

Agroforestry *Update*

March 2007

*British Columbia
Agroforestry
Industry
Development
Initiative*

Also In This Issue:

News and Events	4
How Sweet it Is	5
Biomass Research	6

New Bigleaf Maple Research Supports Growing Industry

Tapping bigleaf maple sap for syrup, wine and other value-added food products has become a popular activity on Vancouver Island. Thanks, in part, to support programs led by Harold Macy (see page 5) and an Agroforestry Initiative supported project in partnership with Gary Backlund of **Backlund's Backwoods** which ran from 2003 to 2007, there is a growing community of interested landowners on Vancouver Island and this agroforestry practice has potential for further expansion. Currently, however there is little research to assess the socio-economic viability of expanding the tapping industry. Moreover, the bigleaf maple resource is often dispersed among multiple landowners and therefore land use agreements must be made to secure access and expand tapping enterprises. Additional research and increased awareness will facilitate the growth of the bigleaf maple tapping industry as will develop-

ing partnerships and collaborating with a variety of different landowners. To meet these goals, and with funding support from **BC Agroforestry Industry Development Initiative**, Deirdre Bruce, a **University of Victoria** graduate student, is leading research and development support to help advance this emerging industry with university, government, industry and First Nations partners.

Deirdre's work employs a 'hands-on', participatory approach to assess the challenges and opportunities of incorporating an agroforestry system for the bigleaf maple on Vancouver Island. This project is being developed collaboratively with the key partner, **Glenora Farms** in the Cowichan valley and multiple land owners in Port Alberni, Cowichan Valley and Ladysmith. Deirdre is assisting with setting up a demonstration sugar shack, organizing and managing the bigleaf

maple tapping and collection, and sharing information and knowledge to assist with evaporating, finishing and bottling syrup. Field work commenced in October 2006 with a survey of potential tapping areas in Glenora, Ladysmith and Port Alberni to assess access and ownership. Where suitable sites were found, landowners were approached to assess their willingness to participate in the research project. Non-exclusive agreements were formed with the private forest company, **Island Timberlands**, in order to tap trees in Glenora and Ladysmith. In addition, the **Alberni Valley Chamber of Commerce, the Tseshahat and Hupacasath First Nations** are participating in the research. Tapping for the project commenced with the maple sap run beginning in early December 2006 and was completed in early March of 2007.

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Bigleaf Maple Research *continued*

“Sap flow is highly dynamic from site-to-site and this project is gathering baseline data that will help to understand the factors that affect daily and seasonal variability.”

A knowledge gap that has restricted the productivity of the West Coast maple tapping industry is the predictability of sap flow. Sap flow is highly dynamic from site-to-site and this project is gathering baseline data that will help to understand the factors that affect daily and seasonal variability. Deirdre has organized a system to collect data on daily sap flow (overall volume of sap per spile per site) to determine differences between microsites as affected by soils, topography and the surrounding vegetation complex. In addition to her own field work, member of the Vancouver Island “Sapsucker” community have been encouraged to collect data on their time spent in the sugarbush and sap flow volumes, in order to improve the scope of the data set.

Bigleaf maple is currently undervalued in the forest industry and there has been little incentive to manage for the multiple values of this tree species. In fact, bigleaf maples in conventional forest management are often treated as a pest species and chemical treatments are sometimes used to eliminate them from mixed

stands. It is known that the bigleaf maple has extensive environmental values and provides habitat for a multitude of different lichens, mosses and forest dependent species. Therefore, conserving bigleaf maple for sugarbush production promotes an increased level of environmental stewardship as it sustains the many values of this native deciduous tree species.

Looking to the future development of this cottage industry, exploratory work is being conducted into the value-added potential of the bigleaf maple syrup by making connections with microbreweries in the Cowichan Valley and the Greater Victoria area. In consultation with brew masters, Deirdre will determine the suitability of the maple sap for making beer by assessing the optimal sugar content for a marketable product and its ability to ferment. Chris Gress, a brew master at the **Craig Street Brew Pub**, is interested in learning more about the viability of using bigleaf maple syrup for making beer and other regional microbreweries that may be interested in developing a unique local beer will be identified. This

project will also outline the process of certifying the bigleaf maple syrup as an “Organic” food product and will determine its eligibility on the international “Slow Food” list. All of these steps are key to the sustainable growth and of this industry.

Deirdre has a Bachelor of Science from the Natural Resource Conservation program at the University of British Columbia. She is registered as a ‘Forester In Training’ with the Association of BC Professional Foresters and has been working in the forest industry on Vancouver Island for the past 5 years. She is currently pursuing her Master of Science through the University of Victoria with Dr. Dan Smith, head of the dendrochronology lab as her supervisor. Her graduate work is being co-supervised with Dr. Bill Wagner at the **Pacific Forestry Centre**. Dr. Wagner has extensive experience working with First Nations and on community based projects and will be actively consulting with Deirdre throughout the project.

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Bigleaf Maple Research *concluded*

In addition to her work experience and studies in Victoria, Deirdre has gained insights into the industry during a Pacific Forestry Centre / University of Victoria sponsored trip to Ontario last year. The visit provided a first-hand opportunity to see businesses in the well-established sugar maple tapping industry and meet with scientists who are actively involved with the maple syrup production industry in Ontario.

In addition to assistance from Lawrence Lampson (Glenora Farms), Chris Law of **Sproat Lake**

Forestry Services Ltd is also providing support for this project. Sproat Lake, a forestry contracting company based in the Alberni Valley, is interested in the development of innovative forestry practices on Vancouver Island. It is also hoped that, through fostering greater awareness of bigleaf maple tapping potential, new agreements will be made to facilitate tapping with a variety of other landowners including First Nations, BC Timber Sales and private forest landowners.

This project shows that

innovation and agroforestry can help to diversify forest-dependent communities. Working in partnership with a wide range of groups and by increasing awareness and promoting the benefits of forest farming through them it is hoped the compatible management of multiple forest values will increase to the benefit of all. It's also Deirdre's desire that by empowering locals to be directly involved in the research, growth and participation in bigleaf maple tapping will continue well beyond the research project.

For more information on this project or to become involved in the research, please contact:

Deirdre Bruce:

deirdreb@uvic.ca



University of Victoria graduate student Deirdre Bruce monitors sap flow during the recently completed 2006-07 bigleaf maple tapping season.

Announcements and Upcoming Events

A reminder that next **deadline** for letters of intent and applications to the British Columbia Agroforestry Industry Development Initiative is **Tuesday, May 15, 2007**

Birch Tapping Workshop

The Quesnel Community and Economic Development Corp (QCEDC) is pleased to offer a Birch Syrup Production Workshop on **Saturday, April 21, 2007** in **Quesnel** to introduce prospective backyard and commercial operators or anyone interested in farm and forest diversification to "sugaring off" boreal forest style. With the wide distribution of birch across Canada, increasing interest in agroforestry and a small but growing number of commercial operations, the birch tapping industry has huge potential for expansion. The nine existing commercial producers in Canada all state that demand for their products exceeds supply.

This workshop will focus on tree and sap physiology, supplies and equipment, legislation and marketing and an introduction to other products from the birch tree. Participants will also network with existing producers while sampling some birch sap and syrup products. One half of the workshop will occur at an operating "Sugar Bush" for a hands on demonstration

of tapping, sap handling and processing.

Workshop fees are \$95.00 and includes a copy of the new "Birch Syrup Production Manual", all nutrition breaks and syrup product samples. **Register prior to April 7, 2007** to be entered to win a "Birch Syrup Production Starter Kit". Additional manuals can be ordered for \$40.00. To register or for more information, please contact April Cheng, QCEDC: 250-992-3522 or acheng@quesnelcorp.com

Heloise Dixon-Warren, RPF, Project Leader: 250-249-5329 or mmfarm@goldcity.net

Registration packages can be downloaded from www.quesnelinfo.com or www.quesnelcorp.com

Kamloops and Area Farm Fresh Guide

Showcasing farm fresh products and agritourism operations in the Thompson Nicola area. Delivery is planned for mid-May as an insert into over 32,000 newspapers throughout the Thompson Nicola Regional District. For more information on individual farm listings and prices please contact Nancy Portman, at 250-371-6052

nancy.portman@gov.bc.ca
Submission deadline is Friday April 6, 2007.

Specialty Crops Framework

The BC Ministry of Agriculture and Lands' "Framework for Evaluating Specialty Crops." (see article in the March 2006 *Agroforestry Update*) is available to download from the Ministry's website:

www.agf.gov.bc.ca/speccrop/publications/evaluate_speccrop.htm

North American Agroforestry Conference

June 10-13, 2007 at Université Laval, in **Québec City, PQ**. The intent of the conference is to stimulate the development and the adoption of sustainable rural land management practices centered on the integration of trees into the landscape. The conference will include two days of talks, a scientific poster session and a field-day in La Pocatière, Québec.

For more info please visit: www.agrofor2007.ca

or email: info@agrofor2007.ca



From Support to Success: “How sweet it is...”

By HAROLD MACY
with thanks to

GARY BACKLUND
for data and zeal

Quite often it seems like governments pour money into programs with dubious benefits to the provincial or local economy. Several years ago, as part of the Forest Renewal BC (FRBC) Small Woodlands Program, I was contracted to co-author and teach the “Vancouver Island Master Woodland Manager” course, an intensive seven weekend combination of classroom and field work. Over fifty private land-owners and Woodlot Licensees took the course over two years.

One popular component of

the curriculum dealt with non - timber forest products. Included in that module was an introduction to West Coast maple syrup. Several of the students took this to a new level, setting up their own systems and producing a quality product. The interest spread throughout the island with short courses, workshops, an excellent handbook written, and local fabricators welding up evaporators — a secondary industry to the production. Activity is centred in the Cowichan, Alberni, and Comox Valleys with enthusiastic others scattered over the island and Gulf Islands.

It has been estimated that a minimum of 40,000 litres

of sap was collected this season. Many people, including a Scout group, have developed homemade systems. A local feed supply store has sold out of tapping supplies several times. The syrup being produced, or rather that which makes it to market, is being sold for at least twice the price of eastern maple syrup with no complaints other than requests for more.

So through the primary economic generation of supplies, the secondary level of activity with private enterprise making local equipment and finally the production of an exquisite new agroforestry product, I feel safe to say the original investment by FRBC was, in this case, a good expenditure.

Agroforestry for Biomass Production Benefiting Canadians

By SARAH SEINEN

Planting fast - growing native willows for biomass production could increase the diversity, profits and viability of farms across Canada, experts say.

“Biomass has the potential to make a significant contribution to energy supplies, both nationally and worldwide,” says Bill Schroeder, head of research at Agriculture and Agri-Food Canada - Prairie Farm Rehabilitation Administration (AAFC - PFRA) Agroforestry Division’s Shelterbelt Centre at Indian Head, Saskatchewan.

The AAFC-PFRA Agroforestry Division is partnering in a three-year research project to study short-rotation willow plantations and agroforestry systems for biomass and bioenergy generation.

“Our goal is to create agroforestry knowledge for practical use by producers and land managers, so they can manage their land resource sustainably while also benefiting from the production of biomass and its energy potential,” says Schroeder.

Biomass is any renewable organic matter such as trees, crops, feeds or agricultural residues, and can be used to reduce greenhouse gas emissions and produce energy for final end uses such as heat, fuel and electricity.

Historically, biomass commodities (such as wood) were the main source of heat for many Canadian homes, farms and businesses.

“New conversion technologies are resulting in renewed interest in biomass production for energy. This process is capable of generating both sustainable energy and environmental benefits—it’s a two-for-one deal,” says John Kort, a researcher with the AAFC-PFRA Agroforestry Division.

Funded by the Technology and Innovation fund of the Canadian Biomass Innovation Network, the agroforestry biomass project consists of two sub-projects with study sites in Saskatchewan, Ontario, Quebec and Prince Edward Island.

The sub-projects are: agroforestry systems for energy production and native willows for biomass production.

Under the agroforestry systems sub-project, AAFC-PFRA Agroforestry Division researchers are evaluating willow alley-cropping and riparian buffers. At the alley-cropping sites, they are studying willow interactions with herbaceous biomass crops to see if improved moisture availability and other microclimate effects increase total biomass production compared to monocultures while reducing net carbon emissions.

The riparian study sites will test the hypothesis that willow - based riparian buffers provide high biomass yields while providing environmental benefits (that is, erosion reduction, nutrient interception, and improved soil and water quality).

Willows are ideally suited for riparian buffers because they are naturally found in riparian zones and they have the ability to readily develop an extensive root system which forms an effective biofilter and soil stabilizer.

Furthermore, the economic feasibility of willow biomass and conversion technologies are being studied by researchers with Natural Resources Canada (NRCAN).

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“..fast - growing native willows for biomass production could increase the diversity, profits and viability of farms across Canada.”

Agroforestry for Biomass Production *continued*

As part of the willow sub-project, NRCAN is selecting native willows from across Canada, with the intent to choose species and clones that can be further developed for biomass production through breeding and/or selection. Its goal is to find willows that grow faster and produce more biomass.

“Willow has a very high biomass production potential; its energy value per dry tonne is similar to

other hardwoods,” says Kort. “Furthermore, it easily establishes with unrooted cuttings and resprouts vigorously after harvest.”

These projects will identify what biomass production advantages agroforestry systems have compared with herbaceous (grass/forages) or woody monocultures (poplar farming).

In this project, AAFC-PFRA Agroforestry Div-

ision researchers are working in partnership with: University of Saskatchewan, Indian Head Agricultural Research Foundation, University of Guelph, Institut de technologie agroalimentaire, Canadian Forest Service (Fredericton, Ste-Foy and Edmonton), Prince Edward Island Soil and Crop Improvement, Jardin Botanique de Montreal and the Saskatchewan Research Council.

For More Information Contact:

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AAFC-PFRA Agroforestry Division is partnering in a research project to study agroforestry systems for biomass and bioenergy generation.

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If you have suggestions for future editions of the *Update* or know of an event that should be included, please let us know.



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