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INFORMATION FORESTRY

Pacific Forestry Centre
Victoria, British Columbia

Centennial Issue!

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Canada

In this Issue...

- A Century of Innovative Solutions.....3
- Federal Involvement in British Columbia's Forests 4
- Forest Conservation.....5
- Federal Forestry – Milestones in B.C. 6/7
- Canada's First Forest Reserves 8
- The Forest and Insect Disease Survey 9
- Fire Research in B.C. Gets off the Ground 10
- The Styroblock Reforestation System.....11
- Recent Publications 12
- Upcoming Events.....12

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Pacific Forestry Centre
Canadian Forest Service
Natural Resources Canada
506 West Burnside Road,
Victoria, B.C., V8Z 1M5
(250) 363-0600

Editor: Joanne Stone
Layout: Jennifer Adsett

For further information:
Phone: (250) 363-0606
Fax: (250) 363-6006
Email: jstone@pfc.cfs.nrcan.gc.ca

Information Forestry is also downloadable from our site at
www.pfc.cfs.nrcan.gc.ca

A Century of Innovative Solutions

Trees and Canada are almost synonymous. This is as obvious today as it was to the country's aboriginal peoples and early European settlers. As Canada grew, so did the concern over the fate of its forests. It was this forethought that gave birth to the Canadian Forest Service one hundred years ago.

In 1899 Elihu Stewart was appointed the first Chief Inspector of Timber and Forestry on Dominion lands. Condemning excessive exploitation of the forests, he focused on conservation and propagation. As the timber demand grew, federal forestry interests grew to include developing better silvicultural methods and reducing timber loss from fire, insect pests and diseases. Over time the goal of conserving timber supply expanded into the challenges of sustainable development.

Of course the successful development of the Canadian Forest Service has been due to the talents of its employees. Two of the individuals who've been integral to the Canadian Forest Service since the early 1960s are Dr. Carl Winget (a former Director General of the Laurentian, Great Lakes, and Pacific Forestry Centres, now Special Advisor to the Assistant Deputy Minister and Acting Director General of the Science Branch in Ottawa) and Dr. Les Safranyik (senior research scientist at the Pacific Forestry Centre). They've witnessed first hand the change in emphasis from timber management to sustainable development.

"Before, our interest was how much good, marketable timber could be produced," says Winget. "Now, values often compete among themselves." He explains that conservationists, for example, have a different view from those who want to save the forest for recreational purposes. "Add the forest industry, and the range of conflict of interest becomes huge."

Adds Safranyik, "The move to sustainable development led to some difficulty in doing business. The response has been a real need for innovative ways of reconciling multiple interests." The Canadian Forest Service has developed a legacy of innovative solutions in forest management to meet this need.

Now recognized world-wide for excellence in science and technology, the Canadian Forest Service continues to provide essential forest research to secure the social, economic and environmental value of the forest for future generations. And it will strive to do so for at least the next 100 years.

Centennial Celebrations at the Pacific Forestry Centre

In celebration of the Canadian Forest Service centennial, the Pacific Forestry Centre created a David Douglas Trail and a native-species arboretum. On June 4, 1999, His Honour, Garde Gardom, Lieutenant Governor of B.C., dedicated a commemorative cairn at the Pacific Forestry Centre to mark the centennial and the opening of the David Douglas trail. David Douglas (1799 – 1834) is credited with discovering more than 200 plant species in western North America and introducing over 400 North American plants to European gardens.

On August 6, a turn-of-the-century garden tea party (with employees in period costume), and a dinner and dance will take place at the Pacific Forestry Centre to celebrate the event.

His Honour, Garde Gardom, Lieutenant Governor of B.C., dedicated a commemorative cairn to mark the centennial and the opening of the David Douglas trail. Director General Paul Addison looks on.

The Canadian Forest Service mission: To promote the sustainable development and competitiveness of Canada's forest sector for the well-being of present and future generations of Canadians.

Federal Involvement in British Columbia's Forests

This centennial issue of Information Forestry highlights some of the successes of the last 100 years of federal activity in B.C.'s forests. Each story deals with a specific time-frame in history. The following summary may help put the following stories into chronological sequence.

The British North American Act of 1867 established the Dominion of Canada and gave provinces the right to dispose of land and timber, as well as the primary responsibility for forest management. However, the federal government has taken a lead role in the administration of federal lands, the formation of national and international forest policies, cooperative agreements with provinces to promote economic development of the forest sector, and forest research.

The federal government became involved with forest administration in B.C. after the province joined confederation with Canada in 1871. The terms of union bound the federal government to complete a rail link with eastern Canada. As compensation for the high cost of railway construction in B.C.'s rugged terrain, an area known as the Railway Belt was transferred to the Dominion of Canada. With completion of the Canadian Pacific Railway in 1885 these lands and the timber they carried were in great demand, and in 1886 the Department of Interior opened a Crown Timber Office in New Westminster to administer timber berths. A second office was subsequently opened in Kamloops.

The turn of the century saw a growing conservation movement and the federal government created a number of forest reserves in the Railway Belt. Following the establishment of the Forestry Branch in 1899, organized fire protection and investigations into forest cover and rate of growth began. From 1909 until 1922, the federal government sponsored the Canadian Commission on Conservation which also undertook investigations in B.C. However, maintaining separate federal and provincial forest and land administrations was costly, inefficient, and inconvenient. In 1930, the Railway Belt and other forest reserves in western Canada were transferred to the respective provinces.

From the 1920s through the 1950s research in forest entomology, pathology and forest products became a major focus. Interest in Sitka spruce for aircraft construction during the First World War sparked the beginning of the Vancouver Forest Products Lab in 1918. The Canadian Forestry Service continued to develop and maintain the Western Forest Products lab, now known as Forintek Canada Corporation. Widespread bark beetle outbreaks in the southern interior resulted in the Department of Agriculture establishing a forest entomology lab in Vernon in 1919. In 1945, a forest pathology laboratory was started in Victoria partly in response to wartime interest in Sitka spruce and concern with decay problems. A forest entomology lab was added in Victoria in 1948 and they amalgamated in 1950. This was a time of pioneering studies in the life cycles, distribution and control of forest pest species, and the properties of western timber species. Also during this time the Forest Insect and Disease Survey was initiated.

The 1950s and 1960s saw a great expansion of the forest industry in B.C. and many new problems to solve. In 1960, the Dominion Forest Branch and the Forest and Forest Biology Division of the Department of Agriculture were amalgamated as the Canadian Forestry Service. A regional structure was established, new forest research and forest products laboratories were constructed, the scope of forest science programs increased beyond forest protection and forest products, and cooperative agreements were greatly expanded.

While each province continues to be responsible for managing its forest resource, the Canadian Forest Service now addresses national and international issues affecting Canada's forests as a whole, such as climate change, market access and First Nations issues.

Forest research remains an integral part of the Canadian Forest Service.

Forest Conservation

The dawn of the 20th century was a time of great institutional activity in forest conservation in North America as many national parks and forest reserves, services, associations and schools were established. These actions resulted not so much from a public outcry for conservation, but from the advocacy of a growing cadre of scientifically trained professionals who were preaching a gospel of "wise use" and efficiency in the exploitation of natural resources.

In 1906, Prime Minister Laurier had convened the first Canadian Forestry Congress, stating that "Our work has just begun." Two years later, the United States, Canada, Mexico, and Newfoundland participated in the North American Conservation Conference, each country pledging to create a permanent Commission of Conservation. A year after, in 1909, Parliament established the Canadian Commission on Conservation with the Honourable Clifford Sifton as chairperson. It was a unique, non-partisan institution established to study, investigate and advise on conservation issues concerning the country.

Within the Commission of Conservation, a Committee on Forests was formed. One of its goals was to develop a national forest policy. It became one of the most active and productive of the Commission's seven committees, producing five special reports in addition to its annual reports.

One of the most important issues to the Committee on Forests was the prevention of forest fires. Coal-fired railway locomotives were a major cause of forest fires at the turn of the century and the committee influenced the Board of Railway Commissioners to create Fire Prevention Regulations under the Railway Act. The Committee on Forests also helped draft regulations requiring the railways to hire and equip rangers for fire detection and suppression, keep rights-of-way clear of brush, and held the railways liable for damage from fires they caused.

The committee also promoted civil service regulations regarding hiring practices for forest services, establishing forest reserves, and reducing fire hazard through brush disposal following land clearing and logging operations.

Another notable achievement of the Committee on Forests was initiating forest inventories. Hugh Whitford and Roland Craig were assigned the task of compiling information for B.C.'s first inventory from the Dominion Forest Branch, the then fledgling B.C. Forest Branch, the Canadian Pacific Railway Forest Branch, timber licensees, and the Commission's own investigations. The Commission of Conservation published their seminal work, "The Forests of British Columbia" in 1918. It was the most comprehensive forest resource inventory in Canada (and possibly in North America) for several decades.

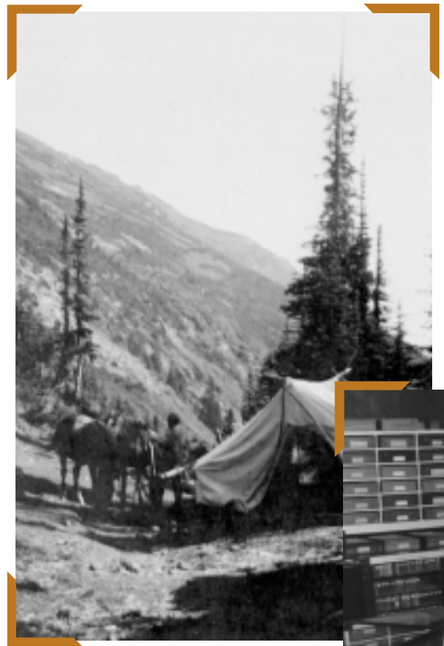
Hugh Whitford and Roland Craig with stems of white pine and cedar on Mara Mountain Trail, Sicamous, B.C., 1923.

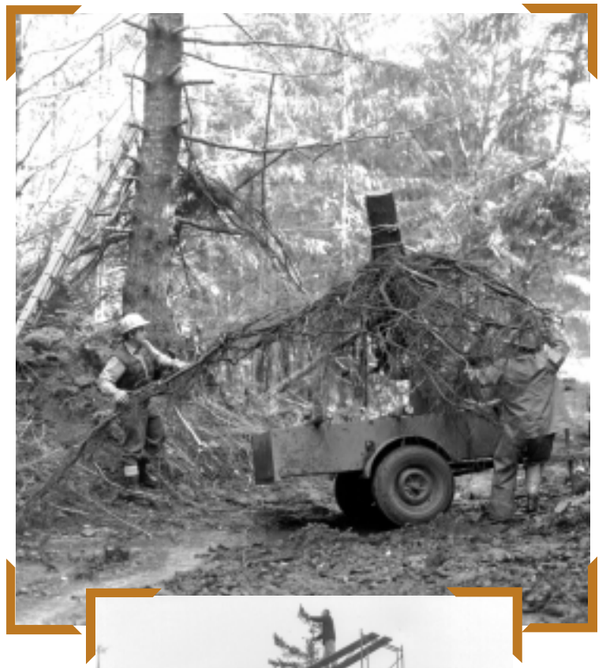
Conserving Canada's forests for the future and developing comprehensive forest inventories continues to be a major focus of the Canadian Forest Service.

Adapted from a story by Steve Taylor.

Federal Forestry – Milestones in B.C.

- **1867** – British North American Act; provinces given right to dispose of lands and timber.
- **1871** – Confederation of B.C. with Canada
- **1873** – Department of the Interior established.
- **1880** – Timber, Mines, and Grazing Branch formed to dispose of timber.
- **1884** – Morgan Commission on the Protection of Forests developed. Railway Belt, Peace River Block, and Coal Block transferred to the Dominion of Canada as compensation for completion of Canadian Pacific Railway.
- **1886** – Crown timber office opened in New Westminister
- **1899** – Dominion Forestry Branch established.
- **1908** – Dominion Forest Reserves Act
- **1909** – Canadian Commission on Conservation, Committee on Forests formed.
- **1911** – Forest Reserves and Parks Act
- **1918** – Vancouver Forest Products lab established.
- **1923** – Forestry Branch renamed Dominion Forest Service
- **1930** – Transfer of Resources Act. Un-alienated lands in the Railway Belt and Peace River Block transferred to the Province of B.C.
- **1936** – Department of Mines and Resources established.
- **1949** – Canada Forestry Act
- **1950** – Department of Resources and Development, Forestry Branch
- **1953** – Department of Northern Affairs and Natural Resources, Forestry Branch
- **1960** – Department of Forestry Act. Forestry Branch of the Department of Northern Affairs and Natural Resources and the Forest Biology Division of the Science Service in the Department of Agriculture combine to form the Department of Forestry.
- **1965** – Pacific Forestry Centre opens.
- **1966** – Department of Forestry and Rural Development, Forestry Branch
- **1969** – Department of Fisheries and Forestry, Canadian Forestry Service
- **1971** – Department of the Environment, Canadian Forestry Service
- **1978** – Department of Fisheries and the Environment, Canadian Forestry Service
- **1980** – Department of the Environment, Canadian Forestry Service
- **1984** – Department of Agriculture (Ministry of State, Forestry)
- **1986** – Department of Agriculture (Ministry of State, Forestry and Mines)
- **1988** – Department of Forestry (pending Royal Assent). Prince George Office opened.
- **1990** – Department of Forestry (Forestry Canada)
- **1993** – Department of Natural Resources, Canadian Forest Service
- **1996** – Prince George office closed.
- **1999** – Centennial of the Canadian Forest Service





Canada's First Forest Reserves

"Big Business Boom in Belt" could have been the newspaper headlines during construction of the Canadian Pacific Railway in the 1880s. Timber exploitation became big business in the "Railway Belt", a strip of land 20 miles on each side of the railway, stretching 500 miles from the Alberta border to Port Moody near Vancouver. Ironically, it was timber exploitation that led to the first forest reserves.

In 1886, a Crown Timber Agent was appointed to administer these timber operations and the railway belt was divided into seven ranger districts for fire control purposes. Within these districts timber reserves developed; these were areas set aside exclusively for the purpose of cutting trees needed by nearby pioneer communities. But as towns developed, so did the realization that forests were much more than lumberyards, and a few years later the name was changed from *timber* reserves to *forest* reserves.

Some of the greatest concerns about protection of the forests came from those living in the dry belts of the Northwest Territories (present-day Manitoba, Saskatchewan and Alberta) and B.C. who had turned to small scale irrigation. The water they used flowed from nearby forested hills or mountains. It was well known that forested watersheds provided reliable water flow, unlike burned or otherwise deforested areas. By 1894 the Wood Mountains (in Saskatchewan) and the Cypress Hills (in Alberta) were set aside to protect the forests on watersheds and mountains. But it was the east slope of the Rockies that became the first forest reserve to be established for watershed purposes. On February 21, 1899 this area was officially named the Foothills Timber Reserve.

The year 1899 was also when the "Timber and Forestry" office (later called the Department of the Interior, Forestry Branch) was created; this was the beginning of the Canadian Forest Service. Elihu Stewart, a legal surveyor, was appointed as the first federal Chief Inspector of Timber and Forestry. He became responsible for a system of forest reserves that had already been set up by Crown Timber Agent E. Frederick Stephenson. Stewart not only established a civilian forest fire organization for western Canada, but also developed a program of public education through the creation of the Canadian Forestry Association. He was also instrumental in establishing the Long Lake Forest Reserve near Kamloops, the first watershed reserve in B.C.

Altogether 12 forest and forest park reserves were created. Portions subsequently became the Yoho, Glacier, and Mt. Revelstoke National Parks, and the present Coquitlam watershed. The remaining forest reserves were transferred to the province of B.C. along with other unalienated lands in the Railway Belt in 1930.

Today, areas of land and water continue to be set aside for concerns such as ecosystem protection, preservation of rare species and wildlife protection.

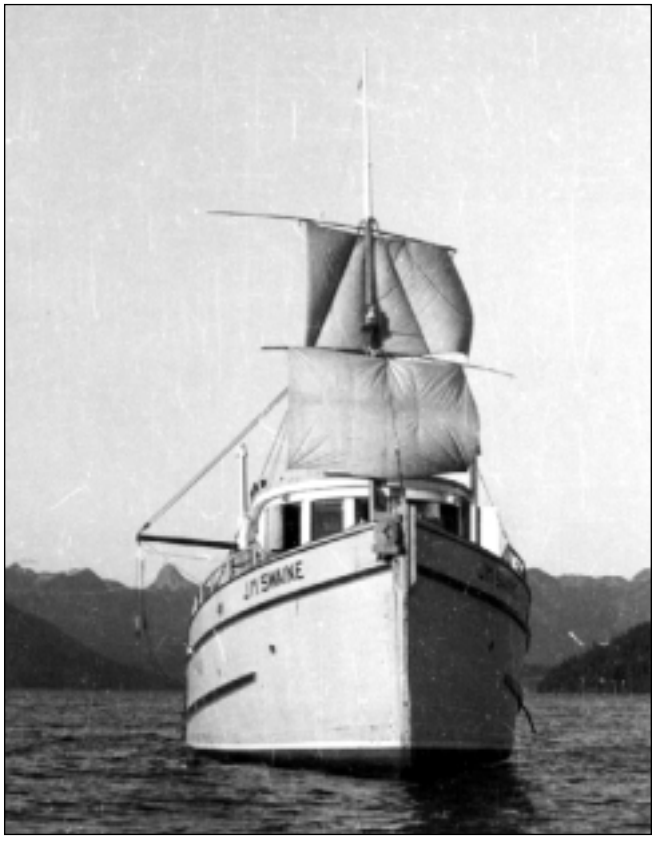
Adapted from a story by Edo Nyland.

C.S. Trevor, O. Jones, and Dr. C. Howe, Canadian Forest Service employees, at Tuktakamin Mountain Lookout Station, Monte Hills Forest Reserve, B.C., August 1923.

The Forest Insect and Disease Survey

Insects are integral to the biodiversity of the forest. In an effort to understand their role and to monitor insect and disease conditions in the forest, the Canadian government has been conducting insect and disease surveys since the turn of the century.

Canada's first full-time forest entomologist, Dr. J.M. Swaine, was appointed in 1912. Swaine published "Canadian Bark Beetles" in 1918, and ten years later, in the midst of severe outbreaks of budworm, sawfly and bark beetles, he advocated the need to survey forest insects. In response, the Division of Forest Insects of the Entomological Branch of the Department of Agriculture organized the "Forest Insect Intelligence Service." This group prepared and distributed questionnaires and brochures detailing principal forest pests to industrial organizations and forest services. Between 1936 and 1939, these forest insect surveys were sent to Ottawa for identification and recording.



The J.M. Swaine, used on the British Columbia coast to observe insect damage to forests. The boat is named after Canada's first full-time forest entomologist.

The objectives of this nation-wide survey were to conduct annual assessments of the status of potentially destructive insect species and accumulate information on their distribution, characteristics of attack, tree species affected, natural control agents, and effects on the forest. These objectives were updated periodically, to include forest diseases in 1952, and damage appraisal and survey methodology in 1969.

After World War II, permanent ranger staff were assigned to work in Victoria and Vernon, in association with the entomology and pathology laboratories. Mr. Lew Fiddick, assigned in 1945, was the first federal insect ranger in the Pacific region. His initial assignment was the assessment of a western black-headed budworm outbreak on northern Vancouver Island. In 1960 the Department of Forestry unified the Forest Insect Survey and Forest Disease Survey, creating the first Forest Insect and Disease Survey. Over the next 30 years Forest Insect and Disease rangers were involved in forecasting and assessing population levels, forest damage, and control efficacy for more than 25 infestations of numerous defoliators.

The Forest Insect and Disease Survey staff in the Pacific Region provided expertise to the B.C. Forest Service and the Yukon Territory, as well as to the forest industry, universities, technical schools, provincial and federal parks, and the public. Through developing practical sampling and survey methods, the Forest Insect and Disease Survey was an invaluable source of information to scientists across Canada and throughout the world. The collections and associated data established a database of more than half a million records on forest diseases, insects and natural control agents. The curated permanent reference collection of more than 66,000 insect and 35,300 disease specimens is critical for accurate identification of native and exotic pests.

Extensive biological surveys (insects, diseases, parasites and predators) were conducted up to 1969, after which emphasis was on introduced insects and diseases of potential risk to Canada's forests. Today, the study of non-indigenous species continues to be a major focus of the Canadian Forest Service Forest Health Network.

For more information about forest insects and diseases, visit the Forest Health Network section at the Canadian Forest Service, Pacific Forestry Centre website at http://www.pfc.cfs.nrcan.gc.ca/main/index2.html#research.

Adapted from a story by Allan Van Sickle.

Fire Research in B.C. Gets off the Ground

For the past several decades Canadian Forest Service fire researchers in B.C. have been "blazing a trail" of successes.

Federal research on fire danger schemes began in the 1920s based on field studies in Alberta, Ontario, Quebec, and New Brunswick. Although federal government fire researchers set up summer field stations in B.C. during the 1950s, it was not until the Department of Forestry Act in 1960 and the expansion of the scope of regional research programs that the fire researcher in B.C., John Muraro, was hired. Over the next 11 years the fire research program grew to a group of 13 researchers and technicians. This unit developed research projects in fire danger rating and fire behaviour prediction, and studied the ecological effects of fire that would lead B.C. into the modern era of science-based fire management decision aids.

In 1968, John Muraro and Bruce Lawson joined colleagues across the country to form the Fire Danger Group. John Muraro developed the idea of a national “Canadian Forest Fire Danger Rating System” that would replace a patchwork of regional systems. The system is used by all provincial and territorial fire management agencies. It has also been adopted by New Zealand and two American states. By 1972, the Fire Danger Group completed the Canadian Forest Fire Weather Index System which provides relative indexes of fuel flamability and fire danger. Work continued for two more decades until the Canadian Forest Fire Behavior System was completed in 1992. The latter system provides quantitative predictions of fire behaviour for most major Canadian forest fuel types. Canada now takes its place on the world stage of fire science, collaborating in and leading major international fire science experiments.

The group in B.C. also made technological advances that revolutionized aspects of fire management regionally, nationally and internationally. One technological innovation pioneered at the Pacific Forestry Centre is the helitorch. Basically an enlarged version of the hand-held drip torch used to ignite slash burns, the helitorch, attached to a helicopter, drips gelled gasoline to the slash below. Such an airborne tool not only improved crew safety, it improved the ignition rate, thus helping to control the burn and allowing several burns to be ignited and supervised at once. By the mid-1970s the helitorch was in commercial production both in Canada and the U.S.

At about the same time as the helitorch was invented, an Australian machine was being developed to drop incendiary capsules from fixed wing aircraft in an effort to ignite large areas of forest and reduce fuel build-up on the forest floor. Expanding on this development, the Pacific Forestry Centre filled small plastic balls with a thermal chemical which delayed ignition. These balls were placed in lightweight aluminium machines and dropped from aircraft. Lighting large forest areas for gentle underburns, post-logging slash burns and wildfire suppression burnouts was now possible, safe and inexpensive. This innovation became known as Aerial Ignition Devices or AIDS, and these devices were eventually used throughout Canada, the U.S., New Zealand, and Australia.

Also during the 1970s, researchers at the Pacific Forestry Centre funded development of a remote and automatic weather station. Daily weather conditions in the forest were measured, stored, and sent over VHF radio channels to where they were used to automatically calculate daily Weather Index readings needed to determine fire protection measures. The electronic/automatic fire weather station concept was developed further by private companies and is used world-wide.

Fire researchers at the Pacific Forestry Centre continue to work closely with colleagues across the country in the CFS Fire Management Network to enhance national fire management systems and programs, and conduct research on the role of fire in ecosystem management.

For more information on fire research, visit the Fire Management Network section at the Canadian Forest Service, Pacific Forestry Centre website at http://www.pfc.cfs.nrcan.gc.ca/main/index2.html#research.

Adapted from a story by Bruce Lawson.

Eric Henry lighting with flame thrower at Kingfisher Burn, Mabel Lake, July 1965.

The Styroblock Reforestation System

Thanks to the Styroblock Reforestation System, over 200 million plug seedlings are grown annually in B.C. alone. This system, developed by the Canadian Forest Service, Pacific Forestry Centre, and the B.C. Forest Service is the most successful reforestation system in western Canada, accounting for virtually all nursery sowings.

In the 1960s, seedlings were grown in nursery seedbeds and their roots were exposed at the time of planting (known as "bareroot stock"). But new studies indicated that containerized reforestation systems could increase planting productivity, improve growth performance, and lend themselves to mechanization, thus reducing labour input, and hence cost. Building on such research, staff at the Pacific Forestry Centre in partnership with the B.C. Forest Service, the University of B.C. Research Forest, and regional forest industries, set to work researching and developing container-planting techniques.

One of the first container systems originally tested was a bullet-seedling concept. Researchers at the Pacific Forestry Centre found that while greatly increasing planting productivity, this system adversely affected seedling survival, early growth and subsequent root development due to a plastic bullet-shaped pot that was planted with the seedling. During these same trials, the team ran paired comparisons with seedlings that had been removed from the bullet pot at the time of planting. These seedlings became known as "plugs", seedlings that were planted with the nursery soil bound to seedling roots. It was found that the plug seedlings gave better field performance than either the bullet seedling or the bareroot stock.

Having established the biological advantages of the plug seedling concept, the next step was to design a more appropriate container in which to grow the seedling. The result was the Styroblock, a modular styrofoam unit containing tapered, rounded cavities in which tree seedlings are raised. When ready for shipment, the seedlings are removed from the Styroblocks, packaged in bundles, and shipped to the field to be planted as plug seedlings.

In 1970 and 1971, the team at the Pacific Forestry Centre co-operated with the B.C. Forest Service to build pilot-scale Styroblock nurseries in Duncan (on Vancouver Island, B.C.), and at Surrey (on the lower B.C. mainland), holding 1,000,000 and 6,400,000 styroplug seedlings, respectively. Everyone from nursery growers to reforestation managers liked the new system and Styroblock nurseries were built throughout the province. Today in B.C. plug seedlings have replaced bareroot production. There are many Styroblock designs available to produce a myriad of stock types tailored to specific management objectives.

Currently, researchers are investigating regeneration success in alternative silvicultural systems in projects such as the Montane Alternative Silvicultural Systems (MASS) project. For more information about the MASS program, check the website at http://www.pfc.cfs.nrcan.gc.ca/practices/mass/.

Adapted from a story by Jim Arnott.

Seedlings growing in styroblocks.

Recent Publications

To order publications on-line, visit the Pacific Forestry Centre Bookstore at http://bookstore.pfc.cfs.nrcan.gc.ca. Search our catalog of thousands of forestry publications. Order copies quickly and easily using a virtual "shopping cart". Open 24/7.

Effects of induced competitive interactions with secondary bark beetle species on establishment and survival of mountain pine beetle broods in lodgepole pine
Safranyik, L.; Shore, T.L.; Linton, D.A.; Rankin, L. Information Report BC-X-384. 33 p. (1999).

Science Investments – Forestry Dividends: Pacific Forestry Centre Program Highlights
Pacific Forestry Centre, Canadian Forest Service, Victoria, BC. (1999).

Les investissements dans la science – des dividendes pour les forêts : Service canadien des forêts – Centre du Pacifique faits saillants du programme
Service canadien des forêts, Centre de foresterie du Pacifique, Victoria CB. (1999).

Tree growth for 15 years following stumping in interior British Columbia
Wass, E. F.; Senyk, J.P. Technology Transfer Note No. 13. (1999).

Croissance des arbres au cours des 15 années suivant des opérations de dessouchage à l'intérieur de la Colombie-Britanique
Wass, E. F.; Senyk, J.P. Notes de Transfert Technologique. Numéro 13. (1999).

Calcareous soils
Kishchuk, B.; Maynard, D.; Curran, M. Technology Transfer Note No. 15. (1999).

Sols calcaires
Kishchuk, B.; Maynard, D.; Curran, M. Notes de Transfert Technologique. Numéro 15. (1999).

Web-based diagnostic tools for insects and diseases of British Columbia's forests and forest nurseries
Thomson, A. Technology Transfer Note No. 17. (1999).

Outil diagnostique Web sur les insectes et maladies des forêts et pépinières de la Colombie-Britannique
Thomson, A. Notes de Transfert Technologique. Numéro 17. (1999).

DNA testing: An application to Armillaria root disease
White, E.; Morrison, D. Technology Transfer Note No. 18. (1999).

L'analyse des empreintes génétiques appliquée à l'étude du pourridié-agaric
White, E.; Morrison, D. Notes de Transfert Technologique. Numéro 18. (1999).

Upcoming Events

Plant Health: Meeting the Challenges
Joint Annual Meeting of the Canadian (CPS) and American (APS) Phytopathological Societies
August 7–11, 1999
Palais des Congrès de Montréal, Montréal, Quebec, Canada
Several Canadian Forest Service employees will be among the presenters at the joint annual meeting of the Canadian (CPS) and American (APS) Phytopathological Societies. For further information contact the Program Chair, Neal Van Alfen, Texas A&M University, Room 120, Peterson Bldg, Plant Pathology & Microbiology, College Station TX, 77843-2132; Phone: (409) 845-8288; Fax: (409) 845-6483; E-Mail: vanalfen@ppserver.tamu.edu

International Union of Forest Research Officers (IUFRO) meeting, "Integrated management and dynamics of forest defoliating insects"
August 15-19, 1999
Victoria, British Columbia, Canada
This working party meeting will focus on the management and population dynamics of foliage-feeding forest insects. All interested individuals interested in participating are invited to attend; membership in IUFRO is not required. For more information visit http://iufro.boku.ac.at/iufro/iufronet/d7/wu70307/victoria/2ndannounce/victann2.htm or contact Dr. Imre Otvos at (250) 363-0620.

Combating Tree Theft: Using New DNA Technology – Ensuring Successful Prosecutions
October 5-6, 1999
Victoria, B.C. Canada
This workshop, offered through the partnership of the Canadian Forest Service, the B.C. Ministry of Forests and the Royal Canadian Mounted Police, introduces the basics of DNA technology as it applies to forestry, coupled with current forensic and legal issues. For further information contact Rod Maides, Canadian Forest Service, 506 West Burnside Road, Victoria, B.C. V8Z 1M5; Phone: (250) 363-0737; Fax: (250) 363-6006; Email: rmaides@pfc.cfs.nrcan.gc.ca.

Federation of B.C. Woodlot Association 12th Annual General Meeting, Conference and Trade Show
October 14–16, 1999
Kamloops, B.C., Canada
For more information, contact Chris Cunningham at (250) 573-3523 or email jsr.cunningham@bc.sympatico.ca.