

# BC

# Forest PROFESSIONAL

MARCH - APRIL 2017

Controlled Vibrations of  
Taller Wood Buildings

**Finding New Value  
from Old Lumber**

Sustaining a Strong Forestry Sector:  
An interview with Ric Slaco, RPF

**Forest History: The  
Birth of an Association**

Inside the Largest Biomass-Heated  
Industrial-Integrated System in Canada



**ON TOPIC**  
Wood Products: More than Raw Logs



# Managing BC's forests

## just got easier.

---

**IMAGINE IF WE  
KNEW WHICH  
TREE TO PLANT,  
AND WHERE  
TO PLANT IT –  
EVERY TIME**

Forests are a crucial part of Canada's cultural, social and economic fabric. Their fibre powers the forest industry, generating jobs and wealth. They play a key environmental role, cleaning our air and water, storing carbon and providing habitat to wildlife. They are, however, constantly under threat from changing climates, invasive pests and pathogens. Imagine a world where our forests are pest-free and easily adaptable to climate change and where breeding practices are improved by sound science. This dream is now even closer. BC is leading the way with five new, cutting-edge academic research projects backed by a \$40-million investment into our province from federal and provincial governments, and other partners.

Visit [genomebc.ca](http://genomebc.ca) and follow us on:

 [genomebc](https://www.facebook.com/genomebc)  [Genome British Columbia](https://www.linkedin.com/company/genomebc)  [@genomebc](https://twitter.com/genomebc)

**Genome**  
British Columbia  
Leading > Investing > Connecting

# Index



Photo courtesy of CSWG

21

## On Topic

- 9** Value-added Applications for Building and Fibre-based Products  
**By Cheryl Waddell**
- 10** Recycled Particle Board: New Value from Old Lumber  
**By Karen Storry, PEng**
- 12** Using Waste Energy from Sawmills to Heat Prince George  
**By Kara Serenius, PEng**
- 14** West Fraser's Edson Remanufacturing Facility Finds Value in Every Piece  
**By Andrew McGibbon**
- 16** Controlled Vibrations of Taller Wood Buildings  
**By Steven Kuan, PhD, PEng, FEC; and Lin Hu, PhD**
- 21** Professional Practice and Construction Initiated Slides  
**By the Construction Initiated Slides Working Group**
- 22** New BEC for the South-Central Columbia Mountains  
**By Deb MacKillop, MSc, RPF**
- 24** Climate-based Seed Transfer: Guiding British Columbia's Reforestation Investments in Climate Change  
**By Jack Woods, RPF; and Colin Mahony**

## Departments

- 5** Letters
- 8** Reflections on Ethical Requirements
- 9** The Principles of Stewardship
- 26** In Memoriam
- 28** Book Review
- 29** Occupational Health and Safety and the Forest Professional
- 30** Membership Statistics
- 31** Moment in Forestry

## Special Features

- 18** Forest Leadership: An Interview with Interfor's Vice President and Chief Forester Ric Slaco, RPF  
**By Cheryl Waddell**
- 25** The Birth of an Association  
**By Gerry Burch, RPF(Ret), Life Member**

## Interest

- 20** Year-end Report: The ABCFP's New Registration Process  
**By Casey Macaulay, RPF**

## Association Business

- 6** President's Report
- 7** CEO's Report
- 8** Association News

## Bringing Tactical Planning Software to the Forest Industry



# FOREST OPS™

*Simplify. Organize. Manage.*

**SEE BACK COVER  
FOR DETAILS ►**

**forestOPS.jrpltd.com**

## Problems with Government's Timber Supply Review Process

In the May-June 2016 edition of *BC Forest Professional*, we read with interest an article titled *Meet the New Chief Forester: Diane Nicholls, RPF* in which Nicholls states that she is working on the timber supply review (TSR) process and forest inventory as a priority issue.

A serious problem that confronts the chief forester is that uncertainty is not properly accounted for in the inventory and growth-and-yield models used by the provincial government and stakeholders to support government objectives, forest resource planning, and resource management decisions.

Witness the reality of uncertainty that recently led mayors from across the province — not just the cities — to pass, without one word of opposition, a resolution at the annual Union of BC Municipalities convention in Victoria invoking the provincial government to re-evaluate how logging rates are calculated “so that stable, long-term employment [can] be assured and watershed and wildlife spaces protected.”

The TSR process needs improvement. The process:

- Relies on the use of an unvalidated growth-and-yield model, calibrated with out-of-date, incorrectly compiled and corrupted data, to predict natural forest growth;
- Relies on an invalid use of the null hypothesis significance test (NHST) to infer equivalency in (1) the inventory audit methodology, when assessing the accuracy of estimates of standing volume; and in (2) the validation of the growth-and-yield model used to predict the growth of managed stands. Even if used correctly, scientific conclusions and business or policy decisions should not be based solely on the results of a single NHST;
- Fails to account for the uncertainty associated with not incorporating the effects of climate change into the growth models, particularly in the area of forest health; and
- Has never been subjected to an independent, third-party audit. Given the above, it would not likely pass such an audit.

BC's chief forester might consider utilizing out-of-province auditors to assist the professional foresters on her leadership team with the correct assessment of uncertainty and material errors in the timber supply review process.

Sincerely,

**Anthony Britneff, RPF (Ret), and Martin Watts, RPF**  
Victoria, BC

## Have a Compliment or Concern? Write us!

The *BC Forest Professional* letters section is intended primarily for feedback on recent articles and for brief statements about current association, professional, or forestry issues. The editor reserves the right to edit and condense letters and encourages readers to keep letters to 300 words. Anonymous letters are not accepted. Please refer to our website for guidelines to help make sure your submission gets published. Send letters to:

Editor, *BC Forest Professional*      E-mail: [editor@abcfp.ca](mailto:editor@abcfp.ca)  
Association of BC Forest Professionals      Fax: 604.687.3264  
602-1281 W. Georgia St  
Vancouver, BC V6E 3J7

# BC Forest PROFESSIONAL

*BC Forest Professional* is published six times a year by the Association of BC Forest Professionals

602-1281 W. Georgia St, Vancouver, BC V6E 3J7

Tel: 604.687.8027 Fax: 604.687.3264

E-mail: [editor@abcfp.ca](mailto:editor@abcfp.ca) Website: [abcfp.ca/web](http://abcfp.ca/web)

**Managing Editor:** Dean Pelkey

**Editor:** Cheryl Waddell

**Editorial Assistant:** Michelle Mentore

**Editorial Board:**

Janelle Dale, RPF; Ron Hart, RPF; Erika Higgins, RPF;  
Trevor Joyce, RPF; Marie-Lou LeFrancois, RPF; Kristin Storry, RPF

**Design:** Massyn Design

**Printing:** Met Fine Printers

**Distribution:** Met Fine Printers

**ADVERTISING SALES MANAGER:** Cheryl Waddell

602-1281 W. Georgia St, Vancouver, BC V6E 3J7

Tel: 604.639.8103 • Fax: 604.687.3264

E-mail: [forest-ads@abcfp.ca](mailto:forest-ads@abcfp.ca)

**ISSN:1715-9164**

Annual subscriptions: Canada; \$44.80 incl GST

U.S. and international; \$80 Canadian funds

Publications mail agreement no: 40020895

Return undeliverable Canadian addresses to:

ABCFP Circulation Department

602-1281 W. Georgia St, Vancouver, BC V6E 3J7



**PRESIDENT** • Mauro Calabrese, RPF, RPBIO

**VICE-PRESIDENT** • Robin Modesto, RPF, PENG

**PAST PRESIDENT** • CHRISTOPHER STAGG, RPF

**LAY COUNCILLORS**

ROD VISSER, TOM WALKER

**COUNCILLORS**

Trevor Joyce, RPF; Morgan Kennah, RPF;

Mason McIntyre, RFT; Lisa Perrault, RFT;

Cliff Roberts, RFT; Kerri Simmons, RPF;

Trevor Swan, RPF

**CHIEF EXECUTIVE OFFICER**

CHRISTINE GELOWITZ, RPF

**REGISTRAR AND DIRECTOR OF ACT COMPLIANCE**

CASEY MACAULAY, RPF

**DIRECTOR, PROFESSIONAL PRACTICE**

AND FOREST STEWARDSHIP

MIKE LAROCK, RPF

**DIRECTOR, FINANCE AND ADMINISTRATION**

LANCE NOSE

**DIRECTOR, COMMUNICATIONS**

DEAN PELKEY

**DIRECTOR, PROFESSIONAL DEVELOPMENT**

AND MEMBER RELATIONS

BRIAN ROBINSON, RPF

*BC Forest Professional* is the professional magazine of the Association of BC Forest Professionals (ABCFP). Editorial submissions, comments, letters to the editor, articles, and photos should be sent to the editor, address above. The opinions expressed in *BC Forest Professional* do not necessarily represent those of the ABCFP, its council, or other members. Reprinting and copying of *BC Forest Professional* articles is encouraged. Please include a credit to both the author and *BC Forest Professional*.

naturally:wood®

# Global innovation in your backyard.

Visit [naturallywood.com](http://naturallywood.com) to access:

- ▶ B.C. forest facts - research comparing B.C.'s forest management practices to the world.
- ▶ Project gallery - over 60 B.C. community buildings showcasing wood design.
- ▶ Factsheets - Topics such as B.C.'s world-leading SFM practices, climate change & carbon
- ▶ Case studies on innovative wood buildings in B.C. such as UBC's Brock Commons Tallwood House



UBC Brock Commons Tallwood House | Photo: KK Law

Visit [www.naturallywood.com](http://www.naturallywood.com)

# STAY SHARP



BC Forest Safety

Slips, trips and falls are the second most common workplace injury. Stay on your feet with proper footwear, being aware of where you step and carrying only what is needed. **It's easier to stay well than get well.** [www.bcforestsafe.org](http://www.bcforestsafe.org)

# Success for Foresters Based on Building Trust

**I write this as my term as ABCFP president winds down, which I find quite amazing, given that it seems like barely a few weeks ago I was on stage at the 2016 forestry conference in Vancouver, taking the reins from Jon Lok, RFT.**

At that time I outlined three areas I wanted to focus on as president of the ABCFP's 69th council:

- A new three-year strategic plan;
- The value proposition of belonging to the association, specifically strengthening relationships and finding common and collaborative ground between government, industry, and consulting members; and
- The relevance of our association to First Nations peoples and communities.



The first item — a new three-year strategic plan — is complete and members may have picked up a copy at the recent 2017 forestry conference and AGM in Prince George. The plan is the culmination of a great deal of work by council and staff and incorporates the viewpoints and advice of a wide cross-section of members and stakeholders. It builds on the strategic framework contained in the 2014-2016 plan and provides a refined mission statement that more accurately defines the role of the association: Ensuring BC

has competent forest professionals who strive for excellence in forest stewardship and are accountable for their conduct and practice.

This new plan will carry us through to 2019 and it emphasizes working to further strengthen the confidence of the public in the profession, and building the value proposition for members and their employers — both items that I highlighted in my 2016 speech to members. Critically, we have seen in the past year growing attention paid to the concept of professional reliance and criticism of self-regulating professions such as forestry. It's important that we, as an association and as individual forest professionals, continue to earn and maintain the public's trust and we must rigorously demonstrate accountability through our actions and professional performance.

The new three-year strategic plan can be found on our website and members can also request printed copies by contacting the ABCFP office.

I have written at length in this column on what I see as the value of belonging to the association; hopefully my musings have not deterred you from reading this magazine. This is a topic that I think is worthy of ongoing discussion and I'm gratified when I read the interviews with members of the Chief Foresters' Leadership Team and how they also value their membership.

Over the past year, ABCFP CEO Christine Gelowitz, RPF, myself,

and several other members of council met with members and employers across the province. We heard your concerns and we believe the directions incorporated into the new strategic plan work to address some of them. Specifically, we recognize that not all members share our belief in the value of being an ABCFP member. Consequently, the association must demonstrate that value on an ongoing basis by providing members the knowledge, tools, resources, and support needed to build public trust and lead the way in forest stewardship.

Lastly, I spoke of making our profession more relevant to Aboriginal Peoples. This is a critical function for us as a profession. It's incumbent for the association to work on building trust with Aboriginal Peoples. Legal decisions, reconciliation agreements, treaty negotiations, and other government initiatives are reshaping the way natural resource industries, including forestry, operate in BC. Our profession is not immune from these forces and while it is clear forestry holds great importance for Aboriginal communities, we must ensure that whatever form an evolving relationship between Aboriginal Peoples and the forest industry takes, the knowledge and skills of practising forest professionals remain at the center.

Hopefully those of you who attended the 2017 forestry conference in Prince George in February were able to hear Chief Councillor Robert Dennis of the Huu-ay-aht First Nation discuss how his people are using their title lands and forestry as a tool for economic development. The activities of the Huu-ay-aht are a prime example of how forestry in BC is changing and how we, as forestry professionals, need to be aware of and able to accommodate the perspective and needs of Aboriginal Peoples as we plan for land use and forestry activity in the future.

Expect to see a detailed plan for Aboriginal engagement from the association in 2017. At the same time, this is an issue that each of us, as both ABCFP members and as practising forest professionals, must be prepared to wear. We cannot rely on the association or our employers to build trust with First Nations communities. We must work as individuals and community members to build trust on a person-to-person basis with each member of a First Nation community with which we have contact. At the end of the day, we as forest professionals share many of the same values with Aboriginal Peoples when it comes to forests and managing the land base. Only by talking, sharing, and building trust can we ensure these values are captured and incorporated into our work.

This concludes my final column as president. I wish incoming president Mauro Calabrese, RPF, RPBio, and vice-president Robin Modesto, RPF, PEng, the best of luck. I look forward to working with them and council for one more year as past president. ❀

# Staying Rooted

**In preparation to enter the profession, we all read the *Foresters Act*,** which establishes the duties and objects of our association. And each year when the association sets its *Strategic Plan*, we include a page summarizing the mandate and referencing the Act. We repeatedly see the written words but when was the last time you took a moment to reflect about why our forest profession exists? How it got its start? Who started it and for what reason? While I've long known the words written in our Act, I am saddened to say that until I joined the staff of the association, I hadn't thought about these words and how they came to be. I never understood our history and hadn't reflected on why it was important that I should.

Over the past year, I have thought about it a lot; understanding the linkage between our past and our present has helped to ground my thinking as I push ahead to address some of the current challenges in our operating environment. From our history, I can draw out the foundational principles that underpin the actions we take as an association and that will always ensure we stay on the high road as we navigate through tough conversations. It is very hard for someone to dismiss you when you are founded on core principles. Our history also helps explain the passion and pride of our profession. And from our history, we can start defining parts of the answer to the question "What would be lost if we didn't exist?"

Over the past year, I have had the good fortune to spend time talking with a few of our members who have been there since the outset or at least for a good majority of the time, and have personally witnessed our association's history. This edition of *BC Forest Professional* contains an article submitted by W. Gerald Burch, RPF(Ret), Life Member. Gerry has had a long and rich professional forestry career with accomplishments that include being an industry chief forester, president of the ABCFP, recipient of the Distinguished Forest Professional award, and chairman of the Forest Appeals Commission. When Gerry first shared the

article with me, I was immediately intrigued — there was much in it with which I was unfamiliar. I was fascinated that some of the trials and tribulations we face today have been there since the outset; they have been inherent in the profession since its birth. Issues such as how to best bring new members into the association, the challenges of setting educational requirements, the examination process for entry into the profession, the need for and the length of terms of appointments for volunteers helping to support the operations of the association; all of these have been present since day one of the association's formation. In later years, the development of our *Code of Ethics* and the awarding of the Distinguished Forest Professional award were driven by the desires of the council of the day to strengthen the recognition of forest professionals by the public.

We continue to discuss and consider all of these same elements today. The recent transformation of our registration process reflected the need to reconsider how to best bring members into the profession and better poise them and the profession for success on their first day as a registered member. Our registrar meets several times a year with a national team to talk about the academic credentials for entry into the forest profession. We have never stopped thinking about the importance of public recognition of the profession and the importance of sustaining and monitoring the level of public trust. Our direct efforts towards the public have ebbed and flowed with other events happening in the external environment; however, for the past 20 years — including as recently as last November — we continue to monitor the public perception of our profession through opinion polls. We make these efforts because we know our profession's existence was founded, and continues to be rooted, in the public trusting that their forests are best managed by the hands of forest professionals.

If you don't have roots, it is easy to get blown around in the wind. I am thankful to belong to a profession with such deep roots. We were established for an important reason. Before we can convince anyone else of it, we must know it ourselves. ☘



## Announcing the 70<sup>th</sup> ABCFP Council

The ABCFP 70<sup>th</sup> council will include four new members elected during the December/January election. The new councillors took their seats during the 2017 AGM, held as part of the *Changing Landscapes, New Opportunities* conference in Prince George. They are:

- Trevor Joyce, RPF (two-year term);
- Mason McIntyre, RFT, (one-year term). The one-year term to be served by Mason McIntyre, RFT, is the result of a previous council member's resignation.
- Cliff Roberts, RFT (two-year term); and
- Kerri Simmons, RPF (three-year term);

The 70<sup>th</sup> council is comprised of:

- Mauro Calabrese, RPF, RPBio – president
- Robin Modesto, RPF, PEng – vice-president
- Christopher Stagg, RPF – immediate past president
- Trevor Joyce, RPF – councillor at large
- Morgan Kennah, RPF – councillor at large
- Mason McIntyre, RFT – councillor at large
- Lisa Perrault, RFT – councillor at large
- Cliff Roberts, RFT – councillor at large
- Kerri Simmons, RPF – councillor at large
- Trevor Swan, RPF – councillor at large
- Rod Visser – lay councillor
- Tom Walker – lay councillor

## Peer and Practice Reviews in 2017

This year the association will again be randomly selecting members for mandatory peer and practice reviews. The goals for this year are to complete 50 peer reviews and 30 practice reviews.

We use a stratified random sampling process for selecting members for review. While others may be selected, the primary focus is on early and mid-career professionals.

If you get selected, please don't worry. The reviews are intended to help members reach their potential as forest professionals and to gather information the ABCFP can use to demonstrate to the public their forests are in good hands. We have conducted more than 500 reviews to date, and the overwhelming response from members has been that the review was valuable to them. We conduct between 80 and 100 reviews each year, which works out to about a two per cent annual sampling of the active membership.

More information is available on the Voluntary and Mandatory Peer Reviews page and the Practice Review page of our website.

## Nominate a Member for Life Membership

Do you know someone who has made an exemplary contribution to our profession? Our Life Membership Advisory Panel will be meeting this spring to review any new nominees for this special honour.

Life membership is awarded to retired individuals who have made an exemplary contribution to the profession of forestry or the practice of forest technology. Life members are encouraged to remain actively involved with the profession and the affairs of the association. There is no annual membership fee.

Visit the Life Membership section of the Status & Name Changes page for information on what constitutes exemplary contribution and for information about the nomination process.

## REFLECTIONS ON ETHICAL REQUIREMENTS

*By Anna Shcherbinina, PhD, RPF, and Mike Larock, RPF*

Bylaws 11.3.6 and 11.3.5 are our commitment to the public and to other members that we will share our knowledge and expertise to promote good forest stewardship and professional practice. The commitment is especially important in developing areas of practice, as is the case with both rural and urban forests. Forests within cities and forests containing urban features face greater pressures than in the natural environment, such as little or no native soils, mechanical damage, and surface treatments to name a few. Conveying science knowledge will be important to recognize the multiple values of urban trees. In this way, forest professionals play a unique role in advocating for green infrastructure and healthy forest spaces by contributing to the communication and cooperation between professionals, municipalities, and communities.

## New Three-Year Strategic Plan Rolled Out

The 2017 forestry conference and AGM in Prince George also saw the release of the association's new three-year strategic plan, covering 2017 – 2019. The plan was crafted by the 69<sup>th</sup> council with input from ABCFP senior staff and information gathered during regular member meetings and surveys.

Overall, this new strategic plan maintains much of the structure of the previous plan. Three of the five goals from the past plan have been revised, while two other goals remain.

The new plan's five goals are:

- Leading in the Stewardship of BC Forest Lands, Resources, and Ecosystems
- Delivering High Standards of Professional Service
- Sustaining and Evolving the Profession
- Enhancing Trust
- Organizational Excellence.

The new plan puts a stronger emphasis on working to further strengthen the confidence of the public in the profession and building the value proposition for members and their employers. Additionally, it identifies the need to continue building trust with Aboriginal Peoples as a priority. Legal decisions, reconciliation agreements, treaty negotiations, and other government initiatives are reshaping the way natural resource industries, including forestry, operate in BC. Our profession is not immune from these forces and while it is clear forestry holds great importance for Aboriginal communities, the profession must ensure that whatever form an evolving relationship between Aboriginal Peoples and the forest industry takes, the knowledge and skills of practising forest professionals remain at the center.

The new three-year strategic plan can be found on the association's website and printed copies can be obtained by contacting the association office.



# Value-added Applications for Building and Fibre-based Products

**When I was a little girl, my father — a carpenter by trade — would call for my sister and I to come help him out in the driveway as he built something, whether it was a cabinet or a new set of stairs for the deck. Following the time-honoured tradition of so many parents and children, my sister and I would act as his assistants, diligently handing him his tools and steadying sheets of plywood and lengths of 2x4 as he guided them towards the circular saw. He didn't need our help but he enjoyed it and we did too. There were valuable lessons to be learned in helping him do this work and I'm grateful for them. To this day, the rich smell of sawdust fills me with a deep sense of accomplishment and comfort.**

It's with fascination and excitement I present our latest issue of *BC Forest Professional*, which covers a small slice of the science behind building with wood and value-added applications for fibre-based products.

Karen Storry, PEng, senior project engineer with Metro Vancouver's Solid Waste Services, and a member of the Zero Waste Implementation Team, shares the results of a recent study on extracting more value from wood resources, where the University of British Columbia, Metro Vancouver, and FPInnovations teamed up to study using wood waste from housing demolitions and remanufacturing it into high-grade, recyclable particle board.

With Prince George being home to the largest biomass-heated industrial-integrated system in Canada, Kara Serenius, PEng, energy manager with Sinclair Group Forests Products, takes us through the steps of using waste energy from sawmills to heat part of the city's downtown core.

It was a steep learning curve when a traditional lumber producer switched gears from commodity lumber production to remanufacturing at their Edson, Alberta facility. Andrew McGibbon, manager - fibre procurement and program development with West Fraser, writes about how West Fraser seized the opportunity to explore the value of using pre-cut and modular wood products to reduce the amount of waste we create.

Did you know tall wood buildings sway gently in the wind, much like the trees in our forests do? Steven Kuan, PhD, PEng, FEC, and research manager, advanced building systems at FPInnovations, and Lin Hu, PhD, senior scientist in the Advanced Building Systems Group at FPInnovations, walk us through the science behind controlling the vibrations of taller wood buildings.

Be sure to check out our third installment of our interview series with Chief Foresters' Leadership Team members. In this edition, Ric Slaco, RPF, Interfor's vice president and chief forester, shares his thoughts on the value of public engagement, how his experiences in Clayoquot Sound and the Great Bear Rainforest have shaped his solution-oriented approach to forestry, and how the role of the forest professional has evolved over the years.

And to round out this edition, Gerry Burch, RPF(Ret), Life Member, takes us down memory lane with a look back at the birth of, what is today, the Association of BC Forest Professionals. ❖



## The Principles of Stewardship<sup>1</sup>

By Megan Hanacek, RPF, RPBio

Due to a tree's ability to absorb and sequester carbon during growth, BC's forests and forest sector have an important role in affecting the atmospheric concentration of carbon dioxide and other harmful greenhouse gases in a changing climate. There are several provincial strategies and policies currently in place to consider the role of BC forests in mitigation and adaptation measures in natural resource management stewardship considerations.

The *British Columbia Forest Carbon Strategy* and the Forest Enhancement Society consider the key spatial and temporal stewardship tenets that management strategies are intended to create benefits for both present and future generations, at sites specific to landscape levels. BC forests cover over 55 million hectares and represent six to seven billion tonnes of above ground carbon-biomass. The use of BC wood for long term carbon storage is an important role in combating detrimental greenhouse gases. Areas of past high percentage pine stands are now being considered for replanting with a diversity of tree species for long term crop rotation planning. This aids in a resilience to climate change impacts, enhances wildlife habitat, enhances visuals and slope stability, and improves the age class structure at the landscape level.

Photo: Adobe Stock

<sup>1</sup> The main document can be seen at [http://member.abcfp.ca/WEB/ABCFFP/Practising\\_in\\_BC/Practising\\_in\\_BC.aspx](http://member.abcfp.ca/WEB/ABCFFP/Practising_in_BC/Practising_in_BC.aspx)

# Recycled Particle Board:



**Wood waste from housing demolitions and sawmills can be remanufactured into high-grade, recyclable particle board at a price point comparable to conventional products for furniture, cabinets, and flooring, according to a recent study conducted by the University of British Columbia (UBC) and supported by Metro Vancouver and FPInnovations.**

Making particle board with recycled wood is common in the resource-scarce European Union (EU), but has yet to catch on in BC, so researchers sought to determine if the process could be adapted to local technical and economic conditions. Led by Felix Böck, PhD



*Karen Storry, PEng, is a senior project engineer with Metro Vancouver Solid Waste Services. As part of the Zero Waste Implementation Team, she works with business sectors to find innovative ways to reduce waste. In recent years, a key focus has been exploring new recycling opportunities and end markets for wood waste. This work includes understanding the feasibility of locally remanufactured products and finding alternatives to pressure-treated wood that are compatible with composting and district energy.*

candidate at the UBC Centre for Advanced Wood Processing, the study refined the process to include local feedstock, such as wood waste from the booming demolition and construction industry, and shavings from sawmills.

## Extracting More Value from Wood Resources

Remanufacturing represents an opportunity for the BC lumber industry to optimize the use and value of wood already in circulation. Instead of getting value only once when a tree is sold as raw lumber,

the industry can collect a portion of the wood and remanufacture it into particle board, further extracting value from an important resource.

Most of the clean wood recovered from home demolitions in the region is used as fuel in sawmills and cement plants. Metro Vancouver believes recovering wood waste and creating new products is a far higher and better use than burning it as fuel, so it teamed up with UBC and FPInnovations to explore the feasibility of remanufactured wood products.

“Recycled particle board is a great example of circular economy principles in action at a local level,” said Malcolm Brodie, chair of the National Zero Waste Council, an organization that brings together government, business, and community leaders committed to waste prevention in Canada. “There are hundreds of thousands of tonnes of wood waste ripe for remanufacturing in Metro Vancouver, and putting that material to use would prevent waste, create green jobs, and help the environment.”

## Making Recycled Particle Board

To develop a viable production process, the research team first had to gather data about the available raw material, including shape, quality, and foreign particle content, and then select the appropriate technology. Though particle board is typically made from virgin wood, the researchers used wood chips, off-cuts, and shims from local transfer stations and saw mills. Given the nature of the feedstock, and to maximize the use of familiar equipment, the team determined a combination of chipping, grinding, and screening would be suitable.

After chipping, a rotary wood grinder was used to generate the

# New Value from Old Lumber



Photo: Alojze Stock

different particle sizes needed for face and core layers, including 0.5, one, and two-millimeter fractions according to ANSI A208.1-1999 standard.

The ground material was then fractionized by a mechanically vibrating screen table using particle classification screens, according to ASTM D7025-09 standard, yielding one millimeter fractions for face layers and two millimeter fractions for core layers.

For the binding agent, Böck recommends using an acrylic resin such as ACRODUR as an alternative to conventional phenolic formaldehyde resorcinol. A final resin content of eight per cent is sufficient to reach the desired properties, though a hardener or wax may be added to the resin mix to significantly improve bonding strength.

The final lab products were 21 inch by 21 inch composite panels with density of 650 kilograms per square meter and thicknesses of 12.5, 16, and 19 millimetres.

In lab tests, the recycled products performed just as well as industrial grade particle board, and met all the technical performance requirements stipulated in the ANSI-2009 standard.

## Value-Added Product Market Opportunity

The construction industry remains on an upturn following the recovery in the North American housing market in early 2010. Since then, total production of particle board has slightly increased, and forecasts predict gradual growth for the industry.

“The key to success with wood recycling is having a reliable and clean supply,” says Böck. “For example, it would be relatively straightforward for a construction company to collect wood from their demolition projects, and provide and control the quality of the

material needed to produce particle board for resale. The investment would depend on scale, and the technology can be introduced to already existing, larger facilities like sawmills.”

Nearly 3,000 houses are demolished in Metro Vancouver each year, sending about 400,000 tonnes of wood waste to disposal. First steps to help the industry secure that supply are already being taken. In 2015, Metro Vancouver implemented the Clean Wood Disposal Ban and introduced a template municipal demolition bylaw to help make clean wood supply more available for fuel and particle board markets.

Böck, originally from Germany, sees BC’s abundance of wood resources as both an obstacle and an opportunity. In the European Union, wood recycling is the norm — all particle board contains a minimum of 30 per cent recycled material.

“Wood, in fact, is the only sustainable building material ... and we can use it much more efficiently, without cutting down more trees,” says Böck. “Canada has yet to feel resource scarcity like we have in the EU, and if we get started now, we will be in much better shape to meet the challenges of the future. Our research shows that the process that’s been so successful overseas works just as well locally.”

The state-of-the-art technology developed by UBC is based on processes widely used in the EU and can handle mixed wood waste of all shapes, sizes, and levels of quality. Though the study didn’t explore the feasibility in depth, the same process could be applied to forestry residue or mountain pine beetle wood.

Böck is keen to share the particle board technology. “Now that the concept is proven, the opportunity is open for anyone to create added value from a useful material that’s too often wasted.” ❁

# Using Waste Energy from Sawmills to Heat Prince George

## Lakeland Mills uses wood residuals to power the City of Prince

George district heating system. Constructed in 2011, the Downtown District Energy System (DDES) is the largest biomass-heated industrial-integrated system in Canada.

The DDES provides hot water to heat 10 buildings in downtown Prince George, including the new RCMP building, the court house, Plaza 400, the Wood Innovation and Design Centre, city hall, the Prince George Conference and Civic Centre, the library, the Four Seasons Leisure Pool, the Coast Inn of the North, and the Prince George Coliseum.

Lakeland Mills (Lakeland) and the DDES deploy state of the art clean technology on a century old idea. The first documented district heating systems were active in the Roman Empire to heat greenhouses. Perhaps there were other systems before that likely all ran on geothermal or bioenergy. Bioenergy is humanity's original source of energy.

So how do we integrate bioenergy into the future of clean energy? First we need to consider the economic viability, then we need to address environmental impacts.

### Economic Viability

Economic viability of fuels is based on supply and demand. The main costs of biomass energy are costs of extraction and costs of transportation.

The costs of extraction are improved by using by-products or residuals from other value-added products. Most biomass projects would not be viable if the fuel was sourced in the woods without any higher value product, such as pulp or lumber.

The cost of transportation is dependent on the distance to fuel use. Wood is a low density fuel compared to coal and liquid fuels. Wood pellets are sometimes used to increase fuel energy density before shipping. The longer the transportation distance, the more important the fuel energy density. The economics of transporting wood as a fuel is typically restricted to a maximum of 200 kilometres. For many places around the world, this makes wood a non-viable fuel.

For BC and other forestry-based regions, biomass is viable as a bi-product and as a locally available material.

Distance to users is also a factor for district heating. The rule of thumb is one-half to one per cent heat loss per kilometre of insulated piping, depending on water temperature. DDES users are all within five kilometres return piping distance from Lakeland. This indicates two-and-a-half to five per cent distribution system losses.

Fuel/Storage	Energy Density by Mass	Energy Density by Volume
Natural Gas (Methane)	55 GJ/tonne	38 MJ/m <sup>3</sup>
Gasoline	46 GJ/tonne	35 MJ/L
Diesel	45 GJ/tonne	39 MJ/L
Coal	24-30 GJ/tonne	72 GJ/ m <sup>3</sup>
Wood Pellets	18-20 GJ/dry tonne	10-14 GJ/m <sup>3</sup>
Wood	14-16 GJ/dry tonne	2-3 GJ/m <sup>3</sup>
Lithium Battery	0.3-1 GJ/tonne	
Lead Acid Battery	0.2 GJ/tonne	

### Environmental Impact

Biomass burning is considered carbon neutral, meaning no greenhouse gases are emitted from this fuel source. The logic behind this is that the carbon released from burning biomass is absorbed from the atmosphere during the tree's growth. Therefore displacing any fossil fuel, such as natural gas, has a positive global impact on greenhouse gas production.

Local air pollution is another consideration with biomass burning. Prince George has a geography known as "the bowl;" air pollution is a concern for the health of the population due to regular weather inversions that trap air in the area.

Lakeland's energy system burns hog fuel, which consists mostly of bark and shavings (sawdust and chips are sold to pellet plants and pulp mills respectively). Adding load to the Lakeland burners to heat the DDES adds particulate matter (PM) to the local air shed. A heat recovery unit and an electric static precipitator (ESP) were installed to address this. The heat recovery unit increased the efficiency of the mill's burner and the ESP uses static electricity to remove particulate from the exhaust. After the project, the energy system produced less PM than it did before adding the load.

### System Details and Operating Model

The City of Prince George is the owner/operator of the DDES. The energy is provided via a glycol/hot water heat exchanger and the hot water travels to the city under the railway tracks from Lakeland's river-side site. The city distributes the hot water and provides boiler back-up service in case of system upsets. The city also works with private buildings to connect by providing the heating infrastructure to replace internal boilers and connecting the pipes to the loop.

Lakeland provides energy and charges the City of Prince George based on energy usage. The City of Prince George charges DDES users a flat rate to connect and then monthly based on energy use. The 10-year contract between Lakeland and the City of Prince George has set pricing and will continue past 10 years based on fair market value of biomass. The city can set pricing for users at its discretion.



TOP: Aerial shot of Lakeland Mills. The green pipe bridge supports the piping for the DDES before it heads under the rail track to downtown Prince George (which is off the right side of the photo).

BOTTOM: Glycol/hot water heat exchanger.

Lakeland's biomass production and the built energy system have sufficient capacity to heat all of our lumber drying kilns and our main mill buildings. This winter has been very cold and there remains capacity to add additional buildings in Prince George, as building operators wish to join the loop. Lakeland also provides biomass to the UNBC system.

### Successful Implementation of Biomass as Clean Energy

Prince George, a forestry based city, is using local resources to join the clean energy future. In 2016, the DDES displaced natural gas heating equivalent to approximately 1 million litres of gasoline. Considering this in terms of greenhouse gas reduction, the DDES reduced of 1,700 tonnes of CO<sub>2</sub> equivalent; equal to removing 500 cars from the road annually.

Lakeland is proud to support the community's goals to reduce environmental impact. ☒



*Kara Serenius, PEng, is the energy manager for Sinclar Group Forest Products. Sinclar is the owner and operator of Lakeland Mills. Kara has two engineering degrees from UBC and is a Professional Chemical Engineer. She has provided energy management advice (efficiency, renewables, strategic planning, risk mitigation, and contract management) across a broad spectrum of industries and companies in BC, the United States, South America, South-East Asia, and Australia.*



# West Fraser's Edson Remanufacturing Facility Finds Value in Every Piece

**In November 2012, West Fraser acquired Sundance Forest Products** sawmill in Edson, Alberta and its bustling value-added business, Sunplus remanufacturing. The acquisition presented a steep learning curve for a traditional lumber producer to learn how different the remanufacturing business is from commodity lumber production.

The Sundance mill did not operate in the same way as West Fraser's other sawmills. Rather than cut for the best recovery from a log, it cut for the highest quality grade product (often referred to as the "European principal"). Instead of using a planer to finish wood products, the mill used machines called moulders. Moulders are significantly slower than a typical sawmill planer. The heads can be fitted with many knives of different profile configurations and depths, which enables the facility to make an almost infinite number of finished wood products. The benefit of a quality first model is you can access higher-quality markets for unique and specialty products. The downside is your markets are also highly specialized and volatile, and they proliferate. At the time of the acquisition, the mill was pulling between 17 and 24 different widths and thicknesses of wood in the sawmill and had thousands of unique wood product items being delivered to customers domestically and abroad. In short, there were too many products for the mill to manage profitably.

planers and upgrade it into marketable specialty products.

Today, the 60,000 square foot facility sources low-grade lumber from sawmills throughout Alberta to make remanufactured products for the domestic market. Ninety per cent of the plant's wood products are less than four feet. One piece of lumber through the machine centre might be made into products for as many as two to four different markets. The facility's core products are dunnage wood for cargo handling, wood components for the pallet and crating industry, webstock and precut truss components, some custom profiled high-value wood products, and packaged shavings for animal bedding.

The range of products within the remanufacturing sector is broad and very deep. There are hundreds of products that are traded in today's lumber markets and the variety is astounding. Small blocks of a specific wood quality, grade, and species can be turned into products of much higher value such as wall studs, door jambs, window casings, moldings and trim, garage door components, entry door components, or rafter material in excess of 50 feet. Other specialty products are created by cutting out a larger premium grade blank from the center of a low grade board and sending it for further processing to become a pointed survey stake or a piece of lath which is placed for stability in larger packages of lumber at a planer mill.

It is common in the remanufacturing industry to turn a two-inch thick piece of lumber into two pieces that are one-inch thick, then further processing them into fence boards, kiln sticks or building strapping. The industry also produces items like furring strips that are used daily in the roofing and building construction sectors. Joist bridging and blocking is also manufactured from low-grade material and is sold into the construction markets. The sector thrives on the opportunity to trim, cut, slice, and dice a piece of inbound lumber into several smaller or shorter products that have a higher value once processed into other types of wood products. Repurposing lumber gives remanufacturers the ability to utilize more, or all, of the inbound piece and regain value from trim material, which in a typical lumber mill would have been taken off of a board and sent to waste.

Edson Specialty's vision is to be a world-class facility that is known to be a reliable and trusted supplier to the markets we serve now and long into the future. We see a lot of opportunity for our business ahead, as housing construction increasingly explores using precut and modular wood products to reduce waste, site build times, and costs when centrally manufacturing homes. What lies ahead is quite exciting. 🌲



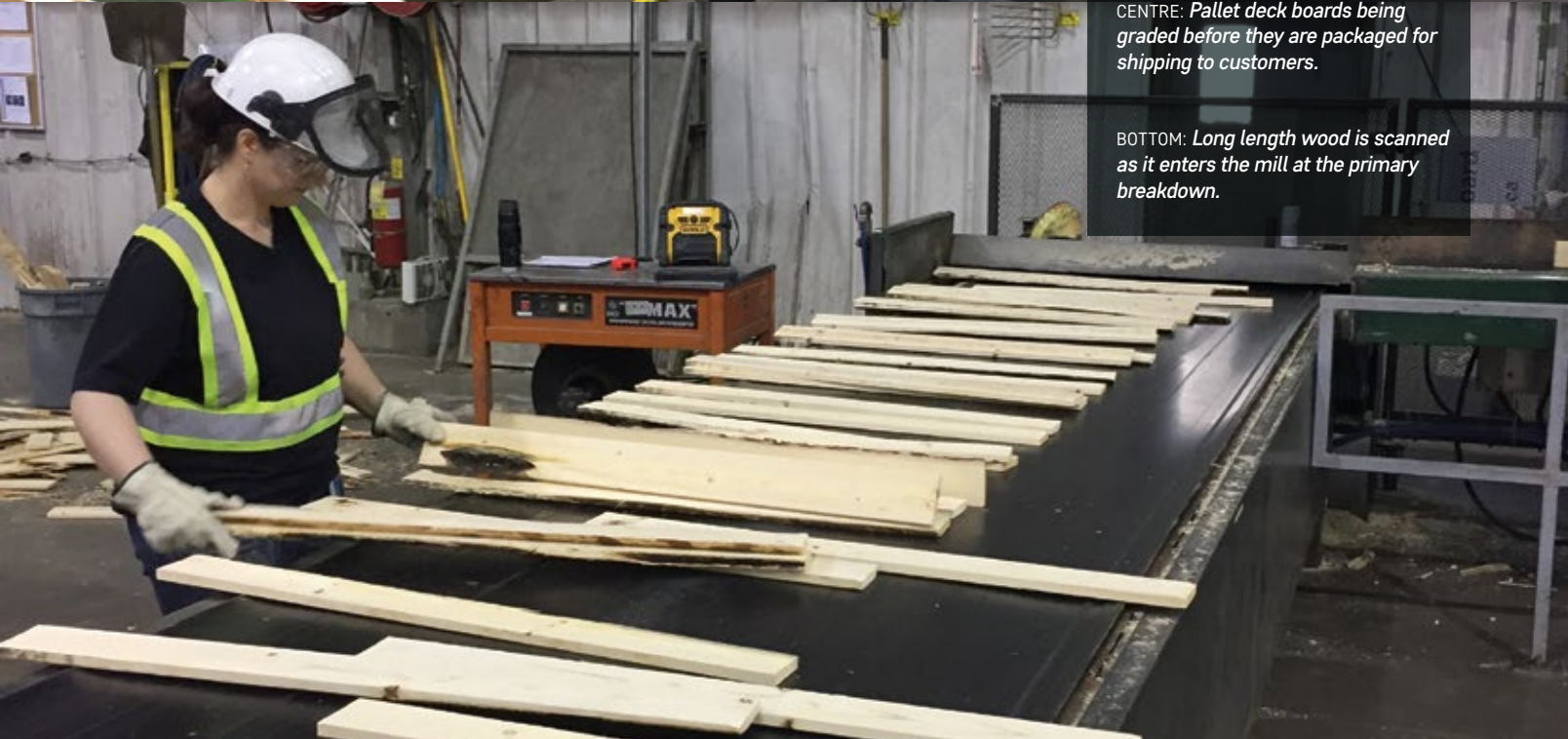
*Andrew McGibbon started his career in the lumber industry as an office wholesaler in Calgary, Alberta. In 2005, Andy joined West Fraser in Quesnel as a North American domestic lumber trader. Andy progressed with West Fraser as manager of product development in 2012 and then plant manager of Edson Specialty in 2014, matching the company's expansion into specialty lumber markets.*

At purchase, the Sunplus upgrading facility housed two moulder stations; a scanning optimizing chop saw breakdown line and several smaller value-added machine centres. With the decision to rebuild the Edson sawmill and convert the dry sorter to a traditional planer mill, the newly named Edson Specialty Products refocused as a leaner, low-cost, more traditional remanufacturing business.

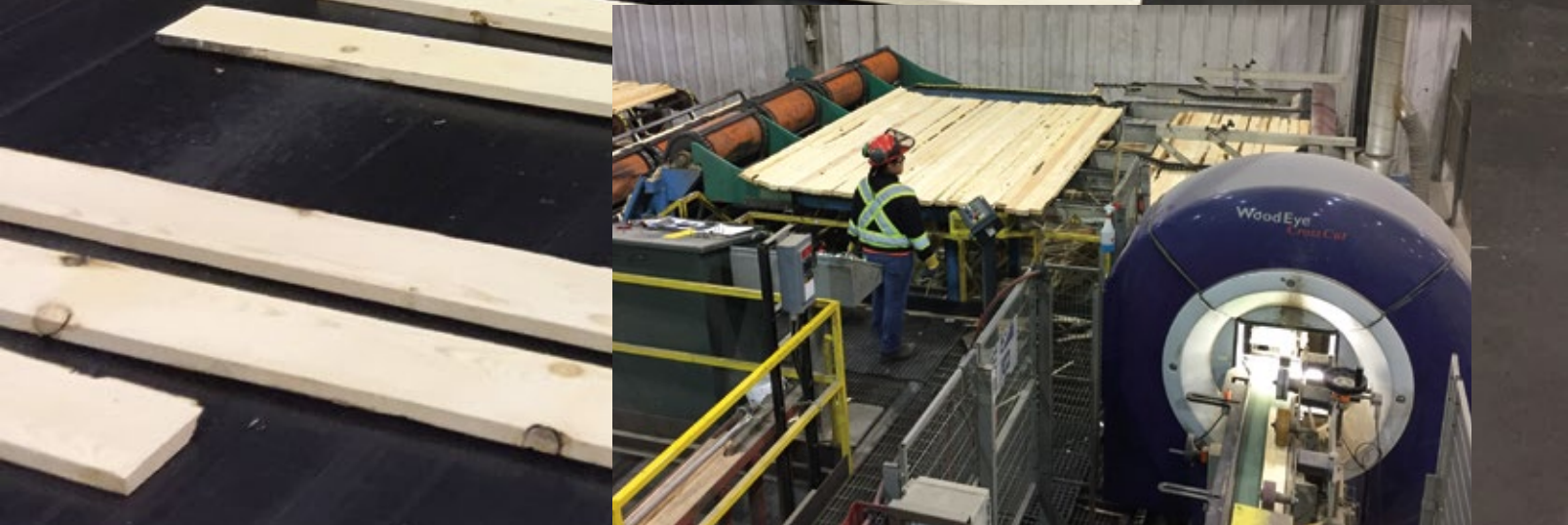
The mill reoriented to capitalize on lumber recovery to achieve the best possible return from every log processed, based on getting the right log to the right facility. As we explored nontraditional dimensional lumber markets, we saw opportunities within the value-added sector. Our objective now is to realize the opportunities where we can gain value from low-grade dimension lumber from sawmills and



TOP: Notched stringers are inspected by employees as they move to be packaged.



CENTRE: Pallet deck boards being graded before they are packaged for shipping to customers.



BOTTOM: Long length wood is scanned as it enters the mill at the primary breakdown.



# Controlled Vibrations of

Figure 2b: Typical floor vibration tests on site. Vibration test using a hammer to excite the floor and accelerometers to measure the floor vibration signals.

On a cool January day in a forest in British Columbia, rows of majestic pine and fir trees sway gently in the winter gusts. Their branches flap up and down in the swirling wind. Not far away in the fast-growing urban centres of the province, the many mid-rise and high-rise wood buildings are vibrating in a similar fashion, however with control and lower amplitudes.


Any building structure would vibrate laterally (i.e. horizontally) when subjected to wind loading, and a floor would vibrate vertically under the footsteps of a walking occupant. Natural frequency is the speed of the back-and-forth motion in a certain

mode of vibration. It is the key structural parameter for controlling vibrations. Human acceptability to building or floor vibration is related to the natural frequency, and building occupants are more tolerant to high-frequency (fast) vibrations<sup>1</sup>. Therefore, when designing and constructing a wood building, it is important to know this structural characteristic and to know how to adjust this value for acceptable performances.


The National Building Code of Canada<sup>2</sup> recommends a set of criteria for checking designs of wood buildings for controlled wind-induced vibrations. The criteria are based on accelerations of the vibrating structure, and expected maximum accelerations could be calculated using values for the natural frequencies and the damping ratios of the building structure.

The natural frequency and damping ratio of a mid-rise or high-rise wood building could be determined from ambient vibration tests (AVT) conducted on the actual structure. AVT uses natural ambient excitations such as wind, traffic, or seismic micro-tremors rather than artificially induced excitations. The vibrations are measured by accelerometers placed at various locations on multiple floors, as shown in Figure 1a. Figure 1b shows a record of the measured accelerations which could then be processed to determine the natural frequencies and the damping ratios. These actual values would then validate the assumptions that are made for these parameters during the design.

Researchers at several Canadian universities conduct ambient vibration tests. However, AVTs on wood buildings are done solely by FPInnovations, which has carried out this type of test on nearly all of the tall mass-timber buildings in Canada. These buildings include the six-story FondAction CSN building in Quebec, the six-story Wood Innovation and Design Centre in Prince George, and the eight-story



Steven Kuan, PhD, PEng, FEC, is research manager, advanced building systems at FPInnovations. The Advanced Building Systems group is a team of 24 scientists, engineers, and technicians in Vancouver and Quebec with technical expertise in performance attributes of wood buildings. Steven has over 25 years of experience in research, government, academia and consulting. He is a professional engineer registered in BC and has served on many technical committees and advisory panels.



Lin Hu, PhD, is a senior scientist in the Advanced Building Systems Group at FPInnovations. She has been with the organization since 1993. Her specializations are vibration control of wood floors and buildings; sound insulation of wood buildings; and non-destructive evaluation and quality control using modal test, stress wave, and X-ray scanning techniques. Lin has authored more than 100 technical publications with readers all around the world. She is a co-author of the standard ISO 18324:2016 Timber Structures – Test Methods – Floor Vibration Performance, and her contributions were recognized with an award of excellence.





*Figure 2a: Typical floor vibration tests on site. Point-load static deflection test, with the deflection gauge and the person acting as the point load.*



*Figure 1a: Accelerometers on a floor in a typical ambient vibration test for building vibrations.*

Photos courtesy of: Steven Kuan, Ph.D., P.Eng., FEC

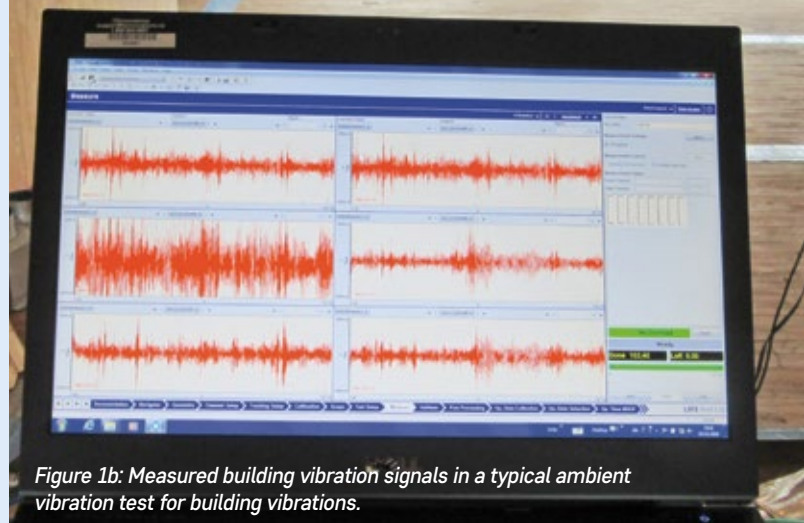
# Taller Wood Buildings

Arbora building in Montreal. The latter two are cross-laminated timber (CLT) buildings. Tests are also being carried out on the 18-story University of British Columbia Brock Commons building in Vancouver — the tallest wood building in the world.

Over the past four decades, FPInnovations has conducted hundreds of field measurements of solid sawn lumber joisted floors, engineered wood floors, heavy glulam timber floors, mass timber floors, and wood-concrete composite floors in conventional wood buildings and contemporary wood buildings across Canada. The studies showed that wood-floor vibrations induced by walking could be controlled by controlling the combination of the natural frequency of the floor structural system and the vertical deflection of the floor under a point-load near the centre of the span. *Figure 2* shows an example of a point-load static deflection test and a floor-frequency test for a CLT floor in a building under construction.

The National Building Code of Canada provides design methods for controlling vibrations of wood floors<sup>2</sup>. The methods are for vibrations of traditional lumber joisted floors induced by walking and for vibrations of any floor type induced by rhythmic activities such as dancing and jumping. FPInnovations developed design methods to control the vibrations of contemporary wood floors with components such as engineered wood joists, wood trusses, CLT, and wood-concrete composite systems. These design methods are further applied to develop span limits for CLT floors, and these limits are presently given in the CSA O86 standard<sup>3</sup> — the wood design standard in Canada.

For buildings of any type of construction, wind-induced lateral vibrations and motion-induced floor vibrations should not be excessive. For mid-rise and high-rise wood buildings, these vibrations can be controlled by following proper design methods.



*Figure 1b: Measured building vibration signals in a typical ambient vibration test for building vibrations.*

Field tests are being carried out to enhance the design guidelines so that these buildings would provide higher levels of comfort for the occupants. This high performance adds to the many good attributes of wood buildings, such as strong aesthetics and environmental benefits. Occupants of taller wood buildings would thus enjoy living and working in them, just as much as they enjoy working and playing in the forests of BC. ✕

#### References

1. ISO: Evaluation of human exposure to whole-body vibration – Part 2: Continuous and shock-induced vibration in buildings (1 to 80 Hz). ISO 2631-2. Geneva, Switzerland, 1989.
2. NRCC: National Building Code of Canada. National Research Council of Canada (NRCC), Institute for Research in Construction (IRC), Ottawa, 2010.
3. Canadian Standard Association (CSA) Group: Engineering design in wood: CLT design provisions in the Supplement of the Canadian Timber Design Standard 086-16, Mississauga, 2016.

# Forest Leadership:

## An Interview with Interfor's Vice President and Chief Forester Ric Slaco, RPF

Since the creation of the Chief Foresters' Leadership Team in the summer of 2015, chief foresters across the province have been busy working together on forest sustainability in the context of current resource management challenges.

Part three of our special series is an interview with Interfor's Vice President and Chief Forester Ric Slaco, RPF.



*You have been a forest professional for many years, moving from technical and operational positions to more senior management roles like the one you hold today as a Chief Forester. How did your early years as a forest professional prepare you for the senior, strategic job you have today?*

I have been working full time in the forestry profession since 1979. Early in my career I was much closer to the trees and the people that cut them, planted them, or tried to save them. Having those first-hand experiences has helped me make better, well-balanced decisions when I am in boardrooms.

*In the late 1980s, you had first-hand encounters with anti-logging protesters in Clayoquot Sound. Looking back, what did you take away from those encounters and how has that informed your decision-making today?*

Clayoquot was a unique experience for me as a young forester. There was no playbook for this. In many respects, the public protest was a response to an industry that did not see the big picture. Emotions were running very high on both sides, and it truly was a war in the woods setting. Rational thinking took a back seat. In the end, a political decision that pleased one side was not — in my opinion — a good one for local communities who were denied modest access to resource use and their ability to support future generations from a truly green and sustainable forest industry. My take away had me seeking outcomes that respected different interests in a more solution-oriented way.

If the public debate solely hinged on whether a tree standing is better than one on its side, the standing tree wins. We needed to broaden the scope of what society wants to achieve and why that is good for the planet, and the people living in local communities.

*How has having the RPF designation helped you in your career and in making decisions?*

I have seen the role of the professional change over the years. For me, the designation demanded integrity in decision-making. When faced with lots of opinions based on self-interest, the RPF must still be true to its profession.

“Professional respect comes from how you engage people, and having good information to support your views.”

***How does the solution in the Great Bear Rainforest rank from a list of successes in your career?***

It was “the worst of times and the best of times” all wrapped together. Some of the hardest moments early on, like knowing the impacts would be substantial to workers and their families, to the warmest feelings of accomplishment when all the parties stood together declaring victory. It was not a fast, nor an easy process. A shift in attitude and practices took time, as did the transformation of the issue from being one of global protest to one of international achievement. I think one of those experiences may be enough, but I am always open to new challenges.

***What were some of the important professional characteristics that you needed in supporting the team that worked on the Great Bear project?***

Many people worked on the GBR issue, and most of my time was spent in the formative years. Early on we were breaking new ground, and in many respects it was an experiment with no certainties on the outcome, with big consequences if we got it wrong. The hardest part was finding common ground with environmental non-governmental organizations, so giving and receiving respect was a key characteristic for success. Professional respect comes from how you engage people, and having good information to support your views. Another key aspect was being solution oriented, and not to panic when things got heated.

***How has the stewardship environment changed from 1988 to now?***

I have seen a growing demand for accountability of the forest professional. Demands of various stakeholders — and from the business itself — requires a more comprehensive understanding of the impacts of resource use on the landscape and the profitability needed to sustain the business. More recently, the change in relationships with First Nations has deservedly taken a much more prominent role.

***In your opinion, how has the role of the forester changed in this period?***

Stewardship is the hallmark of a professional, so changing with the times means managing for multiple interests with an eye on competitiveness. We need to look at incorporating technology and streamlining process. In a regime built on professional reliance with transparency of what we do, I believe our forest professionals are ready for this leadership role in resource management.

***How do you manage your professional obligations and corporate obligations throughout your work?***

The two are intertwined. Interfor expects me to act professionally for the company to have success. We must meet the requirements of the landlord, have the social licence from the public, and satisfy the expectations from our customers, employees, and shareholders. Throughout my work, the company has supported me, even when decisions have not been popular.

***All natural resource industries are increasingly having to engage in public consultation in order to move projects forwards. When it comes to forestry, how can we do a better job of consulting the public and addressing their concerns?***

Improving public consultation means being proactive not reactive. Responding to negative stories is not the best way to paint the profession/business or deal with issues. Having presence in the communities we live in, and demonstrating relevance of forestry to others, requires effort. We can do better by encouraging the forestry community to be visible or have a voice on things that matter to people.

One of the reasons I have joined the Chief Foresters’ Leadership Team is to help shape the vision for the future forests in BC. We have much to be proud of, and lots to learn. Through promoting responsible stewardship we can sustain a strong forest sector that can play a key role in BC’s future prosperity. ☒

# Year-end Report: The ABCFP's New Registration Process

**Over the past two years, the ABCFP has planned and implemented** an integrated, web-based system for enrolled members who are working their way towards registration as a forest professional. The new Learning Management System (LMS) — rolled out in April 2016 — has been widely acclaimed as a progressive step for the profession. This module-based process is designed to progressively introduce and test important professional concepts and regulatory requirements for new members while simultaneously tracking and reporting their progress. Within the LMS, sponsors are able to monitor progress while invigilating exams and signing off important milestones within the articling period. This system, which integrates sponsor support, is unique among regulatory bodies and has generated a lot of positive response. As we approach the one year mark since the launch of the LMS, we'd like to share some of the key facts and figures to the membership.

As of the end of January 2017, the ABCFP has 468 enrolled members at various stages of articling. Within this group, 366 are completing the new registration process. All new applicants must enroll in the new process while some legacy enrolled members may opt to complete the traditional exams. It is common for the legacy enrolled members to transition to the new process, as the traditional exams

will be offered for the last time in 2017 before being retired. At that time, any members who have not transitioned will be required to do so. This was designed to provide a fair alternative for those members who have been enrolled for several years.

So what does the future of the ABCFP's LMS hold? In the coming year, the objective is to make sure the first cohort of enrolled members successfully navigate the new modules. As for the ongoing implementation and evolution of the LMS, there are many elements that require continued attention. The modules will be reviewed annually and updated to reflect any changes in the practice and regulatory framework. Under the direction of the board of examiners and the registrar, new committees have been created to oversee this work. The addition of a LMS to the ABCFP's assets is a significant opportunity for future growth. In time, this platform will allow for the advancement of professional development opportunities using the existing modules, along with the development of more advanced ones. While registered members are currently limited to viewing the *Sponsor Orientation* module, the ABCFP is developing a plan for expanded use for our members. This is an exciting time of development for the ABCFP and its newest members with more good things to come. ✪

To offer some perspective from the users in the new process, staff made a few inquiries for this report. The following questions were asked to enrolled members and sponsors who are currently engaged in the system.

## **What advice would you give to another enrolled member starting the new registration process?**

*"I really appreciate the new system, which allows us to focus on each individual topic and to write the exam whenever we are ready. The one honest suggestion for anyone who is starting the new registration process: multiple choice is not as easy as it feels, make sure to spend enough time before challenging the exam."* — Qingcen Cai, RPF

*"Study a little bit every day, set yourself deadlines; the guides can be redundant so focus on the slides as the material is taken verbatim from the guides. For module 1a, read the scenarios in the given resources. Studying together can be helpful. Review review review...if you know what your learning style is, use that to your advantage."* — Cara Guimond, RPF

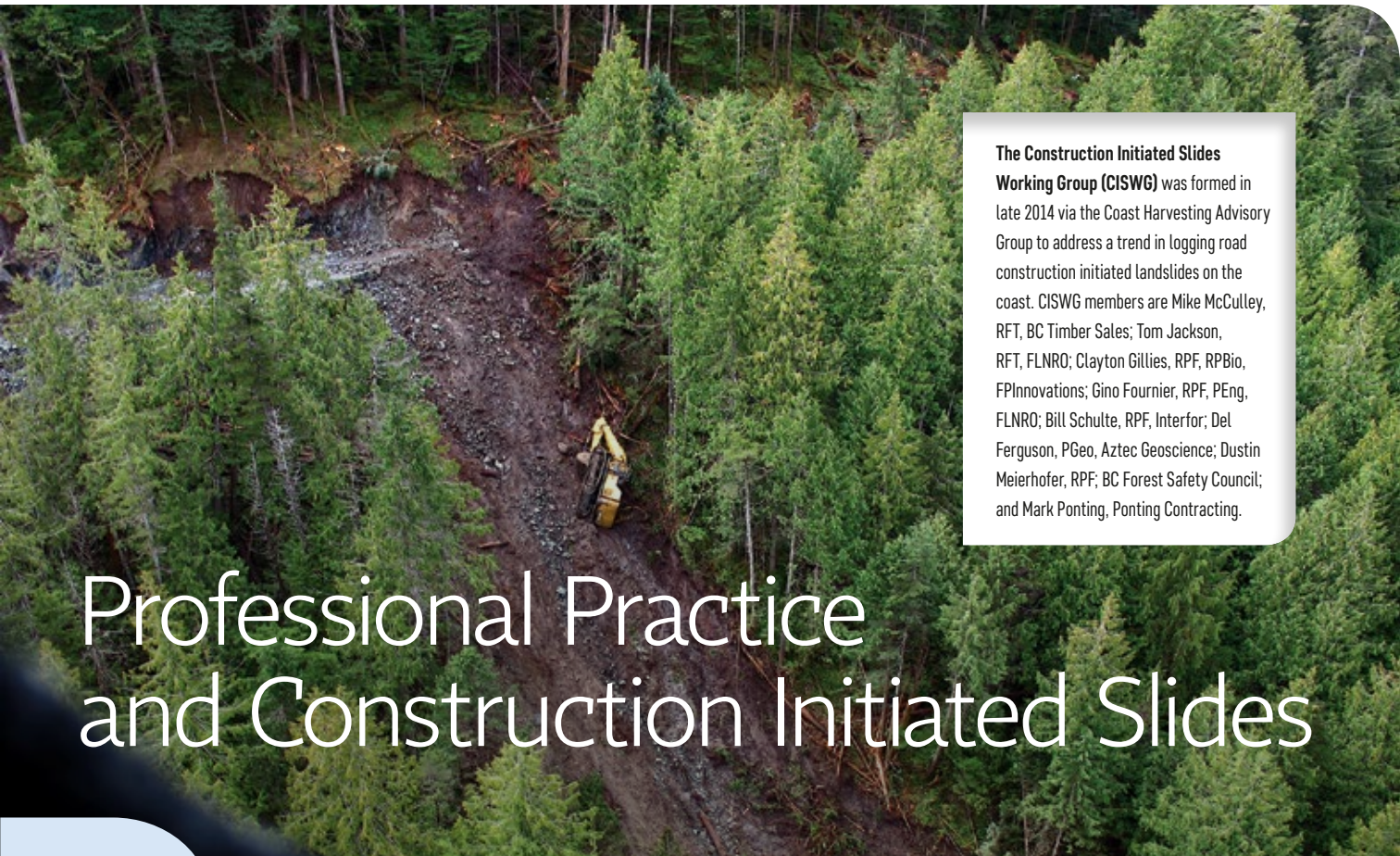
*"Create a routine study schedule and stick to it. Break each module down into manageable chunks with goals and clear*

*timelines. Scheduling exam days in advance with your sponsor will provide more incentive to study and help keep you on track. The process is very doable, and it is satisfying to track your progress as you go, so keep motivated and celebrate the small milestones."* — Maddy Deevy, RPF

## **What advice would you give to another sponsor who is just starting the new registration process?**

*"Ensure that you'll be able to set aside some time to commit to the relationship. The enrolled members are required to commit a significant amount of time — in most cases, time outside of work hours — to this process. As their sponsor, we owe it to them to give them their best possible opportunity to succeed."* — Jesper Nielsen, RPF

*"The best advice I can give to a new sponsor is to complete the LMS training and take time to know your enrolled member so educated guidance can be provided."* — Cosmin Man, PhD, RPF



**The Construction Initiated Slides Working Group (CISWG)** was formed in late 2014 via the Coast Harvesting Advisory Group to address a trend in logging road construction initiated landslides on the coast. CISWG members are Mike McCulley, RFT, BC Timber Sales; Tom Jackson, RFT, FLNRO; Clayton Gillies, RPF, RPBio, FPIInnovations; Gino Fournier, RPF, PEng, FLNRO; Bill Schulte, RPF, Interfor; Del Ferguson, PGeo, Aztec Geoscience; Dustin Meierhofer, RPF; BC Forest Safety Council; and Mark Ponting, Ponting Contracting.

# Professional Practice and Construction Initiated Slides

**Road construction in the forest industry is often necessary to** access old growth and second growth forests where older roads are upgraded. The Construction Initiated Slides Working Group (CISWG) is raising awareness to workers, contractors, and licensees that construction initiated slides are not constrained to specific geographic areas or site conditions. In fact, construction initiated slides occur year-round under all weather conditions and on steep to gentle slopes, down to 30 per cent or less in many areas of BC.

Between 2012 and 2015, there were 36 construction initiated slides recorded on the coast of BC. The financial, environmental, and — most importantly — human cost can be significant not only to those physically injured, but also for anyone who has been on site during a slide.

Employers and tenure holders on the land base engage forest professionals, professional engineers, and geoscientists as qualified professionals to provide advice on hazards, consequences, and risks associated with road construction activities. These professionals will identify hazards and indicate works which may be undertaken by construction crews to reduce the risk to workers, the public and to protect the environment.

Qualified professionals have a duty to follow the established standard of care identified in all professional practice guidelines<sup>1,2</sup> for the forest sector.

In December 2015, WorkSafeBC indicated the professional practice guidelines<sup>3</sup> established by the Association of Professional Engineers and Geoscientists (APEGBC) and the Association of BC Forest Professionals (ABCFP) as being the accepted standard for landslide risk assessments.

Those working in planning, designing, and building roads will want to familiarize themselves with *Occupational Health and Safety Regulation* guidelines for *Excavations* (20.78-20.101), *Planning and Conducting a Forestry Operation* (26.2), and *Creating Additional Hazards* (26.80), at a minimum. These will guide the various assessments, prescriptions, and direction needed for road construction activities to help eliminate the occurrence of landslides associated with road construction.

CISWG has developed a road construction initiated slide awareness presentation for workers involved in road planning, design, and construction. The presentation and webinar are available on the BC Forest Safety Council website<sup>4</sup>.



*The slide occurred as the operator was entering an end haul transition zone in moderately steep ground in an area containing subsurface water and deep, wet organics not identified in the construction plan.*

**References**

1. <https://www.apeg.bc.ca/For-Members/Professional-Practice/Professional-Practice-Guidelines>
2. [http://member.abcfp.ca/WEB/ABCFP/Practising\\_in\\_BC/Practising\\_in\\_BC.aspx#guidelines](http://member.abcfp.ca/WEB/ABCFP/Practising_in_BC/Practising_in_BC.aspx#guidelines)
3. WorkSafeBC *Occupational Health and Safety Regulation Guideline* 26.18
4. <http://www.bcforestsafe.org/node/2713>

# New BEC for the South-Central Columbia Mountains

**Biogeoclimatic Ecosystem Classification (BEC)** has been used to improve resource management in British Columbia since the mid-1970s. The BEC system is a hierarchical classification system that integrates climate, site, and vegetation patterns across many scales. Forest professionals use BEC for site plan development, tree species selection, appraisals, timber supply review, ecosystem based management, wildlife habitat assessment, climate change adaptation, and many other management applications. Most BEC field guides were last published in the 1990s. Now, newer information and knowledge have allowed for significant updates and improvements.

On September 1, 2016 a new BEC field guide and mapping were released for a portion of the southern Interior and is available for use in management activities. The new field guide replaces the former Nelson and Kamloops field guides (LMH 20 – Braumandl and Curran 1992 and LMH 23 – Lloyd et al. 1990) for the areas shown in Figure 1 (and described in the new guide). Field guides are available on the BC Government website<sup>1</sup>.

## New BEC includes:

- Land Management Handbook 70 – *A Field Guide to Site Classification and Identification for Southeast British Columbia: The South-Central Columbia Mountains* (2016)
- *Temporary Supplement to Land Management Handbook 70 – Four Biogeoclimatic Subzones/Variants in the Boundary-Okanagan* (2016)
- Updated BEC mapping (BEC version 10<sup>2</sup>).

The field guide and temporary supplement provide entirely new forested and non-forest site classification for 19 biogeoclimatic units in the South-Central Columbia Mountains and Boundary-Okanagan.

*Deb MacKillop, MSc, RPF, is the research ecologist for the Kootenay-Boundary Region of the Ministry of Forests, Lands and Natural Resource Operations. She is based in Nelson, BC and works across the southeast portion of the province.*

The temporary supplement to LMH70 includes four BEC units that were historically included, at least in part, in BEC units that are published in LMH70. It is a temporary supplement because the content will be replaced and republished in a comprehensive format when the field guide for the Boundary-Okanagan is published in 2017.

New BEC mapping (version 10) covers a much larger area than LMH70 and the temporary supplement, with many changes throughout the Okanagan-Shuswap, Selkirk, and Rocky Mountain Districts, as well as minor updates to linework in the Cascades District.

## Resources

1. New field guide: <https://www.for.gov.bc.ca/hfd/pubs/Docs/Lmh/Lmh70.htm>
2. Updated BEC version 10 mapping: <https://catalogue.data.gov.bc.ca/dataset/biogeoclimatic-ecosystem-classification-bec-map>
3. Stocking Standards: [https://www.for.gov.bc.ca/hfp/silviculture/stocking\\_stds.htm](https://www.for.gov.bc.ca/hfp/silviculture/stocking_stds.htm)

## Management Applications Associated with New BEC

**Stocking standards:** Chief Forester Diane Nicholls, RPF, released an update to the *Reference Guide for FDP Stocking Standards*<sup>3</sup> that is available under a new tab in the Microsoft Excel file for the reference guide *South Central Columbia Mountains* (2016).

**Forest Stewardship Plans:** In the BEC release memo, Nicholls says, “I encourage licensees to consider amending their plans to incorporate the new classification and standards”. To provide a transition period to review and adapt to new BEC, Nicholls goes on to say, “After March 31, 2017, new standards proposed will be expected to use the new classifications.”

**Log Cost Estimates in the Interior Appraisal Manual:** Updated silviculture cost estimates for new and existing BEC subzones/variants were released in November and licensees are expected to submit log costs using new BEC. Several historic, expired BEC units that are no longer in use have been deleted from the table. The *Interior Appraisal Manual, Amendment No. 2* is available online<sup>4</sup>.

**SIBEC—Site Index Estimates:** New Site Index – BEC (SIBEC) values have been calculated based on collection and incorporation of new and existing field sample data and will be released soon.

**Timber Supply Review:** New BEC, including new predictive ecosystem mapping (PEM) and SIBEC are used in the base case for timber supply review in the Arrow and Cranbrook timber supply areas (currently underway).

**Conservation Data Centre:** New forested and non-forested ecosystems are being reviewed and ranked for at-risk status.

## More BEC Field Guides Coming Soon for Other Areas of the Province

Three more guides are expected in 2017: East Kootenay-Rocky Mountain Trench, Boundary-Okanagan, and Merritt-Okanagan. An additional guide for the North Columbia Mountains is expected the following year. New BEC field guides were released for the boreal forests in 2011, for Haida Gwaii in 2014, and for grasslands in the Cariboo in 2014. Additional guides are in progress for the South Coast, Lillooet, North Thompson, and Robson Valley and will be released in 2018 and beyond.

Licensees working in these areas can prepare for incorporation of new BEC information by adding sections to their new forest stewardship plans or supporting documentation such as, “New BEC is expected to be released during the term of this plan; updates will be incorporated within a timely period once new BEC mapping and field guides are officially released.”

For more information on the BEC program, visit the Biogeoclimatic Ecosystem Classification Program webpage<sup>5</sup>. ✕

4. Interior Appraisal Manual, IAM Amendment No. 2: <http://www2.gov.bc.ca/gov/content/industry/forestry/competitive-forest-industry/timber-pricing/interior-timber-pricing/interior-appraisal-manual>

5. Information on BEC: <https://www.for.gov.bc.ca/hre/becweb/>



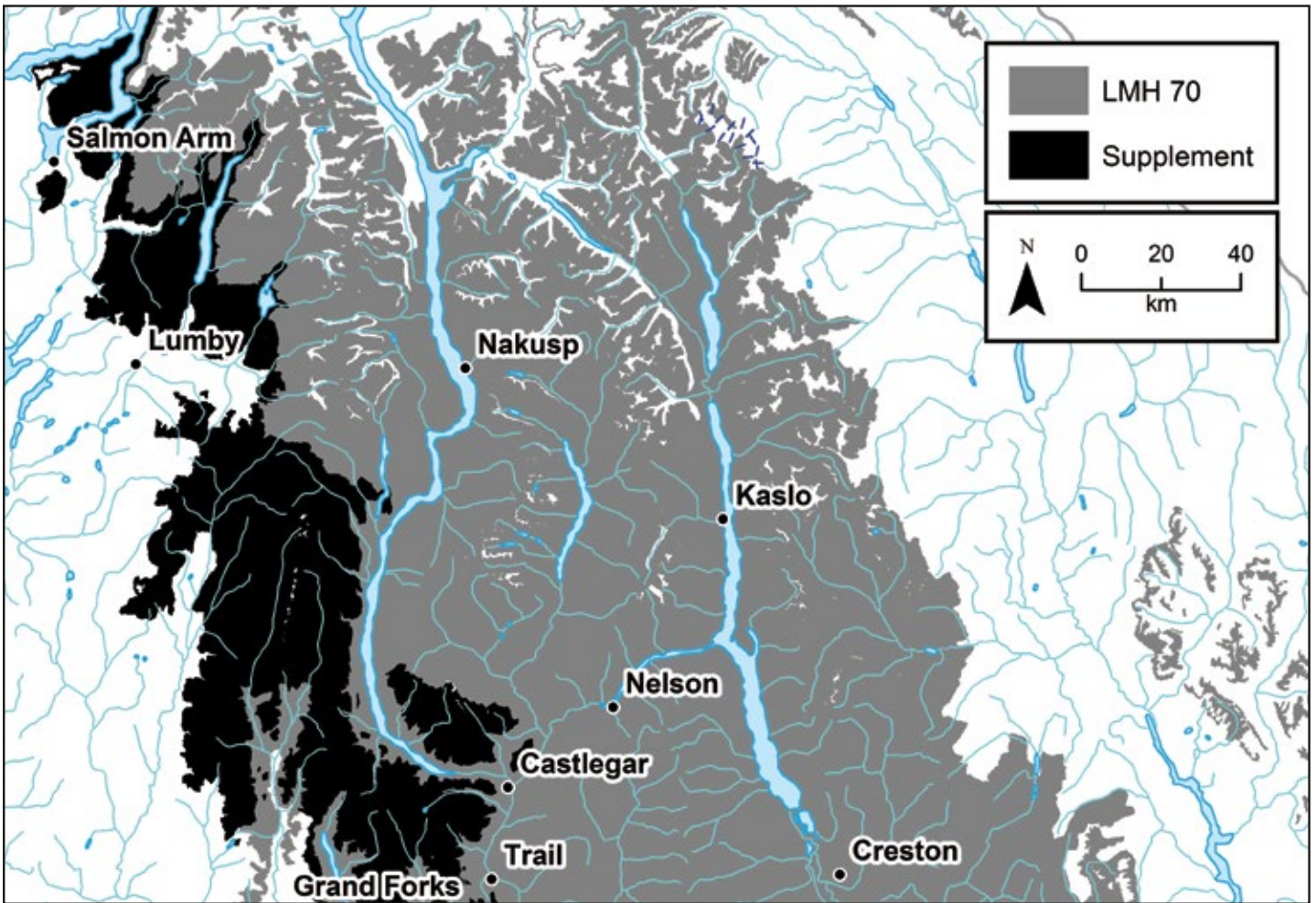


Figure 1. Area covered by the new BEC field guides: Land Management Handbook 70 and the Temporary Supplement.

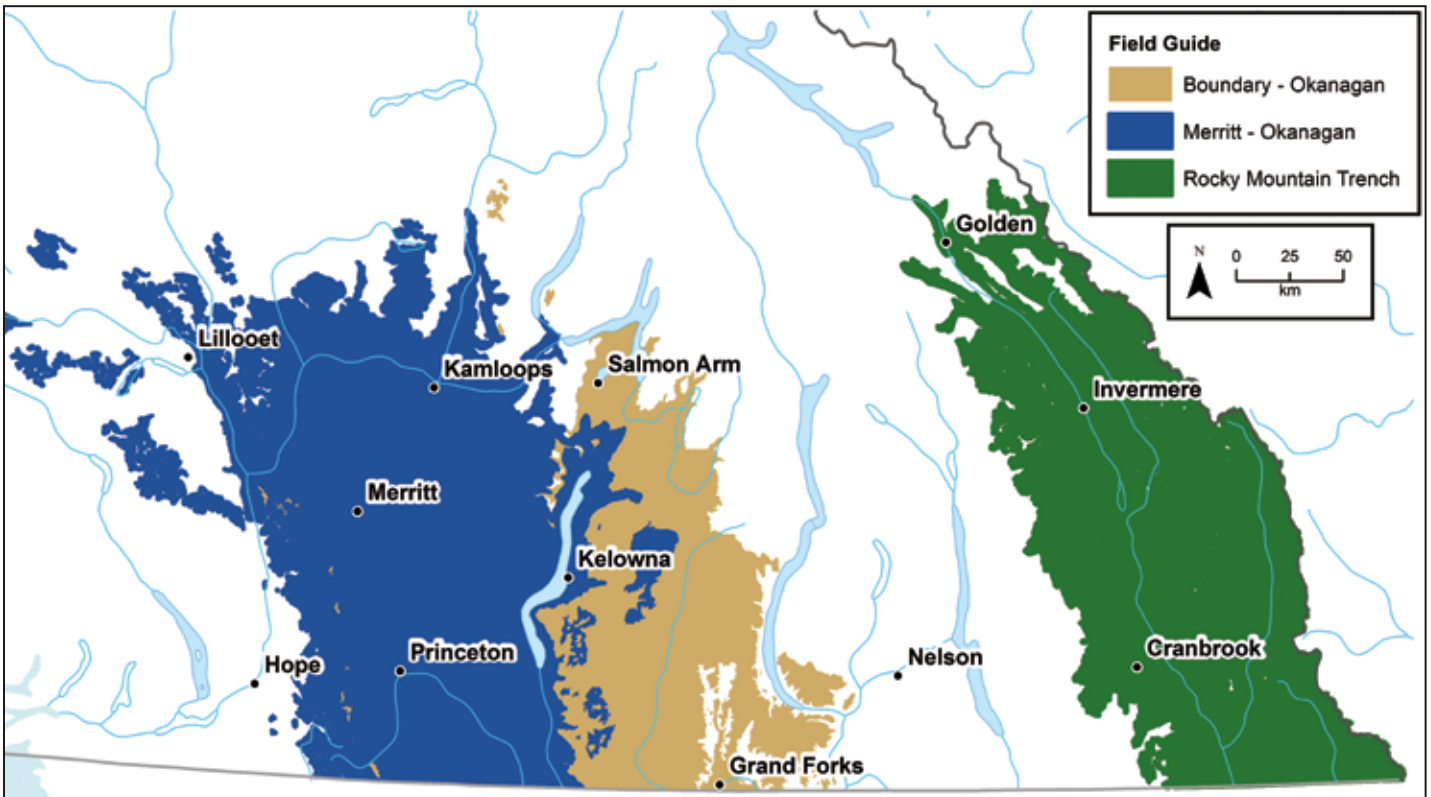


Figure 2. New BEC field guides anticipated for release in 2017.

# CLIMATE-BASED SEED TRANSFER: Guiding British Columbia's Reforestation Investments in a Changing Climate

## Climate Change Causes Genetic Maladaptation

BC's climates are warming and will continue to warm. Climate-change-induced stress on forest trees occurs because they are genetically adapted to past climates. As climates increasingly change, trees become maladapted to the climates they are in<sup>1</sup>. By reducing maladaptation stress, climate-based seed transfer (CBST<sup>2</sup>) has the potential to mitigate billions of dollars of lost timber value over the next century.

## BC is Well Positioned to Respond to Maladaptation Using CBST

We have a wealth of information on how different tree populations perform across BC's climates; a world-class made-in-BC climate data application (ClimateWNA); and expertise in government, universities, and industry. We also have large operational reforestation programs that plant about 250 million trees per year. Together, these assets provide an important opportunity to accelerate the genetic adaptation of forests to climate change and to positively impact timber supply and other services provided by BC's forests.

## CBST Costs are Small Relative to Benefits

The costs of a CBST system are small, relative to the overall cost of reforestation in BC. CBST requires scientific research, a sound policy framework, and periodic adjustments to orchard-seed production and inventory. These activities, at a cost of approximately \$2 million per year, will guide BC's annual reforestation investment of over \$200 million. If CBST offsets half of a 10 per cent productivity reduction due to climate change, these CBST costs have an estimated net present value (at three per cent) of almost \$1 billion<sup>3</sup>.

## Stable Policy and Research Support is Critical to CBST

The successful long-term implementation of CBST in BC requires seed-use policy on Crown land that is comprehensive (applies to all forest-tree seed use), informed by the best-available science, and capable of renewal when new information is available. Such a system is currently under development by the Ministry of Forests, Lands and Natural Resource Operations Tree Improvement Branch in conjunction with stakeholders. The contribution of this policy to forest health and productivity ultimately depends, and will continue to depend, on the science that informs it. This science draws information from many sources, including long-term field trials that assess tree populations with different genetic backgrounds for growth, pest impacts, and stress influences (heat, cold, drought, etc.). Other key research priorities are monitoring and modeling climate-change impacts, and genomics research to unravel the genetic basis of adaptation to climatic factors. Central to the delivery of an integrated system of policy and science is stable support for the institutions that house and develop the people with the knowledge and capabilities that make CBST work. ☒

### References

1. Aitken, S.N., S. Yeaman, J. A. Holliday, T. Wang, and S. Curtis-McLane. 2008. Adaptation, migration or extirpation: climate change outcomes for tree populations. *Evolutionary Applications* 1(1): 95-111.
2. Climate-based seed transfer is the process of allocating seed to planting sites based on climatic attributes. CBST provides the mechanism for assisted migration, in which seed sources are matched with anticipated future climates to which they are deemed to be well-adapted. CBST is meant, in this article, to include assisted migration where it is supported by adequate scientific information.
3. For more information, see <http://www.fgcouncil.bc.ca/CBST-investment-extension-note-FINAL.pdf> or <http://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/tree-seed/seed-planning-use/climate-based-seed-transfer>



# The Birth of an Association

In 1945, the long awaited *Public Inquiries Act - Report of the Commissioner Relating to The Forest Resources of British Columbia* by the Honorable Gordon Sloan, commissioner, was released. Two of the recommendations were of particular importance to a group of veteran foresters in BC; namely, one to establish a new forest tenure (forest management licences – FML), and the other was a recommendation to establish a licencing association for foresters.

The veteran foresters consisted mainly of forestry workers with the BC Forest Service (BCFS) — some graduates (mostly forest engineers) and some non-graduates (such as forest rangers). They were also members of the Victoria and Vancouver chapters of the Canadian Society of Forest Engineers (the predecessors of the Canadian Institute of Forestry) and for years had been writing petitions to government agencies (and to the commissioner) to further forest management policies in the province and to obtain better recognition for the role of foresters.

The first recommendation for the new FML tenure was important because it called for a management plan and for all cutting permits to be signed by a forester (RPF) recognized by a new association. This presented a problem for most companies because few had foresters on staff and cutting permits were drafted by camp engineers. Graduates from the UBC Department of Forestry (which



*Gerry Burch, RPF(Ret), Life Member, has been a prominent member of the ABCFP almost since its inception in 1947. Gerry has a degree in Applied Science in Forest Engineering from UBC. He has served on ABCFP's council, is a past president, and a former member of the Board of Examiners. In 1972, Gerry was a recipient of the ABCFP's Distinguished Forester Award. Gerry retired in 1987, but continues volunteering his time with the association on various committees. In addition to a lifetime of service to the ABCFP, Gerry is a mentor to many of our members. He has authored/co-authored books involving forest history and is committed to sharing his knowledge of forestry.*

was in the Faculty of Engineering) were only granted engineering diplomas upon graduation, which meant many were reluctant to join a new association. Companies therefore began employing new forestry graduates in field positions, even though they were forest engineering graduates from UBC, as it was the only forestry school in Canada west of Toronto.

The first council of the Association of British Columbia Foresters was named in the *Foresters Act* in 1947. This council was tasked to outline the criteria to be used in selecting applicants for this new association. Initially, this group selected the first president, F.D. Mulholland, RPF, a forester in charge of surveys for the BCFS and a past president of the Victoria chapter of the Canadian Institute of Forestry. Also, Malcolm Knapp, RPF, was selected as the first registrar (unpaid), and the initial office became his UBC office.

The initial requirements for acceptance into the association were decided, as follows:

- That the applicant must be a British subject;
- That he (language of the time did not include “she”) must be a graduate of the Department of Forestry at UBC;

- That he must have had two years of acceptable forestry experience in the field;
- That due consideration will be given to rules needed to allow non-graduates (pupils) to become registered; and
- That all applicants must write a thesis on an acceptable forestry subject.

But first, in order to attract membership from the senior foresters in the province to the new association and to obtain finances to set up the organization, a decision was made to accept applications from anyone in a forestry position — graduate or not — without writing a thesis, for a period of about two years. In the early years, about 140 new members were enrolled.

Soon, problems appeared for this first council and they worked on the following solutions:

1. Applications were slow in coming. Many foresters were unsure of the benefit of membership, with very little recognition in industry, and the annual association fee was looked upon as a burden.

*Solution: Both government and industry began setting up forestry positions and salary categories for those registered.*

2. The thesis requirement began to unravel. It was too cumbersome to send around the province to examining board members. There were long delays in receiving approval, often reverting to oral hearings rather than sending a thesis back for rewriting. There were challenges in providing storage for the approved thesis, and, most important, no one ever failed.

*Solution: A decision was made to cancel the thesis and require the writing of exams instead.*

3. An influx of graduate foresters from other provinces (mainly Ontario and New Brunswick) and around the world (Sopron, Hungary) began arriving in BC and requesting membership. *Solution: It was necessary to define forest subjects that all applicants and the few pupils who applied must have taken and passed, or enrollment would be denied. The council requested UBC professors determine this list of acceptable forestry topics. Also, the requirement that the UBC forestry school be the only school to be accepted was dropped.*

4. The term “acceptable experience” was particularly troublesome for the early councils. For example, should a graduate in public relations, research, parks, association positions, or sales be automatically refused admittance?

*Solution: All categories were now accepted.*

5. For the first decade, the same senior foresters were elected each year to council. Senior foresters were adamant the association be nothing more than a registering body; whereas, younger foresters wanted the association to be involved on forest positions, salary levels, forest policies, and the ability to challenge — by articles and speeches — government or industry positions.

*Solution: Eventually, a motion was passed at an annual meeting that past presidents must step down from council at the end of their term, and thus present an opening for a new council member*

# In Memoriam

It is very important to many members to receive word of the passing of a colleague. Members have the opportunity to publish their memories by sending photos and obituaries to [editor@abcfp.ca](mailto:editor@abcfp.ca). The association sends condolences to the family and friends of the following members:



## Allan Cassel MacPherson

RPF# 566, Life Member #257  
July 9, 1929 – January 6, 2017

It is with great sadness that we announce the passing of Al MacPherson on January 6, 2017 at the age of 87.

Al retired from the Ministry of Forests and Lands (Forest Service) in

1986 after a 38 year career. He started as a firefighter in 1948 and retired as Deputy Minister in 1986. During that time he graduated Ranger School in 1953 and became a British Columbia Registered Forester BCRF with the Association in 1969.

Al was born in Creston but spent most of his childhood in Kaslo. As a young person he enjoyed the outdoors and became an avid hunter and fisherman, continuing with these activities late into life.

Al moved many times throughout his career, with one of his first moves taking him to Smithers. It was in Smithers that he met Margaret and the two were married in 1951.

Al and Margaret remained married, until his passing, some 66 years. The couple had four children and have enjoyed nine grandchildren and eleven great grandchildren.

Al and Margaret both loved to travel and made it a priority in life to see the world, travelling into their 80s.

A service, attended by family and friends, was held in Victoria on January 11, 2017.

*Submitted by Douglas MacPherson, RPF*



## Sean Patrick Dunn

RFT #0737

October 10, 1974 – December 30, 2016

It is with great sadness that we report the sudden and tragic passing of Sean Patrick Dunn (“Dunner” or “Grubby” to his friends and co-workers) on December 30, 2016. Sean is survived by a loving family and many close friends. He is

fondly remembered by all whom had the good fortune to come into contact with him during a life that was cut too short.

Sean was born in Prince George, but lived in Kamloops for the majority of his life where he would come to make many close friends and become well respected within the forest industry and the community-at-large. Sean dedicated a large portion of his life to the forest industry and his passion for forestry and working in the field was unsurpassed. Sean started working for Integrated Woods Services (now Integrated Pro-Action Corp.) at the age of 17. Throughout his 25-year career with the company, he worked on development projects all over BC. He mentored countless young foresters and his pride for his work, integrity, and professional attitude influenced many people throughout his career. His fun-loving demeanor shortened many a long day in the bush and the memories will last a lifetime.

Anybody who ever met Sean was impressed by his fun-loving nature and his love of the outdoors. He loved to be outdoors; whether he was golfing, boating, or just satisfying his curiosity by taking random detours. He enjoyed combining his love of the outdoors with one of his other great passions, which was spending time with animals. To Sean it didn't matter; every animal down to the scraggiest of mutts was worthy of his attention and support. Sean was an avid supporter of animal welfare and selflessly donated his time to various causes.

One of his other great loves was the Philadelphia Eagles. He was a devoted fan and he could always be found on Sundays surrounded by his Eagles gear and cheering for his team. Although they were never quite able to capture that Super Bowl title, we will continue to support them and hope that one day they will be able to honor his support.

Sean will be remembered for his passion for many things; sports, music, travel, and his love of a good joke. However, he will be mostly remembered for his fun-loving spirit, integrity, and his dedication to those close to him. Although we make this announcement with heavy hearts, we would also like to celebrate a life well-lived and definitely never forgotten. So long Dunner.

*Submitted by Sean's colleagues (core 4) at Integrated ProAction Corp.*

## Roderick Negrave, PhD, PAg

RPF #1928

November 18, 1965 – November 23, 2016

It is with sadness we announce the passing of Ministry of Forests, Lands and Natural Resource Operations Coast Area Research Section Head Dr. Roderick Negrave, PAg, RPF. The forestry community has lost an intellectual ally, a dedicated and passionate forester, a trusted colleague, a keen mentor, and a dear friend.

Rod was born in Kamloops and grew up on farms in the rural southern Interior where he developed a passion for the environment and for organic farming. Shortly after starting his agriculture degree at UBC in 1984, he met his wife-to-be, Louise, but it wasn't until fourth year that the romantic spark ignited. Over the next few years they became parents to Greta, Laura, Inga, and Karl. Rod was predeceased in death by Laura in 2013. During this time, Rod worked for the BC Cattlemen's Association, completed a Master of Science in forest ecology at the University of Alberta, owned and operated a mixed farm with his family in the Peace River country, consulted in BC and Alberta, and instructed at Northern Lights College. In 2004 Rod completed a PhD in forestry at UBC.

After being hired as a research silviculturist for the Ministry of Forests Coast Region in 2005, Rod introduced himself at the Coastal Silviculture Committee workshop with the statement, "Silviculture research is open for business." He began building a client-driven research program based on partnerships and collaboration with government, industry, academia, and First Nations to bridge the gap between research and management. Rod's research focus included silvicultural systems, mixed woods, fertilization of western redcedar and yellow cedar decline. The success of his research program and



the respect of his colleagues led him to become the regional research section head in 2008.

In 2009 Rod began spending his summers supporting the Coastal Fire Centre, first as plans chief and then in a similar role on various incident management teams assigned to large wildfires. For his outstanding service to BC Wildfire Service (BCWS), the ministry and the province — and the

way he inspired others in this capacity — Rod was awarded the 2016 BCWS Inspirational Award of Excellence.

In his spare time, Rod was an elected councilman for the District of Lantzville; volunteered as a Boy Scout leader, for St. John's ambulance, and with the Victoria and Islands Branch of the BC Institute of Agrologists (including a year as president); was a rector's warden and synod delegate on the Parish Council at St. Philip by-the-Sea Anglican Church; and enjoyed Tai Chi, organic gardening, and spending time with his family.

In all his endeavors, Rod was a dedicated and tireless team member. Rod's style was to listen carefully before speaking and then to offer suggestions, advice, or expertise that was reasoned and measured, honest and sincere, and always good-humoured. He gave freely of his time and genuinely cared for and connected with everyone.

In November of 2015, Rod was diagnosed with Stage 4 cancer and against the odds, lived another full and active year. Rod will be greatly missed by his family, his many friends, and his colleagues.

*Submitted by Louise de Montigny, RPF; Kevin Hardy, RPF; and Sari Saunders, PhD, RPBio*

### ASSOCIATION continued from page 25

*(hopefully, a younger forester).*

6. Soon, the need for a full time office was apparent, but it was determined that the association needed at least 750 members and their dues to support such an office, which was not the case around 1960.

*Solution: In the interim, a half time office was set up in Vancouver with Professor Knapp and a secretary. A full time office was not set up until 1971 when about 800 members were enrolled.*

7. The lack of recognition by the public towards professional foresters worried successive councils, who responded by

establishing a *Code of Ethics*, contacting political parties in Victoria, and awarding the Distinguished Forest Professional award annually to a deserving forester.

8. The role of technologists, which had been conducting many basic forestry tasks in the field for years (particularly forest rangers), was troublesome for early councils. Many discussions were held with technologists, but with no easy resolution, the Applied Science Technicians and Technologists of BC was formed. Most of the disagreements arose as to the determination of the subject of

acceptable forestry projects that must be signed by an RPF.

*Solution: Finally, in 2003, the roll of technologists in forestry activities was solved by allowing them to become registered as Registered Forest Technologists with professional foresters, under the newer-named Association of BC Forest Professionals.*

It is apparent that our fledgling association has come full circle to become a well-recognized organization, well suited to the tasks of the 21<sup>st</sup> century in managing the forests of BC. ☘

# The Hidden Life of Trees: What They Feel, How They Communicate – Discoveries from a Secret World

Written by Peter Wohlleben  
Foreword by Tim Flannery  
Translation by Jane Billinghurst

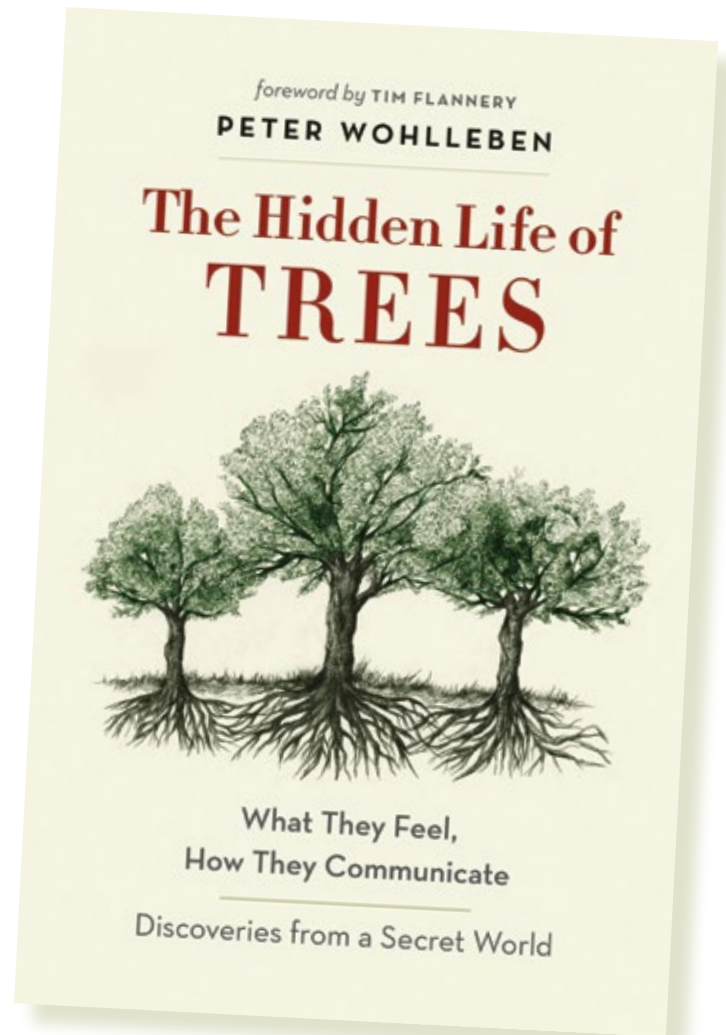
Copyright 2016  
Greystone Books and the David Suzuki Institute  
First Published in German, 2015  
ISBN: 978-1771642484

Books about forests usually sit in the back corners of bookstores waiting to be discovered by casual browsers. Peter Wohlleben's book is the exception. *The Hidden Life of Trees: What They Feel, How They Communicate – Discoveries from a Secret World* made the best seller lists in Germany shortly after it was published in 2015 and again in North America when it was translated into English last year. It's still at the top of the list in BC. Hundreds of thousands of copies have been sold and Wohlleben has become a minor celebrity in Europe. Quite something for someone trained as a forester, working first for a state forest service and then as a community forest manager in Northern Germany.

Clearly the book has hit a nerve in the reading public, and BC foresters should pay attention. But be warned. Wohlleben's approach is unashamedly anthropomorphic. He talks about trees feeling pain, protecting their offspring, and talking to friends; and he reckons they can also count and sense the passage of time. "Enough!" you might say, but he isn't a crackpot. There is a long history of authors using animals to express their views in fiction. Not too many have used trees though. Wohlleben justifies his approach by arguing that by telling stories he can reach a broad public with his ideas about new ways of managing forests. He thinks that the highly mechanized methods of managing forests in Germany, and presumably other parts of the

world, are out of step with ecological thinking about how trees and forests relate to, and respond to, their environment. He peppers his book with supporting references to published studies by reputable scientists. The book is relatively short but covers a wide range of topics from genetics to tree physiology. I found parts that were surprising, and parts that made me grind my teeth with annoyance. On occasion I wondered if the translation was to blame, however the final chapter makes it clear Wohlleben is sincere and wants to bring his love of trees and forests to a wider public. In this he has been remarkably successful.

The book also contains an unusual afterword by Dr. Suzanne Simard, RPF, professor of forest ecology at UBC, who explains the science behind parts of Wohlleben's book, particularly the portions dealing with trees and mycorrhizae — the wood-wide web. Simard



Ranking: 5 out of 5 cones



3 cones for forestry information but  
5 cones for public awareness

used trees though. Wohlleben justifies his approach by arguing that by telling stories he can reach a broad public with his ideas about new ways of managing forests. He thinks that the highly mechanized methods of managing forests in Germany, and presumably other parts of the

connects the observations made about German forests in Wohlleben's book with her research and the research of her colleagues in the Pacific North West and she suggests the approach taken will make us think more deeply about the inner workings of trees and forests.

Should you read this book? I think so, if only because you will undoubtedly encounter someone in the public who has also read it and will eye you with suspicion when you announce your profession, or when you are presenting logging plans to a sceptical public. Forewarned is forearmed.

Review by Alan Vyse, RPF

## Occupational Health and Safety and the Forest Professional: The Right to a Respectful and Safe Workplace

By Carole Savage, RPF, and Mike Larock, RPF

Those of us in forestry are bound by the Foresters Act and our Code of Ethics. They inspire confidence in our profession by maintaining high standards in all we do — including safety in our day-to-day work and our conduct on the job. This is especially important when it comes to the safety and respect of others on site.

The Foresters Act states that it is an offense to take punitive action against a member who is exercising their professional judgment. Our Code of Ethics speaks to having respectful interactions with other members and the importance of demonstrating professional conduct in our day to day endeavors. This helps to determine the image and public trust of our profession.

As forest professionals, we're all aware of the risks of our job, but bullying and harassment should not be part of it. Bullying and harassment is an occupational health and safety (OHS) issue that poses a potential risk to our physical and mental health and safety; it can happen anywhere and at any time — whether it's in the office, out in the bush, during the work day, or after hours.

It's important to keep in mind that bullying and harassment does not include any reasonable action taken by an employer or supervisor relating to management and direction of workers or the workplace. According to WorkSafeBC, bullying and harassment is any inappropriate conduct or comment by a person towards a worker that they know, or ought to have known, would cause them to be humiliated or intimidated. It can include any of the following:

- verbal aggression,
- insults,
- name-calling,
- vandalizing personal property or belongings, and/or
- spreading malicious rumours.

All of us have the right to a respectful and safe workplace. Here are some steps to help you get there:

- Know the bullying and harassment risks at your operation.
- Clarify what a respectful workplace looks like and share these expectations with your workers.
- Implement a prevention plan.
- Support workers speaking up and reporting inappropriate behaviour.

WorkSafeBC has created a package of tools and resources to help workplace parties prevent and address workplace bullying and harassment. Access the online tool kit and OHS policies at [www.worksafebc.com/preventbullying](http://www.worksafebc.com/preventbullying).

### TD Insurance

Meloche Monnex

Get preferred insurance rates today!

1-866-269-1371

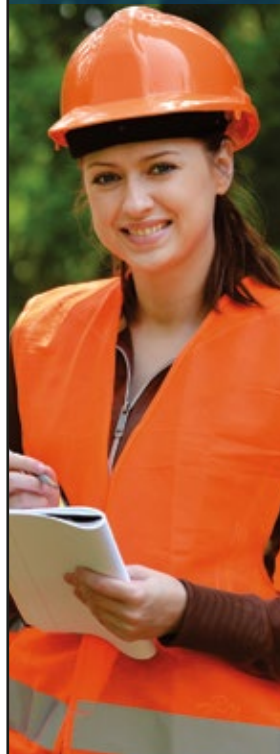
[melochemonnex.com/abcfp](http://melochemonnex.com/abcfp)



The TD Insurance Meloche Monnex program is underwritten by SECURITY NATIONAL INSURANCE COMPANY. It is distributed by Meloche Monnex Insurance and Financial Services Inc. in Quebec, by Meloche Monnex Financial Services Inc. in Ontario, and by TD Insurance Direct Agency Inc. in the rest of Canada. Our address: 50 Place Crémazie, Montreal (Quebec) H2P 1B6.

© The TD logo and other TD trade-marks are the property of The Toronto-Dominion Bank.

### Protect Your Profession



HUB International is pleased to offer a Professional Liability E&O insurance program designed for members of the **Association of BC Forest Professionals**. Unique coverage includes:

- Cyber Security & Privacy Liability
- Defense Costs in Excess of Liability Limits
- Retirement / Disability / Cessation of Business Extension

With HUB International, you receive exceptional coverage and pricing by leveraging a program available only to professional associations and their members.

**Contact Us Today for a Free Quote.**

**Jordan Fellner**

T: 604.269.1888

TF: 1.800.606.9969

E: [tos.vanprof@hubinternational.com](mailto:tos.vanprof@hubinternational.com)

[www.hubprofessional.com](http://www.hubprofessional.com)

**MEMBERSHIP  
STATISTICS**

Note: Individuals may have applied for a change to their status since this posting. Check the member directory on the ABCFP website at [member.abcfp.ca/web/ABCFP/Members/directory.aspx](http://member.abcfp.ca/web/ABCFP/Members/directory.aspx) for the most current list of members. You will need to sign in to access this page.

**ABCFP January 2017****NEW REGISTERED PROFESSIONAL****FORESTERS**

Jenna Rene Brink, RPF  
Chesley Neil Clem, RPF  
Cara Leigh Guimond, RPF  
Corey David Kenji Kuromi, RPF  
Matthias Splittgerber, RPF

**NEW REGISTERED FOREST TECHNOLOGISTS**

Cody Don Jackman, RFT  
Emily Marie Outram, RFT

**NEW FORESTERS IN TRAINING**

Erica Rae Reid, FIT  
Julie Marika Sheppard, FIT  
Shane Broderick Speziali, FIT  
Shane Steven Vandewater, FIT

**NEW TRAINEE FOREST TECHNOLOGISTS**

Carly Tayler Bastien, TFT  
Tyrone Adley Green, TFT  
Amber Jean Merko, TFT  
Alexander Mark Nowak, TFT  
Owen David Patton, TFT  
Lara Michelle Phillips, TFT  
Tyler Rochon, TFT  
Hannah Lynne Vander Meer, TFT

**REINSTATEMENTS (REGISTERED MEMBERS)**

Michael Patrick Kamann, RFT  
Richard A. Smith, RPF

**DECEASED**

Sean Patrick Dunn, RFT  
Roderick W. Negrave, RPF

The following people are not entitled to practice professional forestry in BC:

**NEW RETIRED RPFs**

Pieter J. Bekker, RPF(Ret)  
William W. Bourgeois, PhD, RPF(Ret)  
Kerry C.A. Deschamps, RPF(Ret)  
Peter L. Fuglem, RPF(Ret)  
L.R. Mark Hall, RPF(Ret), PAG  
Brian G. Harding, RPF(Ret)  
David S. Harrison, RPF(Ret)  
Stephen P. Lackey, RPF(Ret)  
Myles R. Mana, RPF(Ret)  
Grantly Richard Nishio, RPF(Ret)  
Stephen J. Potter, RPF(Ret)  
Thomas N. Tamboline, RPF(Ret)

Russell E. Taylor, RPF(Ret)  
Greg Wiggins, RPF(Ret)

**NEW RETIRED RFTs**

Paul Alexander Pashnik, RFT(Ret)  
Pierre Andre Pelletier, RFT(Ret)

**LEAVE OF ABSENCE (REGISTERED MEMBERS)**

David Christopher Banham, RFT(on LOA)  
Shane L. Berg, RPF(on LOA)  
Katherine P. Bleiker, PhD, RPF(on LOA)  
A. Paul Blueschke, RPF(on LOA)  
Jan Bossanyi, RPF, ATC (on LOA)  
John (Jackie) Victor Brown, RFT(on LOA)  
Stephen John Chaplin, RFT(on LOA)  
Gabriel Blair Coleman, RPF(on LOA)  
Aaron Todd Cutler, RFT(on LOA)  
Michael Leigh Davis, RPF(on LOA)  
Colette P. Fauchon, RFT(on LOA)  
Dawn Marie Guido, RPF(on LOA)  
Barbara Aline Harrison, RFT(on LOA)  
Gerald Graham Hills, RFT(on LOA)  
Brandy Deanne Hughes, RFT(on LOA)  
Kirk Bradley Hughes, RFT(on LOA)  
Jennifer Lynn Hutt, RFT(on LOA)  
Kurtis Randolph Isfeld, RFT(on LOA)  
David F. Jewesson, RPF(on LOA)  
Gregory P. Kockx, RPF(on LOA)  
Jamie Dean Kroschel, RPF(on LOA)  
Indra LaLari, RPF(on LOA)  
Stacey D. Larsen, RPF(on LOA)  
Jeffrey Kevin Leahy, RPF(on LOA)  
Hayley Erin Letchford, RFT(on LOA)  
Jennifer Eve Martin, RFT(on LOA)  
Tavis Aaron McDonald, RPF(on LOA)  
Tim Mergen, RFT(on LOA)  
Mark Messmer, RPF(on LOA)  
Kimberley Lillian Meyer, RFT(on LOA)  
Mary Delina Moran, RFT(on LOA)  
Keith Daniel Mullens, RFT(on LOA)  
Sarah Elizabeth Quinn, RPF(on LOA)  
William Redhead, RPF(on LOA)  
Shawn D. Rice, RPF(on LOA)  
Dana Allen Robichaud, RPF(on LOA)  
James A. Sayle, RPF(on LOA)

Aaron Matthew Smeeth, RFT(on LOA)  
James Leonard Smith, RFT(on LOA)  
Daniel Eugene Stanyer, RPF(on LOA)  
Timothy James Taggart, RFT(on LOA)  
Roger D. Tailleux, RPF(on LOA)  
Michael Thomas Toews, RFT(on LOA)  
Christopher A. Waite, RPF(on LOA)  
Christy Patricia Weiss, RPF(on LOA)  
Errol Stanley Widdis, RFT(on LOA)

**LEAVE OF ABSENCE (ENROLLED MEMBERS)**

Amanda Louise Brown, TFT(on LOA)  
Sara Michel Goertzen, TFT(on LOA)  
Kingsley Kyere-Donkor, FIT(on LOA)  
Sean David Nomme Pledger, FIT(on LOA)  
Tara Lynn Rooney, FIT(on LOA)

**RESIGNED RPF**

Roland L. Baumeister  
R. Bruce Catton  
Christopher J.E. Clement  
Brian A. De Gusseme  
Maddalena L. Di Iorio Dunn  
Glenn D. Farenholtz  
Jeffrey Guerin  
Scott W. MacDougall  
Hans R. Mannhardt  
Ingrid J. Russell

**RESIGNED RFT**

Victoria Mary Groves  
Richard George Lalonde  
Migs Lovlin  
Martin Andrew MacLellan  
Paul Andrew Maika  
Deric Robert Manning  
Malcolm Bradley Martin  
Alexander Donald McLean  
Kaela A. Mitchell  
James Adam Veley

**RESIGNED RPF RETIRED**

Joseph Z. Bako



A Moment  
in **Forestry**

**Fireweed off of Kent's main, 20 kilometres south of Powell River.**

*By Patrick Devereaux, RFT*

# Bringing Tactical Planning Software to the Forest Industry



**FOREST**  
**OPS**<sup>TM</sup>

*Simplify. Organize. Manage.*

Forestry operations today require detailed forecasting of woodflow and financial outlooks.

**FOREST OPS**<sup>TM</sup> takes the guess work out of **tactical planning** by making it simple to update your **schedule**, visually confirm you are meeting all of your operational **targets** and analyze **profitability**. **FOREST OPS**<sup>TM</sup> gives better control to forest managers by reducing the time and complexity associated with detailed operational harvest planning.

## **QUICK OVERVIEW**

### **Planning**

Checklist of operational planning tasks with milestones.

### **Scheduling**

Assigning harvesting dates, contractors, and delivery destinations.

### **Targets**

Compare log production with target mill consumption or sales obligations.

### **Profitability**

Review and adjust default contract rates, and forecast log values.

### **Mobile**

Access your **FOREST OPS**<sup>TM</sup> data anywhere on our mobile app.

To set up a meeting contact [sales@jrpltd.com](mailto:sales@jrpltd.com)

[forestOPS.jrpltd.com](http://forestOPS.jrpltd.com)

For more information and online demos on all our products, visit [jrpltd.com](http://jrpltd.com)



**JRP SOLUTIONS LTD.**

*Professional Software Solutions*