

Forest resource research in the Cariboo Forest Region

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INTRODUCTION

The investigation of important forest resource management issues is documented in a list of 342 projects that include scientific experiments, operational trials, and monitoring. Most of the projects, particularly the newer ones, engage a team of scientists and practitioners to clearly define a complex operational resource management issue and to test options from which successful results can be applied in the field.

Challenges for forestry research in the Cariboo Region include—

- Implementation of higher-level plans: technical assistance from research staff and initiation of trials to resolve operational issues.
- Results-based Forest Practices Code: research to define desired end results with extension to practitioners.
- Forest product certification: a range of research involvement, including defining standards and providing data on criteria and indicators.
- New technology: the use of geographical information systems (GIS), remote sensing, and new technological tools in forest management.
- First Nations: studies, extension, training, and collaborative work on traditional use.
- Partnerships: SIFERP and NFREP (Northern Forest Research and Extension Partnership) are two examples.
- Stand management: mixedwood management and meeting biodiversity objectives.
- Forest health: detection methods, population monitoring, and modelling of attack levels for mountain pine beetle.
- Global warming: documenting changes in species ranges through monitoring and research.
- Framework for long-term research: committed, permanent funding for program stability.

INVESTMENTS

In 1999, we provided a summary of forest resource research projects in the Cariboo Forest Region. This synopsis was updated from a September 1998 summary and included information from: the Alex Fraser Research Forest at the University of British Columbia; the ministries of Forests and Environment, Lands and Parks; Lignum Ltd.; Simon Fraser University; and the Science Council of B.C. The summary lists 342 projects that are active or complete. Most trials include two or more agencies and at least two researchers. The list does not include undocumented operational trials and may exclude some individuals or agencies.

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A significant proportion of early research, begun in the mid-1970s, was conducted by the Ministry of Forests on aspects of reforestation, including stock types, site preparation, and microsite planting.

Research personnel in government and academic institutions tend to remain focused on specific studies for relatively long periods. An intangible, but real investment, is the expertise and commitment research personnel invest in established trials and in participating in new research.

TRENDS

The titles of the listed projects show that research design has shifted from a generally focused approach that investigates a discrete problem, to one that employs a multidisciplinary methodology. The investigators and the agencies involved bring a broad base of collective expertise. Most current research will be applied to solve field-based operational issues that require immediate application for resource management decision making.

Specific technical trends in forest resource research include:

- Adaptive management and operational-scale research: “learning from doing.”
- Increased emphasis on extension to apply, share, and communicate information. The Southern Interior Forest Extension and Research Partnership and Northern Forest Research and Extension Partnership are helping to advance and formalize extension.
- Silvicultural systems, which provide alternative harvesting, regeneration, and tending practices, to increase options for those based on clearcutting.
- A reduction in new reforestation trials; to continue instead with older trials now producing valuable knowledge for operational application. Reforestation research is also being included more broadly under silvicultural systems.
- Biocontrol for forest health and vegetation management.
- Studies on biodiversity, with operational application of new knowledge, proposed in an Innovative Forest Practices Agreement (IFPA) forestry plan.

CHALLENGES

Challenges for forestry research in the Cariboo Forest Region include the following.

Implementation of Higher-level Plans

Implementing the Cariboo-Chilcotin Land Use Plan (CCLUP) has required technical input from government research and technical staff on strategies for biodiversity and key ungulate species. As well, some research trials were initiated to test the accommodation of multiple resource use, such as timber harvesting and habitat maintenance. Public attitudes about forest practices have changed, but changing practices also affect communities and local economies. Both ongoing and new research is required to find workable solutions.

Results-based Forest Practices Code

The administrative streamlining of the Forest Practices Code and the subsequent establishment of “results-based” pilot projects in late 1999 has increased reliance on professional decision making in planning and prescriptions. A results-based approach requires clearly defined and desired results for research to address, such as riparian management zone widths, wildlife tree patch area requirements, a free-growing definition, and stocking standards.

Practitioners require the technical results of research and operational trials for interpretation and application. Extension is, therefore, a critical component of a results-based Forest Practices Code.

Forest Product Certification

Research involvement in certification will include input and review for the development of certification standards. Within the standards, research information will be required for guidelines and conservation attributes, and to contribute an understanding of ecosystem functions and values. Further researchers, and research work, may be needed for monitoring and assessment, including data for specific criteria and indicators.

New Technology

The development, use, and refinement of new technology for application in a wide range of forest management activities is a growing issue in resource management. GIS applications, remote sensing, and high technology tools in all aspects of forest planning and management are increasing in significance. Examples include remote sensing to detect and map forest health concerns, visual quality modelling, and the use of GIS in resource management planning.

Additionally, technology generally reduces the labour required for a given task. Technological application must be co-ordinated with various employment measures to maintain employment and a well-trained workforce.

First Nations

With the legal requirement to protect archaeological and traditional use values in forest resource management and planning activities, traditional knowledge is becoming increasingly valued. Traditional use studies, training, extension, and collaborative efforts are helping to address gaps in understanding. Research staff, particularly botanists, may be called to confirm the presence of culturally important sites through confirmation of key plant species.

Partnerships

Partnerships among research agencies, First Nations, government agencies, industry, and communities are a growing aspect of resource-based research. These partners ensure that research design incorporates all necessary factors and that the application of results will be suitable for the intended users.

Stand Management

Mixedwood and non-conifer management provides options to achieve biodiversity objectives and apply ecosystem management concepts. Research trials on riparian and soil restoration projects are helping to maintain forest productivity.

Forest Health

The recent rapid rise in populations of mountain pine beetle requires detection methods, population monitoring, and modelling of attack.

Global Warming

Global warming will gradually shift tree ranges to produce off-site trees from formerly site-adapted genotypes. The reactions of insects and pathogens to stressed trees will likely produce increased forest health challenges. The reinstatement of biologically based forest health surveys to supplement operational surveys is important to accurately monitor projected changes in forest health conditions.

Framework for Long-term Research

As government-funded forest resource research currently heads for another projected decline, alternative mechanisms for forestry research are required. Research investment needs facilitation through new means, possibly including increased security of tenure for major licensees to merit such investment.

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