

# Climate Change Adaptation Workshop Notes

Nelson, October 30<sup>th</sup> 2013

## Personal observations of climate change:

- Wetter springs
- More invasive plants in more places
- Less snow to shovel – i.e., less snow overall
- No ice on West Arm as was found in the past.
- More intense summer rain.
- More rain on snow events and subsequent damage that it brings.
- More frequent avalanches.
- Changes in wildlife distribution – mammals moving north, also birds.
- Greater frequency of fire starts.

## What is Vulnerable and where?

- Fish – especially salmonids (temperature), high flows that can impact spawning habitat, low flows that limit movement.
- Ski hills
- Caribou in three of the four ranges in the area
- Any species that is on the fringe of its habitat
- All values that could be impacted by an increase in disturbance. Thus values should be considered in risk assessment and treatment decisions.
- Increased windthrow and impacts on habitat, forest health (e.g., spruce beetle), timber supply
- Hydro – flow rates and timing
- Transportation networks, roads on steep slopes, bridges, culverts – moving forward this can be addressed but there are many roads/culverts/bridges in place that are vulnerable. Need to risk rank.
- Rural communities and their water supplies – both wells and streams
- Rural communities and fire – as above with disturbance.
- Recreational resources due to fire

## Solutions to Barriers

- Encourage innovation
- Region and District need local autonomy – need Province to work with the Regions and Districts
- Operation trials to track innovation
- TSA committees (re-established) to encourage dialogue and working together – work on specifics, e.g., stocking standards, BEC and its use, inventory priorities, forest health issues...
  - ID higher risk areas (bring in consequences) and put into categories –e.g., triage, cannot afford to do everything everywhere.

- Build trust and respect amongst the group
- This is something that could lead to a coordinated planning process – where issues are identified spatially and inform research priorities.
- Needs to be an understanding of how to share risk (govt/licensee) – Need to look at Risk modeling and use it to help manage. There needs to be an understanding on accepting reasonable risk.
- There needs to be a way to address liability when one is being innovative – again the need to discuss how this can be shared – local and provincial discussions needed.
- Unrealistic G and Y - Improve monitoring – there is a need for baseline information – need for a government commitment
- Get clients to define wants
- Need to keep track of stands post free-growing
- Learn from what has been done – get out in the woods and see for yourselves
- Build communities of practice – see what has worked to date and not – look for causes and use to inform future decisions.
- Funding is needed for additional research and staffing. There is no additional money to fund initiatives to address issues as they emerge – e.g., birch die off
- Manage risk by encouraging diversity
- Cost recognition in the appraisal system for changing to species that cost more and may or may not be as reliable in the short term (i.e., moving species into areas they were not found). This is seen as a crucial issue as no one wants to be on the leading edge as this is seen as a sunk cost.
- For bridge and culvert costs, adjust the appraisal manual to address higher peak flows.
- Build knowledge and capacity – this can take many forms from simply getting out in the field and looking at past practices, to FREP monitoring, to new retrospective studies, to specific topic area training, to full phase management training. Presently understaffed and therefore difficult to find time to do additional information gathering.
  - Schedule a day a week or two days a month to get out of the office.
  - FREP could be used as a focused local approach to address issues or concerns.
- For Regional <climate change> Action Plans – identify performance measures that include assessing past practices along with sharing the results – e.g., lunchtime talks
- Develop action plans with stakeholders
- Incorporate the lens of climate change into all actions of day to day business
- Plans need to have a local focus and be collaborative.

## Species exercise

### Why would we promote or demote a species?

- To address overriding limiting factors – e.g., summer drought or snow issues
- Economic – commercial product attributes, cost of implementation (a real life concern that <investments on> a site that would benefit from greater species diversity would cost too much: essentially relating to the species to be demoted rather than promoted).

- Ecological suitability – flows from the work done by the ecologists on species suitability.
- Forest health risks and probability
- To address shortened rotation ages
- Seed availability
- Species autecology
- Current feasibility – can we get it established?

#### **For the ESSFwc4**

**Species to demote** – note this may take some time in areas of high snow as is presently found.

- Se and Bl – as the climate envelope will favour other species over time. Pl as it is a high risk species to many forest health agents.

**Species to promote** – this will be dictated by present day considerations for feasibility – the idea is to bring species in where feasible to increase the diversity.

- District to look into implementation strategies – Yc and Pw as they are not often found on the list for other units.
- Fd, Cw, Hw Lw all are seen as potential options.
- Sequoia or other species that are not presently in BC should be candidates if the conditions warrant it. Care must be taken not to create a pest problem.

#### **Who should be involved**

- Silviculturalists who have extensive knowledge of the area and what has worked where.
- Entomologists and pathologists to add their knowledge to potential shifts
- Local practitioners.
- Tree breeders and geneticists – note it may not species that are promoted or demoted, it may also include provenances – this is reinforced by the climate based seed transfer work that is underway.

#### **Information to use**

- Ecologists and their knowledge
- Seed transfer guidance
- Vulnerability assessment guidance.

#### **What will I do differently**

- Work on climate change based stocking standards
- Manage for microclimatic factors – possibly making smaller gaps
- Maintain large trees and habitat elements as legacies
- Discuss with co-workers on using the lens of climate change in day to day business
- Manage programs to be effective, try and avoid making decisions that have a very low likelihood of success based on climate change projections, e.g., Caribou relocation.