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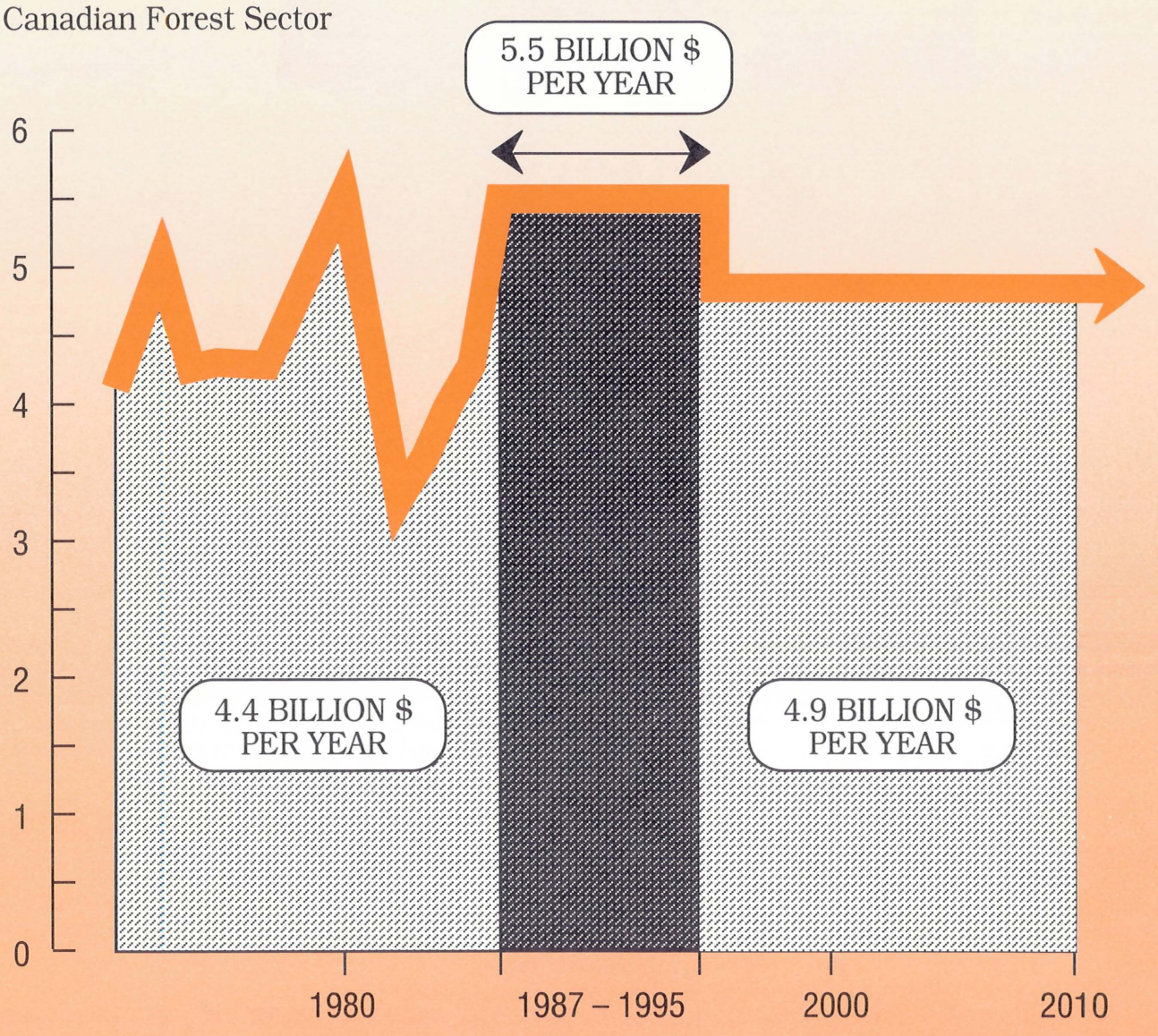


Total Capital Spending Required to Achieve World - Wide Competitiveness

Forestry Canada Forêts Canada

Computer Technology Advances at the Pacific Forestry Centre

by David Reichheld and Maria Stewart

Thanks to user demand, technology in the computer world is continually growing. Computer users know what they want to be able to do with their computer systems, but for companies to meet the needs of users they also have to know. Sometimes, as with the Pacific Forestry Centre, the needs of users are satisfied through their own ingenuity—and when that happens the computer company may also benefit.

Guy Gondor (standing) and Jack Pannekoek continue to work on solving computer problems. (Photo by Tamara Patkau)

"We started using ALL-IN-1 on the VAX minicomputer in 1986," said Dr. Jack Pannekoek of the Pacific Forestry Centre (PFC), "but there are still some employees of PFC who use microcomputer applications. When Forestry Canada introduced the Integrated Management Planning System (IMPS) — a microcomputer application — we found we really needed to connect the mini- and microcomputer."

A microcomputer can process as many bytes of information as a minicomputer but it cannot transfer, or 'bus' the information as quickly. A microcomputer typically handles one user, but a minicomputer can handle tens to hundreds of users because of its greater ability to transfer information.

When a microcomputer board is put into the larger minicomputer, it becomes a multi-user facility. The microcomputer board uses some of the minicomputer's resources so more users can access microcomputer applications. This is called virtual micro technology.

"IMPS wasn't the best application for our regional needs," adds Guy Gondor, Jack Pannekoek's partner in the project and a software specialist at PFC, "so we began working on an application that would allow access to many users (IMPS users could only input on one specific computer terminal). It just made sense to try and integrate ALL-IN-1 with the microcomputer application we were developing to satisfy our needs as well as Headquarters'."

Off to Silicon Valley

The Pacific Forestry Centre turned to Virtual Microsystems Inc. (VMI), located in the Silicon Valley, for the bridge to link the micro- and minicomputer. But PFC had special needs that required almost constant consultation with VMI.

As much as VMI tried to anticipate the needs of its customers, it was becoming an increasingly difficult task. They decided to ask representatives from the most demanding customers to sit in on a Customer Advisory Council. Officials from Ford Motor Co., Price Waterhouse and BP Canada were included. Dr. Jack Pannekoek went to represent PFC, and to claim success in an area that had defied the technical efforts of the others: a transparent link between the minicomputer using ALL-IN-1 and the microcomputer.

"We're working toward complete integration between the mini- and microcomputer world," says Guy. "With our virtual micro interface technology the user doesn't see whether he's in the minicomputer or the microcomputer world."

Jack and Guy also design custom applications, like their Management Information Planning System (MIPS) which not only allows access to many users but is also more efficient for their regional needs than IMPS. Though MIPS is a microcomputer system, it looks and functions like ALL-IN-1.

The problem with the early micro-to-minicomputer bridge systems was that users had to learn two different operating systems: the ALL-IN-1 environment they used on the VAX, and the MS-DOS user interface they used to access applications like Lotus 1-2-3 or Symphony. This involved memorizing different commands and prompts, and presented frustrating technical difficulties. Attempts by other organizations to integrate VMI's bridge with ALL-IN-1 had all ended in failure.

Key to technical evolution

"It took us about four weeks to build the interface," says Jack. "Our experience paid off. There are very few people in the software world who understand all the layers of technology in something like this."

Jack and Guy succeeded in making microcomputer applications transparently accessible from ALL-IN-1: only one system to learn.

Users of VAX systems could now focus on ALL-IN-1. Commands and prompts are translated by the new virtual micro technology into appropriate microcomputer commands, all invisible to the terminal user who sees the familiar ALL-IN-1 menu.

It is the invisible interface that has spurred Virtual Microsystems Inc. to continue a dialogue with PFC. No other company has been able to create an invisible interface to connect the VAX ALL-IN-1 office automation environment with microcomputer applications. If VMI could exploit this discovery it may be the key to furthering their success in the computer world.

"We're at the forefront of one aspect of technical evolution at PFC," says Jack. "Our thinking on integrating systems under ALL-IN-1 is only one component in a larger picture. But we're probably two or three years ahead of other government, and many corporate, information systems."

There are hints of closer involvement in the future between Virtual Microsystems Inc. and the Pacific Forestry Centre. In the mean time, PFC staff can enjoy the benefits of an integrated user interface that will make ALL-IN-1 office automation much more versatile, and therefore, make work a lot easier.

Report highlights increase in forest management

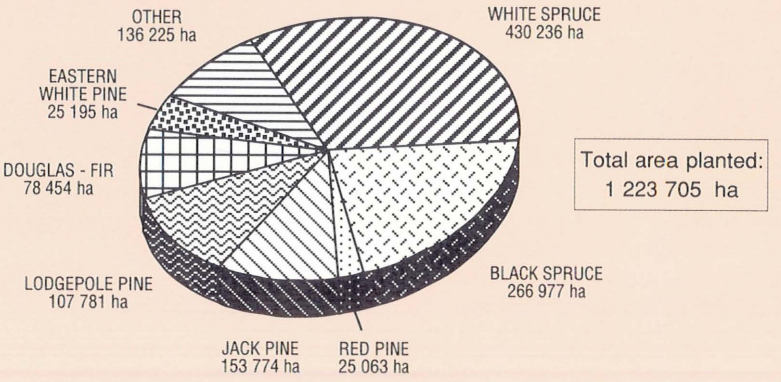
A national report recently released by Forestry Canada reveals that the area of land planted across the country more than doubled from 1975 to 1986, and stand tending increased 479% from 1975-85.

Silvicultural Statistics for Canada: An 11-year Summary, also reveals a trend toward more intensive mangement of our forests and includes other important statistics.

The report states that the increasing use of good forest management techniques by provincial agencies and forest industries is contributing to a positive outlook on the state of the country's forests. The amounts of replanting and stand tending are particularly important to Canada's ability to maintain an acceptable timber supply.

The report is part of a national effort by Forestry Canada to provide current information on the status of Canada's forests, and is based on data supplied by the forest management agencies in each province.

Copies of the report, in english or french, are available from Forestry Canada, Northern Forestry Centre, 5320-122nd Street, Edmonton, Alberta, T6H 3S5.



SPECIES PLANTED 1980 - 85

Mixedwood Symposium

Investment opportunities and managing northeast British Columbia's mixedwoods will be the topics of a symposium featuring international speakers September l2-l4, 1989 in Fort St. John. "The northern mixedwoods of western Canada are one of the hottest investment areas in the forest industry today," said federal Forests Minister Frank Oberle, whose department is one of the sponsors.

"There is tremendous potential for forestry investment in the mixedwoods of northern British Columbia," added provincial Forests Minister Dave Parker. "Managing this complex resource poses a challenge to all land managers and the "Northern Mixedwoods '89" symposium is designed to address some of these challenges."

The symposium is being co-sponsored by Forestry Canada and the B.C. Ministry of Forests under the Canada-British Columbia Forest Resource Development Agreement (FRDA). Northern Lights College at Fort St. John is assisting with organizing the conference.

Speakers from Canada, the United States, Finland, Sweden and the Soviet Union will address resource planning, silviculture, multiple use, harvesting and timber use.

A trade show, to be held at the same time, will allow delegates to view state-of-the-art equipment. There will also be field tours to observe current practices or to discuss future management options.

About 300 delegates are expected to attend. Fort St. John was selected as the site for the symposium because of strong community support, its location relative to the subject, and the tremendous potential for future investment in the area.

Further information can be obtained from Walter Matosevic, Forestry Canada, Prince George (561-5350) or Ken Pendergast, B.C.F.S., Fort St. John (787-3302)

GIS '89 — A Raging Success

by Maria Stewart

All connected with the recent International Symposium on Geographic Information Systems (GIS) were overwhelmed by the event, which drew over 800 people - almost triple the anticipated participation.

As the federal minister of forestry, the Honourable Frank Oberle, remarked at the opening session, "We succeed best with products which we develop to address our special needs." GIS is one of those products.

GIS is a computerized mapping system connected to a data base and Canada has been on the cutting edge of the technology. The world's first true GIS was the Canada Land Inventory.

Forestry Canada's focus has been on developing uses for GIS in such areas as forest weed control and to predict insect attack.

"The key is its analyzing ability, not just the maps. GIS enables you to obtain all the bits and pieces without having 15 open files on your desk," says Art Shortreid, technology transfer and development officer at Pacific Forestry Centre.

GIS '89 is the third of such events, attracting more and more people each year. The first Symposium was held in Manitoba in 1987 and the second in Alberta last year.

GIS technology is growing in government for managing land-based information, and in the private sector for analyzing the cost and availability of wood fibre and for assessing the impact of land uses.

This year's Symposium was co-sponsored by Forestry Canada under the Canada-British Columbia Resource Development Agreement (FRDA) and Reid, Collins and Associates, and was held at Canada Place in Vancouver, last March 7-10.

The Symposium gave participants the opportunity to review the present state-of-the-art technology and to exchange expert views, particularly of those currently using the technology in forestry.

Speakers came from Canada, Scandinavia, and the U.S. There were three hands-on tutorials, a trade show exhibition with 39 booths and four pre-Symposium workshops.

Participating in the GIS '89 opening ceremonies were (l-r) Martin Vreesland, co-chairman (Reid Collins & Associates); Hon. Frank Oberle, Minister of State (Forestry); and Mike Heit, co-chairman (Forestry Canada)

The Symposium gave participants the opportunity to review the present state-of-the-art technology and to exchange expert views

Successes and suggestions

Participants rejoiced in the excellent organization and overall professionalism of the event, particularly satisfying were the pre-Symposium workshops, especially Workshop #1 - Introduction to GIS.

Almost 550 people attended either the workshops or the concurrent tutorials during the four days. The subsequent evaluation showed that respondents' level of knowledge of GIS technology definitely increased, proving the educational significance of the event.

Along with the successes connected with the event, many suggestions were made that could help when planning for next year's Symposium.

Most of the suggestions centred on applications. Participants felt a need to examine real-life applications and to analyze the real benefits of using GIS versus traditional methods. They want to explore what is practically feasible not what is technically feasible, and to have more operational details provided.

"The Symposium was such a success we've already booked for next year," says Art. GIS '90 will take place March 13-16 at Vancouver's Canada Place.

A report containing all 36 Symposium speeches will be released the middle of June.

New Appointment

Dan Peterson

Dr. T. John Drew, Director General, Forestry Canada, Pacific and Yukon Region is pleased to announce the following new appointment to the staff of the Pacific Forestry Centre.

Dan Peterson recently joined the staff of the Pacific Forestry Centre to assist the Development (F.R.D.A.) program. His areas of study include the optimization of silvicultural investments and the integration of stand and forest level management.

Prior to his employment with Forestry Canada, Mr. Peterson attended the University of Alberta, obtaining his B.Sc. in Forest Economics.

Thai Princess Visits P.F.C.

The Pacific Forestry Centre was honored recently by a visit of Professor Dr., Her Royal Highness, Princess Chulabhorn Mahidol of Thailand (second left). The Princess has a Ph.D. in organic chemistry and is the Director of the Chulabhorn Research Institute in her country. While in Canada she lectured at the University of British Columbia, University of Ottawa and Laval University. She took time to pose with (l-r) Ambassador Chawat Arthayukti, Thai Ambassador to Canada; the Princess; Tom Lee, A.D.M., Operations, Forestry Canada; Dr. Bob Dobbs, A/Dir-Gen., P.F.C.; and Dr. Caroline Preston, P.F.C. research scientist who arranged the tour at the Centre. (photo by T. Patkau)

COOPERATIVE PROGRAM TO PROMOTE B.C. WOOD PRODUCTS

A cooperative government/industry program to promote British Columbia manufactured wood products was launched recently.

Known as the Cooperative Industrial and Market Development program, it will provide up to $6.85 million to increase production and exports from the industry to world markets. Both the federal and provincial governments will each provide 40% of the costs, with the manufactured wood products industry contributing the remaining 20%.

Increased emphasis will be placed on higher value added production which in turn will help provide new production and employment opportunities as well as ensuring efficient utilization of forest resources.

The program will go a long way to assist British Columbia's secondary wood products companies take advantage of increasing market opportunities. Diversification of markets and a wider base of higher-value products will help the wood products sector in British Columbia to expand and provide greater employment opportunities in the province.

Participating producers have formed the B.C. Wood Specialities Group which sees the program as fostering a closer relationship between primary manufacturers and secondary processors.

Federal funding for this initiative comes from Industry, Science and Technology Canada. The Ministry of International Business and Immigration will provide funding on behalf of B.C. Enquiries can be addressed to either of these two agencies or to the Council of Forest Industries of B.C.

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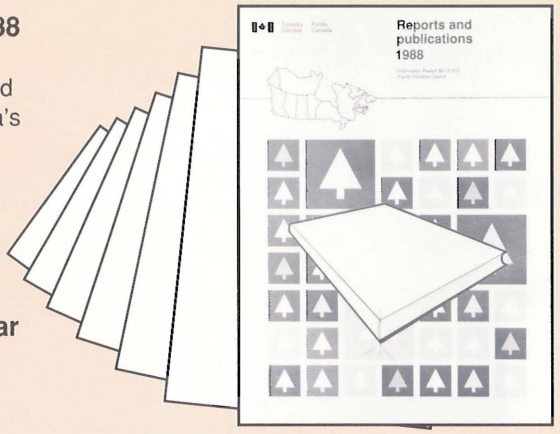


- **Reports and publications 1988**

  A listing of all published reports and papers by staff of Forestry Canada's Pacific & Yukon Region (Pacific Forestry Centre).
  BC-X-310

- **Growth of some pine-spruce stands in the Yukon: a 27-year record**

  G.M. Bonnor
  Permanent sample plots located in three types of stands were established at Watson Lake in 1961 and were remeasured in 1978, 1982 and 1987.
  BC-X-311

- **An economic analysis of fertilization and thinning effects on Douglas-fir stands at Shawnigan Lake**

  K.M. Duke, G.M. Townsend and W.A. White
  Costs and benefits as a function of stand diameter are estimated and forestry investment criteria are used to evaluate each treatment on both an incremental and a regime basis. Silviculture costs as an initial investment and alternatively as a harvest cost are examined.
  BC-X-312

Oldies but goodies

- **A guide to common insect pests & diseases in spruce seed orchards in British Columbia**

  D.S. Ruth, G.E. Miller and Jack R. Sutherland
  This guide covers the common insects that reduce cone and seed production in spruce (*Picea* spp.) seed orchards in B.C. Emphasis is on identification of the various development stages of insects and their damage. First published in 1982.
  BC-X-231

- **Economic and social aspects of tree planting in British Columbia: a survey of workers and contractors**

  G. Alex Fraser and W.G. Howard
  This 1987 study reports social and economic information on planting contracts and on workers employed to plant trees in B.C. derived from a 1985 survey.
  BC-X-29I

Globe 90 Conference in Vancouver

The impact of environmental issues on corporate policy in the l990's will be the focus of a major world conference to be held in Vancouver next March.

Globe '90, an international environment industry trade fair and conference, takes place next March 19-23 at B.C. Place Stadium and the Vancouver Trade and Convention Centre.

It is expected to draw 2,000 delegates and more than l5,000 visitors viewing more than 500 exhibits displaying the latest products, services and technology from the environmental industry.

Visitors from around the world will include business and government leaders, scientists, engineers and representatives from international financial institutions.

The event will provide a valuable forum for identifying practical solutions to environmental challenges and for developing business relationships and completing transactions.

The conference portion integrates business and the environment in three central themes: policy and legislation; business development; and, technology and research. Case studies will cover topical issues such as solid waste management, recycling, hazardous and toxic materials handling, water quality, etc.

Major Event Management Inc. is sponsoring the trade fair while the government of Canada, including Forestry Canada, is sponsoring the Conference.

Major Study Examines Future For Canada's Forest Industry

The Canadian forest industry is entering a new era of considerable growth potential with manufacturing investment and innovation being identified as the key to growth.

So says the recently released study conducted by Woodbridge, Reed and Associates of Vancouver on behalf of Forestry Canada. The report assesses the development potential for the forest sector to the year 2010.

Entitled "Canada's Forest Industry - The Next Twenty Years: Prospects and Priorities", the report projects that the value of Canada's forest products industry output could increase by as much as 55% over the 20 year period. The current value of shipments for the wood and paper industry is about $35 billion.

In releasing the report, Frank Oberle, Minister of State (Forestry), says the industry must ensure they are making the best use possible of resources, using up-to-date technology to produce the "full menu" of upgraded products which are closely tailored to increasingly sophisticated and demanding world markets.

The study is the most comprehensive of its kind, examining future world markets for a wide range of forest products and assessing the Canadian industry's ability to compete globally on a product-by-product basis. Growth scenarios are also provided for each region in Canada.

Other highlights include:

. within the pulp and paper sector there is significant potential for higher value products, such as printing and writing papers, and the higher grades of newsprint.

. within the solid wood sector the outlook is less optimistic, with slow growth expected for construction lumber; however, the study does indicate good growth prospects for higher value lumber products and certain wood panels.

In planning for the future of the Canadian forest sector, the study identifies central issues such as:

• maintaining a viable resource base (wood supply) to support future growth;

• increasing the emphasis on new product and market development;

• developing or purchasing the process and product technologies that will enable Canada to exploit its competitive advantages;

• creating an investment climate that will attract the level of investment required to take advantage of market opportunities.

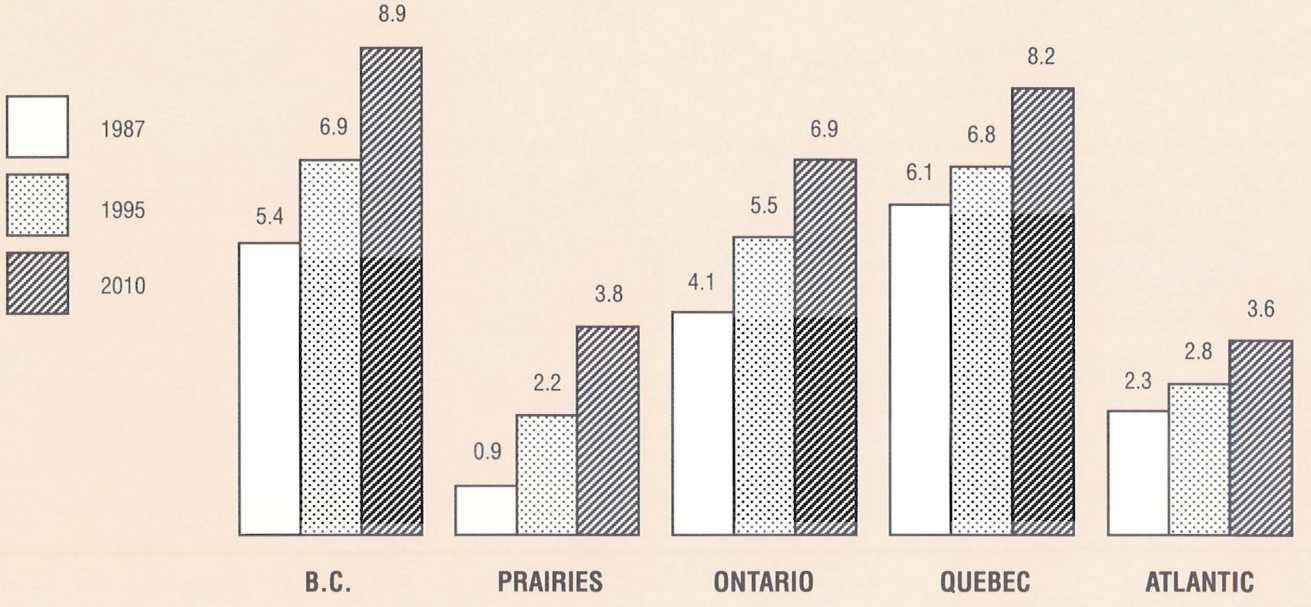
Conclusions of the report identify areas where Canada must act to be able to take advantage of growth opportunities, including enhancing forest mangement, increasing emphasis on product marketing, investing in new produt and process technologies and attracting capital investment in the industry.

The complete study, which is available in six volumes, is also available in a summary volume which provides a strategic assessment of the industry for the future. The summary ties together the major findings and implications of each of the areas examined.

Copies of the report(s) can be obtained from Forestry Canada, Distribution Centre, Petawawa National Forestry Institute, Chalk River, Ontario, KOJ 1JO.

Regional Growth Prospects in the Pulp and Paper Sector

(billions of 1987 C$)



1989 Forest Insect and Disease Survey Assignments

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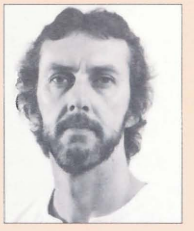

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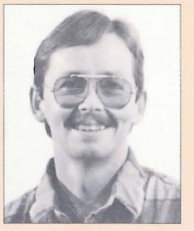

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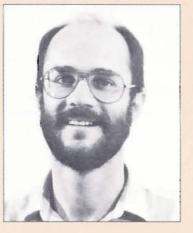

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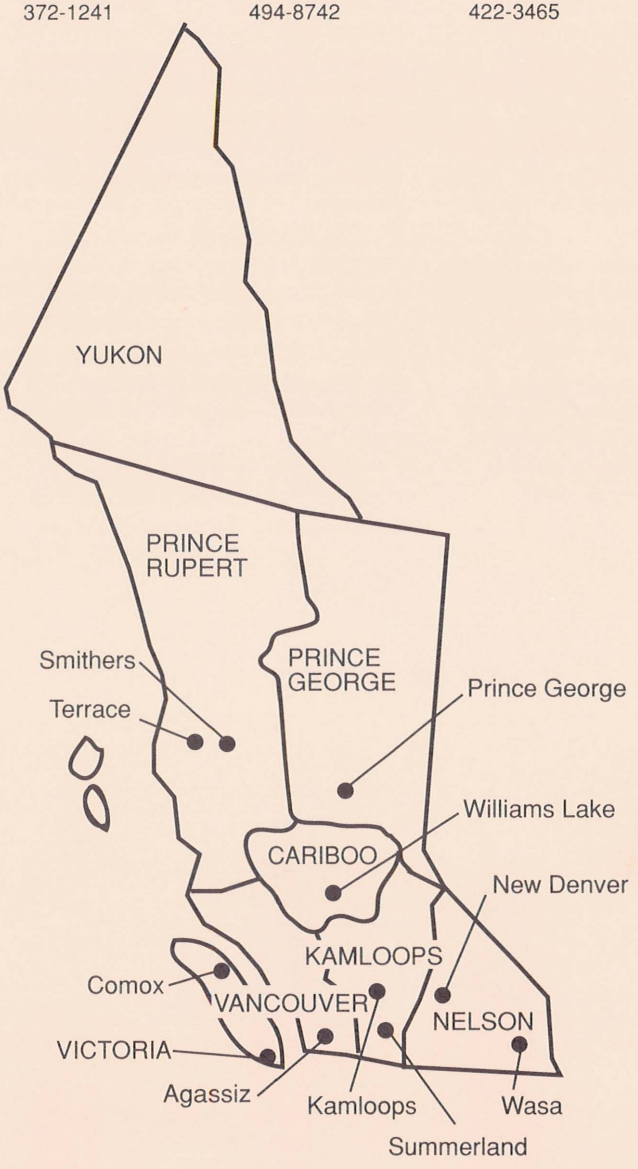

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