



FIA–FSP 2005/06 investments and

For more information related to these research strategies, or a list of the projects funded during the 2005/06 fiscal year, visit: <http://www.cortex.ca/fia-fsp/>

by Kathie Swift, *Early Stand Establishment Extension Specialist*

During the 2005/06 fiscal year, the Forest Investment Account, Forest Science Program (FIA–FSP) invested approximately \$8.3 million in forest research in the Province of British Columbia. This investment focussed on five areas. The first two areas of focus were the Sustainability Program (68 projects worth \$4.2 million) and the Timber and Value Program (59 projects worth approximately \$3.3 million). The third area of focus was providing investments in New Proponent-driven Proposals (\$116,340), which fall within the general research program, but are on topics not identified as the annual priority. The final two areas of focus were Long-term Research Installation Maintenance (\$666,708) and Research Partnerships (\$25,500).

The 2005/06 fiscal year saw the Sustainability Program and the Timber and Value Program redefine their priority themes and topics from those of 2004/05 fiscal year. The Sustainability Program identified three priority themes:

- ecosystem structure, function, and processes, and biodiversity related to forest management;
- sustainable forest management indicators, targets, and monitoring systems; and
- scientific information to inform policy, regulations, and *Forest and Range Practices Act (FRPA)* practice requirements.

The 2005/06 focus for the Timber and Value Program was also redefined into the following four priority themes:

- basic research on tree growth and stand development;
- design and analysis of silvicultural systems;
- growth and yield modelling/predictions; and
- timber losses to environmental factors (wind, drought, insects, and disease).

During 2005/06, provincial focus increased on mountain pine beetle (MPB) research needs. Nine projects were funded to look at various aspects of MPB research including the following: regeneration and stand structure following MPB infestations in the sub-boreal zone; success rate of MPB attack in young stands; maximizing log truck efficiency when transporting logs from MPB-killed stands; monitoring soil disturbance on MPB-harvested areas; determining the impact of MPB-killed forest and elevated harvesting on snow accumulation; and the projected impacts on melt and peak flow.

In 2006/07, both the Sustainability and the Timber and Value Programs released drafts of their 2006–2016 research strategies. In these strategies, the two programs identified their research priorities for the next 10 years, subsets of which were used for the FIA–FSP 2006/07 call for proposals. Although similar to the priorities used in 2005/06, three new priorities have been added for the 2006/07 call, including:

- decision support tools for sustainable forest management associated with the Sustainability Program;
- marketable resources other than timber; and
- climate change associated with the Timber and Value Program.

Highlights from some 2005/06 FIA–FSP projects

SIBEC Site Index Estimates, version 2006

Contact: Shirley Mah, Allen Banner, and Gordon Nigh—Research Branch, BC Ministry of Forests and Range (MOFR)

Over 300 Site Series–Biogeoclimatic Ecosystem Classification (SIBEC) samples were collected in three Biogeoclimatic Ecosystem Classification (BEC) subzone/variants (Interior Cedar–Hemlock, moist cold 1, moist cold 2, and very wet and cold), which will translate into improved site productivity estimates for the Kispiox and Nass areas of British Columbia. New site index estimates resulting from these data will be presented in the soon-to-be published report “Site Index Estimates by Site Series: Report by Biogeoclimatic Unit” on the SIBEC Web site this April: <http://www.for.gov.bc.ca/hre/sibec>

Collaboration pays high dividends—a portion of the SIBEC plots will contribute to establishing an ecosystem recovery study in Interior Cedar–Hemlock ecosystems. This study will characterize the development of several ecosystem components, including growth and yield, understorey and overstorey vegetation, stand structure, epiphytic communities, and soil biota after timber harvesting.

Critical information for policy development and management of non-timber forest products in British Columbia: Baseline studies on economic value and compatible management

Contact: The Centre for Non-Timber Resources at Royal Roads University

This project consisted of two sub-components: Non-Timber Sector Commercial Activity and Non-Timber/Timber Compatible Management. Both sub-components involved surveying individuals and organizations connected with the non-timber sector to assess the level of activity in British Co-



a look to the future of research

lumbia. Results indicated there is a high degree of awareness, interest, and activity in the non-timber forest product (NTFP) sector.

The Commercial Activity sub-component found that the current trade values for wild harvested mushrooms have been declining over the last decade and are estimated to range in value between \$10–42 million annually. Current international trade values for floral greens appear to have increased over the last decade and are estimated to range in value between \$25–50 million. On a regional basis, it is estimated that NTFPs are used by over 35% of the East Kootenay population and have wide usage related to various demographic indicators such as ethnicity, income, education, and ages. Researchers also found that the lack of required reporting for volumes and values of NTFPs has led to the continual problem of not being able to accurately assess the economic contributions of these forest products. This, in turn, has led to the inability of forest managers to incorporate NTFPs into operational plans and has prevented policy makers from getting the necessary information to develop appropriate regulations in BC.

The survey for the Compatible Management sub-component sought to determine the level of NTFP incorporation into forest management plans. There were 287 responses received and respondents identified a wide range of both benefits of, and barriers to, the management of forests for both timber and non-timber values. Among the major barriers were the lack of defined property rights for NTFPs, poor communication between the timber and NTFP sectors, and the absence of information necessary for forest managers to effectively incorporate understorey species into management plans and forest practices.

TASS III: Simulating the management, growth and yield of complex stands

Contact: Jim Goudie—Research Branch, MOFR

This 2005 multi-year research project relates to integrating and calibrating new and revised modules (already developed) into a new version: Tree And Stand Simulator (TASS) III. For those unfamiliar with TASS, it is a growth and yield model that is applied to managed, even-aged stands across the province. The new version, TASS III, will include functionality based on redesigned and new modules and features appropriate for a wider range of stand types, species mixtures, and complex treatments. Improvements have initially focussed on a select number of high-priority tree species (lodgepole pine, coastal and interior Douglas-fir, western hemlock, interior spruce, and trembling aspen) and

stand types (mixed cedar–hemlock and uneven-aged, dry-belt Douglas-fir in the Southern Interior Forest Region; pine–spruce and aspen–spruce mixtures in the Northern Interior Forest Region; coastal Douglas-fir and western hemlock variable retention stands in the Coast Forest Region) for which sufficient calibration and validation data sets can be located. It is expected that by 2008, these modules will be available in TASS III to improve decision making for a broader range of stand types.

Modelling the impact of stand management activities on the wood characteristics of lodgepole pine

Contact: Jim Goudie—Research Branch, MOFR

This FIA–FSP project will enhance TASS by adding key components to model the effects of stand management activities (e.g., variable retention, initial stand density, thinning, pruning, and tree improvement) on the predicted wood properties and lumber characteristics of lodgepole pine (*Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm). Destructive sampling of lodgepole pine in the Central Interior will provide data upon which to develop relationships between the distribution of current crown characteristics (foliar biomass or leaf area) and key ring variables. This, in turn, will predict associated wood characteristics such as relative density, percent earlywood, percent latewood, fibre length, and coarseness. In addition, measurements of the distribution, size, and growth rate of branches will provide information to generate knot populations for each tree. This information will then be passed to two-dimensional and three-dimensional sawmill simulators already linked to the MOFR's decision-support system. Results also will be used to recommend appropriate management regimes to enhance stand values. 🌲

FORREX director and his Alluvial Fan Team are one of three Premier's Award finalists



Photo, from left to right sitting: Matt Sakals, Kandy Schroder, Wendy Bergerud, Robin Pike standing: Bill Grainger, Dave Wilford, Jessica McDonald, Deputy Minister to the Premier, Tom Millard, and John Innes. Missing from photograph: Roy Sidle and Paolo Cherubini.

FORREX's vice-chair, Dr. Dave Wilford and his Alluvial Fan Team were recently selected as one of three finalists for the Premier's Innovation and Excellence Award for solving problems associated with road building and logging on alluvial fans. Included in the team are FORREX Board Directors, Partner representatives, and an Extension Specialist. The team's research formed the basis of two operational handbooks and province-wide extension, as well as scientific underpinning for the *Forest and Range Practices Act*. More details: http://www.bcpublicservice.ca/premiersawards/2005/finalists/2005_innovation.htm