

# Foothills Growth and Yield Association



## A successful collaboration.

Foothills Research Institute supports Foothills Growth and Yield Association, a collaboration of nine Alberta forest companies who continually improve forecasting and validation of managed stand growth and yield, particularly of lodgepole pine. Projects are selected based on their utility for stand level forecasting, their scientific defensibility, relevance and value to forest managers, and their cost effectiveness. Field projects include:

1. Lodgepole pine regeneration (2000-2010)

Foothills Growth and Yield Association installed 408 field plots across the forested landscape of Alberta to annually measure, monitor and forecast the development of lodgepole pine regenerated after harvesting.

2. Comparison of pre-harvest and post-harvest stand development (2002-2004)

The Association completed a comparison of pre-harvest and post-harvest site indices, presenting the final report of this work in 2004 at a major international forestry conference.

3. Cooperative management of historic research trials (2001- ongoing)

In 2001, Foothills Growth and Yield Association with representatives from the Canadian Forest Service and Alberta government visited a number of abandoned Canadian Forest Service growth and yield trials, concluding that they were invaluable resources for forecasting, monitoring, and demonstrating the effects of nutrition and density management. Foothills Growth and Yield Association signed an agreement with the Canadian Forest Service for cooperative measurement, maintenance, and analysis of these trials.



4. Regional yield estimators (2002-2006)

The Association cooperated with Alberta Sustainable Resource Development, which wished to link growth and yield models to the Alberta Vegetation Inventory, enabling Alberta Sustainable Resource Development to report credibly on both the current state of provincial timber resources, and their rate of growth.

5. Enhanced management of lodgepole pine (2004-2009)

This project is focused on filling information gaps in nutrition and density management of both fire-origin and post-harvest stands.

6. Regeneration management in a mountain pine beetle environment

High levels of infestation and mortality in the lodgepole pine forests of Alberta are expected, yet the knowledge with which to address post-infestation treatment is rudimentary.

## Post Harvest Stand Development

The FGYA has completed a comparison of pre-harvest and post-harvest site indices. In 2004 results were presented at a major international forestry conference and published in the conference proceedings. The specific purpose of the comparison was to provide credible and reliable forecasts of post-harvest site index, for the main site types of interest to members, relative to pre-harvest values. The study demonstrated that regeneration practices following harvesting are capable of increasing site index and fibre production relative to that of fire-origin stands, most likely because of differences in initial stand densities relative to those of fire-origin stands. However, these shifts are not without associated risks and residual uncertainties. Priorities were identified for enhancing productivity, managing risks, and reducing uncertainties. Although the original objectives of the project have been met, the FGYA will undertake or encourage further work to:

1. Validate the initial results;
2. Confirm the role of stand density management in the observed differences;
3. Explore the implications to yield forecasting of post-harvest stands having different stocking-density relationships to fire-origin stands;
4. Integrate knowledge from the disciplines of genetics, silviculture and forest health into the prediction of yield following harvesting.



Foothills Research Institute is a leader in developing innovative science and knowledge for integrated resource management on the forest landscape through diverse and actively engaged partnerships.

The Foothills Research Partnership Ltd. landbase is located in west-central Alberta, and is based in the resource community of Hinton, some three hours west of Edmonton. It covers roughly 2.75 million hectare (27,500 square kilometres), and embodies Jasper National Park of Canada, the Willmore Wilderness Park, and the Forest Management Area of Hinton Wood Products, a Division of West Fraser Mills Ltd. It also includes some provincial "crown forest management units" and the Hinton Training Centre's Cache Percotte Training Forest. Within its boundaries are three forest areas—boreal, montane, and sub-alpine—and many forest uses including timber, petroleum, and coal extraction, tourism, and recreation.

We welcome inquiries: Box 6330 Hinton, Alberta Canada • T7V 1X6 • T: 780.865.8330 • F: 780.865.8331 • [foothillsresearchinstitute.ca](http://foothillsresearchinstitute.ca)

