

## Timmins Area FRP Research Project Update

By *Scott McPherson*

### **1) Effects of herbaceous vegetation control and aspen stem density on boreal mixedwood stand development, FRP project 130-301 (6331)**

This study, led by Dr. Doug Pitt (CFS), is providing valuable information for boreal mixedwood management from installations in Whitecourt, Alberta and Timmins, Ontario. Effective and practical mixedwood management strategies are needed to meet the increasing demands for both conifer and deciduous fibre, while maintaining these ecologically important mixed forests on the landscape. Initiated in 2002, this research project will contribute to our understanding of silvicultural regimes necessary to regenerate white spruce and trembling aspen mixtures on upland boreal sites. The hypothesis being tested is that a relatively low density of white spruce (e.g., 400 stems/ha) can be planted and managed on an individual-tree basis, while aspen are grown to an early technical rotation in the intervening areas between the spruce. The aspen may enhance spruce stem quality and will provide a cash crop midway through the spruce sawlog rotation. A key objective of the study is to explore the relationship between early competition control around the planted spruce and aspen stem density, so that mixed yields of the two species might be optimized.

After four growing seasons in Alberta, and three in Ontario, there are already some important messages evident from this study:

- Effective control of both woody and herbaceous competition is beneficial to the early growth of white spruce.
- Treatments which only control woody vegetation lead to increases in herbaceous vegetation and can result in reductions in survival over those observed without treatment.
- Two-meter radius, individual-tree treatments appear to have potential for the establishment of spruce and aspen as intimate mixtures.
- Through four growing seasons, adjacent aspen have not hindered the growth of planted spruce and appear to be offering some benefit in mitigating climatic extremes and reducing exposure injuries.
- Long-term monitoring is needed to document the dynamic interactions between these two species, as established, and formulate practical regeneration strategies and crop plans for spruce-aspen mixedwoods.

The recently completed Partner's Report for the 2006 field season provides more detail on the project and current results. It can be downloaded at:

[http://www.forestresearch.ca/product\\_catalogue/Reports/Partner%20Report%20-%20Sw-Ta%20Comp%202006%20v06-02-07.pdf](http://www.forestresearch.ca/product_catalogue/Reports/Partner%20Report%20-%20Sw-Ta%20Comp%202006%20v06-02-07.pdf)

## 2) Implementation of Enhanced Forest Productivity: A Pilot Project on the Romeo Malette Forest, FRP Project 6251-00

After five years of research involving more than 120 projects, the Forestry Research Partnership (FRP) has initiated a pilot project designed to operationally validate new and ongoing FRP products. The pilot is the first on-the-ground manifestation of the FRP's strategy to increase wood supply in an ecologically sustainable context. With the aim of maximizing productivity on carefully selected "prime sites", FRP products are being incorporated and implemented with existing state-of-the-art knowledge and tools as harvest-to-harvest sequences of silvicultural best-practices. This systematic approach will integrate advanced planning, intensive silviculture, enhanced protection, and thorough monitoring to create flagship illustrations of how silviculture can be used to improve productivity and to restore and diversify Ontario's forests. As such, this project aims to act as a catalyst for enhanced productivity on the Romeo Malette Forest and other forests across Ontario.

The project is being planned and implemented by a team that includes Tembec forest management staff, Ontario Ministry of Natural Resources personnel from the District and Northeast Science and Information Section, Millson Forestry Service, and the Canadian Forest Service – Canadian Wood Fibre Centre. The team is working to merge high-tech inventory with leading-edge forest modeling, and silvicultural science with operational practice, to set the standard for the credible implementation of enhanced forest productivity. Elements of the project include

- state-of-the art spatial modeling to aid in prime site selection,
- enhanced forest inventory including LiDAR to optimize operational planning, including block and road engineering,
- careful, high-utilization logging,
- thorough mechanical and/or chemical site preparation with timely planting of high quality stock, and timely and effective vegetation management, and
- density regulation defined by long-term crop plans.



*Members of the FRP's NE Enhanced Forest Productivity Core Team*

The recently completed Partner's Report for 2006 provides more detail on the project. It can be downloaded at:

[http://www.forestresearch.ca/partnership\\_projects/spatial\\_analysis/120-501\\_Partner\\_Report\\_2006.pdf](http://www.forestresearch.ca/partnership_projects/spatial_analysis/120-501_Partner_Report_2006.pdf)