- Idea originated during a tour of MPB affected areas in BC in 2007
- Realized retention was needed on attached plots to assess stand response after attack
- Successful FRIAA Open Funds Proposal in 2007
- Work started in 2008 as a joint initiative of the FGYA and the MPBEP
- Second phase funded through FRIAA Hazard Reduction and Forest Health Program

Photo: Weyerhaeuser Company, August 2, 2007
CONTRIBUTORS

- Protocols developed in collaboration with ESRD and University of Alberta scientists
- Industry and Government contributed PSP data
- Mountain Pine Beetle Ecology Program managed Phases 1 and 2
A network of 238 PSP
Covered 8 ecological strata
Plots were superimposed on an existing PSPs
Baseline data collected in 2008 on 149 plots
Clusters were selected to be check for ground infestation between 2009 and 2012 (basic monitoring)
Remeasured every two years after attack detected (detailed monitoring)
Rates of tree mortality and fall-down following MPB attack in Alberta are similar to those currently assumed based primarily on B.C. experience.

Natural regeneration of lodgepole pine will be insufficient to satisfactorily restock attacked stands without salvage or site preparation.

Rates of tree mortality and regeneration are influenced by site and stand variables.

Growth (modal height) and abundance (percent cover) of non-tree vegetation (shrubs, herbs, grasses, mosses and lichens) will increase after MPB caused mortality and will influence tree regeneration.

Abundance of key wildlife food species will be affected by MPB attack.

The growth rate of residual trees and saplings will increase after a stand is attacked by mountain pine beetle.
## Measurement History and Schedule

<table>
<thead>
<tr>
<th>Year attack detected</th>
<th>Plot owner</th>
<th># of attacked plots</th>
<th># of plots already re-measured</th>
<th># of plots scheduled for re-measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Canfor</td>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>ESRD</td>
<td>20</td>
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<td>20</td>
</tr>
<tr>
<td>2009</td>
<td>Canfor</td>
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<td>3</td>
</tr>
<tr>
<td></td>
<td>ESRD</td>
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<td>32</td>
<td>32</td>
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<tr>
<td></td>
<td>Weyco</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>63</strong></td>
<td><strong>21</strong></td>
<td><strong>42</strong></td>
</tr>
</tbody>
</table>
DATA COLLECTED

- Saplings: species, dbh, height, and height to live crown, plus ESRD condition codes
- Regeneration: species and height class
- Non-tree vegetation: percent cover and modal height, dominant species, and important food species
- Ground cone counts
- Dead trees: species, MPB attack stage and pitch-tube count, other ESRD condition codes
DATA COLLECTED

- Green attack: species, pitch-tube count, other ESRD condition codes
- Arboreal lichens: abundance class assessed on a minimum of 16 trees per plot
- Tree cone serotiny: assessed on a minimum of 16 trees per plot
- Ecological site class: will be assessed on 23 plots it has not already been collected
**DELIVERABLES**

- Database with data collected from 2008 to 2016
- Quicknote 1 *Project description and progress report*
- Quicknote 2 *Tree mortality in attacked stands – preliminary results*
- Quicknote 3 *Progress report*
- Quicknote 4 *Summary of results and implications*
- Scientific description of analyses and results, including quantitative models of mortality and regeneration trends
- Description of results and management implications
PERSONNEL

- Dick Dempster, PhD—principal investigator
- Sharon Meredith, MScF, RPF—project and data manager
- John Stadt, MSc—government collaborator
QUESTIONS?