Collaborative growth and yield research: Bigger really is better!

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Director, Forest Growth Organization of Western Canada
Outline

• FGrOW background
• Long-term trials
• Provincial Growth and Yield Initiative (PGYI)
• Other collaborative projects
• Growth and yield summit
• Western Boreal Growth and Yield Association (WESBOGY)
• Foothills Growth and Yield Association (FGYA)
• Mixedwood Management Association (MWMA)
• Alberta Forest Growth Organization (AFGO)
• Tree Improvement Alberta (TIA)
The Problem

- Administrative burden of managing multiple associations
- Inefficient use of members’ time attending multiple meetings
- Lack of communication between associations
- Potential for duplication of effort
- Lack of coordination between tree improvement and growth and yield efforts
The Solution

- Amalgamate into one association hosted by fRI Research
- Members write one cheque
- Work of associations continued through project teams
- Tree Improvement Alberta is a project team
- Common annual general meeting and business meeting
- Regular research priority setting
FGrOW Today

A driver of changes in practices

A member-driven organization

A leader in cooperative growth and yield research

A supporter of policy development

Edson Forest Products

Hinton Wood Products

MILLAR WESTERN

ANC Timber Ltd.

Vanderwell

Blue Ridge Lumber

West Fraser

Manning Forest Products

Alberta Agriculture and Forestry

CANFOR

Weyerhaeuser

Northland Forest Products

Alberta Plywood

West Fraser Mills Ltd.

TOLKO Industries Ltd.

Saskatchewan Ministry of Environment

West Fraser

Edson Forest Products

LP

Sundre Forest Products

Spray Lake Sawmills

Norbord
• Model started through WESBOGY
• Trials designed by researchers
• Installed, measured, and maintained by members
• Data managed by the association
WESBOGY Long-term Study

- Designed by Steve Titus
- Aspen and spruce interactions at different densities
- Established beginning in 1990 by 11 agencies
- Randomized block design
  - 1 block per agency
  - Two installations in each block
  - Two replicates of a series of 15 plots
WESBOGY Long-term Study

- Data used for development of the Mixedwood Growth Model (MGM)
- Other grad student projects
- Supporting other projects
  - FRISPY
Regenerated Lodgepole Pine Trial

- Designed by Dick Dempster, FGrOW Research and Development Associate
- Established in beginning in 2000
- Range of ecosites across the upper and lower foothills
- Replicated split plot design
- 102 PSPs, each two 4 subplots
Regenerated Lodgepole Pine Trial

- Impact on growth and survival of:
  - Site type
  - Spacing
  - Treatment (herbicide and thinning)
- Results used to develop a regeneration model
- Data being used for MGM validation
Realized Gains Trial

- Growth of improved stock when operationally deployed
- Designed Sally John and others
- Installed and maintained by members
- Data managed by TIA, housed in the PGYI database
Provincial Growth and Yield Initiative

• PGYI is known affectionately as “piggy”
• Intent to create a dataset for growth model development, calibration and validation
• All FMA holders and Alberta Agriculture and Forestry are participating
• Data is in a consistent format
• Stored in a single database
• Participants have access to other companies’ data
PGYI Database

- Participants upload their own data
- Rigorous QC process
- Users can download data
- Managed by FORCORP
## Current Submitted Data

<table>
<thead>
<tr>
<th>Stand Type</th>
<th>Stand Origin</th>
<th>Number of plots</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plots</strong></td>
<td>Natural</td>
<td>1,310</td>
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<tr>
<td></td>
<td>Managed</td>
<td>1,281</td>
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<tr>
<td><strong>Total Plots</strong></td>
<td></td>
<td><strong>2,591</strong></td>
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<tr>
<td><strong>Plot Measurements</strong></td>
<td>Natural</td>
<td>2,776</td>
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<tr>
<td></td>
<td>Managed</td>
<td></td>
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<tr>
<td></td>
<td>Natural</td>
<td>707</td>
</tr>
<tr>
<td></td>
<td>Planted</td>
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<tr>
<td></td>
<td>Seeded</td>
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<tr>
<td><strong>Subtotal</strong></td>
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<td><strong>4,312</strong></td>
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<tr>
<td><strong>Total Measurements</strong></td>
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<td><strong>7,088</strong></td>
</tr>
</tbody>
</table>
Uses of PGYI Data

- Mixedwood Growth Model (MGM) Validation
- Empirical Post Harvest Assessment Project
- GYPSPY Development
- Company internal analyses
Collaborative Projects

- Understory release
- Stand breakup and mortality
- Improving site index estimates
- Impact of losing herbicide as a tool
- Thinning and fertilization response
Growth and Yield Summit

- Growth and yield crisis across Canada
- Universities losing growth and yield capacity
- Few analysts being trained
- Lack of knowledge amongst practitioners
- Shortage of qualified field staff
• More consistency with a single director
• Things are less likely to be missed
• Initiation of research based on collaborative priority setting
• Facilitated sharing of data between researchers and analysts
• Increased capacity for communications
• More efficient meetings and administration for members
Thank you!