Sample Tree Felling Categorical Exclusion Analysis Report

This report supplements the previous report on this subject and includes additional information as well as the information reported previously.

Subject: Report on the results of a Bureau of Land Management data call for information on NEPA records for Sample Tree Felling Forestry Projects.

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Introduction

The proposed categorical exclusion and this analysis have been revised based on public input, and review by the Council on Environmental Quality (CEQ). The purpose of this document is to explain the basis for enabling the Bureau of Land Management to establish a categorical exclusion (CX) for authorizing Sample Tree Felling in Western Oregon. The proposal covers the following activities:

Proposed 516 DM citation 11.9(C)(6):

> *Felling, bucking, and scaling sample trees to ensure accuracy of timber cruises. Such activities:*
>
> *(a) Shall be limited to an average of one tree per acre or less,*
> *(b) Shall be limited to gas-powered chainsaws or hand tools,*
> *(c) Shall not involve any road or trail construction,*
> *(d) Shall not include the use of ground based equipment or other manner of timber yarding, and*
> *(e) Shall be limited to the Coos Bay, Eugene, Medford, Roseburg, and Salem Districts and Lakeview District, Klamath Falls Resource Area in Oregon.*

Background

The Bureau of Land Management (BLM) measures (cruises) forest stands to inventory and evaluate the quantity and quality of timber that may be available for timber sales, stewardship contracts, and land exchanges. Cruising involves indirect estimation of the standing timber volume and condition by non-destructive means. Cruisers use Sample Tree Felling (STF) in conjunction with a variety of cruising methods to ensure accuracy of timber volume.

There is a need for accurate timber cruises. Accurate timber cruises are used to set total value of land when proposing land sales, transfers or exchanges. Accurate timber cruises also facilitate the preparation of timber sales, by which the BLM produces a sustainable supply of timber,

which contributes to the economic stability of communities. Accurate timber cruises are needed to ensure that the public receives fair value for the timber sold. BLM requires cruise accuracy within 10 percent of the net sale volume (BLM Manual Supplement Handbook H-5310-1).

BLM is proposing the establishment of this CX as a NEPA compliance tool to support the use of STF to ensure the accuracy of timber cruises. Sample Tree Felling is usually the most efficient measurement method and it affords the greatest degree of accuracy. Sampling would be used to verify cruise accuracy, develop local volume tables, and validate timber volume equations. STF sampling is a part of the timber sale preparation process, and is also used for value assessment for proposed land exchanges. However, STF is only a method of collecting information, and may or may not be followed by a land exchange or timber sale. The data gathered through STF, along with all other land information, is used by managers to help establish alternatives that may lead to decisions.

The use of STF is limited to the use of gas-powered chainsaws and hand tools in the felling, bucking and measurement of selected sample trees. There is no road construction, use of ground-based equipment, or any other manner of timber yarding associated with the action. A decision to retain felled sample trees as large woody debris or remove them as a portion of timber sale volume will be addressed in sale-specific environmental analysis.

BLM currently issues hundreds of timber sale contracts and permits on public lands annually. Most timber sale project volumes are estimated using existing volume tables. These standard tables are used by many federal, state, and local agencies, and by timber companies and private landowners that sell timber. Foresters use the tables to estimate the board foot volumes of timber within a forest stand. These tables assist the forester to accurately cruise a forest stand and estimate volume and defect, and therefore set values for selling timber.

Many timber sales and land exchanges do not require STF to obtain accurate volume data. Foresters cruise the timber for gross volume, and use a standard estimate of defect for the timber type to get a net volume and value. However, when there is a high percentage of defect in trees, (due to insects, disease, poor tree form, or other factors), it is difficult to get an accurate estimate of net volume using standard volume tables. Foresters rely on STF to more accurately estimate the amount of defect in a timber stand by felling and measuring a small sample of trees, then extrapolating the results to the larger timber project area.

Because of the high volume and value of timber in the BLM districts in western Oregon, these districts have used STF extensively for many years. BLM offices in eastern Oregon and other western states typically do not use STF as a method for cruising timber.

Data Call Administrative Process

The initial analysis on STF is described here. Comments received on the original analysis report indicated that additional analysis was needed to fully describe STF as used by BLM. An additional review of programmatic EAs was conducted, and is described later in this report.

For the initial analysis, an interdisciplinary team of subject matter experts within the BLM and Department of the Interior (DOI) identified the information needed to determine whether the existing data supports the proposed CX. Washington Office and Oregon State Office staff collaborated to create an Excel spreadsheet to organize the data, drafted instructions for entry of appropriate data, and verified the completeness of data that was entered into the spreadsheet.

Existing sources of information were assessed. Collection of data was coordinated through the Oregon State Office and was analyzed and entered into the spreadsheet by the lead forester for each of the westside Oregon Districts of BLM. The lead foresters in each District are the subject-matter experts on forestry, timber sales, and cruising programs.

The data collected and entered into the spreadsheet includes 100 percent census of STF that supported the timber sale program in five BLM districts in western Oregon. The districts providing data during the first data collection are Coos Bay, Eugene, Medford, Roseburg, and Salem. The Lakeview District Klamath Falls Resource Area (KFRA) was inadvertently left out of the proposed CX. The KFRA used STF extensively from the 1970's through the early 1990's, but had not used STF from 2001 through 2005. Based on comments received, BLM revised the CX to include the Lakeview District Klamath Falls Resource Area since the environmental effects are comparable to the effects of projects in the other offices analyzed.

Data Collection and Analysis Methods

During the years of STF included in the data, BLM offered a total of 1,456 timber sales. This data is based on sales offered using BLM Forms 5450-4 (Contract for the Sale of Timber, Scale Sale) and 5450-3 (Contract for Sale of Timber, Lump Sum Sale), along with the sawtimber portion of sales offered and/or negotiated using BLM Form 5450-5 (Vegetative or Mineral Material Negotiated Cash Sale Contract).

The numbers of timber sales for the 11 western states (Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, and Wyoming) are shown in Table 1. Western Oregon is shown separately because a majority of timber sale projects occur in the western BLM Districts, and because they use STF as a method for cruising timber for accurate volume measurements in some of their timber sale projects.

Table 1: Timber Sales Offered by Year

Year	Ten States Plus Eastern Oregon	Western Oregon	Total
2001	55	162	217
2002	88	234	322
2003	73	205	278
2004	51	295	346
2005	64	229	293
TOTAL	331	1,125	1,456

All states were asked if they have used STF for timber sale volume estimates in the past five years. Only five BLM Districts (see Table 2) in western Oregon have recently used this method for cruising timber. The lead forester for each District was asked to examine the timber sale records for the past five years, and record when STF had been used.

Analysis Process

A table was created to analyze the following information:

- The type of NEPA document/associated actions used to support the activity.
- The size of each project.
- The number of trees affected, and the mathematically derived number of trees per acre.
- Was a road constructed specifically for STF?
- Was there use of ground-based equipment for STF?
- Were significant individual impacts predicted for STF?
- Were significant cumulative impacts predicted for STF?
- Was a FONSI signed?
- Was it a mitigated FONSI?
- Would the project have resulted in an EIS without BMPs?
- Were actual impacts the same as predicted impacts?
- Were the unanticipated impacts significant?
- Was NEPA analysis challenged?
- Was the NEPA analysis challenge upheld?

Every data cell contained precise information to avoid ambiguity. Instructions were provided to support the data entry process. Data entry choices were limited to: explicit information about each STF; one of a small choice of coded options; a single metric; or a "yes", "no", or not applicable response. Only 2 of the 23 fields required narrative responses that could generate dissimilar data entries. Narratives were necessary to answer the following questions:

- Were actual impacts the same as predicted impacts? If not, what were the unanticipated impacts?
- How were the results/impacts validated? If other than through professional judgment, personal observation, or monitoring, briefly describe the validation method(s) used.

Each of the five Westside Oregon Districts filled in the data fields from existing local records. All incidents of STF as a cruising method used for timber sale volumes were recorded. The five spreadsheets were then combined alphabetically by District.

The project area (in acres) for all projects and the number of sample trees felled in each project area were totaled (columns 9 and 10). The average trees per acre for all projects were calculated by dividing the total number of sample trees felled by the total project acres for five years (sum of column 10 divided by the sum of column 9).

Quality Control Procedures

Data received were reviewed by an interdisciplinary team of Washington Office personnel. Three people independently examined the 23 data fields for each STF timber sale project record for appropriate and complete information. Incomplete records were completed by interviewing the person responsible for the data entry. Whenever data appeared inconsistent, or when data questions arose, responses were likewise corrected through interviews.

The data call produced a complete record of required information for 59 STF associated with timber sale projects. Two records were eliminated during the independent quality review period because they were not related to STF for timber sale projects. Of the 61 total responses to the data call, the net outcome was that 59 STF projects were analyzed to validate the use of the proposed CX. This analysis was reviewed by the BLM Washington Office forestry staff.

Findings

The 100 percent census of STF-supported timber sales from October 1, 2001 through September 30, 2005 was compiled by a BLM Washington office staff forester. The number of qualifying projects from the five districts in western Oregon with a forestry program is displayed in Table 2.

Table 2: Sample Tree Felling (STF) Projects

BLM Districts	Number of STF supported timber sale projects from Oct. 1, 2001 – Sept. 30, 2005	Project areas in acres	Number of sample trees felled in project areas	Sample trees per acre
Coos Bay	7	1,227	472	0.38
Eugene	24	5,646	705	0.12
Medford	4	3,246	301	0.09
Roseburg	18	3,650	1,192	0.33
Salem	6	1,293	189	0.15
Totals	**59**	**15,062**	**2,859**	**0.19**

Of the total 1,456 sales in the eleven western states, 1,125 occurred in western Oregon. Only 59 of these involved STF as the method used for cruising timber. A total of 2,859 trees were felled and measured within the 15,062 acres of timber sale projects. The STF for the five western Oregon Districts ranged from 0.09 to 0.38 trees per acre.

Table 3 is a summary of the ground disturbing activities and tree removal associated with STF in the five BLM districts in western Oregon. None of the projects had any road construction, use of ground based equipment, use of yarding equipment, or removal of sample trees from the project area as part of the STF.

Table 3: Sample Tree Felling (STF) Ground Disturbance and Tree Removal

BLM Districts	Number of STF supported timber sale projects from Oct. 1, 2001 – Sept. 30, 2005	Miles of road constructed as part of STF	Type of ground based equipment used	Type of yarding equipment used	Number of trees removed as part of STF
Coos Bay	7	0	None	None	0
Eugene	24	0	None	None	0
Medford	4	0	None	None	0
Roseburg	18	0	None	None	0
Salem	6	0	None	None	0

The purpose of the STF data call and subsequent analyses was to determine whether this activity associated with timber sales is having either individually or cumulatively significant impacts on the quality of the human environment as determined by NEPA. All of the districts wrote environmental assessments for the timber sales that were associated with STF. No significant individual impacts were predicted for STF, nor were there any significant cumulative impacts predicted.

The actual impacts were the same as predicted impacts in all cases. No higher level NEPA analysis was deemed necessary for any of the actions. In all cases where NEPA analysis of the timber sale EA was challenged, the analysis was upheld. Based on the factual evidence, adoption of the proposed STF CX is recommended.

Review of Programmatic EAs

The original data call as described above did not fully represent the STF process as used by BLM in western Oregon. Based on the comments received, BLM conducted an additional review of six pre-2001 District-wide programmatic STF EAs (Coos Bay, Eugene, Medford, Roseburg, Salem, and Lakeview District – Klamath Falls Resource Area). The six programmatic EAs were completed prior to the 2003 Court Stipulation for Dismissal and Order (*Umpqua Watersheds, et al.*, *v. BLM*, No. 00-1750-BR, U.S.D.C. Or., Stipulation for Dismissal and Order, 13 January 2003). The six District-wide programmatic EAs were written specifically to analyze STF in the six western Oregon districts. Each programmatic EA analyzed STF effects, and none were found to be significant.

Conclusions

Analysis of the data set and review of the pre-2001 programmatic STF EAs support the conclusion that performing STF activities will cause no individually or cumulatively significant impacts on the quality of the human environment when the STF activities are as described in CX

11.9(C)(6). Further, BLM must review proposed STF actions against the DOI "extraordinary circumstances" (516 DM 2.3A(3) and Appendix 2). If any extraordinary circumstances apply, BLM cannot use the CX. In all cases where STF was implemented on the ground, the actual impacts of STF were the same as the predicted impacts, and caused no individually or cumulatively significant impacts.

STF is an effective tool that BLM uses when trying to determine net volumes in timber stands with high levels of defect. Without accurate net volumes, estimates of value and potential losses of revenue to the federal government may vary considerably. BLM will continue to use STF when defects from insects, disease or other factors create difficulties in establishing timber values.

The data shows that STF affects less than one tree per acre for all timber sale projects. There is no ground disturbance, no use of ground-based equipment, and no road construction associated with STF. No yarding occurs, and no trees are removed from the site as part of the action.

BLM would incur high costs relating to the amount of time associated with resource staff writing environmental assessments for STF projects. A categorical exclusion for STF will facilitate completion of this routine minor action, and allow BLM to allocate scarce resource dollars to other projects.