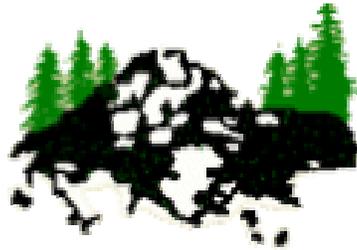




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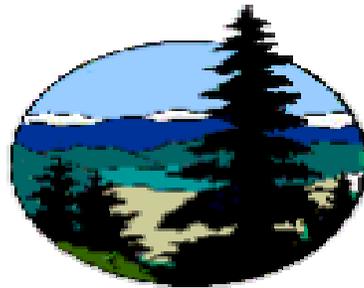
Forest Service



Pacific
Northwest
Region



Rogue River - Siskiyou National Forest



Land and Resource Management Plan

MONITORING AND EVALUATION REPORT

Fiscal Year 2005

*Report on 2005 Inventory
and Monitoring Projects*

ROGUE RIVER-SISKIYOU NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN

MONITORING AND EVALUATION REPORT For Fiscal Year 2005

Report on 2005 Inventory and Monitoring Projects

INTRODUCTION

Background

The Rogue River National Forest Land and Resource Management Plan (LRMP or Forest Plan) became effective in July of 1990. The Forest Plan for the Siskiyou National Forest became effective in March of 1989.

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.

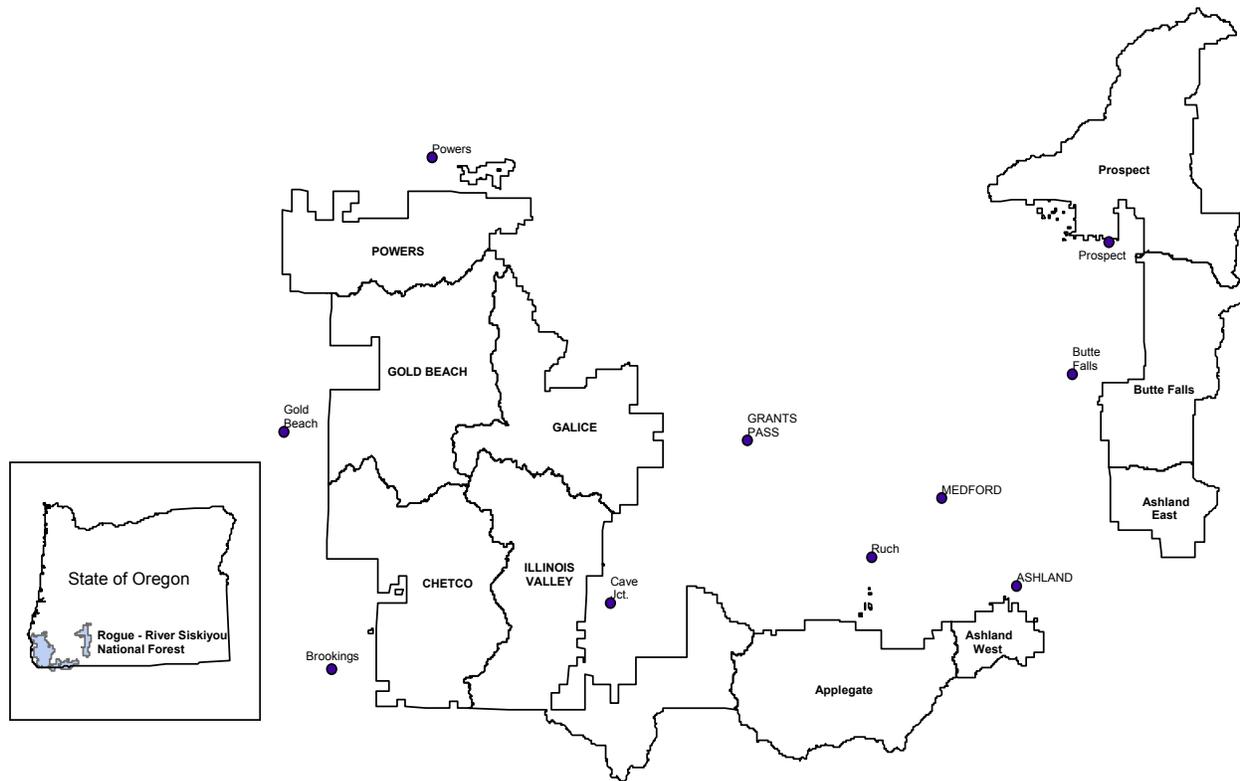
On April 13, 1994, the Record of Decision for *Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl* was signed by the Secretary of Agriculture, Mike Espy and the Secretary of the Interior, Bruce Babbitt. This Record of Decision (ROD) 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.

This ecosystem plan, also known as the Northwest Forest Plan, is 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 April 13, 1994, Record of Decision.

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 (RR-SNF) as applicable. When reference is made to the 1990 Forest Plan or land management direction applicable to the Rogue River National Forest, the phrase Rogue River National Forest (RRNF) continues to be utilized. When reference is made to the 1989 Forest Plan or land management direction applicable to the Siskiyou National Forest, the phrase Siskiyou National Forest (SNF) continues to be utilized.

The Rogue River-Siskiyou National Forest now works under a consolidation of the two respective Forests. This includes operation under a single Forest Supervisor, a Deputy Forest Supervisor, and a single set of Staff Officers for overall management of both National Forests. In concert with this organizational mode, this Monitoring and Evaluation Report has been organized and is reported under a joint Forest assumption.

Throughout this report, reference is made to certain organizational units of the Forest as Districts or Zones. Reference is made to the Powers Ranger District, the Pacific Zone (Chetco and Gold Beach Ranger Districts), the Two Rivers Zone (Illinois Valley and Galice Ranger Districts), the Cascade Zone (Prospect and Butte Falls Ranger Districts), and the Siskiyou Mountain Zone (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) 2005 (10/1/04 to 9/30/05).** This report generally covers Forest Plan monitoring elements and is a summary of selected Forest 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 (RRNF)** became effective in 1990 with the signing of the Forest Plan. Chapter 5 of the RRNF 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. Beginning in May 1995, the Rogue River National Forest began working on an update to the previous strategy. An update was needed to bring the Forest Plan closer to the current situation of forest management under the Northwest Forest Plan and the monitoring goals of this plan and the goals of the Ecosystem Monitoring Framework¹. Since these monitoring processes are still in their developmental and baseline information gathering stage, an update to the Forest Plan monitoring strategy was needed to “fill in the Gap” between the old plan and the new plans under development.

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 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 (SNF)** first became effective in 1989 with the signing of the Forest Plan. Chapter 5 of the SNF Forest Plan contains a summary and table for the components of the Monitoring and Evaluation program. The Monitoring and Evaluation Program for the SNF has been guided by that document since 1989 and several annual reports have been prepared and are available upon request.

Monitoring Strategy for 2005

Federally appropriated funding for monitoring and monitoring reports has been minimal over the previous few years. As in the 2004 Report, reporting is done on specific elements of the respective monitoring strategies, rather than prepare a complete report on all elements. The goal of this approach was to provide meaningful data or results 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 2005, with appropriated funding. This report includes summaries of those projects.

¹ The Ecosystem Monitoring Framework is a concept originating on the RRNF in 1993. It was documented in an Ecosystem Monitoring Handbook, Version 1.3. This handbook contains methodology for gathering predetermined baseline information and develops indicators of change within multiple ecosystems, found within the influence of the RRNF. Three components of the ecosystem (Physical/Chemical, Biological and Human Dimension) are described in this Handbook; this organization is complementary to current ecosystem principles, monitoring under the Northwest Forest Plan, and with the Monitoring Strategy Update.

This FY 2005 report includes discussion of the following:

Selected Forest Plan Items for the FY 2005 Report

Physical Resources

Air Quality - Suspended Particulates.....	Page 8
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Biological Resources

Vegetation Management Effectiveness.....	Page 98
Anadromous and Resident Fish Habitat.....	Page 15

Resources and Services to People

Land Suitability.....	Page 23
Timber Offered for Sale.....	Page 24

Special Funded Inventory and Monitoring Projects - FY 2005

Fisher Survey and Genetic Sampling - Rogue River National Forest	Page 26
Bat Surveys - Rogue River National Forest	Page 27
Spotted Frog Surveys - Rogue River National Forest	Page 28
Salmon Spawning Surveys - Rogue River National Forest	Page 29
Black-backed Woodpecker Enhancement - Rogue River National Forest	Page 30
Thinning in Late-Successional Reserves & Riparian Reserves - Siskiyou NF	Page 31
Salmonid Surveys - Siskiyou National Forest	Page 32
Riparian Reserve Treatments - Siskiyou National Forest	Page 34
Stream Enhancement - Siskiyou National Forest	Page 36
Rogue River Raptor Monitoring - Siskiyou National Forest	Page 38
Foothill Yellow-legged Frog Monitoring - Siskiyou National Forest	Page 39
<i>Erythronium howellii</i> Monitoring - Siskiyou National Forest	Page 40
<i>Fritillaria gentneri</i> Habitat Maintenance - Siskiyou National Forest	Page 41

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 and 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 exists.

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 2005 Report

This section presents the results and evaluation of the selected Forest Plan Monitoring Items that were monitored during FY 2005, 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% 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. 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 Best Available Technology 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 fiscal year 2005, 1,731 acres were burned with prescribed fire and approximately 20,807 tons of fuel consumed. This equates to **520 tons of Total Suspended Particulate (TSP)** produced. The trend is clearly downward and has reached 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% 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

In fiscal year 2005 there were 2,855 acres burned with prescribed fire and approximately 54,360 tons of fuel consumed. This equates to **1,359 tons of total suspended particulates (TSP)** emitted from these burns. This is far below the threshold (.06%) 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 is being achieved on the Forest.

Biological Resources

MONITORING ITEM: *VEGETATION MANAGEMENT EFFECTIVENESS*

GOAL(S), MONITORING QUESTION(S): The Forest goal is to be in compliance with the Forest Plans and with the Regional Guide, which specifies compliance with the *Managing Competing and Unwanted Vegetation Final Environmental Impact Statement* and *Mediated Agreement*. Overall goals include utilization of management practices that best suit the land management objectives. The monitoring questions include:

- 1. How are the number of trees planted per acre and their survival and growth being affected by the amount of site preparation being done on the Forest?**
- 2. Are young conifers being released from competing vegetation in a timely and cost-effective manner?**
- 3. Are long-term growth and yield projections being affected by the use (or non-use) of herbicides and prescribed burning?**
- 4. Is the Forest meeting the intent of the *Managing Competing and Unwanted Vegetation Final Environmental Impact Statement* and *Mediated Agreement*?**
- 5. Are Best Management Practices (BMPs) being effectively implemented for noxious weeds, Port Orford cedar disease (POC) and sudden oak death (SOD)?**

FINDINGS AND EVALUATION:

1. In fiscal year 2005, the Forest planted 3,616 acres, 3,325 acres of which were in the Biscuit Fire area. First year survival was 90%, which is an improvement over last year's report of 82% survival. The following factors contributed to the improvement over the previous year: (1) freezer storage of all seedlings and most stock had only minimum storage following thawing, (2) good weather conditions during planting, (3) an excellent quality planting job (greater than 90% on Forest Service verification inspection), and (4) JH Stone nursery stock was freezer stored between first year lifting and second year transplanting.

The Rogue River-Siskiyou National Forest continues to prioritize an aggressive animal damage control program to improve reforestation success.

Third year seedling survival monitoring results indicate that 2,405 acres were satisfactorily stocked; this accounts for 91% of the total acres reforested. First time success (meeting prescribed stocking objectives with one treatment) is 2,102 acres, this accounts for 98% of the total acres certified in fiscal year 2005.

Two introduced pathogens that cause tree mortality are present on the Rogue River-Siskiyou National Forest. White pine blister rust infects the five needle white pine species, and Port-Orford-cedar (POC) root disease. These pathogens are particularly devastating to young sugar pine and western white pine and POC regeneration. The Forest continues to plant white pine blister rust-resistant tree seedlings in its reforestation program to maintain white pines in the ecosystem. The Forest is also planting POC root disease resistant tree seedlings to maintain POC in its ecosystems.

2. Forest reforestation specialists are mostly successful implementing release treatments in a timely and cost-effective manner. Release from woody vegetation is more expensive and usually requires manual control methods with chain saws to remove competing vegetation. In these situations, a more cost effective release method would involve herbicide use. Four zones, Two Rivers, Siskiyou Mountain, Pacific, and Powers, accomplished manual release treatments in fiscal year 2005 totaling 896 acres.

From the fiscal year 2005 Forest Needs Report, 1,110 acres received pre-commercial thinning treatments during fiscal year 2005, out of 20,014 acres identified as a need at the end of fiscal year 2004. This represents 5% of the pre-commercial thinning need treated on the Forest.

From the fiscal year 2005 Forest Needs Report, 896 acres received release treatments during fiscal year 2005, out of 5,276 acres identified as a need at the end of fiscal year 2004, for the Forest. This represents 17% of the release need treated on the Forest.

Low treatment percentages are due to lack of funding. Not accomplishing planned release and pre-commercial thinning treatments *will* have an adverse effect upon meeting timber outputs projected in the Land and Resource Management Plan.

In fiscal year 2005, reforestation monitoring reports indicated prescribed treatments are cost-effective, based on minimal monitoring of other resource activities (weed control, range, fuels, wildlife, etc.). All harvest units were monitored for stocking levels and certified as meeting Forest stocking standards where appropriate.

3. No recent growth simulations have been made comparing long-term growth and yield of herbicide treated stands with non-treated stands. However, yield tables prepared for the Forest Plans show an approximate 5 to 10% reduction in cubic volume mean annual increment and a 10-year delay in culmination of mean annual increment for non-treated stands.

4. An estimated 420,000 acres of National Forest System lands in the Pacific Northwest Region (Region Six) are currently infested with invasive plants². These plants are damaging biological diversity and ecosystem integrity within and outside the National Forests, including the Rogue River-Siskiyou. Invasive plants lead to many adverse environmental effects, including: displacement of native plants; reduction in habitat and forage for wildlife and livestock; loss of threatened, endangered, and sensitive species; increased soil erosion and reduced water quality; reduced soil productivity; and changes in the intensity and frequency of fires. Invasive plants can spread between National Forest System lands to neighboring areas, affecting all land ownerships.

Current management direction for invasive plants comes from the 1988 Record of Decision for Managing Competing and Unwanted Vegetation (1988 ROD) and 1989 Mediated Agreement. These documents were integrated into Land and Resource Management Plans in Region Six and they remain the overriding management direction for use of herbicides.

² Invasive plants are defined here as "a non-native plant whose introduction does or is likely to cause economic or environmental harm or harm to human health" (Executive Order 13122). Invasive plants are distinguished from other non-native plants by their ability to spread (invade) into native ecosystems.

The 1988 ROD specified and limited the tools available for the treatment of competing and unwanted vegetation, but did not provide administrative mechanisms for adapting their requirements and adopting new technologies. For example, herbicides approved for use by the Forest Service in the 1988 ROD were developed before 1980. Since that time new herbicides have been developed and registered for use. The new herbicides have advantages for invasive plant control, such as greater selectivity, less harm to desired vegetation, reduced application rates, and lower toxicity to animals and people. Collectively, the Forest Plans, as they are currently written, did not provide sufficient direction, nor adequate tools for effectively responding to the invasive plant threat.

Thus, the Regional Forester identified the need for: (1) Forest Plan level management direction that will reduce the extent and rate of spread of invasive plants and help prevent new infestations; (2) Release from the Forest Plan direction established by the 1988 ROD and 1989 Mediated Agreement so that new practices, technologies, and formulations of herbicides are available for use in invasive plant management; and (3) An updated list of herbicides available for use by the Forests.

The Final Environmental Impact Statement for the *Invasive Plant Program - Preventing and Managing Invasive Plants* (FEIS) considered three action alternatives to meet these needs. In a Record of Decision signed on October 11, 2005, the Regional Forester selected the Proposed Action from the FEIS, with modifications. Under this decision, invasive plant management direction is added to all National Forest Plans in the Region (see ROD Appendix 1 for full text to be added to Forest Plans). The Selected Alternative will not be retained as a Regional-scale decision; rather it becomes part of the individual Forest Plans.

Under this decision, all National Forests in the Region are released from direction established by the 1988 Record of Decision for Managing Competing and Unwanted Vegetation (ROD) and 1989 Mediated Agreement for *invasive* plant management. Parts of the 1988 ROD and 1989 Mediated Agreement that apply to unwanted *native* vegetation are not affected by this decision. Invasive plant management direction stemming from these documents is replaced by new direction, in the form of:

- Desired Future Condition (DFC) statement,
- Goals and objectives statements,
- Standards for preventing the introduction, establishment and spread of invasive plants
- Standards for invasive plant treatment and site restoration
- An inventory and monitoring framework.

By separate letter, the Regional Forester requested that the Department of Justice take any necessary steps in *Northwest Coalition for Alternatives to Pesticides, et al v Lyng*, CV 83-6272, to confirm release from the 1989 Order and Mediated Agreement.

The purpose of the new management direction is to facilitate subsequent actions to eliminate or control invasive plants so that: (1) desired conditions on National Forest System lands can be attained; (2) federal land managers' ability to provide goods and services from the National Forest System lands is maintained; and (3) the Forest Service's ability to cooperate with similar efforts across other ownerships is improved.

Management direction related to invasive plants (beyond the 1988 ROD and 1989 Mediated Agreement) is also established by Forest Service Manuals, letters of Regional policy and individual Forest Plan standards in Region Six. This decision adds new direction, but does not vacate existing invasive plant management direction beyond the 1988 ROD and 1989 Mediated Agreement. Inconsistencies between new and existing standards will be reconciled on a Forest-by-Forest basis, as Forest Plans are amended or revised or specific projects are planned.

This decision, in itself, does not approve any site-specific projects. Site-specific treatment decisions will be based on location, biology and size of the target invasive plant species, site conditions, and integrated resource objectives. Invasive plant treatment projects will be subject to future National Environmental Policy Act (NEPA) and Endangered Species Act (ESA) analysis before being implemented.

5. In November 1998, the *Rogue River NF Noxious Weed Strategy* emphasized **Prevention** and identified appropriate treatment methods. In May 1999, an environmental assessment for *Integrated Noxious Weed Management on the Rogue River National Forest* further refined appropriate methods based on species and size of infestation for known noxious weed sites.

Best Management Practices (BMPs) further provides prevention direction. The Rogue River-Siskiyou National Forest is currently implementing *Best Management Practices for Noxious Weed Prevention and Management, Port-Orford-Cedar Root Disease Prevention and Management, and Sudden Oak Death Prevention and Management* (February 2002). The objectives of this interim direction are to 1) reduce the risk of spreading noxious weeds; 2) prevent the establishment of new invaders; 3) integrate weed management practices into resource programs; 4) conduct research and monitoring to evaluate effectiveness and identify emerging issues; 5) reduce spread and integrate management practices for POC and SOD; and 6) build awareness within the agency.

Port-Orford-Cedar Root Disease (POC)

On March 29, 2004 a Record of Decision was signed by the Forest Supervisor to adopt new direction for managing Port-Orford-Cedar root disease (POC). This ROD takes a more aggressive approach into managing POC during planning of transportation, off-road vehicle use and special forest products activities and other forest uses. Following are a summary of key points of this decision; the ROD amends the 1989 Siskiyou NF Forest Plan by:

- Better describing available treatments.
- Providing a risk key to help managers consistently determine which special protection measures need to be applied.
- Providing special emphasis on protecting 144 two thousand acre watersheds that do not currently have the disease.
- The ROD does not change any NW Forest Plan land use allocations or affect private land.
- Port Orford cedar may be removed 25-50 feet of some roads to reduce potential for new infection of healthy Port-Orford-cedar populations or to remove diseased trees.
- Complex timber sales and fuels treatments may require specific equipment types, seasonal operations, and washing of equipment.
- Fire fighting activities will include treating potentially infested water with Clorox bleach, but only when the requirements do not delay protection of life and private property.

Sudden Oak Death (SOD)

Unprecedented levels of tanoak and coast live oak mortality were noted first in Marin County, CA in the early to mid-1990s. Local residents coined the phrase “Sudden Oak Death” to describe the apparently rapid tree mortality they observed. The cause was then unknown. In 2000, a new species of *Phytophthora*, a fungus-like water mold of unknown origin, was isolated from cankers (localized areas of dead cambium) on dying trees and later was found to be the causal agent. Soon it was recognized that the same pathogen was causing leaf blight, stem cankers, and tip dieback on nursery-grown rhododendrons. The new species was named *Phytophthora ramorum* in 2001 (Goheen et al. 2006).

Phytophthora ramorum is an Oomycete, a water mold that looks like a fungus but is more closely related to some marine algae. Most *Phytophthora* species are root pathogens, but *P. ramorum* affects above-ground plant parts. *P. ramorum* is well adapted to the mild, wet conditions of the Pacific Northwest. The pathogen forms sporangia (sacs of spores) on infected leaves or twigs. The sporangia are spread in wind and rain and can release swimming zoospores if they land on a wet surface. The zoospores germinate and infect the plant, starting a new infection. *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 (Goheen et al. 2006).

The pathogen has a broad host range including hardwood trees, such as coast live oak; landscape plants, such as rhododendron; herbaceous plants, such as western starflower; and softwood trees, such as coast redwood and Douglas-fir. Where it has become established in California, *P. ramorum* has adversely affected ecosystem functions, increases fire and safety hazards, and reduces property values in developed areas (Rizzo and Garbelotto 2003).

In Oregon, the pathogen was detected in 2001 via aerial survey. State and federal regulatory actions have been implemented to help prevent the movement of infested wood, bark, forest greenery and other wild material, soil, and host nursery stock from infested areas. At this time, 21.5 square miles of forest in Curry County, Oregon are subject to this regulation. For current information on quarantines and other Sudden Oak Death regulations, visit the Oregon Department of Agriculture (ODA) website at <http://egov.oregon.gov/ODA/PLANT>, and the USDA Animal and Plant Health Inspection Services (APHIS) website at <http://www.aphis.usda.gov/ppq/ispn/pramorum>.

To date, approximately 88 infested acres have been identified in Curry County. In the last week of April 2006, a *Phytophthora ramorum* infection site was confirmed on National Forest lands in the Chetco River drainage approximately 8-9 miles northeast of Brookings near Loeb State Park. The legal description is T.40S., R.13W., section 13, W.M., Curry County, Oregon.

Disease confirmation was based on a field review of visual symptoms and DNA testing at Oregon State University. The boundary of the treatment area (also referred to as the eradication zone) is approximately 300 feet beyond known infected trees. The infected tanoak occur along the boundary of State of Oregon Parks land and National Forest System land. The total eradication zone was approximately 10-11 acres of which an estimated 5 acres occurs on National Forest.

The District Ranger of the Chetco Ranger District decided to treat the infected area on National Forest System Lands within the eradication zone. All tanoak (*Lithocarpus densiflorus*) and other hosts with stems meeting minimum requirements suitable for injection (approximately 1 inch in diameter and greater) within the eradication zone were treated by injecting the chemical glyphosate³ using a method referred to as “hack and squirt”, two weeks prior to cutting the stems. The hack and squirt method employs a device called a “hypo-hatchet”. The hypo-hatchet is a hatchet with an internal herbicide delivery system connected by a hose to an external herbicide container. When the hatchet strikes a tree, the blade penetrates into the sapwood. The impact of the striking action drives a piston forward that delivers 1 milliliter of herbicide into the cut.

All tanoaks, Pacific rhododendron (*Rhododendron macrophyllum*) and evergreen huckleberry (*Vaccinium ovatum*) within the eradication zone were cut down. Oregon myrtle (*Umbellularia californica*) were also cut depending upon the presence of symptoms and plant location. Any other plant species found to be infected within the eradication zone were also cut. All cut plant materials less than or equal to eight inches in diameter were disposed of by burning as soon as reasonably and safely possible. Host leaf litter and other fine plant material was raked into the piles and disposed of as well. Implementation of this action was accomplished by a crew under the supervision of the State of Oregon who were completing the same treatment on approximately 6 acres of adjacent State Park lands.

Based on site evaluation and knowledge of resource staff, and review and consideration of potential site-specific environmental effects and results of scoping, the District Ranger decided to authorize the Section 13 *Phytophthora ramorum* Treatment under the criteria listed in Chapter 30 of FSH 1909.15 under Categorical Exclusion from Documentation (defined at 40 CFR 1508.4). In particular, this decision fell under Categories of Actions for which a Project of Case File and Decision Memo are required (Chapter 30—part 31.2): #14. Commercial and non-commercial sanitation harvest of trees to control insects or disease not to exceed 250 acres, requiring no more than ½ mile of temporary road construction, including removal of infested/infected trees and adjacent live uninfested/uninfected trees as determined necessary to control the spread of insects or disease.

CONCLUSIONS AND NEEDS: Based on these findings, there is no immediate action needed for vegetation management effects on timber harvest treatments. It is recommended that further action be taken to develop monitoring practices that will verify if other resource activities (weed control, range, fuels, wildlife, etc.) are being planned and designed in compliance with this agreement and if adequate monitoring of effectiveness is being conducted. Forest Plan modeled outputs are not consistent with the changes enacted by the Northwest Forest Plan; however, this was predicted and no immediate change is recommended.

Continue to monitor and aggressively treat *Phytophthora ramorum* if detected on National Forest System lands.

³ Glyphosate is an herbicide used by the Forest Service. There are currently 35 commercial formulations of glyphosate that are registered for forestry applications. Refer to: *Glyphosate – Human Health and Ecological Risk Assessment Final Report*, USDA Forest Service, March 1, 2003.

MONITORING ITEM: *ANADROMOUS AND RESIDENT FISH HABITAT*

GOALS(S), MONITORING QUESTIONS(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 the potential of site productivity. 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 site 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:

Approximately one thousand four hundred (1,400) miles of fish-bearing streams have been inventoried and the data entered into NRIS Water on the Rogue River–Siskiyou National Forest. This represents about nine hundred fifty (950) stream reaches, segments of a stream that are similar in general characteristics and distinguishable from other reaches upstream and downstream. Homogeneity within surveyed reaches and heterogeneity between reaches lends itself to comparisons of reach characteristics by using variables collected during stream surveys.

The following analysis, graphs and tables reflect stream conditions in the Siskiyou Mountain geology located within the Klamath Mountain Physiographic Province. This is the underlying geology for the southern and western portions of the Rogue River–Siskiyou National Forest. Most of the high value anadromous fish streams are located within this geology; five rivers designated as Wild and Scenic Rivers with fisheries as an outstanding feature are located in this geologic type. These rivers are the Chetco River, Elk River, Illinois River, North Fork Smith River and Rogue River. Nineteen (19) of the twenty-one (21) key watersheds designated by the Northwest Forest Plan are located within the Siskiyou Mountain geology.

Watershed restoration on the Forest includes a variety of activities including fish passage fixes at road crossings, riparian silviculture to accelerate tree growth in riparian areas, road upgrades and road decommissioning, erosion prevention and repair and instream habitat improvement work. Using large wood per mile and pools per mile derived from stream survey data in NRIS Water the following report will identify stream habitat conditions, which can be used to assess the condition of fish habitat in most of the watersheds located in Siskiyou Mountain geology. These values for large wood and pools can be used for assessing stream habitat conditions in watersheds and for derivation of resource objectives or goals for stream protection, maintenance and restoration.

Watersheds and Stream Surveys on the Forest

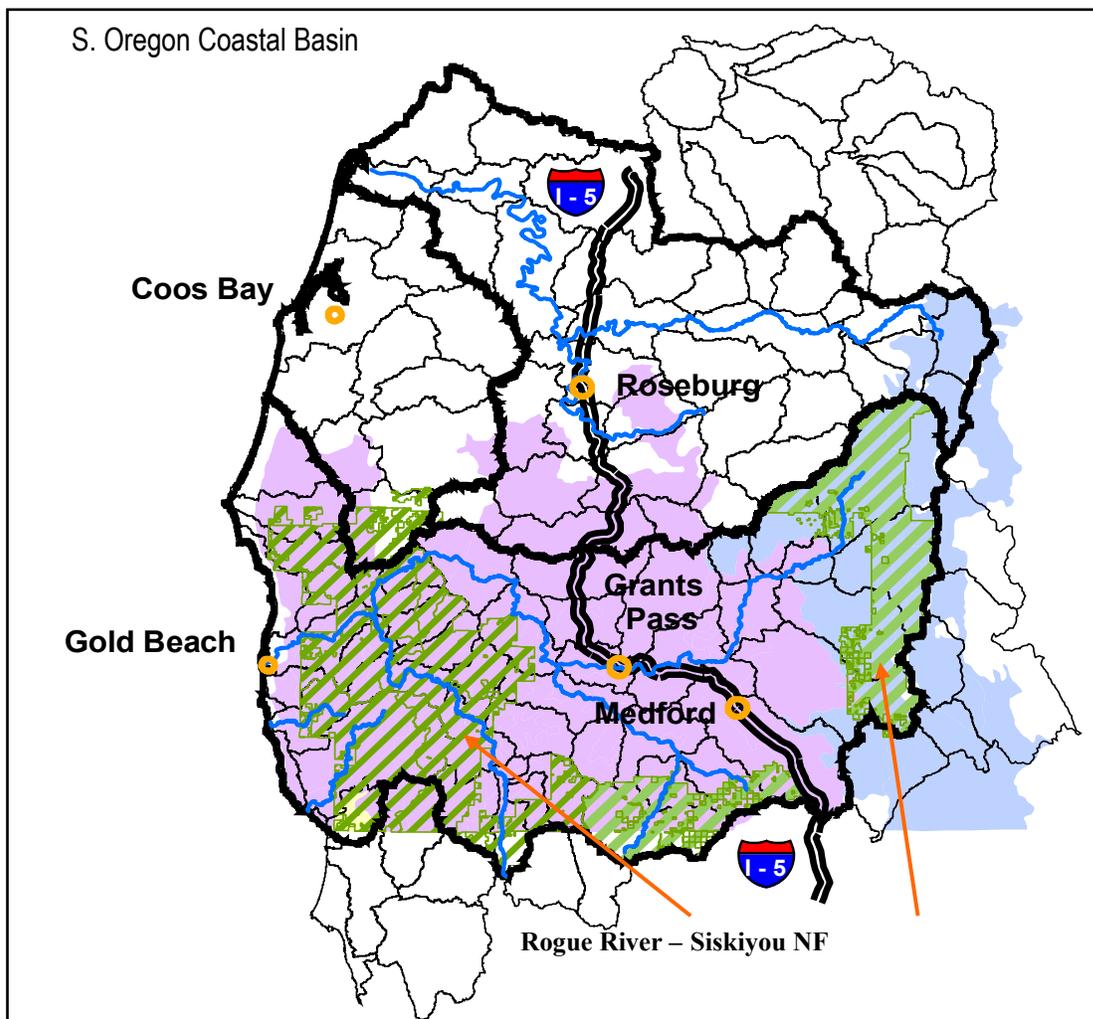


Figure 1-1. Southern Oregon Coastal Basin – Siskiyou/Klamath Mountain Geology is shown in Purple and the Cascade Mountains are in Blue.

Stream surveys conducted since 1994, within the Siskiyou Mountain Geology, total approximately seven hundred fifteen (715) miles in approximately five hundred reaches. Survey protocols for counting size classes of large wood and collection of pool data have remained relatively constant from 1994, thus a very large data set is available in NRIS Water. This represents a very large dataset for the stream channel conditions on the Forest. Many analysts use large wood presence and numbers of pools as a surrogate for overall health of stream reaches and fish habitat. A general set of desired levels of wood and pools in streams has been generated in past documents for estimating baseline conditions for Endangered Species Act consultation (NMFS and USF&WS Streamlining Agreement 1999).

Large Wood in Siskiyou Mountain Stream Reaches

A basic statistical analysis is employed to determine the seventy-fifth percentile (75th %) levels for wood and pools, determining the number of large pieces of wood (greater than 24 inches in diameter and greater than 50 feet in length) per mile and the number of pools per mile by stream size. Width of wetted habitat is used to stratify data by relative stream size. Wetted width is a measure taken at each habitat unit during the survey and sample size is very large with tens of thousands of habitat units surveyed on the Forest. Sixty-three reaches in streams of various sizes were plotted to test the concept that wetted stream width could be employed as a surrogate for the watershed area upstream of the reach surveyed. Comparing stream width with tributary acres upstream for a sub-sample of data indicates a positive correlation between width and acres tributary to the reach. See Figure 1-2.

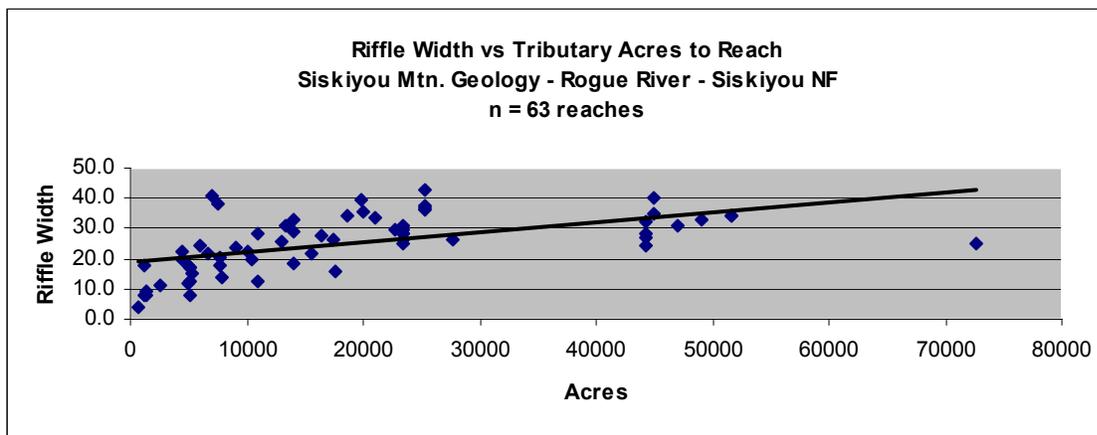


Figure 1-2. A plot of riffle widths of 63 Siskiyou Mountain streams reaches against watershed tributary acres upstream of the reach. Taken from stream survey data and Rogue River–Siskiyou NF GIS files.

Researchers in the Pacific Northwest streams have found that large wood plays an extremely important role in the formation of pools and quality niches for salmonids to rear, sorting of gravels for spawning, and refuge for fish from predators and numerous other channel-forming processes. Riparian areas along tributary streams and fish-bearing streams contribute much of the large wood that enters the stream system by direct entry of trees or debris flows down tributary channels. Trees and wood pieces tend to deliver and become well distributed during flood episodes along with a mixture of soil and rocks. Landslides from upslope areas also often contribute trees and a mixture of pebble sizes. In the Siskiyou Mountains, what is an expected range of large wood per mile in streams of similar size?

Stream survey data for large wood and total wood was stratified by three distinct stream sizes: 20 feet wide or less, 20 to 30 feet wide and greater than 30 feet wide. Large wood is collected in three size classes: Large = > 36 inches in diameter and 50 feet or greater in length, Medium = 24 inches in diameter and 50 feet or greater in length and Small = 12 inches in diameter and 25 feet in length. If the wood piece is equal or greater than twice the active or bankfull channel width it meets the length criteria and the diameter is used to determine the wood size class. The large and medium size classes are considered “key pieces” that are the backbone of instream wood complexes or the principal structure with longevity in most streams (PNW, Various reports). In this report the “Large wood” is a summary of the large and medium wood size classes collected during stream surveys.

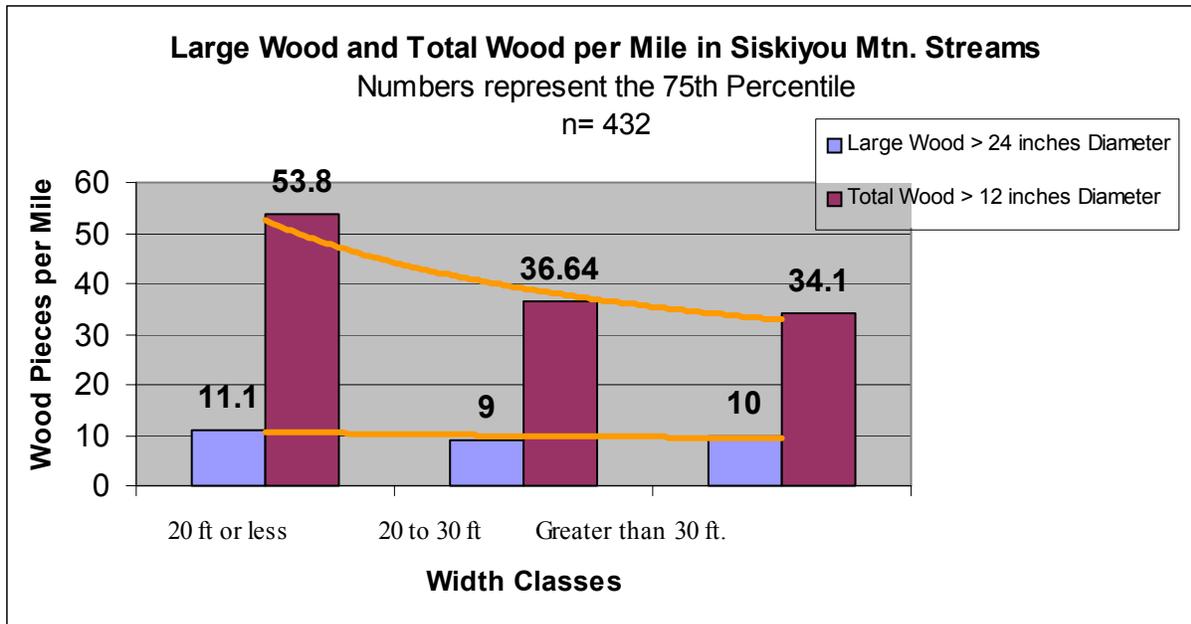


Figure 1-3. Graph of the 75th percentile of large wood per mile grouped by stream width sizes.

Large wood results and discussion

In many watersheds within the Pacific Northwest basic levels of wood in streams have been used to measure stream health. The expected range of large wood pieces varies widely from eastside to westside of Oregon and Washington and range from 30 to 80 pieces of large wood per mile (wood pieces or trees greater than 24 inches in diameter and 50 feet in length). The Oregon Department of Fish and Wildlife Habitat Benchmarks Table (ODFW, 1999) uses the 65th percentile to derive large wood key pieces per mile benchmarks for stream health. This guide indicates that approximately 35 pieces of wood per mile is “Good” in their rating tables and less than 13 pieces of wood per mile is “Poor”. Since their standard key piece is slightly smaller than the “medium” wood size class in Forest Service stream surveys these numbers are not directly equivalent.

Nevertheless, the top 25 percent of Siskiyou Mountain streams contain considerably less wood per mile than this as shown in Figure 1-3. ODFW surveys are done largely on private lands where stream cleanout and alteration of instream channel habitat is ongoing. Streams on the Forest in the Siskiyou Mountains often have no valley bottom roads due to the ruggedness of the terrain and little or no history of direct disturbance in the stream channel. One would expect large wood to be plentiful in these remote forest streams. The presence of wood in the highly dissected Siskiyou Mountains is less than most Westside streams in Oregon and Washington. Many factors contribute to this phenomenon including: confined stream valleys with narrow floodplains, flashy watersheds with winter stream flows that are often 1,000 times greater than summer low flows, ultramafic geology where trees do not attain large size, and open scoured channels incapable of holding trees and wood during high flows.

Pools in Siskiyou Mountain Streams

The presence of pools within streams is an integral part of aquatic habitat used by salmonids and other fishes. Deep water in pools is good resting and hiding habitat for juvenile and adult fish. In association with pools, which by definition have slower water velocities and increased water depth, other habitat niches can often occur. These include wood complexes or single pieces that affect or create pool habitat, tail outs from pool scour that sort gravels for spawning, gravel and cobble interspaces for aquatic insects and a variety of water velocities to provide feeding niches for fish. Similar to the analysis of large wood, streams are stratified by wetted width of the stream and a 75th percentile for pools per mile is derived. Above it was noted that Siskiyou Mountain streams often contain less wood per mile than other streams in western Oregon and Washington due to several factors.

Pools per mile is an attribute, similar to large wood, used to assess the health of a stream reach or assessment at the sub-watershed and watershed scale. Excess sediment produced from management activities upstream, removing wood from stream channels, or altering boulders or cobbles in stream channels can fill pools, widen stream channels and clog gravel interspaces in and around pools in slow and fast water habitats. Pools are often analyzed by a “pool frequency” calculation that uses the channel widths in the reach as a numerator and the number of pools in the reach as a denominator. Thus 1:10 translates to one pool for every 10 equivalent channel widths of channel length. If the channel width is 30 feet, then 1:10 pool frequency equals a pool every 300 feet. Similarly, using wetted width classes or groups, as was done with wood, an analysis of pools per mile in the Siskiyou Mountains is shown below for the data stored in NRIS Water for 432 stream reaches surveyed.

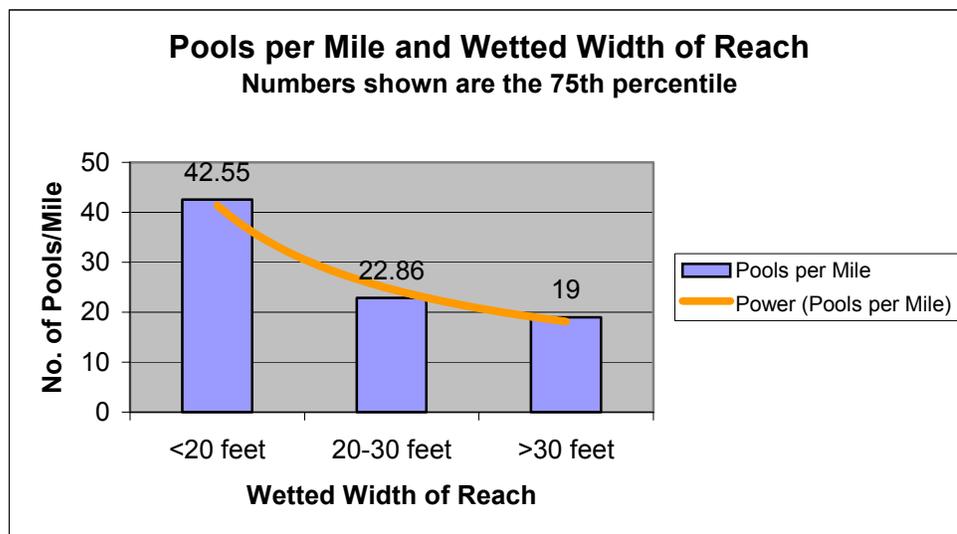


Figure 1- 4. Graph of 75th percentile of pools per mile plotted against three stream width classes.

Smaller streams tend to have more pools per mile than larger streams. Using stream width classes helps normalize the results for comparison. Pool frequency calculations also take into consideration the width of the stream by dividing the length of the sample stream segment by the average wetted width (or active channel width) as discussed above. Using these two attributes, surveyed stream reaches within the key watersheds within the Siskiyou/Klamath Mountain geology on the Forest were rated.

Figure 1-5. A map of the three watersheds used to analyze stream reach conditions for wood and pools per mile using stream survey data from NRIS Water.

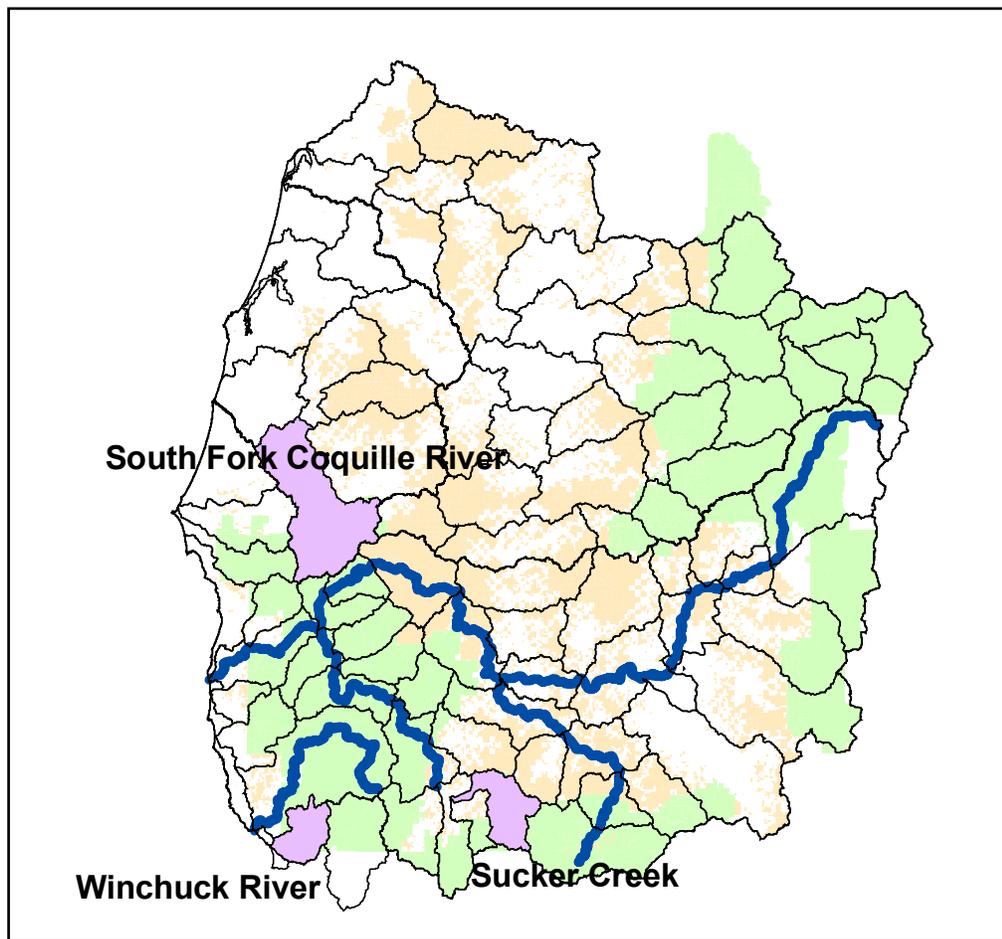


Table 1-1. South Fork Coquille River – Key Watershed in the Coquille River Sub-basin of the South Coast.

NAME	Width	Total large wood	75th percentile	Total all wood	75th percentile	pools/mile	75th percentile
Lockhart Creek	9.37	14.82	abv 11	133.34	abv 54	85.19	abv 43
Buck Creek	9.43	15.13	abv 11	88.16	abv 54	58.55	abv 43
Panther Creek	9.66	14.29	abv 11	36.19	blw 54	47.62	abv 43
South Fork Coquille River	10.14	4.12	blw 11	38.74	blw 54	22.53	blw 43
Foggy Creek	11.65	5.38	blw 11	63.44	abv 54	30.11	blw 43
Panther Creek	12.24	36.63	abv 11	77.22	abv 54	25.74	blw 43
South Fork Sixes River	12.66	35.65	abv 11	82.45	abv 54	26.46	blw 43
Sucker Creek	13.54	12.66	abv 11	105.70	abv 54	17.09	blw 43
South Fork Sixes River	15.05	16.98	abv 11	39.24	blw 54	25.28	blw 43
Johnson Creek	15.12	23.57	abv 11	150.00	abv 54	22.86	blw 43
Panther Creek	16.09	57.74	abv 11	116.50	abv 54	23.71	blw 43
Johnson Creek	16.10	40.91	abv 11	162.12	abv 54	16.67	blw 43
Panther Creek	16.22	21.54	abv 11	62.31	abv 54	43.85	abv 43
South Fork Coquille River	16.95	8.13	blw 11	49.59	blw 54	17.07	blw 43
South Fork Sixes River	17.11	2.14	blw 11	20.71	blw 54	16.43	blw 43
Wooden Rock Creek	17.29	8.76	blw 11	55.48	abv 54	24.82	blw 43

NAME	Width	Total large wood	75th percentile	Total all wood	75th percentile	pools/mile	75th percentile
South Fork Coquille River	24.83	15.30	abv 9	52.95	abv 37	15.29	blw 23
Johnson Creek	24.93	3.52	blw 9	28.63	blw 36	20.26	blw 23
Rock Creek	25.94	24.56	abv 9	102.96	abv 37	17.16	blw 23
Rock Creek	27.19	11.04	abv 9	62.76	abv 37	20.69	blw 23
South Fork Coquille River	31.39	1.15	blw 10	3.45	abv 34	13.79	blw 19
South Fork Coquille River	34.56	7.15	blw 10	16.59	abv 34	9.44	blw 19
Rock Creek	35.82	18.03	abv 10	72.13	abv 34	18.03	blw 19
South Fork Coquille River	36.33	1.89	blw 10	8.81	blw 34	11.32	blw 19
South Fork Coquille River	37.85	3.37	blw 10	8.99	blw 34	8.99	blw 19
South Fork Coquille River	38.93	6.67	blw 10	6.67	blw 34	6.67	blw 19
South Fork Coquille River	40.79	2.95	blw 10	13.66	blw 34	9.47	blw 19
South Fork Coquille River	41.30	4.55	blw 10	25.76	blw 34	10.10	blw 19
South Fork Coquille River	43.90	4.62	blw 10	13.85	blw 34	12.31	blw 19
South Fork Coquille River	44.95	2.97	blw 10	11.65	blw 34	8.22	blw 19
Summary			15 of 30 reaches exceed 75th		17 of 30 reaches exceed 75th		5 of 30 reaches exceed 75th

The South Fork Coquille River watershed is somewhat of an anomaly in the stream survey data set as it is located in both the Siskiyou/Klamath Mountains and the Tye Sandstone geology. The expected natural range of wood in stream reaches is expected to be higher in this area as this watershed receives considerable precipitation and the deeper sandstone soils grow conifers more rapidly than typical Siskiyou/Klamath Mountain Soils. Approximately half of the surveyed reaches meet or exceed the 75th percentile for both wood summaries and few of the reaches meet the 75th percentile for pools per mile.

Table 1-2. Winchuck River – Key Watershed in the Chetco River Sub-basin of the South Coast.

NAME	Width	Total large wood	75th percentile	Total all wood	75th percentile	pools/mile	75th percentile
Salmon Creek	8.53	0.00	blw 11	23.81	blw 54	42.86	equals
Sankey Creek	9.12	2.42	blw 11	39.52	blw 54	47.58	abv 43
Sankey Creek	11.44	9.43	blw 11	39.62	blw 54	39.62	blw 43
Bear Creek	11.57	0.00	blw 11	15.15	blw 54	34.85	blw 43
Fourth of July Creek	14.30	26.40	abv 11	101.60	abv 54	17.60	blw 43
Bear Creek	15.94	0.00	blw 11	11.46	blw 54	26.04	blw 43
Wheeler Creek	16.35	55.43	abv 11	127.95	abv 54	20.45	blw 43
Fourth of July Creek	17.72	17.35	abv 11	63.63	abv 54	19.83	blw 43
Wheeler Creek	25.30	19.91	abv 9	49.20	abv 37	22.43	equals
East Fork Winchuck River	26.38	57.89	abv 9	134.70	abv 37	18.55	blw 23
East Fork Winchuck River	37.22	32.55	abv 10	70.15	abv 34	15.12	blw 19
Winchuck River	39.48	1.67	blw 10	11.67	blw 34	8.89	blw 19
Summary			6 of 12 reaches exceed 75th		6 of 12 reaches exceed 75th		3 of 12 reaches exceed 75th

The Winchuck River is located in both Oregon and California but National Forest System lands are within Oregon only. The Winchuck is within the redwood belt of the Pacific Coast and high precipitation near the ocean produces rapid conifer and hardwood growth. Half of the surveyed reaches exceed the 75th percentile levels for large wood and total wood and only one-quarter (1/4) of the reaches exceed the 75th percentile for pools per mile.

Table 1-3. Sucker Creek – Key Watershed in the Illinois River Sub-basin of the Rogue River.

NAME	Width	Total large wood	75th percentile	Total all wood	75th percentile	pools/mile	75th percentile
Windy Creek	7.54	0.00	blw 11	8.82	blw 54	27.94	blw 43
Windy Creek	9.26	6.47	blw 11	42.94	blw 54	25.88	blw 43
Left Fork Sucker Creek	9.94	8.08	blw 11	23.23	blw 54	19.19	blw 43
Grayback Creek	10.71	3.23	blw 11	29.04	blw 54	31.61	blw 43
Left Fork Sucker Creek	10.72	6.09	blw 11	33.92	blw 54	37.39	blw 43
Bolan Creek	11.27	24.68	abv 11	57.27	abv 54	16.14	blw 43
Left Fork Sucker Creek	15.36	13.16	abv 11	59.21	abv 54	25.00	blw 43
Bolan Creek	15.51	3.52	blw 11	18.31	blw 54	40.14	blw 43
Grayback Creek	16.00	8.72	blw 11	44.33	blw 54	25.71	blw 43
Sucker Creek	18.48	8.76	blw 11	36.97	blw 54	24.12	blw 43
Grayback Creek	20.83	5.45	blw 9	38.52	abv 37	17.12	blw 23
Sucker Creek	26.94	1.29	blw 9	9.02	blw 37	16.21	blw 23
Sucker Creek	31.44	1.17	blw 10	7.40	blw 34	9.73	blw 19
Summary			2 of 13 reaches exceed 75th	3 of 13 reaches exceed 75th	None meet or exceed 75th		

Sucker Creek is located east of the direct coastal influence in the Siskiyou Mountains and receives moderate amounts of precipitation in the upper Illinois River Valley. This is one of the few watersheds within the Siskiyou/Klamath Mountains on the Forest that receives appreciable snow pack and later spring runoff from melting snow. Sucker Creek is considered a good conifer growing site with relatively rapid tree growth for this part of the Siskiyou Mountains. Very few of the survey reaches exceed the 75th percentile level for large wood or total wood per mile and none of the reaches meet the 75th percentile for pools per mile.

Discussion

Reach summaries for all 432 surveyed stream reaches are on file for use when determining resource objectives for large and total wood per mile, pools per mile and other stream features collected during stream surveys. The robust data set represents a large sample size and will be used for a first cut at determining the expected range of wood and pools per mile in a healthy stream reach. A GIS file has been created directly from NRIS Water which can locate stream reaches by these reach attributes. Fish biologists and hydrologists are encouraged to use this data to aid the setting of restoration objectives for stream reaches in the Siskiyou Mountains. This will be used as a planning tool to gauge the relative condition of streams on the Forest and what type of stream and riparian restoration work is relevant to improve fish habitat.

RECOMMENDATIONS: Results are acceptable. Continue to monitor.

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. This Monitoring Item is required by 36 CFR 219.27(c)(1). The monitoring questions are:

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

FINDINGS, EVALUATION & RECOMMENDATION(S):

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 1990 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 (2000-2004). 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 1989 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. This Monitoring Item is required by 36 CFR 219.12(k)(1). 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, EVALUATION & RECOMMENDATION(S):

Rogue River National Forest

Under the 1990 Land and Resource Management 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. The following table shows the timber offered for sale and harvested since 1990.

Table 1-4. Timber Volume Offered for Sale and Harvested: Rogue River 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

Fiscal Year	Volume Offered (MMBF)	Volume Harvested (MMBF)
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
Total	412.3	562.4
Average	25.8	35.2

Siskiyou National Forest

Under the 1989 Land and Resource Management Plan, the TSPQ was 160 million board feet (MMBF) or 28.4 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, 24 MMBF has been determined to be the Probable Sale Quantity (PSQ) for the Siskiyou National Forest. The following table shows the timber offered for sale since 1990, in MMBF.

Table 1-5. Timber Volume Offered for Sale: 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

Fiscal Year	Volume Offered (MMBF)	Volume Harvested (MMBF)
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
Total	449	504.1
Average	28.1	31.5

Fiscal Year 2005 volume totals included a substantial salvage volume from the Biscuit Fire Recovery Project.

**Part Two:
Special Inventory and Monitoring Projects for FY 2005**

The following includes a report of observations and findings from special inventory and monitoring efforts on the Rogue River-Siskiyou National Forest. These reports cover a period from October 2004, through mid summer of 2005.

Fisher Survey and Genetic Sampling - Rogue River National Forest

The primary objective of this monitoring project was to survey for Pacific fisher and to test three hair snare devices used to collect hair for genetic analysis. Surveys were conducted on the **Ashland Ranger District** within the context of standardized surveys for forest carnivores as outlined by Zielinski and Kucera (1995). Two types of remote camera systems, video surveillance and 35 mm, were used. Two different trap types for non-invasive genetic sampling of fisher populations were used, based on snagging hair from target animals. The first type of hair trap consisted of corro-plast material which is similar to corrugated cardboard, but is made of plastic material. Initially, one of two types of hair-snaring devices was incorporated into the corro-plast boxes.

The second type of hair trap involves the use of fisher-sized live traps in which the locking mechanism in the door has been disabled and metal curry combs, used to groom horses, have been attached to the inside bottom of the door. In addition to curry combs, modifications of Belant's technique by wiring .30 caliber metal gun brushes, or mouse glue strips attached with thumbtacks to a 1" x 2" board to the inside, bottom edge of the door were tried. The first type was 3 pieces of Bekeart Gaucho brand barbed-wire placed in a "Z" configuration across the entrance of the hair trap. The second type of hair-snaring device used three, 1" x 2" boards cut to fit the entrance of the hair trap. Non-poisonous mouse glue strips were cut to fit the underside of the bottom board.

For all hair trap stations, traps were initially baited with whole, un-plucked chickens. For a scent attractant, whole coho salmon (*Oncorhynchus kisutch*) carcasses were wrapped in ¼" hardware cloth and hung from a nearby tree with parachute cord. A commercially available skunk-based lure was also used. All known and suspected fisher samples were sent to Dr. Michael Schwartz and his team at the Wildlife Conservation Genetics Laboratory at the USFS Rocky Mountain Research Station (RMRS) in Missoula, Montana, for species identification and genetic analyses.

Four 4 mi.² sample units were accomplished during the winter of 2004-5. Video surveillance cameras documented fisher detections at 1 station (station 2) on 8 days, with multiple visits/day on several of those occasions. A total of 22 hair samples were collected. Seven samples were suspected to be fisher by field personnel based on video documentation. Of the seven samples, six contained quality DNA that could be assigned to fisher.

Fisher samples from Mt. Ashland were genotyped by RMRS as Haplotype 1 which is the most common haplotype for fishers in California (Drew et al. 2003). Introduced fishers in the southern Oregon Cascade Range had haplotypes 9 and 10. Other species documented through photographic evidence or DNA analyses were striped skunk (*Mephitis mephitis*), spotted skunk (*Spilogale gracilis*), wolf/dog (*Canis spp.*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), Douglas' squirrel (*Tamiasciurus douglasii*), and pileated woodpecker (*Dryocopus pileatus*). For more information, contact Jeff VonKienast 541-560-3440.

Bat Surveys - Rogue River National Forest

As part of the Oregon Bat Grid program, seven bat sites were surveyed on the **Prospect Ranger District** to determine what species of bats are present. Surveys were designed to detect both Sensitive and common species. Sensitive species sought included fringed myotis and pallid bat. Four sites were on Forest Service lands, one on BLM, and one site on Army Corps of Engineers land, all in Jackson County, Oregon.

Two sites were surveyed using Sonobat detectors on long term recorders. This equipment recorded all calls over a period up to 8 hours long. Calls were then used to identify to species using computers to determine species presence. Four sites were surveyed using mist nets, which were stretched over water sources and Sonobat detectors. Bats captured in the mist nets were identified as to species, sex and age, and a variety of physiological measurements were taken. DNA samples were collected from each species and Sonobat recorders were used to record calls for comparison with the DNA and physiological identifications. This allowed three different identification techniques and comparison of the accuracy of each, when complex species, like the Myotis genus, were captured. Data for each site and the species associated with it was entered into GIS and local and national databases, including FAUNA.



Figure 2-1. Bats gather at small ponds like this net site

In five nights of surveys 70 bats were captured, representing eight species. These included one Fringed myotis (R6 Sensitive) and one Townsend's big-eared bat (formerly federally listed).

For more information, contact Norman Barrett 541-560-3479.

Figure 2-2. California myotis in hand



Spotted Frog Surveys - Rogue River National Forest

Surveys for Oregon Spotted frogs, federal candidate species, were conducted in the summer of 2005 on the **Cascade Zone** of the Rogue River-Siskiyou National Forest and the Medford District of the BLM. The project area was the Cascade Range and Medford District of the BLM.

Little is known about the distribution of the Oregon spotted frog (*Rana pretiosa*,) in the southern Cascade Mountains. The few sites known on the area are primarily on the eastside of the Cascade Mountains in Klamath County or in Crater Lake National Park. There is one site known for the species just south of the Rogue River-Siskiyou National Forest on BLM lands, and there is one historical site on the Forest, however this may represent a mistaken identification of a Cascades frog (*Rana cascadae*) as a spotted frog.

There have been no systematic surveys for this species on the southern Cascade portion of the Forest and this area may represent the southern extent of the species. The initial surveys attempted to determine the extent of the range of the species in the south Cascades, measure habitat variables in order to determine habitat associations, initiate monitoring of any newly discovered sites on the Forest for population trends, and begin to develop mitigation measures for any potential impacts to the species.

Approximately forty sites were stratified by administrative unit and ten sites from each unit were randomly selected for survey. Six of the Forest Service randomly selected sites were sampled and five of the BLM randomly selected sites were sampled. Seven other sites were opportunistically sampled. Eighteen sites (7 BLM, 11 FS) were sampled for a total of 40 person-hours of Visual Encounter Surveys (VES). All sites were sampled for a minimum of two person hours or until the entire site had been sampled. A minimum of two people sampled each site and up to six sampled one site.

No spotted frogs were found at the selected sites; however two species of salamander, two species of frog, and one species of toad were found. Spotted frogs were confirmed at the BLM Parsnip Lake site. There is an ongoing effort to sample sites in the Rogue Basin to determine if spotted frogs do occur on Forest Service and BLM lands in the Basin. This effort will continue in FY 06. For more information, contact David Clayton 541-858-2276.

Salmon Spawning Surveys - Rogue River National Forest

Annual spawning surveys for coho salmon and steelhead are conducted each year to determine relative escapement to spawning beds on National Forest System lands. This report discusses surveys conducted on the **Prospect Ranger District** (Cascade Zone).

Spawning surveys were conducted no more than 10 days apart for coho salmon to arrive at a redd (the spawning area of trout or salmon) and adult count in a given reach of stream. Bitterlick Creek and Sugarpine Creek, each approximately 10,000 acre sub-watersheds at the survey reach within the Elk Creek key watershed, were surveyed. Fall/winter counts at Huntley Park (river mile 9) and Gold Rey Dam (river mile 125) indicated a record number of wild coho salmon in the Rogue River. Gold Rey has kept records since 1942. Steelhead trout redds have been surveyed in Bitterlick Creek and Sugarpine Creek on a single-pass basis for 5 years.

In Sugarpine Creek, 91 coho salmon redds were observed in a survey reach of approximately one mile. In Bitterlick Creek 48 salmon redds were observed in a survey reach of approximately 1.5 miles. About the same number of live adults were seen as the number of redds at the peak of spawning. The redd density per mile was about 100 redds per mile for Sugarpine Creek and about 32 redds per mile for Bitterlick Creek. For more information, contact Randy Frick 541-858-2270 or Jeff VonKienast 541-560-3440.



Figure 2-3. Coho Spawning.



Figure 2-4. Coho Carcass.

Black-backed Woodpecker Enhancement - Rogue River National Forest

The two main objectives for this project were to enhance habitat for black-backed woodpeckers while reducing fuels around the Thousand Springs Snowmobile Park (4 buildings, formal parking area), and Highway 62 on the **Prospect Ranger District**. This area is a nationally known location for birders interested in observing black-backed woodpeckers.

The treatments were designed to improve the quality of the existing habitat and to expand the available acres of suitable nesting habitat. This included reduction of potential intensity, duration, and rate of spread of fire in a fire prone area by thinning “doghaired” (extremely dense) lodgepole pine trees and reducing ladder fuels. The project was designed to maintain open lodgepole pine habitat with some mixed conifer to promote species diversity for long term ecosystem resilience and restore structural diversity. The project was also designed to improve recreational opportunities, including bird watching, during the summer.

Initial implementation monitoring of this project found the density of the 70 acre stand was reduced to 70-200 trees per acre, dependant on the species by applying pre-commercial thinning, and slash treatment. Currently, 15 acres have been completed through firewood and post-and-pole sales. Felled trees will be used as firewood for the snowpark shelter, commercial or non-commercial sale, or donated to needy people in the Prospect area. Lodgepole pine trees left after thinning are the ones that best meet the needs of Black-backed woodpeckers for cavity nesting, based on size and health. The treatment would leave Douglas-fir and white pine when available. Lodgepole pine would be left over the top of the young trees of other species to help protect from frost. Ground fuels were reduced by removing, chipping, hand piling, or arranging fuels to reduce flammability. For more information, contact Norman Barrett 541-560-3479.



Figure 2-5. Black-backed woodpeckers nest in open lodgepole.

Thinning in Late-Successional Reserves and Riparian Reserves - Siskiyou National Forest

The objective of this project was to restore and enhance Managed Late-Successional Reserves (LSR) and Riparian Reserves using pre-commercial thinning to facilitate late-successional characteristics for threatened, endangered and/or sensitive terrestrial species. The goals of the project are increased growth and vigor, as well as species diversity. This will facilitate the recovery of Riparian Reserves to meet LSR objectives as outlined in the Northwest Forest Plan as well as provide for future nesting platforms for marbled murrelet, spotted owls, bald eagles and provide large woody material.

Conifers within the Riparian Reserve were released with hand tools as well as mechanical means (chain saws). Western red cedar and Douglas-fir were favored over red alder to facilitate functional recovery of Riparian Reserves where appropriate. In areas that lacked the diversity of a conifer/hardwood mix, conifers were planted using conventional means. The figures below show results of treatments on the **Powers Ranger District**, based on initial implementation monitoring. For more information, contact Steve Namitz 541-439-6250.



Figures 2-6 and 2-7. Examples of recently treated stands within LSR.



Salmonid Surveys - Siskiyou National Forest

The objective of these surveys is to quantify abundance and distribution of coho salmon and other salmonid species. Surveys were accomplished in the Illinois River and Middle Rogue sub-basins on the **Powers Ranger District**, and 3 miles of stream in the Lower Rogue River watershed (**Chetco Ranger District**). The population of coho salmon in this region is federally-threatened. Species targeted include but are not limited to fall Chinook, and coho salmon and winter steelhead.

To determine population and trends, data includes number of individuals, number of redds, timing of runs, and hatchery to wild ratios. Weekly spawning surveys are completed along designated reaches. Surveys are continued throughout the spawning season. Redds are marked to avoid recounting. Data is shared with the Oregon Department of Fish and Wildlife. Data is used to determine hatchery to wild ratios, baseline data, and trend information for important commercial and recreational species.

These surveys are used to quantify annual abundance and distribution and aid in calculating long term trends in abundance and population viability. Spawner surveys which quantify carcasses and redds, and snorkel censuses which count juveniles produced were both used in these projects.

One of the surveys was conducted on a new stream. The data from a survey on a previously surveyed stream showed decline in numbers along that reach. However, numbers in the basin were shown to be high. For more information, contact James Simino 541-247-3634, Ian Reid, 541-592-4059, or Steve Namitz 541-439-6250.



Figure 2-8. Snorkel censuses counted juvenile coho salmon.



Figure 2-9. Accurate counts are important to gauge recovery

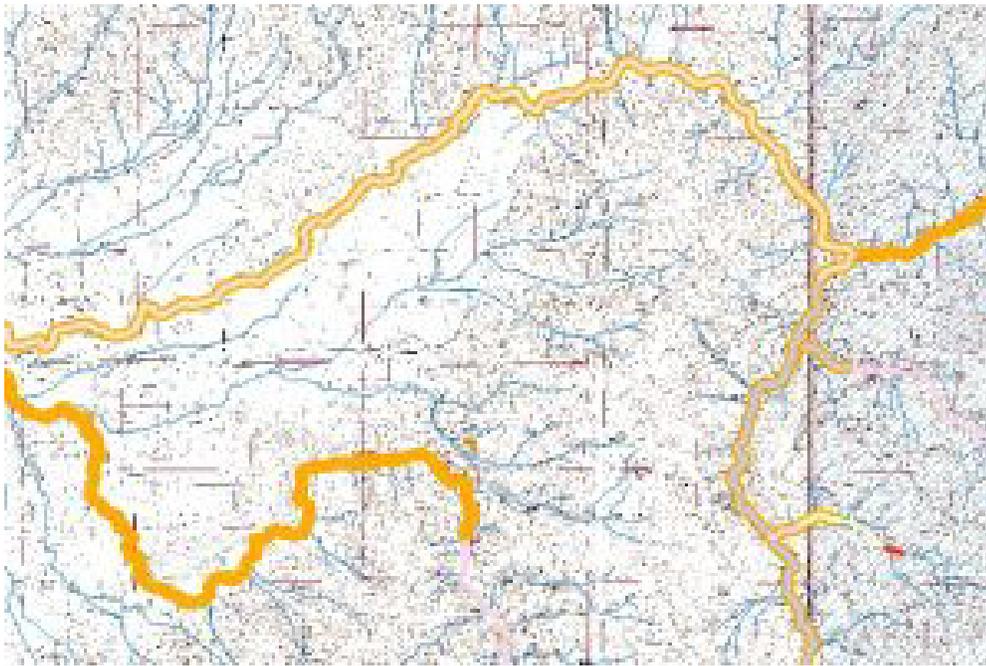


Figure 2-10. Fish data is entered into GIS and computer databases.

Figures 2-11 and 2-12. Instream fish observations.



Riparian Reserve Treatments - Siskiyou National Forest

On the **Powers Ranger District**, riparian treatments were applied to establish and release conifers within managed portions of the Riparian Reserves along anadromous and inland fish bearing streams. The objective of these treatments was to provide for and facilitate the recovery of Riparian Reserves as directed by the Northwest Forest Plan and to provide for future large woody material, critical shade, nutrients, bank stability, and increased growth and vigor as well as species diversity. For more information, contact Steve Namitz 541-439-6250.

On the **Gold Beach Ranger District**, riparian treatments were applied to establish and release conifers within managed portions of the Riparian Reserves along Hunter Creek. The upper part of this watershed was managed in the 70's and 80's. The riparian areas in these stands were harvested and replanted. The conifers within the riparian area have grown back in high numbers and are now thick dense stands. These stands needed to be thinned to allow the trees to grow to maturity faster and provide large woody material in the future, as outlined in the Northwest Forest Plan.

Stands within 75 feet from waters edge on both sides of the creek were pre-commercially thinned. Trees were not removed from the site. Any trees of size were directionally felled into the stream channel to provide woody material to the stream. This project will provide more healthy robust riparian trees within the upper part of the Hunter Creek Watershed. It is within an area where the stream is lacking in wood, and there are plans to add large woody material in the future. For more information, contact James Simino 541-247-3634.

Riparian treatments were applied to establish and release conifers in the riparian zone of Grayback Creek, an important salmon and steelhead spawning tributary to Sucker Creek in the Illinois River Valley, **Illinois Valley Ranger District**. Large conifers in the riparian zone can contribute to stream shade and instream wood recruitment.

Thinning, piling, and burning was accomplished with hand crews. Prescriptions were designed to release large conifers and hardwoods. No overstory trees were removed and a 25-ft no-cut buffer was retained. Sixty-eight acres along Grayback Creek was thinned. In the long term (>50 years), conditions will result in larger trees in the riparian zone, more stream shade, cooler summer water temperatures, and more instream wood. For more information, contact Ian Reid 541-592-4059, or Dave Patton 541-592-4040.



Figures 2-13 thru 2-15. Examples of treatments on Powers Ranger District. Before: treatment areas contained small, dense trees. After thinning: growth should be increased



Stream Enhancement - Siskiyou National Forest

The objective of this project was to improve spawning and rearing habitats for threatened Southern Oregon/Northern California Coasts coho salmon, Klamath Mountains Province summer and winter steelhead, and coastal cutthroat trout in Taylor Creek and West Fork Taylor Creek, **Galice Ranger District**.

A mobile cable yarder was used to place 62 logs and five natural trees with root wads along three miles of Taylor and West Fork Taylor Creeks. Logs were obtained from the Biscuit Fire Recovery Project and other sources. Twenty-five strategic log placement locations were identified by Forest Service biologists.

Improved over-wintering habitat, more spawning gravel, and deeper pools are expected from this project. Previous stream restoration projects in this watershed have contributed to above average juvenile coho salmon densities and substantial increases in the range of coho salmon in these streams. For more information, contact Ian Reid 541-592-4059.



Figure 2-16. Before: simple fish habitat with little large wood.



Figure 2-17. A yarder and skidder were used to place logs.



Figure 2-18. After: Wood complex was added to improve habitat.

To enhance and restore aquatic ecosystems to a healthy and productive state, stream projects such as tree lining are enacted on the **Powers Ranger District** to improve aquatic habitats.

The project utilized materials on site by pulling over and/or utilizing down large conifers for in-stream placement. Potential habitat trees are sound snags, broken tops, or trees that are a potential human hazard. The project intent is not to utilize trees that are of high shade value. The end result is an increase in natural looking aquatic habitat.

Large woody material slows down floodwaters allowing gravel to accumulate, creates pool habitat and provides hiding cover for fish, maintains stream diversity, and provides nutrients. Improvement of in-stream conditions will benefit aquatic species; especially coho, Chinook salmon, steelhead, coastal cutthroat trout and Pacific lamprey. For more information, contact Steve Namitz 541-439-6250.



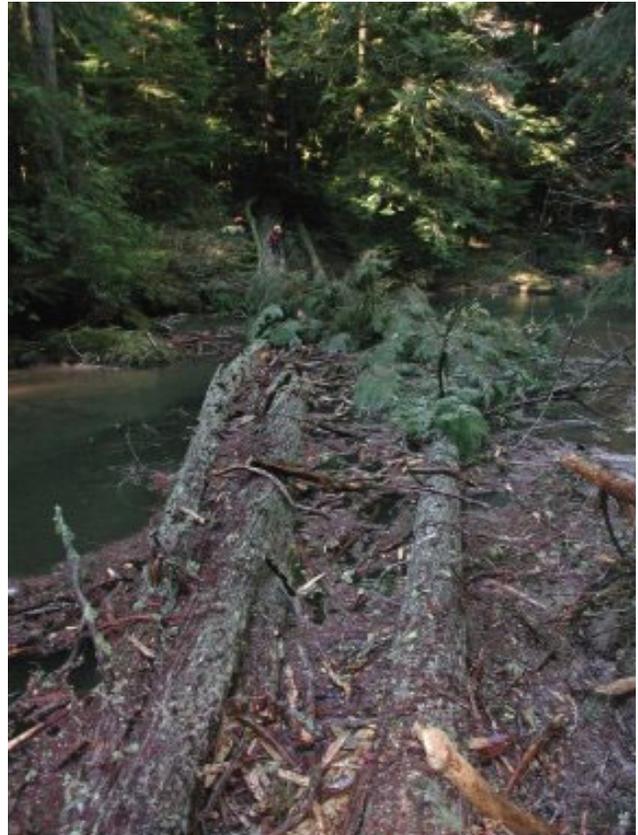
Figure 2-19. Cable yarding machine.

Figure 2-20. Tree being lined over into stream.





Figures 2-21 and 2-22. Trees lined into stream adding to large woody material and stream complexity.



Rogue River Raptor Monitoring - Siskiyou National Forest

This monitoring project documents the physical condition and reproductive status of nest sites for osprey, peregrine falcon, and bald eagle. Thousands of recreationists are able to see, hear, and experience the "wildness" of the lower Rogue River by these species on the **Gold Beach Ranger District**.

High-power optics were used to observe nest sites. A variety of vantage points (terrestrial, river, aerial) are accessed for conducting the survey. The status of 41 osprey nest sites was determined: 29 active, 6 blown down, 4 unoccupied, and 2 new nests. Reproduction (2 young) was documented at one peregrine falcon eyrie. Intact nests were documented at three bald eagle sites (Libby Creek, Watson Creek, Alder Creek). Pairs of eagles were documented for all three sites. For more information, contact Rolando R. Mendez-Treneman 541-247-3644.

Foothill Yellow-legged Frog Monitoring - Siskiyou National Forest

Information is needed on the distribution of breeding and oviposition (egg deposit) sites of the foothills yellow-legged frog (*Rana boylei*) in the lower Rogue River on the **Gold Beach Ranger District**, and the effects of ongoing recreation activities in order to develop mitigation plans for this declining amphibian. In particular, large jet boats used on the river in the spring and summer have the potential to dislodge yellow-legged frog egg masses from shallow water habitats along the main stem of the river during breeding season. Yellow-legged frog breeding sites tend to be clustered in suitable habitats and if these areas can be located, monitoring can help to determine if the boats are impacting these breeding sites and then mitigate those effects.

Potential oviposition sites were located using photo interpretation and local expertise prior to field work. High potential habitat was identified and quantified by stream reach. Standard visual encounter surveys during the April to May breeding season were employed to locate oviposition sites and the presence of adults and/or egg masses. The primary survey effort was for yellow-legged frogs. Other wildlife species such as western pond turtle were observed and recorded during surveys.

Three oviposition sites were found - one on the mainstem of the river and two sites on tributaries of the river. Over 95 percent of the mainstem sites had introduced species present (bullfrog and centrarchid fish). The presence of these species may be why yellow-legged frogs were not detected on the mainstem of the river. The single site found on the river will be monitored in FY 06 to assess the potential effects of river boat traffic on the site. For more information, contact David Clayton 541-858-2276.



Figure 2-23. Yellow-legged frog tadpoles.

Erythronium howellii Monitoring - Siskiyou National Forest

This project provided an opportunity to monitor and assess the effects of a controlled spring burn upon a large population of *Erythronium howellii*.

Fifteen 1m² permanent plots were systematically placed throughout a 5 acre timber sale unit on the **Illinois Valley Ranger District** where *E. howellii* was present. For a control, fifteen 1m² permanent plots were set up on adjacent habitat just outside of the unit. In each plot, all non-reproductive and reproductive individuals were tallied prior to a spring underburn. Additionally, percent cover, coarse woody debris, bare ground, herb, grass, shrub and overstory canopy cover were recorded. A burn index was assigned to each plot following the fire and *E. howellii* abundance will be monitored for two springs following the burn.

E. howellii typically occurs within serpentine influenced open meadow or open woodland habitats. It is likely that periodic low-mid intensity fire encourages habitat characteristics which support *E. howellii*, but no formal monitoring or research has assessed fire effects upon this species. However, woody invasion and loss of high light conditions have been found to adversely impact other species of *Erythronium* (Gehlbach & Polley 1982, McClain, Ebinger, & Koelling 2000, and Naito & Nakagoshi 2002). It is expected that *E. howellii* abundance will not decrease following prescribed fire. For more information, contact Maureen Jones 541-592-4052.



Figure 2-24. Rebar marks the center of monitoring plots.



Figure 2-25. *E. howellii* habitat following the underburn.

***Fritillaria gentneri* Habitat Maintenance - Siskiyou National Forest**

The only known population of the endangered *Fritillaria gentneri* on the Siskiyou National Forest is threatened by the aggressive invader, meadow knapweed. Monitoring of this habitat restoration project is a continuation of six seasons of diligent, conscientious work to ensure that meadow knapweed is dug from the site and does not set seed. To date, the abundance of meadow knapweed has declined by approximately 80%.

Each spring, prior to seed set, meadow knapweed has been carefully dug from the site. For the last two years, the Forest Service has employed a new digging tool which has greatly improved the ability to successfully remove the entire root system, thus preventing root sprouting (see photo). Additionally, site revisits occur throughout the growing season, to assure that no seed is set.

Eventually meadow knapweed will be eliminated from the entire meadow surrounding the *F. gentneri* population. However, given that meadow knapweed seeds may remain viable in the soil for up to 10 years, monitoring and habitat restoration efforts will need to continue for years. For more information, contact Maureen Jones 541-502-2850.



Figure 2-26. Miner's pick removes small & large root systems.

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