

Forestry

INFORMATION

Canadian Forestry Service
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landscape analysis of Bowen Island is a good example where citizens used survey information for developing zoning by-laws.

Landscape studies to date have concentrated on urban and environmental forestry in the developing areas, and land classification in the Yukon and other areas where there is an immediate need for environmental information.

COMPLETED STUDIES

The first urban land-use studies undertaken by PFRC ecologists was participation in the inventory of land resources and resource potentials in the Capital Regional District.

ANALYSING THE LANDSCAPE

Planning the realistic development of new areas for human habitation and industrial expansion must be based on an intimate knowledge of the lands' capability to support future development.

Increasing demands from land managers and planners for more comprehensive information on our natural resources has resulted in the Pacific Forest Research Centre undertaking cooperative 'ecological' research studies that will provide landscape and vegetation information on the YUKON, GULF ISLANDS, the CAPITAL REGION, GREATER VANCOUVER, POWELL RIVER and north end of VANCOUVER ISLAND.

Often the characteristics of the natural processes are such that the site is suitable for a multiplicity of land uses. Recognition

of the inventory of the site, including all inherent natural processes as social values, must precede any prescription for its use.

Dr. T.G. Honer, Program Manager, PFRC resource research group, said the studies, all undertaken in cooperation with the governing authorities, will provide information which presently doesn't exist or that is not readily available. The results will ultimately help develop guidelines for urban planning. Dr. Honer said the increasing demands for this type of information is a direct result of changing social values and greater concern about the quality of the environment in which we live, work and seek recreation. He said the results of PFRC surveys are often used by community groups and citizen organizations as well as by professional planners. The recent

The release of the PFRC publication 'Native Vegetation in B.C.'s Capital Regional District' by Robert McMinn, Slavoj Eis, Ed Oswald and Harry Hirvonen is a summary of one phase of the initial report. Prepared for the Planning Department of the Regional District, the report BC-X-140 reproduces the map, provides an introduction to the area's topography, soils and climate, a brief description of plant communities and suggestions concerning their values as settings for various land uses.

Copies of this report may be obtained by filling out enclosed post card

The Highland Landscape -- This report is an ecological evaluation of land suitability for urban development in the southern portion of the Highland District, Capital Region of British Columbia. Authors Dr. Slavoj Eis and Dr.

Ed Oswald provide general information and summarize history, climate, physiology, geology, soils and hydrology of the area. The report provides the environmental background for planning a community in an area covered entirely by second-growth forest. A detailed map forms part of the report.

Saltspring Island -- This report is another cooperative study with the Capital Regional District. Authors **Harry Hirvonen, John Senyk** and **Ed Oswald**, describe the physical and vegetation characteristics of the Island.

Only library copies of this report are available

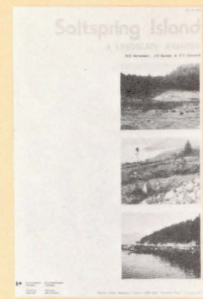
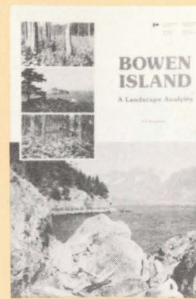
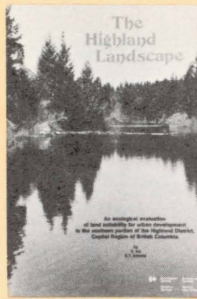
Bowen Island -- This cooperative study with the Bowen Island Advisory Planning Council, the Greater Vancouver Regional District and the Islands Trust, follows a similar method of describing information on geology, topography, climate, soils, hydrology and plant and animal ecology.

Copies of this report may be obtained by filling out enclosed post card

STUDIES IN PROGRESS

Yukon

The classification of Yukon Territories is a general land inventory, incorporating as criteria for subdivisions the significance of landscape features for various resource management uses. The mapping is done from LANDSAT imagery at a scale of 1:1,000,000. The resulting maps and descriptions of the ecoregions are intended to constitute a framework into which land planning, resource inventory, operational ventures, problem analyses and research can be incorporated. (The report 'Eco Regions of Yukon Territory' should be available late in 1976).



Copies may be obtained by contacting PFRC Information Office

Gulf Islands

In a continuing study with Islands Trust and the Capital Regional District, the Gulf Islands land inventory utilizes climate, physiography, geology, soils and hydrology to delineate landscape units by their physical, environmental and vegetational characteristics. The imagery are 20-chain air photographs and the maps produced are at a scale of 1: 20,000 or less. From an extensive ground work the suitability and prohibitions inherent in each landscape unit are being documented. Salt Spring, Bowen, South and North Pender Islands have already been mapped and eventually most of the Gulf Islands will be covered.

Victoria--Vancouver

As a basis for urban planning, the



PFRC has produced preliminary maps covering pertinent features for planned development in the Capital Region and Greater Vancouver. The imagery used were 20-chain air photos. Maps produced are at 1: 50,000 scale and are used for general regional plans which direct, in a general sense, the urban development into areas suitable for human settlement.

When general regional plans are approved by the appropriate governing authority, the PFRC when requested will provide site-specific studies of the areas proposed for development. The objectives of such studies and maps accompanying them are to evaluate each landscape unit for its suitability for individual uses, such as roads, commercial or residential use, schools, parks, green belt, etc. These studies constitute an environmental background for planning a community. Highland Landscape and the Western Community are examples of such studies.

Any plan dealing with a land use requires an inventory of the land resources and land potential and a recognition of natural processes as social values. The planning then becomes an evaluation of alternatives considering the costs and benefits of each.

Ode to a Slash Burner

by Ed Guille

When breath grows short and muscles tire
And hills get steeper and windfalls higher
And those above say you must retire
From the rigours of controlling man made fire

You insist with passion that you're not old
But old caulk boots start to gather mould
From lack of use, or so you're told
And then you're kicked out in the cold

As you sit upon your rocking chair
Filled with remorse and black despair
And think that no one has a care
For old slash burner with vacant stare

Then realize in that dim lit room
That there's no need for all this gloom
For you've given up way too soon
Don't spin you're memories on a loom

This little torch will hearbreak mend
Just add gas and diesel in a blend
And it becomes an instant friend
When match to wick you will lend

Old memories flash about you in review
Quartz and Blaeberry and C.P. 2
And in the creek a bottle of blue
Seems to beckon a thirsty crew

In your head copters will fly
Dropping lines of fire from the sky
And once again from memory's eye
You'll see smoke mushrooms in the sky

So just let all remorse take wing
And in you're head let this thought ring
At all slash burning you were king
And without exception you did your thing

Ed Guille is a fire protection officer with Evans Forest Products, Golden. He composed this poem after spending several weeks with John Muraro - PFRC fire researchers.

FIRE BATTLES BEETLE

PFRC fire researchers and BCFS protection officers will use prescribed fire in an attempt to control the spread of the mountain pine beetle.

The beetle is presently causing widespread mortality of mature lodgepole pine forests in several epidemic outbreaks in the B.C. Interior. Salvage logging of beetle-killed merchantable trees is being used by the Forest Service in controlling the beetle and to obtain some economic return from damaged stands. For areas where current economic conditions make salvage logging impossible, due to lack of market or operators who are able to salvage the timber, the use of prescribed fire for stand sanitation and as a beetle control and stand sanitation is being investigated.

The experiments will take place in lodgepole pine-Douglas fir stands in the Riske Creek Ranger District, 30 miles southwest of Williams Lake. It is a cooperative effort between the fire research and entomology groups of the CFS's Pacific Forest Research Centre and the B.C. Forest Service, Cariboo Forest District protection staff.

The object is to determine if broadcast burning of infested stands will provide an economic and environmental safe tool for controlling outbreaks.

WINS AWARD



Jim Kinghorn, a senior research silviculturist with the Pacific Forest Research Centre, Canadian Forestry Service, Victoria, B.C., has won a special Award of Merit from the Government of Canada for leading a forestry team in developing a system for growing tree seedlings in styroblock containers, a plastic block that has 240 soil-filled cavities.

For the past six years Mr. Kinghorn was responsible for leading an interdisciplinary team of federal and provincial forestry experts in advancing reforestation methods in British Columbia. The successful development of the BCFS/CFS styroblock system for growing containerized seedlings has led to its use throughout the world.

Mr. Kinghorn emphasized that he was only the figurehead, and that success of the project could not have been achieved if it hadn't been for the diligent work of his colleagues Nils Sjoberg, Paul Brett, Glenn Matthews and Alan Vyse of the B.C. Forest Service, and Evert Van Eerden and Jim Arnott of PFRC.

A POWERHOUSE OF KNOWLEDGE AND EXPERTISE

"The library is the 'heart' of a research establishment", says **Mollie MacGregor-Greer**, librarian at the Pacific Forest Research Centre. Most forest researchers consider it as one of the main building blocks in designing and developing a successful research program. The library provides ready access to what others are doing and to the progress that has been accomplished in a variety of disciplines. Often the fact that the information is available eliminates duplication and unnecessary expense.



In charge of the PFRC library since 1966, **Mrs. Greer** and her able assistant **Marlene Mitchell**, are responsible for what is considered one of the finest collections of forestry reference material in western Canada.

Originally designed to serve the specialized needs of scientists, the PFRC library today is used by an increasing number of foresters, forestry students, other libraries and members of the general public. It contains over 8,000 books and periodicals and more than 30,000 technical reports and documents and offers ready access to references to publications in libraries throughout the world. **Mrs. Greer** proudly boasts that "if the library doesn't have it, we will get it."

Subjects range from a comprehensive

FORESTRY COUNCIL WANTS MORE RESEARCH

The Canadian Forestry Advisory Council which helps keep Environment Canada aware of the needs of the forest community recommends:

- ... development of a National forest policy. While forest resources are for the most part managed by provincial governments, a national policy is needed to give coordinated direction to industry, public and all levels of government so that they may work towards overall objectives.
- ... major improvements in forest management are necessary to meet expected product demands by the turn of the century.
- ... the appointment of a Minister of State for Forestry so that there is strong leadership in fields of research and other forestry matters.
- ... high priority for support to professional and technical forestry education and to research by the university-forestry community.

The Council which represents several provincial forestry Deputy Ministers, senior executives from forest industry and university representatives also emphasized the need for federal government initiatives in negotiating joint federal, provincial and industrial agreements on reforestation and tree improvement for the major job of restoring and maintaining the productivity of depleted forest lands. Needed federal support in resource inventory and major access road construction is identified.

In addition, the traditional research role by the Canadian Forestry Service is being reduced in effectiveness through lack of funding and their research capabilities should be strengthened in areas such as forest economics, genetics, reforestation, taxation and forest management incentives.

Special additional economics research is necessary to more clearly identify the role of Canada's forests relative to world forest resources and markets.

Copies of the report entitled, "The Forestry Situation in Canada--Major Concerns and Proposed Remedies." is available from the Canadian Forestry Service, Ottawa.

selection of material on entomology, forest pathology, economics, silviculture, soils, tree biology, weather, hydrology, ecology and fire to the recently acquired set of the Dictionary Catalogue of the Yale Forestry Library. Also available is an excellent selection of abstracting journals, bibliographies, dictionaries and other reference tools.

Books are catalogued and classified

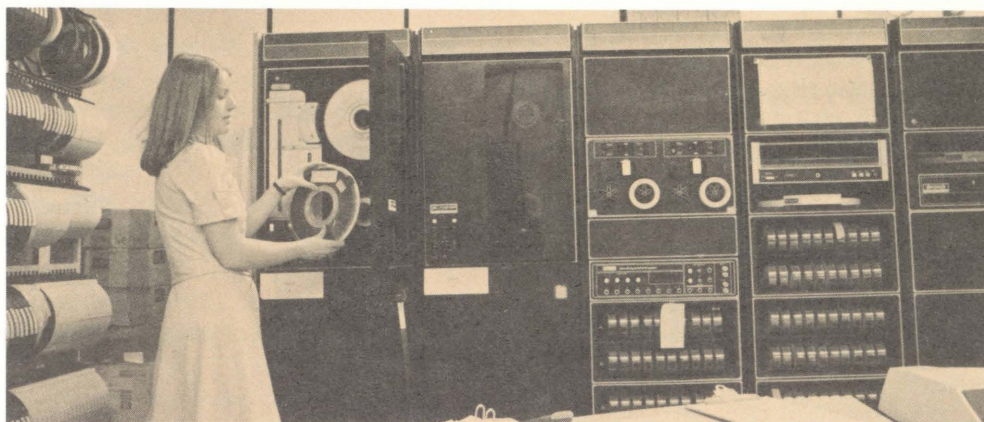
according to the Library of Congress, a system used in most academic and technical libraries in North America. Documents are catalogued alphabetically and numerically and entered on a Kardex for easy reference.

The PFRC library is a contributor to the National Library of Canada, thus providing a 'plug-in' to the international chain of libraries.

Something New

Today's forestry research will uncover even better ideas for tomorrow

Computers in Forestry



REMOTE SENSING

Dr. Y. Jim Lee, PFRC research forester, is using computers and orbiting satellites to provide scientists and land managers with more precise information on the natural resources of British Columbia and the Yukon. Dr. Lee said the satellite-computer system will classify forest land into broad forest types; e.g., in the interior, lodgepole pine can be separated from spruce. The system can predict the degree of run-off after trees have been logged from an area, and through interpretation even show where game animals are to be found or whether they are on the increase or decline.

Satellites pick up information images from the landscape and relay it to Prince Albert, Saskatchewan, where it is electronically taped for computers. The information is then processed by a super computer at the **Canada Centre for Remote Sensing** in Ottawa. The resulting information is fed into the PFRC computer in Victoria.

The technique will mean a forester can update his resource inventory at any time. He can find out roughly the quantity of wood fibre left in his management area, determine where new growth is taking place and estimate the acreage of logged areas.

THE COMPUTER AND SPRUCE BEETLE

An interactive computer simulation model of spruce beetle population dynamics has been developed by the PFRC to aid a team of scientists in evaluating the spruce beetle problem in western Canada. The research teams' major objective is to develop management guidelines to reduce losses in high hazard areas. It was decided to build a spruce beetle computer model in an attempt to better define research needs and set research priorities. The model is a conceptual or theoretical model because the mathematical formulations of the interrelations among variables are based on the collective hypothesis, experience and intuition of the research team.



COMPUTERS HELP BATTLE WEEVIL

Pacific Forest Research Centre specialists are developing an interactive computer simulation model that will integrate available information on the Sitka spruce weevil and its host Sitka spruce in coastal British Columbia. The weevil kills the tree leaders causing crooked and multiple stems, height loss and consequent volume loss. The threat of the weevil has seriously interfered with the use of Sitka spruce in reforesting programs.

The purpose of the model is to evaluate present information, identify information gaps, and to provide a tool to formulate and test control practices.

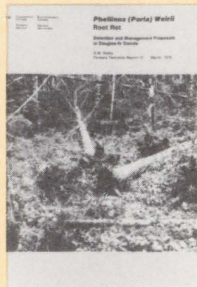
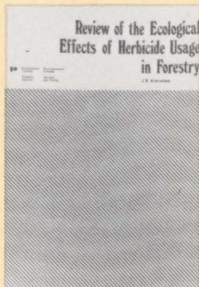
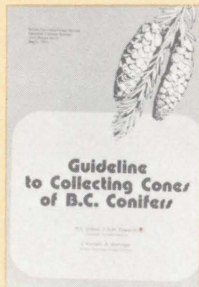
The model, still in the development phase, was designed by Dr. L.H. McMullen, an entomologist and Dr. R.V. Quenet, a biologist/computer analyst. The model suggested that control approaches must concentrate on the early stages of stand development and that chemical control could be effective but requires an excellent mortality level and must be repeated frequently.

This Information Forestry Newsletter is designed to keep you continuously informed on the work undertaken on your behalf by the staff of the Pacific Forest Research Centre, Canadian Forestry Service, Victoria, B.C.

New Publications

INFORMATION REPORTS

1. ESTABLISHMENT OF FORESTS AFTER LOGGING - BC-X-109, Bell/Beckett/Hubbard, (Only available in microfiche).
2. BOWEN ISLAND - A LANDSCAPE ANALYSIS - BC-X-122, Hirvonen (see page 3)
3. ROOTING STUDIES OF WESTERN HEMLOCK CUTTINGS - BC-X-131, Brix/Barker
The selection of cutting material, the seasonal pattern of rooting, variation in rootability and treatment, growth and flowering of rooted cuttings are discussed.
4. REVIEW OF THE ECOLOGICAL EFFECTS OF HERBICIDE USAGE IN FORESTRY-BC-X-139, J.C. Kimmins. The effects of herbicides are discussed both in terms of individual biotic components of forest ecosystems and in terms of the structure and functioning of complete ecosystems.



5. NATIVE VEGETATION IN B.C.'s CAPITOL REGION - BC-X-140, McMinin/Eis/Hirvonen/Oswald/Senyk, (see page 3).
6. SPRUCE WEEVIL DAMAGE. ECOLOGICAL BASIS AND HAZARD RATING FOR VANCOUVER ISLAND. BC-X-141, L.H. McMullen, Various ecological factors, particularly the effect of summer heat, associated with damage caused by spruce weevil are discussed. A map outlining general areas of low weevil hazard area is included.
7. REPORTS AND PUBLICATIONS 1974-75 - BC-X-145. Lists titles of 216 publications issued by the Pacific Forest Research Centre, Victoria, B.C. during the calendar years 1974 and 1975.
8. PHELLINUS (PORIA) WEIRII ROOT ROT - DETECTION AND MANAGEMENT PROPOSALS IN DOUGLAS-FIR STANDS. Tech. Report No. 12 - G.W. Wallis. Designed to assist field foresters and woods supervisors concerned with management of infected Douglas-fir stands. Contains a summary of management proposals relative to stand management phases.

Copies of the above reports may be obtained by filling out the enclosed card and returning it to the Information Office PFRC - 506 W. Burnside Rd. Victoria, B.C. V8Z 1M5.

JOINT REPORTS

9. GUIDELINES TO COLLECTING CONES OF B.C. CONIFERS. Joint Report No. 3. Dobbs/Edwards/Konishi/Wallinger. A series of guidelines relating to various aspects of producing, procuring and processing tree seed in B.C.
10. HIGH ELEVATION REFORESTATION PROBLEMS - Interim Research Results No. 2. Designed to inform 'users' on the progress on a number of studies being undertaken by the BCFS and CFS.



METRIC CONVERSION

"They will be metric awareness programs for registered professional foresters," is the way Bruce Devitt described two special sessions being held to keep foresters informed on metric conversion. Meetings will be held in Victoria September 24th and Vancouver on September 28th.

Speakers from industry, the B.C. Forest Service and the Canadian Forestry Service, will provide a varied account of the current status of conversion and how forestry in British Columbia and in Canada is moving to a total metric system.

(Further details will be announced later. Bruce is Chairman of the R.P.F. Continuing Education Committee).



Feeling low? Plant a tree and watch it grow!
Theo Copley 69



¹ What may be a major breakthrough in controlling forest losses caused by the Douglas-fir tussock moth may be occurring in British Columbia.

Scientists from the Canadian Forestry Service and U.S. Forest Service, and protection specialists from the B.C. Forest Service are collaborating in a major assault against the insect in the Kamloops Forest District. During the past two years the tussock moth has caused extensive tree mortality in Douglas-fir stands in the North Thompson Valley.

The project consists of a major control operation and a research and development program. The objective of the exercise is to prevent or reduce losses, and to develop and test insecticides and biological control materials that will be compatible with environmental requirements.

Combined Attack Fells Douglas-fir Tussock Moth



INSECT CONTROL

The control project was aimed at reducing the larva populations of the tussock moth. The B.C. Forest Service, using aircraft under contract from Conair Ltd., sprayed over 20,000 acres between May 22 and June 19. **Dr. Rod Carrow**, PFRC, provided scientific advice on dosages, timing and assessing the operation. Dr. Carrow said, "preliminary results indicate good success. In most areas the spray achieved 90 per cent insect mortality seven days after spraying."

Mike Finnis, pest management officer for the B.C. Forest Service, said it was the first time the Forest Service has decided to fight an insect outbreak on the same scale as a small forest fire. Spraying was carried out, usually early in the morning, using fixed wing aircraft from a height of 50 to 100 feet. Orthene, an effective organic phosphate, was applied in all areas except in the vicinity of creeks, streams, and watersheds, where BT (Bacillus thuringiensis) was used. BT is a slower acting biological control agent that poses no risk to the aquatic ecosystem. BT had been successfully tested in 1975. Rates of application of Orthene in most areas, was one pound per acre. Where insect populations were lower, a reduced dosage of ½ lb. per acre was used.

Forest Service officials emphasized that the operation was undertaken with tremendous care and a complete awareness of environmental risks. All chemicals had been pre-tested and all resource agencies were consulted. The chemical, Orthene, was chosen as a result of successful tests undertaken last summer.

1. Complete defoliation extended over vast acres of Douglas-fir stands.
2. BT a biological spray was used near watersheds to prevent damage to aquatic insects.

RESEARCH EFFORT

Dr. R. Shepherd, PFRC entomologist and coordinator of the research and development phase of the program, said the research objective was to test Orthene and Dimilin (a chemical that interferes with the natural development of the insect) at lower rates to determine the optimum rate of application. "We were also testing sex attractants and Dr. Steve Illytzy was experimenting with using a virus to help bring outbreaks to a natural halt."

The research team was also assessing the effects of last year's tests with the Orthene, Dimilin and BT.

The research and development phase of the project included a three-man environmental assessment team from the CFS Chemical Control Research Institute in Ottawa.

JOINT PROGRAM

Ken Wright, Head of the U.S. tussock moth control program, said, "the cooperative approach to solving an insect problem that doesn't respect national boundaries is quite significant, particularly from a scientific standpoint. Results will be extremely beneficial to both countries".

The United States has experienced a number of serious outbreaks in the Pacific Northwest since the early 1940's, the last one in 1974, and have used aerial applications of DDT to implement some form of control. Severe restrictions on the use of DDT makes it imperative to find alternate controls.

In British Columbia there have been five recorded outbreaks of the tussock moth since the late 1920's.

The insect is a natural pest which kills trees by completely stripping them of foliage. Epidemics will continue to occur on the average of every 10 years

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3. Extensive log salvage to minimize losses.

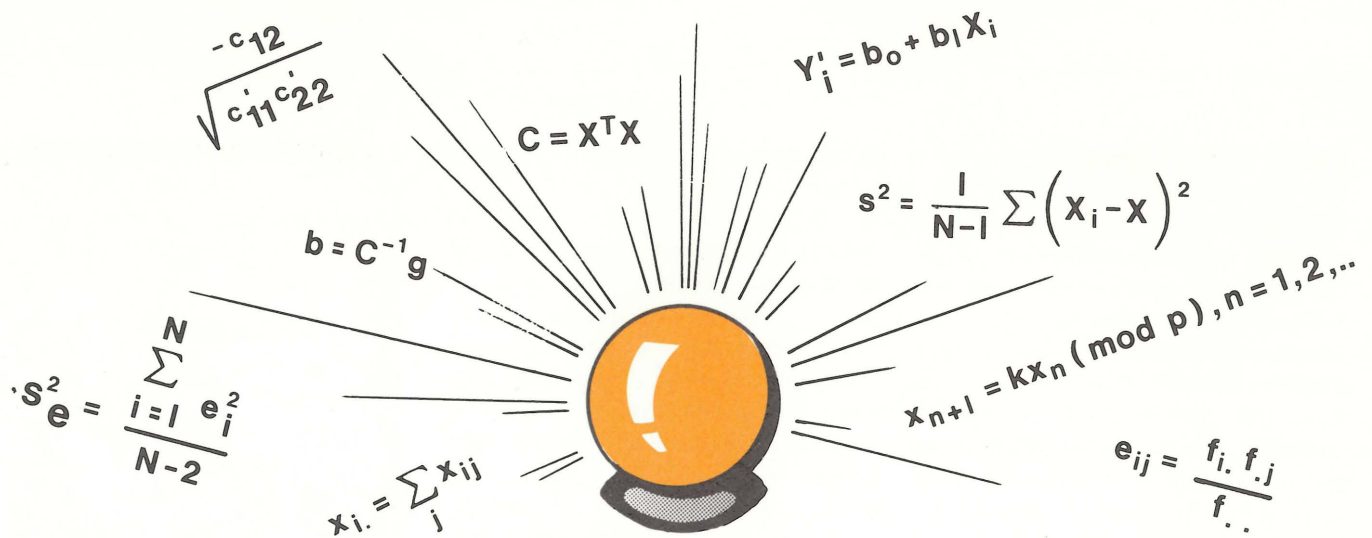
4. Conair aircraft used under contract to BCFS

unless effective control methods are developed.

PUBLIC AWARENESS

Vern Craig, B.C. Forest Service operations coordinator, said that there was little adverse public reaction. Most people were extremely cooperative and in many cases, requested that spraying be carried out on their property.

According to Mike Finnis, this could be based on the fact that Vern and I/c **Ron Bradley** of the B.C. Forest Service did such a thorough job of alerting residents of the operation. In addition to advising ranchers, farmers--including an organic farm and turkey farmer, Vern and Ron visited bee keepers and even went to the effort of locking up a swarm of bees the day spraying was scheduled.



Building a Better Crystal Ball

One of the fundamental requirements of modern forest management is the availability of reliable inventory data. Since management decisions are generally on a long term basis, it is not sufficient merely to provide an estimate of the present status of resource inventory, but predictions must be made of future changes.

To provide forest managers with a reliable method of predicting change, a team of PFRC scientists, led by Frank Hegyi, senior mensurationist, are engaged in an ambitious research project designed to develop tree and stand

growth models in an operational framework.

BENEFITS

Mr. Hegyi said that non-believers often consider growth modelling a computerized mathematical hocus-pocus. Alternatively, they maintain using the traditional yield tables because they are more reliable. In actual fact, they are involved in growth modelling. The columns in the yield tables can be expressed by a relatively simple mathematical equation or growth model; applying such an equation to predict the growth of "similar" stands in simulation.

Because of the obvious constraints of tabulation, yield tables are generally simplistic and offer limited flexibility. Classifying parameters of normal yield tables are often restricted to species and site. Variable density yield tables include broad classes of density besides species and site. On the other hand, growth prediction through mathematical modelling overcomes some of the difficulties. A wide range of classifying variables, as well as constraints,

can be incorporated into either the growth equations or the computer algorithms of the simulators. Hence, growth modelling offers benefits hitherto unavailable in conventional growth and yield prediction methodology.

THREE LEVEL APPROACH

Mr. Hegyi said that it is recognized that three levels of growth models are required, depending on the intensity of forest management. It is further considered that the three levels of growth models be compatible. They should produce the same results under identical conditions, as well as facilitating growth prediction with increasingly greater levels of detail.

Important constraints on the systems analysis of the growth models are that they must be operational with the inventory data bases such as those of the B.C. Forest Service and the industry, as well as be able to stand on their own as simulation models; they should also facilitate expansions and revisions with a minimum of programming efforts.



YIELD FUNCTIONS

This first level of growth model replaces the conventional yield tables or volume-over-age curves. The essential difference is that the relationships between yield and age, expressed traditionally in terms of tables and graphs, are now formulated and available for computer-oriented use in the form of simple mathematical equations. The parameters which classify these yield functions correspond directly with three used in the Provincial forest inventory, hence yield prediction can be made in terms of forest types or type stands. The future status of inventory can thus be estimated by applying to the forest types the relevant mathematical functions, and then multiplying the resulting volume yields (per unit area) by the total areas of the corresponding types.

STAND GROWTH MODELS

Stand growth models are at the record level in terms of complexity and detail. They include such details as bole diameters (at breast height or 1.3m above ground) and total tree height distribution per stand or unit area. The main function of stand growth models is to predict the changes in diameter and height distribution as the stand gets older. The method of prediction may be through the use of regression equations (deterministic approach) or by placing probabilities on the possible changes (stochastic approach). Again the parameters which classify the stand models correspond directly to those used in the Provincial forest inventory, hence these models can be used to predict the growth of individual forest types within a specified inventory, or can function as self-contained

stand growth simulators doing hypothetical populations.

SINGLE TREE GROWTH MODELS

These are the most detailed and complex growth simulators. The basic concept of single tree growth models is that the growth and development of each tree is identifiable in the model at any time. A generalized case of such models is the distance-dependent single tree growth models; these start with the spacial distribution of individual trees being generated or supplied in terms of X-Y



Vast volumes of data can be readily available on computer tape.

coordinates, then each tree is grown in the computer by increasing the diameter and height according to the maximum potential growth rate possible on a given site without the effects of inter-tree competition. However, in order to simulate the real world, the effects of competition on individual trees by their neighbors are formulated in mathematical functions and applied in the reduction of the maximum potential growth rates. The amount and nature of reduction in growth, as well as the estimation of mortality, is determined through calibration. Consequently, single tree growth

simulations can be sensitive to a wide range of silvicultural treatments such as spacing, thinning and even fertilization.

TEAM APPROACH

The growth modelling research is being implemented at PFRC as a team approach. Dr. T.G. Honer, program manager, provides the overall management for the team and the necessary liaison with the Provincial Government and the industry. Frank Hegyi is responsible for providing scientific leadership, as well as for designing and implementing the required systems analysis of the various simulators. Dale Oxtoby, in addition to assisting Frank Hegyi in mensuration and programming, is developing physiological submodels in cooperating with Holger Brix, PFRC tree physiologist. Walter Stanek is responsible for obtaining managed-stand research data for the establishment of functional relationships and for the calibration of the models. Howard Stauffer supplies mathematical expertise to the team and is working jointly with Frank Hegyi on the optimization of growth models. Jim Lee is studying the processes of mortality and is also involved in some fertilization research. Dennis Beddows is responsible for the technical assistance required by the team, and looks after most of the field work.

The growth modelling team works in close cooperation with members of other projects in order to ensure that related expertise is well utilized. In particular, close liaison is being maintained with Mike Crown, project leader of the Shawnigan fertilization and thinning experiments, as well as with pathologists Gordie Wallis and Bill Bloomberg.

FESTIVAL OF FORESTRY

Each year, for the past 10 years, the **Canadian Forestry Service**, together with other B.C. forestry organizations, sponsor Festival of Forestry--a volunteer organization made up of representatives from industry, government, labour and education who are dedicated to furthering the aims of forestry in British Columbia and Canada.

In the words of Chairman, **Bill Moore** of Downtown Winter Harbour, "One of our major programs has been to gather together groups of 20 or 30 graduating foresters and teachers, and forestry and education staff members. We sponsor intensive three to 10-day tours of Canada's forest industry and let them see first hand what our industry and its people are all about. They rap with local union leaders about their problems. They talk to fish and wildlife officials about multiple use of forests. They talk to plant superintendents about sawmill and pulpmill problems and the story of slash fires and reforestation is explained, in the field, by qualified foresters. They visit forest research centres and gain knowledge of the new forests that will one day provide the country with a continuing forest economy.



PFRC silviculturist Jim Arnott hosts education students taking part in Festival tour.

ROOT ROT WORKSHOPS

The impact of root rots on young coniferous forests will be the subject of a series of one-day workshops being held by the **Canadian Forestry Service** on Vancouver Island and the lower mainland between August 10 and November 4, 1976.

PFRC forest pathologists, **Dr. Gordon Wallis** and **Dr. Duncan Morrison**, will collaborate with the B.C. Forest Service and forest industrial companies in explaining the problem and discussing the various alternatives available for managing infected stands.

Root rot has been detected in many stands and is causing major concern to agencies wishing to initiate intensive forest management practices.

Designed for foresters, land managers and woods supervisors, the workshops will explain the consequences and life cycles of three root rot fungi and give a first-hand look at identifying the cause of the damage and discussing what can be done to reduce losses.

The workshops will include field demonstrations in young stands infected by root rots. Seven workshops are scheduled:

Cowichan Lake -- August 10, August 12, October 5
Campbell River -- October 7
Woss Camp, Nimpkish -- October 20
Squamish -- November 3, November 4

Although all seven workshops are scheduled for coastal British Columbia, Dr. Wallis said a series is planned for the Interior sometime next spring.

Anyone wishing further information should contact Dr. G.W. Wallis at the Pacific Forest Research Centre, 506 West Burnside Road, Victoria, B.C. V8Z 1M5.