FIA–FSP Forest Science Corner

FIA Forest Investment Account Forest Science Program

2007/2008 FIA–FSP Program

The Forest Investment Account–Forest Science Program (FIA–FSP) will invest almost $14.5 million in 2007/08 to support research and extension projects that will promote sustainable forest management in British Columbia. More than $2 million of that funding will go towards research that will help in the province's battle with the mountain pine beetle infestation.

The FIA–FSP funds a range of research, knowledge synthesis, and extension activities that contribute to three FIA goals:

- supporting sustainable forest management practices
- improving the public forest asset base
- promoting greater returns from the utilization of public timber

Within the research projects, more than $4.4 million will go towards projects in the sustainability program, $3.3 will be invested in timber growth and value research, $2.1 will go towards mountain pine beetle research, more than $900,000 towards proponent-driven research, and over $700,000 will go towards long-term research installation maintenance. More than $2.8 million will be invested in extending the results of that research.

In our last issues of the FIA–FSP Forest Science Corner we explored some of the diverse projects that are receiving support from the Forest Investment Account–Forest Science Program. In this issue we highlight projects focussed on:

- *the effects of our planning and management practices;*
- *the potential cost reductions in treating mountain pine beetle (MPB)-affected areas;*
- *the MPB's effects on our non-timber resource values; and*
- *the measures we can use to improve sustainable forest management.*

Projects research aspects of ecosystem structure, function, and processes

A priority theme area within the Forest Science Program's Sustainability area is "Ecosystem structure, function, and processes." One of the many researchers working to provide the operational community with information in this area is **Chuck Bulmer** from the BC Ministry of Forests and Range. Using innovative field tests that describe soil physical conditions throughout British Columbia, Bulmer's ongoing project will provide improved information to forest managers and researchers about the effects of soil disturbance and rehabilitation on forest productivity. More specifically, this project aims to:

- identify soil physical conditions that are consistent with productive forest growth on disturbed and undisturbed soils in a variety of ecosystems;
- develop and introduce management tools for the rapid evaluation of soil physical conditions in British Columbia's forests; and
- describe a comprehensive picture of physical factors affecting the growth of tree roots, and its variation, for a range of sites and soil types.

A University of British Columbia (UBC) graduate student, under the supervision of project team member **Dr. Maja Krzic,** will provide a comprehensive description of how soil physical conditions affect forests.

Ruth Lloyd, from the Bulkley Valley Centre for Natural Resources Research and Management, is investigating the survival and development of residual immature subalpine fir in clearcut areas between 1995 and 2000. Project results will guide the abundance and configuration of future residual immature tree retention in clearcut areas.

Researchers are focussing on the survival and growth of sapling and pole-sized immature trees that remain in the cutover area after clearcut harvesting—defined as trees > 1.5 m in height and < 17.5 cm diameter at breast height (DBH)—as these will be easily distinguishable from planted stock and, due to their larger size, have greater potential to contribute to diversity in the developing stand. These retained immature trees have several purposes, including providing habitat in clearcut areas. This will enable other tree species to survive through the initiation phase, to keep growing during stand development, and to reach "large live tree" size by rotation age.

A project from UBC's **Fred Bunnell** is evaluating how strategic zoning can improve the efficiency of timber production. Maintaining biodiversity at the landscape level can be achieved through the coarse filter approach of strategic zoning. Strategic zoning works well in situations where objectives for managing the land base are conflicting, incompatible, or large scale. Zoning distributes the objectives into separate geographic areas where they will have less impact on each other, and limits the area of production while encouraging more intensive production. In this project, Bunnell selected a zone allocation model which uses ecological, economic, and social indicators to locate zones over large landscapes. The project focusses on:

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- creating a credible, transparent modelling tool that can produce efficient zone patterns;
- detailing the opportunities of zoning versus multiple use; and
- establishing reliable data sources.

The end result of this research will be more rigorous definitions of the ecological indicators used to value zoning solutions. To be effective in the long term, ecological indicators must contain stand structural elements and allow for temporal components. This study shows that strategic zoning can improve the efficiency of timber production while still meeting biodiversity objectives.