

Work Plan to Address Harvest Schedule Modeling and Sustainable Harvest Levels in the District Implementation Plans

In moving forward with implementation of the *Northwest* and *Southwest Oregon State Forest Management Plans* (FMPs), the following work plan elements will be implemented to resolve difference between the district level opportunity analyses called for in the adopted FMPs, and the harvest schedule model outputs generated prior to plan adoption.

As the forest management plan was under development, Oregon Department of Forestry (ODF) staff developed the concept of district implementation plans, including a process for determining activities and resulting timber harvest for each district. This process, referred to as the district opportunity analysis, resulted in draft implementation plans (IPs), with identified harvest activity levels. Two different drafts of these IPs were reviewed with the Board, the beneficiaries, and the public prior to adoption of the two FMPs.

In the final year prior to plan adoption, the Department contracted with Oregon State University to conduct a comparative analysis of a range of forest management alternatives for the northwest Oregon state forests planning area. This modeling effort, conducted by Dr. John Sessions, predicted a potential annual harvest volume of approximately 279 MMBF for the three North Coast districts (Alternative 1C-2). The counties predicated their support for adoption of the forest management plan on the expectation that harvest levels would increase to volumes at or near the model outputs for that alternative. Subsequent to completion of the modeling work, and adoption of the plans, several factors came to light that called into question the validity of those projections for the short term. Also subsequent to plan adoption, final drafts of the district IPs were developed and offered for public review and comment. The proposed harvest levels in these IPs were similar to those proposed in earlier drafts, and well below the levels predicted by the model.

Over the past year, the Department has worked closely with the counties and a forestry consultant retained by the counties to explore and identify the reasons for the difference between the IPs and the model. The parties have also worked to identify areas where the district level opportunity analyses could be improved. The result is a set of final IPs

(contained in this plan) which identify an additional harvest level increment of approximately 30 MMBF, roughly a 15% increase over the previous drafts.

The purpose of the work plan that follows is to put in place a comprehensive and systematic process to continue the analysis and resolution of the issues related to harvest levels identified in the report provided to the Council of Forest Trust Land Counties by Mason, Bruce and Girard, and the issues related to the quality of forest inventory information necessary to increase confidence in the model outputs. The intent in carrying out this work plan is to realize the harvest level increases projected by the model to the greatest extent possible, while simultaneously meeting the other elements of Greatest Permanent Value. To the extent that these analyses identify sound and sustainable opportunities for increasing harvest levels within the ranges currently identified in the initial IPs approved, those changes will be made through the annual operations planning process, beginning in November of 2003 for the Fiscal Year 2005 Annual Operations Plans. If these analyses identify opportunities for increasing harvest levels beyond the ranges identified in the approved IPs, applicable district IPs will be revised in accordance with the review and approval process specified in the forest management plans.

The intent is that all elements of the work plan will be completed by January 2005, with interim efforts accomplished as indicated in the detail of the plan. The culmination of the work plan will be re-running the model to provide updated harvest schedule outputs that can be confidently and systematically “ground-truthed” to arrive at revised harvest levels for the district IPs. It is anticipated that such revisions will be implemented in the following annual operations planning cycle.

Goal of Updated Harvest Schedule Model Work Plan

In order to assure confidence in future harvest schedule modeling efforts and the resulting outputs, there are several key conditions that need to exist:

- *Strong involvement from field personnel in the development of model inputs to ensure confidence in model outputs and to ensure internal understanding, acceptance and support of the resulting management objectives (the “corporate view”).*
- *A model that incorporates, to the greatest extent possible, the realities of on-the-ground opportunities and constraints.*
- *Model inputs such as starting inventory, and growth and yield projections, that have a higher degree of correlation with existing data sources (e.g., new stand level inventory, permanent plot inventory, research data).*
- *A process for “connecting” the outputs from the model with actual objectives and activities on the ground in each district.*

Key Elements to Address in Updated Harvest Schedule Model

The following key work plan elements will be accomplished and/or developed:

- ***Development and inclusion of a road layer in the model to reflect access and operational considerations and constraints.***

Status and method for acquiring/developing this element: GIS layer for roads currently exists and was used in the Elliott State Forest model. If this layer is to be used primarily for access assessment in the model, then it will require very little work to update for use in future NW state forests modeling efforts. If the layer is used for more complex questions, such as controlling intensity of road use, more effort will be required to develop criteria for inclusion in the model. It may be determined that it is more efficient to address the “access” question through the final harvest setting boundary layer project element identified below.

Target timeframe for acquiring/developing this element: Spring 2003 for a version that addresses simple access questions. Spring 2004 for one that would address more complex questions.

- ***Development and inclusion of a final harvest setting boundary layer in the model to reflect operational considerations, costs, and constraints.***

Status and method for acquiring/developing this element: Not currently available for NW Oregon state forests. Districts do not have available resources to develop this spatial layer in the near term. Anticipate contracting with a third party to develop this in consultation with each district.

Target timeframe for acquiring/developing this element: Service contract in Fiscal Year 2004. Districts will not have time available until Summer/Fall of 2003 to work with contractor. Final product could be available by early in Calendar Year 2004.

- ***Development and inclusion of spatial layers or criteria to directly incorporate the desired future condition identified in each district IP, and the landscape design principles of the forest management plan for the longer term analysis.***

Status and method for acquiring/developing this element: Spatial layer for identified desired future condition (DFC) will be finalized and available when initial IPs are approved (approximately May 2003). Inclusion of criteria for the model to develop the DFC is a programming issue that will be addressed when the model is actually updated.

Target timeframe for acquiring/developing this element: Early in Calendar Year 2004.

- ***Development of an improved “starting” inventory for the model using information from the recently completed permanent plot inventory, the ongoing stand level inventory and the ongoing Swiss needle cast research projects.***

Status and method for acquiring/developing this element: Permanent plot inventory information is currently available. Stand level inventory information collection is underway, with the first year project data available in Summer 2003. Second year data will be available in May 2004. Preliminary data from the retrospective portion of the Swiss needle cast research project will be available in early 2003.

Target timeframe for acquiring/developing this element: Assuming the need for a minimum of 2 years of SLI project data, and necessary time to “translate” this data into a planning area-wide starting inventory for the model, estimated availability for this element is Fall of 2004.

- ***Development of improved and more comprehensive prescription “menus” for the model based on the best available silvicultural knowledge, and the goals and objectives of the forest management plans. This should include revised reforestation prescription menus based on ongoing Reforestation Task Force work.***

Status and method for acquiring/developing this element: Anticipate third-party contract with academic institution to help develop this element. Will also require significant involvement of field personnel.

Target timeframe for acquiring/developing this element: Contract to be developed and completed in the first half of Fiscal Year 2004. With time allowed for thorough district involvement, estimate that information could be available to incorporate into model in early 2004.

- ***Develop an appropriate “availability review” process to ground-truth model outputs in the field, and to identify other appropriate operational constraints not adequately accounted for by the model.***

Status and method for acquiring/developing this element: Not currently developed or available. Astoria basin analysis and others that need to be completed in other districts will likely offer the best templates. Process and application procedures need to be clear and consistent, with standards for the tools used (GIS, etc.) and documentation of the decisions made.

Estimate timeframe for acquiring/developing this element: Given current district workloads and staffing, we cannot reasonably expect to conduct basin analyses similar to the Astoria project until Winter 2003-04. Anticipate discussion and development of the “availability review” element in early 2004, with a goal of having it fully developed and ready for application when updated model runs are made in late 2004.

- ***Develop more accurate growth and yield tables through modifications to ORGANON that incorporate current understanding of Swiss needle cast growth losses, stand responses to thinning, and information on growth and yield from other data sources.***

Status and method for acquiring/developing this element: Current growth reduction estimates are based on the Growth Impact Study's first remeasurement of 1997 plots completed in Spring 2000. Three studies and one mapping exercise will help to refine Douglas-fir growth rates in Swiss needle cast (SNC) affected stands. 1) A second remeasurement of the Growth Impact Study was completed in Spring 2002. As a part of the Growth Impact Study, tree and plot growth trends relative to ORGANON projections will be reported. 2) A study of growth response to precommercial thinning in Douglas-fir stands with SNC has been conducted annually and summarized every two years starting in Fall 2000. 3) ODF is conducting a study of the response to commercial thinning in Douglas-fir stands with SNC. The study has both a retrospective and design phase. 4) ODF districts will delineate stands with high, moderate, and low SNC severity so that differential growth rates can be modeled.

ODF permanent plot data for 10-year retrospective radial growth collected will be analyzed to get an estimate of the growth rates between 1990 and 2000.

Target timeframe for acquiring/developing this element: 1) Results of the Growth Impact Study's second remeasurement are available now. Comparison of growth to ORGANON projections will be available Summer 2003. 2) Updates on growth response to precommercial thinning in Douglas-fir stands affected by SNC will be available in Fall 2004, although significant change from current understanding is not expected. 3) Each year over the next four years additional results of the commercial thinning studies will be available. 4) As part of the basin analysis, districts with SNC disease will delineate 3 levels of SNC severity.

Retrospective growth rate information from permanent plots will be available early in 2003.