

**Forest Practices Board
Achievement of Free-Growing Forests – 2004
Provincial Update**

Special Report



FPB/SR/25

April 2006

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Key Concepts and Terms

Amendment – A change in the site plan or silviculture prescription, that is approved by the district manager. Amendments can be for a number of reasons, ranging from a change in the net area of reforestation to a change in the late free-growing date.

Establishment to Free-Growing Guidebooks (2002) – These regional guides, developed under the *Forest Practices Code of British Columbia Act*, describe the legislative authority, background, definitions, and procedures for species selection, stocking, establishment, and free growing. Tables contain guidance for the determination of free growing, including tree species selection, stocking standards for conifers and broad-leaved trees, regeneration date, earliest and latest free growing assessment dates, minimum tree height, and percent of crop tree over brush height required to meet free growing.

Free growing – A standards unit with a minimum number of healthy, well spaced, acceptable tree species that:

- have been on site for a minimum of five years;
- are a specified minimum height; and
- are free of brush competition.

ISIS – The original Ministry of Forests and Range silviculture database. In 2002 the system was upgraded to Reporting Silviculture Updates and Land Status (RESULTS,) a new web-based system. The information formerly in ISIS was incorporated into RESULTS.

Late free-growing date – The latest date by which a standards unit must achieve free-growing.

Standards unit – A portion of a cutblock (with similar soil and moisture conditions) with similar density and species requirements.

Stocking standard – The density of healthy, well spaced, acceptable tree species for the site required to achieve free growing.

Stocking Standards Reference Guide (2005) – This document is intended as an aid to the development of stocking standards. Silviculture prescriptions no longer need to be submitted for approval by a district manager. Instead, stocking standards must be specified by licensees and approved by the district manager in a forest stewardship plan. This guide may be used by licensees in preparing, and district managers in approving, stocking standards for inclusion in forest stewardship plans. The guide primarily proposes preferred and acceptable species that relate to the primary, secondary or tertiary species as listed in the regional *Establishment to Free Growing Guidebooks*. Stocking levels, time periods and minimum tree heights are unchanged from the guidebooks.

Executive Summary

British Columbia is proud of its sustainable forest management practices. Following the logging of public land, forest companies are required to reforest the site with native species and establish a new crop of trees. Each year, more than 200 million seedlings are planted in the province. Forest companies are then required to tend those trees for a number of years, to ensure they survive and grow into a healthy new forest. Once the trees reach this stage, called ‘free growing,’ the companies are relieved of their responsibility to look after the trees, which once again become the responsibility of the Crown.

The free-growing standard is the principal benchmark in measuring the achievement of reforestation objectives in BC. Free growing means that licensees have re-established, on a logged area, a stand of healthy, growing trees that can continue to thrive without further intervention. Achievement is based on a set of stand measurements, taken at a predetermined time, with clear criteria for determining free growing. The deadline for licensees to achieve free growing is known as the “late free-growing date.”

Achievement of free growing is also an example of results-based forestry and provides an interesting case study for assessing this forest management approach. There are no legislated steps that must be followed to achieve free growing—professionals must use their judgment and apply appropriate prescriptions and treatments to obtain a free-growing stand of trees.

In 2003, the Forest Practices Board reported on the achievement of free growing across British Columbia. This was accomplished through a combination of field review and analysis of the Ministry of Forests and Range (MOFR) silviculture database (ISIS), which keeps track of reforested sites across the province. The Board study looked at the first 6,488 cutblocks required to be free growing since the current rules were established in 1987. Overall, the results of the study were very good. Across the province, 85 percent of cutblocks were free growing and, on average, these cutblocks reached free-growing status three years early.

In 2005, the Board decided to follow-up that study and look at free-growing status for all cutblocks required to achieve free growing between 1987 and March 31, 2004. This new evaluation includes the area examined in 2003. The total area due for free growing as of March 31, 2004, was 300,000 hectares.

This assessment is made with respect to forest region and type of forest licence. The Board’s report is based on reviewing the information in the RESULTS¹ database—no field checks were carried out for this update report.

¹ Note: Since the last assessment MOFR has changed its database from ISIS to Reporting Silviculture Updates and Land Status (RESULTS,) a new web-based system. The information formerly in ISIS was incorporated into RESULTS to ensure continual oversight of basic silviculture obligations.

Provincially, 92 percent of the cutblocks have achieved free-growing status:

- 62 percent have been declared free growing within the prescribed free-growing time interval;
- 18 percent have been declared free growing, but missed the late free-growing date; and
- 12 percent appear to be free growing, but have not been declared.

There are no significant regional differences in achieving free growing. Slightly better results were achieved on the Coast than the Interior. Differences between forest licence types were also examined. Free-growing results for BC Timber Sales program cutblocks were slightly better than for other licensees; however they rely on a greater number of amendments to the prescription in order to achieve free growing.

Most free-growing declarations were made the year they were due (23 percent), or the year prior to the year due (19 percent). A total of 18 percent are declared one year or more after the late due date.

Two components of achieving free growing are meeting the required stocking density and the minimum height criteria. A total of 15 percent of the cutblocks are either below minimum stocking density standards or are at high risk of not meeting stocking density standards. An additional 10 percent are over the target stocking standard. These stocking levels are for free-growing trees and do not necessarily account for the total stocking on site, which may vary considerably, depending upon levels of natural regeneration or brush on site. Approximately 22 percent of the cutblocks do not meet minimum height specifications for free growing. The minimum height requirement was introduced in 1994. Therefore, many of the SUs in this sample were not required to meet this standard. These results could potentially have implications for modeling long-term timber supply.

Data analysis was complicated by the large number of errors and omissions in the RESULTS silviculture database. MOFR needs to complete data entry and correct the significant number of errors in the database.

The fact that the declaration of free growing is voluntary complicates the analysis. To help accurate and timely reporting, MOFR should make the free-growing milestone declaration a legal requirement.

Assessing the achievement of free-growing results is made difficult by the widespread practice of amending the prescriptions. Amendments can change the late free-growing date, the stocking standards, or a number of other parameters. Amendments are approved by the district manager, but the reasons have not been recorded in RESULTS. Provincially, 50 percent of all standards units (SUs) (a portion of the cutblock with uniform stocking density and species requirements) have been amended. The amendments may be for only a small portion of each SU; however RESULTS does not provide reasons for the amendments. The Board will conduct a further investigation into the causes and implications of the amendments.

Introduction

Following the logging of public land, forest companies are required to reforest the site with native species, establish a new crop of trees, and ensure they survive and grow into a healthy forest. Forest companies must create a free-growing new forest within a defined time period after completion of harvest.

Free growing means a minimum number of healthy, well spaced, acceptable tree species that:

- have been on site for a minimum of five years;
- are a specified minimum height; and
- are free of brush competition.

Many cutblocks logged in the late 1980s and early 1990s should now be re-established with free-growing stands of new trees. This study provides an opportunity to assess licensee success in achieving free-growing stands and provides a benchmark for future surveys.

Assessing the success in achieving free growing is important for the following reasons:

- Provides the Crown reasonable assurance that a suitable number of ecologically appropriate species are well established on site.
- Ensures targets for future timber supply are being met.
- Provides a feedback mechanism for guidelines on silvicultural treatments.

Achievement of free growing is also an example of results-based forestry and provides an interesting case study for assessing this forest management approach. There are no legislated steps that must be followed to achieve free growing—professionals must use their judgment and apply appropriate prescriptions and treatments to obtain a free-growing stand of trees.

In June 2003, the Forest Practices Board published a report on *Reforesting BC's Public Land – An Evaluation of Free-Growing Success*. The report summarized the status of cutblocks that were to be free growing by August 2002. The purpose of this report is to analyze the free-growing results from 1987 to the end of March 2004.

Background

Harvesting on Crown land in British Columbia comes with reforestation obligations. Since 1987, forest companies have been legally required to establish a free-growing stand following harvesting. In the nearly two decades since then, the requirement to create a free-growing stand has remained virtually intact despite many other legislative changes.

Following harvesting, licensees must achieve a free-growing stand within a time frame specified in silviculture prescriptions or site plans. Guidelines for determining free-growing timeframes are described in the *Establishment to Free-Growing Guidebooks*. The "latest free-growing date" is the latest date specified in the silviculture prescription by which the stand must be free growing. Under the Forest Practices Code, the time period is generally 10 to 15 years; with the *Forest and Range Practices Act* (FRPA), this has been extended to 20 years.

Free-growing surveys are carried out when a cutblock or standards unit (SU) (a portion of the cutblock with similar density and species requirements) has achieved free growing. This information is reported to the government each year before May 31, from data collected during the previous fiscal year.

Once a licensee believes that it has achieved free-growing status for a particular SU, it can make a voluntary declaration of free-growing status. MOFR has 15 months to make an assessment to verify this declaration; if no assessment is done within that time period, the area automatically reverts to the responsibility of the Crown. However, if no declaration is made, the licensee retains responsibility for the cutblocks even after the free-growing deadline has past.

Declaring the SU free growing is not mandatory. Some licensees may choose not to declare their SUs free-growing if not concerned about ongoing liability, or they may not consider it a priority. The Board's results indicate that approximately 20 percent of the SUs are not declared by the licensee.

Previous Work by the Board

A 2003 special report by the Board² analyzed the provincial database (ISIS) to determine the success of the first set of cutblocks due for free growing in the province. The report found that:

- 85 percent of cutblocks met the original free-growing date and remain free-growing.
- An additional 3 percent missed the original free-growing date, but were free-growing at the time of the assessment.
- Of those that had not achieved free growing, 9 percent had their silvicultural prescriptions amended to extend the late free-growing due date.
- Approximately 5 percent of blocks had not achieved free growing due to brush competition.
- Small proportions of blocks (1.5 percent) met the original free-growing date but are no longer free growing.

² <http://www.fpb.gov.bc.ca/special/reports/SR16/SR16.pdf>

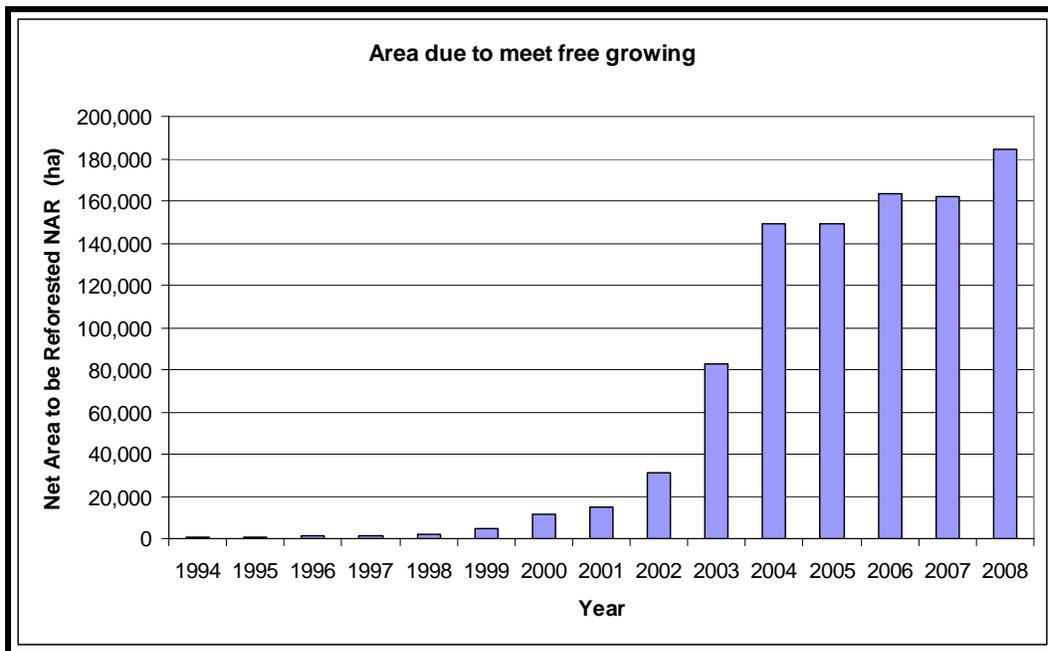
The Board carried out a field verification survey in six districts, which found that 99 percent of the area declared free growing was indeed free growing, offering a high level of confidence in the database results.

What Area is Due For Free-Growing?

The 'net area to be reforested' (NAR) is the portion of the cutblock that has been logged and can be replanted (i.e., excluding roads, landings, etc.) where there is a legal requirement for the licensee to reforest.

The total NAR logged and due for free growing before March 31, 2004, is approximately 300,000 hectares. The area of land due for free growing, with its corresponding late free-growing date up to 2008, is illustrated in Figure 1. The area that is due for late free growing has increased yearly from 1988 through to 2005, where the area due reaches a relatively steady state (between 140,000 hectares to 180,000 hectares per year).

Figure 1. Net Area for Reforestation (NAR) Due For Late Free-Growing By Year³



³ For the complete data set see the Technical Compendium.

The number of SUs due for free growing in each forest region is tabulated in Table 1.

Table 1: Total Number of SUs Due For Free Growing In Each Forest Region, By Year, Up To 2004

FG Due Date	Coast	Northern Interior	Southern Interior	TOTAL
1988	18	29	44	91
1989	11	16	24	51
1990	7	13	20	40
1991	11	13	39	63
1992	15	9	31	55
1993	17	23	16	56
1994	15	7	31	53
1995	15	9	18	42
1996	16	5	38	59
1997	31	6	53	90
1998	49	20	62	131
1999	231	20	80	331
2000	468	65	114	647
2001	499	132	189	820
2002	1,017	235	337	1,589
2003	1,746	692	1,161	3,599
2004	1,757	1,347	2,700	5,804
Total	5,923	2,641	4,957	13,521

Objectives

The objectives of this report are:

1. To document the achievement of free-growing status for the Province of British Columbia for cutblocks with a late free-growing date prior to March 31, 2004.
2. To compare two of the measurements made at the time of the free-growing survey, stocking and height, with the stated minimums and targets.
3. To report on the number of silvicultural prescriptions that have been amended in order to achieve free growing.

Scope

All cutblocks harvested since October 1987, with a late free-growing date prior to March 31, 2004, were assessed. For the most part, this includes areas harvested between 1987 and 1992. Both interior and coastal districts were assessed.

Forest tenure types that were assessed include major licensees, woodlot licensees, and BC Timber Sales (BCTS)⁴; but do not include backlog silviculture prescriptions, and areas affected by natural disturbance such as fires or insect infestations.

Methods

The study was based entirely on analysis of RESULTS and the forest cover inventory. RESULTS was searched, using a specific set of search criteria, to identify areas that were due to achieve free growing in the defined time frame. This approach can be used in future updates to monitor the ongoing achievement of free growing.

However, since a free-growing declaration is not mandatory, RESULTS does not capture all of the free-growing cutblocks. Free-growing information can also be reported in the forest cover updates, which are mandatory. Therefore, a secondary search using specific criteria within the forest cover updates was undertaken. This information is less useful however, as there is no data on free-growing dates or on the measurements taken at the time of free growing.

Minimum height analysis was done by comparing the reported average silviculture height and the minimum height indicated by species in the *Stocking Standards Reference Guide*. This required the biogeoclimatic (BEC) site series of each SU to be determined. The species on site were then identified, and the minimum height looked up, for that stocking standards/species combination. The height was then compared to the reported average silviculture height.

Achievement of stocking targets was assessed through a risk assessment. Two approaches were used to compare actual free-growing stocking densities with the minimum and target stocking densities:

- comparison against prescribed stocking standards for the SU; and
- comparison against stocking densities indicated in the *Stocking Standards Reference Guide*.

The Board did not ask the forest districts to correct errors and omissions in the database. Where data was questionable, it was not included in the analysis. Unlike the 2003 report, the Board did not verify the findings in this update through field work. This was because the 2003 study showed that overall the database information was accurate and compared favorably with the field data.

⁴ Previously the Small Business Forest Enterprise Program.

Technical Compendium

The Technical Compendium (available at the following website address: <http://www.fpb.gov.bc.ca/special/report/SR25/TechCompendium.pdf> - 1.05 MB) provides supplemental statistics on the performance of specific districts, regions, and tenure types. While the main report highlights the assessment outcomes and provides general discussion of methodology, results and trends, the detailed analysis to arrive at the conclusions could not be included in the written report due to space constraints. However, it is recognized that some of the detailed statistics may be useful to review regional trends and for follow-up on the report's recommendations for data clean up.

Results

Meeting Free-Growing Criteria

The Board examined the number of cutblocks that achieved free growing within the prescribed free-growing window. A total of 285,665 hectares were due to meet late free-growing⁵ and had late free-growing dates assigned. This area was used for the analysis. An additional area of 21,110 hectares was not included in this analysis, as these sites do not have late free-growing dates assigned in the database. These blocks were not included in the analysis due to the uncertainty of the free-growing window.

A total of 62 percent of the SUs (constituting 65 percent of the NAR) were declared on time or before the late free-growing date (Figure 2).

An additional 18 percent of the SUs were declared after the late free-growing date (15 percent of the NAR).

The total area declared free growing, either on time or late, is therefore 80 percent of the NAR (and 80 percent of the SUs).

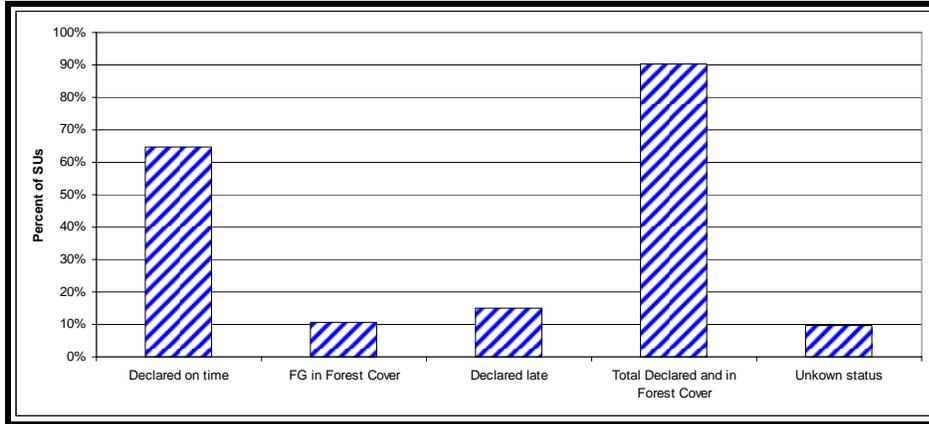
An additional 12 percent of the SUs (11 percent of the NAR) are due for free growing but have no free-growing milestone declaration. However, they do have free-growing notations in the forest cover inventory. These blocks are most likely also free growing. However the timing of the achievement of free-growing status is unknown.

This brings the total percentage of SUs that are either declared, or that have a notation in the forest cover inventory, to 92 percent (90 percent by NAR).

⁵ Note the total population was 306,776 hectares of which 21,111 hectares had a missing late free-growing date. The analysis used those SUs with prescribed late free-growing dates. If the full potential population is used, free growing on time is 55 and 60 percent, free-growing in forest cover is 10 and 10 percent, declared late is 16 and 14 percent for a total declared as 81 and 84 percent by SU and NAR respectively.

Finally, a total of 8 percent of the SUs (10 percent by NAR) did not achieve free growing. It is possible that some of these SUs did, in fact, achieve free growing, but the data was not entered in RESULTS or in the forest cover inventory.

Figure 2. Percentage of SUs Identified as Free-Growing Within the Evaluation Time Frame



Comparison of Forest Licence Type

The Board’s first report on free growing raised questions about the state of free-growing success in areas managed by the BCTS program. The Board therefore compared the relative performance of BCTS vs. major licensees in achieving free growing. The analysis included both declared SUs and those recorded as free growing in the forest cover inventory.

Overall, BCTS had a higher proportion of SUs declared free growing (96 percent) than the average for all other licensees (89 percent) (Table 2). However, BCTS had a higher proportion of SUs declared after the late due date (23 percent vs. 17 percent).

The free-growing success achieved by individual major licensees is documented in Technical Compendium.

Table 2: Assessment Of Free-Growing Status By Licence Type

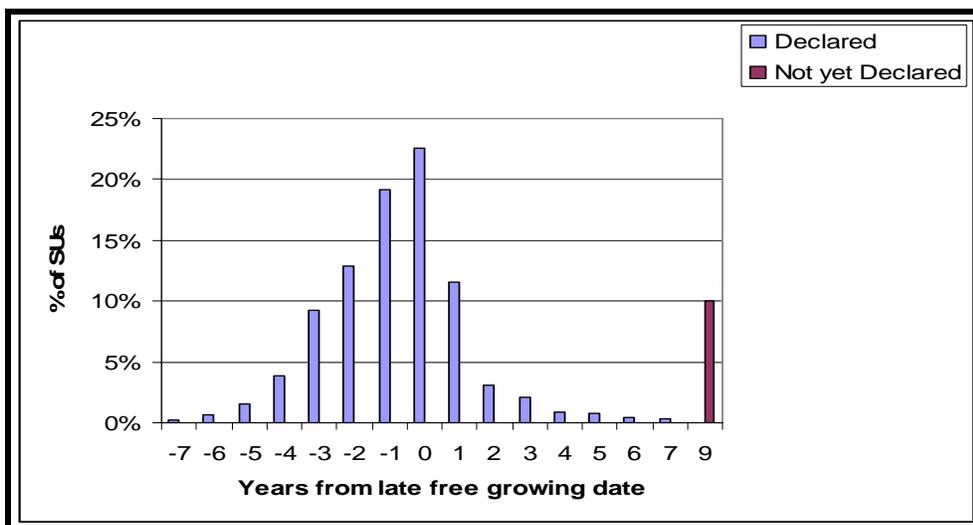
	FG On time	FG In Forest Cover	Declared After Late Due Date	Total Declared Free Growing	Unknown Status	TOTAL
Total SUs						
BCTS	1392	322	518	2232	42	2274
Non BCTS	6171	1098	1695	8964	988	9952
Total	7563	1420	2213	11196	1030	12226
% of SUs						
BCTS	61%	14%	23%	98%	2%	100%
Non BCTS	62%	11%	17%	90%	10%	100%
Total	62%	12%	18%	92%	8%	100%
NAR (ha)						
BCTS	28,091	5,488	8,383	41,962	1,732	43,694
Non BCTS	156,721	24,918	34,653	216,292	25,679	241,971
Total	184,812	30,406	43,037	258,254	27,411	285,665
% by NAR						
BCTS	64%	13%	19%	96%	4%	100%
Non BCTS	65%	10%	14%	89%	11%	100%
Total	65%	11%	15%	90%	10%	100%

Timelines of Declaration

The database was searched to determine the timing of declaration. Voluntary free-growing declarations can be made anytime between the early and the late free-growing date. This is usually between 10 and 15 years following harvest.

The Board only examined the timeliness of SUs that were declared or that missed the late free-growing date. No analysis was made of SUs that were not declared and only noted in the forest cover inventory, as the free-growing date is unknown.

Figure 3. Declaration Date Compared To Late Free-Growing Due Date



A total of 62 percent of the SUs were declared on time or before the late free-growing date. Most free-growing declarations were made the year they were due (25 percent), or the year prior to the due date (20 percent) (Figure 3). A few early declarations were made up to seven years prior to the due date. A total of 18 percent were declared one year or more after the late due date. A total of 10 percent of the SUs were not declared.

Amendments

Amendments can be made of the original free-growing standards that were specified in the silvicultural prescription. This allows SUs that do not achieve free growing by the late free-growing date, or that do not quite meet all the specified criteria, for reasons acceptable to the district manager, to still be declared free growing. Examples of amendments are:

- Extending the late free-growing date because part of the SU is not free of brush.
- Extending the late free-growing date because minimum height specifications have not been achieved.
- Allowing a different stocking density of acceptable trees, because the site is considered adequately stocked.

Provincially, over 50 percent of all SUs have been amended during the sample period. In the Coast Region and Northern Interior Region, 60 percent of the SUs have been amended (Figure 4).

Overall, more amendments are made on tree farm licences (62 percent) and timber licences (68 percent) than other types (Table 3); and the least are made on woodlot licences.

The original database does not describe the reasons for the amendment, whereas more recent (post 2003) amendments made in RESULTS are tracked. The present information simply indicates that amendments were made in the majority of the SUs, demonstrating that free growing was not met with the original standards in place.

Figure 4. Percentage Of SUs In Each Region That Have Been Amended To Meet Free-Growing

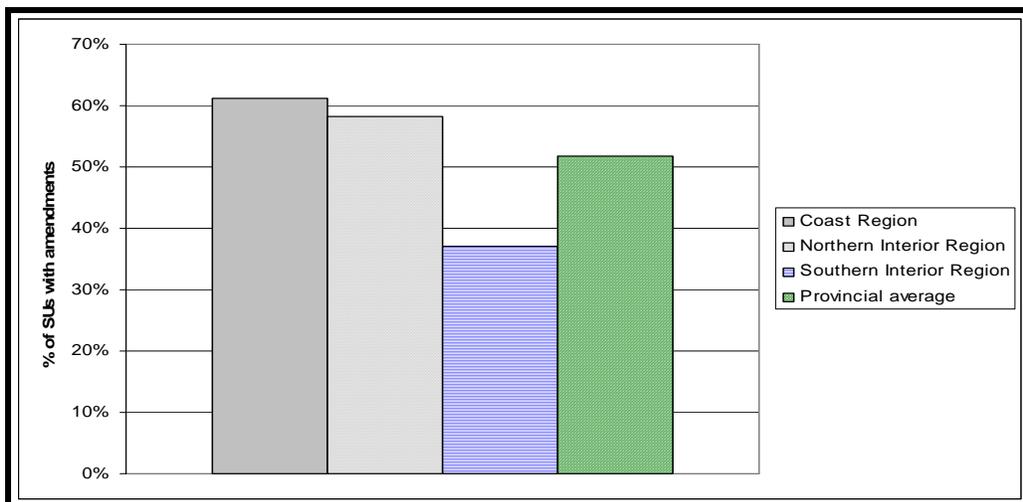


Table 3: Percentage Of SUs Amended By Licence Type

License Type	Number of SUs	Amended	% SUs Amended
Forest	6,869	3,283	48%
Tree Farm	2,272	1,404	62%
Timber	1,282	877	68%
Woodlot	490	139	28%
SB TSL	2,627	1,298	49%

Stocking Density

An SU can be declared free growing once the stocking level has achieved the required minimum number of stems that meet conditions with respect to age, height, vigour, health and freedom from brush. While the minimum stocking is the legal minimum, the target stocking is more desirable from a timber productivity perspective.

A risk assessment identified the proportion of SUs close to minimum and target stocking targets. Actual free-growing stocking in stems per hectare (sph) was divided into four categories to compare the prescribed minimum stocking standard and the target stocking standard. The categories are:

- *Low Risk* - FG sph is within 100 sph of the target stocking
- *Mid Group* – FG sph is between the low and high risk categories
- *High Risk* - FG sph are below or within 100 sph of minimum stocking
- *Over Stocked* - FG exceeds target stocking

The analysis was made by comparison with the prescription (Figure 5a) and with the field guide (Figure 5b). Approximately 12 percent of the free-growing SUs are high risk. In fact, 7 percent of the SUs did not meet minimum stocking standards, yet were still declared free growing (dark shading in Figure 5a). Up to 25 percent of the blocks are considered low risk. Between 7 percent and 12 percent are over target stocking standards.

Figure 5a. Proportion Of Area By Risk Category - Comparison With The Prescription

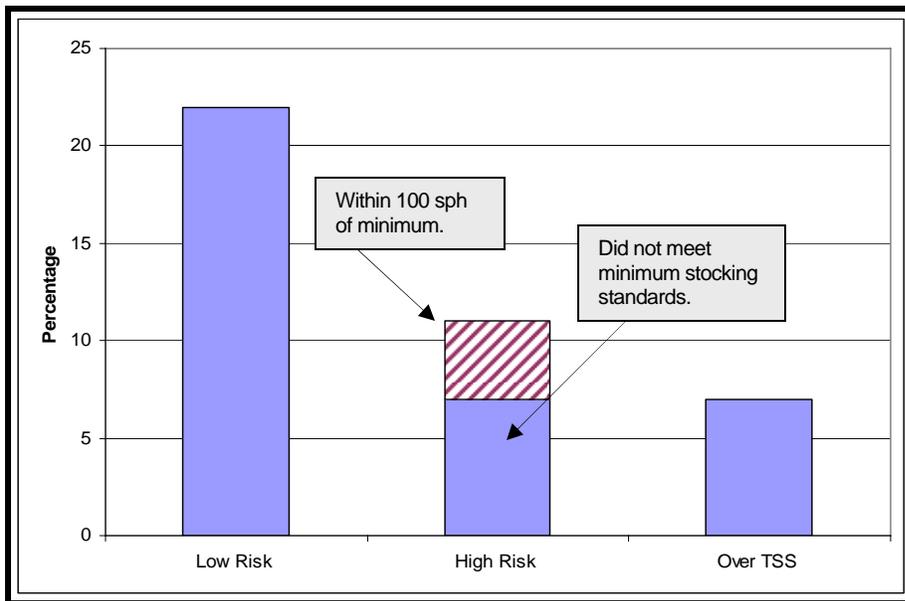
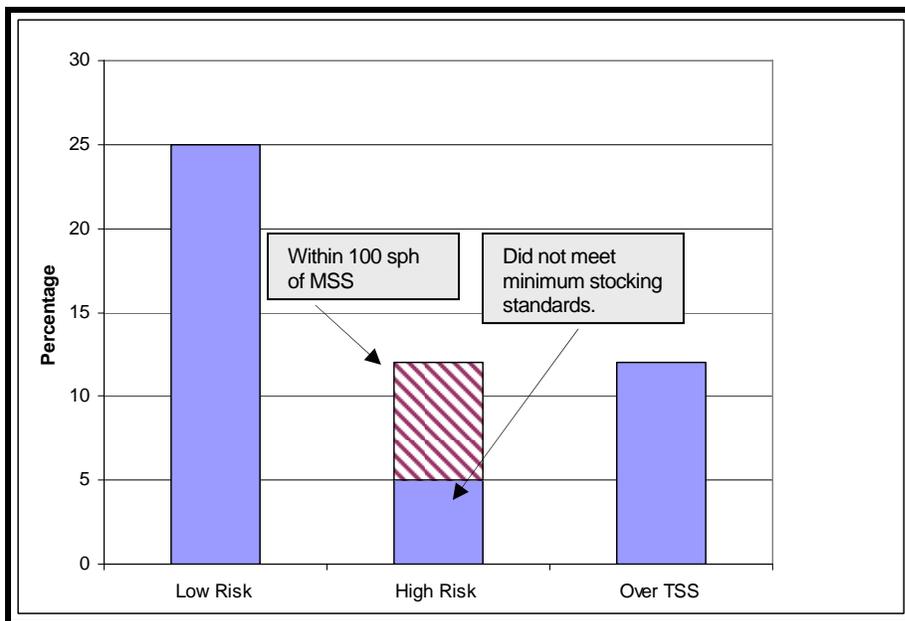


Figure 5b. Proportion Of Area By Risk Category - Comparison With The Field Guide



Regional differences are also apparent (Table 4). Areas at high risk areas range from 9 percent (Northern Interior) to 15 percent (Southern Interior). The Southern Interior also has significantly less area at low risk than the other two regions. The Coast shows the largest proportion in the low risk category. All regions have missing data and some values are over the target stocking standard.

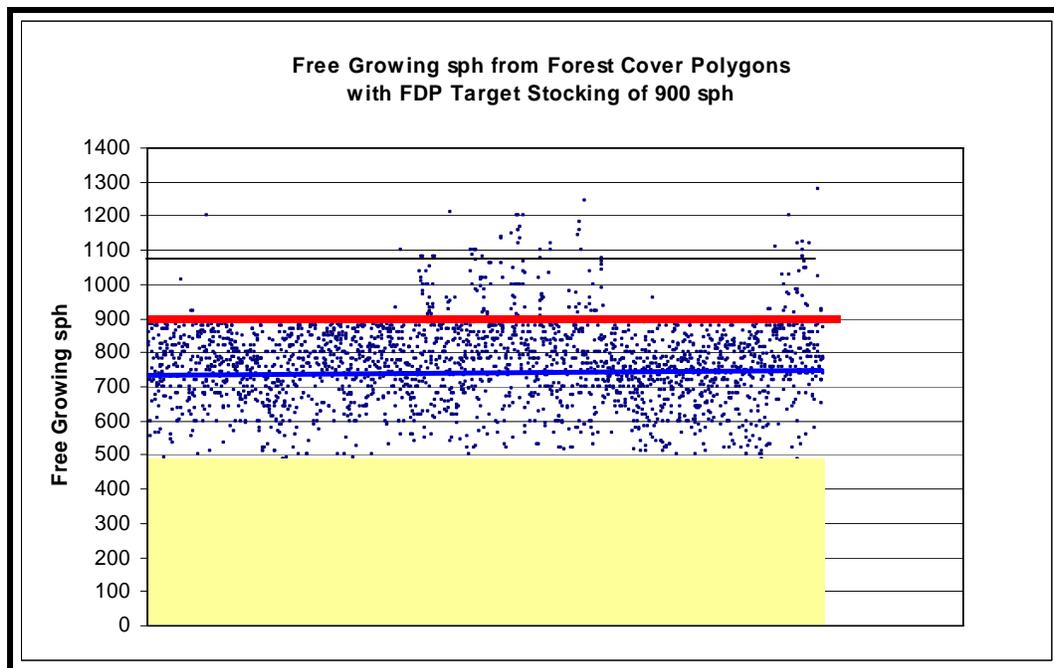
Table 4: Percentage of Area by Stocking Risk Category by Forest Region

Region	Low Risk %	Mid Group %	High Risk % (below MSS in brackets)	Over TSS %	Missing Data %
Coast Region	36	43	11 (3)	6	3
Northern Interior	21	56	9(4)	11	4
Southern Interior	8	66	15(7)	5	6

As noted above, a portion of the declared areas are below the minimum stocking standard for the SU. Areas that have been declared free growing, but are below the minimum stocking standard, do not meet the formal definition of free growing. These records will be made available for licensees and district staff to check for possible errors. Also, the stocking density should seldom be greater than the target stocking standard, due to the sampling methodology.

It is evident that most of the area is above the minimum stocking standard when viewed as a scatter diagram (Figure 6). For example, SUs with a prescribed target of 900 sph, have most of the area above the minimum of 730 sph. However, there is significant variation and a large number of SUs are at or below minimums (shaded area), which could affect projected timber supply.

Figure 6. Scatter diagram of stocking density (sph) for SUs with a prescribed target of 900 sph (red line) and a minimum acceptable of 500 sph (shaded area). Average density is 730 sph (blue line).

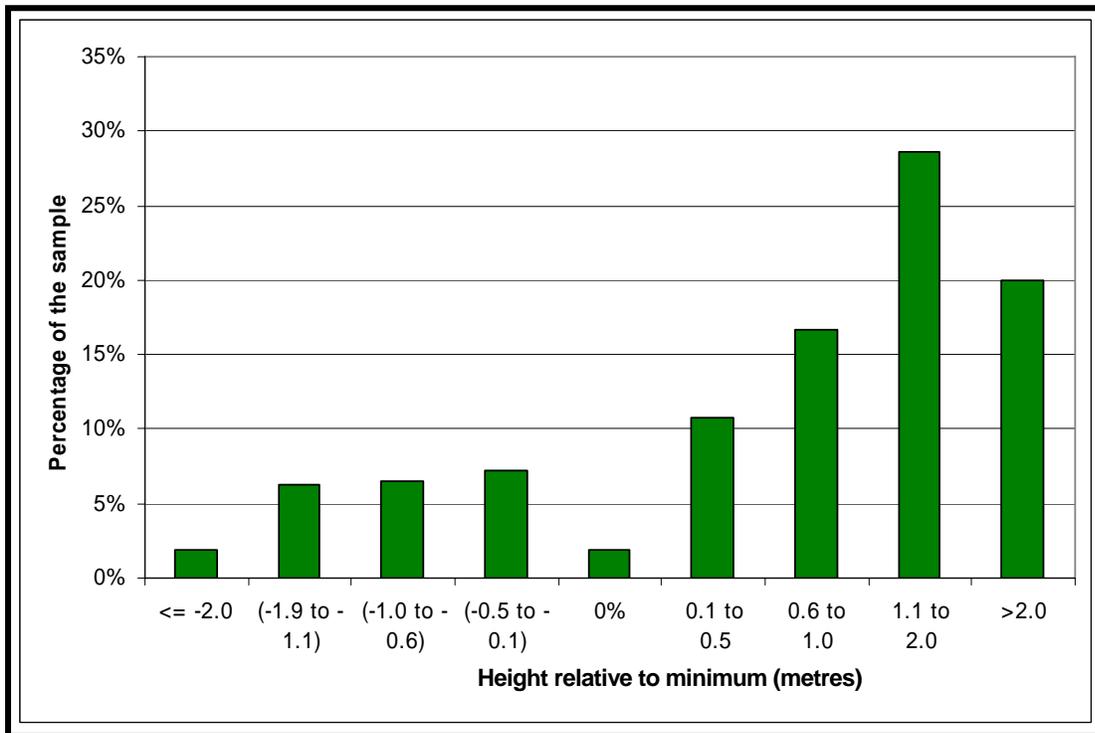


Minimum Heights

The minimum height requirement was introduced in 1994. Therefore, many of the SUs in this sample were not required to meet this standard. Nevertheless, an analysis was made to determine if the minimum height expectation in the guidelines was being achieved at the time of the free-growing survey.

Figure 8 shows that approximately 78 percent of the SUs have regeneration that meets or exceeds the minimum height criteria. Over 50 percent of the SUs exceed the minimum height criteria by more than one metre. The remaining 22 percent of the SUs do not meet the minimum height criteria. A district manager may have approved a lower height at the prescription stage, or may have amended the prescription to reduce the minimum height requirement, on these cutblocks.

Figure 8. Height of Stocked Trees Compared with Minimum Recommended Heights



Conclusions

This report examined cutblocks scheduled to achieve free growing before March 31, 2004. Provincially, 92 percent of those cutblocks have achieved free-growing status. There is a level of uncertainty about this figure however, due to gaps in the silviculture database. The free-growing cutblocks fall into the following groups:

- 62 percent are free growing and met the original free-growing date
- 18 percent missed the free-growing date, but are now free growing
- 12 percent are not declared free growing in the RESULTS database, but the forest cover inventory (a separate part of the database) says they are free growing

These results compare favorably with the level of achievement of free growing found in the 2003 Board report.

Deficiencies in reporting and the analytical functions of RESULTS do not allow a completely accurate assessment. Some of the block information has not yet been entered into the database, while some data are simply wrong or incorrectly entered.

There are no significant regional differences in achieving free growing. Slightly better results are achieved on the Coast than the Interior.

Differences between forest licence types were examined. Free-growing results for BCTS cutblocks are slightly better than for other licensees, but they rely on a greater number of amendments.

Most free-growing declarations were made the year they were due (23 percent), or the year prior to the due date (19 percent). A few early declarations were made up to seven years prior to the due date. A total of 18 percent were declared one year or more after the late due date and 10 percent of the SUs are still not declared.

A total of 15 percent of the cutblocks are either below minimum stocking standards or are at high risk of not meeting free-growing stocking standards. An additional 10 percent are over the target stocking standard. These stocking levels are for free-growing trees and do not necessarily account for the total stocking on site, which may vary considerably, depending upon levels of natural regeneration or brush on site. Approximately 22 percent of the cutblocks do not meet minimum height specifications for free growing.

The achievement of free growing has required a considerable number of amendments. Provincially, 50 percent of all SUs have been amended, and in the Coast and Northern Interior 60 percent have been amended. Often the amendment may only be for a small portion of each SU; however there is no information in RESULTS on the reasons for the amendments.

The overall conclusion of this study is that free growing is being achieved on the vast majority of sites in the province. However, achievement of free-growing status often requires amendments to the prescription or relaxation of the regional free-growing standards. The Board will conduct a further investigation into the reasons for the amendments in the upcoming year.