PREDICTING OUTCOMES

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

NOVEMBER, 1998

Editor's Note

This is the first 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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Changes to the Stand Management Prescription (SMP) Template and the SMP Guidebook

By Brian Raymer

Recent changes to the Forest Practices Code and the Operational Planning Regulation have resulted in a need to update the SMP template and the SMP guidebook. The main changes are the enabling of multi-area SMPs and the move toward results-based SMPs.

The draft version of the stand management prescription template is available on the Ministry ftp server at the following address: branches/ forest_ practices_branch/mof_internal/publish/ smp template.doc.

Changes have been made to ensure compliance with the regulations and to allow for bundling of areas with similar treatments and standards. However, changes have been kept to a minimum. The use of the template is not mandatory, and it may be modified to suit local conditions and requirements. Some additional standards may be desirable to facilitate delivery under FRBC standards agreements.

The draft guidebook that complements the template will be out for review and comment to regions in November. Changes have been made to clarify new requirements and to promote results-based prescriptions that are consistent with the regulations. Guidebook changes have been kept to a minimum.

Please send any comments on the template or the draft guidebook (when available) to Brian Raymer, (250) 387-8909.

BRITISH COLUMBIA
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FOREST RENEWAL BC

PrognosisBC — an Overview

By Barry Snowdon

PrognosisBC is an adaptation of the US Forest Service individual tree model from North Idaho. It is applicable to the southern interior of British Columbia.

PrognosisBC is a non-spatial model that can simulate the development of mixed species coniferous stands regardless of stand structure (i.e., complex stands). This model can project a stand from any point in its development, including bare ground. A ground-based inventory (i.e., PSP or cruise plots) is used to describe an existing stand. The model's great strengths are its ability to compile the inventory, simulate the future dynamics of the stand (e.g., species shifts and breakup), and allow the user to rank alternative partial cutting prescriptions.

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 both graphical and tabular form.

A pilot or Beta version of PrognosisBC was released for general use in April 1998. Currently, the PrognosisBC user community numbers 128. A subsequent release is expected this winter.

Visit our website, www.for.gov.bc.ca/resinv/prognosisbc/index.htm, for more information on

- the model,
- work completed to date, and
- current and future work on
  - – growth equations,
  - – application software,
  - – user support and training, and
  - – forest level application of the model.

To obtain a copy of the model, contact the model support centre. Phone: (604) 739-9806
E-mail: gymodels@istar.ca.

Internet Sites

Interested in stand growth models? Here are a few Internet sites to check out.

http://www.for.gov.bc.ca/cgi-shl/research/gy/softreg.exe
From this site, you can download a variety of Ministry of Forests software, including TIPSY, SITETOOLS, and VDYP.

http://www.rr.ualberta.ca/research/mgm/MGM software updates.htm
From this site, you can download the Mixedwood Growth Model (MGM) that is under development for boreal spruce-aspen-pine stands.

http://www.snowcrest.net/pswfs/sim.html
From this site, you can access information on several stand growth models developed for western North America, including ORGANON, FPS, and DFSIM.

http://www.for.gov.bc.ca/resinv/prognosisbc/soft.htm
From this site, you can request a copy of PrognosisBC.

Know of a cool Internet site with information useful for predicting the outcomes of stand-tending operations? Drop us a line and let us know about it.

Effect of Silviculture on Growth Intercept Estimates of Site Index

By Patrick Martin

The growth intercept (GI) method estimates site index (SI) from the height growth above breast height (bh), measured on undamaged, unsuppressed top-height trees. The GI method allows foresters to obtain an SI estimate from only a few years of growth above bh. Some foresters are concerned that silviculture treatments may alter top-height growth, thus affecting GI-based estimates of SI. With FRBC funding through the Site Productivity Working Group, I manage a program of activities to look into these concerns. In this article, I briefly describe the results of one of these investigations.

In 1997-98, we investigated the effect of site preparation on GI predictions of SI in planted lodgepole pine. Lorne Bedford (Ministry of Forests, Forest Practices Branch) provided data from two of his experiments near Vanderhoof—the Bednesti and Tanli sites. In these experiments, we expect site quality to be the same on plots subjected to different site-preparation treatments.

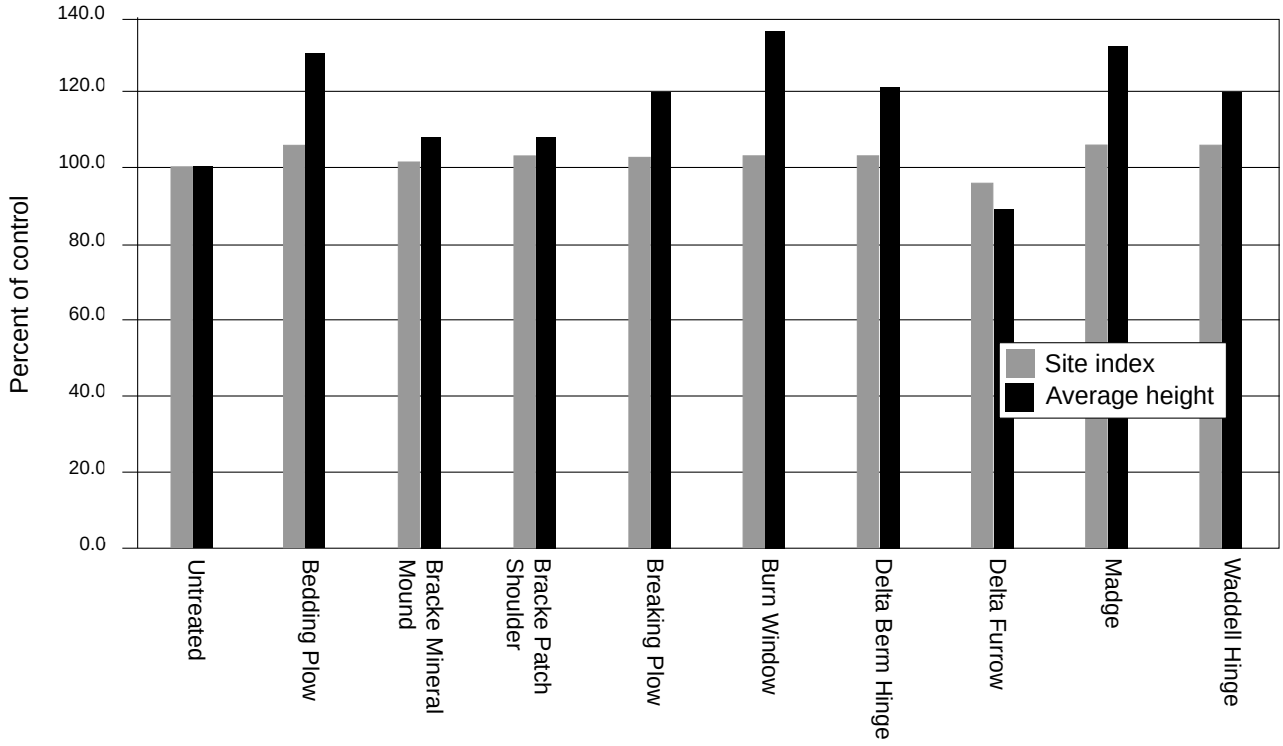
Figure 1 shows the estimated site index and average height by treatment at Bednesti (expressed as a percent of the control values). Note that average heights differ greatly between treatments, but the GI-based predictions of SI are stable. Closer examination of the data indicated that this stability is due to the fact that site preparation has altered height growth to bh much more than it has altered height growth above bh. Recall that the GI method predicts SI from height growth above bh.

Because these trials are only 10 years old, this investigation provides only weak evidence of the stability of GI-based SI predictions. These trials will have to be re-measured for many more years before we can accumulate strong evidence. However, at present the results from these trials suggest that site preparation is not affecting GI-based SI predictions in planted Pl.

Contact me if you would like the technical report for this project. Also, this year we have a large program to check the performance of the GI method in managed coastal Fdc stands.

If you have some thoughts on this issue, please contact Patrick Martin at (250) 356-0305.

Figure 1. 1997 average height and site index expressed as percent of control value.



Data Collection: Tips for Determining Age from Increment Core

By Patrick Martin

Obtaining a correct ring count from an increment core can be difficult. Accurate predictions of treatment outcomes often require accurate age determination. Here are a few tips that may help reduce, but not completely eliminate, mistakes in determining age from ring counts on increment cores.

1. Don't use an "incy." Cut the tree down instead. In some cases, this is practical and warranted. It is much easier to determine age correctly when looking at the entire stem cross-section.

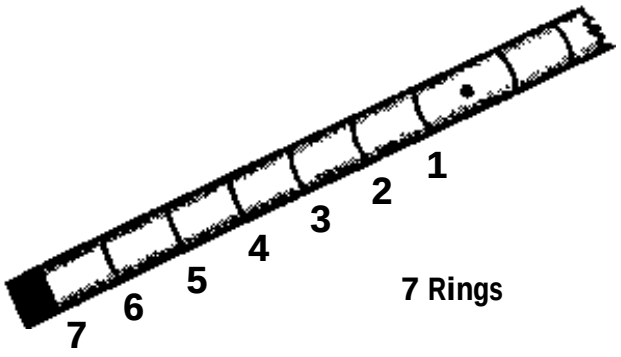
2. Take a quality core. Rings are easier to count on high quality cores. Keep your increment borer sharp and clean, and hold it steady as you drill.

3. Prepare core for counting. In some cases, wetting the core, or coloring it with a yellow highlighter pen, may help you distinguish rings.

4. Accurately locate the pith. Make sure that the speck of dark spongy stuff in your core is really the pith—and not a pocket of decay. Annual rings form circles around the real pith.

5. Accurately locate the first ring. The first ring around the pith is often difficult to locate. How far from the pith should you expect it? One way to gauge this is to observe the typical thickness of the leaders of trees of the species that you are coring. Also, note where you have cored within the internode. The ring will be closer to the pith if you take your core just below the internode.

6. Carefully count rings. To help resolve ring-counting uncertainties, roll the core over to look around all sides of it. Accuracy is often improved by using a hand lens to examine the core. Mark every 5th or 10th ring with a pen or pencil while counting.



7. Correctly account for the last ring. Make sure that your method of counting takes account of the last ring that is pressed against the inner bark. One way to do this is use the following method to count rings.

- Do not count the pith.
- Count from pith to 1st band of latewood as ring #1.
- Count each subsequent band of latewood as a ring.
- Count the last ring pressed against the inner bark.

8. Double check. Every now and again, double check your age determination. On small trees with distinct annual branch whorls, compare your age determination to the age count based on counting whorls.

9. Count in the office. Field counts of rings on cores have proven unreliable under some circumstances. As a result, some projects require cores to be placed into plastic drinking straws, labeled, secured, and taken back to the office to be counted under proper lighting and magnification.

If you have a ring-counting tip to share, call Patrick Martin at (250) 356-0305.

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