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Comments to the Oregon Board of Forestry

ODF's Implementation of the ESSA Report

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I am Mark Rasmussen, a Principal at Mason, Bruce & Girard, Inc (MB&G) headquartered in Portland Oregon. I have been serving as a consultant to the Forest Trust Lands Advisory Committee (FTLAC) since 2001. My role is to provide FTLAC with forestry technical expertise and support. I am a member of ODF's Technical Expert Review Group (TERG) and last offered testimony to the BOF as a member of the TERG on October 19, 2015.

Two weeks ago ODF presented the TERG members with the final report from ESSA, and spent a couple of hours explaining how ODF planned to implement the ESSA recommendations. We will prepare detailed technical comments and provide them to the ODF planning team as we understand a little bit more about some of the analysis recently completed.

I would like to spend a few minutes today providing the BOF with my high level views on just a few key issues about ODF's implementation of the ESSA report. I won't get into technical details in this testimony – that is better directed at ODF staff. In addition, Commissioner Josi asked me to provide the Board with my perspective about the effort to date.

First, I'll highlight a couple of the ESSA recommendations that seem problematic to me.

1. ODF should reject ESSA's notion that it should expect "fall-down"

   ESSA recommends that ODF should expect a "fall-down" between inventory estimates and harvests, and that ODF should develop "fall-down" factors. ESSA cites a WA DNR study that found fall-down of 10-45%, meaning that actual harvest volumes were 10-45% less than inventory volumes.

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MB&G has worked for many public and private timberland managers. In our experience, foresters that talk about "fall-down" are almost exclusively public land managers, and a vague idea that they should expect "fall-down" becomes a self-fulfilling prophecy. Harvest volumes are below expectations, and no one really questions why.

Private timberland managers, on the other hand, are responsible for earning a fair return from a timberland asset, and look for every way to capture the volume in the inventory. They typically do not make a large scale discount to inventory volumes, and they are typically able to produce the inventory volumes.

On one of the properties we have responsibility for I have been comparing inventory depletions to scaled volume for the last 18 years – total harvest was over 1.0 billion board feet during this period. The difference between depletion from the inventory and the scaled volume is only 2.5% -- well within any reasonable statistical error. There is no need for an additional "fall-down" factor if the inventory is maintained carefully.
I spend time on this because I think it would be a great disservice to the beneficiaries of the Forest Trust Lands if ODF suddenly adopted an expectation of "fall-down." If the Board starts to hear that idea from ODF, I recommend that you press hard on ODF.

2. Cubic measurement will only serve to confuse

In Oregon, almost all landowners and mills base log transactions on board foot volume measures. Past ODF forest plans have projected growth, yield and harvest in board foot volume measures. To date, all ODF timber sale activities and prices are reported in board foot volume measures.

ESSA, however, suggests that ODF should do its planning in cubic foot volume measures. While we understand the biometrician's preference for cubic volumes, we cannot recommend that ODF make the switch.

Converting from board foot to cubic foot volumes is not a straight-forward task, and not without controversy. If ODF were switch to planning in cubic feet, it would be adding confusion to the existing controversy. Suppose, for example, that the new plan project 50 million cubic feet of harvest. Is that more or less than the current harvest level? The answer is: it depends on the species, size and shape of the trees scheduled for harvest, and those characteristics will change over time.

ODF does not need to add confusion to what is turning out to be a controversial planning process.

3. ESSA's recommendation for calibrating the FVS model should be set-aside

ESSA recommended ODF use the USFS FVS growth model.[1] It is risky to use any of the growth models without calibrating them to local conditions. Regarding calibration, ESSA passed on to ODF the USFS recommendation to set the SDIMax parameter to the SDI of the 97% percentile of

[1] We note for the record that we view ESSA's lack of consideration of other growth models, especially the FPS model currently used by ODF to manage its inventory, as a serious oversight in the report.

the ODF's stands, as represented in the inventory.

This recommendation is problematic, in our view, as it assumes that the top 3% of ODF stands are at the maximum density. But a forester that lets stands get near the maximum density is not doing his/her job. In fact, following this advice would mean that the more successful a forester is in maintain stand density in the optimal range, the lower the calculation of SDIMax, and the lower the projected growth. This is a circular and nonsensical result.

This is a little bit of inside baseball, but I feel it is worth noting our objections to this approach.

4. This effort has taken too much time.

It has been 18 months since the TERG provided the Board with its views about ODF's inventory and growth and yield projections. Commissioner Josi asked us to provide our perspective on the amount of time spent on this initial part of the planning process.
MB&G does a considerable amount of forest planning work for federal, state, tribal and private forestland owners. In the past 20 years, we've built 165 such models covering over 65 million acres.

Getting the inventory right, selecting a growth model, and calibrating the growth model is always a first step in the process. Nearly every property offers a few challenges, some offer more. We cannot remember, however, ever seeing a project stall out for 18 months on the preliminary inventory and growth and yield projections.

In my opinion, the ODF planning staff already knew the issues, knew the possible solutions and was waiting for someone to empower them to decide on a reasonable course of action. In fact, I thought that the TERG was giving ODF staff some good ideas about how to proceed, and was surprised to find that ODF decided it needed a third party opinion.

In my view, the ODF planning staff is, for the most part, proceeding as it had contemplated before the ESSA report.

This is important because the planning tasks that we just spent 18 months on – inventory, growth and yield – are the easy part of forest planning. From here, ODF will construct the planning models, which is much more of an art than a science. I am sure that we will find many more topics/questions/issues to discuss going forward. ODF cannot afford to take a hiatus every time that someone raises a question or objection.

5. Is the inventory reliable?

At the last FTLAC meeting, after my report to FTLAC about the ESSA report, Commissioner Tucker asked me a very good question: "Can you tell me that the inventory as it is now stated is reliable?"

That is really the essential question isn't it?

MB&G is often asked to answer that question. We are often called upon to offer our opinion about the veracity of an inventory for someone buying or selling timberland. We have some

standard procedures that include studying the inventory methods, process documentation, the history of the inventory, and we typically perform a verification cruise and statistical analysis.

In the case of the ODF, we have enough questions about all of this to be cautious in offering our view to Commissioner Tucker without some more research. We will be pursing Commissioner Tucker's question and will let you know what we find.

We do note, however, that there is much more that ODF can be doing to provide confidence in the inventory and the growth projections. ODF could and should:

a. Re-measure the Permanent Plots

   Permanent plots were first established in 2001 (I think) to help calibrate future growth models. These plots should have been measured 10 years later, but weren't due to budget problems. Had these plots been re-measured, then ODF could have calibrated the growth model with much more confidence.

b. Felled tree study

   Volume equations are used to calculate board foot volume for trees based on their species, diameter and height. ESSA recommended using the NVEL equations without any analysis of alternatives, and without any data about how well the NVEL equations fit ODF's trees.

   A felled-tree study addresses this question by felling a broad sample of trees and measuring the diameter at increments up the stem. It is neither difficult nor expensive, but it does provide actual data that can be used to select and calibrate volume equations.

c. Mid-stem measurements

   ODF could improve the fit of its volume equations by recording a mid-stem measurement during the cruise.

d. Comparison of depletion to scale

   ODF could regularly compare inventory depletion to scaled volume. Earlier I mentioned that I do this for a client on a regular basis. As we see close agreement between the annual depletion and the annual scaled volume, we develop more confidence in the inventory and the growth applied to the inventory.

   Most industrial timberland managers are employing some combination of these strategies. The inventory, after all, accounts for nearly all of the asset value of a commercial timberland property, and owners, sellers and buyers are keenly interested in understanding how reliable their inventory estimates are.

   As it stands right now, there is no corroborating data to help us answer Commissioner

Tucker's question: is the recently restated inventory volume reliable.

ODF has at least the same need for reliable inventory data as any private timberland owner, if not more. We stand ready to help ODF and the BOF address these issues.