

# Collaborative growth and yield research: Bigger really is better!

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**fRI** *Research*  
Informing Land & Resource Management



# Outline



- FGrOW background
- Long-term trials
- Provincial Growth and Yield Initiative (PGYI)
- Other collaborative projects
- Growth and yield summit





# Alberta G&Y History



- 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



**Hinton Wood Products**  
*A division of West Fraser Mills Ltd.*



Manning Forest Products



**Sundre Forest Products**  
*A division of West Fraser Mills Ltd.*



Spray Lake Sawmills



Edson Forest Products



# Long-term trials

- 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



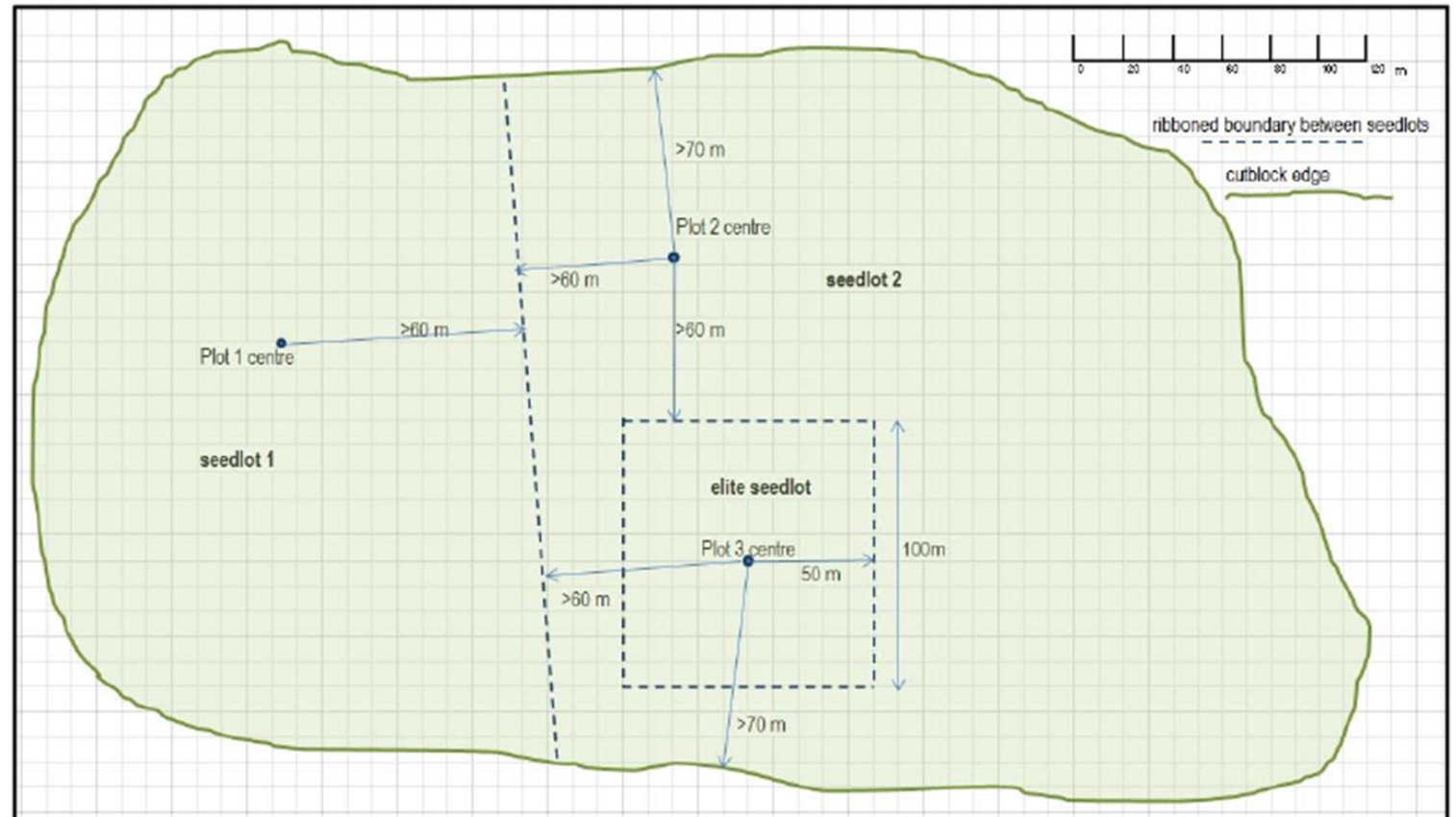


# Realized Gains Trial



- 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

Site layout: three seedlots, wild (composite seedzone), orchard, and elite

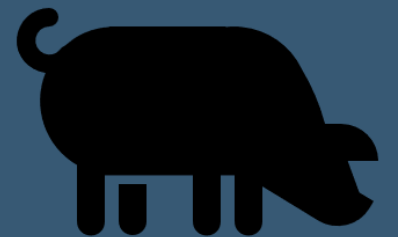




# Provincial Growth and Yield Initiative



- 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

The screenshot shows the FORCORP PGYI Database interface. The top navigation bar includes 'FORCORP', 'Home', 'Search', 'Search<sup>Beta</sup>', and 'Reports'. The 'Reports' section is active, showing a 'PGYI Export' option under the 'Plots' category. A dropdown menu for 'Company' is open, listing various companies including ALPC, ANC, BLUE, CFPL, CFS, DAIS, FORCORP, GOA, HLF, MDFP, MHJ, MWWC, SFPI, SLPC, SPRA, SUND, VAND, WYGP, and WYPM. A warning message states: 'This request requires approval. A zip file containing eight CSVs of PGYI plot data. This report may take awhile to generate due to the quantity of data.'

The screenshot shows the 'Plot Submission' details window for record E022935. The window displays the following information:

| Reference | Type | Last Modified | Company              | Location |
|-----------|------|---------------|----------------------|----------|
| E022935   | Plot | 2019-Jun-19   | CANADIAN FOREST P... |          |

Plot Submission Details:

- Contact: Logan Purdy
- Company: CANADIAN FOREST PRODUCT...
- Created By: Logan Purdy
- Created Date: 2019-Jun-19
- Type: Completely Replace Plots
- Validation Results: Download
- Validation Level: WARNING

Files included in the submission:

- disturbance.csv
- photo\_avl.csv
- plot.csv
- plot\_measurement.csv
- regeneration.csv
- treatment.csv
- trees.csv
- trees\_measurement.csv

Additional interface elements include filters for Type, Grantee, Grantor, Stage, and Assigned To, and a status bar at the bottom showing '1 record found' and 'Auto Zoom'.



# Current Submitted Data

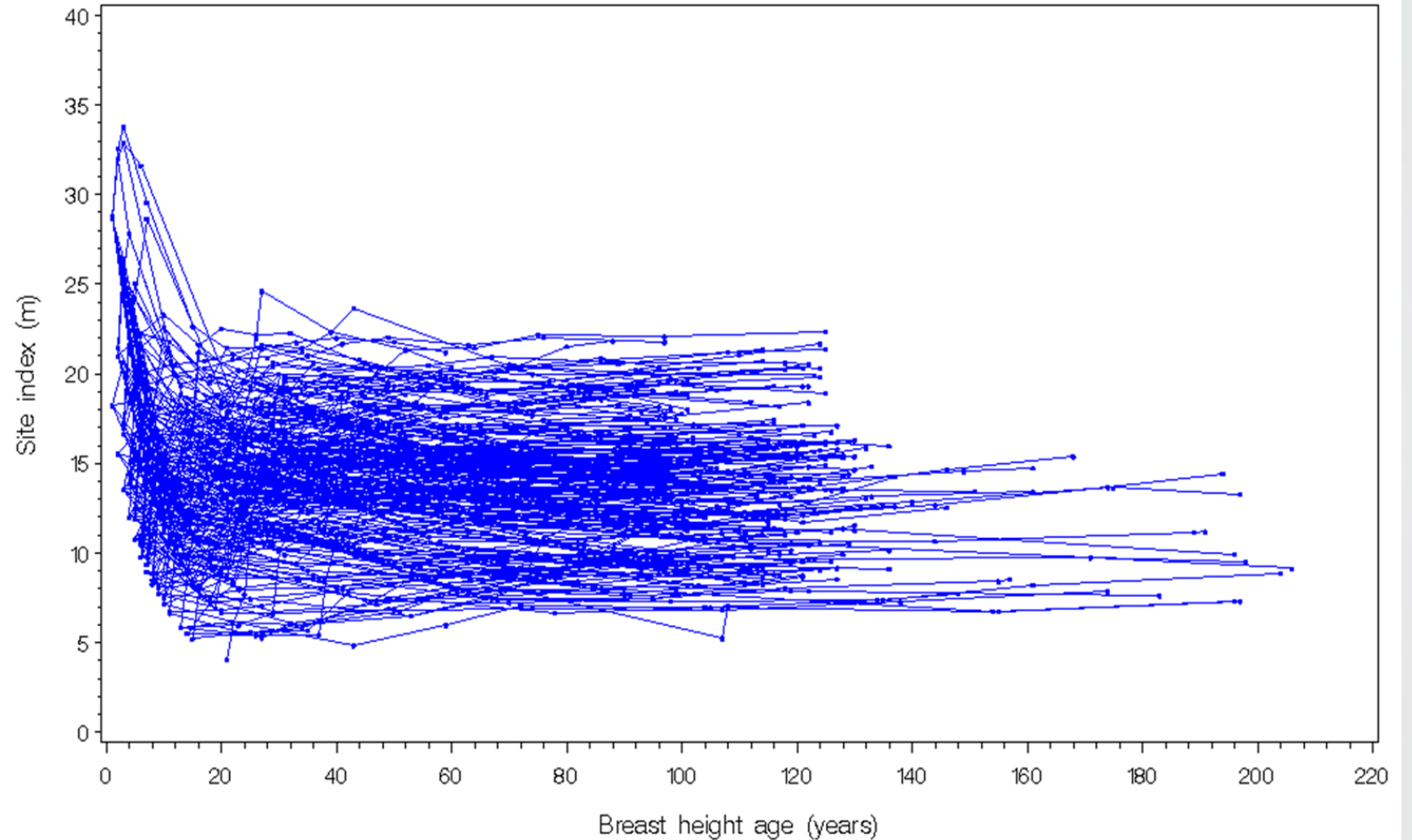


|                                 | <b>Stand Type</b> | <b>Stand Origin</b> | <b>Number of plots</b> |
|---------------------------------|-------------------|---------------------|------------------------|
| <b><i>Plots</i></b>             | Natural           |                     | 1,310                  |
|                                 | Managed           |                     | 1,281                  |
| <b>Total Plots</b>              |                   |                     | <b>2,591</b>           |
| <b><i>Plot Measurements</i></b> | Natural           |                     | 2,776                  |
|                                 | Managed           | Natural             | 707                    |
|                                 |                   | Planted             | 3491                   |
|                                 |                   | Seeded              | 114                    |
|                                 | Subtotal          |                     | 4,312                  |
| <b>Total Measurements</b>       |                   |                     | <b>7,088</b>           |

# Uses of PGYI Data



- Mixedwood Growth Model (MGM) Validation
- Empirical Post Harvest Assessment Project
- GYPSY 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





# Bigger is better

- 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!