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January 6, 2020

via: engage.gov.bc.ca/climatereadybc

The Honourable George Heyman,
Minister of Environment & Climate Change Strategy
PO Box 9063
Victoria BC V8W 9E2

Dear Minister Heyman:

Re: Climate Preparedness and Adaptation Strategy

The Forest Practices Board is pleased to provide a submission to the Provincial Climate Preparedness and Adaptation Strategy (the Strategy).

In August 2019, the Board approved a new strategic plan that will guide our work for the next three to five years. During the development of the plan, the Board sought the views of a diverse group of forest stakeholders, reviewed forest practices we have seen on the ground, and looked at changes that will affect the future of forestry. We received strong feedback that climate change, and the impacts it is having on BC's forests, is an issue of significant concern and should be a focus for the Board. As a result, climate change is one of three emerging issues that the Board will explore in the coming years. We hope that we can play a role in promoting the continuous improvement of forest practices to address this challenge.

The Board has worked on issues related to climate change for more than a decade. The Board's first commentary on climate change was in its 2004 annual report, which stated the Board was concerned about the "implications of a warming climate and the associated fire and pest disturbances to forest practices and future forest conditions." In the intervening 15 years, the Board has commented numerous times on the impacts of climate change, and has produced investigations and special reports that examined specific forest practice issues related to climate change. Our submission draws from that history.

Forests will play a critical role in adapting to climate change, and we believe that a comprehensive plan is needed to drive climate adaptation into forest practices. As noted by the Auditor General, BC has some good tools for considering climate change, and the past decade has seen major advancements in our understanding of some of the practices required to address

climate change in forest and range management; however, the application of these tools and practices is not widespread.

Our recommendations are broken into three parts. We suggest that an overarching policy goal guide all actions regarding adaptation. We identify five focus areas where we believe action will have greatest impact, and finally we have provided an appendix with past recommendations from the Board for specific actions that can be taken.

Climate Adaptation; Ecosystem Resilience as the Goal.

The province should consider adopting ecosystem resilience¹ as a policy goal for forest and range management. The Board has referred to the importance of resilience in many of our past reports and the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) has done much good work to advance our understanding of resilience. Given the large uncertainty regarding how climate change will ultimately affect ecosystems, creating resilient ecosystems is widely viewed as an appropriate approach to manage risks. The Board believes that resilience would be an effective goal that could guide subsequent planning, science, and policy. We understand that resilience is not itself a specific outcome, but rather a guiding management principle, and considerable further work is required to properly define it, undertake science on its application in diverse ecosystems, and to adjust current policies and programs to reflect a goal of resilience.

Improve Practices in Five Areas

We are highlighting five areas where risks to forest values are highest or the impact of change could be greatest. A Strategy should identify actions that can be taken in each of these areas;

1. **Tactical Planning.** Tactical (or Landscape Level) planning has the potential to be an essential tool in planning for adaptation of BC's ecosystems. BC is too large and complex (ecologically and socially) to address future climate solely through provincial standards or policies. Climate change requires that we look far into the future and plan practices today to ensure forests that will deliver the multiple benefits society demands, in the climate of the future. With the proposed creation of a tactical planning requirement under the *Forest and Range Practices Act*, the province will need to create guidance and tools for tactical plans to guide forest practices for adaptation at the landscape level.
2. **Managing Forest Fuels.** Government has made significant progress in the past five years to create new programs, tools, and policies to enable more robust management of fuels on the landscape. The Board encourages government to continue to focus on effective management of fuels in the wildland urban interface, modernizing hazard

¹ "Ecological resilience is the capacity of an ecosystem to absorb, recover from, and adapt to disturbance or stress caused by agents of change." (MOFR, 2010).

- abatement requirements for industrial operations, re-introduction of prescribed fire, and addressing fuel management across the broader landscape (beyond the wildland urban interface). Full implementation of the recommendations for fuel management outlined in the Chapman/Abbot report is an essential start.
3. Reforestation. Reforestation standards and practices should be adjusted to address anticipated stresses caused by climate change, as well as shifts in ecosystem composition. FLNRORD has created a good foundation of guidance and standards, but these do not appear to be widely adopted yet. Clear direction to licensees would ensure consistent and widespread adoption of climate-based seed transfer and fire management stocking standards.
 4. Aquatic Ecosystems and Water. Forest practices that affect riparian areas or may have cumulative effects on the hydrologic regime may need to be adjusted to reduce overall stress on aquatic ecosystems and water (e.g., shade, temperature, interception, etc.).
 5. Roads and Bridges. Road and bridge design standards should be updated to ensure that designs consider anticipated changes to peak flows and increased risk of landslides on steep slopes, due to climate change. Bridge and road design standards can ensure that new roads or bridges are future climate ready and that, as infrastructure is periodically replaced, we “build back better.”

Over the next two years the Board hopes to expand on some of these topics through our work. We look forward to continued and constructive engagement with government as the provincial strategy is developed and moves to implementation. This is an important project and forest practices have a significant role to play in climate adaptation. Please contact Dave Clarke, Executive Director at 250-213-4702 if you would like more details on any of these topics.

Sincerely yours,



Kevin Kriese,
Chair

Cc: The Honourable Doug Donaldson, Minister of Forests, Lands, Natural Resource
Operations and Rural Development
Jeremy Hewitt, Assistant Deputy Minister, MECC

Appendix 1; Summary of Previous Board Recommendations related to Climate Change

Tactical Forest Planning, 2019

The need for intermediate-level, tactical planning in forest management is more critical now than at any time in the past because:

- It is increasingly apparent that many issues of importance to the public, such as managing forestry impacts on water flow and wildlife habitat, are difficult to address on a cutblock by cutblock basis;
- Current and predicted changes in climate will accentuate issues that cannot be resolved at the cutblock level; issues like managing fuels to address risk of wildfire, or fluctuating stream flows.
- Planning at this level provides an opportunity to engage in meaningful partnerships with Indigenous peoples in forest management planning, consistent with government's commitment to implement the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
- Members of the public are demanding opportunities for consultation about forest management before operational decisions are being made; their concerns are often related to landscape scale issues.

Conserving Fish Habitat under FRPA, 2018

Forest Practices and Climate Change Adaptation

Climate change is affecting temperatures and precipitation levels throughout BC with increased incidence of unseasonal and extreme weather events, which can increase the risk of substantial impacts to fish and fish habitats. Forest harvesting has the potential to reduce the resiliency of streams and fish habitats. For example:

- Increases in stream temperatures may be worsened by removing riparian vegetation adjacent to non-fish-bearing and small streams.
- Increased and unseasonal extreme rain events in harvested areas can increase peak flows to a size and force that alters stream channels and scours streambeds, damaging fish habitats.
- Increased storm intensities could increase the risk of slope instability associated with forest harvesting and roads. This could result in increased deposition of soil material into streams.
- Existing stream crossing structures (culverts and bridges) may not be large enough to accommodate projected increases in size and frequency of peak flow events and stream widening.
- Longer and warmer growing seasons may result in second growth trees growing quickly to crown closure and out-competing understory shrub and ground cover

vegetation for light, water and nutrients. Fewer understory shrubs in riparian areas could reduce stream bank strength and result in lower stream resilience to heavy water flows.

The BC Government is developing policies, tools and information to assist with climate change adaptation in the natural resource sector. FLNRO approved a Forest Stewardship Action Plan for Climate Change Adaptation in 2012. Each FLNRO region is implementing their own climate change action plans, with actions specific to the pressing issues in each region. As an example, the Climate Action Plan for Thompson Okanagan Region includes actions to establish thresholds for low stream flows, mitigate advances in the timing of freshets, reduce risk of increased stream and lake temperatures, and restore fish habitats lost through increased storm and flood intensity and frequency.

Engineers and Geoscientists BC and the Association of BC Forest Professionals are preparing joint watershed guidelines that require members who are responsible for watershed management or watershed assessments to take into account and plan for climate change. These professional associations expect their members to stay informed on climate change and incorporate consideration of climate change into their practice.

East Kootenay Rangelands, 2016

Climate Change Effects

Plant communities in rangelands are likely to respond to climate change in various ways, depending on their growing site and individual physiologies and innate resilience to changing temperatures and levels of precipitation. Ecosystems are predicted to change in composition as some species shift in their range, new species are introduced, and plant communities adapt to altered seasonal patterns of pollination and reproduction. The impacts of these changes on forage supply are not yet known. Managing pro-actively to promote healthy rangelands now will promote adaptation to climate change and the ability of plant communities to withstand undesirable climate-related agents such as high severity fire, insects and disease, and invasive plants.

Off-road recreation is an ongoing challenge that will require collaboration across agencies and sectors. Efforts to maintain healthy rangelands will help to promote the ability of grassland and open forest ecosystems to adapt to, or withstand, climate change effects.

Fuel Management - 2015 Update:

The Board encourages government to review its approach to fuel management and consider these opportunities for improvement:

1. Provide sustainable and adequate funding.
2. Treat more area effectively and at a lower cost.
3. Redefine the role of local government.
4. Reduce the hazard in all new interface areas during the development phase.

5. Convince or compel at-risk private landowners to participate in the FireSmart program.

This report provides several ideas to get the conversation started, but the Board expects consultation with practitioners, local governments, First Nations, the Union of BC Municipalities, First Nations Emergency Services Society and others will be necessary.

Fuel Management - Original 2010 report:

The Board believes that fuel management should be an urgent priority for communities at risk of wildland-urban interface fires. Accordingly, the Board is making the following recommendations:

Local Governments

1. Local governments should consider fuel hazard and wildfire risk and should require mitigation measures before approving new development in interface areas.
2. Local governments should take advantage of the fuel management program, build on the experience of others described in this report and manage the hazardous fuels in and around their community.

Provincial Government

3. The provincial government should make fuel management easier for communities. Possible actions include: Setting provincial stocking standards for interface areas so that local governments do not have to negotiate them individually with MFR district managers. Establishing interface areas where public safety is the first priority. Addressing administrative issues regarding stumpage, appraisal, and international trade to remove them as barriers to local governments taking action. Addressing the need for funding to sustain the program over the long-term. Fostering, encouraging and supporting innovation; local communities may have suggestions for addressing fuel management issues such as liability, jurisdiction and sustainable funding.
4. The provincial government should lead the development of best management practices for the management of debris from fuel treatments.

Fire Management Planning, 2011

Based on these findings, the Board is making seven recommendations to the Ministry of Forests, Lands and Natural Resource Operations. The Board requests that the Ministry advise it of the steps taken to implement these recommendations by March 31, 2013.

Fire Management Planning

1. Government make fire management planning a high priority by ensuring current plans are up-to-date and moving quickly to Stage 2, which prioritizes values and defines where fire is wanted or unwanted, and under what circumstances.
2. WMB and land management staff collaborate to refine the current Fire Management Plan model to focus on information important to fire managers while remaining simple

and easy to access. First Nations, licensees, BCTS, local governments, and the public should also be included where appropriate.

3. WMB implement the digital delivery of geographic and land management information for fire management planning through an existing software platform such as Fireview. Fire Analysis
4. Standardize and automate resource valuation to the greatest extent possible to ensure that resources are valued consistently.
5. Develop a provincially consistent process to estimate potential fire spread so values at risk can be assessed consistently and efficiently.
6. Review monitoring practices for FAs to ensure that plans are regularly updated and that resource and wildfire managers' decisions are carried out according to the plan.
7. Ensure those completing the FA state clear objectives, strategies and tactics.

The Board also believes that Wildfire Management Branch has a role to play in managing public expectations around fire response. Its motto of "hit hard and hit fast" has conditioned the public to expect action on fires and it will be a challenge to help the public understand that smoke and fire are inevitable, and that not all actions are the same in all situations.

Finally, the Board strongly encourages government to place a high priority on full implementation of the Wildland Fire Management Strategy at all levels, including maintenance and use of fire management plans.

Landslide Occurrence Following Major Rainstorms on Vancouver Island, 2009

The Board suggests that forest managers and practitioners consider the possibility that large rainfall storm events may occur more frequently in the future. Forest managers and practitioners should recognize this potential for increased slide activity when planning future roads and cutblocks in coastal areas of BC.

The Board suggests that a risk-based approach should be developed to address the anticipated increased frequency of large rainfall storm events. Forest land managers and practitioners should begin to assess the effectiveness of current planning (such as cutblock boundaries and wildlife tree patches); operational activities related to roads (such as culvert sizing, maintenance, deactivation and cross drain spacing); and harvesting, given the anticipated increase in frequency of large rainfall storm events, not only along the coast of Vancouver Island, but in other parts of British Columbia. Specific emphasis should be placed on planning, road construction and harvesting occurring on slopes greater than 60 percent that have a high consequence if landslides occur.