Policy and Genetic Resource Management Directions

or

Who moved my seed?

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Overview

• Setting the context
  – Major Forestry Issues
  – MPB
  – State of Forest Industry
  – Political Direction
• Climate Change & Forest Carbon
• GRM Challenge Dialogue
• Other TIB Initiatives and News
Major Forestry Issues

• **Mountain Pine Beetle**
• **BC Forest Industry** – Roundtable, Regulatory Review, Innovation, Community Transition,
• **Coast** – transition to 2nd growth
• **First Nations** – treaty negotiations, FN opportunities
• **Fire** Protection and Community and Interface
• **Managing for multi-values**: ecosystem-based management, visuals; water; wildlife (spp. at risk), NTFPs
• **Worker Safety** and **Succession**
• **Climate Change** – GHG mitigation and adaptation
Responses to the Mountain Pine Beetle

- Increase harvest levels in affected areas
- Protect the mid-term timber supply
- Mountain Pine Beetle Action Plan
- BC Bio-energy Strategy
- Forest for Tomorrow Program
State of Forest Industry

- Weak US market
- Strong Canadian $
- Increasing energy and transportation costs
- Softwood lumber sales decline
  - 24% compared to 2006 sales
  - 36% “2003 “
- Mill closures, reduced shifts
- Full AAC not being harvested
  ~75% of 80M m³ Provincial AAC
## Seedlings Requested vs. Planted 2005-2008

<table>
<thead>
<tr>
<th>Planting Year</th>
<th>Seedlings Requested (k)</th>
<th>Seedlings Planted (k)</th>
<th>Difference (k)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>227</td>
<td>209</td>
<td>18</td>
</tr>
<tr>
<td>2006</td>
<td>257</td>
<td>230</td>
<td>27</td>
</tr>
<tr>
<td>2007</td>
<td>270</td>
<td>236</td>
<td>34</td>
</tr>
</tbody>
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2008 = 214M seedlings requested
Minister Pat Bell’s – Top 4 Themes

1. Growing more trees and fibre - for diverse products and carbon storage; creating incentives to capture full value
2. Improving utilization standards
3. Expand markets – China
4. Promote wood construction in commercial and institutional buildings
State of Forest Sector – Seed Use Impacts

- Less area harvested = less seed demand (Licensees and BCTS)
- New and diverse seed users: Communities, First Nations, Bio-energy producers, carbon sequesters
- Increasing gov’t role in reforestation – FFT Program
- Continued demand for quality seed…. at reduced cost
- Optimize seed use efficiency
Climate Change Impacts

- Frequent Intense Storms
- Changing Fire Behaviour
- Insects and Disease
- More Severe Drought
## Climate Change Responses

**BC Government**
- Aggressive GHG reduction targets
- Western Climate Initiative
- Cap and Trade System
- Zero net deforestation
- Plant trees to store carbon
- Use wood over other products
- Bio-energy Strategy

**Ministry of Forests and Range**
- MFR climate change strategy
- Future Forest Ecosystems Initiative
- FFEI Science Council
- Forest Sector Climate Action Steering Committee
- Forest carbon management scenarios, protocols
- Climate modelling; seed transfer and species selection changes
Climate-based Seed Transfer

- **Interim changes Fall 2008**
  - elevation, latitudinal shifts for some spp.
- **Seed Transfer Models** – development, analysis, and selection
- **New seed transfer standards within 3-5 yrs**
- Tied to climate projections and species selection
- **Assisted Migration Trial**
- **Incremental changes** over time – allow for adjustments to investments in seed inventories and orchards etc.

Courtesy Greg O’Neill
CC and Carbon - Seed Use Impacts

- Changing species selection & seed transfer standards
- Increased species diversity – hardwoods
- Changes to breeding programs, seed production
- Increased use of seed from warmer areas – USA
- Shifts in use of existing seed inventories, ownership
- Seed supply in wild stands effected by increased pest damage and changes in reproduction.
- Some seed will become more precious, other redundant.
Genetic Resource Management (GRM) Challenge Dialogue

Purpose:

- to have a dialogue with GRM Community of Practice (COP) and stakeholders to create:

  a collective vision and strategy for GRM in BC
GRM Final Report & Strategic Framework

Forest Tree Genetic Resource Management – Strategic Framework (Logic Model)

Drivers

- Climate change
- Increasing plantations
- Genetic legacy of BC forests and future generations
- Mitigation of climate change impacts in the context of BC’s large forest management investments, and economic conditions
- Cost competitiveness of the forest industry
- Transition from old growth to other forest lands and tenure at the local, regional, and international levels
- National and international agreements, protocols, and obligations
- Market demands for new and improved forest and other products

Resources

- Forest Tree Genetic Resource Research in British Columbia
- GRM-Related Programs and Initiatives
- GRM Community of Practice: people, expertise, and skills
- GRM Governance, Operation, and Management: Research Branch, Forest Service, BC Tree Farm Licences, BC Forest Development Council

Objectives and Outcomes

- Core Business Objectives and Outcomes
  - Conservation: genetic diversity of representative populations of all indigenous tree species
  - Adaptability: genetic diversity of all indigenous tree species is maintained through a network of sites
  - Resilience: resistance of BC forests to climate change and pests and diseases
- Enabling Outcomes Objectives and Outcomes
  - Research: knowledge gaps regarding the genetic diversity, genetic worth determination, and adaptation to climate change and pests and diseases
  - Enabling Conditions: development of new and improved forest management systems

Impacts

- Strategic investments in genetic diversity will ensure the sustainability of BC’s forests
- The status of forest health and productivity will be maintained
- The infrastructure for forest management will be strengthened

British Columbia – The Best Place on Earth
GRM in BC

Vision

*BC’s forest genetic resources are diverse, resilient, and managed to provide multiple values for the benefit of present and future generations*

Scope

- Crown & Private lands
- Includes All 51 tree spp. in BC
- Indigenous, “migrated” and “exotic” spp.
- Timber & non-timber values
- Encompasses new technologies
Components of GRM

- 3 core business areas:
  - Conservation
  - Resilience
  - Value

- Enablers:
  - Research
  - Policy and Practices
  - Decision Support Systems
  - Communications
Outcome: The genetic structure and diversity of all indigenous tree species are adequately maintained to support their continued evolution while providing environmental services and social and economic values.

Objective: The genetic diversity of all tree species indigenous to BC is protected through a network of in-situ reserves, inter-situ populations, and ex-situ seed collections.
**Outcome:** Trees are well adapted to the projected climate of the areas in which they are planted, contain adequate genetic diversity, and where technically feasible, are resistant to pests, resilient, healthy, and form part of diverse forest ecosystems across the landscape.

**Objective:** GRM activities, including seed registration[^1] and transfer policies, aim to address the potential environmental impacts of climate change, including, changes to forest productivity and forest health risks.

[^1]: includes collection, processing, testing, verification, storage, distribution and tracking of seed.
Outcome: The genetic resource of indigenous tree species is developed to maintain and enhance a range of socio-economic values.

Objective: Sufficient seed of high quality and genetic value is produced through tree breeding, seed production, and related activities to meet reforestation objectives and enhance timber supply and quality.
Next steps in GRM

- FGC 5-year strategic plan 2009-2014
- Performance measures for GRM outcomes and objectives
- FGC and MFR annual business plans
- Guides GRM policies and practices
Other TIB Initiatives 2008-09

- Amendment to CF Standards – extend 95% transfer rule to multiple-license holders
- Processing unprecedented volumes of Pli cones and seed - 3 to 4 times more than 10-yr average
- Reviewing Cone and Seed Service Fee Schedule and Surplus Orchard Seed Prices
- Surplus Wild Stands Seed Prices = costs of acquisition (e.g. ground vs. aerial)
- Provincial level seed planning – - MFR Seed Stewardship Strategy - Seed Planning Checklist
- Updates to existing seedlot data – using GIS tools
- Developing tools to map seedlot collection areas
- C&E procedures and effectiveness evaluations of seed use
- State of Forest Reporting on Genetic Diversity
Sowing the Seeds of Change
based on ‘Who Moved My Cheese?’

Change Happens
- They keep moving the seed

Anticipate Change
- Get ready for the seed to move

Monitor Change
- Smell the seed to check its still ripe and robust!

Adapt To Change Quickly
- The quicker you let go of old seed, the sooner you can enjoy new seed

Change
- Move with the seed

Enjoy Change!
- Savor the adventure and enjoy the taste of new seed!

Be ready to change quickly and enjoy it again & again
- Keep moving the seed.
Congratulations!
Tree Seed Centre 50th Anniversary