



Information

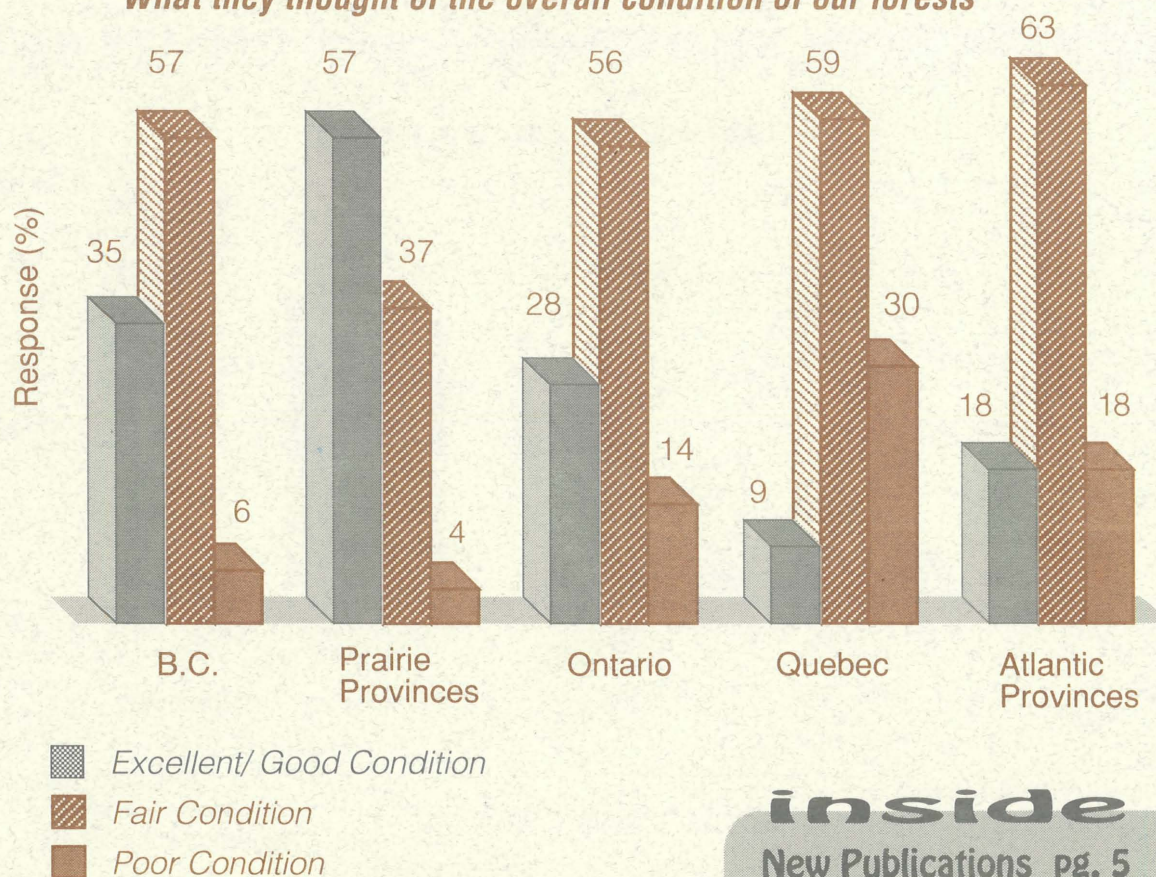
FORESTRY

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Survey of Professional Foresters in Canada – see pages 2 & 3

What they thought of the overall condition of our forests



inside

New Publications pg. 5
 Green Plan Update pg. 6
 State of Forests Report pg. 7
 FRDA II signed pg. 8



Forestry Canada
 Forêts Canada

Pacific and Yukon Region

Results of National Professional Foresters Survey released

Forestry Canada commissioned a national survey of professional foresters in September, 1990, to identify their views and perspectives on a wide range of forest management issues.

It was recognized that professional foresters play a critically important role in the management of Canada's forest resources, providing professional expertise to the forest industry and government agencies in most areas of forest management. This role provides them with a unique understanding of the many issues now being discussed concerning the state of our forests and how they should be best managed.

Four in 10 are employed by either provincial (36%) or the federal (7%) governments, while 30% work for the forest industry and the remainder as consultants, contractors or in educational institutions.

Most have considerable experience in their field, with 67% having worked in the forest sector for more than 10 years; 12% have less than six years experience. Forestry remains primarily a male (94%) profession.

ment have improved over the past 10 years, with many citing advances in integrated forest management and planning, attention to non-timber values and new government initiatives.

But foresters express criticism as well. There is widespread concern about the long term sustainability of

forest resources across the country, and a majority of foresters are lukewarm to negative about many areas of forest management in their province (particularly in the area of stand tending).

Governments come under criticism for inadequate funding, overly lenient enforcement of regulations and too little public education and information. Foresters are least satisfied with the federal government, in part because they are unclear about its forest management role and activities.

As for the

Canadian public, foresters consider it to be largely ill-informed about forestry issues, but at the same time accept the public as having a legitimate role in forest management decisions.

Foresters across Canada share a common profession and training, but also express divergent perspectives on many issues, perspectives

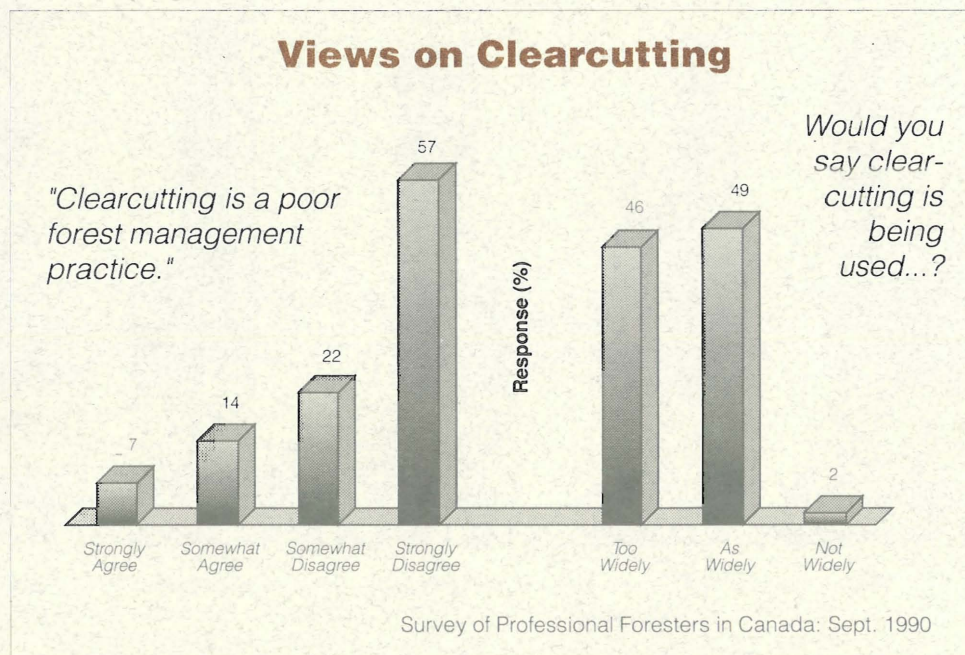
"Less than three in ten Canadian foresters rate the current condition of forests in their province as excellent or good."

Who was polled

The study was designed to obtain the views of a majority of professional foresters in Canada, ensuring adequate representation from every province. A sample of 4500 foresters was drawn from the estimated total population of 6572 across the country. Of those polled a response rate of 55% was achieved.

The survey revealed that foresters are most likely to work in B.C. (34%), followed by Quebec (24%) and Ontario (17%), with the remainder split between the Atlantic (14%) and Prairie (12%) provinces.

Views on Clearcutting



Study conclusions

Foresters are distinctly positive about some aspects of forest land management as it is practised today, particularly in the areas of fire management and reforestation. Moreover, there is broad agreement that most aspects of forest manage-

tives which reflect actual differences in the composition of the sector and the forests themselves. Quebec foresters stand out from their colleagues elsewhere in expressing a perspective that is closer to that of the general public on such issues as clearcutting, pesticide use, old growth preservation, public involvement and criticism of the forest industry. In British Columbia, foresters' perspective is more consistent with that of the industry itself, with greater criticism of governments and opposition to the public's sentiment on such issues as clearcutting and old growth preservation.

Some specific issues

Current forest conditions:

Less than three in ten Canadian foresters rate the current condition of forests in their province as excellent or good. Some 56% say they are in fair condition. B.C. and Alberta foresters rated conditions more positively than elsewhere. Forest management practices (51%) are the single most important factor identified as affecting forest conditions, followed by harvest rate, (14%) ownership and tenure (10%), land use (9%) and pests and diseases (7%).

Wood supply:

Some 34% strongly or 42% somewhat strongly hold the view that there is a growing scarcity of timber in Canada today. Concerns about long term forest sustainability are most pronounced in B.C. where 47% rate the prospects as poor.

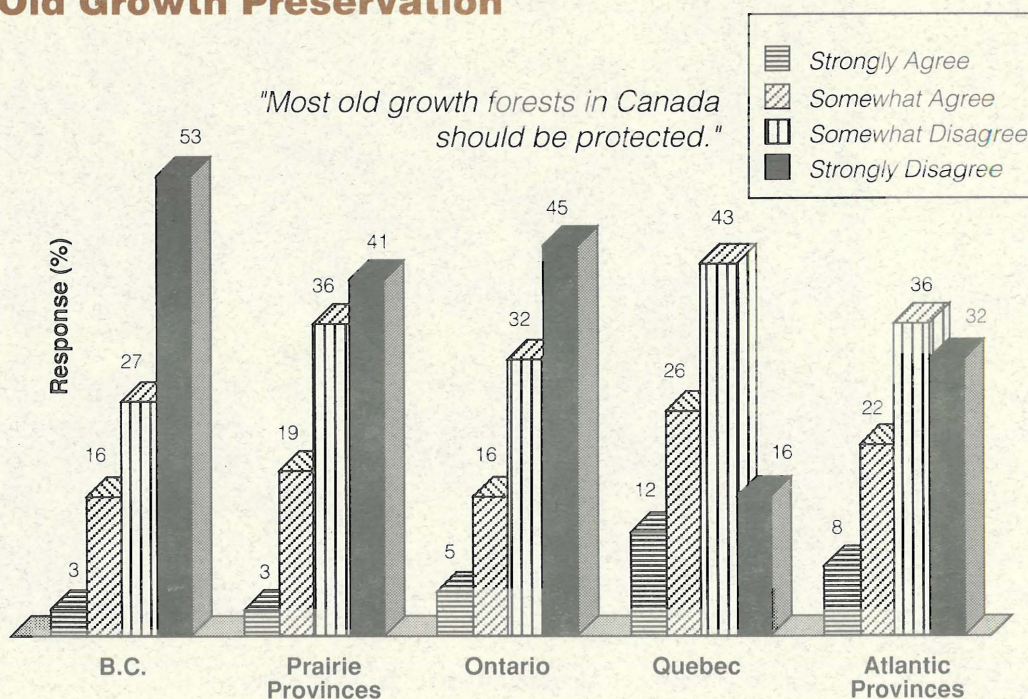
poor forest management practice". Rejection of this view was almost universal in B.C. (90%).

Forest Resource Development Agreements:

Foresters in Atlantic Canada (62%) and B.C. (62%) are most likely to

Old Growth Preservation

"Most old growth forests in Canada should be protected."



Survey of Professional Foresters in Canada: Sept. 1990

Forest harvesting and renewal:

Across Canada 61% of foresters say the AAC in their province is either definitely or likely too high. Nearly half say the amount of not satisfactorily restocked, or NSR, land in their province is decreasing with 68% of B.C. foresters saying NSR was on the decline in B.C..

Clearcutting:

Most foresters in Canada strongly (57%) or somewhat (22%) disagree with the view that "clearcutting is a

see the impacts of these agreements as major, and most believe more needs to be done.

Considered as a whole, foresters' perspectives on forest management in Canada is neither the bright one portrayed by the industry nor the gloomy one espoused by environmental and conservation interests, but shares elements of both.

A copy of the complete results of this survey can be obtained by writing: Communications Branch, Forestry Canada, Ottawa, Ontario, KIA IG5.

Unique machine first for forestry in Canada

By Barry M. Gee

Nuclear magnetic resonance (NMR) spectroscopy may sound like something from a science fiction movie, but the "Bruker WM 250" spectrometer that the Pacific Forestry Centre (PFC) has acquired is far from

fiction. In fact, the NMR spectrometer is one of the most powerful analysis tools in chemistry today. This machine and others of its type may be powerful, but they are also scarce.

The Bruker is the first of its kind in Canada to be dedicated specifically to forestry research. According to PFC chemist Dr. Caroline

Preston, it is only the third or fourth available for forestry research in the world. And research is the key word. This machine is opening up new areas of research for scientists at PFC.

"We know very little about organic structures in soils. This is our chance to find out," Dr. Preston explains. For example, soil decomposition can be probed more intensely using this machine.

"Analyzing soil organic matter is a large part of the research on carbon cycling," she says. "We can look at how carbon is processed, stored and released in relation to forest ecology and climate effects."

Another scientist to sing the spectrometer's praises is Dr. John Manville. Although PFC's other equipment is accurate enough, it doesn't measure up to the NMR spectrometer. "We can do a great

"some day we may be in a position to use this information to predict an epidemic of harmful insects by understanding how, and why it starts. The more you learn about anything, the more you are able to

predict and possibly intervene," he added.

With the Bruker, scientists can also study trees, particularly their natural weapons to fight pests.

"Sometimes when an insect or fungus attacks a tree, the tree's defensive chemicals aren't released in time to stop the attack," explains Dr. Manville. "We need to identify

such potentially weak tree types early, so they can be weeded out before they are planted as our next forest."

The NMR spectrometer will help put PFC at the forefront of several areas of forestry research. The understanding scientists can now gain will contribute to healthier forests for the future.



Dr. Caroline Preston demonstrates the NMR machine.

deal of analysis with other techniques, and combining these methods provides a lot of information," he says. "But NMR spectroscopy, as one technique, can provide more information than all the others put together."

The Bruker works by way of a superconducting magnet. A sample is placed in the magnetic field and scientists are able to learn something of the sample's molecular structure. One of Forestry Canada's main concerns is battling the pests that plague our forests. Scientists can now use the Bruker to examine insect physiology.

"If we can better understand the insect internally," says Dr. Manville,



NEW PUBLICATIONS

How to manage your woodlot for firewood production and sales

Produced for Forestry Canada by Sterling Wood Group Inc. and Nawitka Resource Consultants Ltd.

This practical manual tells B.C. woodlot owners and managers the ins and outs of managing woodlots when the primary objective is firewood production. Prepared in everyday language, it shows appropriate steps to be taken to improve management, harvesting and processing and business management of woodlots.

Useful trees of tropical North America

Russell M. Burns and Menandra Mosquera

A compendium of 20 individual papers dealing with tree species that show the greatest potential for forestry in tropical Mexico, Puerto Rico, Hawaii and the southern United States. Information is provided on the silvics and silviculture to allow foresters to select those best adapted to local environments so as to establish, culture and manage them to yield a maximum return of quality wood, fibre and forage. A project of the Study Group on Silviculture of the North American Forestry Commission. (Rept. No. 3)

Vegetation establishment during 5 years following wildfires in northern British Columbia and southern Yukon Territory

E.T. Oswald and B.N. Brown

Studies were conducted on four fire sites occurring between 1980 and 1982. Some 47 plots were studied with coniferous tree seedlings or aspen juveniles appearing on all plots within three years.

BC-X-320

Reports and publications - 1989

A list of reports and papers published by Pacific Forestry Centre staff during 1989.

BC-X-321

A bibliography of NMR applications for forestry research

Caroline M. Preston and Ann C.M. Rusk

This bibliography lists over 450 recent references to the end of 1989. An author index and a brief introduction to some basic NMR concepts are provided.

BC-X-322

Taper-volume equations for major tree species of the Yukon Territory

G.M. Bonnor and P. Boudewyn

Using stem analysis data from 1248 trees in the Yukon Territory and a previously published variable-exponent taper equation, taper-volume equations were derived for each ecoregion for four species - lodgepole pine, white spruce, black spruce and aspen.

BC-X-323

Testing the performance of FORCYTE-11 against results from the Shawnigan Lake thinning and fertilization trials on Douglas-fir

D. Sachs and J.A. Trofymow

The results of testing and evaluating the performance of FORCYTE-11 model are outlined in this report.

BC-X-324

The expected influence of biomass in the British Columbia energy sector to 2010 AD

The report examines future supply and demand for wood fibre, including traditional forest products and energy feedstock. Policy and economic variables influencing supply and allocation of fibre are reviewed. Several alternative utilization scenarios are examined and policy initiatives are suggested for increasing use of forest residuals for bioenergy.

BC-X-325

Forest Insect and Disease Conditions, British Columbia and Yukon - 1990

C.S. Wood and G.A. Van Sickle

This summary of forest pest conditions highlights pests that are or may become major forest management problems. It was compiled from field reports and other records of 11 Forest Insect and Disease Survey (FIDS) rangers, with contributions from the forest industry, researchers and agencies.

BC-X-326

Impacts of two stumping operations on site productivity in interior British Columbia

R.B. Smith and E.F. Wass

Two clearcut sites located in the southern interior of B.C., stumped to control root disease in 1980 were studied along with adjacent unlogged and logged but non-stumped portions, to determine whether the stumping affected seedling growth, particularly through changes in soil properties.

BC-X-327

Keeping Canada Green – Forestry and the Green Plan

by Barry M. Gee

More than ever, Canadians as well as people worldwide are expressing a concern for the environment and for just how far into the future the earth can sustain the diverse lifeforms it is currently a home to.

Dr. Dick Silversides, a research scientist specializing in meteorology at the Pacific Forestry Centre (PFC), who has been involved with the forestry component of the Green Plan for the past year, describes the concern as "an environmental ethic".

In response to this global concern the federal government launched a six-year \$3 billion Green Plan last December following several months of public meetings and consultations across the country.

Over 500 recommendations emerged and were contained within the more than 100 initiatives outlined in the Plan. Among those initiatives were a variety of programs aimed at improving air and water quality, waste reduction and management of toxics. It targets renewable resources such as fisheries, agriculture, wildlife and forestry. The Green Plan also identifies funding for research into global warming, ozone depletion and acid rain. Overall it represents a national effort with regional programs and global consequences.

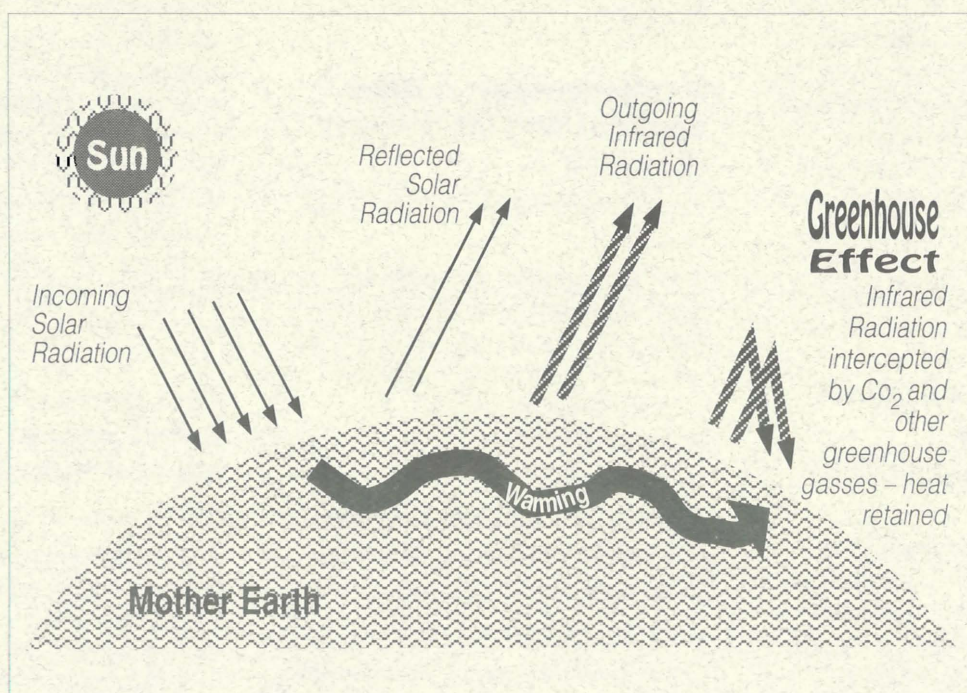
Forestry Component

Canada's forests are a major target of concern – not only because of their environmental or economic value, but because, as

for the enhancement of several areas of research - many of which are underway at the Centre. Such areas include climate change, biodiversity, acid rain and fire

management as well as insect and disease research.

The second major forestry component focuses on "community tree planting", the key objective of which is to help Canadians realize they can make a difference simply by planting a tree. The goal of this program is to encourage public participation in the planting of 325



The Greenhouse Effect

Dr. Silversides describes it, "forests are part of our psyche, part of what makes us Canadian. We love the outdoors and the wilderness. It's a spiritual value we identify with."

Initiatives within the forestry component will address many forestry issues - the goal being to "shift the management of our forests from sustained yield to sustainable development".

One of two key forestry programs focuses on "model forests". Up to eight demonstration projects will be created as working models of sustainable development. The model forests will demonstrate sustainability and will serve as demonstration areas of sound forest management practices.

Staff at PFC will also feel the impact of the Green Plan as it calls

million trees across Canada, which will ultimately help reduce carbon dioxide levels by the year 2000 - a specific goal of the Green Plan.

These initiatives are now being actively pursued and the government is currently in the process of making the necessary commitments to make them realities. However, government alone can't do it all.

"Partnership," says Dr. Silversides, "is a very strong component of the Green Plan. There are linkages between different environmental problems so no one organization can hope to completely solve all of them."

He concludes, "The Green Plan really opens the door for governments, industry, individuals, environmentalists and natives to work together in a true partnership."

The State of Forestry in Canada – providing the knowledge base to work from

On April 9, 1991 Forestry Minister Frank Oberle tabled in the House of Commons "The State of Forestry in Canada", Canada's first national account of forest activity.

The report fulfills the requirement of the Department of Forestry Act, passed in February 1990, that the Minister report annually on the condition of Canada's forest resources. Subsequent reports will follow every year, refining and highlighting changes to the state of forestry in Canada while focussing on a particular facet of forestry. This

first report concentrates on Canada's timber supply.

Mr. Oberle commented, "The report provides a summary of the aspects of our forests, our timber resources and the forest industry as well as areas we need to continue to develop, such as data on the environment and non-timber values. It shows we have made real gains over the last ten years, yet the report recognizes there is still much to be done."

Those gains include the finding that from 1976 to 1986, the net

growing volume of Canada's forest capital increased by 2.5%, or some 693 million cubic metres — indicating that Canada's forests are becoming more productive.

The increase in productivity, however, is accompanied by the finding that the amount of productive forest land in Canada declined between 1976 and 1986 by 2% (4.74 million hectares). The decrease is the result of urbanization and preservation, as well as losses due to fire, insects and disease which each year claim an amount of timber nearly equivalent to the amount harvested.

The amount harvested each year was found to be about one million hectares, of the approximately 234 million designated as productive forest land. In total, almost half of Canada's 997.1 million hectares of land are forested. Considering these figures, the importance of forestry to Canada is easily recognized.

It is, in fact, the country's leading export, contributing \$19.5 billion in 1989 to Canada's balance of trade of \$3 billion — more than agriculture, fishing, mining and energy combined. Also, close to 900,000 Canadians work either directly in the industry or for companies that support it and almost 350 Canadian communities are dependent on forestry.

The report is also in keeping with the federal government's commitment under the Green Plan to provide Canadians with relevant, timely and authoritative information on the state of Canada's forest resources.

Copies of the State of Forestry in Canada report may be obtained by writing to: Communications Branch, Forestry Canada, Ottawa, Ontario, K1A 1G5.

B.C. Forest Commission Report released

A little less than two years ago the British Columbia Forest Resources Commission, under the chairmanship of Sandy Peel, was asked to examine the state of the province's forest land base and recommend improvements to the way it is managed.

The report, which was released in early May, makes 108 recommendations and is based on more than 1700 written submissions, presentations made at public meetings and regional workshops, and independent research done by the commission.

Four priority tasks were assigned to the commission:

- to provide the Minister of Forests with a comprehensive view of what the forests of British Columbia should represent, taking into account the full range of forest values, how the forest might be managed to protect and enhance those values and the total economic impact of the forests to the province;

- to advise the Minister of Forests on the effectiveness of tree farm licences as a form of tenure;

- to recommend ways to improve public participation in forest planning and management; and,

- to review and recommend ways to improve forest harvest practices, focussing on clear-cutting and its associated forest practices and their impacts.

The 108 recommendations fall into eight categories: land use planning; a management and financial structure; tenure; financial and economic considerations; inventories; forest practices; education; and, public participation in forest planning and management.

The public, other interested parties and the government will be given an opportunity to review the recommendations before action is taken said Claude Richmond, Minister of Forests when releasing the document.

\$200 million Federal-Provincial Forestry Agreement signed

Federal Forestry Minister Frank Oberle and provincial Forests Minister Claude Richmond recently signed a four-year \$200 million cost-shared partnership forestry development agreement, known as FRDA II.

There are seven programs under the agreement, all designed to achieve sustainable forest development programs. The programs and allocation of dollars are as follows:

▲ Sustainable forest development (\$133.5 million). This program includes incremental silviculture, hardwood management, investigating harvesting methods and designing and implementing an integrated forest resource inventory.

▲ Research in sustainable forest development (\$23 million)

▲ Small-scale forestry on federal, municipal, private and Indian lands

(\$20.5 million)

▲ Public information, forest education, forest extension and technology transfer (\$15 million)

▲ Identifying opportunities in new or value-added products (\$3.5 million)

▲ Co-ordination, implementation and evaluation of the agreement (\$2.5 million)

▲ Economic and social development (\$2 million)

To achieve its overall objectives of working towards the sustainable development of the forest resources of British Columbia, this Agreement includes programs that address specific areas of opportunity, including:

▲ Improving the value, quality and health of young stands through stand tending;

▲ Improving current forest management practices on federal, provincial and private forest land;

▲ Identification of new or value-added products and markets, not yet discovered or whose potential has not been fully realized; and

▲ Enhancement of integrated management of the full range of British Columbia's forest resources.

A better lighting system for container seedling nurseries

Daylength extension is commonly used in the container nurseries of British Columbia to prevent young seedlings from setting a terminal bud early in the growing season, thus allowing continued seedling growth and the production of a plantable tree seedling within the same year. Without an artificially-extended day the seedlings of many of British Columbia's tree species would not reach target height within the first growing season.

Presently, daylength extension is provided by high pressure sodium vapour lamps mounted in a grid pattern across the nursery that are programmed to come on just before sunrise and provide artificial extension of the natural daylength to the required number of hours that some tree species need to maintain their shoot growth. Usually, the length of time required (i.e. the photoperiod of a particular tree species), ranges from 16 to 18 hours. Thus, in the early part of the growing season the lights must be on for more than eight hours, thereby consuming great quantities of electrical power. A nursery compound containing eight million container seedlings would need, for example, 600 kw of electricity for just one night's operation in March.

Research by Pacific Forestry Centre scientist Jim Arnott, has shown that a relatively brief exposure of light for two hours in the middle of the night - night break lighting - can be just as effective as the conventional daylength extension technique in maintaining tree seedling growth. This has been proven in controlled experiments at the Centre and demonstrated for three consecutive years at several nurseries throughout southern British Columbia.

The technique was successfully demonstrated last year on spruce, interior Douglas-fir, ponderosa pine and western white pine by Tony Willingdon at the B.C. Ministry of Forests' Surrey Nursery.

Night break lighting reduces electrical consumption and increases the life-span of the expensive high-pressure sodium vapour lamps. In the example given earlier for an eight million seedling nursery, electrical consumption for lighting was reduced by 75% - to 150 kw from 600 kw - and the life span of the expensive lamps increased considerably. With energy conservation becoming increasingly important, such savings are significant.



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