

How the use of the term “free growing” in British Columbia is linked to harvest date and assessment date

Prepared by Allan Powelson, Forest Practices and Investment Branch

The term “free growing” in British Columbia is, and has been, used for a variety of purposes such as:

1. to denote stands that are not ecologically or economically feasible to treat
 - use in this context is to indicate that further treatment of the stand is not practical from an ecological or economic stand-point. The condition of the stand in its current state is accepted and the “free growing” designation indicates in the records that no further treatment should be considered or undertaken. This designation prevents the stand from showing up in outstanding work that needs to be done or from showing up in the list of areas to be assessed.
 - The free growing designation in these cases may have been based on “file-calls”, “air-calls”, or ground surveys. The ground surveys for the majority of these were pre-stand tending surveys where the main focus of the assessment was on the collection of data to carry-out a treatment. As such, and even though, inventory information was collected the rigour that was required may not have been as stringent as that of a survey to determine legal status. Some pre-stand tending surveys may have also resulted in treatment of the stand where upon the original inventory data may have been slightly modified based on the treatment and then declared free growing.
 - This methodology is typically used for stands harvested prior to 1987
2. to denote that a stand has achieved a growth milestone
 - indicates that a stand has reached specified stocking parameters.
 - usually used for areas that do not have a legal obligation associated with the achievement of the standard.
 - typically used for stands harvested in the late 1980’s or any other stand that was harvested or disturbed after that point but did not have a legal free growing obligation
 - Methodology for these surveys varies from rigorous field surveys to recce based calls.
3. to denote the transfer of an obligation from the holder to the government

- indicates the achievement of a legal free growing obligation and that the stand has met the requirements of the specific stocking standards assigned to each unit of that opening.
- Methodology is a rigorous field survey whose results have to be able to stand up under outside verification

For any stand harvested prior to October 1987, the current physical condition of a stand and the designation as “free growing” is based on past management practices and decisions and may not be a reflection of achievement of the specified parameters for that ecosystem that are also termed “free growing stocking standards”.

The time period 1970 to post-1987 encompasses an active period of evolution in forest management in BC. It was during the early part of this period that the value of planting a wider variety of sites was beginning to be realized and, consequently, the number of sites artificially reforested rose dramatically.

However, the site preparation and nursery and seedling handling practices were in their infancy and these early planting efforts had fairly high mortality rates. As the 1970's progressed the survival of the stock increased and it was also recognized that it was just as important to ensure that the planted trees survived and grew at a rate which was necessary to maintain future timber supplies. As this recognition evolved, the concept of “free growing” was formulated as being the point when the establishment phase of the stand was ended and the stand could be generally left to produce future timber supplies without further intervention (except those treatments necessary to improve growth rates or product value such as conifer release, spacing, fertilization and pruning).

In the period 1982 to 1987, through licence commitments, licensees were responsible for reforestation (planting) which evolved into that period's version of free growing for all areas they harvested. Government approved and funded all activities covered by the licensees under Forest Act (FA) section 88. Government also controlled the nurseries and what species could, or would, be planted. During this time, the amount of funds provided for reforestation each year varied due to the government budget allocation process and priority decisions made there in. As a result, only about 50 per cent of the area harvested annually was planted (as compared to over 80% today). In 1983 and 1984 two policies were developed that guided silviculture throughout this early period: “Basic stocking standards policy” and “Basic monitoring performance policy.”

As the harvesting from this period continued into late 1987 and early 1988 (on blocks where majority of harvesting had commenced before October 1, 1987), the reforestation efforts in this program were also extended into the early 1990's under the industry outstanding program (IO). Funding for this program also varied on an annual basis as

it, too, was subject to annual government appropriations. Beginning in 1988, the Ministry of Forests (MFR) developed backlog reclassification rules which would allow stands that were 12 years old and had 500 well-spaced trees per hectare to be reclassified from Not-Sufficiently-Restocked (NSR) to Sufficiently-Restocked (SR).

In the early 90's surveys on the IO blocks used, if available, the stocking standards on the prescription, the current stocking standard for that ecosystem, the backlog reclassification rules, or just assessed the trees that were on-site regardless of their listing as preferred or acceptable at the time. The rigour around these surveys was not mandated and varied considerably between, and within, Forest Districts. Quickly through the 1990's the focus of these surveys switched to getting these older stands off the records as NSR and, later, from being recorded as impeded. The stands were surveyed with a variety of methods including "air-calls", ground recce's, "file-calls", and ground surveys.

The ground-surveys were mainly focused on if the stand was ecologically or economically feasible to treat. While inventory information was recorded, it was not the focus of the data collection and the rigour in gathering that information varied between surveyors and the level of monitoring by the MFR quality assessor. It is assumed that a significant amount of the inventory labels at this time were based on estimates. Free growing designation would typically include only a percentage of height above brush and the impacts of broadleaves would have been a site specific management decision agreed to with the MFR. These types of surveys and processes for blocks harvested prior to October 1, 1987 continue today through the impeded stand review. Free growing status is assigned to these openings based on the ecological or economical feasibility of treatment.

Several long-term trials established throughout Northern British Columbia (Inga lake, Bednesti, Iron Creek, Wonowon, Tanli, Upper Coalmine, etc) during the mid-1980's that have been measured almost continuously, or periodically, ever since their establishment, are a good indication of the fate of stands in these areas as a result of different establishment practices. These trials have provided the data for many peer-reviewed publications and have informed policy and practice development.

Stands harvested after October 1, 1987 (enactment of Bill 70), generate a legal free growing obligation which is defined as being met when the stand achieves specified parameters. The meeting of those parameters has to be able to be independently verified by the MFR, therefore the rigour in which the information is collected has always been high. Free growing surveys for the achievement of legal obligations did not start on mass until approximately 1995 because some of the more productive stands harvested in 1988 would just then start to be of sufficient condition to be declared as free growing. It wasn't till about 2002 (i.e. 15 years after the start of Bill 70) when the

steady state level of free growing surveys was achieved and that level remains to this day.

Surveys parameters for legal free growing obligations are based on the specific standards established at the time of harvest. All future assessments of that standard are based on the legislation and the agreed to stocking standards in place at the time of harvest commencement. Internal MFR audits and compliance and enforcements efforts indicate that over 90% of stands meet their specified stocking standards at Free Growing declaration. The results of these post-1987 harvested block surveys also indicate that in general British Columbia is achieving 84% of target stocking on all harvested sites (86% Coast Forest Region and Northern Interior Forest Region, 82% Southern Interior Forest Region).

It is important to also note there have been significant changes in stocking standards through out British Columbia during the evolution of the concept of “free growing”

- From 1981-1987 each region (the former 6) had there own set of stocking standards for each biogeoclimatic (BEC) zone and site series. Some stocking standards had significantly higher target stocking densities than today, but they also allowed very small minimum inter tree distances to be used. As well, some standards were very restrictive in the sense of what constituted preferred and acceptable species and how they were to be deployed as compared to today.
- From 1988-1990, MFR ecologists, operational, headquarters, and regional staff as well as key industry representatives developed and released new correlated stocking standards. This changed and standardized the key stocking parameters
- From 1990-1993, MFR ecologists, operational, headquarters, and regional staff as well as key industry modified and released new correlated species standards. This changed and widened the criteria for species use in stocking standard. Also, at this time, the concept of minimum preferred and multiple species was introduced to ensure monoculture conditions could be controlled and to also require a minimum number of preferred species in each standard unit.
- In 1994, minimum heights were included as part of the stocking standards in an attempt to accommodate forest health factors most active in the juvenile stages of stand development.
- In 1995, there was the conversion of the stocking standards to Forest Practices Code (FPC) *Establishment to Free Growing* (EFGG) guidebook along with some additional refinements to suitable species
- In 2000, the free growing criteria were added to the EFGG allowing for some measure of broadleaf tolerance in most BEC site series in the interior regions managed for conifers

- In 2002 there was an update to the species stocking standards in the rollout of the new Forest Development Plan (FDP) stocking standards.
- In 2003, the enactment of the Forest and Range Practices Act (FRPA) allowed for the licence holders to specify stocking standards in a Forest Stewardship Plan (FSP) as long as the standard met the FRPA tests.
- In 2007, the free growing criteria of the EFGG was amended to include some specific Coast Forest Region BEC site series to tolerate the presence of low levels of broadleaves on sites managed for conifers.

All these changes affect harvested stands differently depending on the harvest commencement date and who, if anyone, has the free growing obligation.

Depending on the timeframe of the original harvest, the existence of a legal reforestation requirement, and the focus and rigour of the assessment, the designation of a stand as “free growing” can indicate a variety of stand conditions and management intents. An understanding of these differences associated with harvest and assessment timing as well as survey intent is critical when assessing today’s current stand condition against past designations.