

PREDICTING OUTCOMES

Newsletter from the Stand Tending Unit, BC Ministry of Forests, Forest Practices Branch

MARCH, 1999

Editor's Note

This is the second in a series of newsletters that will provide updates on the activities of the Stand Tending Unit, Forest Practices Branch, BC Ministry of Forests. Although the Stand Tending Unit is involved in many activities, this newsletter focuses on a single theme—predicting outcomes of stand-tending treatments.

I hope you enjoy the brief, informal articles in this newsletter. At this time, I anticipate four issues over a one-year period—one per season.

If you have any comments on anything you read in this newsletter, please contact me.

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PrognosisBC provides its users with tremendous flexibility

PrognosisBC is an adaptation of the US Forest Service individual tree model—the “Forest Vegetation Simulator” from North Idaho. It is a nonspatial model that can simulate the development of mixed species coniferous stands regardless of stand structure. The model can project a stand from any point in its development, including bare ground. Stand exam data is used to describe the existing stand. The model's great strengths are its ability to compile the stand exam data, simulate the future dynamics of the stand (including species shifts and stand breakup), and allow the user to rank alternative partial cutting prescriptions.

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PrognosisBC offers its users tremendous flexibility. At a recent stand density management symposium in Alberta, Barry Snowdon examined the applicability of Prognosis to Alberta.¹ The graphs in Figure 1 and Figure 2 are from that presentation. They show PrognosisBC yield predictions for a pure lodgepole pine stand established at 1500 trees/ha on a MSdk/01 site and thinned from below at various times to various levels of residual stocking. These simulations demonstrate the model's current behavior in response to commercial thinning in lodgepole pine. Figure 1 shows the predicted response of the stand to the *timing* of a 50 percent basal area removal conducted mid to late rotation. A second group of simulations (Figure 2) examined the response of the simulated stand to lighter thinnings conducted at 80 years.

PrognosisBC provides the user with a great deal of flexibility in the scheduling of a wide variety of thinning regimes. The user interacts with the model through a menu-driven interface that can report results in the form of graphs and tables. A pilot or Beta version of **PrognosisBC** (version 1.02b) was released for general use in April 1998. It is applicable to the southern interior of British Columbia.

To discuss PrognosisBC, or this article, call Barry Snowdon at 250-386-0183.

1 The full text of Barry's paper "Planning stand density management in Alberta—is PrognosisBC the right tool for the job?" will be published in the conference proceedings.

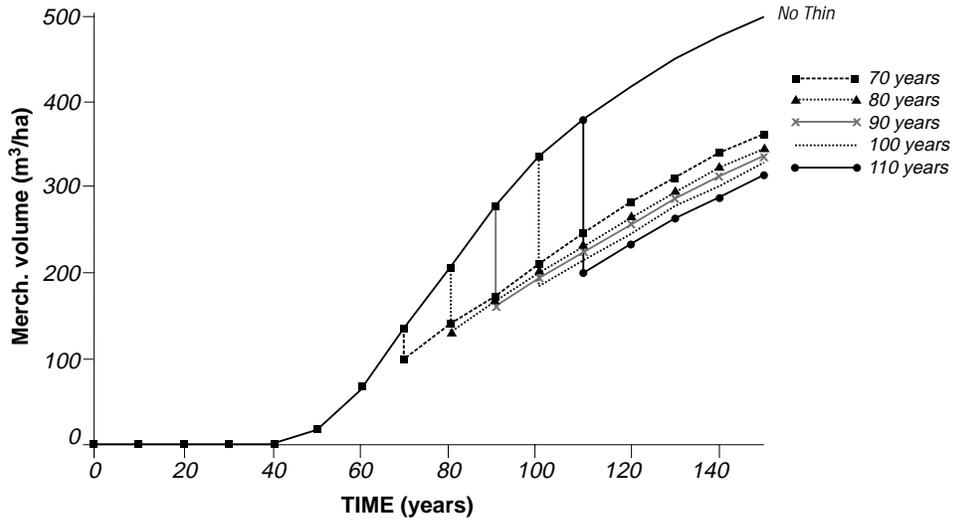


Figure 1. Impact of the timing of thinning on merchantable volume accumulation (MSdk/01 PI stand established at 1500/ha with 50% basal area removal at various ages).

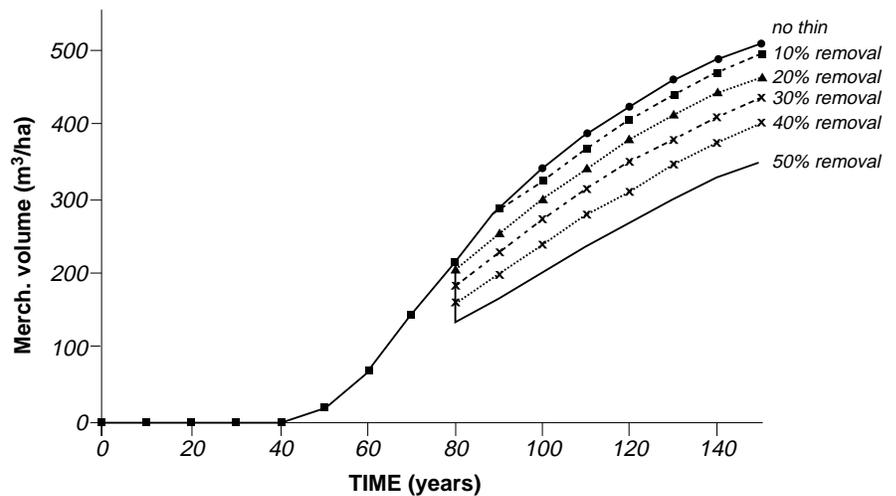


Figure 2. Impact of the intensity of thinning on merchantable volume accumulation (MSdk/01 PI stand established at 1500/ha with various thinning intensity at age 80 years).

Regulations–Maximum Density

Stand density at free growing has a significant impact on long-term stand development. Some prescriptions require a stand to be spaced before free growing if conifers/ha exceeds a “maximum density.” An informal summary of the regulations pertaining to maximum density is provided below. For specific details, please refer to the appropriate policy and regulations.

- Section 13 of the Silviculture Practices Regulation (SPR) describes maximum density requirements. This section of the SPR has been amended. The amendment changes the maximum density to 10,000 countable coniferous trees/ha. This new maximum density overrides any maximum density previously specified in any SP.
- The new maximum density applies to:
 - all SPs approved on or after April 1, 1994; and
 - all SPs approved before April 1, 1994 in lodgepole pine or drybelt Douglas-fir stands.
- Countable trees are conifers that are at least 20 percent of the median height of the preferred and acceptable well-spaced trees in the survey plot (for silvicultural systems other than single tree selection).

- Section 13 further specifies how to determine the required post-spacing density and the process for deviations from 10,000/ha.

Changing maximum density

- Section 13 states that:
 - “the regional manager may specify a number other than 10,000, if (a) satisfied that a number other than 10,000 is necessary to ensure that forest resources are adequately managed and conserved in an area,” and
 - “the regional manager is not required to specify a number other than 10,000”
- To specify a number other than 10,000, the regional manager must follow policies and guidelines specified by the Chief Forester. These policies and guidelines will be discussed in a future issue of this newsletter.

To discuss the new maximum density regulations, call Brian Raymer at 250-387-8909.

9th FS415 available NOW!!!

The 9th field form in the FS 415 series is available now. FS 415s are growth intercept tables and other resources that silviculture surveyors use to estimate site index. FS 415s are printed on waterproof paper and are sized to fit into a six-ring field book.

The series includes the field forms listed.

You can obtain copies of these forms from the Ministry of Forests in several ways:

1. Order by phone by contacting Don Brickwood at 250-387-8688 at the Admin. Supply Warehouse.
2. Order by fax from Don Brickwood at 250-387-8687 at the Admin. Supply Warehouse.
3. Adobe Acrobat 3.0 versions of these forms are posted on the Internet at <http://www.for.gov.bc.ca/ISB/Planning/Forms/index.htm>

FS 415	Contents	Region
FS415 A	Growth intercept table for lodgepole pine	Interior B.C.
FS415 B	Growth intercept table for interior spruce	Interior B.C.
FS415 C	Growth intercept table for western hemlock	Coastal B.C.
FS415 D	Growth intercept table for Sitka spruce	Coastal B.C.
FS415 E	Growth intercept table for Douglas-fir	Coastal B.C.
FS415 F	Growth intercept table for Douglas-fir	Interior B.C.
FS415 G	Growth intercept table for subalpine fir	Interior B.C.
FS415 H	Growth intercept table for western hemlock	Interior B.C.
FS415 I	Average SI relationships and Key to help silviculture surveyors select a method to estimate site index	Coast and Interior B.C.

To discuss the FS415, call Pat Martin at 250-356-0305.

Strategic silviculture - treatments that achieve forest-level objectives

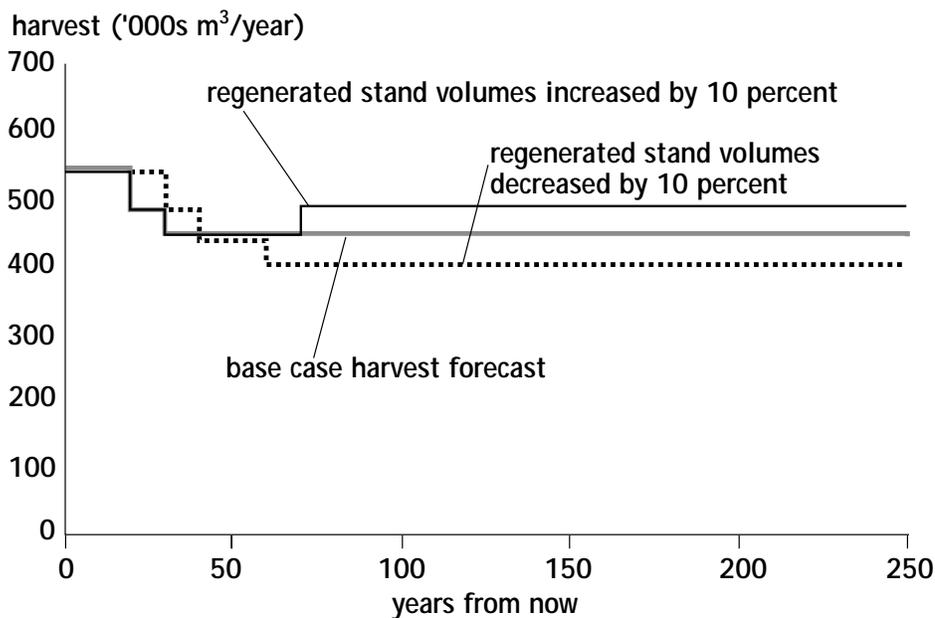
In 1998 the Ministry of Forests made significant progress in developing silviculture strategies for every forest district in the province. Ralph Winter coordinated a team of consultants whose task was to help districts develop silviculture strategies to use in their resource management plans.

A typical process involved first assembling existing sources of information, including the relevant Timber Supply Review documents. From this background data, the consulting team developed a draft strategy based on a common template. District staff, region staff, and licensees then attended a working session in the district to review the initial

draft strategy. After several rounds of review comments and revisions, the district produced its silviculture strategy.

The following figure illustrates one of the many kinds of information used to develop the silviculture strategy in the Golden TSA. The figure suggests the possible impact on timber supply of silviculture treatments that increase the yield of regenerated stands.

To learn more about the program to support the development of silviculture strategies, call Ralph Winter at 250-387-8906.



Increasing regenerated stand yields 10 percent increases long-term harvest level by 10 percent. Yields can be increased through a variety of silvicultural actions.