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To: All Forest Regions  
All Forest Districts  
All Licensees

From: Tom Ethier  
Assistant Deputy Minister  
Resource Stewardship Division

**Re: Consideration of Climate Change When Addressing Long-Term  
Forest Health in Stocking Standards**

This memo builds on the Chief Forester's "Guidance on Tree Species Composition at the Stand and Landscape Level" released on September 24, 2009, and highlights mechanisms within the existing legislative framework that can be used to manage risks associated with innovative and/or unproven practices.

The Forest Planning and Practices Regulation (FPPR) section 26 requires that stocking standards address both immediate and long-term forest health issues. The impacts of climate change need to be considered as part of the long-term forest health test both by those preparing Forest Stewardship Plans and those reviewing plans submitted for approval or extension. A significant amount of information is now available for many management units (such as the research sponsored by the Future Forests Ecosystems Initiative), to support informed changes to reforestation practices in order to address the long-term forest health risks associated with a changing climate. In those areas where this type of information is yet to be developed, a key climate change adaptation strategy is to increase forest resilience and adaptability by establishing a diversity of tree species at both the stand and the landscape level.

I strongly encourage government and licensee personnel to work together to develop timely and responsive climate change adaptation strategies. Implementation of these strategies should include timely modification of practices and amendment of FSP stocking standards (e.g., not necessarily just at the time of FSP extension approval).

A climate adaptation strategy may include increased deployment of ‘non-conventional species’ including species where the range is being expanded under a facilitated migration strategy or species that have had limited deployment historically on certain sites given site. It is recognized that in some of these cases there may be a significant degree of uncertainty regarding the expected performance of these non-conventional species, including a potential increased risk of seedling mortality. In these cases, increasing establishment density to account for the risk of mortality may be the best option for managing risk and uncertainty. Alternatively, or in addition, an FSP could specify a reasonable reduction to the free growing stocking density, if the reduction is associated with higher levels of mortality in a non-conventional species and where there is a commitment to deploy species consistent with a climate adaptation strategy.

The FRPA framework provides considerable flexibility for managing for these types of risk. The Forest Planning and Practices Regulation, Section 16 requires that a Forest Stewardship Plan (FSP) specify stocking standards and date for regeneration, and stocking standards and date for free growing. This provides an opportunity to develop different standards at regeneration and free growing for both species and site occupancy that account for potential risks and uncertainty. Section 16 also enables an FSP to specify stocking standards that vary depending on the situation or circumstance and this provision may be useful in identifying standards that apply when a specific climate change adaptation strategy is being implemented.

Under FPPR 26(3) and (4) a decision maker must be satisfied that stocking standards in an FSP will:

1. result in the area being stocked with ecologically suitable species that address immediate and long-term forest health issues;
2. are consistent with maintaining or enhancing an economically valuable supply of commercial timber;
3. are consistent with the timber supply analysis and forest management assumptions.

FPPR 26(5) allows a decision maker to approve stocking standards that do not conform to the above requirements, if they are reasonable, having regard to the future timber supply for an area. Innovative stocking standards consistent with climate adaptation strategies may be consistent with the intent of this section.

In addition, FPPR 46.2 provides a mechanism to address those situations where, for example, there is significant mortality of non-conventional species that are deployed as part of a climate adaptation strategy that make it impossible to achieve a free growing stocking standard. This section allows an alternative free growing stocking standard to be proposed along with the date by which it will be achieved.

In developing climate adaptation strategies it is important for government and licensee staffs to develop a common understanding of the risks associated with establishing specific species and which sites and conditions provide the best opportunity for regeneration success for various species. Note that this applies to both non-conventional species as well as conventional species that may not be well adapted to a changing climate. These potential risks should be considered with due regard for the future timber supply and within the context of overall practices over the management unit.

## Guidance on Tree Species Composition at the Stand and Landscape Level

These examples highlight the flexibility that exists within the current legislative framework to enable innovative approaches to stocking standards establishment consistent with climate change adaptation strategies and approaches, and to address potential risks associated with innovative reforestation practices. I am confident that consistent with the principles of 'results based management' and 'professional reliance,' appropriate climate change adaptation based changes to reforestation practices will occur. I look forward to following how this important challenge is being met across the province as reflected in ongoing monitoring and reporting activities.



Tom Ethier  
Assistant Deputy Minister  
Resource Stewardship

pc: Jim Sutherland, Deputy Chief Forester and Director, Resource Practices Branch  
Dave Peterson, Chief Forester and ADM, Tenures, Competitiveness & Innovation Div  
Diane Nicholls, Executive Director, Resource Stewardship Division  
Albert Nussbaum, Director, Forest Inventory and Analysis Branch