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To: Regional Executive Directors
District Resource Managers
Timber Sales Managers

From: Jim Sutherland
Director, Resource Practices Branch/Deputy Chief Forester

Re: Guidance for assessing FSP stocking standards alignment with addressing immediate and long-term forest health issues

The purpose of this memo is to provide guidance related to adjudicating the Forest Planning and Practices Regulation (FPPR) section 26 requirements that stocking standards address both immediate and long-term forest health issues. While this guidance focuses on only one aspect of the section 26 stocking standards tests, it is recognized that the stocking standards tests must be adjudicated collectively. This guidance should also be considered in the context of other specific guidance related to FSP extensions.

This guidance is particularly relevant at this time because many TSRs are assuming shorter regeneration delays, full stocking and managed densities. In addition, the transition to mid-term TSA harvest levels is highly dependent on the yield curves and regeneration delays used in the TSR analysis. For these reasons it is increasingly important that the stocking standards in FSPs are aligned with the assumptions in the TSR and have accounted for any new or existing information relating to forest health hazards and risks.

The implementation of FRPA resulted in a shift from the previous legislated requirement to reforest with a mixed species stand when a mix of species was present on site prior to harvest to the current stocking standard test of the area being stocked with ecologically suitable species that address both immediate and long-term forest health. FSP stocking standards must aim to maintain or enhance an economically valuable supply of commercial timber and be consistent with current TSR and forest management assumptions. Under the FRPA model it is expected that the prescribing forester will consider all relevant information and the best science that is available when developing stocking standards. Similarly, it is assumed that DDM will use these same sources, including the latest forest health information, when making determinations on new FSPs or when determining whether to extend an existing FSP.



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Immediate forest health issues are those agents that can impact a stand during the establishment phase and the resulting damage is apparent during subsequent free growing assessments. Long-term forest health issues are those where damage may not be readily identifiable at the time of free growing declaration, but have the potential to impact the stand through to rotation. It is therefore critical to consider the full suite of forest health factors that may be present on a site from the time of establishment through to those that can reasonably be expected to affect a later stage of stand development.

When both developing and reviewing stocking standards; the Reference Guide for Forest Development Plan Stocking Standards is commonly used to inform the determination of species composition, establishment density, and the free growing height. When using the Reference Guide, it is important to understand both the history of the stocking standard recommendations in the guide, and the assumptions on which they are based.

The following are some key assumptions, relevant to forest health, that were considered when the guidelines for species selection, density, and free growing heights were developed to assist in your understanding of how current forest health information may lead to modification of these parameters.

A) Species

The species in the reference guide are species that were considered ecologically suitable at the time based on the knowledge of the productive capability of each site series, silvics of the tree species, and the growth and development of existing second-growth forests. They were further categorized as primary, secondary, and tertiary based on their silvicultural feasibility, reliability and productivity with an assumed objective of timber production. In determining the appropriate species for regeneration practitioners were expected to consider a number of factors such as:

- desired stand structure
- desired reproduction method
- role of advanced regeneration
- potential for natural regeneration
- potential for pest impact

In determining the appropriate combination of species the expectation continues to be that a prescriber will review the recommended species with appropriate consideration of hazards, such as pests, that are likely to affect the stand throughout the rotation. The species selected may, as a result, be only a subset of those listed in the guidelines where there are known pest hazards in the area, or a limitation may be placed on the level of deployment of a species due to these hazards.

B) Density

The legislated tests requires the stocking standards be consistent with current TSR and forest management assumptions with intent to maintain or enhance the supply of timber. TSR and forest management assumptions incorporate a normal or average level of mortality beyond free growing and the expectation is that where local

experience or conditions indicate a higher level of mortality the stocking levels should be increased accordingly. It is expected that local forest health knowledge will be used by the prescribing forester to modify densities for the appropriate situations and circumstances to maintain or enhance the supply of commercially valuable timber.

C) Free Growing Height

In FRPA, free growing height is expected to demonstrate that a tree is adapted to the site, and is growing well and can reasonably be expected to continue to do so. Minimum heights should be set specific to each species and site condition, beyond which the majority of forest health concerns will have been expressed. When the free growing heights that are now contained in the reference guide were initially developed, there was an early free growing date prior to which a stand could not be declared. This was in part to ensure that forest health factors had sufficient time to express themselves. In FRPA, the early free growing date has been removed, resulting in the increased importance of setting an appropriate free growing height to ensure adequate accounting of forest health factors at time of declaration to provide certainty that the stand will more than likely continue to be free growing 20 years after the commencement date. For example, if a stand achieves the minimum height requirements at age 9, is it reasonable to assume that all of forest health factors have had sufficient time to express themselves and that the stand will remain free growing for an additional 11 years? If it is not reasonable to make this determination at this height/age due to local forest health conditions or knowledge, then the free growing height is too low. It must be recognized, however, that free growing heights must be set at a level that can reasonably be achieved in less than 20 years.

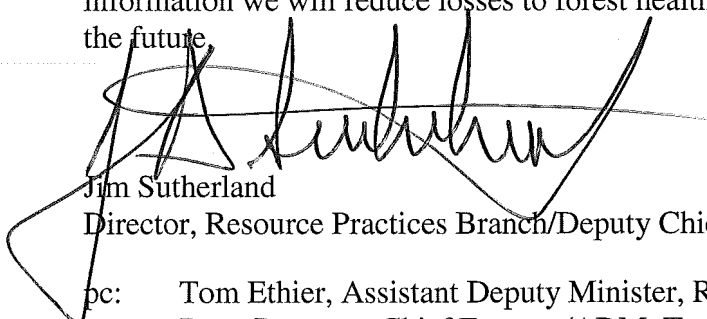
There are a number of sources of local forest health information that may be pertinent to the development and evaluation of stocking standards:

- District Forest Health Strategies – These strategies provide current forest health conditions and information on pest hazards within the District or TSA. http://www.for.gov.bc.ca/hfp/health/TSA_strategies.htm
- Stand Establishment Decision Aids (SEDA) – These publications from the BC Journal of Ecosystems and Management, produced by FORREX, provide a synthesis of pest hazards and associated management recommendations for most of the major forest pests affecting managed stands in British Columbia. <http://www.forrex.org/tools/sedas/>
- Regional Forest Health Specialists – These specialists (entomologists and pathologists) can provide expert advice on the local forest health factors likely to affect managed stands throughout their rotation and possible management options.
- FREP Stand Development Monitoring (SDM) – The data collected using the SDM protocol provide information on forest health factors impacting stands beyond the typical free growing assessment period. Locally collected SDM data should be used to further inform the long-term forest test for stocking standards.

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- RESULTS Data – Forest health data reported at the time of free growing declaration is available in the RESULTS database and can be spatially presented and analyzed. Maps depicting levels of damage in managed stands for the majority of forest health agents in most districts have been developed.
<http://lbis.forestpracticesbranch.com/LBIS/node/142>
- Forest Practices Code Guidebooks – A number of guidebooks were developed for management of specific forest health agents. Much of the information in these guidebooks is still relevant to management decisions being made today.
<http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/guidetoc.htm#Forest%20Health>

While in many areas the recommendations in the Reference Guide are appropriate, I would like to emphasize the need to consider local forest health information in developing and assessing stocking standards and determining whether they address both immediate and long-term forest health. I am confident that by ensuring appropriate consideration of this information we will reduce losses to forest health factors in our managed stands now and in the future.



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