

Renewal

*The quarterly newsletter of the
Canada-British Columbia Forest
Resource Development Agreement (FRDA)*

FRDA's Mid-point Report Documents Success in All Regions of B.C.



PROVINCIAL GOVERNMENT

At mid-point in the five-year Canada-British Columbia Forest Resource Development Agreement, FRDA statistics demonstrate an excellent degree of success.

FRDA has invested \$103 million in forest management programs and created 339 397 days of employment throughout the province since the agreement was signed in 1985. These impressive statistics highlight

the mid-term report of FRDA issued jointly by Federal Minister of State for Forestry and Mines Gerald S. Merrithew and B.C. Forests and Lands Minister Dave Parker.

"We've tackled over half a million hectares of B.C. forest land. This includes replanting of non-satisfactorily restocked lands, the so-called NSR lands, and fertilization, brushing, weeding, site preparation and

surveying. A total 62 000 hectares were replanted across the province."

Said Parker, "Although FRDA has almost two years to run, the agreement can already be called an unqualified success."

A significant aspect of the agreement has been the funding of important new silvicultural research to help foresters solve technical problems in replanting backlogged NSR lands. Nearly 10 percent of FRDA funds — \$27 million — are designated for several hundred research and demonstration projects. These include trials of tree-planting machines and site preparation equipment, studies on the beneficial effects of fire, a number of projects to grow superior seedlings in nurseries and extend their survival rate in the wild.

FRDA has funded a Forest Biotechnology Centre at the University of British Columbia. It will use modern genetic engineering and tissue culture techniques to develop improved trees and solve disease problems.

Another FRDA initiative is the new Surrey Seed Centre. This modern "seed bank" gathers, cleans and maintains in cold storage hundreds of millions of tree seeds, representing a 10-year supply for reforestation efforts in B.C.

A significant long-term benefit from FRDA will be the creation of an estimated 500 forestry jobs. Intensive silvicultural practises carried out by FRDA will result in increased timber yields in future decades, creating more jobs in forest management and in logging operations, sawmills, and pulp mills.

Tangible benefits in every region

In the Kamloops Forest Region, FRDA has spent \$6.8 million on reforestation and created 49 435 days of employment. Fertilizing, brushing and weeding, site preparation and surveying has improved 64 629 hectares of forest land, with replanting completed on 10 000 hectares.

FRDA has also funded a project at the Balco-Canfor Reforestation Centre in Kamloops. It is studying the potential for increasing seedling survival by injecting the seedlings with mycorrhizal fungi. Another Kamloops area FRDA project is examining different site preparation and planting procedures to minimize seedling die-off.

FRDA has conducted work on 189 497 hectares in the Prince George Forest Region, with 123 599 days of employment created. A total \$19.9 million has been spent in the Prince George region, with planting completed on nearly 12 000 hectares.

Expenditures in forest management activities in the Prince Rupert Forest Region total nearly \$7 million. FRDA has treated 59 420 hectares of forest land in the Prince Rupert region. That includes replanting of nearly 4,000 hectares. Employment created totals 34 276 days.

In the Nelson Forest Region, 50 814 days of employment have been created by FRDA and \$10.4 million spent on forest management programs. FRDA has improved 70 283 hectares of forest land in the Nelson region, with 11 000 hectares already replanted.

Research projects in the Nelson region include studying the use of burning as a site preparation tool preceding replanting of the NSR lands.

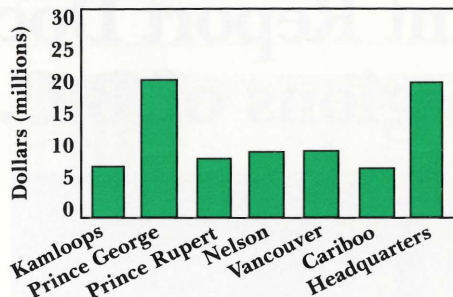
In the Vancouver Forest Region, which includes Vancouver Island, FRDA has treated 57 484 hectares, creating 39 954 days of employment. FRDA expenditures in the lower coastal region exceed \$9.4 million. Replanting has been completed on 2 600 hectares.

The Cariboo Forest Region has had the benefit of \$6.5 million in FRDA

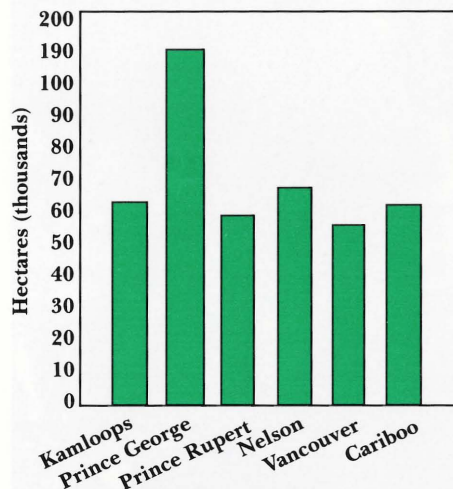
spending, with 41 318 days of employment created. Replanting of nearly 7 200 hectares in the Cariboo Forest Region was completed and a total of 62 123 have

Expenditures and Achievements of Cost-Shared Programs by Region (FRDA Mid-point Report)

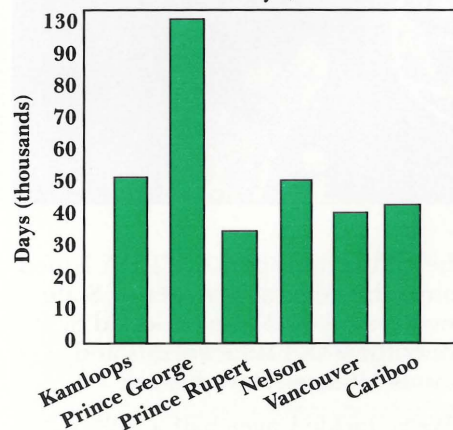
Dollars Spent (Total*— \$79.6 million)



Hectares Treated (Total*— 503 437)



Employment Created (Total*— 339 397 days)



* Cost-shared programs only
An additional \$14.7 million was spent by the province and \$8.6 million by the federal government under the direct delivery programs for a mid-term total of \$102 918 894.

been improved under FRDA.

FRDA's five-year target is to rehabilitate 150 000 hectares of the province's forests. Based on the extensive preparatory work already accomplished during the first half of the FRDA time span, reforestation and other forest management activities will be increased in the second half of the agreement.

"Spending on forest management activities will accelerate in the next two years, as the two governments have pledged a total of \$300 million by 1990," said B.C. Minister Parker.

Said Federal Minister Merrithew, "FRDA will have a very positive long-term impact on the health of B.C.'s forest industry."

Executive Milestones

D. Ross Macdonald, CFS Director-General of the Pacific and Yukon Region since 1985, retired December 31. He had previously served as Regional Director, Pacific Forestry Centre, 1980-85. Macdonald was senior federal negotiator for the Canada-British Columbia Forest Resource Development Agreement, and was subsequently co-chairperson of the management committee for that agreement.

Macdonald, who graduated with a B.Sc.F. from the University of Toronto in 1952, and a M.F. from the University of Michigan, served as a Research Officer and Research Scientist at the Maritimes Forest Research Centre in New Brunswick from 1952-69. He then transferred to the Pacific Forest Research Centre, Victoria, as Section Head, Forest Entomology.

In 1975, Macdonald led the first "solo" delegation of two Canadian scientists to the People's Republic of China, examining that country's programs in the biological control of forest pests. On a second trip, he negotiated the, "memorandum of understanding," between CFS and the Ministry of Forests, PRC. He also travelled in Mexico and the USSR viewing biological control research programs.

DND Forests Shaping Up

In 1986, CFS undertook an inventory of the Department of National Defense (DND) properties in the coastal B.C. region and made an intriguing discovery — 17 major DND properties contained marketable forest resources.

In approaching DND, CFS found Canada's armed services amenable to the idea of making their property efficient in terms of forest management. CFS formulated a plan to implement resource management programs at selected sites, in cooperation with the DND.

The first project is already well underway at Nanoose Bay. To administer the program, a "Green Team" was set up, including the Canadian Forces Base Commander, Capt. (N) Beckett; the Base Engineering Officer, Lieutenant Colonel Harris; Art Robinson of CFS; and Registered Professional Forester Kate Lindsay, who oversees the project.

The program is designed to minimize DND concerns while delivering maximum economic benefit. Every

key decision is based on consultation between the Base and CFS.

To begin, Kate Lindsay evaluated the property for forestry potential and submitted a report to CFS and DND. The Base Commander approved the project in principle, after consulting with other DND officials.

With approval, Lindsay then did detailed fieldwork and drew up a comprehensive report, including a recommended contract.

CFS put the contract out for bids and a small-scale contractor was appointed to do the onsite work.

Nanoose Bay provided Douglas-fir and balsam for sawmills, cedar for speciality products and building materials, and lower grade conifers for pulp. Alder went for pulp and firewood.

After the initial harvesting, the contractor proceeded with the silvicultural side of the program. The program provides for ongoing maintenance and silviculture over a five-year time frame.

The contractor is responsible for commercial thinning to improve growth of remaining trees, and rehabilitation of mixed deciduous/

conifer stands to allow faster growth of saleable conifers, as well as patch cutting and planting. A total of 23 740 new trees are being planted at Nanoose Bay, new forests that will have a much more efficient life cycle than the previous forests.

In addition to performing all the required silvicultural work, the contractor was obligated to build new boundary fencing and a new access road at the Nanoose Bay site.

The Nanoose Bay project will generate over \$100,000 cash benefits to the federal Crown, plus the value of road construction, fencing and silviculture to the Base which retains the benefits and total control over the project.

The Base also benefits from the public relations pluses of becoming a model small-scale forestry project, of benefit both to the taxpayer and the local economy. Further, the forestry activity improves DND property for military use, recreational potential, and wildlife habitat.

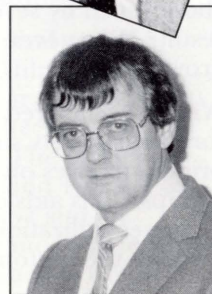
With the established success of the Nanoose Bay project, CFS is now working with other coastal region Armed Forces Bases to implement several more cooperative "Green Team" forestry management projects.

Dr. Robert C. Dobbs has replaced *D. Ross Macdonald* on an acting basis as federal co-chairperson of FRDA. Dobbs has served as senior Program Director, Research, at the Pacific Forestry Centre in Victoria since 1984.

From 1977-84, Dobbs served at CFS headquarters in Hull, Quebec, as Manager of the ENFOR Biomass Production contract research program, and as Program Manager, Resources, in the Research and Technical Services Directorate. From 1966-77, Dobbs was a Research scientist with CFS, in Winnipeg and Victoria. Before immigrating to Canada in 1966, Dobbs was a Research Forester with the U.S. Forest Service, serving at the Redwood Experimental Forest near Klamath, California.

John A. Edwards, CFS Senior Program Director, Forest Development and Relations, since 1983, and

D. Ross Macdonald, CFS Director-General of the Pacific and Yukon Region, retires.



Dr. Robert Dobbs (r) replaces Ross Macdonald on FRDA management committee while Mike Heit (l) replaces John A. Edwards.

a federal representative on the FRDA management committee, retired February 26, 1988.

Edwards worked with Ross

Macdonald in negotiating the \$300 million Canada-British Columbia Forest Resource Development Agreement.

From 1974-83, Edwards directed the Department of Regional Economic Expansion's management and implementation of 11 federal/provincial subsidiary agreements in B.C., which were negotiated under the Canada-British Columbia General Development Agreement (1974-84). From 1972-74, he was the DREE director for Manitoba in Winnipeg. In Ottawa from 1968-72, Edwards was Chief of the Atlantic Provinces for DREE's Industrial Development Branch.

Edwards' replacement on the FRDA management committee will be Mr. Mike Heit. Mr. Heit is currently Program Director of Forest Development for the Western Region (Alberta, Saskatchewan and Manitoba) of the Canadian Forestry service in Edmonton. Mr. Heit has been appointed on an acting basis.

The Dean of Private Forests

A former Dean of Forestry at UBC, Tom Wright has created a model for what can be accomplished through the Canadian Forestry Service's Private Forest Lands Program.

However, the first certified tree farm in B.C. wasn't always a respected model. When Wright began his Sunshine Coast operation in 1951, he was laughed at.

"I wanted some land that was worthless for anything but growing lumber — but I had a paucity of economic omniscience," says the professional forester.

When Wright went to his banker to arrange a loan, "He asked how long it would be until I received income from the land. I told him it would be a minimum of ten years and probably more like 30 or 40. He asked me what price I expected to get from the lumber and I said I didn't know. He asked me what the costs would be for roads, etc., and I said I didn't know.

"I can still hear his hollow laughter echoing through the bank," says Wright, with a twinkle of amusement in his eye.

Today it's the forestry expert who laughs all the way to the bank. In addition to economic success, Wright has the satisfaction of having pioneered a concept that can be of great economic benefit to private landowners, to employment and to the provincial economy.

Not only that, it's also a lot easier to get started these days. The Private Forest Lands Program — a federal program under the Canada-British Columbia Forest Resource Development Agreement — will pay as much as 80 percent of the management costs to get privately-owned forests working efficiently as tree farms.

Furthermore, newcomers to the business have the benefit of Tom Wright's innovations as a guide to what can be successfully accomplished in this province.

In 1951, Wright mortgaged his house and his furniture to get his 190-hectare high site underway.

Over the years, the property has given him a good number of challenges, but his innovative approach to management has solved most of them. "Every operator should try doing something a little bit crazy," Wright asserts.

For example, to overcome the difficulty on one of his highest sites, which was choked with weeds, he began planting "giant" seedlings. "I figured, if you can't beat the brush you should walk in and join it."

He fertilized seedlings grown in pots until they were sprouting skyward. Then his crews carved out clearings in the thick brush and planted the extra-big seedlings.



Private forestry innovator Tom Wright with his seedlings.

"These were on super high sites and I was planting with wide spacing, about seven by seven metres." The result? "I've never seen seedlings grow so big!"

Wright has logged and thinned his forest selectively since 1957. "We pride ourselves on leaving very low stumps. This aids our operation and increases utilization. There is a lot of wood in the bottom foot of a tree."

The consummate manager does not believe in cutting trees before they reach their potential. "I favour very long rotations. There is tremendous potential value in wood when it is large. I believe in keeping things growing for maybe 120 years. Why cut it off at 70 years?"

In keeping with his policy of balance, he is an advocate of finding

markets for smaller timber, the trees which are removed as the maturing stand is thinned. "On this coast, there is a marvelous capacity to manufacture small log lumber. We need to find a good market for small logs — ones that are less than six inches at the top."

To this end, Wright has shipped one load to Japan where the logs were used as pilings. "But the whole thing is very political. People say you are shipping jobs out of the country. I don't see it that way, when you consider that we are just using these trees for chip and saw."

"We should develop some good, strong, profitable markets for these trees — 59 percent of the trees on my site are small. We have a prodigious opportunity there. Up to now, the little trees have been forgotten."

Another Wright innovation has been to develop shelterwood management techniques. In his conifer stands, he plants hemlocks under the canopy of larger trees. "Firs are deep-rooted, while hemlocks are shallow. The fir holds the stand up because they are wind-firm. Hemlocks aren't." Wright has also rehabilitated his high site deciduous stands.

"Today this forest is exploding — it's fantastic!"

Among his other harvestings, for 30 years he has been in the Christmas tree business. "We started Christmas trees in 1957, and it was a whole series of disaster stories. It's like having a bear by the tail. You have to keep shearing and spacing them. It has been a minor economic disaster from the start, but it's coming along now."

Today, owners of private forests can turn to the Private Forest Lands Program for expert help and funding. It is estimated that there are over one million hectares (2.5 million acres) of privately-owned forest land in British Columbia which could be developed to provide employment for forestry workers and economic gains for private wood lot owners. Many of these owners may not realize that their forest land is of extremely high quality and rich potential.

To qualify for the program, an owner must have 20 or more continuous hectares (50 acres) of productive or potentially productive forest

BC's Official Tree: Western Redcedar

The western redcedar, *Thuja plicata* Donn, is now British Columbia's official tree.

The proclamation was made in February after the provincial cabinet accepted Forests and Lands Minister Dave Parker's recommendation that the B.C. Tree Council's unanimous choice for the province's official tree be approved.

The B.C. Tree Council — a group representing the forest sector, interest groups and associations — was formed last year by the minister to recommend an official tree.

The selection was based on public nominations, essays from students in grades five to seven, the distribution and characteristics of the species, and the cultural, historic and economic importance to the province.

Its form is like that of a pine. It is a lighter green than most conifers and



Forests and Lands Minister, Dave Parker, plants BC's official tree at Legislative Buildings in Victoria.

is easily identified by its long, sweeping branches that are covered by dropping branchlets, or fronds, which give it a lacy, misty appearance.

Historically, western redcedar has played a key role in the lives of the west coast Indians, whose use of this wood is well documented.

Western redcedar is native to British Columbia and is well-suited to grow in a variety of moist environments found throughout the coastal and interior wet belt areas of the province.

The western redcedar is also well-known in the province and around the world as a decorative, aromatic wood used in interior decoration and furniture — for “cedar” chests — and externally for siding on buildings and as a roofing material.

It joins the dogwood flower, jade, and Steller's jay as official provincial symbols.

The winners of the province-wide essay contest who have won a free camping trip to a B.C. Forestry Association Camp this summer are:

Kamloops Forest Region:

Teryne Laskey, Lesley Gavelin, Michelle Cornish;

Nelson Forest Region:

Isaac Saban, Sancha Alicia Tatlock, Carol Higginson;

Prince George Forest Region:

Lance Burgener, Elizabeth Siddle, Stacey Durrell;

Prince Rupert Forest Region:

Jennifer Perreault, Angelique Goffinet, Darren Hedberg;

Vancouver Forest Region:

Robbie Worobetz, Karina Strahl/ Amanda Reich, Agnes Tielmann, Sean Laverty.

land. The program will help conduct an inventory of the private forest, prepare a forest management or development plan, and initiate or continue with intensive forest management activities. The program may provide up to 80 percent of the total costs, up to a maximum of \$80,000.

The individual land owner is expected to pay for a minimum of 20 percent of the costs.

Along with forest inventories and management plans which include silvicultural prescriptions, there are many backlog reforestation and intensive forest management activities which are eligible for financial assistance. These include purchase of seedlings, site preparation, planting, brushing and weeding, pest control, conifer release, juvenile spacing and forest fertilization.

Several types of forest-related projects are not eligible. These include Christmas tree farms, road building, legal survey lines, nursery

establishment and fencing. Essentially, it is only projects which are designed to initiate or improve forest growth that are eligible for assistance. The program has been designed to assist people who own small areas of forest land, rather than to provide funds for large industrial forest holdings.

An example of a typical grant recipient is Laurie Milner of Nanaimo, who was granted \$18,000 to help develop 36 hectares of private forest land. The Milner grant for Round Island Farms Ltd. will help fund surveys and an investigation of the site to determine which commercial species would best suit the land. Site preparation, planting and thinning method to promote conifers will also be funded.

Another grant, of \$79,000, went to the UBC research farm at Oyster River. The UBC farm's funding is divided into two segments. The first involved a forest inventory and the development of a forest manage-

ment plan as a basis for intensive forest management activities of 558 hectares of forest land.

The land will be used as a demonstration area for landowners. More than \$11,000 was contributed to that part of the project.

As a result of that part of the project, UBC's research farm now has a forest management plan and is beginning to develop the forest land using the remaining \$68,000 in funding up until the year 1990.

Work will include preparing the site, including various silviculture practises such as brush removal and weeding, conifer release, juvenile spacing, and planting.

For more information on the Private Forest Lands Program, or for applications, contact: John Burch, R.P.F., Private Forest Lands Program Co-ordinator, Canadian Forestry Service, Pacific Forestry Centre, 506 West Burnside Road, Victoria, B.C. V8Z 1M5. Mr. Burch's telephone number is (604) 388-0600.

Roundup* Result at Carnation Creek Test

Resource managers from across Canada attended the FRDA-sponsored Carnation Creek Herbicide Workshop, held in Nanaimo in December. The 170-and-some participants heard considerable evidence that Roundup*, which contains the active ingredient glyphosate, can be an effective and environmentally acceptable silvicultural tool.

The focus of the workshop was the presentation of some 20 research papers reporting on a comprehensive study of an aerial application of Roundup at Carnation Creek in September, 1984.

Carnation Creek is a small Pacific salmon stream located in the Bamfield area on Vancouver Island's west coast. For the past 17 years the watershed has been the site of world-renowned inter-agency research on the impact of forest management practices on fisheries and fish habitat. This wealth of background information made Carnation Creek the ideal location for the herbicide trial.

The lead agency selected to conduct the herbicide trials was the Forest Pest Management Institute of the Canadian Forestry Service, which is based in Sault Ste. Marie, Ontario. The research team, headed by Dr. Phil Reynolds, included scientists and biologists from the Canadian Forestry Service and the Canadian Department of Fisheries and Oceans.

The Carnation Creek Herbicide

Workshop provided the research team with their first opportunity to present formally their findings to an audience of resource managers from both government and industry. Presentations covered such topics as the fate of Roundup in soil and water, its impact on fish, fish habitat and food resources, soil microbes and vegetation at Carnation Creek.

Workshop participants also heard papers covering related studies conducted at other sites. These included a laboratory study of toxicity to salmonids, silvicultural studies, and a comparison of various herbicide application systems.

Given the absence of any significant direct negative impacts of Roundup, discussions turned to questions of its indirect effects. In particular, water nutrient levels and water temperature were two areas that appeared to be affected by the application of the herbicide to surrounding vegetation. The need to protect riparian vegetation and fish and wildlife habitat was strongly emphasized.

*For more information, contact:
Ted Baker, MOFL, Research Branch,
387-6721; or David Winston, Canadian
Forestry Service, 388-0600.*

*Source of article: Solutions, FRDA
newsletter, No. 1, 1988.*

** Roundup is now marketed under the
trade name "Vision." Roundup and
Vision are registered trademarks of
Monsanto Canada Inc.*

ministry since 1929.

A second FRDA-funded TASS project assesses the quality of wood in second-growth Douglas-fir trees as simulated under various management regimes. This project also involves the simulated sawing of the wood into lumber products using a sawmill simulator (SAWSIM) leased from Howard Leach and Associates. This modelling strategy can determine the economic value of the trees "grown" in the computer.

Stephen Omule is remeasuring, analyzing and interpreting the results of older species and spacing research trials. This information will improve the accuracy of TASS projections.

Ian Cameron is working on a FRDA study collecting data on the height growth, branch extension, crown form and bole development of individual trees in one research plot at the ministry's Cowichan Lake Research Station. This data will help refine and improve TASS's performance.

Jim Goudie is gathering the kind of baseline information that will give TASS the capacity to simulate the growth and yield of coastal western hemlock trees and stands.

In the interior, Wayne Johnstone is installing field experiments to determine the effects of spacing and subsequent thinning on the growth and yield of white spruce, lodgepole pine, Douglas-fir, and mixed pine and fir stands. John Pollack has established close to 200 experimental plots to provide valuable information for quantifying the effects of post-thinning density on the growth and yield of interior spruce and pine.

Rob Brockley is investigating the effects of fertilization on interior spruce, Douglas-fir, lodgepole pine and western larch. His objective is to provide the information required to make site-specific predictions on tree growth in response to fertilization.

The cumulative effect of these growth and yield initiatives will be significant progress toward the goal of providing forest managers with accurate means to quantify their operational growth and yield predictions.

*Source of article: Solutions, FRDA
newsletter, No. 1, 1988.*

FRDA Delivers

Eleven research projects in intensive forestry are currently underway in the Ministry of Forests and Lands' direct delivery component of FRDA. Five more projects are underway in backlog reforestation.

Work being done in the area of growth and yield promises to have a fundamental impact on long-term forest management. The primary objective of the ministry's growth and yield specialists is to produce a body of measurements that will

enable managers to accurately assess performance and gain in managed stands.

One important aspect of growth and yield research is the development of a computer-based technique to simulate the growth of trees and forest stands. Since 1963, Ken Mitchell has been perfecting a modelling strategy called TASS (Tree and Stand Simulator). The program uses growth and yield data from sample plots worldwide, with the most critical data coming from the many growth and yield research plots established by the



Victoria junior high school students get hands-on experience in forestry through Green Gold Grants program.

Green Gold Grants Promote Forest Awareness

A Green Gold Grant has given 50 Victoria junior high school students a golden opportunity for hands-on experience in British Columbia's most important industry.

Operation Green Gold is a national forest awareness program sponsored by the Canadian Council of Forest Ministers. The program in British Columbia is jointly sponsored by the Governments of Canada and British Columbia.

Central Junior High in Victoria received a \$2,100 grant in 1987 to bring a portable sawmill to the school, along with two instructors. Charlie and Gerri Parsons of Powell River taught the students the basic operating techniques and safety procedures in handling the equipment.

Approaching the practical instruction eagerly, the students sawed and shaved raw logs into workable lumber. After kiln-drying, the lumber

was then made into furniture designed by the student builders.

It was not only woodworking students who staffed the sawmill. A third of the students who applied for a shift on the sawmill were academic honor students.

"They were doing units in Canadian ecology and industry, so this direct experience of working on a sawmill was a perfect idea," said Maria Marson, Victoria School District Communications Project Coordinator. "Once they have experience like this, it is something tangible in their lives. In a book, it is often fleeting and temporary."

The sawmill project was of benefit to more than just the 50 students who worked on it. The sawmill operation, while at Central Junior High, was visited by tours from other elementary and high schools in the district. They, too, got to see a small-scale

sawmill in action and to learn first-hand about the forest industry.

Other students at Central Junior High were also involved in the project. Photography Club members and writing students compiled a record of the project. Students in the catering classes turned out "lumberjack" meals for the hard-working crews.

When the project was completed, not only had many Victoria students a better understanding of the forest industry; the school also had a good number of pieces of solid new furniture built of fine British Columbia lumber.

All in all, the Victoria junior high project was an outstanding example of what Operation Green Gold seeks to achieve.

Green Gold Grants pay for qualifying projects sponsored by non-profit organizations, and are aimed at increasing public awareness of the importance of forestry in the province.

During the first year of the Green Gold Grants program, 26 non-profit organizations throughout British Columbia received funding totalling close to \$105,000. An additional \$105,000 is available in 1988/89 and again in 1989/90.

The first year's grants ranged from \$100 to \$10,000, the maximum amount allowed, and averaged \$4,000. Non-profit organizations must match the amount funded through volunteer labour or funds.

Green Gold Grant projects during the first year of the program included brochures for interpretive forests, portable displays for woodlot associations, forestry radio announcements, portable sawmill demonstrations at schools, a Knowledge Network television program, a brochure on horse logging, and slide/tape shows.

Applications must be received by the end of March each year.

Application forms are available from any Ministry of Forests and Lands or Government Agent's office or by writing Green Gold Grants, Box 4115, Station A, Victoria, B.C. V8X 3X4.

New FRDA Releases

Reports

Early Growth of Four Species Planted at Three Spacings on Vancouver Island: by S. A. Y. Omule, B.C. Ministry of Forests and Lands, May 1987, FRDA Report 009.

This study investigated the relative growth of four species (Douglas-fir, Sitka spruce, western redcedar and western hemlock) planted at different initial spacings on a common site in the Windward Submontane Maritime Wetter Coastal Western Hemlock Zone. It is anticipated that over time this information will help in evaluating species selection guidelines and in validating growth models. Results indicated that initial spacing had no significant effect on seedling survival. The growth of Douglas-fir in relation to initial spacing indicated that wider spacing produced larger trees which became merchantable sooner, although volume yield was lower. Growth and yield in the other three species was not affected by initial spacing.

Efficacy and Phytotoxicity of Fungicides for Control of Botrytis Graymould on Container-Grown Conifer Seedlings: by M. M. Glover, J. R. Sutherland (CFS), C. Leadem (MoFL) and G. W. Shrimpton (MoFL), September, 1987, FRDA Report 012.

Six fungicides were tested for efficacy against gray mould on container-grown seedlings of white spruce, western redcedar, Sitka spruce and Douglas-fir. Phytotoxicity of the fungicides to the seedlings was also determined. Growth of all species except Douglas-fir was inhibited by one or more of the fungicides. The fungicide iprodione gave excellent *Botrytis* control on all seedling species. The other five fungicides gave varying degrees of control on various species.

A Review of Pest-Damage Survey Methods for Young Trees and Backlog Reforestation Areas in British Columbia: Prepared by: F. Einfelt (Industrial Forestry Service), J. D. Beardsley (Beardsley and Assoc.), and J. A. Muir (MoFL), September 1987, FRDA Report 013.

As a first step towards developing pest-damage surveys for young

stands and plantations, this study reviewed approximately 25 general forest and silviculture surveys currently in use. The study concluded that several of these — including timber cruising, sampling, pre-harvest prescription, stocking, and free-to-grow assessments — could be modified to record pest damage to young trees. The study also recommended that further surveys would be desirable to detect pest conditions in NSR areas.

For copies of FRDA titles and/or further information about the Canada-British Columbia Forest Resource Development Agreement, contact:

Canadian Forestry Service
Pacific Forestry Centre
506 West Burnside Road
Victoria, B.C. V8Z 1M5 Ph. 388-0600
or
B.C. Ministry of Forests and Lands
Research Branch
31 Bastion Square
Victoria, B.C. V8W 3E7 Ph. 387-6719

Forestry students may obtain copies of FRDA publications through bookstores located at: University of British Columbia, British Columbia Institute of Technology, Malaspina College, Selkirk College, and College of New Caledonia.



Minister of State (Forestry and Mines), Gerald S. Merrithew (r), presents British Columbia Forests and Lands Minister, Dave Parker, with a cheque for \$15.6 million, representing 50% of the federal government's 1987/88 contribution to the cost-shared portion of the Canada-British Columbia Forest Resource Development Agreement. The cheque passing ceremony took place in Victoria.

Renewal is the quarterly newsletter of the Canada-British Columbia Forest Resource Development Agreement.

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Canada



Economic & Regional Development Agreement

The Canada-British Columbia Forest Resource Development Agreement is jointly funded by:

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Pacific Forestry Centre
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B.C. V8Z 1M5 Tel: 388-0600

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