

A photograph of a forest with tall trees and green foliage. The text is overlaid on semi-transparent grey boxes.

Forest Co-op Science Day

**Growth & Yield Science Unit
Permanent Growth Plot Program
2011**

John Parton, MNR

1

A photograph of a forest with tall trees and green foliage. The text is overlaid on semi-transparent grey boxes.

Plotting The Future

**PGPs as a Foundation for
Decision Making**

2

Plot Sightings – More Than Just Trees...



3

Setting The Context

- The Crown Forest Sustainability Act, 1994, requires that every forest management plan contain “a description of the future structure, composition and condition of the Crown forest.” (CFSA 68(5)(c))



4

It's All About Forest Cover

MANAGEMENT OBJECTIVE

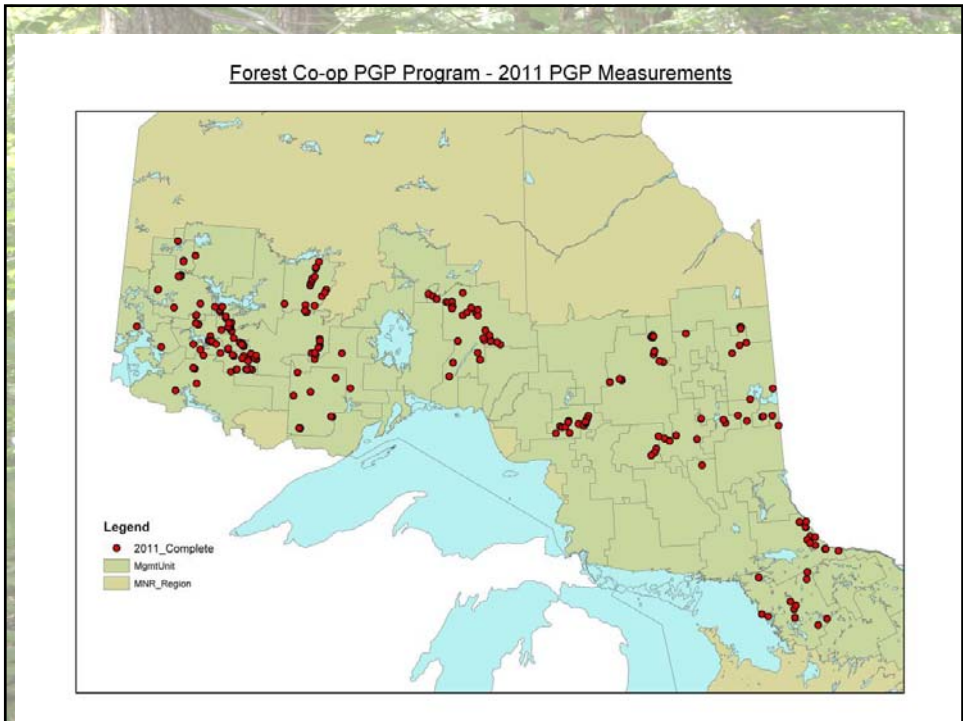
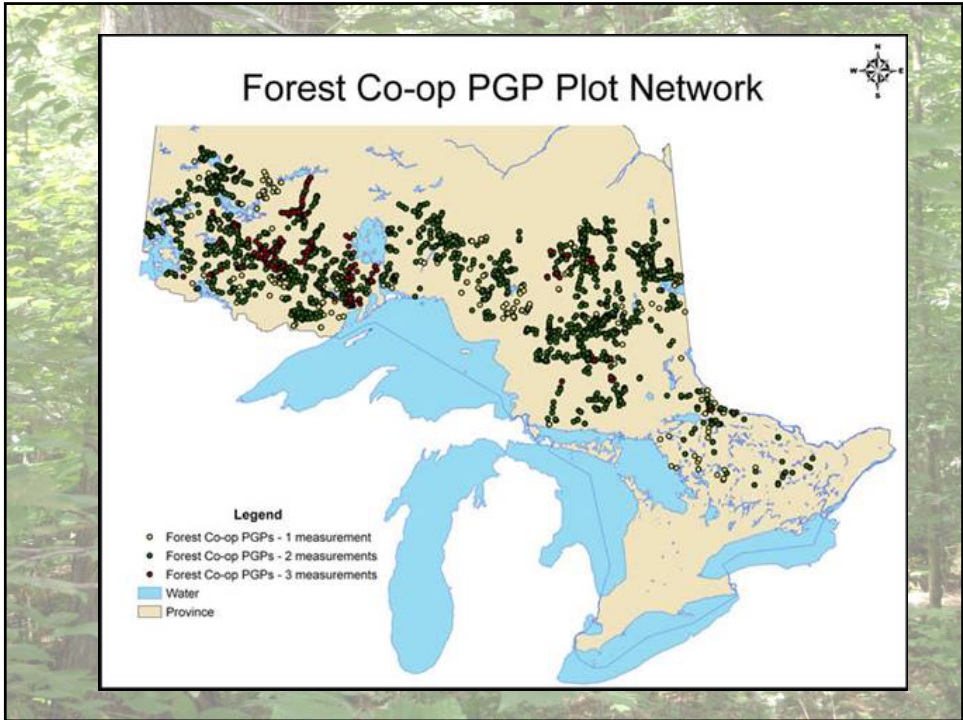
“A statement of quantitative or qualitative desired future benefits or conditions, developed specifically for the management unit, that are to be achieved through the manipulation of forest cover. (FMPM 2009: G-14)”

5

The Nuts And Bolts

The yield curves and growth projections will:

- (a) be **consistent** with growth and yield models developed through Ontario's growth and yield program;
- (b) be developed using **relevant data, collected to approved data collection standards and accepted modelling principles**;
- (c) be validated with independent **local data**, when available;
- (d) be developed to represent **forest units and silvicultural intensities** (FMPM 2009: A-29)

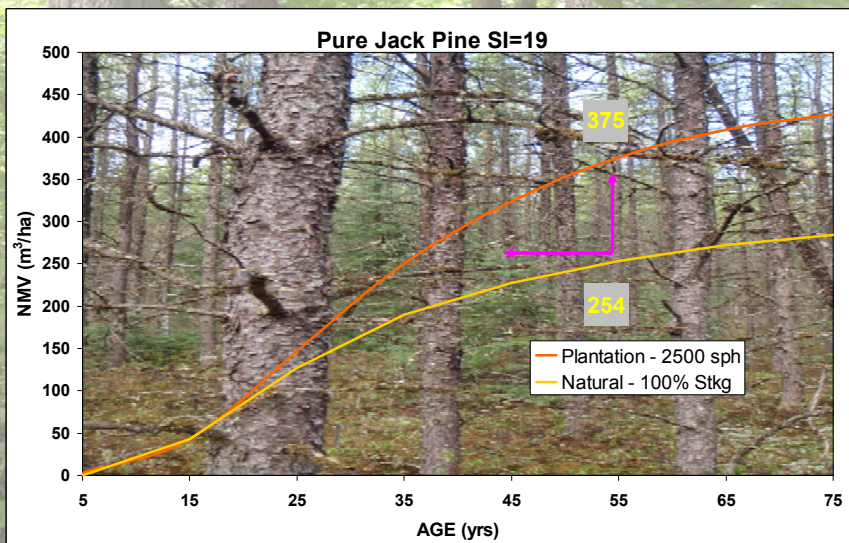


Some Nuisance Facts

Establishment Year	Count	Number of Msrs
1999	80	230
2000	252	729
2001	483	959
2002	542	1076
2003	489	969
2004	316	625
2005	264	470
2006	76	132
2007	60	60
2008	20	20
	2582	5270

Number of Individual Trees with a dbh measurement	308057
Number of Individual Trees with a height measurement	51353
Number of Individual Trees with an age measurement	12465

Return On Investment



What's The Next Trick...

Any projected changes to forest stand description attributes will normally be based on accepted growth algorithms. The height attribute may be adjusted using height, age, species composition, and site class information based on regression formula which simulates the results found in yield tables. Growth projection models/algorithms must be supported by growth and development information or analysis of permanent sample plot data. (FIM 2009: 53)

11

The Basis for Good Decisions

- “Good clean data and information are key to timber supply forecasting” (Larry Pedersen, 1999)
- “Poor quality information may cause both direct costs (such as costs due to late delivery of timber to a mill) and indirect costs (costs due to suboptimal decisions concerning harvest timing).” (Kangas et al. 2010)
- “the value of information stems from the ability to make better decisions if new information is available.” (Kangas et al. 2010)

12

A Pathway To Success

- PGPs have played and continue to play a vital role in our ability to describe, explain or predict aspects of succession such as pathways of succession (the temporal pattern of vegetation change).

13

So ...The Basis For Good Decisions Is Good Data – But Here's The Kicker

- “the more the decisionmaker dislikes risk, the more he or she should be willing to pay for information”
(Kangas et al, 2010)

14



A View To The Future

- PGPs cover a sufficient range of growing conditions (e.g., stand density, stand management history, and site) to permit the study of growth patterns for both trees and stands relative to these factors. The repeated measurement of PGPs over long-term time horizons permits for the modelling of stand dynamics.

15



A Critical Choice

- It takes a great deal of principle, determination, and blind luck to maintain a series of permanent plots over a period of time long enough to answer relevant questions about tree and stand growth and yield and forest succession.

16



Not Just A One Trick Pony

- PGPs are also valid for monitoring the effects of management practices and their value grows proportionally to the length of the observation period. They help answer the fundamental question—do the envisaged changes in plant communities really take place, and at their assumed timing and rate.

17



Seeing Through The MIST...

- PGPs are a major source of data underlying MIST, a critical planning tool used in the development of 'long-term management direction', and they continue to play a strong supporting role. In 2011, we measured 260 plots, ~ half of the eligible plots.

18



Questions?