

FINAL REPORT

August 1999

Results of the FY 1998 Implementation Monitoring Program

for

Management of Habitat for Late-Succession

and

Old-Growth Forest Related Species

Within the Range of the Northern Spotted Owl

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Implementation Monitoring Program

ACRONYMS

BLM	Bureau of Land Management
NFP.....	Northwest Forest Plan
PAC	Provincial Advisory Committee
PIMT	Provincial Implementation Monitoring Team
REO	Regional Ecosystem Office
RIEC	Regional Interagency Executive Committee
RIMT	Regional Implementation Monitoring Team
ROD.....	Record of Decision
S&Gs	Standards and Guidelines

Executive Summary

The FY 1998 Regional Implementation Monitoring Program reviewed 24 randomly selected timber sales and associated new road construction. For the third consecutive year, results of the Northwest Forest Plan (NFP) Implementation Monitoring Program show a high level of compliance with Standards and Guidelines (S&Gs) for timber sales (96 percent for FY 1998).

The FY 1998 monitoring process continued to use a standardized questionnaire for determining whether these timber sales were meeting the Record of Decision (ROD) and its S&Gs.

Adverse biological effects associated with instances of noncompliance appeared to be minimal at the regional scale. Where noncompliance occurred, the local biological effects were judged to be generally low to moderate.

Although there is room for improvement, none of the deficiencies noted in this report warrant recommending major corrective actions or operational shifts by land management agencies. Local Forest Service and Bureau of Land Management (BLM) units have already implemented some corrective actions to address deficiencies noted during monitoring efforts.

Several programmatic issues called for in the ROD have yet to be accomplished. These include such actions as developing provincial standards for coarse woody debris and snags.

Provincial Implementation Monitoring Teams (PIMTs) again invited a broad representation of interests, agencies, and disciplines into the review process. Field unit managers continue to acknowledge the value of this public review process in helping to build understanding and trust. Field unit managers are also continuing to adapt procedures developed for the Regional Implementation Monitoring Program to enhance their local monitoring efforts.

Costs of the FY 1998 Implementation Monitoring Program continue to be in line with those of the previous two years. Total direct cost was approximately \$121,516, not counting the overhead costs associated with program development, training, analysis, and reporting. PIMT review costs averaged \$5,345 per timber sale.

Introduction

This implementation monitoring report is presented in two ways: first, an analysis of the results of the timber sale project reviews; and second, an evaluation of the review process. *Coupled with an overview and a Conclusions and Recommendations section, this report is divided into four parts:*

Part 1 provides an overview of the review program. It explains the relationship of the implementation review to the NFP, describes the approach used to design the review process for FY 1998, and presents information related to the questions asked in the review.

Part 2 specifically addresses the analysis of implementation monitoring data related to timber sales with the S&Gs of the NFP. It includes a presentation of results followed by a discussion of those results and recommendations intended to improve compliance in the future.

Part 3 focuses on the process used for implementation monitoring. Like Part 2, it presents results but these results focus on the design and implementation of the process itself. A discussion of program success is followed by recommendations intended to provide helpful direction for future implementation monitoring.

Part 4 addresses overall conclusions and recommendations concerning the implementation monitoring. This discussion covers four topical areas: management direction, clarification of S&Gs, clarification as to when S&Gs apply, and improvements to the monitoring process.

Except where noted, in this report "ROD direction" refers to both the ROD and the S&Gs that comprise Attachment A of the ROD. "Provincial Monitoring Team" refers to a Provincial Implementation Monitoring Team; likewise, "Regional Monitoring Team" refers to the Regional Implementation Monitoring Team.

Part 1 - The FY 1998 Implementation Monitoring Program

Background and Purpose

1998 marks the third year in a regional-scale Implementation Monitoring Program that was formally initiated in 1996. The purpose of the program remains to determine and document whether the ROD for the NFP and its corresponding S&Gs are being consistently followed across the range of the NFP. This monitoring program was continued at the request of the Regional Interagency Executive Committee (RIEC). This report builds on the work of field units and interagency, intergovernmental teams from the 12 provinces that encompass the geographical area of the NFP.

The NFP, implemented in May 1994, requires federal natural resource agencies to manage public land resources on nearly 25 million acres in Washington, Oregon, and northern California under a common, collaborative approach. The ROD for the NFP amended Regional Guidelines and the planning documents for 19 National Forests and 7 BLM Districts. The management direction in the ROD consists of extensive S&Gs, including land allocations, that comprise a comprehensive ecosystem management strategy.

The ROD is designed to implement three related conservation strategies: aquatic, terrestrial, and socioeconomic. Part of the management strategy involves monitoring how well the NFP is working and whether BLM and the Forest Service are conducting their activities in ways that satisfy NFP objectives. The ROD and its S&Gs, hereafter referred to as the "ROD direction," is the foundation of NFP

In December 1994, U.S. District Court Judge William L. Dwyer said, *"Monitoring is central to the [Northwest Forest Plan's] validity. If it is not funded, or done for any reason, the plan will have to be reconsidered."* He added, *"If the plan as implemented is to remain lawful the monitoring . . . steps called for by the ROD will have to be faithfully carried out, and adjustments made if necessary."*

The ROD (page E-1) states that implementation monitoring *" . . . ensures that management actions meet the prescribed standards and guidelines and that they comply with applicable laws and policies."* It also notes that the NFP calls for three components of monitoring: (1) implementation, (2) effectiveness, and (3) validation. *"Monitoring will . . . determine if the standards and guidelines are being followed (implementation monitoring); verify if they are achieving the desired results (effectiveness monitoring); and determine if the underlying assumptions are sound (validation monitoring)."*

Additionally, the ROD (page E-1) indicates that *"Monitoring will be conducted at multiple levels and scales . . . to allow . . . information to be compiled and considered in a regional context."* Although both BLM and the Forest Service have extensive experience with monitoring, particularly at the project level, there has been only limited work on monitoring at broader scales and in areas of the size and scope covered by the NFP.

conservation and management strategies and forms the basis for determining what questions

to ask in implementation monitoring. Specific questions developed from the ROD direction center on specific activities and the applicability of the ROD direction to those projects.

Monitoring results are intended to provide managers with feedback regarding how well a particular activity meets management objectives.

The monitoring process is intended to be an evolving, iterative, adaptive process where we learn by doing. As results are evaluated, the process is expected to be adjusted as needed by: (1) determining whether compliance is being achieved, (2) identifying deficiencies in our implementation, and (3) identifying what action steps need to be taken to achieve implementation objectives.

Relationship Between Implementation Monitoring and Other Monitoring Activities

Three different types of monitoring activities are to be conducted under the NFP: implementation monitoring, effectiveness monitoring, and validation monitoring. This report focuses on implementation monitoring where sampling and reporting are accomplished at a regional scale, and where reviews are conducted on a random sample of local projects. Implementation monitoring initially determines compliance with ROD direction across all land allocations in the NFP, serving as an important baseline for both effectiveness and validation monitoring. It also To accomplish the objective of conducting monitoring activities under a "systematic" approach, a *_pilot_* program was initiated in FY 1996; and a sample of timber sales in Forest Service Ranger Districts and BLM Resource Areas within the NFP provinces was selected for review. At the direction of the RIEC, and as recommended in the March 3, 1997, Final FY 1996 Implementation Monitoring Report (see Alverts et al., 1997), FY 1997 activities for formal

documents actual practices as they are carried out by field units, providing an important link to management and NFP assessment.

Various BLM and Forest Service management units monitor a number of projects and activities within and outside the scope of the NFP at multiple scales and for a variety of purposes. For example, monitoring is conducted to address local issues of public interest, management actions not covered by the ROD direction, and land use plan requirements. This report does not address monitoring for these other activities, or for effectiveness or validation monitoring.

The Approach to Implementation Monitoring

Overview

Following completion of the ROD in 1994, an interagency work group attached to the Research and Monitoring Committee of the REO was assigned the task of designing the monitoring approach for the NFP. The group's work culminated in the release of a Final Draft Implementation Monitoring Guidance document in May 1995. The work group chose to systematically evaluate conformance with the ROD direction through an overall strategy that emphasized an interagency, interdisciplinary approach and included members of the public.

review were expanded from the pilot year program to include not only timber sales but also road construction and restoration projects. The FY 1998 program called for monitoring timber sales along with an informal feasibility inquiry into watershed-scale activities. Six watersheds (five key watersheds and one non-key watershed) were examined (two per state). The watershed-scale approach was tested

sufficiently that it has been recommended for expanded application in FY 1999.

Sample Selection

The basic sampling design for the FY 1998 Implementation Monitoring Program was a stratified random approach. Based on RIEC guidance and findings from previous implementation monitoring efforts, the FY 1998 sampling strata were constructed based on timber sale volume, harvest activity, and administrative unit (Forest Service National Forest, BLM District). Following RIEC guidance, the Regional Implementation Monitoring Team (RIMT) used existing agency regional databases as the information sources for identifying the regional population of timber sales. Several of these databases were found to be incomplete and containing errors that required the RIMT to make some adjustments and compromises during the design and field review processes.

The timber sales and sampling strata information were developed based on information in the FS STARS reporting system and the BLM Timber Sales Information System. A regional total of 282 timber sales sold in FY 1996 or FY 1997, with sale volume greater than 1000 MBF and at least partial harvest activity, were identified. These sales were then stratified by the 24 FS and BLM administrative units and a random sub-sample selected for review (see Appendix C).

The sample size of 24 timber sales reflected the scope of effort for the FY 1998 Implementation Monitoring Program agreed to by the RIEC. Results from the previous NFP implementation monitoring program were used to further focus the FY 1998 program on the large, harvested sales. The selection of the administrative units as strata was based on the desire to review and equalize the workload across all units. During the field reviews, it came to light that two of the

24 sales were without harvest activity. Future target population identification efforts should consider additional measures to ensure the review of active or completed projects.

Part 2 - Analysis of Monitoring Results

The results of the FY 1998 Monitoring Program are discussed in the following section.

Results and Discussion

One timber sale was reviewed from each of the 24 major administrative units participating in the NFP (National Forests and BLM Districts). The results from these sales are presented below.

The initial responses provided by the PIMTs are presented in Table 1. These responses show a relatively high level of compliance with NFP S&Gs. This initial categorization of responses not meeting S&Gs in FY 1998 was similar to the initial figures in FY 1997 (4.2 percent vs. 2.3 percent).

As in FYs 1996 and 1997, the PIMTs' initial responses were reviewed by an Interagency Analysis Team composed of the RIMT and additional personnel from the Forest Service, BLM, and Fish and Wildlife Service. Like FY 1997, this year's review examined all PIMT responses, not just the responses that did not meet S&Gs. As a result, a number of responses were placed into more appropriate categories (Table 2). The magnitude of recategorizations of PIMT responses in FYs 1997 and 1998 were similar. A summary of recategorized responses was provided to each PIMT for review and comment.

Analysis

Each question was answered by the PIMTs using a response of whether it was judged to have *_Exceeded, _Met, _Not Met, _was _Not Capable of Meeting, _* or was *_Not Applicable_*.

After compiling all the PIMT reports, an Interagency Analysis Team was assembled to review all PIMT responses in order to improve consistency among PIMT responses, to identify weaknesses in the implementation monitoring process, to level judgments about compliance with the ROD, and to develop management recommendations to improve future implementation of the NFP.

Table 1
Responses by Provincial Monitoring Teams to Timber Sale Monitoring Questions

Responses	Count	Overall Percentage (%) ¹	Applicable Percentage (%) ²
Exceeded	28	1.0	3.2
Met	804	29.7	90.5
Not Met	20	0.7	2.2
Not Capable	12	0.5	1.4
Multiple Answers	24	0.9	2.7
Not Applicable	1,663	61.3	--
Blank (no response)	161	5.9	--
TOTAL	2,712	100.0	100.0

- 1 The overall percentage is based upon all 2,712 responses.
- 2 The applicable percentage is based upon only those 888 responses for which the PIMTs decided the S&G applied (the sum of all "applicable" responses).

Table 2
Assessment of PIMT Timber Sale Responses by RIMT

PIMT Assessment		RIMT Assessment				
Responses	Number	Exceeded	Met	Not Met	Not Capable	Not Applicable
Exceeded	28	27	1	0	0	0
Met	804	1	789	9	1	4
Not Met	20	0	1	19	0	0
Not Capable	12	0	0	0	12	0
Multiple Answers	24	0	9	6	1	8
Not Applicable	1,663	2	2	0	1	1,658
Blank (no response)	161	0	1	1	0	159
TOTAL	2,712	30	803	35	15	1,829

- 1 The RIMT categorized each of the PIMT responses into one of categories described above.

Composition of the Interagency Analysis Team

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Bob Gunther, BLM Coos Bay Office, Coos Bay, OR
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Fay Shon, Forest Service, Region 6, Portland, OR
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Brian Stone, Forest Service, Region 5, San Francisco, CA
Don Wilbur, BLM Eugene Office, Eugene, OR

After review by the RIMT and Interagency Analysis Team, all responses were summarized by individual projects and by individual questions.

Responses marked *_Not Met_* indicate that the reviewed action did not comply with NFP S&Gs. Responses of *_Met_*, *_Not Capable of Meeting_* and *_Exceeded_* indicate that the reviewed action either complied with the NFP or exceeded the minimum requirements of the NFP.

The majority of responses falling into the "Exceeded" category indicated actions that were above and beyond minimum requirements of the NFP. These instances did not appear to be excessive and were not considered to be noncompliant.

The results of the FY 1998 review of timber sales are found in Table 3. Table 3 presents

both the sample and the regional estimates. The regional estimates were calculated by

applying the appropriate strata weights to the individual

timber sale results. As in FYs 1996 and 1997, the FY 1998 program indicates a high overall level of compliance with NFP S&Gs (96.7 percent the sum of exceeded, met, and not capable in Table 3).

Table 3
Compliance of Timber Sales with S&Gs

Responses ¹	Count	Overall Sample Percentage (%)	Applicable Sample Percentage (%)	Regional Percentage (%)
Exceeded	30	1.1	3.4	3.3
Met	803	29.6	90.9	92.2
Not Met	35	1.3	4.0	3.3
Not Capable	15	0.6	1.7	1.2
Not Applicable	1,829	67.4	---	---
Blank (no response)	0	0	---	---
TOTAL	2,712	100.0	100.0	100.0

¹ The RIMT categorized the PIMT responses as to whether or not they were consistent with the S&Gs. The overall percentage is based upon all 2,712 responses. The applicable percentage is based upon only those 883 responses for which a S&G did apply (the sum of all "applicable" responses). The regional percentage is computed based on the sample results weighted by the number of timber sales in each strata.

The local biological effects of both not meeting and exceeding S&Gs ranged from low-to-moderate effects. Project area effects of timber

sale actions that exceeded or did not meet S&Gs are presented in Table 4.

Table 4
Project Area Effects of Timber Sale Actions
That Exceeded or Did Not Meet S&Gs

Effects Category ^{1,2}	Exceeded Items		Not Met Items	
	Localized Occurrence	Project-wide Occurrence	Localized Occurrence	Project-wide Occurrence
Low Positive Effects	0	0	0	0
Moderate Positive Effects	1	1	0	0
High Positive Effects	0	0	0	0
No Effect	0	0	0	0
Low Negative Effects	0	0	18	7
Moderate Negative Effects	0	0	2	1
High Negative Effects	0	0	0	0
Undetermined	2	26	4	3
TOTAL	3	27	24	11

- 1 The PIMT, Interagency Analysis Team, and RIMT reviewed all instances where noncompliance was indicated and attempted to assess the biological impact of that noncompliance.
- 2 The effect of noncompliance to the immediate "project area" was assessed by the PIMT and RIMT. The RIMT categorized all noncompliance to determine if the event was a localized occurrence in the project area or occurred throughout the project area ("project-wide" or systemic problem with the action).

Overall results were compiled for each reviewed timber sale. Those results can be found in Appendix A. Figure 1 shows the distribution of selected timber sales by percent compliance. As can be seen from this figure, the majority of sales had greater than 90 percent compliance. Two sales had relatively low levels of compliance.

The responses to individual questions on the timber sale questionnaire are summarized and presented in Appendix B. A review of those summaries indicates that some S&Gs are more difficult to attain than others. These summaries were screened in order to identify those S&Gs that were most frequently not complied with (those with less than a 90 percent compliance

- ***The retention of 240 feet of coarse woody debris in regeneration harvests in western Washington and Oregon.*** One of the three sales that should have retained at least 240 linear feet of coarse woody debris did not meet the guideline in all units.
- ***The retention of 120 feet of coarse woody debris in regeneration harvests in eastern Washington and Oregon.*** One of the six sales that should have retained at least 120 linear feet of coarse woody debris did not meet the guideline even though adequate material was available.
- ***The retention of green trees in regeneration harvests in moderate to large clumps.*** One of the six sales that

rate and greater than three applicable responses). Topics with higher rates of noncompliance were:

- ***The exclusion of Riparian Reserves from timber harvest except as allowed for by the S&Gs.*** Three of the 24 sales were found to have questionable harvest activities in the associated Riparian Reserves. In these cases, the PIMT raised issues concerning the consistency of the activities with the attainment of Aquatic Conservation Strategy objectives.

should have retained trees in clumps did not. This was in only one unit with group selection harvests.
- ***The retention of the largest, oldest, decadent green trees in regeneration harvests.*** One of the eight sales that should have retained the largest, oldest trees for retention did not (in only one unit). Another sale was not capable of this retention.
- ***The indefinite retention of green tree retention patches.*** Two of the nine sales that should have retained patches indefinitely did not do so.
- ***The prohibition of harvests when snags requirements are not met.*** Of the four sales that did not meet snag

requirements, two continued with harvests. Both sales anticipated meeting snag requirements after mortality from future treatments (prescribed fire) or anticipated insect damage.

Part 3 - Analysis of Monitoring Process

This part of the report summarizes the methods that were employed in monitoring implementation of timber sales in FY 1998. Further, it summarizes process critiques from the FY 1998 Provincial Monitoring Teams. Additionally, it presents opportunities for continuous improvement in the 1999 implementation monitoring program. As in the preceding two years_ reports, it displays a cost summary of the FY 1998 program. Finally, it recounts the major lessons learned in this third-year monitoring effort.

The FY 1998 Implementation Monitoring Program built upon experiences from the 1996 Pilot Implementation Monitoring Program and the 1997 Implementation Monitoring Program. As in previous years, the FY 1998 program featured successful interagency, interdisciplinary, and public participation. The 1998 program carried this principle of broadly-based participation forward.

The FY 1998 program, as in the previous two years, used a teamwork approach with discussions facilitated by questionnaires and supplemental guidance documents (see Appendix B). The questionnaires for FY 1998 had been modified according to recommendations from 1997 program critiques. Please refer to the report, *Results of the FY 1996 (Pilot Year) Implementation Monitoring Program*, pp. 30-34 (Alverts et al., 1997), for additional background information on how questionnaires have been used by provincial teams.

Following are the findings and results of continuing improvements to monitoring The FY 1998 computerized database that compiles statistical information underwent

processes that have been applied to timber sales for the past three years, along with a summary of the direct costs to the FY 1998 program.

Results of the Timber Sale Monitoring Process

Capitalizing on the major process lessons learned from the preceding two years of NFP implementation monitoring, the regional timber sale population was again stratified so that a significant number of larger, more complex sales would be included in the random selection process. Provincial Team Leaders who had served in both the FY 1996 and FY 1997 programs universally noted that 1998 revisions to the timber sale questionnaires had added significant improvements to the timber sale implementation monitoring process. Questionnaire revision has become an exercise in continuous quality improvement. Consistency in how the questions are interpreted and applied has also been improved as a third year of experience has been gained. A better worded questionnaire, more experience, and more training prior to actual monitoring have all added value to an already solid monitoring program.

Field reviews in FY 1998, as in the previous two years, were the most satisfying parts of the monitoring experience. Provincial team leadership; interagency, interdisciplinary, and public participation; local unit openness and quality hosting--all added up to another summer season of successful field reviews.

improvements through centralization, electronic data transfer that minimized data transfer errors,

and a simplified, universally accessible electronic database. Essentially, a more user-friendly, and a more accessible database with less human error-inducing data handling have brought this monitoring program to a state of maturity.

Complete disclosure, openness, and a jury system for deliberating over controversies again characterized the FY 1998 program. As in previous years, some Provincial Team Leaders exchanged lead positions for their respective agencies. For example, a Forest Service Provincial Team Leader may lead reviews on BLM projects and a BLM Provincial Team Leader may lead reviews on Forest Service sales. Team participation also typically crosses agency boundaries. Team member diversity continues to be a key attribute in achieving monitoring report credibility (see Appendix C).

Lessons Learned

Questionnaires

For the third year, results have further established that regional questions drawn from ROD direction can be effectively answered through an objective process carried out by Provincial Monitoring Teams. The Provincial Monitoring Teams again endorsed the value of the questionnaire as a key instrument in the review process. Along with continuous editorial improvement to bring clarity to the S&G-based questions, review teams found fewer questions that were more relevant to programmatic review than in the previous two years' programs. The primary value of the questionnaire continues to be its use as an objective instrument for determining compliance with ROD direction. In sum, the questionnaire continues to importantly

- Project-level reviews again provided an important evaluation of how well agencies are meeting NFP direction and S&Gs. (Watershed-scale evaluation

serve as a neutral focus for PIMT discussions that usually lead to consensus answers.

Summary Lesson Learned

The summary statement about implementation monitoring process taken from last year's report still holds: The repeated and overriding lesson about the implementation monitoring process that has been learned from [two] years of NFP implementation monitoring is that public natural resource agents, in collaboration with citizens of diverse interests, can render credible judgments about public natural resource project compliance.

- Timber sales and associated new road construction monitoring indicated a high level of compliance with ROD direction and the S&Gs. The processes used to obtain these data were adequate. Based on 1997 recommendations, the following changes were made with wide acceptability:
 - Fewer programmatic questions remained; the focus was clearly on project-level questions.
 - The previous year's recommendation to monitor roads associated with timber sales as a single, combined activity was acted upon. This year's timber sale questionnaire incorporated road-specific questions. Repetitive questions on both the timber sale and roads questionnaires were weeded out when they were discovered.

processes were also preliminarily tested in FY 1998.)

Costs

Costs of the FY 1998 Regional Implementation Monitoring Program again fell within the RIMT's

expectations. Actual minimum and average costs were near the sums expected. Table 5 illustrates a simple cost accounting that is based on a subsample of 18 sales where preparation costs, review costs, and/or travel and other costs were recorded:

Table 5
Estimated Costs for an Average FY 1998 Timber Sale Implementation Monitoring Program

Preparation	Review	Travel & Other	TOTAL
\$1,718	\$2,913	\$714	\$5,345

The range of costs to the government for implementation monitoring of timber sales is from approximately \$1850 to \$13,070. As noted in the previous years_ reports, costs are primarily a function of the complexity of the subject projects, review team size, and the numbers of projects reviewed at one time.

The total estimated direct cost for the FY 1998 Implementation Monitoring Program (24 timber sales) is \$128,280. These figures do not include indirect costs associated with regional program development, training, analysis, and reporting.

Discussion

Organizationally, the RIMT remains committed to principles of random sampling, simplicity, and interagency cooperation.

Teams worked diligently, as during previous years, to resolve questions through open discussion and interaction.

Process Observations

Provincial Monitoring Teams and the originating field units again effectively employed a jury system in responding to the questions and determining compliance with the NFP.

The sample size of 24 timber sales, 8.5 percent of the regional sales, permitted all administrative units and provinces to be included. Regional estimates of compliance were provided although regional variance estimates could not be estimated. Either increased sample sizes or reduced stratification would be necessary should variance estimates be required in the future. The stratification approach was successful in balancing the work loads for the Forest Service and BLM units being reviewed; however a few provinces continued to conduct the majority of the reviews.

Teams reached consensus responses to most questions but were occasionally unable to agree on a single response to a question. In these instances, the Interagency Analysis Team and RIMT determined the most appropriate response

through a group leveling process that aimed for consistency of interpretation as its main discussion criteria.

The 1998 Implementation Monitoring Program built upon experiences from the 1996 Pilot Implementation Monitoring Program and the 1997 Program that were characterized by successful interagency, interdisciplinary, and public participation.

The 1998 program was also characterized by teamwork that surrounded discussions facilitated by questionnaires. The struggle to interpret and answer questions together as monitoring teams is the driving feature of the review process that does more to foster understanding and trust between team members than any other aspect of the program. The 1998 questionnaires were modified according to PIMT recommendations from 1997 program critiques. Given the scope of questions (over a hundred questions), not all modifications have yet been made. Question revision is expected to continue as an ongoing annual part of the monitoring process. Refer to the report, *_Results of the FY 1996 (Pilot Year) Implementation Monitoring Program,* pp. 30-34, for additional background information on the uses of the questionnaires by provincial teams.

Developing and maintaining consistent region-wide evaluation is critical to the success of NFP implementation monitoring. FY 1998 PIMT reviews were more consistent than the FY 1997 reviews and greatly more consistent than pilot year reviews. The annual question editing process has, by acknowledgment from the PIMTs, aided the quest for consistency.

There are still some irrelevant questions. The RIMT continues to review the value of asking questions that have low levels of applicability.

Due to the way timber sales were selected for review in 1998 (random sample of all sales),

those provinces with higher timber sale volumes have the largest monitoring workload. Efforts to make future project selection procedures as equitable as possible continue into FY 1999.

The FY 1997 program found a significant difference in noncompliance between harvested and nonharvested sales. The selection of harvested sales allows reviews to assess both project planning and administration issues. This emphasizes the need to focus monitoring on completed actions.

While most reviews appeared to have been conducted in a very objective manner, some team members did feel pressure to avoid "Not Met" responses. Team leaders need to continually reinforce the value of objectivity and the minimization of bias.

The FY 1998 watershed scale assessment helped clarify and modify the relevant questions; led to a significant revision of the questionnaire; provided information which focused on 5th field watersheds as the appropriate scale for review; and provided information useful in refining the review process to help guide PIMTs.

Part 4 - Conclusions and Recommendations

These summary conclusions and recommendations have been placed in four categories: management direction, clarification of S&Gs, clarification of when S&Gs apply, and improvements to the monitoring process. These categories provide a framework for follow-up needs by focusing on general problem areas and specific actions.

The management direction category contains issues for which recommendations are based on findings where S&Gs are clearly stated and understood. For these issues, the recommended action is for regional management to reaffirm commitment to these S&Gs and communicate the expectation of full compliance in the future.

The clarification of the S&Gs category addresses issues for which the monitoring results indicate difficulties in understanding, interpretation, and implementation of the S&G. As recommended in the FY 1997 report, issue resolution teams or interagency groups should address the S&G inconsistencies and field interpretations. Results of these (now ongoing) efforts should lead to greater consistency and efficiency in implementation of the S&Gs.

The third category, clarification of when and where S&Gs apply, contains issues concerning when, where, and to which agency a specific S&G applies. Many of these issues were resolved through rewording of questions and redesign of the FY 1998 questionnaire. Some of these issues arise when the ROD implies that the S&G applies to all activities, when the intent would have been more appropriately applied to some activities (e.g., timber sales) and not others (e.g., hazard tree removal, road right-of-

way blowdown removal). Others apply to programmatic matters rather than site-specific issues.

The fourth category, improvements to the monitoring process, contains issues related to the monitoring process that arose during the year's review and reporting efforts. In these cases, the continuous improvement process based on PIMT feedback to the RIMT continues to bring efficiencies to the NFP Implementation Monitoring Program.

Management Direction

The Provincial Monitoring Teams, who conducted the field monitoring reviews; the Regional Monitoring Team, who analyzed the Provincial Team reports and prepared the draft and final reports; and the Interagency Analysis Teams who further analyzed the field data all concluded that FY 1998 findings demonstrate high levels of compliance with the ROD and its S&Gs. Instances of noncompliance were anticipated to have minor biological effects at the regional scale and generally had low-to-moderate effects at the local project-level scale.

Based on that summary conclusion, the RIMT recommends no major changes in management direction. The RIMT does, however, recommend the following actions to improve NFP implementation.

Emphasize direction, training, and information for the following:

- Meeting the Riparian Reserve requirements of the ROD and its S&Gs.
- Meeting the Aquatic Conservation Strategy requirements of the ROD and its S&Gs.
- Meeting the coarse woody debris requirements of the ROD and its S&Gs.
- Meeting green tree retention requirements of the ROD and its S&Gs.
- Improved coordination between project planning staff/decision-makers and contract administrators to ensure that planned actions are fully communicated and carried out as on-the-ground implementation.
- Meeting the snag requirements of the ROD and its S&Gs.
- Distribution of the Regional FY 1998 Implementation Monitoring Report to field offices with direction to adopt procedures and recommendations as appropriate.
- Evaluate regional timber sale databases for opportunities to improve compatibility, usefulness, and accuracy.

Clarification and Improvements to the ROD and its S&Gs

The FY 1998 Monitoring Program, as in the previous two years' programs, provided field units, through the Provincial Monitoring Teams, opportunities to identify difficulties with understanding and interpreting the ROD and its S&Gs. Some S&Gs are allocation-specific, others agency-specific, others time-specific, and others apply to programs more directly than

S&Gs. Although a number of S&Gs continue to be cited as being ambiguous and difficult to understand and interpret, there were no significant problems identified in FY 1998. There continues to be room, however, for improving and clarifying S&Gs to reduce multiple interpretations at the field level and to increase field unit efficiencies through clarification of ROD and S&G direction for:

- Hazard tree removal.
- Snags.
- Coarse woody debris.
- Riparian Reserve establishment for wetlands of less than one acre.
- How to maintain legacy trees given the constraints of operational needs and safety concerns.
- Resolve differing interpretations of how trees are selected under BLM Green Tree Retention guidelines.
- Appropriate silvicultural treatments in Riparian Reserves.

Such clarification can be facilitated by findings generated not only through implementation monitoring, but also through effectiveness monitoring and validation monitoring. ROD intention is that some of these clarifications are to be developed on a province-by-province basis. Action on these items is needed.

Clarification of When S&Gs Apply

projects. Most of the pilot year recommendations in this area were considered

in the design, training, and instruments used in the FY 1998 program.

Recommendations

- Provide explicit guidance to the field on meeting S&Gs for actions relating to programmatic versus project requirements.
- Provide explicit guidance to field units on how to apply S&Gs for green tree retention, snags, coarse woody debris, and Aquatic Conservation Strategy objectives in areas designated for fuel breaks or risk reduction efforts.
- Provide guidance for green tree retention requirements for group selection and individual tree selection.

Improvements to the Monitoring Process

NFP implementation monitoring features continue to facilitate credible results: intergovernmental, interagency team selection; training; project selection; field review evaluations; and cost containment.

The following list contains suggestions and recommendations from the Province Review Teams for implementation monitoring process improvement.

Recommendations

Monitoring Objectives

- Continue project-level reviews of key activities (i.e., timber sales).
- Expand implementation monitoring to assess S&Gs that address

Cost Containment

programmatic functions and planning issues in landscape-level and watershed-level contexts.

Training and Orientation

- Continue with the one-day, pre-season workshop for PIMT leaders and capitalize on the experiences of FYs 1996, 1997, and 1998 leaders.
- Continue to provide more detailed guidance on how to answer questions.

Provincial Monitoring Teams

- Provincial Monitoring Teams should be strengthened through active, personal recruitment of team members from federally recognized Tribes. Although federally recognized Tribes have usually been afforded opportunities to participate in reviews through regular agency notification procedures, their status as sovereign governments warrants personal contact regarding participation.
- Continue to draw non-federal team membership from Provincial Advisory Committees (PACs).
- Continue to involve purchasers' representatives and contractors where possible in project reviews.

Sampling

- Continue to stratify sample populations so that maximal effort will go to projects having greater complexity or importance.
- Continue to focus monitoring reviews on actions that have been implemented on the ground to some extent.

- Continue to limit project selection to the highest priorities identified by the PACs, the field units, and the RIEC.
- Continue to address monitoring cost efficiency.
- Keep cost accounting requirements to those of past years' programs.

Communication

- Field units need ongoing information sources and contacts for specific applications, changes, updates, guidance, and clarification on the ROD and its S&Gs (e.g., protocols for Survey and Manage species surveys).

Follow-Up

- Recommend that agencies inform subordinate units about specific monitoring concerns so that corrective actions can be taken.
- Continue to use monitoring as a tool to extend the useful life cycles of BLM and Forest Service land management plans.

The Questionnaire

- Continue to refine the questionnaire based on PIMT critiques.
- Continue to provide opportunities for the Provincial Monitoring Teams to identify and help clarify monitoring questions (or the associated S&Gs) that are unclear, ambiguous, or of questionable biological value.
- Continue to improve training and direction for PIMTs that is aimed at achieving better question response consistency.

Acknowledgments

Various agencies and PACs have reviewed and commented on the draft results that are summarized in this report. The Regional Monitoring Team thanks everyone who contributed to another successful NFP Implementation Monitoring Program, particularly those who actively participated in the field monitoring process.

Special thanks go to Provincial Monitoring Team leaders, Provincial Monitoring Team members, PACs, and Mary Schoenborn for document preparation.

Appendix A
FY 1998 Timber Sale Compliance by Individual Sale

Timber Sale

ID#	Exceeded	Met	Not Met	Not Capable	Not Applicable	Compliance % *
1	1	40	0	0	72	100.0
2	0	26	13	0	74	66.7
3	0	33	0	1	79	100.0
4	0	39	0	0	74	100.0
5	3	25	0	0	85	100.0
6	0	46	4	0	63	92.0
7	0	31	1	0	81	96.9
8	1	27	0	0	85	100.0
9	1	42	2	4	64	93.9
10	2	33	1	1	76	97.3
11	2	43	0	0	68	100.0
12	5	33	0	0	75	100.0
13	4	34	0	3	72	100.0
14	3	38	1	0	71	97.6
15	3	38	1	2	69	97.7
16	0	39	0	0	74	100.0
17	0	35	3	1	74	92.3
18	1	21	0	0	91	100.0
19	2	36	1	0	74	97.4
20	0	16	5	1	91	77.3
21	0	31	1	1	80	97.0
22	0	33	0	1	79	100.0
23	2	36	0	0	75	100.0
24	0	28	2	0	83	93.3
Total	30	803	35	15	1,829	96.0

*Responses of exceeded, met, and not capable were considered to have met the compliance criteria (from a biological perspective) associated with ROD S&Gs.

Appendix B

FY 1998 Timber Sale Compliance by S&Gs

1998 IMPLEMENTATION QUESTIONNAIRE: TIMBER SALES (V3.0: 6/23/98) Instructions

Please complete a questionnaire and narrative report for each timber sale. An electronic version of your report should be submitted by October 1, 1998.

Each question has five potential responses as to how well the project meets the standards and guidelines (note: some questions can only be answered met or not met).

- **Exceeded** the biological requirements of the S&G (e.g., the S&Gs call for 240 linear feet of logs per acre greater than 20 inches in diameter and 20 feet long and the project retained 320 linear feet of such logs, the project “exceeded” the S&G);
- **Met** the S&G (if, in the above example, 240 feet of such logs were retained);
- **Not Met** S&G (if, in the above example, 180 feet of such logs were retained - but it was possible to have retained 240 feet);
- **Not Capable of Meeting** the S&G (if, in the above example, 180 feet of such logs were retained - but the site did not have enough 20 inch logs to meet the S&G. Thus, the S&G was not met, but there was no way to meet it); and
- **Not Applicable** (for example, if a question pertains to management of a Survey and Manage species and there are no occurrences of the species in the project area - mark NA. In the previous examples, a response of not applicable should not occur for regeneration harvests.)

Responses of “exceeded”, “not met”, or “not capable” of meeting **MUST** be explained. The potential biological effects of these situations will be summarized in the regional report. To facilitate the regional report, team reports should address local biological effects (positive, no effect, and negative effects - low, medium, or high).

Where post-NFP amendments or NFP-directed analyses have modified initial S&Gs, the new, modified requirements should be used to determine compliance. Such situations must be summarized in the team report. The team will identify all S&G questions that have been locally modified, cite the modification document, and describe the modification.

Some questions have a secondary question in parentheses. Answer both questions, but **DO NOT** base your response on meeting the S&G on the secondary question. For example, the primary question asks “Were the results of Watershed Analysis used to support the decision-making process?” The secondary question asks “Is the project consistent with the Watershed Analysis?” If a Watershed Analysis was used, the correct response is “met” - regardless of how the secondary question is answered.

Comment on unclear questions, if the S&G is problematic, or if the team failed to reach consensus.

For efficiency, some units may fill in the answers to the questions prior to the site visit. If the team decides on a response different from the unit’s response, the team’s response should be

recorded. Such differences in response should be explained in the comment section. When a timber sale has a permanent road associated with it (construction, reconstruction, or major maintenance), the road and timber sale should be addressed as a single action. If the road is in the timber sale contract and the road will be a system road then the additional “road” questions should be filled out.

The questions have been segregated into several categories. You may not have to answer all questions, but you do have to answer all questions pertaining to the type of timber sale being reviewed. The chart below indicates the appropriate section to complete.

	Section in Questionnaire						
Land Use Allocation	ALL (General)	LSR/MLSA	Riparian Reserves	Matrix	AMA	Species	Research
LSR/MLSA	X	X	X			X	X
Matrix	X		X	X		X	X
AMA	X		X		X	X	X

Timber Sale Questionnaire

Question			Comments
All Land Allocations			
1	Ex	0	Has the timber sale undergone required site-specific analysis? R13 Sale 2: Unplanned harvest occurred outside of area covered by EA. Sale 20: EA did not adequately disclose road construction, road location, and reasons for riparian reserve thinning.
	M	22	
	NM	2	
	NC	0	
	NA	0	
	%	91.7	
2	Ex	3	Does the timber sale comply with regulatory requirements for public participation and administrative appeal? R13 Sale 10: Exceeded, extra public involvement via public meetings and field trips. Sale 12: Exceeded, considerable extra public involvement. Sale 14: Exceeded, extra public involvement via newsletter, open house, and field trips.
	M	21	
	NM	0	
	NC	0	
	NA	0	
	%	100	
3	Ex	0	Have analyses been conducted with coordination and consultation occurring to ensure consistency under existing laws (NEPA, ESA, Clean Water Act)? R54,A2-3,C1 Sale 2: Unplanned harvest occurred outside of area considered under NEPA and ESA.
	M	22	
	NM	1	
	NC	0	
	NA	1	
	%	95.7	
4	Ex	0	In situations where more than one set of S&Gs apply (i.e., overlapping land use allocations), have the more restrictive S&Gs been followed? R7-8,C1-2
	M	19	
	NM	0	
	NC	0	
	NA	5	
	%	100	
5	Ex	0	Has the timber sale avoided restricting tribal treaty rights in accordance with the Record of Decision? R54-55,C16
	M	11	
	NM	0	
	NC	0	
	NA	13	
	%	100	
Late-Successional Reserves/Managed Late-Successional Areas			
6	Ex	0	Has an Initial Late-Successional Reserve Assessment / Late-Successional Reserve Assessment / Managed Late-Successional Area Assessment been reviewed by and found consistent by the Regional Ecosystem Office prior to habitat manipulation activities in LSRs or MLSAs? R57,A7,C11,C26 Sale 2: Unplanned harvest occurred without LSRA.
	M	1	
	NM	1	
	NC	0	
	NA	22	
	%	50	

Question			Comments
7	Ex	0	If treatment was not exempted from review, have thinning, salvage, or silvicultural treatments within LSRs been reviewed and considered consistent by the Regional Ecosystem Office? If treatment was exempted from Regional Ecosystem Office review, explain. C12-13 Sale 2: Unplanned harvest was not reviewed by REO.
	M	1	
	NM	1	
	NC	0	
	NA	22	
	%	50	
8	Ex	0	Was the project consistent with the Late-Successional Reserve Assessment and did it comply with the stocking, snag, coarse woody debris, and other parameters upon which an REO consistency finding (or exemption from REO review) was based?
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
9	Ex	0	Have timber management activities within the 100-acre spotted owl Late-Successional Reserves complied with S&Gs for Late-Successional Reserves? C10-11 Sale 2: Unplanned harvest did not consider LSR objectives.
	M	0	
	NM	1	
	NC	0	
	NA	23	
	%	0	
10	Ex	0	In LSR timber harvest units west of the Cascades, have stands over 80 years old (110 years in the North Coast Adaptive Management Area) been excluded? C12
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
11	Ex	0	Has the purpose of silvicultural treatments in LSRs west of the Cascades (precommercial and commercial thinning) been to benefit the creation and maintenance of late-successional forest conditions? C12
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
12	Ex	0	Have silvicultural and risk reduction activities in <u>younger stands</u> in LSR/MSLAs east of the Cascades or in the Klamath Provinces of Oregon and California accelerated development of late-successional conditions while making the future stand less susceptible to natural disturbances? C13
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
13	Ex	0	Have silvicultural and risk reduction activities in <u>late-successional stands</u> in LSR/MSLAs east of the Cascades or in the Klamath Provinces of Oregon and California maintained LSR objectives and clearly provided a greater assurance of long-term habitat maintenance by reducing the threat of catastrophic insect, disease, and fire events? C12-13
	M	0	
	NM	0	
	NC	0	
	NA	24	

Question			Comments
	%	----	
14	Ex	0	Has salvage been limited to disturbed sites that are greater than 10 acres in size and have less than 40 percent canopy closure? C14 Sale 2: Unplanned salvage occurred in areas <10 acres in size.
	M	0	
	NM	1	
	NC	0	
	NA	23	
	%	0	
15	Ex	0	Have all standing live trees been retained in salvage areas (except as needed to provide reasonable access or for safety)? C14-15
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
16	Ex	0	Have snags that are likely to persist (until the stand reaches late-successional conditions) been retained in salvage areas? C14
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
17	Ex	0	Has coarse woody debris been retained in salvage areas in amounts so that in the future there will be coarse woody debris levels similar to those found in naturally regenerated stands? C15
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
18	Ex	0	Has retained coarse woody debris in salvage areas approximated the species composition of the original stand? C15
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
19	Ex	0	Have green-tree and snag guidelines in salvage areas been met before those for coarse woody debris? C15 Sale 2: Snags were removed without consideration of LSR needs.
	M	0	
	NM	1	
	NC	0	
	NA	23	
	%	0	
20	Ex	0	If salvage does not meet the general guidelines, has it focused on areas where there is a future risk of unacceptable large scale fire or large scale insect damage? C15 Sale 2: Unplanned harvest was related to salvage, not risk reduction.
	M	0	
	NM	1	
	NC	0	

Question			Comments
	NA	23	
	%	0	
21	Ex	0	If access to salvage sites was provided and some general guidelines were not met, did the action ensure that a minimum area was impacted and that the intent or future development of the LSR was not impaired? C15-16
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
22	Ex	0	Do fuel management and fire suppression activities within LSRs/MLSAs minimize adverse impacts to late-successional habitat and emphasize maintaining late-successional habitat? C17
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
23	Ex	0	Have hazard reduction and other prescribed fire applications been reviewed by and considered consistent by the Regional Ecosystem Office prior to completion of the fire management plan? C18
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
24	Ex	0	Has the project avoided the introduction of nonnative plants and animals into Late-Successional Reserves (if an introduction is undertaken, has an assessment shown that the action will not retard or prevent the attainment of LSR objectives)? C19
	M	2	
	NM	0	
	NC	0	
	NA	22	
	%	100	
25	Ex	0	Have silviculture, salvage, and other multiple-use activities in Managed Late-Successional Areas been guided by the objective of maintaining adequate amounts of suitable habitat for the northern spotted owl? C26
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
Watershed Analyses/Aquatic Conservation Strategy/Riparian Reserves			
26	Ex	0	If required, has a Watershed Analysis been completed for watershed(s) encompassing the project area (required prior to timber harvest, salvage, or management activities in key watersheds, roadless areas, or Riparian Reserves)? R55-56,A7,B12,B17,B20-30,C3,C7,E20-21
	M	22	
	NM	0	
	NC	0	
	NA	2	
	%	100	
27	Ex	0	Were the results of Watershed Analysis used to guide and support findings by decision-makers that activities are consistent with Aquatic Conservation Strategy
	M	22	

Question			Comments
	NM	0	Objectives? B10 Is the project consistent with the Watershed Analysis?
	NC	0	
	NA	2	
	%	100	
28	Ex	0	Have surveys been conducted to locate all streams and water bodies in the project area (i.e., for all five stream and water categories)? C30
	M	24	
	NM	0	
	NC	0	
	NA	0	
	%	100	
29	Ex	0	Have riparian reserve boundaries been established for fish bearing streams (the greater of: top of the inner gorge; outer edges of the 100-year flood plain; outer edges of riparian vegetation; slope distance of two site potential tree heights; slope distance of 300 feet; or as modified)? If interim boundaries were modified, explain. C30
	M	15	
	NM	0	
	NC	0	
	NA	9	
	%	100	
30	Ex	0	Have riparian reserve boundaries been established for permanently flowing, non-fish bearing streams (the greater of: top of the inner gorge; outer edges of the 100-year flood plain; outer edges of riparian vegetation; slope distance of one site potential tree height; slope distance of 150 feet; or as modified)? If interim boundaries were modified, explain. C30
	M	20	
	NM	0	
	NC	0	
	NA	4	
	%	100	
31	Ex	0	Have riparian boundaries been established for seasonally flowing or intermittent streams, wetlands <1 acre, and unstable areas (the greater of: the extent of unstable/potentially unstable areas; stream channel and extent to the top of the inner gorge; outer edges of riparian vegetation; slope distance of one site potential tree height; slope distance of 100 feet; or as modified)? If interim boundaries were modified, explain. C30
	M	22	
	NM	1	
	NC	0	
	NA	1	
	%	96	
			Sale 21: Small wetland and intermittent waterway were not included in riparian reserves.
32	Ex	0	Have riparian reserve boundaries been established for lakes and natural ponds (the greater of: outer edges of riparian vegetation; extent of seasonally saturated soil; extent of unstable and potentially unstable areas; slope distance of two site potential tree heights; slope distance of 300 feet; or as modified). If interim boundaries were modified, explain. C31
	M	3	
	NM	0	
	NC	0	
	NA	21	
	%	100	
33	Ex	0	Have riparian reserve boundaries been established for constructed ponds and reservoirs and wetlands greater than 1 acre (the greater of: outer edges of riparian vegetation; extent of seasonally saturated soil; extent of unstable and potentially unstable areas; slope distance of one site potential tree height; slope distance of 150 feet from the edge of the wetland or the maximum pool elevation; or as modified). C30
	M	4	
	NM	0	
	NC	0	
	NA	20	
	%	100	
34	Ex	1	Have Riparian Reserves been excluded from timber harvest except for

Question			Comments
	M	20	<p>treatments necessary to obtain Aquatic Conservation Strategy objectives (or for salvage/hazard tree removal if Watershed Analysis determines that present and future coarse woody debris needs are met and ACS objectives are not adversely affected)? C31-32</p> <p>Sale 2: Harvest did not follow prescription in some units. Sale 10: Exceeded, treatment was exceptionally site specific and detailed. Sale 14: Riparian reserve prescription intended to maintain pine, not promote ACS objectives. Sale 20: Riparian reserve treatments did not promote (and hindered) attaining ACS objectives.</p>
	NM	3	
	NC	0	
	NA	0	
	%	88	
35	Ex	0	Do fuel treatments and fire suppression strategies meet Aquatic Conservation Strategy objectives and minimize disturbance of riparian ground cover and vegetation? C35
	M	18	
	NM	0	
	NC	0	
	NA	6	
	%	100	
36	Ex	0	Have prescribed burn projects and prescriptions been designed to contribute to the attainment of the Aquatic Conservation Strategy objectives? C35
	M	10	
	NM	0	
	NC	0	
	NA	14	
	%	100	
37	Ex	0	Has delivery of retardant, foam, or additives to surface waters for fire and fuels management been minimized? C35
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
38	Ex	0	<p>Have trees which were felled to reduce safety risks been kept on-site when needed for coarse woody debris? C37</p> <p>Sale 10: Live skyline guy trees dropped for safety reasons and removed.</p>
	M	14	
	NM	1	
	NC	0	
	NA	9	
	%	93	
Matrix			
39	Ex	0	<p>For regeneration harvests in western Oregon and Washington north of and including the Willamette National Forest and the Eugene District Bureau of Land Management, have 240 linear feet of logs per acre (greater than or equal to 20 inches been retained in diameter and 20 feet long and decay class 1 and 2)? C40</p> <p>Sale 20: CWD not met on some units.</p>
	M	2	
	NM	1	
	NC	0	
	NA	21	
	%	67	
40	Ex	0	For regeneration harvests in eastern Oregon and Washington, and western Oregon south of the Willamette National Forest and the Eugene Bureau of Land Management District, has a minimum of 120 linear feet of logs per acre (greater
	M	5	

Question			Comments
	NM	1	than or equal to 16 inches in diameter and 16 feet long and in decay class 1 and 2) been retained? C40 Sale 17: CWD not met on some units.
	NC	0	
	NA	18	
	%	83	
41	Ex	0	For regeneration harvests in northern California National Forests, have the local forest plan standards and guidelines for coarse woody debris been met? C40
	M	1	
	NM	0	
	NC	1	
	NA	22	
	%	50	
42	Ex	0	For Forest Service and BLM, do down logs left for coarse woody debris reflect the species mix of the original stand? C40 Sale 20: Cedar was removed from unit.
	M	15	
	NM	1	
	NC	1	
	NA	7	
	%	94	
43	Ex	1	In areas of partial harvest, have coarse woody debris guidelines been modified to reflect the timing of stand development cycles? C40 Sale 15: Exceeded, team rated as exceeded.
	M	15	
	NM	0	
	NC	0	
	NA	8	
	%	100	
44	Ex	0	Has coarse woody debris already on the ground been retained and protected to the greatest extent possible during treatment? C40 Sale 20: Some existing CWD (cedar) was removed. Sale 24: CWD >120 feet was removed.
	M	18	
	NM	2	
	NC	1	
	NA	3	
	%	90	
45	Ex	0	Have down logs been left within forest patches that are retained under the green-tree retention guidelines? C41
	M	10	
	NM	0	
	NC	0	
	NA	14	
	%	100	
46	Ex	1	For National Forests, outside the Oregon Coast Range and the Olympic Peninsula Provinces and the Mount Baker-Snoqualmie National Forest, has at least 15 percent of each cutting unit been retained? C41 Sale 6: Group selection in one unit did not provide 15% green tree retention. Sale 9: Exceeded, retained green trees over 25-50% of sale.
	M	8	
	NM	1	
	NC	0	
	NA	14	
	%	90	
47	Ex	0	On the Mt. Baker-Snoqualmie National Forest, have site specific prescriptions

Question			Comments
	M	1	been developed to maintain green trees, snags, and down logs? C41
	NM	0	
	NC	0	
	NA	23	
	%	100	
48	Ex	1	Has 70 percent of the total retained area occurred as aggregates of moderate to larger size (0.5 to 2.5 acres or 0.2 to 1 hectare) with the remainder as dispersed structures? R36,C41-42 Sale 5: Exceeded, retained green trees in clumps significantly >0.5-2.5 acres. Sale 6: Green tree retention did not provide dispersed and aggregated trees.
	M	5	
	NM	1	
	NC	0	
	NA	17	
	%	86	
49	Ex	0	Have patches and dispersed retention included the largest, oldest, decadent or leaning trees and hard snags occurring in the unit? C42 Sale 6: Did not identify the largest, oldest, decadent trees for retention.
	M	6	
	NM	1	
	NC	1	
	NA	16	
	%	88	
50	Ex	0	Are green tree retention and dispersed retention patches being retained indefinitely? C42 Sale 6: Green trees were not identified for indefinite retention.
	M	7	
	NM	2	
	NC	0	
	NA	15	
	%	78	
51	Ex	0	For lands administered by the BLM in California, have green tree and snag retention been managed according to existing District Plans, which emphasize retention of old-growth? C41
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
52	Ex	0	For BLM lands north of the Grants Pass line, and including all of the Coos Bay District, outside of the South Willamette-North Umpqua Area of Concern, have projects within the 640 acre Connectivity/Diversity Blocks retained 12 to 18 green trees per acre? C42
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
53	Ex	0	For BLM lands north of the Grants Pass line, and including all of the Coos Bay District, outside of the South Willamette-North Umpqua Area of Concern, has the project avoided reducing the amount of late-successional forest to less than 25-30 percent of each 640 acre Connectivity/Diversity Block? C42
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	

Question			Comments
54	Ex	1	For BLM lands north of Grants Pass and including the entire Coos Bay District, were 6 to 8 green trees per acre left in harvest units in the remainder of the matrix (General Forest Management Area)? C42 Sale 23: Exceeded, retained >9 trees per acre in harvest units.
	M	4	
	NM	0	
	NC	0	
	NA	19	
	%	100	
55	Ex	1	For Medford District, BLM, lands south of Grants Pass, were 16 to 25 large green trees per acre retained in harvest units? C42 Sale 19: Exceeded, retained large numbers of large trees.
	M	0	
	NM	0	
	NC	0	
	NA	23	
	%	100	
56	Ex	0	For BLM lands, has the project avoided reducing the amount of late-successional forest to less than 25- 30 percent of each Connectivity/Diversity Block (in Old-growth Emphasis Areas in the Eugene District and the seven Managed Pair Areas and two Reserved Pair Areas on the Coos Bay District surrounding Designated Conservation Area OD-33)? These areas are designated as Connectivity/Diversity Blocks in BLM RMPs. C42-43
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
57	Ex	0	For BLM lands, have 12-18 green trees per acre been retained in Connectivity/Diversity Blocks (in Old-growth Emphasis Areas in the Eugene District and to the seven Managed Pair Areas and two Reserved Pair Areas on the Coos Bay District surrounding Designated Conservation Area OD-33)? Designated as Connectivity/Diversity Blocks in BLM RMPs. C42-43
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
58	Ex	2	Did the project employ practices which minimize soil and litter disturbance from harvest methods, yarding, and heavy equipment? C44 Sale 13: Exceeded, extra protection afforded to soil and litter. Sale 14: Exceeded, used less ground disturbing techniques. Sale 17: Small area had unnecessary skidding impacts. Sale 19: Poor waterbar construction resulted in some unreasonable soil disturbance.
	M	17	
	NM	2	
	NC	0	
	NA	3	
	%	90	
59	Ex	0	Have specific measures been undertaken to reduce the intensity and frequency of site treatment practices? C44
	M	21	
	NM	0	
	NC	0	
	NA	3	
	%	100	
60	Ex	0	Has the project avoided the harvest of late-successional forest in watersheds where little old-growth remains (i.e., watersheds where 15 percent or less of the federal forest-capable lands are late-successional [stands 80 years and older])? C44 [Note: If more than 15 percent of the watershed is late-successional, the project has "met" requirements]
	M	15	
	NM	0	
	NC	0	

Question			Comments
	NA	9	
	%	100	
Species			
61	Ex	0	Has information on known sites for Survey and Manage species (Survey Strategy 1) been used in the design modification and implementation of activities? C4,C43-48
	M	22	
	NM	0	
	NC	0	
	NA	2	
	%	100	
62	Ex	0	Has the project managed known sites for Survey and Manage species (Survey Strategy 1)? C4-5
	M	5	
	NM	0	
	NC	0	
	NA	19	
	%	100	
63	Ex	3	Has the project surveyed for Survey and Manage species (Survey Strategy 2) prior to ground disturbing activities? C4-5 Sale 11: Exceeded, surveyed for survey and manage species and protection buffer species prior to requirements. Sale 12: Exceeded, surveyed for survey and manage species prior to requirements. Sale 13: Exceeded, surveyed for survey and manage species prior to requirements.
	M	4	
	NM	0	
	NC	0	
	NA	17	
	%	100	
64	Ex	0	Have required management actions occurred for the following species (if in the project area). If none of the taxa are present then mark Not Applicable (NA). If management for any taxa does not meet requirements then mark Not Met (NM) and explain. <ul style="list-style-type: none"> • Oxyporous nobilissimus (600 acres) C4-5; • rare and endemic fungi (160 acres) C4-5; • Ptilidium californicum (establish LSR) C20; • Ulota meglospora (establish LSR) C20; • Aleuria rhenana (establish LSR) C20; • Sarcosoma mexicana (establish MLSA) C20,27; • Otidia tidealeporina (establish LSR) C20 • Otidia onotica (establish LSR) C20 • Otidia smithii (establish LSR) C20; • Shasta salamanders (establish LSR) C20 • Larch Mountain salamanders (establish MLSA) C28 • Siskiyou Mountain salamanders (establish MLSA) C28 • Del Norte salamanders (establish MLSA) C20,28; • great gray owl nest sites (1/4 mile zone), meadows, and openings C21; • Brotherella roellii (establish MLSA) C27 • Buxbaumia viridis (establish MLSA) C27 • Rhizomnium nudum (establish MLSA) C27 • Schistostega pennata (establish MLSA) C27
	M	3	
	NM	0	
	NC	0	
	NA	21	
	%	100	

Question			Comments
			<ul style="list-style-type: none"> • <i>Tetraphis geniculata</i> (establish MLSA) C27.
65	Ex	0	Have management activities adjacent to the 100-acre spotted owl Late-Successional Reserves been designed to reduce risks from natural disturbance to these areas? C10-11
	M	4	
	NM	0	
	NC	0	
	NA	20	
	%	100	
66	Ex	0	In marbled murrelet habitat, within 50 miles of the coast, have marbled murrelet surveys been conducted to protocol in areas planned for timber harvest? C10,12,D15
	M	3	
	NM	0	
	NC	0	
	NA	21	
	%	100	
67	Ex	0	If marbled murrelet occupation is documented, has all contiguous existing and recruitment habitat for marbled murrelets within a 0.5-mile radius been protected to maximize interior old-growth habitat? C9-10,12
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
68	Ex	0	Have silvicultural treatments in non-murrelet habitat within the 0.5-mile murrelet circle been designed to protect or enhance suitable or replacement habitat? C12
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
69	Ex	0	Has protection been provided for caves, mines, and abandoned wooden bridges and buildings that are used as roost/hibernation sites for bats? C43,D10
	M	4	
	NM	0	
	NC	0	
	NA	20	
	%	100	
70	Ex	0	Have surveys for bats been conducted according to a standardized regional protocol? C43,D10
	M	2	
	NM	0	
	NC	0	
	NA	22	
	%	100	
71	Ex	0	Has timber harvest been prohibited within 250 feet of sites containing bats? C43,D10
	M	3	
	NM	0	
	NC	0	

Question			Comments
	NA	21	
	%	100	
72	Ex	0	Have site management measures been developed for sites containing bats? C43 Sale 9: Did not develop site management measures for bats.
	M	1	
	NM	1	
	NC	0	
	NA	22	
	%	50	
73	Ex	0	If Townsend's big-eared bats were found, have the appropriate state wildlife agencies been notified? C44
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
74	Ex	0	Have management prescriptions included special consideration for caves or mines known to be occupied by Townsend's big-eared bat? C44,D10
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
75	Ex	6	For both Forest Service and BLM lands: Have snags been retained within the harvest unit at levels sufficient to support species of cavity-nesting birds at 40 percent of potential population levels? C42 Sale 5: Exceeded, left snags sufficient to support birds at 70-100% of potential population levels. Sale 7: Snag levels were based on both matrix and riparian reserve acres, while the S&G allows only matrix acres. Sale 8: Exceeded, left snags sufficient to support birds at 100% of potential population levels. Sale 12: Exceeded, exceeded snag requirements. Sale 15: Exceeded, left snags sufficient to support birds at close to 100% of potential population levels. Sale 19: Exceeded, left snags sufficient to support birds at over 60% of potential population levels. Sale 23: Exceeded, left snags sufficient to support birds at over 60% of potential population levels. Sale 24: Snag levels were not determined prior to harvest and no provisions were made to meet S&G.
	M	8	
	NM	2	
	NC	7	
	NA	1	
	%	91	
76	Ex	1	Have 0.6 conifer snags (ponderosa and Douglas-fir) per acre, at least 15 inches in diameter or the largest available, and in the soft decay stage, been retained for the white-headed woodpecker and the pygmy nuthatch, if within their range and habitat? C46 Sale 1: Exceeded, left >0.6 snags per acre.
	M	7	
	NM	0	
	NC	2	
	NA	14	
	%	100	

Question			Comments
77	Ex	1	Have 0.12 conifer snags (mixed conifer and lodgepole pine in higher elevations of the Cascade Range) per acre, at least 17 inches in diameter or largest available, and in the hard decay stage, been retained for black-backed woodpecker, if within their range and habitat? C46 Sale 15: Exceeded, team rated as exceeded.
	M	7	
	NM	0	
	NC	1	
	NA	15	
	%	100	
78	Ex	1	Have some beetle infested trees been left for black-backed woodpeckers, if within their range and habitat? C46 Sale 5: Exceeded, left 12 beetle infested trees per acre in appropriate habitat.
	M	4	
	NM	0	
	NC	0	
	NA	19	
	%	100	
79	Ex	1	Have the needs of other cavity nesting species, including primary cavity nesters, been provided for (above and beyond the needs for white-headed woodpecker (0.6 snags/acre) and black-backed woodpecker/pygmy nuthatch (0.12 snags/acre)? C46-47 Sale 18: Exceeded, 300-350 cavities created in addition to snag retention.
	M	12	
	NM	0	
	NC	1	
	NA	10	
	%	100	
80	Ex	0	If snag requirements for cavity nesters were not met, was harvest prohibited? C46 Sale 9: Harvest occurred even though areas were deficient in snags. Sale 17: Harvest occurred even though areas were deficient in snags.
	M	2	
	NM	2	
	NC	0	
	NA	20	
	%	50	
81	Ex	0	Did the project use a standardized definition of hazard trees? C46
	M	15	
	NM	0	
	NC	0	
	NA	9	
	%	100	
82	Ex	0	In known lynx range, have site-specific timber harvest, roading, and fire management plans been developed? C48 Sale 9: Management plans for lynx were not developed.
	M	0	
	NM	1	
	NC	0	
	NA	23	
	%	0	
Adaptive Management Areas			
83	Ex	1	Has project planning in the Adaptive Management Area included early public involvement and coordination with other activities within the province? D6 Sale 12: Exceeded, considerable extra public involvement.
	M	3	
	NM	0	
	NC	0	

Question			Comments
	NA	20	
	%	100	
84	Ex	0	Within Adaptive Management Areas have S&Gs within current plans been considered during planning and implementation activities? C3
	M	4	
	NM	0	
	NC	0	
	NA	20	
	%	100	
85	Ex	0	Have projects in Late-Successional Reserves and Managed Late-Successional Areas within AMAs been managed according to the S&Gs for such reserves? D9
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
86	Ex	0	Have the S&Gs in current plans for hazard reduction been followed until approved Adaptive Management Area plans have been established? D8
	M	4	
	NM	0	
	NC	0	
	NA	20	
	%	100	
87	Ex	0	Has riparian protection been comparable to that prescribed for other federal land areas? D9
	M	4	
	NM	0	
	NC	0	
	NA	20	
	%	100	
88	Ex	0	Has analysis of Riparian Reserve widths also considered the contribution of these reserves to other, including terrestrial, species? D10
	M	4	
	NM	0	
	NC	0	
	NA	20	
	%	100	
89	Ex	0	Has the intent of the S&Gs for coarse woody debris, green tree and snag retention, identified for the matrix, been met? C41,D10
	M	3	
	NM	0	
	NC	0	
	NA	21	
	%	100	
90	Ex	0	Has the project avoided modifying late-successional forests in watersheds where little old-growth remains (i.e., watersheds where 15 percent or less of the federal forest-capable lands are late-successional [stands 80 years and older]) unless the role of those forests has been considered by Watershed Analysis prior to
	M	2	
	NM	0	

Question			Comments
	NC	0	their modification? D11
	NA	22	
	%	100	
91	Ex	0	Has the project met the S&Gs for Reserved Pair Areas for spotted owls in the Finney and Northern Coast Range Adaptive Management Area? D13-16
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	
92	Ex	1	Did the project employ practices which minimize soil and litter disturbance from harvest methods, yarding, and heavy equipment? C44,D11 Sale 10: Exceeded, many project design and mitigation features that greatly reduced negative effects.
	M	3	
	NM	0	
	NC	0	
	NA	20	
	%	100	
93	Ex	0	Have specific measures been undertaken to reduce the intensity and frequency of site treatment practices? C44,D11
	M	4	
	NM	0	
	NC	0	
	NA	20	
	%	100	
Research			
94	Ex	0	Have research activities been analyzed to ensure that there is no significant risk to Aquatic Conservation Strategy objectives and to watershed values? C38
	M	2	
	NM	0	
	NC	0	
	NA	22	
95	%	100	If research activities are not consistent with the S&Gs, have they been assessed by the Regional Ecosystem Office to ensure that they test critical assumptions of these S&Gs or produce results important to habitat development? R15,C4,C18,C38,D7,E3
	Ex	0	
	M	1	
	NM	0	
	NC	0	
96	NA	23	Have non-conforming research activities being located where they will have the least adverse effect upon the objectives of these S&Gs? R15,C4,C18,C38,D7,E3
	%	100	
	Ex	0	
	M	0	
	NM	0	
	NC	0	
	NA	24	
	%	----	

SUPPLEMENTAL QUESTIONS FOR ROADS ASSOCIATED WITH TIMBER SALES

Question			Comments
97	Ex	0	Has the project avoided building roads in the remaining portions of inventoried (RARE II) roadless areas in Key Watersheds? C7
	M	5	
	NM	0	
	NC	0	
	NA	19	
	%	100	
98	Ex	0	Is the project consistent with a road management or transportation management plan (includes; operations and maintenance, traffic regulations during wet periods, road management objectives, and inspection/maintenance for storm events)? C32 Sale 15: Road not closed.
	M	15	
	NM	1	
	NC	0	
	NA	8	
	%	94	
99	Ex	0	Have new culverts, bridges, and other stream crossings been designed to accommodate the 100-year flood, including bedload and debris? C33
	M	10	
	NM	0	
	NC	0	
	NA	14	
	%	100	
100	Ex	0	If new road construction in Late-Successional Reserves/Managed Late-Successional Areas was necessary, did the project keep new roads to a minimum, route roads through non-late-successional habitat, and minimize adverse impacts? C16
	M	1	
	NM	0	
	NC	0	
	NA	23	
	%	100	
101	Ex	0	Has the project reduced or maintained the net amount of roads in Key Watersheds? C7
	M	11	
	NM	0	
	NC	0	
	NA	13	
	%	100	
102	Ex	2	Have sediment deliveries to streams from roads been minimized? C32-33, B19-20 Sale 2: Road and waterhole are depositing sediment when they could have been removed. Sale 13: Exceeded, extra effort taken to minimize road disturbances. Sale 14: Exceeded, numerous design and mitigation techniques used to minimize sediments.
	M	16	
	NM	1	
	NC	0	
	NA	5	
	%	95	
103	Ex	0	Has fish passage been provided at road crossings of existing and potential fish-bearing streams? C32-33, B19-20
	M	7	
	NM	0	

Question			Comments
	NC	0	
	NA	17	
	%	100	
104	Ex	0	Has the project met Aquatic Conservation Strategy objectives for existing or planned roads by minimizing road and landing locations in Riparian Reserves? C32
	M	19	
	NM	0	
	NC	0	
	NA	5	
	%	100	
105	Ex	0	Has the project met Aquatic Conservation Strategy objectives for existing or planned roads by preparing road design criteria, elements, and standards? C32
	M	17	
	NM	0	
	NC	0	
	NA	7	
	%	100	
106	Ex	0	Has the project met Aquatic Conservation Strategy objectives for existing or planned roads by preparing operation and maintenance criteria? C32
	M	18	
	NM	0	
	NC	0	
	NA	6	
	%	100	
107	Ex	1	Has the project met Aquatic Conservation Strategy objectives for existing or planned roads by minimizing disruptions to natural hydrologic flow paths? C32 Sale 2: Waterbars were inadvertently plowed away. Sale 12: Exceeded, obliterated 4.9 miles of high risk roads.
	M	17	
	NM	1	
	NC	0	
	NA	5	
	%	95	
108	Ex	0	Has the project met Aquatic Conservation Strategy objectives for existing or planned roads by restricting sidecasting? C32
	M	16	
	NM	0	
	NC	0	
	NA	8	
	%	100	
109	Ex	0	Has the project met Aquatic Conservation Strategy objectives for existing or planned roads by avoiding wetlands? C32
	M	10	
	NM	0	
	NC	0	
	NA	14	
	%	100	
110	Ex	0	Has the project met Aquatic Conservation Strategy objectives for planned or existing roads by reconstructing roads and associated drainage features? C32
	M	14	

Question			Comments
	NM	1	Sale 2: Road to waterhole was depositing sediment and could have been reconstructed.
	NC	0	
	NA	9	
	%	93	
111	Ex	1	Has the project met Aquatic Conservation Strategy objectives for existing or planned roads by stabilizing and closing or obliterating roads? C32 Sale 2: Road to waterhole was depositing sediment and could have been stabilized or obliterated. Sale 13: Exceeded, 23.9 miles of road stabilized or decommissioned.
	M	17	
	NM	1	
	NC	0	
	NA	5	
	%	95	
112	Ex	0	Have herbicides, insecticides, and other toxic agents, and other chemicals been applied in a manner to avoid impacts to Aquatic Conservation Strategy objectives? C37
	M	3	
	NM	0	
	NC	0	
	NA	21	
	%	100	
113	Ex	0	Have water drafting sites been located to minimize adverse effects on stream channel stability, sedimentation, and in-stream flows? C37
	M	10	
	NM	0	
	NC	0	
	NA	14	
	%	100	

Appendix C

Provincial Implementation Monitoring Teams and the Projects They Reviewed

(Note: Timber sales are numbered and noted as TS.)

WASHINGTON

OLYMPIC PENINSULA

(10TS) Tie Timber Sale; Olympic National Forest

Team Leader: Ward Hoffman, Olympic National Forest

Team Members: Alexandra Bradley, Northwest Ecosystem Alliance, PAC
Ron Lee, EPA, PAC
Deanna Lynch, USFWS, representing PAC member
Jonathan Seil, Ecoforester, PAC
Trevin Taylor, Quileute Tribe Natural Resources, representing PAC member
John Wullschlager, NPS, representing PAC member

EASTERN WASHINGTON CASCADES

(9TS) Doe Timber Sale; Okanogan National Forest

Team Leader: Jim Furlong, Wenatchee National Forest

Team Members: Jodi Bush, USFWS
Lee Carlson, Yakama Indian Nation, PAC
Susan Crampton, PAC
Chris Hall, WA Dept. of Ecology
Ron Lee, EPA
Edwin Lewis, BIA
Tim McCracken, USFWS

(15TS) Eight Mile Timber Sale; Wenatchee National Forest

Team Leader: Tom Graham, Wenatchee National Forest

Team Members: Jodi Bush, USFWS
Lee Carlson, Yakima Indian Nation
Chris Hall, WA Dept. of Ecology
Edwin Lewis, BIA
Ruth Anne Miller, USFS
Bill Noble, USFWS

WESTERN WASHINGTON CASCADES

(7TS) Lyle Thin Timber Sale; Mt. Baker-Snoqualmie National Forest

Team Leaders: Gary Ketcheson (Field); Chris Hansen-Murray (Prewrite)
Mt. Baker-Snoqualmie National Forest

Team Members: Kate Benkert, USFWS
Steve Bubnick, EPA
Brian Jones, Summit Timber, PAC
Bob Penhale, WA Dept. of Ecology, PAC
Lance Raff, USFS
Phyllis Reed, USFS
Mike Swayne, Environmental Systems, PAC

SOUTHWEST WASHINGTON

(6TS) McToo Timber Sale; Gifford Pinchot National Forest

Team Leader: John Roland, Gifford Pinchot National Forest

Team Members: Gary Ahlstrand, NPS
Roy Burns, PAC
Kim Burkland, Central Cascades Alliance
Lee Carlson, Yakima Indian Nation
Philo Greg, PAC
Ron Lee, EPA
Pam Repp, USFWS
Mark Shaw, BPA
Paul Ward, Yakima Indian Nation

OREGON

OREGON COAST

(13TS) Big Elk Timber Sale; Siuslaw National Forest

Team Leader: Criag Snider, Siuslaw National Forest

Team Members: Kathy Berry, USFWS
Rennie Ferris, Ferris Nursery, Newport
Cole Gardner, Oregon Trout, PAC
Chuck Hawkins, BLM
Joe Linares, USFS

(20TS) Gidget Timber Sale; BLM Salem District

Team Leader: Craig Snider, Siuslaw National Forest

Team Members: Lisa Brown, Coast Range Association, PAC
Julie Fulkerson, USFWS
Cole Gardner, Oregon Trout, PAC
Chuck Hawkins, BLM
Angie Hernandez, USFWS
Garwin Yip, NMFS

(21TS) Aim High Timber Sale; BLM Eugene District

Team Leader: Craig Snider, Siuslaw National Forest

Team Members: Kathy Barry, USFS
Cole Gardner, Oregon Trout, PAC
Chuck Hawkins, BLM
Garwin Yip, NMFS

WILLAMETTE

(16TS) Lynx Ridge Timber Sale; Willamette National Forest

Team Leader: Rick Colvin, BLM Eugene District

Team Members: John Davis, USFWS
Cole Gardner, Oregon Trout, PAC
Paul Gnerer, BLM
Jim Johnson, OR Dept. of Agriculture, PAC
Ross Mickey, PAC
Tom Ortman, USFS
Don Wilbur, BLM

DESCHUTES

(5TS) Red Plague Timber Sale; Deschutes National Forest

Team Leader: Gery Ferguson, Deschutes National Forest

Team Members: Nancy Lee, USFWS
Tim Lillebo, Oregon Natural Resources Council, PAC
Susan Skakel, USFS
Chris Stecher, Mt. Bachelor Corp., PAC
Ted Young, Crown Pacific, PAC

(8TS) Grasshopper Salvage Timber Sale; Mt. Hood National Forest

Team Leader: Gery Ferguson, Deschutes National Forest

Team Members: John Davis, USFWS
Jeff Dillon, USFWS
Brad Fowler, PAC
Reis Hoyt, PAC
Ann Saxby, PAC

SOUTHWEST OREGON

(11TS) Squaw Elliot Timber Sale; Rogue River National Forest

Team Leader: Bob Gunther, BLM Coos Bay District

Team Members: Paul Ausbeck, BLM
Frank Bird, NMFS
Debra Kinsinger, USFWS
Wayne Kleckner, USFS
Craig Tuss, USFWS
Anita Ward, Member of the Public

(14TS) Deep Cut Timber Sale; Umpqua National Forest

Team Leader: Bob Gunther, BLM Coos Bay District

Team Members: Scott Center, USFWS
David Hill, PAC
Mike Oxford, BLM
Ron Yockim, PAC

(12TS) Water Thin Timber Salvage Sale and Road Construction; Siskiyou National Forest

Team Leader: Bob Gunther, BLM Coos Bay District

Team Members: Richard Blake, PAC
Sue Livingston, USFWS
Loren Wittenburg, BLM

(22TS) Old Dillard Salvage Timber Sale; BLM Roseburg District

Team Leader: Roger Evenson, Umpqua National Forest

Team Members: Jeff Davis, BLM
Francis Eatherington, PAC
Craig Tuss, USFWS
Keith Wilkinson, PAC
Ron Yockim, PAC

(23TS) Tokyo Ginger Timber Sale; BLM Medford District

Team Leader: John Ouimet, Umpqua National Forest

Team Members: Frank Bird, NMFS
Jeanette Griese, BLM
Dave Hill, PAC
Debra Kinsinger, USFWS
Wayne Kleckner, USFS
Craig Tuss, USFWS

(24TS) Sagaview Timber Sale; BLM Coos Bay District

Team Leader: John Ouimet, Umpqua National Forest

Team Members: Rich Blake, PAC
Sue Liningston, USFWS
Jim McConnell, BLM
Bob Progulske, USFWS
Don Rose, USFS
John Roth, NPS, Oregon Caves
George Smith, Coquille Tribe

KLAMATH

(17TS) Gardner Timber Sale; Winema National Forest

Team Leader: Laura Chapman, Six Rivers National Forest

Team Members: Doug Laye, USFWS

(19TS) Lower Spencer Salvage Timber Sale; BLM Klamath Falls Resource Area

Team Leader: Mike Bechdolt, BLM Lakeview District

Team Members: Doug Laye, USFWS
Leonard LeCaptain, USFWS
Gayle Sitter, BLM

CALIFORNIA

KLAMATH

(2TS) Ocean Salvage Timber Sale

Team Leader: Michelle Light, Mendocino National Forest

Team Members: Ron Clemenson, USFWS
Laura Fujii, EPA

(18TS) Powerline Timber Sale; BLM Redding Resource Area

Team Leader: Laura Chapman, Six Rivers National Forest

Team Members: Paul Roush, BLM

(1TS) Heiney Heli Timber Sale; Six Rivers National Forest

Team Leader: Lynda Karns, Klamath National Forest

Team Members: Nadine Kanim, USFWS
Cay Ogden, USFWS
Tom Reed, USFWS

NW SACRAMENTO

(4TS) Flow Multiproduct Timber Sale; Shasta-Trinity National Forest

Team Leader: Jim Zander, Shasta-Trinity National Forest

Team Members: Michael Bornstein, USFWS
Bill Branham, USFS
Steve Funk, USFS

CALIFORNIA COAST

(3TS) Hastings Timber Sale; Six Rivers National Forest

Team Leader: Laura Chapman, Six Rivers National Forest

Team Members: Robin Hamblin, USFWS
Hank Harrison, BLM
Chris Heppe, EPA
Ron Hoover, Sierra Pacific Industries
Paul Roush, BLM