; especially if protocols used are consistent with past research efforts on

arboreal rodents within the broader NSO distribution. Four grids within the footprint of the AFR project have been established and have had at least one season of trapping pre-treatment.

Each grid consists of 128 traps. Post-treatment surveys will be conducted following implementation of fuels reduction work.

Fisher monitoring began in February of 2010 due to uncertainty as to the efficacy of the proposed mitigations for fisher, and a lack of research or literature on the effects of fuel reduction on fisher in the west. The Forest entered into a fisher monitoring program with the Pacific Southwest Research Station (PSW) in Fresno, California. Annual Fisher monitoring is association with the AFR fuels reduction project continues. To date 26 animals have been captured; 16 have been collared. Important pre and post treatment habitat use and home range data has been collected and will continue for at least the next two years. There is some evidence that these fisher continue to use commercially and non-commercially treated stands. Commercial treatments began in 2012 and will continue through 2013; fisher will be monitored to determine their response to those activities.

Small mammal trapping was initiated in the spring of 2011 (and continued in 2013) to determine how spotted owl and fisher prey species will respond to the project treatments. To date, 6 trapping grids of 128 traps per grid have been deployed, and many animals have been captured, marked, and released. Two flying squirrels and a Douglas squirrel have also been radio-collared and followed by volunteers in order to gather information about home range and habitat use.

Annual monitoring of landbirds, spotted owls, and small mammals continued in association with the AFR project to determine the response of those species to fuels reduction. Oregon State University is assisting with monitoring 11 owl sites, and radio telemetry of 17 woodrat den sites. Klamath Bird Observatory is assisting with landbird monitoring (several point count transects and one MAPS long-term monitoring mist net station), and the Pacific Northwest Research Station is assisting with small mammal trapping.

Soil Disturbance and Effective Ground Cover

Goal(s), Monitoring Question(s):

Implementation monitoring assesses whether treatments were implemented according to design, including appropriate mitigation measures and management constraints. AFR stakeholders elevated the importance of securing baseline data to inform the project design and, if gathered in the future, to document changes resulting from the treatment for future reference and how these changes compare to planned changes. The following questions form the basis for the implementation monitoring basic to the project:

1. Were treatments implemented according to design criteria, including appropriate mitigation measures and management constraints, outlined in the plans for the project and the subsequent decision?
2. Were fire hazard reduction treatments implemented according to the schedule outlined in the decision document?
3. Did the treatments meet or exceed key Rogue River Forest Plan standards and guidelines for direct effects?
4. Did the resultant vegetation composition and fuels conform to conditions intended in the plans for the project?

Questions 1 and 3 are particularly relevant to soil disturbance and effective ground cover and are the focus for this monitoring.

Findings and Evaluation:

Skidder-yarded commercial harvest units were targeted for implementation monitoring of effective ground cover in FY2013, as well as one helicopter commercial harvest unit. Baseline, pre-project implementation data had been collected on four units in 2013 and post-implementation effective ground cover monitoring was targeted for these units. Also the pre- and post-harvest monitoring was collected on two new units (including the helicopter unit, 67E)

Effective Ground Cover (EGC)

Effective ground cover data was collected in cooperation with The Nature Conservancy, utilizing the Soil Cover Protocol in Roadside Revegetation: An integrated approach to establishing native plants (Steinfeld et al. 2008) and the Cover Monitoring Assistant Program. More information about methods can be found in the detailed monitoring reports located in the Rogue River-Siskiyou National Forest Soils Program Files.

Table 11. Effective ground cover summary of FY 2013 monitoring results

AFR unit	Acres	Pre-implementation mean EGC	Post-implementation mean EGC	Most limiting erosion hazard class in unit	Minimum EGC required per the AFR ROD and Forest Plan
281	73 acres	99%	95%	Moderate	>60%
282	16 acres	99%	97%	Moderate	>60%
283	15 acres	99%	98%	Moderate	>60%
67F	26 acres	99%	97%	Moderate	>60%
67E	54 acres	98%	97%	Severe	>70%
65	68 acres	97%	94%	Moderate	>60%

All units prior to skidder-yarding and helicopter activities, and post-implementation monitoring, show effective ground cover standards and guidelines were met, and are well within the requirements for both the Record of Decision for the AFR Project, and the Rogue River National Forest LRMP (as amended by the NWFP). Utilizing slash over bare soils is showing to be effective at protecting the soil surface from rain splash soil particle displacement and sheetwash erosion, as well as effectively preventing rill erosion.

Soil Disturbance

Soil disturbance data was collected using the Forest Soil Disturbance Monitoring Protocol, GTR-WO-82a & 82b (Page-Dumroese et al. 2009). Soil disturbance classes are based on specific site descriptors and soil visual indicators, such as depth of wheel tracks, amount of displacement, depth of change in soil structure, etc. The determination of the percent in a condition that is detrimental to long-term productivity is based on cumulative observations made at each sample point; observations to date have found detrimental conditions in a mix of class 2 and 3 disturbances. Monitoring focused on collecting the baseline condition of soils in planned skidder-yarded commercial harvest units; a summary of results is displayed in table 13. More information about methods can be found in the detailed monitoring reports located in the Rogue River-Siskiyou National Forest Soils Program Files.

The Forest does not have any new data to report for FY-13 because post treatment monitoring achieves best results 1 or 2 years after treatment. This allows more accurate data and will be performed during the 2014 CY field season. Efforts will be done to capture both detrimental soil

effects along with pile burn scars for total project impacts to the soils resource. Therefore, additional information will be forthcoming in the FY-14 monitoring report.

The Rogue River National Forest Plan standard and guideline for soil disturbance requires that no more than 20 percent of an activity area should be displaced or compacted resulting from previous management practices. The Forest expects that the six AFR units being monitored are within this standard and guideline for soil disturbance cumulative effects. It is important to note that unit 281 has residual ground disturbance impacts from past mining and historic homestead activities as well as vegetation management activities.

Based on the data collected, the following design element for soils and site productivity, from attachment A of the AFR Record of Decision, is applicable for implementation on the above-mentioned six units:

> (2) For areas where less than **20 percent** of the site is in a detrimental soil condition from prior activities, design projects such that detrimental soil conditions do not exceed the existing condition plus 5 percent (not including the permanent transportation system) with the total detrimental effect following project implementation and restoration not to exceed 20 percent, including the permanent transportation system.

Recommendations:

Complete post-implementation detrimental soil disturbance on AFR units 281, 282, 283, 67F, 67 E and 65. Continue with monitoring of new units as implementation of the AFR Project progresses.

Bat Species Distribution and Census (Oregon Bat Grid) – High Cascades Ranger District

The objective of this monitoring is to participate in the interagency Oregon Bat Grid census effort to determine species distribution and habitat use by the various Oregon bat species. The Pacific Northwest was divided into a grid and randomly selected cells were chosen for sampling. One cell falls on the southern end of the High Cascades Ranger District. Inside this cell, 4 sites are mist netted every year and 4 additional sites are acoustically sampled. The same sites may be netted more than once in a given year. Mist netting consists of spreading mist nets above small water drinking areas and collecting all bats netted within a 4 hour period. Captured bats are identified to species (where possible), sex, and age. Various measurements are taken and a sample of the call is recorded. For some hard to distinguish species, DNA samples are collected from a wing for subsequent positive identification. The local work is being carried out by the Medford BLM with assistance from Forest Service personnel. This data will assist the Forest Service and BLM in determining trends in bat species across Oregon over the long-term. Data on this effort is entered into the NRIS Wildlife database annually by the Regional Office.

On-going surveys were completed in FY 2013 at three sites on the Forest. Sixty eight (68) bats were captured, which included individuals from eight species. This work has only been occurring since 2006 and fluctuations in weather and temperatures make week to week and even year to year captures rates highly variable, consequently no trend analysis can be made at this time. It may take several more years to observe any trends at these sites.

Osprey and Harlequin Duck Monitoring – Powers Ranger District

Osprey nest monitoring and a harlequin duck surveys were performed. No detections were made at the OE-157 osprey site. No detections of harlequin ducks were made on the District

either. Four osprey nests were monitored, although one had blown down over the winter. The other three nests were active and successfully fledged 4 young.

Invertebrate Monitoring – Gold Beach and High Cascades Ranger Districts

On both the High Cascades and the Gold Beach Ranger Districts newly discovered mardon skipper sites are being monitored annually for occupancy and abundance in conjunction with the Xerces Society, partners in invertebrate conservation in the Pacific Northwest. The Forest resurveyed the two known sites on the Siskiyou side of the Forest and 350 acres of potential habitat. There are no trends to report on these sites yet, as they are relatively new sites with very few individuals present.

The Forest performed Gray-blue butterfly, short-horned grasshopper, Coronis fritillary, and shield-backed bug inventories. We detected one new gray-blue butterfly site for the High Cascades District at Hershberger Meadow Complex. Nine (9) acres were surveyed on the Wild Rivers District for gray-blue butterfly at Bigelow Lakes. Four (4) individuals were observed, which resulted in a range expansion for the species. Twenty (20) acres were surveyed along the Illinois River for Coronis fritillary butterfly. A few individuals were observed.

Part Three: Contributions to the Forest Service National Strategic Plan

As was mentioned in the introduction to this report, a new requirement was introduced in 2010 to provide “a description of the plan area’s contribution to the achievement of applicable outcomes of the Forest Service national strategic plan.” This section is designed to meet that requirement, and will focus on those applicable to the Rogue River-Siskiyou National Forest in FY 2012.

GOAL 1. Restore, Sustain, and Enhance the Nation’s Forests and Grasslands

- The Forest **reduced the risk to communities and natural resource from wildfire** through implementation of several projects, including the Ashland Forest Resiliency Project which is reducing fuel loads in the Ashland Watershed outside of the community of Ashland, Oregon.
- Fire crews on the Forest **suppressed wildfire efficiently and effectively** in 2013.
- The Forest **reduced adverse impacts from invasive and native species, pests, and diseases** through various projects, including treating Sudden Oak Death infestation at the Wilson (4.6 acres) and E. Fork Winchuck (7 acres) sites to prevent sprouting new Sudden Oak Death infestation in the Wheeler Creek drainage of the Winchuck River Watershed.
- Implementation of aquatic restoration projects in several of the priority watersheds on the Forest, described under the “Anadromous and Resident Fish Habitat’ section, contributed to **restoration and maintenance of healthy watersheds and diverse habitats**.

GOAL 2. Provide and Sustain Benefits to the American People

- The Rogue River-Siskiyou National Forest contributed to providing a **reliable supply of forest products over time**, offering 27 million board feet (MMBF) of timber in FY2013.
- The Forest also contributed to providing a **reliable supply of rangeland products over time**, administration of range allotments on the Forest.

GOAL 3. Conserve Open Space

GOAL 4. Sustain and Enhance Outdoor Recreation Opportunities

- The **quality and availability of outdoor recreation experiences** were improved on the Forest through improvement projects at several recreation sites across the Forest In addition, acquisitions along the Pacific Crest Trail enhance nationally recognized trail opportunities.

GOAL 5. Maintain Basic Management Capabilities of the Forest Service

- The Forest contributed to **improving the administration of national forest lands and facilities in support of the agency's mission** by conveying the Butte Falls Ranger's house and proposed sale of L Street facilities out of federal ownership. Conveyance of these properties out of federal ownership will free up funding for maintaining other administrative facilities to standard.

GOAL 6. Engage Urban America with Forest Service Programs

GOAL 7. Provide Science-Based Applications and Tools for Sustainable Natural Resource Management

Part Four: Forest Plan Amendments

Forest plans are dynamic documents that can be amended in response to:

- Errors and/or discrepancies found during implementation.
- New information.
- Changes in physical conditions.
- New laws, regulations, or policies that affect National Forest management.

We frequently learn about the need for amendments through monitoring. Since the Rogue River Forest Plan was first published in 1990 and the Siskiyou Forest Plan in 1989, there have been a number of amendments to the forest plans. Notably, the 1994 Northwest Forest Plan which amended all forest plans in the range of the northern spotted owl. Since all forest plans were amended at the regional level, the amendment did not receive a number.

Rogue River National Forest

Table 12 summarizes the amendments to the Rogue River Forest Plan.

Table 12. Forest Plan amendments – Rogue River Forest Plan

Amendment	Implementation date	Type of change
1	10/3/1990	Vacated 1988 Record of Decision for the Supplement to an Amendment to the Pacific Northwest Regional Guide: The Secretary of Agriculture vacated the 1988 Record of Decision for the Supplement to an Amendment to the Pacific Northwest Regional Guide, and amended all final Forest Plans to return Spotted Owl Habitat Areas (SOHAs) to the land classification of adjacent lands by notice in the Federal Register on October 3, 1990. Also, management activities are to be not inconsistent with the Interagency Scientific Committee recommendations for the conservation of the northern spotted owl.
2	3/2/1992	Correction to oversight in MA 5 (Special Interest): Amended the Forest Plan and Map to correct an oversight in a land allocation; MA 5 (Special Interest) was inadvertently allowed to mask MA 4 (Developed Recreation). Also corrected an acreage figure (numbers were transposed) in table 4-3.
errata	11/5/1992	Corrections to the Rogue River National Forest Plan: Corrections were made to change typographical errors, to correct an oversight to Amendment #2, and make improvements to two Forest Plan tables to make them easier to understand. Corrections were made on page 1-3, page 4-16 in table 4-6, page 4-31, page 4-32 in table 4-9, page 4-53, page C-2, MA 14 page 4-172, MA 16 page 4-198, MA 21 page 4-257, and MA 23 page 4-283.
errata	12/11/1992	Corrections to the Rogue River National Forest Plan (Correction #1): Corrections were made on page 1-3, page 4-16 in table 4-6, page 4-31, page 4-32 in table 4-9, page 4-53, page 4-172, page 4-198, page 4-257, page 4-283.
3	2/2/1993	Amendment to Wild and Scenic River land allocation table: Corrected table 4-3, Land Classification by Management Area (page 4-14) to be consistent with the description of the area allocated to MA 10 (Wild River) and 11 (Scenic River) (i.e., 1/4 mile on each side of the river).
4	3/2/1993	Activity Schedule Update: Updated the activity schedules shown in appendix A.

Amendment	Implementation date	Type of change
5	12/16/1993	Incorporation of the Upper Rogue River Management Plan into the Rogue River National Forest Plan: Designates what the management regime will be for the Wild and Scenic Upper Rogue River. A total of 40.3 miles was designated into the National Wild and Scenic Rivers System: the 0.5 mile segment from the northern Forest Boundary to 0.1 miles below Forest Road 6530-760 bridge crossing is classified as a Scenic River, the 5.9 mile segment from 0.1 miles below Forest Road 6530-760 bridge crossing to 0.1 miles above Forest Road 6530 bridge crossing is classified as a Wild River, and the 33.9 mile segment from 0.1 miles above Forest Road 6530 bridge crossing to the southern Forest Boundary near Prospect is designated as a Scenic River.
errata	1/21/1994	Corrections to the Rogue River National Forest Plan (Correction #2): Corrections were made to include pruning as an acceptable silvicultural practice on the Rogue River Forest (pages 4-78, 4-92, 4-106, 4-118, 4-141, 4-171, 4-242, 4-257, and 4-282).
6	8/19/1996	Minerals Operations in Riparian Reserves; Standards and Guidelines MM-1, Northwest Forest Plan (NWFP): Standard and guideline MM-1 was amended to read: (a) "Require a reclamation plan, approved Plan of operations, and reclamation bond for mineral operations that are likely to significantly retard or prevent attainment of the Aquatic Conservation Strategy objectives. Such plans and bonds must address the costs of removing facilities, equipment, and materials; recontouring disturbed areas where practicable, to near pre-mining topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvage and replacement of topsoil; and seedbed preparation and revegetation to meet Aquatic Conservation Strategy objectives." and (b) "The responsible official will document the basis for a determination that the proposed activity would not likely cause significant disturbance of surface resources nor significantly retard or prevent attainment of the Aquatic Conservation Strategy objectives. If this determination were made, it would not necessitate submission of a Plan of Operation." The document also made two corrections: Correction 3 - Rewording of LRMP Standards and Guidelines from five years after sale closure for wildlife snags creation, to three years from sale closure; and Correction 4 - Removal of *Buxbaumia piperi* (a species of moss) from list of survey and manage species; page C-27, Northwest Forest Plan; and Change of Survey Status for the lynx: Level 2 to Level 3, Standards and Guidelines, Northwest Forest Plan.
N/A	5/24/1996	Refinement to the Standards and Guidelines for coarse woody material (CWM): Refined the Matrix prescription and provided a process to be used in Late-Successional Reserve and Riparian Reserve allocations and, when necessary, to develop coarse wood prescriptions.
errata	2/27/1997	Corrections to the Rogue River National Forest Plan (Correction #3): Reworded the current Standards and Guidelines for Wildlife, Fish and Plants under Woodpeckers (Cavity Nesters) to read: "Green merchantable trees will not be utilized for wildlife snags, regardless of the situation, until at least 3 years after project completion (sale closure), in order to capture any mortality that may occur during that time. This will allow an assessment to be made of any additional snags that may have been created through post-sale operations, disease, etc."

Amendment	Implementation date	Type of change
N/A	1/9/2006	Amendment to add the Huckleberry Patch Special Interest Area (SIA) to the Forest Plan: Additional language was added to chapter 4, under Recreation and Timber, that would: designate 4,714 acres on the Rogue River side of the divide as a Special Interest Area, and include its acreage in SIA calculations and descriptions; encourage management activities that would benefit the recognition of the cultural, historic, and traditional values, as well as encourage production of huckleberries; require appropriate tribal consultation for projects on the Forest; address activities that may occur within the SIA; and clarify direction for overlapping management strategies and allocations. The SIA is a total of 9,497 acres and is located on both the Rogue River and Umpqua National Forests.

Siskiyou National Forest

Table 13 summarizes the amendments to the Siskiyou Forest Plan.

Table 13. Forest Plan amendments – Siskiyou Forest Plan

Amendment	Implementation date	Type of change
1	8/19/1991	Clarification of restocking period: Amended Standard and Guideline 6-7 (page IV-40) to delete wording that permitted consideration of a restocking period of more than 5 years.
2	12/23/1991	Incorporating Long-term Site Productivity Research Site as an Administrative Study Area: Amended the Forest Plan to incorporate the Integrated Research Site for Long-term Site Productivity Research as an administrative study area and to establish standards and guidelines for the 750-acre area.
3	4/27/1992	Adjustment to project implementation schedules (Appendices B and C) of the Forest Plan: Amended (and updated) the project implementation schedules.
4	7/16/1992	Land Exchange: Land exchange: selected lands from Management Area 14 - General Forest, 40 acres; acquired lands allocated to MA 2 (Wild River) 127 acres, MA 7 (Supplemental Resource) 80 acres, MA 11 (Riparian) 35 acres, MA 13 (Partial Retention Visual) 208 acres.
5	7/30/1992	Addition of "Emerald Canyon" as a Unique Interest Area: Changed the "Emerald Canyon" area (77 acres) from Management Area 7 (Supplemental Resource Area) to Management Area 5 (Unique Interest Areas). This area (sec. 31 and 32, Township 36 South, Range 12 West, of the Willamette Meridian, Curry County, Oregon) is located on the mainstem of Lawson Creek, near the confluence of the North and South Forks of Lawson Creek, on the Gold Beach Ranger District.
6	7/23/1993	Incorporation of the Chetco River Management Plan into the Siskiyou National Forest Plan: Designates the management regime for the Chetco Wild and Scenic River. A total of 44.5 miles was designated into the National Wild and Scenic Rivers System: the 27.5 mile segment from the headwaters to Mislatnah Creek is classified as a Wild River, the 7.5 mile segment from Mislatnah Creek to Eagle Creek is classified as a Scenic River, and the 9.5 mile segment from Eagle Creek to the Forest Boundary is designated as a Recreational River.

Amendment	Implementation date	Type of change
6a	9/21/1993	Port-Orford-cedar Disease Control - Forest Road 1376: Provided for reduction of Port-Orford-cedar (POC) introduction from milepost 21.2 to 28 on Forest Road 1376 through: sanitation removal of roadside POC, road drainage improvements, a one-way road access restriction in the wet season (approximately October 1 to June 1) and during wet weather in the dry season (June 1 to October 1). This is related to Forest Plan Standard and Guideline 12-8, Management of Port-Orford-cedar.
N/A	9/22/1994	Incorporation of the Elk River Wild and Scenic River Management Plan into the Siskiyou National Forest Plan: Designates the management regime for the Elk Wild and Scenic River. A total of 19 miles was designated into the National Wild and Scenic Rivers System: the 17 mile segment from the confluence on the North and South Forks of the Elk to Anvil Creek is classified as a Recreational River, and the 2-mile segment of the North Fork Elk from the falls to its confluence with the South Fork is classified as a Wild River.
N/A	4/1/1996	Minerals Operations in Riparian Reserves; Standards and Guidelines MM-1, Northwest Forest Plan (NWFP): Standard and Guideline MM-1 was amended to read: (a) "Require a reclamation plan, approved Plan of Operations, and reclamation bond for mineral operations that are likely to significantly retard or prevent attainment of the Aquatic Conservation Strategy objectives. Such plans and bonds must address the costs of removing facilities, equipment, and materials; recontouring disturbed areas, where practicable, to near pre-mining topography; isolating and neutralizing or removing toxic or potentially toxic materials; salvage and replacement of topsoil; and seedbed preparation and revegetation to meet Aquatic Conservation Strategy objectives." and (b) "The responsible official will document the basis for a determination that the proposed activity would not likely cause significant disturbance of surface resources nor significantly retard or prevent attainment of the Aquatic Conservation Strategy objectives. If this determination were made, it would not necessitate submission of a Plan of Operation."
9	3/21/2000	Incorporation of the North Fork Smith River Wild and Scenic River Management Plan into the Siskiyou National Forest Plan: Designates the management regime for the North Fork Smith Wild and Scenic River. A total of 13 miles was designated into the National Wild and Scenic Rivers System: the 4.5 mile segment from the headwaters to Baldface Creek is classified as a Wild River, the 6.5 mile segment from Horse Creek to Baldface Creek is classified as a Scenic River, and the 2 mile segment from Baldface Creek to the Oregon-California State line is classified as a Wild River.

Rogue River and Siskiyou National Forests

Table 14 summarizes the amendments to both the Rogue River and Siskiyou Forest Plans.

Table 14. Forest Plan amendments – Rogue River and Siskiyou Forest Plans

Amendment	Implementation date	Type of change
N/A	10/11/2005	Invasive Plants Program: Preventing and Managing Invasive Plants: Added invasive plant management direction to all National Forest Land and Resource Management Plans in Region 6. The management direction includes invasive plant prevention and treatment/restoration standards intended to help achieve stated desired future conditions, goals and objectives. The management direction is expected to result in decreased rates of spread of invasive plants, while protecting human health and the environment from the adverse effects of invasive plant treatment.
N/A	10/22/2010	Fire Use Amendment: Changed fire management direction (Standards and Guidelines) to allow for the use of unplanned fire to obtain desired ecological conditions for resource benefit, removed or changed LRMP direction that restricts the range of response options available, and updates (outdated) fire terminology used in Forest Plan direction.

Interdisciplinary Team Members

Selected Items for the FY 2013 Report

Air Quality	Jon Lamb
Soil Productivity	Joni Brazier
Silvicultural Harvest Methods	Ken Wearstler
Insect and Disease Activities	Ellen Goheen
Anadromous and Resident Fish Habitat	Susan Maiyo, Chris Park
TES Species: Spotted Owl	Dave Clayton
TES Species: Bald eagle and Peregrine falcon	Dave Clayton
Off-Road Vehicle Use	Kristen Hauge
Forest Transportation System	Scott Blower
Mineral Development	Robert Shoemaker
Land Ownership	Kevin Heikkila
Special Uses	Gary Einck, Sue Laurance
Land Suitability	Dave Zimmerman
Timber Offered for Sale	Jim Campbell
Payments to Counties	Jim Campbell

Special Inventory and Monitoring Projects for FY 2013

Ashland Forest Resiliency Project	Don Boucher, Joni Brazier, Dave Clayton
Bat Species Distribution and Census	Dave Clayton
Osprey Monitoring	Dave Clayton
Invertebrate Monitoring	Dave Clayton

Forest Plan Amendments

Forest Plan Amendments Compilation	Ken Grigsby

Organization and Report Compilation

Organization and Report Compilation	David Krantz

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