

Policy and Technical Influences on Harvest Volume Modeling:
11-03 through 07-04

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1. The Board's responsibility is to set a harvest level for one decade (2004-2013), accompanied by policies on harvest flow intended to ensure sustainability in subsequent decades. Subsequent decades' estimated harvest levels are also modeled, but the Board does not adopt them.

2. Computer modeling in 2003 led to an estimate of average annual harvest by decade for seven decades under each alternative, which were displayed in the DEIS. For Alternative 6, the average annual harvest was estimated at 781 mmbf in decade 1 (2004-2013) and ranged between 721 and 825 in the next 6 decades. The following are the average annual harvest volume for the 7 decades in millions board feet:
 - 781 – 825 – 809 – 720 – 823 – 742 – 729

3. In the DEIS, Alternatives 5 and 6 used 20 ownership groups, used a financial value guide or yield tables to model stand growth, and allowed +/- 25 percent change in average annual harvest volume from one decade to the next. These two alternatives also targeted 10-15 percent of each HCP Planning Unit for development of old forest structural characteristics. Alternative 6 also included new approaches to silviculture on state trust lands. While maintaining HCP objectives along with all federal and state laws, Alternative 6 proposed use of biodiversity pathway management in the form of variable density thinnings.

4. In late 2003 a technical question arose, in discussion with DNR region staff, as to whether or not the model's estimates of harvest volumes per acre in decade 1 for Alternatives 5 and 6 were within the range of current timber sale volumes per acre. Angus Brodie informed the Board at their January 2004 meeting of this question, and of the likelihood of a reduction in the estimated decadal volumes for Alternatives 5 and 6, and for any Preferred Alternative similar to those alternatives.

5. Beginning at its December 2003 meeting, the Board began examining policy variations to the 6 DEIS alternatives, especially Alternative 6 with elements of Alternatives 3 and 5, as part of developing a Preferred Alternative. Some of these policy preferences, which eventually were incorporated into the Preferred Alternative, included:
 - Less intensive management of riparian areas, more like DEIS Alternative 2 than Alternative 6.
 - Substitution of heavier early decade thinning regimes under biodiversity pathway approaches than in DEIS Alternative 6, where possible, in order to begin restoring structural diversity sooner for habitat value, across a majority of the landscape. Further stand level modeling and consultation with the Technical Review Committee indicated that lighter thinnings may not

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promote structural development as much as modeling for the DEIS had indicated. In addition, light thinnings are financially less feasible.

6. Beginning at its January 2004 meeting, the Board began receiving information on costs and other considerations in implementing a potential Preferred Alternative in the first decade. Cost control became a critical consideration and the department introduced cost control measures into the modeled silvicultural regimes, principally by controlling financially marginal activities such as thinning. The department also modeled first decade harvest volumes limited by operational considerations. These modeling factors affected both first decade and subsequent decade estimated harvest volumes.
7. In February and March, additional technical corrections were introduced in modeling, related to refined landscape targets for the Olympic Experimental State Forest (OESF) and deferral of marbled murrelet areas from on-base status. These technical corrections reduced model estimates of harvest volumes for the OESF and some counties.
8. In summary, modeling of estimated multi-decade harvest volumes for the Board's preferred alternative were affected by a series of factors, including:
 - Ongoing policy direction from the Board.
 - Technical modeling corrections to accurately match new silvicultural patterns to the situation on the ground.
 - Efforts to contain costs and reflect operational limits in decade 1.
9. The department worked continuously from February through June to incorporate all these factors into the modeling of estimated multi-decade harvest volumes.
10. At the February 17 Board workshop, the department introduced 636 mmbf as the currently modeled average annual volume for decade 1. This was an initial estimate, not fully incorporating the modeling refinements listed above.
11. In the March 2 Board meeting Reference Material, the department introduced a model run with the first decade's modeled average annual volume operationally limited at 554 mmbf and subsequent decades ranging between 544 mmbf and 650 mmbf. The Board directed the department to attempt to achieve 636 mmbf for the first decade:

➤ 554 – 650 – 602 – 580 – 594 – 555 – 557

The March Board resolution asked the department to "meet an average annual harvest target of 636 mmbf as soon as possible." The department developed the FEIS on the basis of that direction, and also presented a second version of a decade 1 transition plan at the May Board meeting.

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12. By late June, all the modeling adjustments noted in items 4 through 8 above were completed, and final modeled multi-decade harvest volume estimates were shared with Board members for two alternatives. One alternative set a first decade average annual harvest level of 636 mmbf, consistent with what had originally been proposed in February. In this alternative, the model's estimated second decade average annual harvest volume is 514 mmbf and remaining decades range from 506 mmbf to 559 mmbf:

➤ 636 – 514 – 506 – 511 – 559 – 537 – 528

The other alternative set a first decade average annual harvest level of 597 mmbf, consistent with the department's ongoing implementation analysis. In this alternative, the model's estimated second decade average annual harvest volume is 574 mmbf, and remaining decades range from 499 mmbf to 547 mmbf:

➤ 597 – 574 – 531 – 539 – 547 – 543 – 499

These two sets of numbers were also presented at the July 6 Board meeting.

13. The variant beginning 597 mmbf has a decade 1 year-by-year implementation transition as follows:

FY:	<u>05</u>	<u>06</u>	<u>07</u>	<u>08</u>	<u>09</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>
	453	495	540	570	610	634	637	637	637	637

No decade 1 year-by-year implementation transition has been presented for the variant beginning with 636 mmbf, but the presumption is that the department would attempt to exceed 636 mmbf if production or staffing could be increased in years 7-10 so that the 636 mmbf average for the decade is reached. This would require an average annual harvest of 765 mmbf in years 7-10. Or higher volumes would need to be achieved throughout the decade.