



May 18, 2015

Mr. Doug Denico  
 Director  
 Maine Forest Service  
 Department of Agriculture, Conservation, and Forestry  
 22 State House Station  
 Augusta, Maine 04333

Dear Mr. Denico:

You asked Sewall to provide an opinion on the calculation of the current forest level growth rate for lands managed for timber production by the Bureau of Parks and Lands (approximately 418,572 acres).

The Bureau provided Sewall with summaries of three studies that have been done to support a growth calculation. Sewall has reviewed the results of these studies. Based on the information that was provided, Sewall reviewed the methodology used to conduct the studies. However, Sewall has not done an in depth reviewed of the methodologies used.

The first is the result of a study by the Maine Forest Service, which summarized growth by landowner class using United States Forest Service Forest Inventory and Analysis (FIA) data. The FIA plot system is a nationwide system of permanent sample plot locations that are used to monitor change that occurs in the forest. This study used FIA plot data for the growth period from 1999-2001 to 2004-2006. The net growth rate for the "Public" ownership class was 0.432 cords/acre/year. The "Public" ownership class includes land that is not owned and managed by the Bureau, but the Bureau lands represent a significant part of the "Public" ownership.

Permanent sample plots represent one of the only ways to directly measure growth in the forest.

The second was the result of an inventory reconciliation that was done by the Bureau. A forest inventory project on Bureau lands was completed in 2011. The lands were previously inventoried in 1999. The study looked at the difference in inventory from 1999 to 2011 and added harvest during that time period to infer a growth rate. The net growth rate resulting from this study was 0.449 cords/acre/year.

It is common practice for landowners to do this sort of reconciliation after conducting a re-inventory. While variation from inventory to inventory is common and expected, and there can be difficulty converting units of measure from those used for the sale of forest products to those used for the inventory, it is common to do this sort of reconciliation as a means to derive a growth rate.

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The third study that we were provided was presented at the fall 2012 CFRU Advisory Committee meeting. This summarized FIA growth (using plots remeasured during 2006 to 2010) by stand size and stocking class. The Bureau classified their land by a similar system and applied the FIA growth rates by size and stocking class to the Bureau lands. The result of this study was a growth estimate of 0.440 cords/acre/year for Bureau lands.

These studies all produce a similar net growth rate (0.432 to 0.449 cords/acre/year). The FIA plot analysis and the inventory reconciliation provide the most compelling evidence. Both are scientifically valid means of measuring and deriving growth rates.

Based on the data that we were provided and our review of that data, we believe that it is reasonable to conclude that the growth rate on Bureau lands is in the range of 0.432 to 0.449 cords/acre/year, or 180,800 cords/year to 188,000 cords/year on the 418,572 acre area.

Sincerely,

Ernest H. Bowling  
Forest Biometrician  
JAMES W. SEWALL COMPANY