

Monitoring of Stand Development after Mountain Pine Beetle



Working with the Mountain Pine Beetle Ecology Program of the Foothills Research Institute, in 2008 we established a network of 240 plots to monitor impacts of beetle attack on stand development, using permanent sample plots already installed by the Alberta government and forest industry, and making additional measurements to determine baseline pre-attack conditions. Attacked plots are being re-measured on a 2-year cycle. A preliminary decision-support tool has been developed, forecasting the effects of infestation and silvicultural interventions on post-attack stand development.

Pine – Aspen Density Management Study

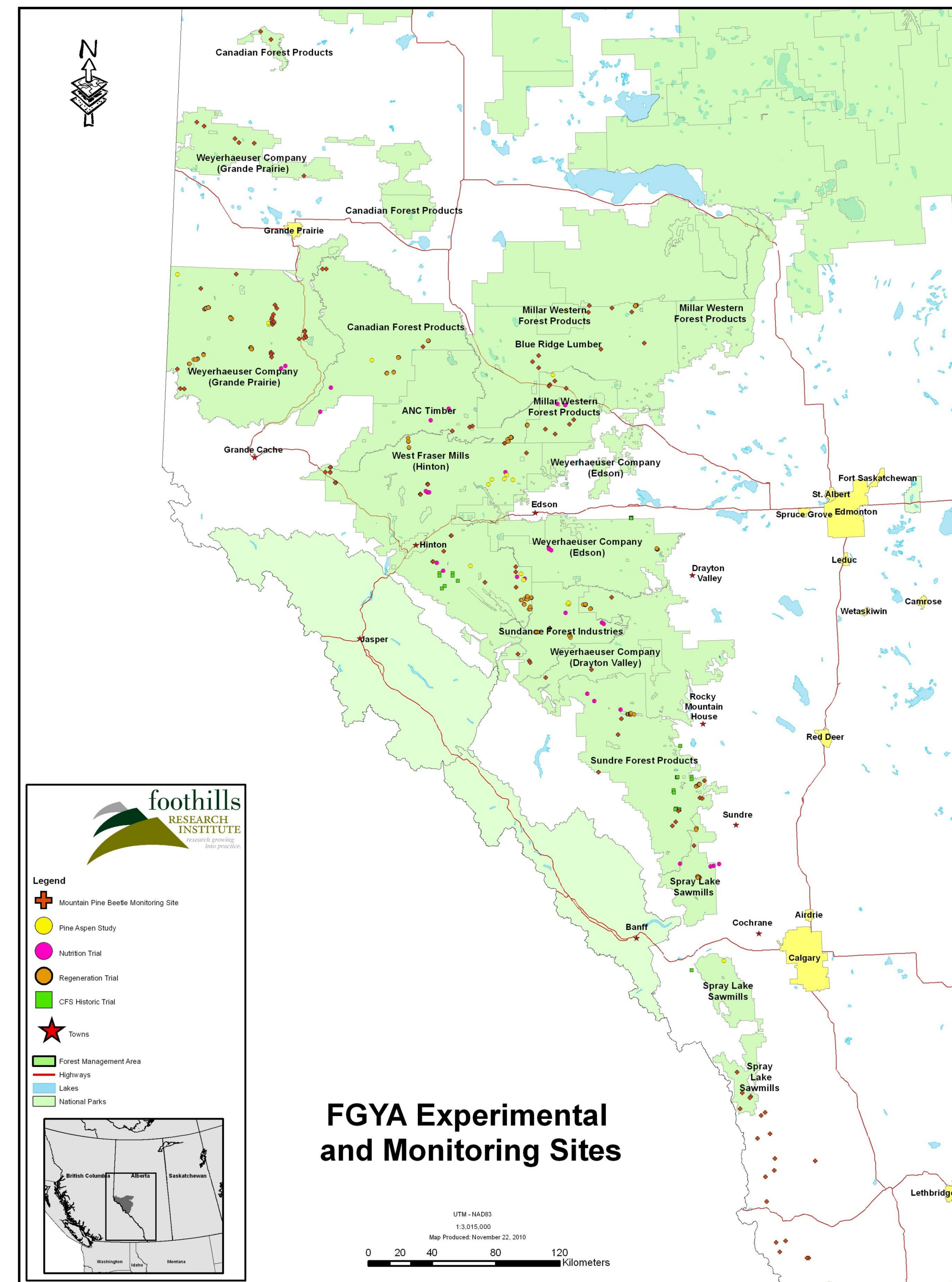


The study was undertaken in cooperation with University of Alberta researchers, led by Dr. Phil Comeau, to examine effects of aspen on lodgepole pine in western Alberta. During 2006 and 2007 a total of 18 installations were established with 6 installations located in each of the three age classes (10-20, 20-30, and 30-40 years old). For comparison between the lower and upper foothills, 9 installations (3 in each age class) were located in each sub-region. Results show that competitive effects of aspen on pine growth can be estimated using basal area or other simple competition measurements.

Nutrition Trial



The trial was established in 2005 and 2006, again in cooperation with the University of Alberta. Plots were fertilized in 30 stands, of which 15 were young (10 – 30 years of age) and of post-harvest origin, and 15 were older and of natural fire-origin. A thinning treatment was included in the young stands. Foliar responses were assessed at 1 and 3 years after treatment, and initial growth response was measured after 3 years. Data from the trial have been used to assess the effects of thinning and fertilization on snow damage, foliar nutrient uptake, diameter growth and root carbohydrate concentrations.



Our Mission

The mission of the FGYA is to continually improve the assessment of Lodgepole pine growth and yield in managed stands by:

- Forecasting and monitoring responses to silvicultural treatments;
- Facilitating the scientific development and validation of yield forecasts used by members in managing their tenures;
- Promoting knowledge, shared responsibility and cost-effective cooperation.

Historic Research Trials



The Association entered into an agreement with the Canadian Forest Service and the Alberta provincial government to provide forest managers with the continued benefit of historic field trials, some established over 50 years ago. Ongoing activities involve maintenance and protection of the field installations, periodic re-measurement, analysis, and interpretive signage. The history and current results of the trials have been documented and published. Data are being used to test growth and yield models and strategies for the management of pine stands in the Foothills.

Regeneration Trial



102 plot clusters, each 1 ha in area, were established between 2000 and 2002 as a controlled and replicated experiment to monitor the growth of lodgepole pine, regenerated after harvesting, in relation to site, planting density, brushing and pre-commercial thinning. Currently the main focus of measurement and analysis is monitoring regeneration performance and incorporating the results into predictive regeneration models. The data collected have already demonstrated trends in mortality of planted stock, ingress of natural regeneration, and other stand dynamics with significant implications for forest management.

Other Projects

Other projects conducted by the FGYA include:

- Development and management of the Association - planning, field coordination, technical meetings, field tours, data analysis and dissemination of information;
- Comparison of pre- and post-harvest stand development;
- Yield estimation - testing of growth and yield models for application in the Foothills region.

For further information, please contact the Foothills Research Institute at 780-865-8330.

