

Climate Change Adaptation Workshop

Richmond, October 17th 2013

Personal observations of climate change:

- Yellow Cedar dieback
- Seasonal low flows
- Budworm, tussock moth
- Gall rusts and succession to Fd
- Swiss Needle Cast!
- Rain intensity – greater than previous – impacts roads, deactivation, fish
- Jet stream impact on duration and intensity of storms
- A shift in the timing of seasons
- Seems to be more storm events – random to some extent.
- Implications from Decadal oscillations – notice wild weather swings
- Less snow, more rain
- Multiple factors are occurring: some may be climate driven, others management, e.g. fire suppression and MPB impacts.
- Phenology of plants are changing
- Hunting seasons out of sequence with animal rhythms.
- Ocean currents?

What is Vulnerable and Where?

- Ski Resort development near Squamish – issue of snow at its elevation, cannot move upslope any further or onto a glacier.
- 2nd growth stands <are subject>to various pests and potential climatic influences
- Fire – dead pine in the interior
- Infrastructure:
 - Roads and flooding – localized and more acute
 - Water quality – filtration
 - Water quantity – dams or reservoirs may or may not be suited to future conditions.
- Fish – especially salmonids (temperature)
- Hydro – flow rates and timing
- Cultural impacts – e.g., loss of traditional use of fish.
- Recreational resources due to fire

Yellow Cedar Exercise

As a licensee, how would you deal with yellow cedar decline in future FSP revisions, specifically in terms of harvesting guidance and stocking standards?

- Ensure that the areas impacted are classified as Problem Forest types to promote their harvest.
- Change stocking standards to reflect the understanding of where Yellow cedar is problematic, and promote where it is suited. Use the model to help predict for both demotion and promotion.
- Possibly create multi-block standards to allow for flexibility.

Policy and Practice

1. As a land manager, how would you alter policy and practice to adjust for the ecological, economic and social impacts from the loss of yellow cedar?
 - Promote policy to allow for the direction provided above.
 - Promote salvage in a planned and coordinated fashion.
 - Maintain First Nations values through consultation.

Fire Exercise

Notes were not taken – the main point was to link opportunities for innovation using the following information to create stands that would provide a reduction in intensity.

Representative Canopy Bulk Densities (kg/cubic meter) for a single tree of the same size (approx 30cm dbh and 20 m tall). In order of decreasing bulk density – higher means hotter:

- Douglas-fir 0.00077
- Western red-cedar 0.00075
- Grand fir 0.00060
- Western hemlock 0.00054
- Lodgepole pine 0.00033
- Western white pine 0.00026
- Ponderosa pine 0.00022
- Western larch 0.00017

Fire Resistance

- High - western larch, ponderosa pine, Douglas-fir
- Moderate - western white pine, lodgepole pine, western red-cedar
- Low - western hemlock, grand fir, Pacific silver fir

Notes – Fire resistance is highly dependent on bark thickness (thicker is better), rooting habit (deep is better), branching habit (self pruning is better), foliage density (less is better) and associated species. Relationships and categorization vary with age and opinion.

Flammability

- Deciduous species are generally far less flammable than coniferous species.
- Western red-cedar may be considered the most flammable of the coniferous species considered due to its tendency to retain foliage and oil.