

**FINAL REPORT**

March 3, 1997

# **Results of the FY 1996 (Pilot Year) 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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## Executive Summary

A crucial component of the Northwest Forest Plan (NFP) is monitoring implementation at a variety of scales. Successful implementation depends upon consistent application of the ecosystem-based strategy in the Record of Decision (ROD) and its Standards and Guidelines (S&Gs). This report explains the results and methods of the Regional Implementation Monitoring Pilot Program.

The objectives of the Pilot Program were twofold:

- Determine levels of timber sale compliance to ROD direction.
- Field test a regional interagency, interdisciplinary, public monitoring process.

At the request of the Regional Ecosystem Office (REO), an interagency Regional Monitoring Team developed a strategy to review 45 Forest Service and Bureau of Land Management (BLM) timber sales, a 10 percent sample of FY 1995 sales in the NFP region. The core of the review strategy was to answer a detailed questionnaire drawn from each of the S&Gs in the ROD. All 12 Provincial Monitoring Teams used the questionnaire to evaluate sale compliance.

Subsequent analyses of Provincial Monitoring Team findings by scientists from the Forest Service, BLM, Fish and Wildlife Service, and the REO concluded that:

- There was a 95 percent level of compliance to ROD direction.
- Adverse biological effects associated with instances of noncompliance appeared to be minimal at the regional scale.

Overall, the Forest Service and BLM have implemented the ROD and its S&Gs throughout the region. However, there is room for improvement in some areas. In some instances, efforts are already underway to address these issues.

The Regional Implementation Monitoring Team recommends:

- Additional management emphasis on the need to use known site information on Survey and Manage species, to strengthen compliance with efforts to control non-native species, to provide agency oversight of purchasers/contractors, and to facilitate efforts to consistently identify intermittent waterways.

- Clarification of ambiguous S&Gs associated with snag retention in young stands, hazard reduction in campgrounds and roadways, and the development of province-level guidance for salvage, snags, green tree retention, and coarse woody debris (CWD).
- Clarification of when S&Gs apply to different land use allocations and to existing rights-of-way.
- Improvements to the implementation monitoring process by simplifying and clarifying the monitoring questionnaire, improving consistency, concentrating on large timber sales, and focusing on sales that have been fully harvested.

Provincial Monitoring Teams were interagency, interdisciplinary, and intergovernmental; most included members of the public. The diversity of ideas, backgrounds, disciplines, and agency involvement in these reviews resulted in timber sales having been evaluated from a variety of perspectives. This perspective diversity opened the sales to broad scrutiny, resulting in rigorous reviews. Team members discussed sales at length, using the questionnaire to ensure thorough, consistent assessments. Teams nearly always reached consensus. Team discourses led to improved trust among team members and appreciation for the skills and knowledge of Forest Service and BLM employees who design and administer timber sales. Monitoring in this public interagency environment provided an objective, open forum for the participatory adaptive management that agency leaders had set forth in their initial guidance.

Careful reading of Provincial Monitoring Team reports and team participant critiques reveals that relationships among participating agencies and with the public were strengthened by the struggle to interpret, then answer, the monitoring questions for each sale. Team members were impressed by the thoroughness and care that typically go into planning Forest Service and BLM timber sales. Some team members gained first-hand knowledge about the relationships between agencies and timber purchasers, including the levels of detail that purchasers must understand in order to achieve agency objectives and comply with federal timber sale contract requirements.

Because this was a pilot program, findings about implementation monitoring methods and costs will lead to improvements in future programs. Total direct cost of the Pilot Program was \$234,000, not counting overhead associated with program development, training, analysis, and reporting. Also not included in this figure are costs borne by agencies other than the Forest Service or BLM, tribal, and private citizens' costs. Field review costs averaged \$5,200 each (range: \$940–\$8,170).

Finally, for the FY 1997 Implementation Monitoring Program, Provincial Monitoring Teams recommended three priority topics: timber sales (continued), roads, and restoration projects.

In summary, the Implementation Monitoring Pilot Program successfully evaluated timber sales and found a high level of compliance with direction in the NFP at a regional scale. It also provided an effective foundation for future monitoring programs.

## Introduction

The nature of the pilot project for implementation monitoring requires a two-fold approach: first, an analysis of the results of the timber sale reviews; and second, an evaluation of the pilot year 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 the pilot year, and presents information related to the questions asked in the review.

Part 2 specifically addresses the analysis of the implementation monitoring as it relates to timber sale compliance with the S&Gs of the NFP. It includes a presentation of the 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 as undertaken during this pilot year. Like Part 2, it presents results but these results focus on the design and implementation of the process itself. A discussion of the success of the pilot year is followed by recommendations intended to provide helpful direction for future implementation review projects.

Part 4 addresses overall conclusions and recommendations concerning the pilot year implementation monitoring process. The 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 - Overview of the Implementation Monitoring Program

## Background and Purpose

In 1996 at the request of the Regional Interagency Executive Committee (RIEC), the REO initiated a regional-scale pilot Implementation Monitoring Program. The purpose was to field test a monitoring program that would determine whether the ROD and its corresponding S&Gs were consistently being followed across the region of the NFP.

This report summarizes the first year's experience with implementation monitoring, sometimes called "compliance monitoring," which built on the work of field units and interagency, intergovernmental teams from each of 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 the BLM and Forest Service are conducting their activities in ways that satisfy NFP objectives.

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 the BLM and 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.

The ROD and its S&Gs, hereafter referred to as the "ROD direction," is the foundation of 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. More details on the adaptive management process are explained in Appendix A.

## **Relationship Between Implementation Monitoring and Other Monitoring Activities**

As noted earlier, three different monitoring activities are to be conducted under the NFP: implementation monitoring, effectiveness monitoring, and validation monitoring. This pilot effort focuses on implementation monitoring where sampling and reporting are done at a regional scale, and where reviews are conducted on a sample of local projects. Implementation monitoring initially determines compliance with ROD direction across all land allocations in the NFP, serving as an important link to both effectiveness and validation monitoring.

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**

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.

To accomplish the objective of conducting monitoring activities under a "systematic" approach, timber sales in Forest Service Ranger Districts and BLM Resource Areas within the NFP provinces were selected for review. ROD direction, including the S&Gs that pertained to timber sale activities, was converted into a questionnaire containing 131 questions categorized by the land allocations in the ROD and taken from the May 30, 1995, Draft Implementation Monitoring Guidance document (see Appendix B for list of monitoring questions).

At the direction of the RIEC, the first activities chosen for formal review by the pilot program were timber sales, specifically harvest units, as they relate to two of the three conservation strategies in the ROD: the aquatic and terrestrial conservation strategies. The third strategy, the socioeconomic strategy, is partly addressed through implementation monitoring in areas such as public participation and involvement of Provincial Advisory Committees (PACs).

In order to successfully monitor the implementation of the NFP, it is necessary to:

- Have a clearly stated monitoring objective.
- Use clear and measurable standards (the S&Gs) and have clear and unambiguous monitoring measurements (e.g., "questions") that directly relate to the S&Gs.
- Have a clear definition of "success" or when our objectives have been met.
- Use statistically sound procedures that ensure monitoring outcomes reflect acceptable levels of precision and certainty.

The Implementation Monitoring Pilot Program attempted to incorporate these features. The program goals for FY 1996 were two-fold: to field test a pilot monitoring process and to determine whether the ROD and its S&Gs were being implemented throughout the area of the NFP. The standard of "success" as to whether the S&Gs are being implemented is to have 100 percent compliance for all monitored actions.

Appendix C shows the timeline for the action steps associated with the FY 1996 Implementation Monitoring Pilot Program which are summarized as follows:

- After the Final Draft Implementation Guidance Document was completed (May 1995), the Implementation Monitoring Strategy was presented to the Intergovernmental Advisory Committee (IAC) (June 1995).
- Based on the discussion at the June 1995 IAC meeting, the RIEC directed the REO's Research and Monitoring Committee to focus FY 1996 implementation monitoring activities on a sample of FY 1995 timber sales as shown in Appendix D (July 1995).
- In January 1996, the Research and Monitoring Committee established an interagency Regional Implementation Monitoring Team, hereafter referred to as the Regional Monitoring Team, to conduct the Implementation Monitoring Pilot Program and lead the process.
- On February 23, 1996, the Regional Foresters and State Directors sent a memorandum to Forest Supervisors and District Managers outlining their objectives and directing the FY 1996 Implementation Monitoring Pilot Program (see Appendix E). The memo addressed program scope and objectives, covered the role of the Regional Monitoring Team, outlined the formation of interagency, intergovernmental Provincial Monitoring Teams, and directed the selection of team leaders.
- An initial Draft Report was distributed for review on October 3, 1996. A final Draft Report which incorporated comments on the initial draft was completed on November 1, 1996, and distributed for review on November 5, 1996.
- At the December 5, 1996, IAC/RIEC meeting, the report "Results of the FY 1996 (Pilot Year) Implementation Monitoring Program" was discussed. The Regional Interagency Executives asked the REO to conduct additional analysis of the monitoring questions that were answered "No" by the Provincial Teams.
- In January 1997, an interagency group was assembled to conduct a Supplemental Analysis of the "No" responses (see Analysis of Implementation Monitoring Responses).
- On March 3, 1997, the Final Report was completed and distributed to the parties of interest.

Based on the regional direction, the Regional Monitoring Team worked with Provincial Interagency Executive Committees, Forest Supervisors, and District Managers to: (1) finalize a workable design, (2) establish an interagency, intergovernmental monitoring structure that involved local field units in each province, (3) conduct implementation monitoring reviews,

(4) complete reviews during the 1996 field season, and (5) prepare a regional report on the pilot program by the end of the fiscal year.

As part of the pilot project, Forest Service and BLM regional executives sought to better understand the resources needed in terms of personnel, funding, and time to conduct a quality implementation monitoring program in a regional context.

### **Selection of the Sample**

The sampling approach was a random selection of 10 percent of the BLM and Forest Service timber sales implemented in FY 1995 from a list of all sales (424 total sales in the Forest Service Sales Tracking and Reporting System [STARS] and BLM Timber Sale Information System [TSIS] databases) compiled at the REO. The sample resulted in 43 timber sales representing 10 of the 12 NFP provinces. To get at least one sale in each of the provinces, two more sales were selected: the Whiteface Salvage project in the Eastern Washington Cascades Province and the Van Duzen thinning project in the California Coastal Province. To avoid biasing the sample, this report does not reflect responses for these two sales in the data analysis and summary tables. However, observations and comments from the monitoring of these projects have been incorporated into this report.

Table 1 summarizes the number of timber sales monitored by province and land use allocation. The scope of the monitoring program is expected to broaden into other activities in FY 1997 and beyond.

**Table 1**  
**FY 1996 Implementation Monitoring Program**  
**Number of Monitored Timber Sales by Province and Land Use Allocation**

Province	Matrix	Late Successional Reserve	Adaptive Management Area	TOTALS
Western WA Cascades	0	1	0	1
Eastern WA Cascades <sup>1</sup>	0	1	0	1
Olympic	1	0	1	2
Yakima	1	2	0	3
Southwest WA	1	0	1	2
OR Coast	0	2	0	2
Willamette	5	1	0	6
Deschutes	2	0	0	2
Southwest OR	12	3	0	15
Klamath	5	0	2	7
Northwest Sacramento	2	1	0	3
CA Coast <sup>1</sup>	1	0	0	1
<b>TOTAL SAMPLED</b>	<b>30</b>	<b>11</b>	<b>4</b>	<b>45</b>

<sup>1</sup> Add-on sale; not included in the statistical summary but discussed in the report.

Figure 1 shows the number of monitored timber sales by land use allocation. Two-thirds of the sales sampled were in the matrix allocation category.

**Figure 1**

Figure 2 shows the volume of sampled timber sales in each land use allocation. Over 75 percent of the sampled timber sale volume is in the matrix allocation category.

**Figure 2**

Figure 3, which shows the overall distribution of FY 1995 timber sales by volume, indicates the majority of the timber sales were small. Roughly 70 percent were under one million board feet, and 40 percent were less than 100 thousand board feet.

**Figure 3**

Figure 4 shows the differences between BLM and Forest Service timber sales in the distribution of sales by volume.

**Figure 4**

### **Team Leader and Review Team Selection**

The Regional Monitoring Team assisted the field managers in developing the Provincial Monitoring Teams, which would perform the field reviews. The executives directed the field managers and the Regional Monitoring Team to structure interagency, intergovernmental, interdisciplinary teams from agencies and PACs (see Appendix F for list of teams.)

The Regional Monitoring Team also set up a training program for the Provincial Monitoring Team leaders. Team leaders from each of the 12 provinces covered by the NFP were selected from the Forest Service, BLM, and the Fish and Wildlife Service.

### **Team Leader Orientation and Training**

The Regional Monitoring Team organized and conducted a one-day orientation and training session for Provincial Monitoring Team leaders on April 3, 1996. All team leaders participated in the training, which was designed to ensure consistency in the execution of the implementation monitoring process. The training agenda included the following topics:

Purpose and need for implementation monitoring.

- Keynote by Tom Tuchmann, Director, Office of Forestry and Economic Development

Overview of the implementation monitoring approach.

- Dan McKenzie, Ph.D., Regional Ecosystem Office

Roles of the Regional Ecosystem Office, Research and Monitoring Committee, Regional Monitoring Team, and the Provincial Monitoring Teams.

- Dan McKenzie, Ph.D., Regional Ecosystem Office

Legal requirements for monitoring under the NFP.

- Jeff Handy, USDA Office of General Counsel

Planning and preparation:

- Team formulation, roles, and responsibilities.
- Needed resources and logistics (personnel, vehicles, office space, etc.).
- Safety.
- Scheduling.
- Relationships with line officers and field units.
- Cost accounting.
- Training and pre-work for Provincial Monitoring Team members.
- Conducting and documenting field reviews.
- Preparing reports.

As a follow-up to the training session, the group agreed to periodically hold conference calls. Several conference calls between the Regional Monitoring Teams and Provincial Monitoring Team leaders were conducted throughout the review period, addressing new issues, problems, and experiences that Provincial Monitoring Team leaders wanted to share for the benefit of other teams.

### **Process for Field Reviews**

An initial test of the process was conducted for the Abiqua Creek timber sale project on the Salem BLM District in mid-January of 1996 by the Regional Monitoring Team. The purpose of the pilot review was to determine whether the process was workable and whether procedures should be refined prior to the training session and field reviews. As a result of this test, the Regional Monitoring Team distributed copies of the questionnaire to field units for review before the field reviews began. Field units were then asked to answer the questions, so that Provincial Monitoring Teams had something specific to base their responses on. This was intended to improve monitoring efficiency and the interaction between field unit personnel and monitoring team members. Some procedures were changed before the Provincial Monitoring Team leader training session as a result of the test.

The Regional Monitoring Team established a series of expectations regarding the Provincial Monitoring Teams' performance of field reviews. First, the teams were expected to operate in an open forum that provided for the exchange of ideas, information, and expertise.

Second, teams were encouraged to group sale reviews for efficiency and to conduct reviews such that no more than two days were spent on a particular sale, including time for field visits.

Third, teams were instructed to coordinate the scheduling of reviews with Provincial Monitoring Team members and field units (see Appendix C), and complete field reviews in the 1996 field season (during the months of May, June, and July). This was necessary so review reports could be completed by the end of July and sent to the Regional Monitoring Team in time to prepare this Regional Report. A number of concurrent team reviews were expected throughout the region, particularly during June and July.

Fourth, Provincial Monitoring Team leaders were responsible for obtaining the necessary resources and background information to adequately review the selected timber sales. The field units were also directed to provide all essential background information applicable to each sale and make it available for review by the Provincial Monitoring Team. This included National Environmental Policy Act (NEPA) documents, watershed assessments, Late-Successional Reserve (LSR) assessments, Adaptive Management Area (AMA) plans, and applicable Forest and District land management plans. The Regional Monitoring Team distributed all applicable supplemental direction issued by the REO to Provincial Monitoring Team leaders.

Fifth, teams were responsible for answering a set of questions for each timber sale being reviewed (see Appendix B). Provincial Monitoring Team leaders asked the host unit Ranger District or Resource Area to initially answer all applicable questions for each of their respective projects before the Provincial Monitoring Teams were convened.

Sixth, Provincial Monitoring Teams were required to review each of the 131 questions to determine compliance with the ROD and its S&Gs. A simple "Yes" or "No" response was required. Some questions were not applicable to the project being monitored so a "Not Applicable" response was warranted. Provincial Monitoring Teams were also required to document the rationale for question responses.

Seventh, Provincial Monitoring Teams were asked to answer a final summary question for each review sale: Overall, did this timber sale conform to the direction in the ROD and its S&Gs?

Eighth, following the field reviews, Provincial Monitoring Team leaders were asked to prepare a written report summarizing the review of each timber sale. The reports were to include the following information:

- Brief description of the project.
- Responses to all applicable questions.
- Highlights of the review process.
- Recommended changes in the monitoring process.
- Overall assessment of project compliance with the ROD and its S&Gs.
- Identification of new topics for FY 1997 and beyond.
- Program costs.

For those reviews in which non-federal PAC members participated, the Federal Advisory Committee Act (FACA) was an important consideration. As requested by Provincial Monitoring Team leaders at the April 3, 1996, training workshop, the Regional Monitoring Team consulted with attorneys from the regional Office of General Counsel and determined that because PACs were used to recruit Provincial Monitoring Team members, FACA applied (U.S. Department of Agriculture Office of General Counsel, 1996). As a result of this determination, where a province team contained non-federal PAC members, Provincial Monitoring Team reports were reviewed by the PACs before final submission to the Regional Monitoring Team. Provincial Monitoring Team reports are on file in the REO in Portland, Oregon.

### **Development of a Database**

In the Draft Report, the Regional Monitoring Team created two databases from the questionnaires and the agency timber sale lists. The first database included the "Yes," "No," and "Not Applicable" response to each of the 131 questions. Responses were requested from Provincial Monitoring Team leaders in their sale reports, based on conference call discussions

with Regional Monitoring Team members. Responses were taken from the timber sale report narratives submitted by team leaders. As the data were entered by the Regional Monitoring Team, it became evident that several responses should have been answered "Not Applicable" instead of "No," but the Regional Monitoring Team entered the data unchanged.

The second database was compiled from two electronic lists from the BLM (130 sales) and the Forest Service (294 sales).

The Forest Service and BLM sale information systems did not include the same fields, which limited subsequent analysis. BLM did not include the land use allocation or province for the respective sales. These attributes were determined for the selected sample of sales. These attributes need to be in any future sale listing used for sample determination, particularly if stratification is to be considered.

Additional data (fields) developed by an Interagency Analysis Team have been incorporated into this database.

For the analysis, 42 of the 45 sales were included. The Van Duzen Thinning and Whiteface Salvage sales were not in the original statistical sample, but added to include at least one sale in each province. Sale WS22 & 40, was outside the National Forest boundary and not applicable and was deleted from the sample and the population.

These databases are PC-based using Paradox 4.5 by Borland and are on file in the REO in Portland, Oregon.

### **Analysis of Implementation Monitoring Responses**

In the Draft Report, each question was analyzed using only the "Yes" and "No" responses from the questionnaires (see Appendix H). All the "Not Applicable" responses were dropped from the analysis. Elimination of the "Not Applicable" responses resulted in the number of sales within a sample for a given question to range from 1 to 41. A hypergeometric distribution was used to construct the confidence intervals around the estimated proportion of "Yes" responses. The hypergeometric distribution is used with binary data (yes/no) and with a finite population size. The 80 percent confidence level should be interpreted as meaning that intervals constructed with the above procedure will contain the true population proportion 80 percent of the time in the long run. A re-analysis of the information in Appendix H of the Draft Report was not undertaken for the Final Report.

The length of a confidence interval is governed by the sample size and the probability level attached to the interval. As the sample size increases, the length of the confidence interval decreases. As the probability level attached to the confidence interval increases, so will the

width of that interval, since the chances that the interval contains the true population parameter increases.

The decision to select an 80 percent confidence interval for the statistics ultimately is based on several considerations, some of which are not statistical. The major benefit of conducting project reviews is the non-statistical information that the reviewers obtain by talking with the field people. The narratives provide a wealth of information as to the problems that the field faces. Secondly, the reviews provide an objective measure of the implementation of the S&Gs. In this context, there is a balance between the benefits of annual reports that contain high levels of certainty accompanied by narrow confidence intervals and the costs that are associated with such a review with the knowledge that these reports will be an annual event providing opportunities for evaluating the data over the span of several years. If the data are pooled over several years, the confidence intervals will decrease from the current estimates. The data could also be used in hypotheses testing to determine if the proportions are changing over time. With each additional year, the ability to detect smaller changes in proportions increases as the number of projects available for the analysis increases. The 80 percent confidence interval represents a compromise that gives the reader a sense of the variability in the proportion estimates at a reasonable cost on an annual basis, with the knowledge that this data represents only one year in an annual data collection effort.

### **Additional Assessment of Monitoring Responses**

Following the initial review of the November 1, 1996, Draft Report on the Results of the FY 1996 (Pilot Year) Implementation Monitoring Program, the Research and Monitoring Committee was directed by the RIEC to analyze the monitoring responses and provide management recommendations. This in-depth analysis of the raw "No" responses was conducted by the Interagency Analysis Team composed of scientists from the Forest Service, BLM, Fish and Wildlife Service, and REO. This team reviewed the responses in order to identify weaknesses in the implementation monitoring process, to determine compliance of the sale with the ROD, and to develop management recommendations to improve future implementation of the NFP. The results of this supplemental analysis are incorporated into this Final Report.

Appendix I displays the range of conformance to the ROD and its S&Gs for the sampled sales. Although field reviews pointed out questionable interpretations of the ROD direction, and noncompliance was noted in several specific parts of the projects reviewed, it was the consensus opinion of the Regional Monitoring Team and most Provincial Monitoring Teams that, overall, the ROD direction was being met. Where ROD language, including S&Gs, allowed multiple interpretations of meaning, review team discussions usually led to consensus about whether or not intent was met.

### **Composition of the Interagency Analysis Team**

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## Part 2 - Analysis of Implementation Monitoring

This second part of the report addresses three areas related to the implementation monitoring review: (1) results of analysis of the data, (2) discussion of those results, and (3) recommendations for improving compliance with the NFP.

### Results and Discussion - Implementation Monitoring

The responses of the Provincial Monitoring Teams were initially tabulated as to whether each of the survey questions was answered as “Yes,” “No,” “Not Applicable,” or left “Blank.” This resulted in a total of 7,014 records for the 131 survey questions addressed for each of the 42 sampled timber sales. Of these responses, 864 were “Yes” responses, 249 “No” responses, 5,889 “Not Applicable” responses, and 12 were “Blank” (Table 2). When considering only the “Yes” and “No” responses, the proportion of “Yeses” is 77.6 percent with an 80 percent confidence interval of 74.4 percent - 80.8 percent (see Appendix G).

**Table 2**  
**Responses by Provincial Monitoring Teams to Monitoring Questions**

Responses	Count	Overall Percentage (%) <sup>1</sup>	Applicable Percentage (%) <sup>2</sup>
“YES”	864	12.32	77.63
“NO”	249	3.55	22.37
“Not Applicable”	5,889	83.96	-
Blank (no response)	12	0.17	-
<b>TOTAL</b>	7,014	100.00	100.00

<sup>1</sup> The overall percentage is based upon all 7,014 responses.

<sup>2</sup> The applicable percentage is based upon only those 1,113 responses for which the Provincial Implementation Monitoring Teams decided a S&G applied (the sum of all “Yes” and “No” responses).

As a follow-up to reviews of the Draft Report and discussions at the December 5, 1996, IAC meeting, an in-depth analysis of the raw “No” responses (Table 2) was conducted by the Interagency Analysis Team represented by scientists from the Forest Service, BLM, Fish and Wildlife Service, and REO. This team reviewed each of the 249 “No” responses in order to identify weaknesses in the implementation monitoring process, to determine compliance of the

sale with the ROD, and to develop management recommendations to improve future implementation of the NFP. During this review, the Interagency Analysis Team categorized each “No” response as to one of four possible outcomes with respect to compliance with the S&Gs in the ROD (see Table 3). Those outcomes were:

- **MEETS** Indicates that the action was fully consistent with the appropriate S&G.
- **FAILS** Indicates that the action was not fully consistent with the appropriate S&G.
- **FAILS, NOT CAPABLE** Indicates that the action was not fully consistent with the appropriate S&G, but that site-specific conditions prevented the action from being fully consistent (e.g., the S&G required course woody debris retention of 240 linear feet of logs per acre with a diameter greater than or equal to 20 inches, but the site had no trees greater than 15 inches in diameter).
- **NOT APPLICABLE** Indicates that the S&G being addressed was not applicable to the action being reviewed (e.g., the S&G requires that research activities are analyzed to ensure that significant risk to watershed values does not exist, but the action does not have a research component).

The interagency team found these supplemental analyses to be easier, more definitive, and less contentious than originally anticipated. Narrative comments provided by the Provincial Monitoring Teams made it clear how the responses should be categorized. In the few instances when responses were ambiguous, the Provincial Monitoring Teams’ “No” response was interpreted as a failure to meet the applicable S&G.

This assessment used a literal interpretation of the S&Gs rather than attempting to assess whether or not the “intent” of the ROD was being followed. Use of a literal interpretation was necessary in order to effectively identify S&Gs in need of additional attention to determine if they were ambiguous, counter productive, or just difficult to attain.

The Interagency Analysis Team determined that the majority of the Provincial Monitoring Teams’ “No” responses, approximately 80 percent, did not indicate noncompliance with the S&Gs of the NFP. Most of these “No” responses were more appropriately listed as “Not Applicable,” and some were best answered as having actually attained the associated S&G (Table 3). This outcome indicates that the questionnaire needs to be more clearly worded and better explained. Certain questions were worded in a manner that resulted in the Provincial Monitoring Teams answering “No” when another answer was more appropriate. For example, question 10 asks “Has information from watershed analysis been used in project planning?” Many of the Provincial Monitoring Teams answered this question as “No” when the project was in matrix and there was not a completed watershed analysis. For some situations, this answer would indicate noncompliance with the S&Gs. However, many of these projects did not require

watershed analysis for matrix timber harvests (as long as they did not encroach on Riparian Reserves (RRs)). A literal interpretation of the questions would be a “No”; however, because a watershed analysis was not required, a more appropriate response would have been “Not Applicable.” Similarly, question 69 asked, “Have all five categories of streams or water bodies been identified?” While each of the 42 surveyed timber sales were surveyed for all types of streams and water bodies, few contained all five types of streams or water bodies. Again, a literal interpretation resulted in a number of “No” responses when a “Yes” response was more appropriate.

This pattern of literal interpretations was repeated for a number of other questions, especially those relating to management actions for protection buffer species (e.g., great gray owl). Frequently, the Provincial Monitoring Teams would answer that no species-specific management was undertaken, even when the project was outside the range or habitat of that species.

The lack of clarity in the questions did not appear to significantly affect the ability to draw conclusions from the pilot monitoring program. However, this situation confounded the interpretation of the raw results and required additional analysis of the narrative comments by the Provincial Monitoring Teams. If possible, the FY 1997 monitoring effort should strive to reduce this additional review.

Table 4 provides summary statistics for the Interagency Analysis Team’s efforts to assess compliance with the S&Gs. Responses were further analyzed to determine why particular S&Gs were not met (Appendix J) and to estimate the relative biological impact of actions that failed to meet the S&Gs (Table 5).

An analysis of all responses (“Yeses and Noes”) was conducted for selected topical areas of high concern: RR boundaries, CWD, and snag retention (Appendix K). The results of this review did not appear to differ substantially from the analysis of the “No” responses conducted by the Interagency Analysis Team.

**Table 3**  
**Assessment of “No” Responses by the Interagency Analysis Team**

Category <sup>1</sup>	Count	Percentage (%)
“No” categorized as “Meets”	28	11.24
“No” categorized as “Fails to Meet”	36	14.46
“No” categorized as “Fails, Not Capable of Meeting”	6	2.41
“No” categorized as “Not Applicable”	179	71.89
<b>TOTAL</b>	249	100.00

<sup>1</sup> The Interagency Analysis Team categorized each of the 249 “No” responses into one of four categories described above. Three “No” responses were applied by the Provincial Monitoring Teams to the wrong question. Consequently, the analysis changed three questions answered “No” by the Provincial Monitoring Teams to “Yes” and changed three different questions answered “Yes” by the Provincial Monitoring Teams to “No.” All three responses to these questions indicated a failure to meet the S&Gs. These three responses are not tabulated in this table (which shows 36 “fails to meet”), but are shown in Table 4 (which shows 39 “fails to meet”).

**Table 4**  
**Compliance of FY 1995 Timber Sales with Standards and Guidelines**

Responses <sup>1</sup>	Count	Overall Percentage (%)	Applicable Percentage (%)
Meets	889	12.67	95.18
Fails to Meet	39	0.56	4.18
Fails, Not Capable of Meeting	6	0.09	0.64
Not Applicable	6,068	86.51	-
Blank (no response)	12	0.17	-
<b>TOTAL</b>	7,014	100.00	100.00

<sup>1</sup> The Interagency Analysis Team categorized the responses made by the Provincial Monitoring Teams as to whether or not they were consistent with the S&Gs. These categories are described in the text. Questions answered as “Yes” by the Provincial Monitoring Teams were considered to indicate compliance with S&Gs; the “No” questions were categorized as indicated in Table 2; and the total count of answers indicating compliance recalculated. The overall percentage is based upon all responses - 7,014. The applicable percentage is based upon only those 934 responses for which a S&G did apply (the sum of all “meets” and “fails” responses).

### **Compliance with Northwest Forest Plan Standards and Guidelines**

Table 4 indicates that approximately 95 percent of the S&Gs applicable to the 42 timber sales reviewed by the Provincial Monitoring Teams were complied with. Approximately 5 percent of the applicable S&Gs did not appear to have been met. Situations resulting in noncompliance are discussed below and tabulated in Appendix J. The Interagency Analysis Team also attempted to assess the biological effects of noncompliance (Table 5). This effort proved difficult and the team decided to adopt a conservative approach to assessing biological impact. The team considered all instances of noncompliance to ultimately have an unknown biological impact, but felt that it was appropriate to provide an assessment of the “potential” biological effect based upon the Provincial Monitoring Teams’ narratives. In four instances, the Provincial Monitoring Teams did not provide any narrative, and the Interagency Analysis Team considered the potential biological effects to be undeterminable.

**Table 5**  
**Assessment of the Biological Effects of Actions**  
**that Failed to Meet the Standards and Guidelines**

Effects Category <sup>1</sup>	Count	Percentage (%)
<b>Meets</b>	889	95.18
<b>Potential Localized Biological Effects of "Fails to Meet"</b>		
▪ Positive	5	0.54
▪ None	15	1.61
▪ Slight	5	0.54
▪ Low	7	0.75
▪ Medium	1	0.11
▪ High	2	0.21
▪ Undetermined	4	0.43
<b>Not Capable of Meeting</b> (all anticipated to have none to a slight local effect)	6	0.64
<b>TOTAL</b>	934	100.00

<sup>1</sup> The Interagency Analysis Team reviewed all instances where noncompliance was indicated and attempted to assess the biological impact of that noncompliance. The team considered all instances of noncompliance to have an "unknown" biological impact, but did expect some deviations to have the potential for a wide range of effects. These effects are described in the text and ranged from an expectation of having a positive biological effect to having high potential for effects. Instances that completely lacked narrative descriptions had the potential effects of those situations listed as "undetermined."

**Actions Failing to Meet Standards and Guidelines**

Sixteen of the 42 sampled timber sales appeared to fully meet all applicable S&Gs. Compliance in the remaining 26 sampled timber sales ranged from 75 to 100 percent, with an average of 94.6 percent (Appendix I).

The 45 instances of failing to meet S&Gs were distributed among 22 survey questions (Appendix J). The S&Gs most frequently not met were those dealing with watershed analysis, RRs, CWD, and snag retention. These types of noncompliance events are the ones expected to

occur most frequently across the region, and they are discussed in more detail in Appendices J and K.

### **Individual Instances of Failing to Meet Standards and Guidelines**

Appendix J provides information on the sales that resulted in a failure to meet S&Gs. An understanding of these instances is important, especially with respect to an understanding of the magnitude of effects. Several types of events are discussed below. These instances were chosen in order to highlight the potential biological impacts of failing to meet S&Gs and to better develop subsequent discussions pertaining to management recommendations.

- Failed to modify CWD amounts in seven partial harvests. The ROD establishes S&Gs for providing CWD in regeneration harvest, then goes on to state that for partial harvests these amounts should be modified to reflect the timing of stand development cycles (ROD, page C-44). Failing to modify the CWD amounts is expected to result in more CWD than expected. This, in turn, is expected to have no effect or generally positive biological effects.
- Failed to establish RRs on small intermittent streams in two harvests. Identification of small intermittent waterways has proven to be difficult. The Provincial Monitoring Teams identified two unprotected waterways that should have been classified as intermittent streams and protected as such. These waterways were the lower 100 feet of a swale and a snowmelt drainage area. Differences of professional judgment are to be expected when defining waterways on the border of different categories (in these cases between intermittent and less than intermittent). The biological effects of these two instances are expected to be low.
- Failed to minimize soil disturbance by heavy equipment on one sale. Excessive tractor use (blading) was found on one steep slope. This was likely to have a moderate biological effect. In addition, this points to the need for additional agency oversight of purchaser/contractors.
- Failed to check known site records on Survey and Manage and Protection Buffer Species. The Interagency Analysis Team checked the known site database at a later time and found no occurrences within the project area. While this indicates that there was not a local biological effect of failing to consider Survey and Manage Species, there is a clear need for management to emphasize the use of the known site information in project planning.
- Failed to stop project when snag requirements could not be met on two sales. No snags were removed or harvest was a hazard tree removal. The ROD states that if a project cannot meet snag requirements, the harvest must not take place (ROD, page C-46). One

salvage sale and one thinning which did not meet snag retention requirements proceeded anyway. In both instances, snag requirements were not attainable due to the size of the available trees in the stand. It is unclear how preventing thinning of young stands would further the biological goals of the NFP. The Interagency Analysis Team recommends that this S&G be reviewed for its biological value.

- Failed to use the greater of 100 feet or one site potential tree height for RR width on one sale. This sale of firewood (16 cords) was designed using 100 foot RRs rather than the greater distance of one site potential tree (146 feet). There was probably only a slight biological effect from this action.
- Failed to exclude fuelwood cutting in RRs on one sale. Firewood cutting of 16 cords “may” have encroached to within 71 feet of an intermittent stream. There was probably only a slight biological effect from this action.
- Failed to assess the impacts of using non-native species in soil stabilization efforts at two sales. Non-native species were used in the re-seeding mixture and may have contaminated material used in mulch. Use of these species should not have occurred without an assessment of the impacts of those introductions. These instances could potentially have serious biological ramifications.
- Failed to attain standard when site was not capable of meeting standard at six projects. Projects could not meet S&Gs on snag retention, CWD, or green-tree retention due to site-specific conditions. These instances did not technically meet the S&Gs due to site limitations, but the sales were designed to come as close as possible. Consequently, the Interagency Analysis Team determined that there was little likelihood of biological effects.
- Provincial Monitoring Teams identified documentation shortcomings on four sales (Kingsley Salvage, Hyatt Ballfield, Walupt Wabbitt, and Sh-Head 2). Field units did not document a linkage between project plans and ROD direction. On Kingsley Salvage, consultation with the Fish and Wildlife Service and the State Historic Preservation Officer was not complete. On Hyatt Ballfield, the NEPA documentation was not prepared. On Walupt Wabbitt and Sh-Head 2, there was no documented consultation with Tribal governments.

## **Finding**

Based upon follow-up review of the 249 “No” responses, the Interagency Analysis Team concluded that the FY 1996 Pilot Implementation Monitoring Program indicated:

- A high level of compliance with the S&Gs (i.e., 95 percent; Table 3).
- Instances of noncompliance are anticipated to have:
  - Minor biological effects at the regional scale and
  - Generally minor biological effects at the local, project-level scale, with the exception of a few situations where there was the potential for local effects to be of medium-to-high concern (Table 5).

This review of timber sales has shown that field personnel are complying with ROD direction despite competing land allocations and conflicting requirements. Attention to the intent of the NFP was most evident when competing requirements were resolved. Where field discretion was exercised to mitigate conflicts in requirements, the least ecologically disturbing activities (acknowledged by Provincial Monitoring Team consensus) were often chosen except where public safety was a concern (e.g., Campground Salvage, Kingsley Salvage, Summer Home Salvage).

## **Part 3 - Analysis of the Pilot Year Process**

This part of the report addresses three areas related to the pilot year of the implementation monitoring review process: (1) results of the process, (2) discussion of the process, and (3) recommendations for improving the process in the future.

### **Results - Pilot Year Process**

The results of the pilot year of the implementation monitoring review process generally relate to three areas: (1) the questionnaire format, (2) team dynamics and relationships, and (3) costs.

#### **Questionnaire Format**

Results indicate regional questions drawn from the ROD direction can be effectively answered through an objective process carried out by Provincial Monitoring Teams. The Provincial Monitoring Teams endorsed the value of the questionnaire in the review process, noting that organizing review questions by land use allocation in the same manner and sequence as the ROD aided teams in the interpretation and responses to the questions.

The primary value of the questionnaire was its use as an objective means for determining compliance with the ROD direction. It served as a catalyst for Provincial Monitoring Team discussions, which most often led to consensus responses.

However, Provincial Monitoring Teams recognized that for some issues the ROD is ambiguous, leaving room for a variety of interpretations and responses to the questions. The inherent complexities and ambiguities in the ROD and its S&Gs are carried through in the monitoring process and responses to questions dealing with the same subject matter. The variance was partly due to the diverse scope of timber sales in the sample (see Table 1 and Figures 2-4). Varying interpretations also resulted from differing assumptions and opinions about how best to answer the questions. Teams often found that additional rationale was needed to fully understand a response to a question or to clarify why a question was answered a certain way.

During the first field review, the Provincial Monitoring Teams quickly found that complex projects within a framework of multiple land allocations and the multi-tiered nature of the ROD and its S&Gs could not be thoroughly evaluated by a simple "Yes/No/Not Applicable" response to each question.

Teams also varied the process of answering ROD questions for the selected timber sales. Some teams reviewed all questions in the office before going to the field, highlighting those questions that team members wanted to review and verify in the field. Other teams traveled to the field

before answering questions, using the host unit staff to discuss the sale and take time to review the sale area and relevant issues of interest to team members. Those teams that went to the field to review the sale area before answering questions seemed to build understanding quicker and have an easier time addressing the questions.

Provincial Monitoring Teams found that most sales did not include all of the land use allocation categories in the ROD, so a number of the questions were not applicable and did not require a response. Additionally, the teams found they were able to respond to questions on 10 of the 45 sales without going to the field, due to the small size of the sales and the nature of the issues involved.

### Review of Survey Questions

Appendix L contains a detailed discussion of responses to each of the questionnaire answers. Table 6 summarizes the raw responses of the questions by land use allocation.

**Table 6**  
**Tabulation of Raw Responses by the Provincial Monitoring Teams**

Land Use Allocation	Yes Responses	No Responses	N/A Responses	Not Answered
All Allocations (Questions 1-22)	308 (27%)	45 (4%)	779 (69%)	2 (0%)
LSRs (Questions 23-58)	82 (5%)	24 (1%)	1532 (94%)	0 (0%)
MLSAs (Questions 59-68)	3 (<1%)	3 (<1%)	414 (99%)	0 (0%)
MLSAs and RR (Questions 69-83)	189 (12%)	112 (7%)	1245 (81%)	0 (0%)
Matrix (Questions 84-115)	251 (17%)	57 (4%)	1202 (79%)	2 (0%)
AMAs (Questions 116-131)	31 (4%)	8 (1%)	717 (95%)	0 (0%)
<b>TOTALS</b>	864	249	5889	4

AMA Adaptive Management Area  
LSR Late-Successional Reserve

MLSA Managed Late-Successional Area  
RR Riparian Reserve

## **Team Dynamics and Relationships**

The diversity of ideas, backgrounds, disciplines, and agency involvement of this review process ensured the sample timber sales would be evaluated from a variety of perspectives. Monitoring in a public interagency environment provided an objective, open forum for the participatory adaptive management that agency leaders set forth in their initial guidance.

As shown in Appendix F, there was excellent participation in sale reviews by interagency, intergovernmental teams. Thirty-seven different Provincial Monitoring Teams were assembled to conduct the sale reviews. Thirty teams included non-federal members. Eight had state government representatives. Five had county government representatives. And four had Tribal representatives.

Provincial Monitoring Team leaders demonstrated the management and leadership skills necessary to develop and work effectively with diverse interagency, intergovernmental teams while conducting the monitoring reviews. The teams appeared to be well-organized, conducted their reviews professionally, and completed their tasks on schedule with a minimum of conflict or delay.

Team leaders also coordinated their team members' diverse schedules. The Deschutes Province Team, for example, conducted a review on a Saturday in order to accommodate non-federal PAC members.

The orientation and training session held in early spring helped provide basic objectives, set a common approach, and provided the necessary process information and details to conduct an effective field review of the sales.

Field unit employees provided essential background information concerning the sales and were fluent in their knowledge of the ROD and its S&Gs. They provided excellent maps and overlays that showed the project areas and the various land allocations at issue. Notable was their ability to refer to specific language for rationale in response to questions. Field agency staffers and Provincial Monitoring Team leaders often referred to well-worn, highlighted, and tabbed copies of the ROD during the reviews. It is evident that ROD direction has become the central guidance for federal timber sale planning in the Pacific Northwest.

On most reviews, District Rangers and Area Managers met with provincial teams for their summary closeout. Several also accompanied the teams on field reviews, as did two Forest Supervisors, who participated in separate reviews. Not only was this a noteworthy demonstration of leadership, but of line manager commitment to the monitoring process. Managers responded to questions about the sales and shared recommendations for future implementation monitoring activities.

The process of facilitated group dialogue around the 131 questions, followed by consensus-seeking, was as important to judgment about NFP compliance as the direct response to questions. Discussions among team members most often led to consensus responses to the questions. Consensus determinations proved more important than attempts to provide precise interpretations of the ROD and helped legitimize the responses. With each consensus determination, an increment of trust was raised among team members and field officials. Two PAC members, who served on the same review team and who generally hold different points of view, commented that ten years ago the review process and the trust it generated would not have occurred.

Although difficult to quantify, careful reading of the Provincial Monitoring Team reports and team participants' critiques reveal that relationships among participating agencies and with the public were strengthened by the struggle to interpret, then answer the monitoring questions for each sale. Team members were impressed by the thoroughness and care that typically go into planning Forest Service and BLM timber sales. Some team members gained first-hand knowledge about the relationship between agencies and timber purchasers, including the level of detail that purchasers must understand in order to achieve agency objectives and comply with federal timber sale contract requirements.

Inter-province cooperation also characterized the review process. For example, the timber sale in the Oregon Coast Province consisted of a small negotiated right-of-way that the Willamette Province agreed to monitor, thus saving costs on an activity of such limited scope. Later, the Willamette Province Team agreed to review a second Oregon Coast Province sale.

As shown in Table 1, the FY 1996 pilot monitoring program resulted in a variable workload for field units and Provincial Monitoring Teams. The workload ranged from one timber sale for several province teams, to eight sales reviewed by the Willamette Provincial Monitoring Team, and 15 in the Southwest Oregon Province. Given the large number of selected timber sales in the Southwest Oregon Province, line officers decided to set up two review teams. They identified one Provincial Monitoring Team leader from BLM and the other from the Forest Service. In the Willamette Province, line officers named a Provincial Monitoring Team leader from outside the land management agencies--a Fish and Wildlife Service employee.

On some sales, where teams determined that field reviews were not needed, videotapes were used to help illustrate field conditions and respond to the questions. Videos helped reduce costs, while not compromising review thoroughness.

As shown in Figure 2, Provincial Monitoring Team members found that the number of small sales in the review sample (40 percent of sales had less than 100 MBF) reduced team efficiency because they required about the same level of work as larger sales. Teams also found it easier to evaluate timber sales and answer questions where some or all contract activities had occurred compared with those where no activity had begun.

**Costs of the Pilot Program**

The costs of the pilot program were within the Regional Monitoring Team's expectations. Actual minimum and average costs were near the sums expected. Table 7 illustrates a simple hypothetical array of costs based on a typical two-day monitoring event:

**Table 7**  
**Costs of the Pilot Program**

Preparation	Review	Travel & Other	TOTAL
\$1,500	\$3,000	\$500	\$5,000

Provincial Monitoring Team leaders were encouraged to track costs associated with field unit preparation, Provincial Monitoring Team review, and other categories such as travel and per diem. The actual costs derived from the 31 cost accounting reports submitted by the team leaders show an average of \$5,200 per review.

The least expensive sale review was \$940 which involved evaluating a roadside hazard tree salvage sale. Four U.S. Government officials and a PAC member drove and walked through this "straight forward sale."

The most expensive sale review was \$8,170 for a complex project in forest stands adversely affected by insects and disease. There were 12 U.S. Government officials and 3 PAC members on this particular sale review.

Further data analysis backs up the following cost containment principles:

- Monitoring costs increase as project complexity increases.
- Monitoring costs decrease with smaller review teams.
- Monitoring costs decrease when multiple projects are visited during the same review.

Timber sale complexity is more relevant to overall costs than sale volume or project size. It simply takes more time to weigh and discuss issues surrounding projects having greater complexity. Also, by visiting more than one project on a given day, some review teams were able to efficiently use their field review time.

The total direct cost projected for the 45 sale reviews is \$234,000. Indirect costs associated with overhead as well as monitoring program design, training, and analysis are not included in this figure.

## **Discussion - Pilot Year Process**

Organizationally, the interagency implementation monitoring design team committed to principles of randomization, simplicity, and interagency cooperation. However, the Provincial Monitoring Teams demonstrated that NFP implementation monitoring is more complex than originally perceived. Certain factors contributed to this.

Factor 1: Timing. The planning and execution of the FY 1995 sales occurred during or immediately after the ROD went into effect. This is particularly noteworthy because it was a period of great uncertainty and confusion characterized by limited guidance from REO or the land management agencies. Specifically troublesome was the lack of specific direction for green tree retention, CWD, and RR boundaries during the period when these sales were being prepared.

Factor 2: Ambiguous direction. As stated previously, the ROD was not intended to provide simple answers to every resource management issue. Although re-writing the questions or providing more detailed instructions might have clarified some ambiguities, most would likely have remained subject to multiple interpretations.

Factor 3: Project selection. The number of small projects (see Figure 2) in the pilot year program caused the greatest frustration to Provincial Monitoring Teams.

Factor 4: Project complexity. Project complexity influenced monitoring costs more than any other factor in this year's pilot program.

Factor 5: Statistics. Statistics could not be computed consistently on a question-by-question basis. Several teams noted that in many instances where "No" was the appropriate answer to the applicable question, the project was still in compliance. For example, 12 questions were answered "No" for the Van Duzen Thinning Timber Sale, yet the review team determined that the project appeared to be in complete compliance with NFP direction. Further review by the Interagency Analysis Team provided clarification of the "No" responses as shown in Tables 2, 3, 4, and 5 and Appendix J.

## **Lessons Learned**

Overall, Provincial Monitoring Teams and the originating field units worked hard to accurately respond to the questions and determine compliance with the NFP. Procedurally, teams tried several methods to achieve efficiencies and conduct open reviews, rather than fault-finding exercises.

The 10 percent sample size (43 timber sales) appeared to be a sufficient sample of NFP timber sales for monitoring and statistical analysis within the constraints of budget, time, personnel, and logistics capabilities. Individual strata by type or size of sales, however, were not adequately addressed in the 10 percent sample. Variation found within the FY 1996 sample can form the basis for FY 1997 sample sizes. Sample sizes also need to be based upon the types of topics monitored and the purposes of monitoring.

As stated earlier, the questionnaire used to review each sale was derived from specific language in the ROD and its S&Gs. As such, these responses were designed to address individual components of the overall direction. The response to any one question, therefore, could not necessarily be used to determine whether the overall intent of the NFP had been met. Combined, however, the responses provided the Provincial Monitoring Teams with the information needed to assess whether a project met the intent of the plan.

In part, this is a factor of the nature of the plan itself. The NFP was not intended to provide “cookbook” answers to every resource management question. Each project must be designed and implemented based on the professional interpretation of the direction in the plan within the context of the unique circumstances of each project.

Teams worked to resolve questions through discussion and interaction, which brought fairness to the process of judging how best to answer questions.

Teams reached consensus responses to most questions, but were unable to agree on others.

Interpretations of the answers to the same question varied between teams, such that some questions were inconsistently answered.

The struggle to interpret and answer questions is what developed understanding and trust between team members.

## **Part 4 - Conclusions and Recommendations**

The 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 activities by focusing on both the general problem area and actions.

The management direction category contains issues for which the recommendation is based on the finding that the S&G is clearly stated and understood. For these issues, the recommended action is for regional management to re-affirm commitment to these S&Gs and communicate the expectation of full compliance in the future.

The clarification of the S&Gs category contains issues for which the monitoring results indicate difficulties in understanding, interpretation, and implementation of the S&G. In these instances, it is recommended that an issue resolution team or interagency group address the inconsistency in the S&G and how it is being interpreted at the field level. The results of that effort are anticipated to lead to greater consistency and efficiency in implementation of the S&G.

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. The majority 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). In these cases, it is recommended that screening criteria or guidance be developed to permit consistent and efficient application of the S&G to the relevant activities.

The fourth category, improvements to the monitoring process, contains issues related to the monitoring process that arose during the pilot review and reporting efforts. In these cases, it is recommended that the team designing the FY 1997 implementation monitoring program address the issues to enhance the process and the information content of the results.

### **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 Team who further analyzed the "No" responses to the monitoring questions all concluded there was a high level of compliance with the ROD and its S&Gs, such that no major changes in management direction relating to NFP implementation for timber sales are warranted at this time.

Instances of noncompliance were anticipated to have minor biological effects at the regional scale, and generally minor effects at the local project-level scale with exceptions noted in Table 5, where there was potential for local effects to be of medium-to-high concern.

#### *Recommendations*

- Provide explicit direction on the need to, and procedures for, accessing information on Survey and Manage species and Protection Buffer species.
- Provide direction, training, and information to clarify identification of small, intermittent waterways and refine direction for RR requirements in areas difficult to identify, or where professional judgment differs.
- Strengthen compliance with management efforts aimed at controlling non-native species in seed mixtures and mulch.
- Strengthen Forest Service/BLM oversight of purchaser/contractor actions to ensure implementation of S&Gs.

### **Clarification and Improvements to Standards and Guidelines**

The FY 1996 Pilot Monitoring Program provided field units, through the Provincial Monitoring Teams, the opportunity to identify difficulties with understanding and interpreting the S&Gs (see Appendix L). Although a number of S&Gs were cited as being ambiguous and difficult to understand and interpret, there were no significant problems identified. There is room for improving and clarifying S&Gs to reduce multiple interpretations at the field level, and to increase field unit efficiencies through the following recommendations:

#### *Recommendations*

- Examine issues associated with hazard tree removal, snag retention, and CWD requirements in campgrounds and along roadways. The purpose of this evaluation is to assess the biological effects of these activities in relation to the administrative burden they impose.
- Develop specific Province-level guidance for CWD, snags, and green tree retention as recommended in the ROD (page C-14).
- Clarify the S&Gs dealing with snag retention in young stands being thinned (ROD, page C-46).

- Clarify the application of CWD standards for small projects, and partial harvest and salvage sales, including the opportunity to substitute standing timber when down material is not present at the desired levels, or as a substitute for existing CWD removed as part of sale volume.
- Clarify green tree retention patch size (ROD, page C-41) differentiating between areas less than and greater than 2.5 acres.
- Clarify what constitutes modification of site treatment practices to minimize soil and litter disturbance concerning harvest methods and the use of fire and pesticides (ROD, page D-11).

### **Clarification of When Standards and Guidelines Apply**

Some S&Gs are allocation specific, others agency specific, and others time specific in terms of applicability. Agencies need clear guidelines on what S&Gs are applicable to specific allocations and when they go into effect.

#### *Recommendations*

- Clarify the hierarchy of land use allocations regarding the application of specific S&Gs (e.g., campground salvage in RRs and LSRs).
- Provide more detailed guidance to the field on meeting S&Gs for actions relating to existing rights-of-way.

### **Improvements to the Monitoring Process**

Future monitoring efforts should continue the effective process techniques applied during this pilot year, including: 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 to improve the implementation monitoring process in FY 1997.

## *Recommendations*

### Training and Orientation

- Continue the one-day, pre-season workshop for Provincial Monitoring Team Leaders and capitalize on the experience of FY 1996 leaders.
- 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 were usually afforded opportunities to participate in reviews through regular agency notification procedures, their status as sovereign governments warrants personal contact regarding participation.
- Clarify roles of PACs early in the FY 1997 program, including non-federal PAC member involvement.
- Continue to involve purchaser's representatives where possible in sale reviews.

### Sampling

In addition, the Provincial Monitoring Team had some specific points:

- Most teams suggested that sampling of future projects be stratified to focus on those having greater complexity or controversy. In order to effectively stratify the sample, there would need to be greater commonality of the elements in the BLM and Forest Service databases.
- Focus the evaluation on actions that have been fully implemented (e.g., timber cut or roads constructed).
- Consideration should be given to conducting both pre- and post-harvest field reviews as part of the implementation monitoring program. This would assess both the planning and implementation phases of project compliance with the ROD and its S&Gs.

### Cost Containment

- Limit project selection to the highest priorities as identified by the PACs, the field units, and the RIEC.
- Yearly monitoring activities should address cost efficiency (e.g., concurrently monitoring timber sales, roads, and restoration projects). Monitoring systems should be designed to avoid duplication of efforts.
- Continue to use monitoring as a tool to extend the life of BLM and Forest Service land management plans.

### Additional Topics

- Review teams identified a number of additional topics they believe should be considered for implementation monitoring in FY 1997 and future years. Although the scope of interest in future topics as expressed by the review teams is widespread, as noted in Appendix M, there are three subject areas receiving the greatest interest: timber sales (stratified by size and complexity), roads, and restoration activities. These topics are consistent with responses to a separate inquiry on FY 1997 topics from the REO to PACs (REO, 1996). These projects were reaffirmed by the RIEC as the priorities for FY 1997 implementation monitoring at the December 5, 1996, IAC/RIEC meeting.

### Communication

- Field units need clear direction regarding information sources and contacts for specific applications, changes, updates, guidance, and clarification on the ROD and its S&Gs (e.g., protocols for great gray owl surveys).

### Follow-Up

- Recommend that field units be informed about specific sales that are not in full compliance with the ROD or its S&Gs so that corrective actions can be taken.

### The Questionnaire

- Re-write numerous questions, incorporating suggestions noted in team reports and highlighted in Part 3 of this report. Modify questions to improve the correspondence of a negative answer indicating noncompliance with the S&Gs.

- Require a narrative explanation for all “fails to meet” and “fails-not capable” responses. This narrative should provide an assessment of the extent of the situation and the impact of noncompliance.
- Clarify procedures for responding to questions on timber sales using multiple silvicultural methods (e.g., thinning and regeneration units in the same sale).
- Provide a mechanism for the Provincial Monitoring Teams to identify and discuss questions (or the associated S&Gs) that are unclear, ambiguous, or of questionable biological value.
- Provide a mechanism for the Provincial Monitoring Teams to identify questions for which the team did not reach consensus on the response.
- Reorganize the questions to reduce duplication, break out compound questions, and better fit the circumstances. Because many questions could not be adequately answered by the "Yes/No/Not Applicable" response, an alternative should be considered for next year:
  - Category 1: S&G Exceeded.
  - Category 2: S&G Met.
  - Category 3: S&G Not Met.
  - Category 4: S&G Applicable and Unattainable.
  - Category 5: S&G Not Applicable.
- For groups of questions pertaining to specific land allocations or topics, an introductory question would help frame the entire set and make the list seem less daunting.
- Consider the inclusion of a capstone question as to whether the project met overall compliance requirements of the ROD and its S&Gs.
- Improve direction so that Provincial Monitoring Teams have greater consistency in responses to questions.
- Referencing page numbers in the ROD proved beneficial to Province Monitoring Teams and should be continued.

## **Acknowledgments**

Internal agency and PAC reviews were conducted during the development of this report. Numerous comments and suggestions for modifying and improving the approach to implementation monitoring were provided. The Regional Monitoring Team wishes to thank everyone who contributed comments and ideas during these reviews, along with those who participated in the monitoring process itself.

Special thanks go to Provincial Monitoring Team leaders; Provincial Monitoring Team members; Provincial Advisory Committees; Mauragrace Healey for editorial assistance; and Mary Schoenborn for document preparation.

The Regional Monitoring Team appreciates receiving copies of several individual letters written by Provincial Monitoring Team members after their field reviews, summarizing their experience and offering additional points for consideration.

## Acronyms

AMA .....	Adaptive Management Area
BLM.....	Bureau of Land Management
CWD .....	Coarse woody debris
FACA.....	Federal Advisory Committee Act
FS .....	Forest Service
IAC.....	Intergovernmental Advisory Committee
LSR .....	Late-Successional Reserve
MLSA .....	Managed Late-Successional Area
NEPA .....	National Environmental Policy Act
NFP .....	Northwest Forest Plan
PAC.....	Provincial Advisory Committee
REO.....	Regional Ecosystem Office, Portland, OR
ROD .....	Record of Decision
RR .....	Riparian Reserve
RIEC .....	Regional Interagency Executive Committee
S&G .....	Standard and Guideline

## References

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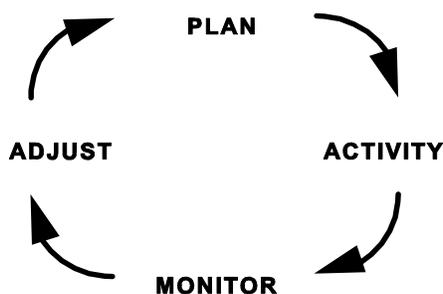
Willamette and Oregon Coast Provinces' Summary Report. 1996. FY 1996 Implementation Monitoring for Timber Harvest Activities--Significant Findings and Suggestions for Improvement. Portland, OR.

## **Appendix A: The Adaptive Management Process**

Of primary importance is an understanding of how implementation monitoring is to be used. The key concept is "adaptive management," as used in the scientific literature and in the ROD and FEMAT (Thomas *et al.* 1993) documents which provide the conceptual basis for the Northwest Forest Plan.

The adaptive management process is a continuous cycle of action based on hypothesis testing. Planning is followed by an action based on a stated hypothesis, then the action is monitored, evaluation of monitoring results occurs, and finally adjustment is made.

### **ADAPTIVE MANAGEMENT PROCESS**



This process helps managers determine how well their actions meet Northwest Forest Plan direction and identifies where management actions may need to be modified to increase success. Implementation monitoring is one key to adaptive management. Monitoring in the adaptive management framework is necessary because of the uncertainty of our predictions. The purposes of implementation monitoring under this adaptive management framework are to provide the manager with the information necessary to adjust management actions in a timely manner, and to document how successfully the Northwest Forest Plan is being implemented.

## **Appendix B: List of Questions for FY 1996 Implementation Monitoring Program**

April 3, 1996

TO: Provincial Implementation Monitoring Team Leads  
FROM: Regional Implementation Monitoring Team (RIMT)  
SUBJ: Set of Questions to be Addressed in FY96 Monitoring Reviews of Selected FY95  
Timber Sales

The attached set of questions, based on the Northwest Forest Plan (NFP) Record of Decision and Standards and Guidelines (ROD and S&Gs), is a critical component of FY96 implementation monitoring activities. These questions are the foundation from which the selected set of 45 FY95 timber sales will be monitored. They were initially designed by a subgroup of the Regional Ecosystem Office (REO) Research and Monitoring Committee (RMC) in the spring of 1995. The Regional Implementation Monitoring team (RIMT) has refined the list of questions to those applicable to the timber sales selected for monitoring.

The implementation monitoring questions focus on how well the Forest Service (FS) and Bureau of Land Management (BLM) are complying with the objectives listed in the ROD and S&Gs for each of the selected timber sales. Responses will serve as the raw data from which an aggregated report will be prepared on FY96 implementation monitoring activities. For each of the selected timber sales we request that team leads work with host field management units to accomplish the following:

- distribute questions to field units well in advance of scheduled reviews
- work with field units to complete questions for each review sale prior to scheduled reviews
- have field units return completed set of questions to you so that copies can be made for review by team members prior to and during scheduled reviews

Questions are structured to be answered simply "yes" or "no". Those questions receiving a "no" answer also need to be followed up with rationale as to "why not?" Not every question will need to be answered for every sale. For those questions not applicable to a particular sale, simply indicate N/A and go on to the next question. Some questions are unique to either the FS or BLM, and are grouped accordingly. Because this is a pilot effort, not every question may appear to be relevant to timber sales. We are interested in knowing what questions do not make sense for this effort.

Should you have follow-up questions or need additional information, please contact your RIMT member.

Attachment: Implementation Monitoring Questions  
/s/ RIMT Members

**FY96 Implementation Monitoring Program  
Projects - Timber Sale Harvest Units  
Version: 4/2/96**

**Implementation Monitoring Questions for Projects**

Legend of Codes:

<AL> = All  
<AMA>= Adaptive Management Area  
<RR> = Riparian Reserve  
<LSR> = Late Successional Reserve  
<MTX> = Matrix  
<MLSA>= Managed Late Successional Areas  
<AW> = Administratively Withdrawn

R6 = Page # reference in Record of Decision (ROD)

C7 = Page # reference in Appendix C of the Standard and Guides (S&G)

**Questions on Record of Decision**

1. Have timber sales undergone appropriate site-specific analysis and do they comply with regulatory requirements for public participation and administrative appeal? R13 <AL>
2. Have matrix objectives for silviculture included the following? B5-9 <MTX>
  - production of commercial yields of wood.
  - retention of moderate levels of ecologically valuable old-growth components.
  - provision of early-successional habitat.

**Questions on Transition Standards and Guidelines**

3. For projects in Fiscal Years 1994-1996 and located within Late-Successional Reserves, has an initial late-successional reserve assessment been done at a level of detail sufficient to assess whether activities are consistent with the objectives of the Late-Successional Reserves? R57,A7,C11,C26 <LSR>

**Questions on Common to all Land Allocations Standards and Guidelines**

4. Have analyses been conducted and appropriate coordination and consultation occurred on activities to ensure consistency under existing laws? R53-54,A2-3,C1 <AL>
5. Have all applicable standards and guidelines been applied in areas where land allocations overlap? R7-8,C1,C2 <AL>

6. Where more than one set of standards and guidelines applied, have the more restrictive standards and guidelines been followed? R7-8,C1,C2 <AL>
7. Have standards and guidelines in current plans and draft plan preferred alternatives been applied where they are more restrictive or provide greater benefits to late-successional forest related species? R7-8,C1,C2 <AL>
8. Has the 15 percent green-tree retention standard for matrix been applied where current plans and draft plan preferred alternatives for National Forests are greater than 15 percent for the matrix? C3 <AL> NF only.
9. Within Adaptive Management Areas have standards and guides within current plans and draft plan preferred alternatives been considered during planning and implementation activities? C3 <AL>
10. Has information from watershed analysis been used in project planning? R55-56,A7,B12,B17,B20-30,C3,C7,E20-21 <AL>
11. Have proposed research activities been assessed to determine if they are consistent with the objectives of these standards and guidelines? R15,C4,C18,C38,D7,E3 <AL>
12. If research activities are not consistent, will they test critical assumptions of these standards and guides or produce results important to habitat development? R15,C4,C18,C38,D7,E3 <AL>
13. Have non-conforming research activities being located where they will have the least adverse effect upon the objectives of these standards and guidelines? R15,C4,C18,C38,D7,E3 <AL>
14. Standards and guidelines may differ between Oregon and California. In this case, for activities along the California-Oregon border, has a determination been made as to whether the following criteria were met? C4 <AL>
  - activities are consistent within Administrative Unit boundaries.
  - activities are stated as the intent of the unit.
  - activities involve only a slight fraction of the unit.
  - activities do not violate a clear assumption of the standards and guidelines.

### **Survey and Manage**

15. Has information on known sites for Survey and Manage species (Survey Strategy 1) been used in the design and implementation of ground-disturbing activities? C4,C43-48 <AL>
16. Have specific treatments been designed to protect these species, including vascular plants? C4-6 <AL>

17. Have management areas been established around the two unprotected sites of Oxyporous nobilissimus? C4-5 <AL>
18. Have 160 acres been withdrawn from ground-disturbing activities for rare and endemic fungi if site-specific measures have not been developed? C4-5 <AL>
19. Has the project observed established managed sites for Survey and Manage species? C4-5 <AL>
20. Within 50 miles of the coast, have 2 years of pre-project surveys been conducted to assure that no marbled murrelet nests exist in areas planned for timber harvest? C10, 12 <AL>
21. Have surveys for great gray owls been conducted prior to ground-disturbing activities and mitigation measures implemented for required habitat and known nest sites? C21 <AL>

### **Questions on Key Watersheds Standards and Guidelines**

22. Has watershed analysis been conducted prior to management activities in key watersheds? R55-56,A7,B12,B17,B20-30,C3,C7,E20,E21 <AL>

### **Questions on Late-Successional Reserves Standards and Guidelines**

23. Have management assessments for Late-Successional Reserves been prepared prior to habitat manipulation activities? A7,C11,C26 <LSR>
24. Have unmapped Late-Successional Reserves been observed for the following? C3 <LSR>
  - around all occupied marbled murrelet sites, now mapped.
  - 100 acres around known spotted owl activity centers.
25. Have unmapped Late-Successional Reserves and Managed Late-Successional Areas been observed for the following? C3 <LSR>
  - managed pair areas around known spotted owl activity centers.
  - other protection buffers.
26. 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 <LSR>
27. Have silvicultural treatments in non-murrelet habitat within the 0.5-mile circle been designed to protect or enhance suitable or replacement habitat? C10, 12 <LSR>
28. Have the 100-acre spotted owl areas been maintained even if they are no longer occupied by spotted owls? C10-11 <LSR>

29. Have timber management activities within the 100-acre spotted owl areas complied with standards and guidelines for Late-Successional Reserves? C10-11 <LSR>
30. Have management activities adjacent to the 100-acre spotted owl areas been designed to reduce risks of natural disturbance? C10-11 <LSR>

### **Silviculture**

31. a. Have thinnings or other silvicultural treatments within LSRs been submitted to the Regional Ecosystem Office for review? C12 <LSR>  
b. Have the consistency requirements recommended by REO been implemented in the development of an affected timber sale? C12 <LSR>
32. In timber harvest units west of the Cascades, have stands over 80 years old (110 years in the North Coast) been excluded except under high risk circumstances? C12 <LSR>
33. Has the purpose of silvicultural treatments west of the Cascades (precommercial and commercial thinnings) been to benefit the creation and maintenance of late-successional forest condition? C12 <LSR>
34. Have silvicultural activities east of the Cascades and in the Oregon and California Klamath Provinces been aimed at reducing risk through focus on younger stands in Late-Successional Reserves? C12 <LSR>
35. Has the objective of silvicultural activities in younger stands east of the Cascades and in the Oregon and California Klamath Provinces been to accelerate development of late-successional conditions while making the future stand less susceptible to natural disturbances? C12 <LSR>
36. Have salvage activities in younger stands east of the Cascades and in the Oregon and California Klamath Provinces focused on the reduction of catastrophic insect, disease, and fire threats? C12,13 <LSR>
37. Were salvage activities submitted to the Regional Ecosystem Office for review? C13 <LSR>
38. Has salvage been limited to disturbed sites greater than 10 acres and less than 40 percent canopy closure? C14 <LSR>
39. Have all standing live trees been retained in salvage areas? C14 <LSR>
40. Have snags that are likely to persist been retained in salvage areas? C14 <LSR>

41. Has coarse woody debris been retained in salvage areas in amounts similar to naturally regenerated stands? C15 <LSR>
42. Has retained coarse woody debris approximated the species composition of the original stand? C15 <LSR>
43. Have green-tree and snag guidelines been applied before the coarse woody debris guidelines? C15 <LSR>
44. If salvage does not meet the general guidelines, has it focused on areas where there is a risk of unacceptable large scale fire or insect damage? C15 <LSR>
45. Have deviations from the general guidelines been allowed to provide access to salvage sites and logging operations? C15 <LSR>

#### **Multiple-use Activities other than Silviculture**

46. Do fuel management and fire suppression activities within LSRs minimize adverse impacts to late-successional habitat? C17 <LSR>
47. Have hazard reduction and other prescribed fire applications proposed prior to completion of the fire management plan been submitted to the Regional Ecosystem Office for review? C18 <LSR>
48. Has an assessment of impacts been completed for any proposed introduction of nonnative species? C19 <LSR> <LSR>

**Protection Buffers** - Are there concerns for any of the following species associated with FY95 review sale harvest units? If no skip to 59; if yes, address each relevant question in 49-58.

49. Have stands of overmature white fir at about 5,000 feet elevation been maintained for Ptilidium californicum (liverwort) for inoculum and dispersal along corridors? C20 <LSR>
50. Has timber harvest been deferred and removal of fallen trees and logs been avoided if distribution patterns of Ptilidium californicum (liverwort) are disjunct and highly localized? C20 <LSR>
51. Have known sites of Ulotia meglospora (moss) been protected if distribution patterns are disjunct and highly localized? C20 <LSR>
52. Have timber harvest or other activities been deferred which would not maintain desired habitat characteristics and population levels for Ulotia meglospora (moss)? C20 <LSR>

53. Have ground-disturbing activities been deferred if studies continue to show the populations of Aleuria rhenana (fungus) are rare? C20 <LSR>
54. Have older forests been protected from ground disturbance where the following species have been located? C20 <LSR>  
- Otidea leporina, O. onotica, and O. smithii (fungi)
55. Have localities been protected from timber harvest, mining, quarry activity, and road building within the delineated sites containing Shasta salamanders? C20 <LSR>
56. Has a buffer of at least the height of one site-potential tree or 100 feet horizontal distance, whichever is greater, surrounding the outcrop been established for each site containing Shasta salamanders? C20 <LSR>
57. Has the project maintained a no-harvest buffer of 300 feet around meadows and natural openings for the great gray owl? C21 <LSR>
58. Has the project protected a 1/4-mile protection zone around nest sites of the great gray owl? C21 <LSR>

#### **Questions on Managed Late-Successional Areas Standards and Guidelines**

59. For projects in the California Cascades and the Eastern Washington Cascades, has the project observed the Managed Pair Areas surrounding spotted owl activity centers? C23 <MLSA>

#### **Silviculture -**

60. Have silviculture, salvage, and other multiple-use activities for these areas been guided by the objective of maintaining adequate amounts of suitable habitat for the northern spotted owl? C26 <MLSA>

**Protection Buffers** - Are there concerns for any of the following species associated with FY95 review sale harvest units? If no, skip to 69. If yes, address each relevant question 61-68.

61. Were decay class 3, 4, and 5 logs and canopy closure greater than 70 percent protected for the following species where they are found? C27 <MLSA>  
- Brotherella roellii, Buxbaumia piperi, B. viridis, Rhizomnium nudum, Schistostega pennata, and Tetraphis geniculata (mosses)
62. Have activities that conflict with maintaining suitable habitat characteristics and known populations of Brotherella roellii (moss) been deferred? C27 <MLSA>

63. Have deep litter layers of older forests where Sarcosoma mexicana (fungus) is found been protected? C27 <MLSA>
64. Has the project observed buffers of at least the height of one site-potential tree or 100-foot horizontal distance, whichever is greater, surrounding the known locations for the Larch Mountain, Siskiyou Mountain, and Del Norte salamanders? C28 <MLSA>
65. Have ground disturbing activities that disrupt the talus layer been avoided for the Larch Mountain, Siskiyou Mountain, and Del Norte salamanders? C28 <MLSA>
66. Has a 40 percent canopy closure been maintained within the buffers for the Larch Mountain and Del Norte Salamanders? C28 <MLSA>
67. Has partial harvest been conducted using helicopters or high-lead cable systems within the buffers for the Larch Mountain Salamander and the Del Norte Salamander? C28 <MLSA>
68. Has removal of overstory trees within the sites of the Siskiyou Mountain Salamander been prohibited? C28 <MLSA>

#### **Questions on Riparian Reserves Standards and Guidelines**

69. Have all five categories of streams or water bodies been identified? C30 <MLSA,RR>
70. Have the riparian reserve boundaries been established for fish bearing streams as the greater of the following? C30 <MLSA,RR>
  - 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 or 300 feet
  - as modified through watershed analysis, ID team, and NEPA process (if this is the case report modification and rationale)
71. Have the riparian reserve boundaries been established for permanently flowing nonfish-bearing streams as the greater of the following? C30 <MLSA,RR>
  - 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 or 150 feet
  - as modified through watershed analysis, ID team, and NEPA process (if this is the case report modification and rationale)
72. Have the riparian reserve boundaries been established for constructed ponds and reservoirs, and wetlands greater than 1 acre as the greater of the following? C30 <MLSA,RR>

- 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 or 150 feet from the edge of the wetland or the maximum pool elevation
  - as modified through watershed analysis, ID team, and NEPA process (if this is the case report modification and rationale)
73. Have the riparian reserve boundaries been established for lakes and natural ponds as the greater of the following? C31 <MLSA,RR>
- 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 or 300 feet
  - as modified through watershed analysis, ID team, and NEPA process (if this is the case report modification and rationale)
74. Have the riparian reserve boundaries been established for seasonally flowing or intermittent streams, wetlands less than 1 acre, and unstable and potentially unstable areas as the greater of the following? C31 <MLSA,RR>
- the extent of unstable and potentially unstable areas (including earthflows)
  - the stream channel and extent to the top of the inner gorge
  - outer edges of riparian vegetation
  - slope distance of one site potential tree height or 100 feet
  - as modified through watershed analysis, ID team, and NEPA process (if this is the case report modification and rationale)
75. Have Riparian reserves been excluded from timber harvest, including fuelwood cutting, except if necessary to obtain Aquatic Conservation Strategy objectives through the following? C31,32 <MLSA,RR>
- salvage and fuelwood cutting following catastrophic events.
  - salvage only when watershed analysis determined that coarse woody debris needs were met.
  - silvicultural practices to control stocking, reestablish and manage stands, and acquire vegetation characteristics.
76. Do fuel treatments and fire suppression strategies meet Aquatic Conservation Strategy objectives and minimize disturbance of riparian ground cover and vegetation? C35 <MLSA,RR>
77. Have incident bases, camps, helibases, staging areas, helispots, and other centers for incident activities been located outside Riparian Reserves? C35 <MLSA,RR>

78. Has an interdisciplinary team been used to predetermine suitable incident base and helibase locations if such activities must be located within Riparian Reserves? C35 <MLSA,RR>
79. Have prescribed burn projects and prescriptions been designed to contribute to the attainment of the Aquatic Conservation Strategy objectives? C35 <MLSA,RR>
80. Has delivery of retardant, foam or additives to surface waters for fire and fuels management been minimized? C35 <MLSA,RR>

### **General Riparian Area Management**

81. Have trees which were felled to reduce safety risks been kept on-site when needed for coarse woody debris? C37 <MLSA,RR>

### **Research**

82. Have research activities been analyzed to ensure that significant risk to watershed values does not exist? C38 <MLSA,RR>
83. Have current funded agency research activities been reviewed by the Regional Ecosystem Office? C38 <MLSA,RR>

### **Questions on Matrix Standards and Guidelines**

#### **Specified Amounts of Coarse Woody Debris**

84. For 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 in diameter) been retained in decay class 1 and 2? C40 <MTX>
85. 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 than or equal to 16 inches in diameter and 16 feet long) been retained in decay class 1 and 2? C40 <MTX>
86. In areas of partial harvest, have coarse woody debris guidelines been modified to reflect the timing of stand development cycles? C40 <MTX>
87. For National Forests, has coarse woody debris already on the ground been retained and protected to the greatest extent possible during treatment? C40 <MTX>

88. For National Forests, have down logs been left within forest patches that are retained under the green-tree retention guidelines? C41 <MTX>

### **Green Tree and Snag Retention**

#### **Applicable to Forest Service only-**

89. For National Forests, have trees been left in patches generally larger than 2.5 acres and intended to be left protected for multiple rotations? C41 <MTX>
90. For National Forests, outside the Oregon Coast Range and the Olympic Peninsula Provinces, has at least 15% of each cutting unit been retained? C41 <MTX>
91. On the Mt. Baker-Snoqualmie National Forest, have site specific prescriptions been developed to maintain green trees, snags and down logs? C41 <MTX>
92. For National Forests, has 70% of the total retained area occurred as aggregates of moderate to larger size (0.2 to 1 hectare or more) with the remainder as dispersed structures? C41,42 <MTX>
93. For National Forests, have patches and dispersed retention included the largest, oldest, decadent or leaning trees and hard snags occurring in the unit, and are the patches being retained indefinitely? C42 <MTX>

#### **Applicable to Bureau of Land Management Only -**

94. For lands administered by the BLM in California, have green tree and snag retention been managed according to existing District Plans? C41 <MTX>
95. On lands administered by the BLM 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 Connectivity/Diversity Blocks incorporated the following? C42 <MTX>
- 150-year control rotations.
  - 12 to 18 green trees per acre retained.
  - 25 to 30 percent in each block in late-successional condition.
96. On 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 <MTX>
97. For Medford District, BLM, lands south of Grants Pass, were 16 to 25 large green trees per acre retained in harvest units? C42 <MTX>

98. For lands administered by the BLM, have the following additional matrix standards and guidelines been applied to lands designated as Deferred and Non-Deferred Old-growth Emphasis Areas in the South Willamette-North Umpqua Area of Concern in the Eugene District, and to the entire area of seven Managed Pair Areas and two Reserved Pair Areas near the Medford/Roseburg District boundary and on a portion of the Coos Bay District surrounding Designated Conservation Area OD-33? (Note: these lands have been designated Connectivity/Diversity Blocks in the BLM RMPs) C42,43 <MTX>
- 150-year area control rotations.
  - 25 to 30 percent of each block in late-successional condition.
  - 12 to 18 green trees per acre retained.

**Applicable to both Forest Service and BLM -**

99. 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 <MTX>
100. Has additional protection been provided for caves, mines, and abandoned wooden bridges and buildings that are used as roost sites for bats? C43 <MTX>
101. Have surveys for bats been conducted according to standardized protocol? C43 <MTX>
102. Has timber harvest been prohibited within 250 feet of sites containing bats? C43 <MTX>
103. Have site management measures been developed for sites containing bats? C43 <MTX>
104. If Townsend's big-eared bats were found have the appropriate Washington or Oregon state wildlife agencies been notified? C44 <MTX>
105. Have management prescriptions included special consideration for potential impacts to the Townsend's big-eared bat? C44 <MTX>
106. Have site treatment practices, particularly the use of fire and pesticides, and harvest methods been modified to minimize soil, and litter disturbance? C44 <MTX>
107. Have specific measures been undertaken to minimize the effects of yarding and heavy equipment operations on soils and litter? C44 <MTX>
108. Have specific measures been undertaken to reduce the intensity and frequency of site treatment practices? C44 <MTX>
109. Have late-successional patches been retained where less than 15% of a fifth field watershed is in late-successional forest? C44 <MTX>

**Protection Buffers**

110. Have 0.6 conifer snags (ponderosa and Douglas-fir) per acre, at least 15 inches dbh or the largest available, and in the soft decay stage, been retained for the white-headed woodpecker and the pygmy nuthatch? C46 <MTX>
111. Have 0.12 conifer snags (mixed conifer and lodgepole pine in higher elevations of the Cascade Range) per acre, at least 17 inches dbh or largest available, and in the hard decay stage, been retained for black-backed woodpecker? C46 <MTX>
112. Have beetle infested trees been left for black-backed woodpeckers? C46 <MTX>
113. Have provisions of snags for other cavity nesting species, including primary cavity nesters, been added to the requirements for the white-headed woodpecker, black-headed woodpeckers, pygmy nuthatch, and flammulated owl? C46,47 <MTX>
114. If snag requirements for other cavity nesters could not be met, was harvest prohibited? C46 <MTX>
115. Have fire and fuels management activities been coordinated with local governments, agencies, and landowners during watershed analysis to identify additional factors which may affect hazard reduction goals? C48 <MTX>

#### **Questions on Adaptive Management Area Standards and Guidelines**

116. Has project planning included the following? D6 <AMA>
  - early involvement of the public.
  - coordination with overall activities within the province.
117. Have the standards and guidelines in current plans and draft plan preferred alternatives for hazard reduction been followed until approved Adaptive Management Area plans have been established? D8 <AMA>

#### **Standards and Guidelines**

118. Have projects in Late-Successional Reserves and Managed Late-Successional Areas been managed according to the standards and guidelines for such reserves? D9 <AMA>
119. Has riparian protection been comparable to that prescribed for other federal land areas? D9 <AMA>
120. Has analysis of Riparian Reserve widths also considered the contribution of these reserves to other, including terrestrial, species? D10 <AMA>
121. Has the intent of the standards and guidelines for coarse woody debris, green tree and snag retention, identified for the matrix, been met? C41,D10 <AMA>

122. Has additional protection been provided for caves, mines, and abandoned wooden bridges and buildings that are used as roost sites for bats? D10 <AMA>
123. Have surveys for bats been conducted according to standardized protocol? D10 <AMA>
124. Has timber harvest been prohibited within 250 feet of sites containing bats? D10 <AMA>
125. Has the project incorporated management prescriptions to provide special consideration for the potential impacts to the Townsend's big-eared bat? D11 <AMA>
126. Have site treatment practices, particularly the use of fire and pesticides, and harvest methods been modified to minimize soil and litter disturbance? D11 <AMA>
127. Have specific measures been undertaken to minimize the effects of yarding and heavy equipment operations on soils and litter? D11 <AMA>
128. Have specific measures been undertaken to reduce the intensity and frequency of site treatment practices? D11 <AMA>
129. Have late-successional patches been retained where less than 15% of a fifth field watershed is in late-successional forest? C44,D11 <AMA>
130. Has the project been surveyed for marbled murrelets and occupied sites protected for the following Adaptive Management Areas? D15 <AMA>
  - Northern Coast Range Adaptive Management Area, Oregon
  - Olympic Adaptive Management Area, Washington (except in the Quinault Special Management Area)
131. Has the project observed the standards and guidelines for Reserved Pair Areas for spotted owls in the Finney and Northern Coast Range Adaptive Management Area? D13, D15 <AMA>

## **Appendix C: FY 1996 Implementation Monitoring Timeline**

05/30/95	Draft Implementation Design
June 95	IAC Meeting Discussion on Draft Implementation Monitoring Guidelines
July 95	RIEC Direction to REO/RMC to implement modified program
July 95	Selection of FY95 Timber Sales as FY96 Pilot Activity
Sept. 95	REO Direction to Create RIMT
Jan. 96	RIMT Members Named
Jan.-Mar. 96	RIMT Process Development
02/22-23/96	Memorandums to Field Managers and Partner Agencies on FY96 Activities
03/11/96	Due Date for Identification of PIMT Leaders
04/03/96	Training/Orientation for PIMT Leaders
May 96	Completion of Timber Sale Field Review Schedule
06/28/96	REO Letter Sent to PACs on Ideas for FY97 Implementation Monitoring
07/31/96	Timber Sale Field Review Reports Due from Team Leads
08/02/96	PAC Responses on FY97 Implementation Activities Due
09/30/96	Draft FY96 Regional Implementation Monitoring Report Distributed for Agency, REO, Provincial Team, and PAC Reviews
10/15/96	Comments on Draft FY96 Implementation Monitoring Report Due Back to RIMT
10/28/96	Final Draft FY96 Regional Implementation Monitoring Report Sent to REO
11/01/96	Final FY96 Regional Report Sent to IAC Meeting Participants for Review
12/5/96	FY96 Implementation Monitoring Results and Report on IAC Meeting Agenda

12/96	IAC and RIEC Guidance on FY97 Implementation Monitoring Activities Determined
1/97	Process for FY97 Implementation Monitoring Program Initiated
3/3/97	Final FY96 Regional Implementation Monitoring Report Sent to REO

Legend:

IAC: Interagency Advisory Committee

RIEC: Regional Interagency Executive Committee

REO: Regional Ecosystem Office

RMC: Research and Monitoring Committee

RIMT: Regional Implementation monitoring Team

PIMT: Provincial Implementation Monitoring Team

PAC: Provincial Advisory Committee

**Appendix D: FY 1995 BLM and Forest Service Timber Sales  
Selected for FY 1996 Implementation Monitoring Pilot Program**

<u>#</u>	<u>St</u>	<u>Agency</u>	<u>Dist/For</u>	<u>RD</u>	<u>Province</u>	<u>ID/Sale Name</u>	<u>MBF</u>	<u>LUA</u>
01	CA	FS	Six Rivers	54	CA Coastal	Van Duzen Thinning	89	Matrix
02	OR	FS	Deschutes	5	Deschutes	DEMO	315	Matrix
03	OR	FS	MtHood	1	Deschutes	Haze (Hazel POA)	2729	Matrix
04	WA	FS	Okanogan	5	EWashCascades	Whiteface Salvage	4300	LSR
05	CA	FS	Klamath	57	Klamath	Four Corner, Chip	350	AMA
06	CA	FS	Klamath	57	Klamath	Divide Insect SSTS	212	ANA
07	CA	BLM	Ukiah		Klamath	3 Union Hill	331	Matrix
08	CA	FS	Klamath	58	Klamath	East Roadside SSTS	65	Matrix
09	CA	FS	Klamath	55	Klamath	Baker's Can Ins. Salv.	322	Matrix
10	CA	FS	Shasta-Trinity	56	Klamath	Elk Gulch II	1612	Matrix
11	OR	FS	Winema	3	Klamath	Odessa	80	Matrix
12	CA	FS	Mendocino	51	NW Sacramento	Kingsley Salvage	194	LSR
13	CA	FS	Shasta-Trinity	61	NW Sacramento	McCloud AO 1st Qtr95	4455	Matrix
14	CA	FS	Shasta-Trinity	61	NW Sacramento	Ninebuck	3400	Matrix
15	WA	FS	Olympic	5	Olympic	Whatever Salvage	273	AMA
16	WA	FS	Olympic	4	Olympic	WS22 & 40	120	Matrix
17	OR	BLM	Eugene		Oregon Coast	394 Seed Orchard Neg R/W	7500	LSR
18	OR	BLM	Roseburg		SW Oregon	207 12-Mile Salv Neg	207	LSR
19	OR	FS	Siskiyou	1	SW Oregon	Upper Pistol	9542	LSR
20	OR	FS	Umpqua	6	SW Oregon	Campground Haxard	7	LSR
21	OR	BLM	Coos Bay		SW Oregon	24 Bateman & Robin	1035	Matrix
22	OR	BLM	Coos Bay		SW Oregon	310 I.C. Ranch Salvage	5400	Matrix
23	OR	BLM	Coos Bay		SW Oregon	311 Terminal Bud	49	Matrix
24	OR	BLM	Medford		SW Oregon	85900-Hull Mt. Fire Salvage	4261	Matrix
25	OR	BLM	Medford		SW Oregon	18 Hyatt Ballfield	74	Matrix
26	OR	BLM	Roseburg		SW Oregon	1 Right View	3954	Matrix
27	OR	BLM	Roseburg		SW Oregon	217 5900- J.D. Salvage	11	Matrix
28	OR	BLM	Roseburg		SW Oregon	228 5900-Sutherlin Neg.	23.3	Matrix
29	OR	FS	Rogue River	6	SW Oregon	Sunshine	500	Matrix
30	OR	FS	Rogue River	3	SW Oregon	Lock	4988	Matrix
31	OR	FS	Siskiyou	1	SW Oregon	Butte #1	8	Matrix
32	OR	FS	Umpqua	3	SW Oregon	Amity Salvage	180	Matrix
33	WA	FS	Gifford Pinchot	4	SW Washington	Walupt Wabbit	85	AMA
34	WA	FS	Gifford Pinchot	5	SW Washington	SH-Head 2	965	Matrix
35	OR	BLM	Salem		Willamette	304 Mill Creek Ned R/W	111	LSR
36	OR	FS	Willamette	5	Willamette	Mossback	720	LSR
37	OR	BLM	Eugene		Willamette	224 River Grub	2018	Matrix
38	OR	FS	Umpqua	1	Willamette	Optical	1736	Matrix
39	OR	FS	Willamette	1	Willamette	Area 17 Salvage	8	Matrix
40	OR	FS	Willamette	8	Willamette	Finberry	7900	Matrix
41	OR	FS	Willamette	7	Willamette	Campground Salvage	55	Matrix

---

<u>#</u>	<u>St</u>	<u>Agency</u>	<u>Dist/For</u>	<u>RD</u>	<u>Province</u>	<u>ID/Sale Name</u>	<u>MBF</u>	<u>LUA</u>
42	WA	FS	Mt Baker-Snoq	7	WWaCascades	Summer Home Salvage	79	LSR
43	WA	FS	Wenatchee	8	Yakima	Jungle Wood Salvage	12	LSR
44	WA	FS	Wenatchee		Yakima	Swauk Deck	60	LSR
45	WA	FS	Wenatchee		Yakima	Fini 13 Salvage	50	Matrix

## Project Summary By Agency and State

### BLM - 13 Projects

California - 1 Project  
Ukiah 1

Oregon - 12 Projects  
Salem 1  
Medford  
Eugene 2  
Roseburg 4  
Coosbay 3

### FS -32 Projects

California - 9 Projects  
Six Rivers 1  
Klamath 4  
Shasta-Trinity 3  
Mendocino 1

Oregon - 14 Projects  
Winema 1  
Deschutes 1  
Rogue 2  
Umpqua 3  
Siskiyou 2  
Willamette 4  
Mt. Hood 1

Washington - 9 Projects  
Okanogan 1  
Wenatchee 3  
Mt. Baker-Snoqualmie 1  
Olympic 2  
Gifford Pinchot 2

## **Appendix E: Memorandum Directing FY 1996 Implementation Monitoring Pilot Program**

### **REGIONAL ECOSYSTEM OFFICE**

333 SW 1st  
P.O. Box 3623  
Portland, Oregon 97208-3623  
Phone: 503-326-6265 FAX: 503-326-6282

#### **MEMORANDUM**

**DATE:** February 22, 1996

**To:** Elaine Y. Zielinski, State Director, Bureau of Land Management, Oregon/Washington  
Ed Hastey, State Director, Bureau of Land Management, California  
John E. Lowe, Regional Forester, Forest Service, R-6  
G. Lynn Sprague, Regional Forester, Forest Service, R-5

**FROM:** Donald R. Knowles, Executive Director

**SUBJECT:** Transmittal of Memorandum to Field Officials to Establish Provincial Implementation  
Monitoring Teams

#### **REPLY REQUESTED FEBRUARY 23**

The Regional Implementation Monitoring Program for the Northwest Forest Plan (NFP) is being initiated this year as one of the key components in support of the NFP. The program has been designed by an interagency work group with assistance from the Research and Monitoring Committee (RMC) of the Regional Ecosystem Office (REO). The FY 1996 pilot effort will focus on timber sales (specifically harvest units) within the region of the NFP, although the scope of the program is expected to broaden in FY 1997. A Regional Implementation Monitoring Team has been established to work with Provincial Interagency Executive Committees, Forest Supervisors, and District Managers to conduct implementation monitoring reviews of a sample of FY 1995 timber sales. This pilot effort will result in a report on timber sale compliance with NFP Standards and Guidelines.

A key component of the implementation monitoring program is the use of interagency, intergovernmental, interdisciplinary provincial teams to conduct the monitoring reviews. Enclosed for your signature is a letter outlining the initial steps of the review process and identifying Forest Service and Bureau of Land Management responsibilities in setting up Provincial Implementation Monitoring Teams.

Please call or FAX approval for use of your file signature to Laurie Ystad, REO's secretary, at 503-326-6277 or FAX 503-326-6282. Given the timing of the pilot implementation monitoring effort, please provide your response before 4:30 p.m. on Friday, February 23. We will combine signatures and provide a final copy of the letter to you for transmission to your field units. We will also forward a copy of the signed letter to the other Regional Interagency Executive Committee members.

If you have questions or need additional information, please do not hesitate to call.

Enclosure(s)  
cc: REO Reps  
614/ly

**United States  
Department of  
Agriculture**      **Forest  
Service  
R-5/6**

**United States  
Department of  
Interior**

**Bureau of Land  
Management  
OR/WA/CA**

**Reply to:** FS: 1920/2430  
BLM: 1734

Date: February 23, 1996

**Subject:** FY 1996 Implementation Monitoring - Northwest Forest Plan

**To:** Forest Supervisors and District Managers Within the Area of the Northwest Forest Plan

### **REPLY DUE MARCH 11**

#### **Background**

The Regional Implementation Monitoring Program for the Northwest Forest Plan (NFP) is being initiated this year as one of the key components in support of the NFP. The program has been designed by an interagency work group with assistance from the Research and Monitoring Committee (RMC) of the Regional Ecosystem Office (REO). The FY 1996 pilot effort will focus on timber sales within the region of the NFP. We recognize that ongoing Forest and District monitoring programs may be examining a wider variety of activities including roads. In addition, based on the results of the pilot effort, the scope of the regional Implementation Monitoring Program will broaden in FY 1997 to address additional Standards and Guidelines.

Timber sales have been identified as high-priority projects for monitoring in FY 1996. A 10-percent random sample of all FY 1995 timber sale decisions within the region of the NFP resulted in selection of 43 sales (Enclosure A). Two additional sales were added to ensure that at least one project is monitored in each province. The focus of FY 1996 reviews will be timber harvest units. Review Teams are expected to spend no more than 2 days (on average) reviewing each project. The results of these reviews will be consolidated at the regional scale.

#### **Implementation Monitoring Teams**

A Regional Implementation Monitoring Team (RIMT) has been formed to facilitate execution of the pilot Implementation Monitoring effort and to coordinate activities among Provincial Implementation Monitoring Teams (PIMTs) conducting the reviews. The RIMT will be working with the provincial teams to develop guidance and training to ensure the pilot effort is a success. RIMT members are also available for briefings at Provincial Interagency Executive Committee meetings and Provincial Advisory Committee (PAC) meetings. To schedule training or briefings for your province team, contact your agency RIMT member. RIMT members are listed in Enclosure B.

A key component of our approach is the use of interagency, intergovernmental, interdisciplinary provincial teams to conduct the implementation monitoring reviews. We request that you work with the Designated Federal Official of your province to recruit and select team leader(s) for the PIMTs. In provinces with multiple jurisdictions, it may be appropriate to designate more than one team leader. Team leaders, in cooperation with Forest Supervisors and District Managers, will coordinate all FY 1996 Implementation Monitoring activities for their respective province(s). Provinces are encouraged to work together and share resources.

We recommend that PIMT members be selected using the following guidelines. The goal is to have an interagency, intergovernmental, and interdisciplinary review team consisting of four-to-nine people, including representation from the Bureau of Land Management, Forest Service, other Federal agencies, and other governmental entities. You are encouraged to extend opportunities for participation to non-Federal PAC members.

**Implementation Monitoring Reports**

After field reviews are completed, PIMT reports will be forwarded through District Managers and Forest Supervisors to the RIMT. The RIMT will then assemble a comprehensive regional report for submission to the RMC and REO. Results will be used to report on regional compliance with NFP Standards and Guidelines for timber sales and to finalize regional implementation monitoring plans for timber sales and other activities in future years. A copy of the schedule for completing the FY 1996 Implementation Monitoring Program is provided in Enclosure C.

**Reply Due**

Please provide the name, address, and phone number of your PIMT team leader selection(s) to your agency RIMT member by March 11. In addition, feel free to contact any RIMT member if you have questions or need additional information.

/s/ William L. Bradley (for)

/s/ John E. Lowe

ELAINE Y. ZIELINSKI  
State Director, Oregon/Washington

JOHN E. LOWE  
Regional Forester, R-6

/s/ Ed HasteY

/s/ G. Lynn Sprague

ED HASTEY  
State Director, California

G. LYNN SPRAGUE  
Regional Forester, R-5

Enclosures

cc:  
REO  
RIMT

614/ly

**Enclosure A-1**

FY 1995 Timber Sales - Implementation Monitoring Sample (10%)  
Summary

			<b>District/Forest (with Sales)</b>		
<b>Agency</b>	<b>Sample</b>		<b>Sampled</b>	<b>No Samples</b>	
BLM	13	1CA 12OR	<b>BLM</b>		
FS	32	9CA 14OR 9WA	1	Ukiah	Lakeview
<b>Land Allocation</b>			3	Coos Bay	
Matrix	30		2	Eugene	
LSR	11		2	Medford	
AMA	4		4	Roseburg	
Key Watershed	4		1	Salem	
Connectivity Blk	1		<b>FS</b>		
<b>Province</b>			1	Deschutes	Siuslaw
WWash Cascades	1		1	Mt Hood	Lassen
EWash Cascades	1		2	Rogue River	
Olympic	2		2	Siskiyou	
Yakima	3		3	Umpqua	
SW Washington	2		4	Willamette	
Oregon Coast	1		1	Winema	
Willamette	7		2	Gifford Pinchot	
Deschutes	2		1	Mt Baker-Snoq	
SW Oregon	15		2	Olympic	
Klamath	7		1	Okanogan	
NW Sacramento	3		3	Wenatchee	
Calif Coast	1		4	Klamath	
			1	Mendocino	
			3	Shasta-Trinity	
			1	Six Rivers	

<b>Size</b>	<b>MBF</b>		<b>State</b>	
Average	1274	(5.4 - 9542)	WA	9
BLM	915		OR	26
FS	1419		CA	10

**Enclosure A-2**

1996 IMPLEMENTATION MONITORING PROGRAM

<u>State/Agency</u>	<u>District/Forest</u>	<u>RD</u>	<u>Province</u>	<u>Sale Id/Sale Name</u>	<u>MBF</u>	<u>LUA</u>
CA FS	Six Rivers	54	CA Coastal	Van Duzen Thinning	89	Matrix
OR FS	Deschutes	5	Deschutes	DEMO	315	Matrix
OR FS	Mt. Hood	1	Deschutes	Haze (Hazel POA)	2729	Matrix
WA FS	Okanogan	5	EWashCascades	Whiteface Salvage	4300	LSR
CA FS	Klamath	57	Klamath	Four Corners, Chip	350	AMA
CA FS	Klamath	57	Klamath	Divide Insect SSTS	212	AMA
CA BLM	Ukiah		Klamath	3 Union Hill	331	Matrix
CA FS	Klamath	58	Klamath	East Roadside SSTS	65	Matrix
CA FS	Klamath	55	Klamath	Baker's Can Ins. Salv.	322	Matrix
CA FS	Shasta-Trinity	56	Klamath	Elk Gulch II	1612	Matrix
OR FS	Winema	3	Klamath	Odessa-P	80	Matrix
CA FS	Mendocino	51	NW Sacramento	Kingsley Salvage	194	LSR
CA FS	Shasta-Trinity	61	NW Sacramento	McCloud AO 1st Qtr95	4455	Matrix
CA FS	Shasta-Trinity	61	NW Sacramento	Ninebuck	3400	Matrix
WA FS	Olympic	5	Olympic	Whatever Salvage	273	AMA
WA FS	Olympic	4	Olympic	WS22 and 40	120	Matrix
OR BLM	Eugene		Oregon Coast	394 Seed Orchard Neg R/W	7.5	LSR
OR BLM	Roseburg		SW Oregon	207 12-Mile Salvage Neg	20.7	LSR
OR FS	Siskiyou	1	SW Oregon	Upper Pistol	9542	LSR
OR FS	Umpqua	6	SW Oregon	Campground Hazard	7	LSR
OR BLM	Coos Bay		SW Oregon	24 Bateman & Robin	1035	Matrix
OR BLM	Coos Bay		SW Oregon	301 I.C. Ranch Salvage	5.4	Matrix
OR BLM	Coos Bay		SW Oregon	311 Terminal Bud	49	Matrix
OR BLM	Medford		SW Oregon	85900-Hull Mt Fire Salv	4261	Matrix
OR BLM	Medford		SW Oregon	18 Hyatt Ballfield	74	Matrix
OR BLM	Roseburg		SW Oregon	1 Right View	3954	Matrix
OR BLM	Roseburg		SW Oregon	217 5900- J.D. Salvage	11	Matrix
OR BLM	Roseburg		SW Oregon	228 5900-Sutherlin Neg.Salvage	23.3	Matrix
OR FS	Rogue River	6	SW Oregon	Sunshine	500	Matrix
OR FS	Rogue River	3	SW Oregon	Lock	4988	Matrix
OR FS	Siskiyou	1	SW Oregon	Butte #1	8	Matrix
OR FS	Umpqua	3	SW Oregon	Amity Salvage	180	Matrix
WA FS	Gifford Pinchot	4	SW Washington	Walupt Wabbit	85	AMA
WA FS	Gifford Pinchot	5	SW Washington	Sh-Head 2	965	Matrix
OR BLM	Salem		Willamette	304 Mill Creek Neg R/W	111	LSR
OR FS	Willamette	5	Willamette	Mossback	720	LSR
OR BLM	Eugene		Willamette	224 River Grub	2018	Matrix
OR FS	Umpqua	1	Willamette	Optical	1736	Matrix
OR FS	Willamette	1	Willamette	Area 17 Salvage	8	Matrix
OR FS	Willamette	8	Willamette	Finberry	7900	Matrix
OR FS	Willamette	7	Willamette	Campground Salvage	55	Matrix
WA FS	Mt Baker-Snoq	7	WWashCascades	Summer Home Salvage	79	LSR
WA FS	Wenatchee	8	Yakima	Jungle Wood Salvage	12	LSR

## **Enclosure B**

### List of RIMT Members

**Bob Alverts**

Oregon State Office, Bureau of Land Management  
503-952-6357  
B.ALVERTS:R06C

**Brian Stone**

Pacific Southwest Region, FS  
415-705-2738  
B.STONE:R05A

**Al Horton**

Pacific Northwest Region, FS  
503-326-3346.  
A.HORTON:R6/PNW

## Enclosure C

### 1996 Implementation Monitoring Schedule

3/11	Team Leader selections forwarded to RIMT.
3/15-4/15	RIMT conducts Team Leader orientation.
5/1-7/31	PIMTs conduct field reviews.
7/31	PIMT reports submitted to RIMT.
9/1-9/15	RIMT distributes DRAFT consolidated report for review.
10/30	RIMT provides final report to RMC/REO.

# REGIONAL ECOSYSTEM OFFICE

333 SW 1st  
P.O. Box 3623  
Portland, Oregon 97208-3623  
Phone: 503-326-6265 FAX: 503-326-6282

## MEMORANDUM

**DATE:** February 23, 1996

**TO:** Ken Feigner, Director, Forest & Salmon Group, Environmental Protection Agency  
Stan M. Speaks, Area Director, Bureau of Indian Affairs  
Michael J. Spear, Regional Director, U.S. Fish & Wildlife Service  
William Stelle, Jr., Regional Director, National Marine Fisheries Service  
William C. Walters, Deputy Field Director, National Park Service

**FROM:** Donald R. Knowles, Executive Director

**SUBJECT:** Transmittal of Memorandum to Field Officials Requesting Participation on Provincial Implementation Monitoring Teams

The Regional Implementation Monitoring Program for the Northwest Forest Plan (NFP) is being initiated this year as one of the key components in support of the NFP. The program has been designed by an interagency work group with assistance from the Research and Monitoring Committee (RMC) of the Regional Ecosystem Office (REO). The FY 1996 pilot effort will focus on timber sales within the region of the NFP, although the scope of the program is expected to broaden in the future. A Regional Implementation Monitoring Team has been established to work with Provincial Interagency Executive Committees (PIECs), Forest Supervisors, and District Managers to conduct Implementation Monitoring reviews of a sample of FY 1995 timber sales. This pilot effort will result in a report on timber sale compliance with Northwest Forest Plan Standards and Guidelines.

Consistent with prior Regional Interagency Executive Committee discussions, the Forest Service (FS) and Bureau of Land Management (BLM) have initiated the FY 1996 pilot effort. A copy of the joint FS and BLM letter requesting the selection of Provincial Implementation Monitoring Teams is enclosed. This letter emphasizes that a key component of the implementation monitoring approach is the use of interagency, intergovernmental, interdisciplinary provincial teams to conduct the monitoring reviews.

Enclosed for your review and consideration is a draft letter requesting your agency's participation on the Provincial Implementation Monitoring Teams (PIMTs). Please feel free to tailor the draft to meet your organizational needs prior to transmitting the information to appropriate field offices. We suggest that a copy of the joint FS and BLM letter be included as an enclosure with your transmittal.

Please note that PIMT team leader selections are expected by mid March, and there will be orientation sessions for team leaders and team members. Although implementation monitoring reviews are not scheduled to begin until May 1, field personnel need to be apprised of the pre-review activities in order to ensure their full participation. We therefore recommend that the information presented in the draft memo be transmitted to the field by March 1.

If you have questions or need additional information, please do not hesitate to contact me.

Enclosures  
cc: FS & BLM execs, and REO reps  
615/ly

**[INSERT AGENCY LETTERHEAD HERE]**

**DATE:** February [ ], 1996

**TO:** [Appropriate Field Officials]

**SUBJECT:** Participation on FY 96 Provincial Implementation Monitoring Teams for the Northwest Forest Plan

As partner agencies involved with implementation of the Northwest Forest Plan (NFP), it is important that we provide solid support and assistance for interagency activities. Opportunities for our participation in FY 1996 implementation monitoring are outlined in the enclosed letter from the Forest Service (FS) and the Bureau of Land Management (BLM). Our participation is important to the success of the NFP and is a priority element for FY 1996 NFP efforts. We encourage our Provincial Interagency Executive Committee (PIEC) members to participate in the Provincial Implementation Monitoring Teams (PIMTs) to the extent feasible.

This fiscal year, 45 FY 1995 timber sales will be reviewed to ensure that management actions meet the prescribed Standards and Guidelines (S&Gs) of the NFP. Sales in each province will be reviewed as part of this pilot effort, and provinces are encouraged to work together and share resources.

The FS and BLM will be working with the provincial Designated Federal Officials (DFOs) to recruit and select team leader(s) for each PIMT (see enclosure). These team leaders, in cooperation with Forest Supervisors and District Managers, will coordinate all FY 1996 implementation monitoring activities for their respective province(s).

Please contact your PIMT team leaders to arrange your participation in the FY 1996 implementation monitoring activities. In addition, feel free to contact your Regional Ecosystem Office representative if you have questions or need additional information.

[INSERT REGIONAL EXECUTIVE SIGNATURE BLOCK HERE]

Enclosure  
[Joint FS and BLM Letter w/Enclosures]

**Appendix F: Provincial Implementation Monitoring Teams**

## **WASHINGTON**

### **OLYMPIC PENINSULA**

#### **Whatever Salvage (15)**

Team Leader: Ward Hoffman  
Olympic National Forest

Team Members: Alexandra Bradley, PAC, Western Ancient Forest Campaign  
Ron Lee, EPA  
Jonathan Seil, PAC, Ecoforester  
Marilyn Stoll, USFWS

#### **WS 22 & 40 T.S. (16)**

Team Leader: Ward Hoffman  
Olympic National Forest

Team Members: Chris Anderson, USFS  
Kate Benkert, USFWS  
Alexandra Bradley, PAC, Western Ancient Forest Campaign  
Ron Lee, EPA  
Mike Parton, USFS  
Jonathan Seil, PAC, Ecoforester

### **WESTERN WASHINGTON CASCADES**

#### **Summer Home Salvage (42)**

Team Leader: Chris Hansen-Murray  
Mt. Baker-Snoqualmie National Forest

Team Members: Joe Iozzi, USFS  
Steve Johnson, USFS  
Nancy Brennen-Dubbs, USFWS  
Steve Bubnick, EPA  
Joanne-Schuett-Hames, WA. State Dept. of Ecology  
Mike Swayne, PAC Alternate

## **EASTERN WASHINGTON CASCADES**

### **Whiteface Salvage (4)**

Team Leader: Al Garr  
Okanogan National Forest

Team Members: Tim McCracken, USFWS  
Jim Michaels, USFWS  
Jodi Bush, USFWS  
Phil Campbell, NPS  
Dave Schultz, Okanogan County Commissioner  
Edwin Lewis, BIA  
Dan Robison, EPA  
Alan Bibby, Longview Fibre Co., PAC  
Susan Crampton, PAC  
Nancy Reznick, PAC

## **SOUTHWEST WASHINGTON**

### **Walupt Wabbit (33) / SH-Head 2 (34)**

Team Leader: John Roland  
Gifford Pinchot National Forest

Team Members: Bill Marshall, Lewis County Economic Development Council  
Todd Williams, USFWS  
Ron Lee, EPA  
Lee Carlson, Yakama Indian Nation  
John Squires, PAC  
Philo Gregg, PAC  
Randy Shepard, USFS

## **YAKIMA**

### **Jungle Wood Salvage (43) / Swauk Deck (44) / Fini 12 Salvage (45)**

Team Leader: Glenn Hoffman  
Wenatchee National Forest

Team Members: Dan Robison, EPA  
Jim Michaels, USFWS  
Edwin Lewis, BIA  
Bill Boyum, WA. State Department of Natural Resources  
Lee Carlson, Yakama Indian Nation

## **OREGON**

### **OREGON COAST**

#### **394 Seed Orchard Negotiated R/W (17)**

Team Leader: Ray Bosch  
USFWS-Oregon

Team Members: Wayne Kleckner, USFS  
Art Mancl, PAC  
Cole Gardiner, PAC  
Herb Wick, USFS  
Dave DeMoss, BLM  
Robert Towne, BLM

#### **304 Mill Creek Neg R/W (35)**

Team Leader: Ray Bosch  
USFWS-Oregon

Team Members: Chuck Hawkins, BLM  
Robert Towne, BLM  
Dave DeMoss, BLM  
Wayne Elliott, BLM  
Wayne Kleckner, USFS  
Herb Wick, USFS  
Cole Gardiner, PAC

## **WILLAMETTE**

### **Mossback (36)**

Team Leader: Ray Bosch  
USFWS-Oregon

Team Members: Wayne Kleckner, USFS  
Dave DeMoss, BLM  
Ken Byford, USFS  
Gary Varner, BIA

### **224 River Grub (37)**

Team Leader: Ray Bosch  
USFWS-Oregon

Team Members: Wayne Kleckner, USFS  
Gary Varner, BIA  
Dave DeMoss, BLM  
Cole Gardiner, PAC  
Chuck Hawkins, BLM  
Wayne Elliott, BLM

### **Optical (38)**

Team Leader: Ray Bosch  
USFWS-Oregon

Team Members: Dave DeMoss, BLM  
Chuck Hawkins, BLM  
Herb Wick, USFS  
Wayne Kleckner, USFS

### **Area 17 Salvage (39)**

Team Leader: Ray Bosch  
USFWS-Oregon

Team Members: Dave DeMoss, BLM  
Chuck Hawkins, BLM  
Wayne Kleckner, USFS  
Cole Gardiner, PAC

### **Finberry (40)**

Team Leader: Ray Bosch  
USFWS-Oregon

Team Members: Cole Gardiner, PAC  
Wayne Kleckner, USFS  
Herb Wick, USFS  
Dave DeMoss, BLM  
Chuck Hawkins, BLM  
Gary Varner, BIA  
Julie Stangell, PAC Alternate  
Ross Mickey, PAC Alternate  
Art Mancl, PAC

### **Campground Salvage (41)**

Team Leader: Ray Bosch  
USFWS-Oregon

Team Members: Dave DeMoss, BLM  
Chuck Hawkins, BLM  
Herb Wick, USFS  
Wayne Kleckner, USFS  
Cole Gardiner, PAC  
Wayne Janz, PAC Alternate

### **DESCHUTES**

#### **DEMO (02)**

Team Leader: Gery Ferguson  
Deschutes National Forest

Team Members: Kaz Thea, USFWS  
Susan Skakel, USFS  
Chris Stecher, PAC, Mt. Bachelor Corp.  
Karen Thompson, PAC, Bend Research Corp.  
Ted Young, PAC, Crown Pacific  
Glen Ardt, OR. Department of Fish & Wildlife  
Andrea Unruh, USFS

#### **Haze (3)**

Team Leader: Gery Ferguson  
Deschutes National Forest

Team Members: Kaz Thea, USFWS  
Laura Ceperley, USFS  
Reis Hoyt, PAC  
Ann Saxby, PAC  
Jim Torland, OR. Department of Fish & Wildlife  
Caitlin Cray, USFS

### **SOUTHWEST OREGON**

#### **207 12-Mile Salvage (18)**

Team Leader: Mike Hupp  
Umpqua National Forest

Team Members: Dave Reed, BLM  
Cindy Laguodakis, USFS  
Scott Center, USFWS

### **Upper Pistol (19)**

Team Leader: Doug McVean  
BLM, Roseburg District

Team Members: Richard Blake, PAC  
Richard Hart, PAC  
Wayne Wergeland, PAC  
Nabil Atalla, BLM  
Dan Couch, BLM  
Kirk Casavan, BLM  
Sue Livingston, USFWS  
Debbie Kinsinger, USFWS  
Brett Roper, USFS

### **Campground Hazard (20)**

Team Leader: Doug McVean  
BLM, Roseburg District

Team Members: John Roth, PAC  
Bob Gunther, BLM  
Joel King, USFS  
Debra Kinsinger, USFWS

### **24 Bateman & Robin (21)**

Team Leader: Mike Hupp  
Umpqua National Forest

Team Members: Keith Wilkinson, PAC  
Ann Donnelly, PAC  
Gary Varner, BIA  
Don Hicks, BLM  
Doyle Ward, USFS  
Brenden White, USFWS  
Sue Livingston, USFWS

### **301 I.C. Ranch Salvage (22)**

Team Leader: Mike Hupp  
Umpqua National Forest

Team Members: Don Hicks, BLM  
Doyle Ward, USFS  
Brendan White, USFWS  
Sue Livingston, USFWS

**311 Terminal Bud (23)**

Team Leader: Mike Hupp  
Umpqua National Forest

Team Members: Don Hicks, BLM  
Doyle Ward, USFS  
Brendan White, USFWS  
Sue Livingston, USFWS  
Gary Varner, BIA

**85900-Hull Mtn. Fire Salvage (24)/18 Hyatt Ballfield (25)**

Team Leader: Mike Hupp  
Umpqua National Forest

Team Members: Richard Hart, PAC, Headwaters  
Lew Krauss, PAC, Rough & Ready Timber Co.  
Bob Gunther, BLM  
Sigi Barron, BLM  
Paul Uncapher, USFS  
Brendan White, USFWS

**1 Right View (26)**

Team Leader: Mike Hupp  
Umpqua National Forest

Team Members: Diana Wales, PAC, Umpqua Audubon  
Ron Yockim, PAC, Douglas County  
Dave Reed, BLM  
Cindy Lagoudakis, USFS  
Scott Center, USFWS

**217 5900-J.D. Salvage (27)/228 5900 - Sutherlin Neg (28)**

Team Leader: Mike Hupp  
Umpqua National Forest

Team Members: Dave Reed, BLM  
Cindy Lagoudakis, USFS  
Scott Center, USFWS

**Sunshine (29)/Lock (30)**

Team Leader: Doug McVean  
BLM, Roseburg District

Team Members: Richard Hart, PAC  
Sharla Moffett, PAC, S. Oregon Timber Industry Assn.  
Paul Uncapher, USFS  
Joe Graham, BLM  
Jim Russell, BLM  
Bob Gunther, BLM  
Brendan White, USFWS

**Butte #1 (31)**

Team Leader: Doug McVean  
BLM, Roseburg District

Team Members: Richard Blake, PAC  
Richard Hart, PAC  
Wayne Wergeland, PAC  
Nabil Atalla, BLM  
Dan Couch, BLM  
Kirk Casavan, BLM  
Brett Roper, USFS  
Debra Kinsinger, USFWS

**Amity Salvage (32)**

Team Leader: Doug McVean  
BLM, Roseburg District

Team Members: Ron Yockim, PAC  
Jon Roth, PAC  
Bob Gunther, BLM  
Joel King, USFS  
Debra Kinsinger, USFWS

## **CALIFORNIA**

### **KLAMATH**

#### **Four Corners Chip (5)/Divide Insect SSTS (6)**

Team Leader: Mike Ford  
Klamath National Forest

Team Members: Mary Roehrich, Siskiyou County Round Table  
Tyler Smith, Ranching Community Member  
Laurie Simons, USFWS  
Jim DePree, PAC, Klamath  
Tom Reed, USFWS  
Joan Smith, PAC, Siskiyou Board of Supervisors

#### **3 Union Hill (7)**

Team Leader: Mike Ford  
Klamath National Forest

Team Members: Bill Brock, USFWS  
Joseph Bower, PAC  
Tim Burton, CA. Department of Fish & Game

#### **East Roadside SSTS (8)**

Team Leader: Mike Ford  
Klamath National Forest

Team Members: Mark Maghini, USFWS  
Jim DePree, PAC

#### **Baker's Can Ins. Salvage (9)**

Team Leader: Mike Ford  
Klamath National Forest

Team Members: Barbara Holder, USFS  
Tim Burton, CA. Department of Fish & Game  
Joan Smith, PAC, Siskiyou Board of Supervisors  
Ed Matthews, USFS  
Mary Roehrich, Volunteer  
Pat Higgins, Volunteer  
Felice Pace, Volunteer  
Jim DePree, PAC, Klamath  
Chris Heppe, EPA  
Marja Boroja, USFWS  
Lynda Karns, USFS

## **Elk Gulch II (10)**

Team Leader: Ken Coop  
Shasta-Trinity National Forest

Team Members: Kelly Wolcott, USFWS  
Jim Zander, USFS  
Chris Heppe, EPA  
Pat Higgins, PAC  
Jim Spears, NRCS  
Joseph Bower, PAC  
Dee Sanders, PAC Alternate

## **NW SACRAMENTO**

### **Kinglsey Salvage (12)**

Team Leader: Michelle H. Light  
Mendocino National Forest

Team Members: Michael Bornstein, USFWS  
Mark Parson, NRCS

### **Mud (13)**

Team Leader: Ken Coop  
Shasta-Trinity National Forest

Team Members: Kelly Wolcott, USFWS  
Mark Stanley, CA. State Resource Agency  
Francie Sullivan, Shasta County Commissioner  
Richard Sargent, PAC, Native American  
Bob Bailey, NRCS

### **Ninebuck (14)**

Team Leader: Ken Coop  
Shasta-Trinity National Forest

Team Members: John Borgic, BLM  
Kelly Wolcott, USFWS  
Mark Stanley, CA. State Resource Agency, Forester  
Richard Sargent, PAC, Native American  
Bob Bailey, NRCS

## **CALIFORNIA COAST**

### **Van Duzen Thinning (1)**

Team Leader: Michelle H. Light  
Mendocino National Forest

Team Members: Nan Reck, NMFS  
Bruce Halstead, USFWS  
Chris Heppe, EPA  
Hank Harrison, BLM

## Appendix G: Proportion and Variance Estimates for all Standards and Guides

$$\hat{p} = \frac{\sum_{i=1}^n a_i}{\sum_{i=1}^n M_i} = \frac{864}{1,133} = .776 \text{ or } 77.6\%$$

The estimate of the proportion for all standards and guides is:  
where,  
 $a_i$  is the number of conforming standard and guides in sale I,  
 $M_i$  is the number of applicable questions in sale I, and  
 $n$  is the number of sales in the sample.

$$\begin{aligned} \text{var}(\hat{p}) &= \frac{N-n}{Nn\bar{M}^2} \frac{\sum_{i=1}^n M_i^2 (\hat{p}_i - \hat{p})^2}{n-1} \\ &= \frac{N-n}{Nn\bar{M}^2} \frac{\sum_{i=1}^n (a_i - M_i \hat{p})^2}{n-1} \\ &= \frac{N-n}{Nn\bar{M}^2} \frac{\sum_{i=1}^n a_i^2 - 2\hat{p} \sum_{i=1}^n M_i a_i + \hat{p}^2 \sum_{i=1}^n M_i^2}{n-1} \end{aligned}$$

The approximate estimate of the variance (Cochran, 1977) is:  
where,

$$\hat{p}_i = \frac{a_i}{M_i} \quad \bar{M} = \frac{\sum_{i=1}^n M_i}{n}$$

and  $N$  is the number of sales in the population.

With  $N=423$ ,  $n=42$ ,  $\bar{M} = 26.5$ ,  $\sum_{i=1}^n a_i^2 = 22,890$ ,  $\sum_{i=1}^n M_i^2 = 37,893$

$\sum_{i=1}^n a_i M_i = 28,904$  and a z-score=1.28, the results are

$$\text{var}(\hat{p}) = .000633$$

$$\text{standard deviation} = .025$$

$$\hat{p} = .776$$

$$\text{approximate 80\% confidence interval} = (74.4 - 80.8)$$

Cochran, William, *Sampling Techniques*, 1977, 3rd edit., John Wiley & Sons

## Appendix H: Confidence Intervals for the Percentage of Conforming Sales Using an 80% Confidence Level<sup>1</sup>

Question	Sample Size	Conforming Sales in the Sample	Percent Conforming	Lower Confidence Level	Upper Confidence Level	Actual Confidence Level
1	40	40	100.0	96.2	100.0	80.2
2a	28	28	100.0	94.6	100.0	80.2
2b	28	28	100.0	94.6	100.0	80.2
2c	19	15	78.9	62.4	90.5	80.9
3	10	6	60.0	35.5	81.1	80.2
4	41	40	97.6	91.0	99.8	80.8
5	34	33	97.1	89.1	99.8	82.6
6	30	29	96.7	87.9	99.8	82.9
7	19	19	100.0	92.0	100.0	80.4
8	3	3	100.0	58.4	100.0	80.2
9	4	4	100.0	66.9	100.0	80.1
10	26	11	42.3	29.1	56.5	80.6
11	2	1	50.0	5.0	95.0	80.6
12	1	1	100.0	19.9	100.0	80.1
13	1	1	100.0	19.9	100.0	80.1
14a	1	1	100.0	19.9	100.0	80.1
14b	1	1	100.0	19.9	100.0	80.1
15	28	26	92.9	82.3	98.1	81.1
16	5	4	80.0	41.6	98.1	81.0
18	1	0	0.0	0.0	80.1	80.1
19	7	5	71.4	40.4	92.2	80.5
20	8	3	37.5	14.7	65.5	80.4
21	8	3	37.5	14.7	65.5	80.4
22	8	6	75.0	46.3	93.1	80.2
23	8	5	62.5	34.5	85.3	80.4
24a	2	2	100.0	44.7	100.0	80.1
24b	11	10	90.9	69.0	99.3	82.6
25a	8	7	87.5	59.6	98.8	80.9
25b	5	4	80.0	41.6	98.1	81.0
26	3	3	100.0	58.4	100.0	80.2
28	7	6	85.7	54.8	98.6	80.5
30	5	3	60.0	24.6	88.9	80.5
31a	3	3	100.0	58.4	100.0	80.2
31b	3	3	100.0	58.4	100.0	80.2
32	3	2	66.7	19.6	96.7	80.4
33	2	1	50.0	5.0	95.0	80.6
34	1	0	0.0	0.0	80.1	80.1
35	3	2	66.7	19.6	96.7	80.4
36	1	0	0.0	0.0	80.1	80.1
37	2	1	50.0	5.0	95.0	80.6
38	2	2	100.0	44.7	100.0	80.1
39	3	3	100.0	58.4	100.0	80.2
40	3	3	100.0	58.4	100.0	80.2
41	2	2	100.0	44.7	100.0	80.1
42	5	5	100.0	72.6	100.0	80.0
43	2	2	100.0	44.7	100.0	80.1
45	3	1	33.3	3.3	80.4	80.4
46	6	6	100.0	76.6	100.0	80.0
47	3	3	100.0	58.4	100.0	80.2
48	6	2	33.3	9.2	66.7	80.3
49	2	1	50.0	5.0	95.0	80.6
57	2	0	0.0	0.0	55.3	80.1
59	1	1	100.0	19.9	100.0	80.1
60	1	1	100.0	19.9	100.0	80.1
64	1	0	0.0	0.0	80.1	80.1
65	1	1	100.0	19.9	100.0	80.1

Question	Sample Size	Conforming Sales in the Sample	Percent Conforming	Lower Confidence Level	Upper Confidence Level	Actual Confidence Level
66	1	0	0.0	0.0	80.1	80.1
67	1	0	0.0	0.0	80.1	80.1
69	30	23	76.7	64.3	86.3	80.1
70a	11	4	36.4	17.0	59.8	80.2
70b	12	5	41.7	22.0	63.6	80.2
70c	10	3	30.0	11.6	55.1	80.4
70d	17	17	100.0	91.0	100.0	80.5
70e	10	3	30.0	11.6	55.1	80.4
71a	9	2	22.2	5.9	48.9	80.8
71b	9	2	22.2	5.9	48.9	80.8
71c	9	2	22.2	5.9	48.9	80.8
71d	14	13	92.9	75.2	99.3	80.4
71e	7	1	14.3	1.4	45.2	80.5
72a	3	2	66.7	19.6	96.7	80.4
72b	3	2	66.7	19.6	96.7	80.4
72c	3	2	66.7	19.6	96.7	80.4
72d	6	6	100.0	76.6	100.0	80.0
72e	1	0	0.0	0.0	80.1	80.1
73a	2	2	100.0	44.7	100.0	80.1
73b	2	2	100.0	44.7	100.0	80.1
73c	2	2	100.0	44.7	100.0	80.1
73d	2	2	100.0	44.7	100.0	80.1
73e	1	0	0.0	0.0	80.1	80.1
74a	10	4	40.0	18.9	64.5	80.2
74b	13	6	46.2	26.5	66.9	80.5
74c	13	6	46.2	26.5	66.9	80.5
74d	26	25	96.2	86.1	99.8	84.1
74e	7	0	0.0	0.0	20.6	80.3
75a	9	6	66.7	40.2	87.0	80.2
75b	6	0	0.0	0.0	23.4	80.0
75c	7	5	71.4	40.4	92.2	80.5
76	16	15	93.8	78.0	99.5	82.6
77	4	4	100.0	66.9	100.0	80.1
78	1	0	0.0	0.0	80.1	80.1
79	6	5	83.3	48.9	98.3	80.6
80	3	3	100.0	58.4	100.0	80.2
81	15	13	86.7	68.6	96.5	80.6
82	1	1	100.0	19.9	100.0	80.1
83	1	1	100.0	19.9	100.0	80.1
84	6	4	66.7	33.3	90.8	80.3
85	17	14	82.4	65.0	93.4	80.7
86	20	12	60.0	43.5	74.9	80.4
87	19	17	89.5	74.5	97.2	80.7
88	11	11	100.0	86.5	100.0	80.1
89	13	6	46.2	26.5	66.9	80.5
90	13	12	92.3	73.3	99.3	81.3
91	1	0	0.0	0.0	80.1	80.1
92	10	8	80.0	55.1	94.6	80.5
93	10	10	100.0	85.1	100.0	80.4
94	1	1	100.0	19.9	100.0	80.1
95a	1	1	100.0	19.9	100.0	80.1
95b	1	1	100.0	19.9	100.0	80.1
95c	1	1	100.0	19.9	100.0	80.1
96	4	4	100.0	66.9	100.0	80.1
97	1	0	0.0	0.0	80.1	80.1
99	26	23	88.5	76.4	95.7	81.1
100	1	1	100.0	19.9	100.0	80.1
101	12	2	16.7	4.5	38.3	80.4
102	3	2	66.7	19.6	96.7	80.4
103	2	1	50.0	5.0	95.0	80.6
105	1	1	100.0	19.9	100.0	80.1

Question	Sample Size	Conforming Sales in the Sample	Percent Conforming	Lower Confidence Level	Upper Confidence Level	Actual Confidence Level
106	25	25	100.0	93.9	100.0	80.5
107	29	27	93.1	83.0	98.1	80.3
108	21	19	90.5	76.8	97.4	80.3
109	7	7	100.0	79.4	100.0	80.3
110	9	9	100.0	83.7	100.0	80.2
111	7	7	100.0	79.4	100.0	80.3
112	8	4	50.0	24.1	75.9	80.0
113	15	12	80.0	61.0	92.4	80.4
114	2	0	0.0	0.0	55.3	80.1
115	11	9	81.8	58.6	95.0	80.3
116a	5	5	100.0	72.6	100.0	80.0
116b	2	2	100.0	44.7	100.0	80.1
117	5	5	100.0	72.6	100.0	80.0
119	1	1	100.0	19.9	100.0	80.1
120	1	1	100.0	19.9	100.0	80.1
121	5	5	100.0	72.6	100.0	80.0
123	2	0	0.0	0.0	55.3	80.1
125	1	0	0.0	0.0	80.1	80.1
126	7	4	57.1	27.9	83.0	80.2
127	5	4	80.0	41.6	98.1	81.0
128	4	3	75.0	32.2	97.6	80.9
129	1	1	100.0	19.9	100.0	80.1
132	40	37	92.5	84.4	97.2	80.7

**Confidence Intervals for the Estimated Number of Non-Conforming Sales  
Out of 423 Total Sales Using an 80% Confidence Level  
and a Sample Size of 42**

Question	Non-conforming Sales in the Sample	Non-conforming Sales in the Population	Lower Confidence Interval	Upper Confidence Interval	Actual Confidence Level
1	0	0	0	16	80.2
2a	0	0	0	23	80.2
2b	0	0	0	23	80.2
2c	4	90	40	159	80.9
3	4	170	80	273	80.2
4	1	11	1	38	80.8
5	1	13	1	46	82.6
6	1	15	1	51	82.9
7	0	0	0	34	80.4
8	0	0	0	176	80.2
9	0	0	0	140	80.1
10	15	245	184	300	80.6
11	1	212	21	402	80.6
12	0	0	0	339	80.1
13	0	0	0	339	80.1
14a	0	0	0	339	80.1
14b	0	0	0	339	80.1
15	2	31	8	75	81.1
16	1	85	8	247	81.0
18	1	423	84	423	80.1
19	2	121	33	252	80.5
20	5	265	146	361	80.4
21	5	265	146	361	80.4
22	2	106	29	227	80.2
23	3	159	62	277	80.4
24a	0	0	0	234	80.1
24b	1	39	3	131	82.6
25a	1	53	5	171	80.9
25b	1	85	8	247	81.0
26	0	0	0	176	80.2
28	1	61	6	191	80.5
30	2	170	47	319	80.5
31a	0	0	0	176	80.2
31b	0	0	0	176	80.2
32	1	141	14	340	80.4
33	1	212	21	402	80.6
34	1	423	84	423	80.1
35	1	141	14	340	80.4
36	1	423	84	423	80.1
37	1	212	21	402	80.6
38	0	0	0	234	80.1
39	0	0	0	176	80.2
40	0	0	0	176	80.2
41	0	0	0	234	80.1
42	0	0	0	116	80.0
43	0	0	0	234	80.1
45	2	282	83	409	80.4
46	0	0	0	99	80.0
47	0	0	0	176	80.2
48	4	282	141	384	80.3
49	1	212	21	402	80.6
57	2	423	189	423	80.1
59	0	0	0	339	80.1
60	0	0	0	339	80.1

Question	Non-conforming Sales in the Sample	Non-conforming Sales in the Population	Lower Confidence Interval	Upper Confidence Interval	Actual Confidence Level
64	1	423	84	423	80.1
65	0	0	0	339	80.1
66	1	423	84	423	80.1
67	1	423	84	423	80.1
69	7	99	58	151	80.1
70a	7	270	170	351	80.2
70b	7	247	154	330	80.2
70c	7	297	190	374	80.4
70d	0	0	0	38	80.5
70e	7	297	190	374	80.4
71a	7	329	216	398	80.8
71b	7	329	216	398	80.8
71c	7	329	216	398	80.8
71d	1	31	3	105	80.4
71e	6	363	232	417	80.5
72a	1	141	14	340	80.4
72b	1	141	14	340	80.4
72c	1	141	14	340	80.4
72d	0	0	0	99	80.0
72e	1	423	84	423	80.1
73a	0	0	0	234	80.1
73b	0	0	0	234	80.1
73c	0	0	0	234	80.1
73d	0	0	0	234	80.1
73e	1	423	84	423	80.1
74a	6	254	150	343	80.2
74b	7	228	140	311	80.5
74c	7	228	140	311	80.5
74d	1	17	1	59	84.1
74e	7	423	336	423	80.3
75a	3	141	55	253	80.2
75b	6	423	324	423	80.0
75c	2	121	33	252	80.5
76	1	27	2	93	82.6
77	0	0	0	140	80.1
78	1	423	84	423	80.1
79	1	71	7	216	80.6
80	0	0	0	176	80.2
81	2	57	15	133	80.6
82	0	0	0	339	80.1
83	0	0	0	339	80.1
84	2	141	39	282	80.3
85	3	75	28	148	80.7
86	8	170	106	239	80.4
87	2	45	12	108	80.7
88	0	0	0	57	80.1
89	7	228	140	311	80.5
90	1	33	3	113	81.3
91	1	423	84	423	80.1
92	2	85	23	190	80.5
93	0	0	0	63	80.4
94	0	0	0	339	80.1
95a	0	0	0	339	80.1
95b	0	0	0	339	80.1
95c	0	0	0	339	80.1
96	0	0	0	140	80.1
97	1	423	84	423	80.1
99	3	49	18	100	81.1
100	0	0	0	339	80.1
101	10	353	261	404	80.4
102	1	141	14	340	80.4

Question	Non-conforming Sales in the Sample	Non-conforming Sales in the Population	Lower Confidence Interval	Upper Confidence Interval	Actual Confidence Level
103	1	212	21	402	80.6
105	0	0	0	339	80.1
106	0	0	0	26	80.5
107	2	30	8	72	80.3
108	2	41	11	98	80.3
109	0	0	0	87	80.3
110	0	0	0	69	80.2
111	0	0	0	87	80.3
112	4	212	102	321	80.0
113	3	85	32	165	80.4
114	2	423	189	423	80.1
115	2	77	21	175	80.3
116a	0	0	0	116	80.0
116b	0	0	0	234	80.1
117	0	0	0	116	80.0
119	0	0	0	339	80.1
120	0	0	0	339	80.1
121	0	0	0	116	80.0
123	2	423	189	423	80.1
125	1	423	84	423	80.1
126	3	182	72	305	80.2
127	1	85	8	247	81.0
128	1	106	10	287	80.9
129	0	0	0	339	80.1
132	3	32	12	66	80.7

<sup>1</sup>The confidence limits are based on an algorithm published in the *Encyclopedia of Statistical Sciences*, a Wiley-Interscience Publication, 1983, Vol. 3 for the hypergeometric distribution. With the size of the population (N), sample size (n) and number of conforming or non-conforming questions (x) in a sample all known, then for a confidence interval with width 1- $\alpha$ , the objective is to find a.

$k_1$  = minimum k that satisfies

$$F(N,n,k,x) \leq \alpha/2$$

and a  $k_2$  = maximum k that satisfies

$$F(N,n,k,x-1) \geq 1 - \alpha/2$$

where F is the hypergeometric cumulative distribution function. For situations where x is equal to zero or n, the interval is one-sided and  $\alpha$  is used instead of  $\alpha/2$ . For x=0, x-1 is set to 0.

## Appendix M: Proposed FY 1997 Implementation Monitoring Topics

- Landscape-scale Subjects
- Basin-scale Subjects
- Silvicultural Activities in LSRs other than Timber Sales
- \* Restoration Projects (watershed, fish habitat, wildlife habitat, road, flood damage, etc.)
- Aquatic/Riparian Projects
- \* Roads (densities, closures, no net gain in LSRs, landslide restoration, problem culverts, new construction, etc.)
- \* Stratified Timber Sales
- Socioeconomic Actions
- Jobs in the Woods
- Cumulative Effects in Watersheds
- Fuels Management
- Fire Presuppression Activities
- Fire Reintroduction
- Road Access in Private Land Interfaces
- Rights of Way (powerlines, roads, etc.)
- Grazing
- Mining
- Special Forest Products (uses, conflicts, programmatic approach)
- Wildlife Habitat Improvement Projects
- Administrative Sites
- Trail Construction
- Watershed Analysis
- Hydroelectric Projects
- Recreation Activities

Note: \* These topics were rated by Provincial Monitoring Teams as the most important topics to address in FY97.

**Appendix I: Summary of Compliance  
with Standards and Guidelines by Timber Sale**

Sale	Meets	Fails	Total	Percent	“Yes”	“No”	Total	Percent
02D	23	1	24	95.83	23	2	25	92.00
03D	47	1	48	97.92	47	5	52	90.38
05D	11	0	11	100.00	11	1	12	91.67
06D	33	0	33	100.00	29	9	38	76.32
07D	20	0	20	100.00	20	3	23	86.96
08D	42	0	42	100.00	42	2	44	95.45
09D	19	1	20	95.00	18	5	23	78.26
10D	15	2	17	88.24	13	7	20	65.00
11D	44	3	47	93.62	43	10	53	81.13
12F	10	2	12	83.33	10	4	14	71.43
13D	21	3	24	87.50	20	5	25	80.00
14D	16	3	19	84.21	15	5	20	75.00
15D	18	2	20	90.00	17	4	21	80.95
17D	9	0	9	100.00	9	3	12	75.00
18F	24	1	25	96.00	24	23	47	51.06
19D	36	0	36	100.00	36	25	61	59.02
20D	22	0	22	100.00	22	5	27	81.48
21D	21	1	22	95.45	20	17	37	54.05
22D	3	0	3	100.00	3	0	3	100.00
23D	9	1	10	90.00	9	3	12	75.00
24D	31	1	32	96.88	31	14	45	68.89
25D	6	2	8	75.00	4	5	9	44.44
26D	26	0	26	100.00	26	8	34	76.47
27F	13	1	14	92.86	13	5	18	72.22
28F	11	1	12	91.67	11	2	13	84.62
29D	19	5	24	79.17	20	15	35	57.14
30D	33	3	36	91.67	30	17	47	63.83
31D	16	2	18	88.89	16	6	22	72.73
32D	19	1	20	95.00	19	2	21	90.48
33D	17	0	17	100.00	16	2	18	88.89
34D	26	0	26	100.00	24	2	26	92.31
35D	10	1	11	90.91	10	2	12	83.33
36D	28	1	29	96.55	28	1	29	96.55
37D	35	0	35	100.00	35	1	36	97.22
38D	29	0	29	100.00	28	4	32	87.50
39D	12	0	12	100.00	10	3	13	76.92

<b>Sale</b>	<b>Meets</b>	<b>Fails</b>	<b>Total</b>	<b>Percent</b>	<b>“Yes”</b>	<b>“No”</b>	<b>Total</b>	<b>Percent</b>
40D	45	2	47	95.74	44	4	48	91.67
41D	25	1	26	96.15	25	4	29	86.21
42D	14	1	15	93.33	14	13	27	51.85
43D	6	0	6	100.00	6	0	6	100.00
44D	11	1	12	91.67	11	1	12	91.67
45D	12	0	12	100.00	12	0	12	100.00
Average	21.12	1.05	22.17	94.59	20.57	5.93	26.50	79.41

## Appendix J: Potential Effects of Timber Sale Activities Not Complying with Standards and Guidelines

Forty-five of the 937 opportunities for compliance resulted in noncompliance (5%). Each of these instances is identified below along with the monitoring question number (Appendix B), the sale number (Appendix D), whether the action complied or failed to comply with standards and guidelines, and the potential effects of noncompliance. The local, project-level biological impacts of all noncompliance events were considered to be “unknown”, but the potential effects of these situations were estimated for some categories based upon the narrative provided by Provincial Monitoring Teams. Four events completely lacked narrative descriptions and the potential effects of these situations were listed as “undetermined”.

Question	Sale	Compliance	Potential Effects	Comments
4	25	Failed	None	Did not conduct and coordinate an Environmental Analysis for the project. However, the project was reviewed by the agency to assess biological significance. EFFECT: No biological effect (pertained to 1.5 acres of Riparian Reserve).
10	25	Failed	None	Did not conduct Watershed Analysis for the project. A Watershed Analysis was not prepared, however, the project was reviewed by the agency to assess biological significance. EFFECT: No biological effect (pertained to 1.5 acres of Riparian Reserve).
10	42	Failed	None	Did not consider an existing Watershed Analysis for the project. Hazard tree removal from recreation areas and 0.10 acre clearing for trail head parking. EFFECT: No biological effect (action was not inconsistent with Watershed Analysis, but was not addressed specifically in the Watershed Analysis).
10	44	Failed	None	Did not conduct Watershed Analysis for the project. The project was a sale of logs removed from an existing State Highway right-of-way improvement project. EFFECT: No biological effect (very few trees removed and those removed were removed for safety reasons).
15	29	Failed	None	Did not use information on known sites for Survey and Manage species. The known site database on Survey and Manage species was not available at the time of project planning. However, the database was apparently not checked after it did become available. Subsequent follow-up by the Interagency Analysis Team found no occurrences in the project area. EFFECT: No biological effect (no Survey and Manage known sites from project area).
20	35	Failed	Low	Did not conduct pre-project surveys for marbled murrelet nests. The project was a road improvement as part of an

Question	Sale	Compliance	Potential Effects	Comments
				existing right-of-way agreement. Murrelets had previously been observed in the project area, but surveys to protocol were not done. EFFECT: Low biological effect since the area was assumed to be murrelet habitat, few trees were removed, and none of these were large enough for nesting.
25	29	Failed	None	Did not use information on known sites for Protection Buffer species. The known site database was not available at the time of project planning. However, the database was apparently not checked after it did become available. Subsequent follow-up by the Interagency Analysis Team found no occurrences in the project area. EFFECT: No biological effect (no Protection Buffer known sites from project area).
30	30	Failed	Low	Did not document that management activities adjacent to 100-acre spotted owl areas were designed to reduce risks of natural disturbance. There was no indication that the 100-acre area was considered in project design. EFFECT: Low biological effect since there was also no indication that the resulting actions were inconsistent with management of the 100-acre area.
48	36	Failed	High	Did not assess the impacts of introducing non-native species into the project area. Non-native species were identified in the terms of the contract as suitable for use. EFFECT: Potentially high biological effect, depending upon which species were introduced.
48	40	Failed	High	Did not assess the impacts of introducing non-native species into the project area. Non-native species were identified in the terms of the contract as suitable for use. EFFECT: Potentially high biological effect, depending upon which species were introduced.
74	10	Failed	Low	Did not establish a Riparian Reserve on an intermittent waterway. Provincial Monitoring Team felt that a Riparian Reserve should have been established for an area the agency considered a snowmelt channel. EFFECT: Low biological impact given that the area in question was at the border between an intermittent stream and a non-stream area. Differences in professional judgement in this respect are to be expected.
74	29	Failed	Low	Did not establish a Riparian Reserve on an intermittent waterway. Provincial Monitoring Team felt that a Riparian Reserve should have been established for the lower 100 feet of a swale where there was evidence of deposition. EFFECT: Low biological impact given that the area in question was at the border between an intermittent stream and a non-stream area. Differences in professional judgement in this respect are to be expected.
74	31	Failed	Slight	Did not establish an appropriate Riparian Reserve on an

Question	Sale	Compliance	Potential Effects	Comments
				intermittent waterway. A 100 foot Riparian Reserve was delineated in an area where the “greater” of 100 feet or one site potential tree (146 feet) should have been used. EFFECT: Slight biological effect given that the project was a fire wood sale which removed 16 cords of tan oak which were less than 20 inches in diameter.
75	11	Failed	None	Did not exclude Riparian Reserve from timber harvest, except as needed to obtain Aquatic Conservation Strategy objectives. Project was a salvage of an insect killed stand in a Riparian Reserve that also posed safety hazards in a campground. EFFECT: The lack of a Watershed Analysis probably resulted in no biological effect since agency specialists reviewed soil, water, fish, and wildlife issues and determined that the area was in excess of coarse woody debris needs.
75	12	Failed	Low	Did not exclude Riparian Reserve from timber harvest, except as needed to obtain Aquatic Conservation Strategy objectives. The project removed dead and dying hazard trees from a campground area and was not intended to benefit ACS objectives. EFFECT: Probably a low biological effect, given the limited area involved (25 acres) and the developed nature of the area.
75	18	Failed	None	Did not exclude Riparian Reserve from timber harvest, except as needed to obtain Aquatic Conservation Strategy objectives. The project removed dead and dying hazard trees from and along an existing road, but the action was not in response to a catastrophic event and not intended to benefit ACS objectives. EFFECT: Probably no biological effect, given the limited number of trees involved (28 MBF).
75	27	Failed	None	Did not exclude Riparian Reserve from timber harvest, except as needed to obtain Aquatic Conservation Strategy objectives. The project removed hazard and down trees from a campground area and was not intended to benefit ACS objectives. EFFECT: Probably a low biological effect, given the limited number of trees (32) and that an agency biologist assessed coarse woody debris to ensure needs were met.
75	31	Failed	Slight	Did not exclude Riparian Reserve from timber harvest, except as needed to obtain Aquatic Conservation Strategy objectives. The project cut and removed some tan oaks less than 20 inches in diameter for fuelwood. Part of the 2.5 acre sale area extended into a Riparian Reserve to within 71 feet of an intermittent stream. EFFECT: Probably a slight biological effect, given the limited area (2.5 acres) and small volume (16 cords/8MBF) involved.
81	12	Failed	None	Did not keep trees felled for safety reasons when they were needed for coarse woody debris. The project removed hazard trees from a campground. Downed trees were not retained because it was felt that campers would have removed the

Question	Sale	Compliance	Potential Effects	Comments
				material for firewood anyway. EFFECT: No biological effect, given the limited area involved (25 acres) and the developed nature of the area.
81	21	Failed	None	Did not keep trees felled for safety reasons when they were needed for coarse woody debris. The project removed one snag from along a temporary road. This downed snag was removed without an assessment of coarse woody debris needs. EFFECT: No biological effect, given that only one snag was removed.
84	15	Failed, not capable	None	Did not retain 240 linear feet of logs per acre greater than or equal to 20 inches in diameter. The project was a salvage of 60 to 65 year old blowdown. Logs available for retention as coarse woody debris were too small to meet this standard and guideline. EFFECT: No biological effect since site conditions precluded or would not support S&G conditions.
84	41	Failed, not capable	None	Did not retain 240 linear feet of logs per acre greater than or equal to 20 inches in diameter. The project was a small hazard tree removal in a high elevation campground. Logs available for retention as coarse woody debris were too small to meet this standard and guideline. EFFECT: No biological effect since site conditions precluded or would not support S&G conditions and the project retained coarse woody debris in sizes representative of adjacent stands.
85	28	Failed, not capable	None	Did not retain 120 linear feet of logs per acre greater than or equal to 16 inches in diameter. The project was a salvage of 200 trees (windthrow and fire killed) adjacent to roads and other areas. Logs available for retention as coarse woody debris were too small to meet this standard and guideline. EFFECT: No biological effect since site conditions precluded or would not support S&G conditions and the project provided some coarse woody debris and retained all material on the ground.
86	02	Failed	None	Did not modify coarse woody debris guidelines for partial harvest in order to reflect stand development cycles. The harvest did modify the amount of coarse woody debris left, but did not consider stand development in determining this amount. EFFECT: No biological effect is expected since the review team felt that the amount of coarse woody debris retained appropriately reflected the timing of stand development cycles.
86	10	Failed	None	Did not modify coarse woody debris guidelines for partial harvest in order to reflect stand development cycles. This salvage harvest did modify the amount of coarse woody debris left, but did not consider stand development in determining this (did consider soil and wildlife needs). EFFECT: No biological effect is expected since the review team felt that the amount of coarse woody debris retained was not a prob-

Question	Sale	Compliance	Potential Effects	Comments
				lem.
86	11	Failed	Positive	Did not modify coarse woody debris guidelines for partial harvest in order to reflect stand development cycles. This salvage harvest did modify the amount of coarse woody debris left in some areas (for safety reasons), but did not consider stand development in determining this. EFFECT: A positive biological effect is expected since, in total, a greater than expected amount of coarse woody debris was probably retained.
86	14	Failed	Positive	Did not modify coarse woody debris guidelines for partial harvest in order to reflect stand development cycles. This salvage harvest did not consider stand development in determining coarse woody debris needs. EFFECT: A positive biological effect is expected since, in total, a greater than expected amount of coarse woody debris was probably retained.
86	23	Failed	Positive	Did not modify coarse woody debris guidelines for partial harvest in order to reflect stand development cycles. This salvage harvest did not consider stand development in determining coarse woody debris needs. EFFECT: A positive biological effect is expected since, in total, a greater than expected amount of coarse woody debris was probably retained.
86	29	Failed	Positive	Did not modify coarse woody debris guidelines for partial harvest in order to reflect stand development cycles. This salvage harvest did not consider stand development in determining coarse woody debris needs. EFFECT: A positive biological effect is expected since, in total, a greater than expected amount of coarse woody debris was probably retained.
86	32	Failed	Positive	Did not modify coarse woody debris guidelines for partial harvest in order to reflect stand development cycles. This salvage harvest did not consider stand development in determining coarse woody debris needs. EFFECT: A positive biological effect is expected since, in total, a greater than expected amount of coarse woody debris was probably retained.
87	40	Failed	Low	Did not retain and protect existing coarse woody debris. Project removed existing coarse woody debris and substituted newly cut wood. EFFECT: Probably a low biological impact, since removed debris was of recent origin.
89	03	Failed	Slight	Did not retain patches greater than 2.5 acres in size for multiple rotations. The project retained 15 percent of the harvest area, but did not identify large patches. EFFECT: Probably a slight biological impact.

Question	Sale	Compliance	Potential Effects	Comments
89	13	Failed	Slight	Did not retain patches greater than 2.5 acres in size for multiple rotations. The commercial thinning retained 15 percent of the harvest area, but did not identify patches. EFFECT: Probably a slight biological impact given the type of treatment.
97	24	Failed, not capable	None	Did not retain 16-25 large green trees per acre. This project salvaged timber following a stand replacing fire. In large portions of the harvest unit, insufficient green trees remained to meet this S&G, even after all trees with a less than 60 percent chance of mortality were retained. EFFECT: No biological effect since site conditions precluded or would not support S&G conditions.
99	15	Failed, not capable	None	Did not retain snags to support cavity nesting species at 40 percent of their potential population levels. This project was in a stand of small trees which lacked sufficient size to provide snags of adequate size for species requiring larger snags. Smaller snags were retained by the project. EFFECT: No biological effect since site conditions precluded or would not support S&G conditions.
99	30	Failed, not capable	None	Did not retain snags to support cavity nesting species at 40 percent of their potential population levels. This project thinned a stand of trees which lacked sufficient size to provide snags of adequate size for species requiring larger snags. All snags were retained by the project. EFFECT: No biological effect since site conditions precluded or would not support S&G conditions.
107	29	Failed	Medium	Did not minimize the effects of heavy equipment operations on soils and litter. Excessive tractor use (blading) and ground disturbance was noted on steep slopes. EFFECT: Locally, the effects of this were probably of medium concern and impact.
108	09	Failed	Low	Did not reduce the intensity and frequency of site treatments. The project could have reduced multiple entries to the site, but due to time considerations this was not done. EFFECT: This probably had a low level of biological impact
112	13	Failed	Undetermined	Did not retain beetle infested trees for black-backed woodpeckers. This project removed dead and dying trees, but did not specifically retain any beetle infested trees. EFFECT: This has an unknown biological impact. The report did not provide adequate information upon which to estimate impacts.
112	14	Failed	Undetermined	Did not retain beetle infested trees for black-backed woodpeckers. This thinning project did not specifically retain any beetle infested trees. EFFECT: This has an unknown biological impact. The report did not provide adequate information upon which to estimate impacts.

<b>Question</b>	<b>Sale</b>	<b>Compliance</b>	<b>Potential Effects</b>	<b>Comments</b>
113	11	Failed	Slight	Did not provide sufficient snags for all cavity nesters in all parts of the project. Due to safety reasons, snags were removed from the campground portion of the project, but excess snags were retained in the remaining portions of the project. EFFECT: Probably a slight biological effect, since snags were retained in most of the project area.
113	13	Failed	Undetermined	Did not provide sufficient snags for all cavity nesters in all parts of the project. EFFECT: This has an unknown biological impact. The report did not provide adequate information upon which to estimate impacts.
113	14	Failed	Undetermined	Did not provide sufficient snags for all cavity nesters in all parts of the project. EFFECT: This has an unknown biological impact. The report did not provide adequate information upon which to estimate impacts.
114	20	Failed	None	Did not prohibit harvest when snag requirements could not be met. This project cut 34 hazard trees in seven campgrounds. Snag requirements were not met. EFFECT: Probably no biological effect, given the few number of trees cut (less than 6 trees removed from the site).
114	30	Failed	None	Did not prohibit harvest when snag requirements could not be met. This thinning project could not meet snag requirements due to the size of trees in the stand. EFFECT: No biological effect since site conditions precluded or would not support S&G conditions.

## Appendix K: Analysis of Responses to Selected Topics

During the initial compilation of the review teams' responses, three limitations of the pilot implementation monitoring database became apparent: (1) different interpretations of the monitoring questions and the yes/no/not-applicable format led to varying responses for similar situations, (2) answers to individual questions were frequently qualified in the comments and summary section, and (3) aggregation of responses was hampered by these factors. In addition, a need was identified (for management purposes) to distinguish between Standards and Guidelines (S&Gs) which were not met because of inaction or inappropriate action, and S&Gs which were not met due to site constraints. As part of this pilot analysis, three topics were chosen to test expanded compliance categories and to illustrate the types of summaries that can be obtained from the database, including regional compliance estimates based on extrapolations of the sample data.

These analyses were conducted prior to the Interagency Analysis Team's assessment of the "No" responses. Therefore, minor differences in the statistics summaries are the result of different categorizations of the "No" responses as well as the categorization of some of the "Yes" responses for the earlier analyses. The review team decided not to redo the analyses in this section based on the expectation that the results would not change substantially and because the RIEC provided guidance that efforts should focus on the assessment of significance and management recommendations. The primary use of the analyses in this section should be as an example of the summaries and types of information to expect in future implementation monitoring efforts.

An analysis was conducted to examine timber sale project compliance with *ROD* direction for three topics: Riparian Reserve (RR) boundaries, coarse woody debris (CWD), and snag retention. The topics were selected because they generated substantial discussion during the implementation monitoring process and, in addition, they are generally considered to be of widespread interest. Once the topics were selected, all questions pertaining to each topic were identified. Then individual sale project reports were examined and the review teams' findings, comments, and answers were combined to assess timber sale project compliance with *ROD* direction for that topic. Compliance was assessed using the following criteria:

- Category 1: S&G Exceeded
  - The activity exceeded the S&G, or
  - The activity exceeded a more restrictive S&G from an existing land management plan.
- Category 2: S&G Met
  - The activity met the S&G, or
  - The activity met a more restrictive S&G from an existing land management plan.

- Category 3: S&G Not Met
  - The activity did not address an applicable and attainable S&G, or
  - The activity did not fully implement an applicable and attainable S&G.
  
- Category 4: S&G Applicable and Unattainable
  - The S&G applies to the activity and applies within the land allocation where it occurs; however, the S&G could not be met due to site characteristics. This category includes a variety of situations; e.g., analysis documenting the constraining site conditions may or may not have been completed, and the activity may or may not have partially met the S&G.
  
- Category 5: S&G Not Applicable
  - The S&G does not apply to this activity, or
  - The S&G does not apply within the land allocation where the activity occurs.

The results for each question were aggregated by topic to provide a project level assessment; i.e., to indicate the number of projects in each compliance category for each topic. These results were then further aggregated across topics to assess overall project compliance with this pilot grouping of three topics.

The implementation monitoring program used a statistical sampling approach to ensure that sample data could be used to generate findings about compliance at the regional level with a particular degree of certainty. Based on the individual project results and the statistical sampling approach, estimates for the population of FY 1995 timber sales were made. These estimates provide information about project compliance at the regional scale. Estimates of the number of projects (on a regional level) that were not in full compliance (Category 3) with the S&Gs for the three topics analyzed were developed along with 80 percent confidence limits. These results can be interpreted as the estimated number of projects among all projects (423 timber sales regionwide) that were Category 3. The 80 percent confidence limits indicate the largest and smallest number of Category 3 projects that we are 80 percent certain would be found among the 423 timber sales. The number of projects region-wide within other compliance categories were also estimated, along with the associated 80 percent confidence limits.

The circumstances contributing to projects in Category 1, 3, and 4 are summarized and presented to aid in the management assessment of the FY 1995 Timber Sale Pilot Implementation Monitoring results.

### **Riparian Reserve Boundaries**

The Riparian Reserve (RR) topic aggregated questions 70 through 75 which addressed whether projects complied with the S&Gs regarding identification and establishment of RR boundaries. Project areas which did not include any RRs were rated as not applicable (Category 5). If the project complied completely with all RR boundary direction, then it was rated fully consistent

(Category 2). Projects that did not meet applicable *ROD* direction for RR boundaries were identified as Category 3.

The results of the efforts to categorize each sale relative to the RR S&Gs are summarized in Table K-1.

**Table K-1**  
**Responses to Questions Applicable to Riparian Reserves**

Riparian Reserves	Category 1 # % C.L.	Category 2 # % C.L.	Category 3 # % C.L.	Category 4 # % C.L.	Category 5 # % C.L.
Sample (42)	1	27	2	0	12
Population of Timber Sales (423)	10.1 2.4% 0.2-3.8%	272.6 64.3% 53.7-74.0%	20.2 4.8% 1.2-11.8%	0 0% 0.0-3.8%	121.1 28.6% 19.6-39.0%
Percent of Timber Sales (30) w/ RRs	3.3%	90%	6.7%	0%	

The 80 percent confidence limits for the number of sales in the population that are in Category 3 are 5 to 51 sales (1.2 percent to 11.8 percent). The individual RR S&G issues for the Category 3 sales are summarized as follows:

- One sale unit included an intermittent stream that was not identified and included in a RR.
- One sale included channels classified as snowmelt channels and not included within intermittent stream RRs; however, the review team felt those channels met the definition for intermittent streams and should have been included within RRs.

The timber sale project that was classified as Category 1 was reported to:

- Have used 400 feet and 200 feet instead of two and one potential tree heights (360 feet and 180 feet) as specified by the *ROD* S&Gs and the decision document.

A related result for this Category 1 project is that the required watershed analysis had not been done. The review team felt that a watershed analysis was appropriate to address such changes as required in the *ROD*. Thus, while the project was not in compliance with another S&G, it was classified as a Category 1 for this subset of RR S&Gs.

## Coarse Woody Debris

The Coarse Woody Debris topic addresses related S&Gs for several land allocations: questions 41 and 42 cover LSRs, questions 84 - 88 deal with Matrix lands, and question 121 covers AMAs.

Review team evaluations were aggregated for these questions to assess the compliance of projects with the CWD topic as a whole.

The results of the efforts to categorize each sale relative to the CWD S&Gs are summarized in Table K-2.

**Table K-2**  
**Responses to Questions Applicable to Coarse Woody Debris**

Coarse Woody Debris	Category 1	Category 2	Category 3	Category 4	Category 5
	# % C.L.	# % C.L.	# % C.L.	# % C.L.	# % C.L.
Sample (42)	5	19	3	4	11
Population of Timber Sales (423)	50.5 11.9% 5.9-20.6%	191.8 45.2% 35.0-55.8%	30.3 7.1% 2.6-14.9%	40.4 9.5% 4.3-17.7%	111.0 26.2% 17.5-36.4%
Percent of Timber Sales (31) w/ CWD	16.1%	61.3%	9.7%	12.9%	

The 80 percent confidence limits for the number of Category 3 sales in the population are 11 and 63 sales (2.6 percent to 14.9 percent). The individual CWD S&G issues for the Category 3 sales are summarized as follows:

- Two sales had no protection for existing down CWD.
- Two sales identified standing trees to meet the CWD requirement, whereas the review team's interpretation was for down CWD.

For the Category 1 sales, the following findings were reported by the review teams:

- Four sales applied the CWD standard for regeneration harvest to partial harvest situations.
- One sale exceeded the CWD standard.

The primary reason for the four sales classified in Category 4 was:

- Logs did not exist in the quality and size needed to meet the S&G.

### Snag Retention

Questions 40 and 43 (for LSRs), 93, 94 and 99 (for Matrix lands), and 121 (for AMAs) addressed snag retention S&Gs. Review team assessments of these questions were aggregated to evaluate this topic. Note that snag retention S&Gs were a topic consistently reported as the focus of considerable discussion between reviewers and project teams. Much of this was prompted by different interpretations of the S&Gs, lack of consensus on definitions, and lack of availability of analytical results described in the *ROD*. The analysis referenced in the *ROD*, an analysis to establish the “levels sufficient to support species of cavity-nesting birds at 40 percent of potential population levels based on published guidelines and models,” was generally not referenced in the project documentation. Without the results of this analysis, most sales identified snag retention levels based on guidance in plans other than the NFP.

The results of the efforts to categorize each sale relative to the snag S&Gs are summarized in Table K-3.

**Table K-3**  
**Responses Applicable to Snag Retention**

Snag Retention	Category 1 # % C.L.	Category 2 # % C.L.	Category 3 # % C.L.	Category 4 # % C.L.	Category 5 # % C.L.
Sample (42)	3	25	1	1	12
Population of Timber Sales (423)	30.3 7.1% 2.6-14.9%	252.4 59.5% 48.9-69.5%	10.1 2.4% 0.2-8.7%	10.1 2.4% 0.2-8.7%	121.1 28.6% 19.6-39.0%
Percent of Timber Sales (30) w/ Snags	10.0%	83.3%	3.3%	3.3%	

The 80 percent confidence limits for the number of Category 3 sales in the population are 1 to 37 sales (0.2 percent to 8.7 percent) The individual snag retention S&G issues for the Category 3 sales are summarized as follows:

- One sale did not contain snags that were marked or cruised and the discussions did not reach consensus on requirements.

The two sales in Category 1 referenced:

- Snag levels from the LRMP, but exceeded that level.

The one sale in Category 4 reported:

- Timber was too small to meet S&G.

### Combined Results

Results for the above three topics were aggregated to provide information on the number of sales that met all *ROD* S&Gs for Riparian Reserves, Coarse Woody Debris, and Snag Retention. A project was placed in Category 2 if it had Category 2 ratings for all three topic areas, Category 3 if at least one topic area was Category 3, Category 1 if at least one topic area was Category 1 and the others were Category 2, etc. The results of the efforts to categorize each sale relative to the combined S&Gs are summarized in Table K-4.

**Table K-4**  
**Combined Responses to Questions Applicable to Riparian Reserves,**  
**Coarse Woody Debris, and Snag Retention**

Combined S&Gs for RR, CWD, Snags	Category 1 # % C.L.	Category 2 # % C.L.	Category 3 # % C.L.	Category 4 # % C.L.	Category 5 # % C.L.
Sample (42)	7	24	5	4	2
Population of Timber Sales (423)	70.7 16.7% 9.7-26.0%	242.3 57.1% 46.6-67.4%	50.5 11.9% 5.9-20.6%	40.4 9.5% 4.3-17.7%	20.2 4.8% 1.2-11.8%
Percent of Timber Sales (40) w/ RR, CWD, &Snags	17.5%	60.0%	12.5%	10.0%	

The 80 percent confidence limits for the number of Category 3 sales in the population are 25 to 87 sales (5.9 percent to 20.6 percent).

These aggregated results were post-stratified by the sale’s timber volume, and the results are presented in Table K-5.

**Table K-5**  
**Combined Responses to Questions Applicable to Riparian Reserves,  
 Coarse Woody Debris, and Snag Retention Post-Stratified by Timber Volume**

<b>Sale Volume (mbf)</b>	<b>Number of Sales in Sample</b>	<b>Category 1 # %</b>	<b>Category 2 # %</b>	<b>Category 3 # %</b>	<b>Category 4 # %</b>	<b>Category 5 # %</b>
less than 250	22	4 9.5%	13 31.0%	0	3 7.1%	5 11.9%
greater than 250	20	3 7.1%	11 26.2%	5 11.9%	1 2.4%	0

While the number of sales in each category is too small to permit statistical hypothesis testing, e.g. Chi Square tests, it does not appear that the size of the timber sale is strongly associated with compliance or noncompliance within these three topic areas. However, the results for Category 3 suggest that the larger timber sales have more difficulty in implementation within these three S&G areas. Category 5 results suggest that small sales are less likely to have project characteristics that are relevant to these three S&G areas.

## **Appendix L: Summary of Responses Grouped by Their Applicability to Specific Land Use Allocations**

Table 6 in the report (page 30) summarizes responses from Provincial Monitoring Teams to questions grouped by land allocation.

### **Questions Applicable to All Land Allocation categories**

Of the 353 responses answered as “Yes” or “No,” 87 percent were “Yes” and 13 percent were “No.” Of the twenty-two questions in this section, the teams identified the following concerns:

On question 1, there was confusion over interpretation of the word "appropriate" when referring to site specific analysis. Teams questioned who should determine what is appropriate?

On question 2b, teams suggested clarifying how this question should be applied to timber sales involving road rights-of-way or campgrounds, when public safety is an issue.

On questions 5, a clarifying re-write was offered: "If land allocations overlap within the project area, have all applicable standards and guidelines been applied?"

On question 10, the variability in team interpretations was particularly evident: 11 yes answers, 15 “No” answers, and 16 n/a answers. A clarifying re-write was suggested to reduce future inconsistencies: "a) If required, has a watershed analysis been completed for the watershed(s) encompassing the project area? b) If a watershed analysis has been completed for the watershed(s) encompassing the project area, was information from watershed analysis used in project planning?"

On question 20, a clarifying re-write was suggested: "Within 50 miles of the coast: a) has it been determined if marbled murrelet surveys to protocol are required? b) if required, have surveys to protocol been conducted?"

On question 21, concerning great gray owl surveys, teams suggested a clarifying re-write that separates the compound topics: part 1) were surveys done?, part 2) were mitigation measures implemented?

Five of the twenty-two questions in this section were believed to be ambiguous, and needing additional clarification (8, 14, 18, 19, 21). No specific suggestions were identified in team reports.

### **Questions Applicable to Late Successional Reserves**

Of the 106 responses answered as “Yes” or “No,” 77 percent were “Yes” and 23 percent were “No.” Of the thirty-five questions in this section, the teams identified the following concerns:

On questions 24 and 25, teams expressed concern over the word "observed" and how it was intended to be used to respond to these questions dealing with unmapped late-successional reserves. They want to know who makes the determinations for the observations at issue, and how to better interpret the questions.

On questions 29 and 30, teams expressed interest in clarifying the differences between silvicultural and timber management activities for response to the questions.

On questions 35-45, teams suggested a lead-in note that indicates these questions are only applicable if salvage is an issue; if not, skip to question 46.

On question 39, the ROD reference (C-14) from which this question was derived notes that "specific guidelines should be developed for each physiographic province, and possibly for different forest types within provinces." Field units question whether or not this will be done, by whom, under what funding and time frame? This is an important issue tied to salvage, green tree and snag retention, and coarse woody debris in LSRs.

On question 42, teams want clarification on the application of this question dealing with coarse woody debris to road rights-of-way, campgrounds, and comparable sales that address public safety issues and hazard trees. Several teams believe that quantifiable analysis of coarse woody debris is not practical when dealing with non-discretionary R/W applications.

On question 45, a clarifying re-write was suggested when dealing with general guidelines: "Have deviations been held to as small a portion of the area as possible?"

On questions 49-58, teams desire clarification on how protection buffers relate to LSRs. One interpretation is that within LSRs surveys are not needed for protection buffer species under the cited section of the ROD/S&Gs; rather, such species within LSRs or Riparian Reserves would generally be identified and appropriately protected from any ground disturbing activities through the Survey and Manage S&Gs. Exceptions would involve Ulota meglospora and the great gray owl, which are not S&M species.

### **Questions Applicable to Managed Late Successional Areas**

Of the 6 responses answered as “Yes” or “No,” 50 percent were “Yes” and 50 percent were “No.”

All questions dealing with protection buffers were a concern even though most were answered not applicable.

On questions 61-68, teams were concerned as to whether Managed Late Successional Area protection buffer species apply to LSRs in areas of overlap. ROD page A-5 clarifies priority allocations. These questions are generally perceived to be applicable to the eastside units, but some of the species overlap into the westside. Some teams believe the questions should be answered if the species are present regardless of which side of the Cascades a sale unit is on.

Some teams also noted they were not getting timely information about the protection buffer species at the field unit level, and often resorted to calling the PNW Station scientists in Corvallis directly to get the latest information, not waiting for it to come through channels.

### **Questions Applicable to Managed Late Successional Areas and Riparian Reserves**

Of the 301 responses answered as “Yes” or “No,” 63 percent were “Yes” and 37 percent were “No.”

Of the fourteen questions in this section, the teams identified the following concerns:

On question 69, teams suggested re-wording, such that all five categories have been reviewed for applicability to the project area. Most teams did not find all five categories associated with a given project, and a literal answer would be "No" if anything other than the five were involved. Two suggested re-writes are: (1) "Have appropriate steps been taken to identify where riparian reserves should be established?", and (2) "Has the project area been surveyed to identify which categories of streams or water bodies are within the project area?"

On questions 70-74, teams noted difficulty in interpretation, which led to a variety of responses. Teams suggested that this question be rewritten, but offered no specific language.

On questions 75 and 76, teams recommend separating the compound elements so it is easier to understand and answer.

### **Questions Applicable to Matrix lands**

Of the 308 responses answered as “Yes” or “No,” 81 percent were “Yes” and 19 percent were “No.”

Of the thirty-one questions in this section, the teams identified twelve that needed clarification. Examples are summarized as follows:

Questions in this section were a problem for thinning sales in young stands with small timber and no large wood legacy, and for salvage along roads and in campgrounds, where public safety is an issue.

On question 84, the coarse woody debris diameter requirements do not apply to one of the timber sales, #41 Campground Salvage, in that natural stand development and environmental conditions in the area do not grow timber large enough to meet the minimum diameter requirements listed in the S&G. Existing conditions also precluded other sales from meeting this S&G (e.g., sale 16, WS22 and 40).

On questions 89 and 92, teams seek clarification of what to them are "very broad questions." They suggested that some definition of scale be developed to help answer these questions. These questions are seen as contradictory by some teams.

On question 99, teams made differing interpretations of this question, based on the information they had to address the 40 percent population levels of cavity-nesting birds. Existing conditions precluded some sales from meeting this S&G (e.g., sale 16, WS 22 and 40).

On question 101, teams suggest adding the word "regional" before standardized protocol, to clarify the appropriate response.

On question 105, teams suggest clarifying the question to focus on known sites. A suggested re-write is: "Have management prescriptions included special considerations for sites known to be occupied by Townsend's big-eared bats?"

On questions 106-108, teams indicate the measures of success are not well defined or understood. Teams suggested that this question be rewritten, but offered no specific language.

On question 109, teams expressed difficulty answering the question because of problems interpreting and defining fifth field watersheds and putting the information in the context of the project area.

On question 114, a supplement to the question is suggested: "Were the needs of other cavity nesting species, including primary cavity nesters, included in the analysis?"

### **Questions Applicable to Adaptive Management Areas**

Of the 39 responses answered as "Yes" or "No," 79 percent were "Yes" and 19 percent were "No."

On question 124, teams noted this question should add the word "roosts" at the end of what is currently written.

On question 130, the Olympic Province team suggests a clarification that removes the perceived implication that marbled murrelet protection in subpart three, is excepted for the Quinault Special Management Area (SMA). The SMA is exempt from having LS/OG1 and LS/OG2 automatically classified as LSR, but this does not negate the need to provide for occupied murrelet sites.

Teams saw some of the questions repeated throughout various land allocations, and expressed concern about duplication. Questions appear several times because subject areas are addressed for a number of different land use allocations in the ROD and its standards and guidelines. As a possible way to reduce duplication, one reviewer suggested the questions should be reorganized into a subject-oriented format, not according to the structure in the ROD and its standards and guidelines.

Questions subject to the widest range of interpretation were those where the ROD direction was hard to understand or consistently interpret: those dealing with Late-Successional Reserves, green tree retention, snags, coarse woody debris, and riparian reserves, and survey and manage species. Many of these questions are relevant for projects in several land allocations.