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June 15, 2022

To: Regional Executive Directors  
Regional Directors of Resource Management  
District Managers

From: Julie MacDougall, A/Chief Forester and A/Assistant Deputy Minister

**Re:** Chief forester's updated guidance on maximum density for free growing obligations

### **Purpose**

The purpose of this memo is to provide updated guidance for delegated decision makers and forest professionals on maximum density policy in the province of British Columbia. This guidance is based on the findings and recommendations of the Repression Density Working Group (RDWG), a sub-committee of the Interior Silviculture Sub-committee (ISSC) tasked with addressing the long-standing issue of maximum density policy in B.C.

### **Background**

Currently in British Columbia, a person with an obligation<sup>1</sup> to establish a free growing stand under section 29 of the *Forest and Range Practices Act* (FRPA) is directed to reduce stand densities, by juvenile spacing, *if maximum density limits are specified in the stocking standards of an approved Forest Stewardship Plan (FSP)* and if the specified maximum density thresholds have been exceeded. Section 44 of the Forest Planning and Practices Regulation (FPPR) states this requirement:

***44 (1) A person who has an obligation to establish a free growing stand must establish, for areas that have been identified under section 16 (1) [stocking standards] as areas to which this section will apply, a stand that***

*(a) meets the applicable stocking standards set out in the forest stewardship plan for the area, by the applicable regeneration date specified for the area, and*

*(b) meets the applicable stocking standards and free growing height set out in the forest stewardship plan for the area by a free growing date that is no more than 20*

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<sup>1</sup> Includes a holder of a major licence or community forest agreement who harvests timber to which a FSP applies; a timber sales manager authorized to harvest timber under a timber sale licence that requires its holder to prepare a FSP or is the holder of an FSP [FRPA s.29].

*years from the commencement date, unless the minister permits a later free growing date.*

Maximum density policy, and its associated thresholds or limits, have changed over time and across legislative eras. This policy was most recently updated in 2006 and 2007 to adjust the maximum density threshold upward for lodgepole pine leading stands. Regional Executive Directors provided new guidance reflecting an increase to 25,000 countable conifers per hectare and 20,000 countable conifers per hectare as [South Area policy](#) and [North Area policy](#), respectively. The maximum density threshold remained the same for non-pine leading stands at 10,000 countable conifers per hectare. Many FSP holders adopted these regional maximum density thresholds into their plans. FSP holders could adopt the regional maximum density thresholds, propose unique maximum density thresholds, or propose no maximum density thresholds as part of their stocking standards submission for approval by delegated decision makers. The minister's consideration of stocking standards is specified in FPPR Section 26, and states:

***26 (3) The minister must approve the regeneration date, free growing height and stocking standards referred to in section 16 (3) if the minister is satisfied that***

*(a) the regeneration date and the standards will result in the area being stocked with ecologically suitable species that address immediate and long-term forest health issues on the area, to a density or to a basal area that, in either case,*

*(i) is consistent with maintaining or enhancing an economically valuable supply of commercial timber from British Columbia's forests, and*

*(ii) is consistent with the timber supply analysis and forest management assumptions that apply to the area covered by the plan on the date that the plan is submitted for approval*

Section 3.44 of the [Silviculture Surveys Procedures Manual](#) describes the different eras of policy and legislation that dictate the requirement to juvenile space, as well as the survey methodology necessary to identify spacing obligations prior to a free growing declaration. The intent of the policy, and the associated survey methodology, is to reduce inter-tree competition on high density stands, thus lowering the likelihood of repression, or reduced growth rates.

## **Current Considerations**

Following the historic 2003 Okanagan Mountain wildfires, unprecedented levels of natural pine regeneration emerged following salvage harvesting efforts in the area. This provided an opportunity to further study early stand growth and the effects of high-density pine establishment following wildfire and post harvest disturbance. Silviculture researchers, and practitioners representing government, industry, and consulting, came together to address maximum density policy and its relationship to biological repression, and to develop the [Repression Density Decision Key \(RDDK\)](#). The goal was to produce a decision aid that guides *improved economic decision making*, using financial analyses and treatment cost assumptions, growth and yield simulations, interpretation of operational trials, current

research and literature, and expert opinion. The intent was to look carefully at the cost of juvenile spacing and determine where it would make most sense as a silviculture investment.

The RDDK explored two disturbance types that respond differently when considering high density germination, and the potential for loss of growth potential, or repression. Fire origin stands typically germinate all at once, creating conditions that favour repression when compared to regeneration patterns that follow post harvest disturbance. Post harvest regenerated stands germinate over many years, creating vertical height differentiation as the stand grows and develops. With this considered, the RDDK suggests that economically viable juvenile spacing treatments should only be considered when dominant and co-dominant stems per hectare (sph) *exceed* 50,000 for post wildfire stands and 150,000 for post harvest regenerated stands. These thresholds represent the *probability* of repression, above which, stands may experience repression that is economically viable to treat, once validated through additional site level analyses.

Provincially, there are a very small number of stands that exceed these thresholds and exhibit the magnitude of repression that would be economically viable to treat, based on the findings of the Repression Density Decision Key and its supporting documents. This is a foundational element in my decision to provide additional guidance for maximum density as part of the free growing obligation.

## **Guidance and Recommendations**

**When considering maximum density in the context of even aged stocking standards, Delegated Decision Makers should discourage the inclusion of maximum density thresholds in forest stewardship planning.**

The following chief forester guidance outlines the mechanisms to adopt the recommended changes to maximum density policy:

1. For new FSP submissions or amendments to existing FSPs, FSP holders **consider omitting or removing any reference to maximum density thresholds**, as an adopted stocking standard for even aged stands.
2. Where an existing FSP has included maximum density thresholds as an adopted stocking standard, that existing FSP (retroactive to April 1, 2004) **may be amended by the FSP holder to reflect the removal of any reference to maximum density thresholds** as an adopted stocking standard for even aged stands.

**Note:** In considering whether an amendment to an FSP in this context requires approval or not, the delegated decision maker should refer to Forest Planning and Practices Regulation Section 29 (e) which states:

***29 The following are the prescribed circumstances referred to in section 20 (1) of the Act, in which an approval is required to amend a forest stewardship plan, despite a determination under that provision:***

(e) a change to the regeneration date, free growing date, free growing height, or stocking standards that apply to an area in a manner that would be a significant departure from that originally approved in the plan

**My decision to provide updated guidance for maximum density prior to a free growing declaration has been carefully considered.** In my determination I have weighed the magnitude of the issue both provincially and at the Management Unit (MU) level. The analysis completed to date results in only minor timber supply implications, based on an extension to rotation ages. Unspaced stands will add to a portfolio effect across the landscape, promoting high quality forest products over time, increased forest health resiliency, and will contribute to an increased growing stock capable of sequestering additional carbon.

## **Conclusion**

As a silviculture tool, I believe future juvenile spacing options should remain available on a case-by-case basis but should consider specific objectives at the Management Unit (MU) level that may prioritize other stewardship values, including wildfire resilience or First Nations interests for example. This will be considered as British Columbia moves toward a Forest Landscape Planning (FLP) approach and to regime-based silviculture standards, and where earlier rotation ages, wildfire risk reduction, or other stand and landscape level objectives favour juvenile spacing as a beneficial treatment. However, as a universal requirement prior to a free growing declaration, I have determined that these juvenile spacing investments are not collectively providing the certainty of a positive economic return to B.C.

I am satisfied that the analysis and recommendations of the RDWG have been adequately reviewed by joint industry and government working groups, including the Coast, North and South Area Operational Issues Forum (OIF) members. We have engaged broadly at the provincial level, ensuring the opportunity for government and industry to provide comments and feedback.

Please share this information with interested staff and stakeholders. If you have any questions, please contact Greg Jorgenson, Silviculture Reporting and Strategic Planning Officer, or Craig Wickland, Stand Management Team Lead at Forest Science, Planning and Practices Branch.

Sincerely,



Julie MacDougall, RPF  
A/Chief Forester and A/Assistant Deputy Minister

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