

BC

Forest PROFESSIONAL

JULY - AUGUST 2016

Further Up the Slope:
A Literal Mountain of Timber

Protecting and Managing
Sensitive Geological Topography

Good Geometric Road Design:
**Limiting Risk
for the Future**

Minimizing Operational and
Environmental Impacts
to Wetland Crossings

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VIEWPOINT
Forest Operations





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Photo: Ryan Potter, RPF

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ABCFP's 68th Forestry Conference and AGM — Great Bear Rainforest Land Use Order

While it is difficult to mention every speaker on the agenda of this year's forestry conference and AGM, I think that Deputy Minister Tim Sheldon, Dr. Jody Holmes, and professional forester Rick Monchak, RPF, earned a special accolade. Like most British Columbians, the achievement of the *Great Bear Rainforest Agreement* (GBRA) was a historic event, the right thing to do, and February 2016's forestry conference was the right place to discuss making the GBRA a new reality.

The deputy minister gave some of the historical background of the conflict leading to the GBRA, while Dr. Holmes described it as a change in public consciousness, a complete change in doing business. She described what made the agreement happen. The greatest task fell to Rick Monchak as he talked about some of the challenges facing its implementation and governance. Not only are planning and operational costs going to increase, making forestry less competitive, there are enormous problems with administration. Using a simple example of old growth, he highlighted the confusion associated with many of the terms in the agreement. After defining old growth as more than 240 years of age, what measure should be used to define an old stand? Does it mean some volume per unit area, or maybe an ideal basal area, or possibly a number of trees per hectare? Presently, an old growth stand is 25 or more 230 year-old trees per hectare. Expect other surprise definitions.

Each of the speakers did an excellent job in dealing with a complicated issue.

Sincerely,

Will Wagner, PhD, RPF

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Digital Signatures Too Expensive?

In the March-April edition of BCFP magazine, Chris Perry, RFT, wrote about his concerns around the cost of obtaining a digital signature through Notarius. While it's true this isn't a cheap service, they do offer a fully secure digital signature. Different members need different levels of security when it comes to their signatures. If your work is mostly low risk, then you might be comfortable with a scanned signature or stamp. If your work is high risk, or if you prefer to have a higher level of security and control of your signature, you may be better off using a digital signature provider such as Notarius. The ABCFP offers some guidelines on this topic. Check out the Guidelines for Interpretation of Bylaw 10 – Identification of Professional Work on the Bylaws page of the website (Members – Governance – Bylaws).

Brian Robinson, RPF

Director of Professional Development and Member Relations

Interview with Diane Nicholls, RPF, May-June Edition

I have just finished reading the May-June issue of **BC Forest Professional** and particularly the interview with Diane Nicholls, RPF, BC's new Chief Forester.

I was impressed by the creation of the Chief Forester's Leadership Team to identify strategic issues that need attention and the timber supply review and forest inventory to be supplemented with research on growth and yield.

Since 1980, BC has established 5.46 million hectares of planted forests, almost the size of New Brunswick. Reliable data on the growth performance of this vast area of managed young stands, some of it 30-35 years old, will provide support for silviculture and strategic planning.

The Canadian average AAC/ha is less than 1.5m³/ha/yr. How fast are these BC planted forests growing? It is important to know.

I attended an excellent session on LiDAR at the recent spring meeting of the Canadian Woodlands Forum held in Moncton, NB, chaired by Dr. Doug Pitt of the Canadian Wood Fibre Centre. The potential of LiDAR to provide inventory data for both strategic and operational planning is impressive.

NB expects to have the forests of its province covered by LiDAR in about five years.

Ms Nicholls, "May the force be with you."

Tony Rotherham, RPF(Ret)

Knowlton, Quebec

Re: ABCFP Council Replies to: Advocacy and Patronage

Sir and Councillors: You may recognise my name as the author of a letter in 2015's Nov.-Dec. issue of the **BC Forest Professional**, in which I challenged the practice of making donations to BC's political parties. At January 1, 2016 the total spent is \$12,200; not a small amount.

I interpreted those dollars as a "Pay to play" charge and objected strongly re the improper use of our money. Similar sentiments have been published from Alf Farenholtz and David Smith in subsequent issues.

Our Association's replies defended the practice as, per Past-President Lok in the May-June 2016 issue, the donations "... gives us unprecedented access not only to forestry politicians and staff, but politicians in related ministries"... as ..."an aspect of the ABCFP's advocacy work."

Since the revelation of the \$50,000 paid Premier Clark by the Liberal Party I assume that you and our Board members have been as shocked by this callous use of donated funds to consider the wisdom of future donations.

Clearly, our Association has been misled, or was not diligent in checking on, any limits to the purposes and use of our donations and must now be evaluating alternatives. I suggest the only conclusion to this questionable practice is to stop it.

Our Association has sufficient credibility to gain ready access to appropriate Government Ministries and staff.

No more "Pay to play" with Members' money. As BC's Professional Engineers do, each can donate to the party of choice.

Our ABCFP funds are not for the Executive to spend on partisan actions. I request that you publish this letter and your response in the next issue of our Professional magazine so that all Members can receive your reply equally clearly.

Michael Meagher, Ph.D., RPF (Ret.)

PS. Ms Brittain: When you publish this letter I would appreciate your leaving intact my use of capital letters to designate proper nouns, such as "Past-President", "Member", "Government Ministries".

The current practice of using lower-case letters minimises the importance of such positions and agencies. Thank you. M. Meagher

Reply to:

ABCFP Council Replies to: Advocacy and Patronage

Council is monitoring related external events and in the interim continues to actively engage with government at both the political and bureaucratic levels while exploring new engagement opportunities.

Chris Stagg, RPF

President

Social License

The articles on social license in the May-June edition were interesting, but the elephant in the room was avoided. Forest corporations operating public forests is not a prescription for sustainable social license.

Andrew Mitchell, RPF(Ret)

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:

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Making Council Stronger and More Effective

Serving on council — some may think of it as punishment and wonder why anyone would stand for election. I have a much different point of view. I think it is an honour to serve on council. I take great pride in serving the profession and the membership.

In recent memory, the ABCFP has never had difficulty in finding members willing to run for council. In most years, we've had more people than spots on council. I think this is a fantastic situation to be in and sincerely thank everyone who has stood for election whether or not you've served on council.

Recently, council has begun to notice the benefits of having members with particular skill sets or attributes serve on council. Running the ABCFP is similar to running a small company — everyone benefits from having people with a diversity of knowledge of governance, human resources, finances, communications, strategic thinking, and other key skills. Of course, knowledge of the forest sector in BC will always be important.

This year's council has decided to make it a priority to have future councils made up of members with skills and attributes that collectively help make council stronger and more effective. As a result, we've taken a look at the terms of reference for

the Council Nomination Committee — the committee responsible for finding members willing to run for council. In the past, the Council Nomination Committee would look for a good balance of candidates from different geographic locations, different employer groups (industry, government, consulting), the right number of RPFs/RFTs, a mix of men and women, etc. Not much attention was paid to the other skills of individuals involved.



Now we've asked the Council Nomination Committee to also pay attention to some other key attributes. We feel these skills will ensure council continues to be high functioning and competent. So, in addition to having a strong personal character and creating a balance of people from different geographic areas, employer groups, work experience, and maintaining gender diversity, the nominations committee will try to find individuals with some or all of the following attributes:

- **Governance stewardship:** Guiding the ABCFP is not an easy job. Having past experience with boards and or senior management experience will go a long way to make a council member comfortable in this role.
- **Human resources management:** Council oversees the CEO, so it is essential that members understand HR topics like recruitment, senior executive management, succession planning, etc.
- **Financial acumen:** Having the ability to read and understand financial statements provides another level of checks and balances to ensure the ABCFP's books are in good shape.
- **Strategic orientation:** Council and the CEO provide strategic direction to the ABCFP. Council members must understand how strategy and business needs coexist at the association.
- **Innovative and critical thinking:** Challenging business

problems arise at the ABCFP, just as they do in any organization. Council members must be able to find innovative ways to solve these problems.

The intent is to ensure a good mix of these skills on council at any given time. If you're looking for a challenge and want to give back to the profession, I urge you to take a look at your strengths based on the key skills above. Give a member of the committee a call and let your name stand for council. You won't regret it. ☘

What Is the Council Nomination Committee?

The committee comprises the past president of the current council (or another member of the council executive), at least two current or past council members, and the CEO. All members serve a four-year term, except for the past president who serves for only one year. Members can serve a maximum of two terms.

The goal of the committee is to ensure there are enough people with the key attributes to run for council each year.

The 2016 Council Nomination Committee

Bob Craven, RPF
Christine Gelowitz, RPF, CEO
Jonathan Lok, RFT
Kelly McCloskey, RPF

Being a Professional: Why it Matters

When I first became a part of the association I thought I understood the significance of what it meant to be a forest professional. I graduated from UNBC with a forestry degree and knew if I wanted to legally practise forestry in BC I needed to be registered with the ABCFP. As a Forester in Training I learned about professional aspects, such as our duty to uphold the public interest and professional independence. Despite this, I didn't internalize the significance of my professional designation.

A true grasp of the professional role and its importance takes some time, practise, and reflection. It's similar to when I owned a Harley Davidson and learned the critical difference between knowing how to *operate* a bike versus knowing how to *ride* one. If you spend your day doing what most people call 'traditional' forestry work, you may not have felt the need for this deep level of reflection. The need might arise when traditional tasks become less and less the focus of your job or when you have a hard time remembering the last time you went into the field. Maybe at this stage of your career you wonder if you are still practising professional forestry and if you should still be registered.



Reflecting on earlier parts of my career, I think what compelled me to become and stay registered was the respect forest professionals garnered — from the public, other professionals, and people without professional backgrounds. I saw forest professionals playing valuable roles in the entire management and governance framework of the forests — from experts in the field, to subject matter specialists, to senior leadership. On a personal level, I felt my designation brought me a certain level of credibility and weight when I walked into a meeting when no one knew much else about me. I liked the sense of being connected to others who shared common training and values; that it didn't matter who my employer was, we were all part of the same professional family.

In the past three months I have talked to a number of forest professionals employed by industry, government, and also independent consultants. Some have never questioned their designation and its importance and they are baffled by those that do; some have questions about their need for registration, but something in their gut continually tells them it's the right choice; and some are former

members who have decided to take their careers in new directions and now reflect on their decision. All of these discussions about the personal value of one's professional designation has led me to describe professionals as a three-part package.

First, a professional has specialized education. Second, a professional has built a complimentary suite of skills and competencies that enable practical use of their education and the ability to work effectively on the forested land-base. Third, is values and beliefs. Professionals subscribe to a code of ethics, a commitment to uphold good forest stewardship and the public's interest, and a commitment to act with integrity.

Is it possible for someone who is not a professional to develop all of this during a career? Maybe. There is, however, one major critical difference — a professional is held to account for all three parts. When professionals are not acting with integrity, are not using accurate or current science in their decision making, are not competent in an area of practice, the association and other members hold them to account. The public has a clear path for recourse when things go wrong; this is a key reason professional bodies exist. Professional practice has been built directly into the governance design for how forested lands are managed in BC, with the public's best interest at the forefront.

My thinking has evolved a lot since I began my professional career, but even more profoundly since becoming the CEO. I know that being a professional matters — on both a personal level and, more importantly, to the public of BC. Before you start to think aloud whether the new CEO of the ABCFP has just 'drunk the Kool-Aid', please take a few minutes to re-read our Code of Ethics and reflect about how important you feel it is to have good forest stewardship in our province. Our profession has been afforded a tremendous honour and privilege to protect the forests so they will continue to provide benefits today and in the future. During times of crisis, the public instinctively call upon registered professionals for help — a lawyer when we need advice about a contract, an accountant when we are being audited, a doctor when we become ill. Significant changes are happening in our forests and the public needs our profession to make strategic decisions with personal integrity and the stewardship of our forests in our hearts. I proudly plan to be there for the public of BC and I hope you will be too. ✕

Learn More about the New Registration Process

Since April, ABCFP staff have been hosting monthly live webinars to explain the intricacies of the new registration process to enrolled members, sponsors, and anyone who is interested in learning more. We've been recording each webinar and posting them on the website. If you'd like to learn about the new process and can't make a live webinar, recordings are available in the Webinar Recordings section of the Professional Development page (you will need to sign in to access the page).

Awards Program Now Accepting Awards

The ABCFP's awards program is now open and accepting nominations for all awards. We've made some changes to the program to make it easier to nominate a colleague. If you know someone who has gone above and beyond or who has steadily worked for years to improve forestry in BC, be sure to submit a nomination. We also have awards for non-members, so don't forget your non-forest professional colleagues. For more information, visit the Awards & Awards Winners section of the Our People page on our website or e-mail Brian Robinson, RPF, director of professional development and member relations at brobinson@abcfp.ca

Business Resolution Ballot Coming Soon

On February 25, 2016, at the ABCFP's conference and AGM, a business resolution was adopted by the members in attendance. The business resolution calls for the ABCFP to advocate for the creation of a BC Growth and Yield Cooperative, along with a suitable mechanism for financial support. In accordance with Sections 3.2 to 3.6 and Section 4 of the ABCFP Bylaws, the resolution must be put to the members for a vote within six months of being approved. An information package with the business resolution, additional information on the proposed cooperative, and voting instructions will be available on the Resolutions page of the website in early July. Voting for eligible members begins July 18. The last day to vote is August 24.

New Coastal Douglas-fir Practice Reminder Available

The ABCFP has produced a practice reminder for conducting forestry management activities in the Coastal Douglas-fir (CDF) BEC zone and associated ecosystems. One of the objectives for the ABCFP, as set out in the *Foresters Act*, is to advocate for and uphold the principles of stewardship for forests, forest lands, forest resources, and forest ecosystems. Although the current biggest threat to the CDF BEC zone is from urbanization on fee-simple lands, forest professionals have a role to play in the proper management of this most at risk BEC zone in BC. You can find the practice reminder in the Reports and Reminders section of the Practising in BC page (you will need to sign in to access this page).

Reflections on Ethical Requirements

The forest professional does not determine broad land use; however, the forest professional does decide what happens and when at the site level. Stand development, logging, forest operations, and infrastructure (e.g. road network development) have an impact on the landscape. So there is much for the forest professional to think about, such as visual resources, safe crossings, or small streams. Bylaw 11.3.5 requires the forest professional "to work to improve practices and policies affecting the stewardship of forest land." This can be done by developing best management practices, advocating to employers, clients or government for improved practices and policies thus fulfilling our ethical responsibility to the public.

Council Visits Cranbrook

Council held their May meeting in the East Kootenay region. In addition to regular business, council and senior staff joined FLNRO staff in the forest to discuss how professional reliance is working in the East Kootenay. The field tour included Mark Creek Watershed and a forested area in the Kimberley community with recent fuel mitigation work. While present in the Ktunaxa traditional territory, council executive along with CEO Christine Gelowitz, RPF, met with representatives from the Ktunaxa Nation Council to discuss ways to make the profession and the association more relevant to their and other First Nation communities. Council and staff also hosted a member meeting for ABCFP members in the surrounding area. The group discussed the new registration process, use of professional reliance in appraisals, climate change, and other topics. Council was especially pleased to see both long-time members and a young future forest professional with his membership application in hand ready to send to the ABCFP.

Farewell from Long-Time Staff Member Amanda Brittain

After 11 years with the ABCFP, it is with mixed feelings that I announce my resignation. I came on board as a forestry newbie with very little knowledge of the sector. Thankfully, the fantastic staff, council, and members ensured I received my Forestry 101 education over the years. I feel very privileged to have had the opportunity to work with volunteers to produce BCFP magazine and to host the conference and AGM. I've travelled to virtually every corner of the province and met with fantastic members. Some of my best days at work were ones where I was able to go on a field tour to learn about what our members do on a daily business. I now have the opportunity to move on to an organization that will present me with new and different challenges. I will miss all my forestry friends and the tree talk — ABCFP members are some of the best people in the world! It has been an honour to work with all of you. If you wish to keep in touch, feel free to connect with me on LinkedIn. Amanda Brittain, ABC, MA

The Challenges and Complexities of Forest Operations

Photo: Courtesy of Ryan Potter, RPF

Field season is kicking into high gear, which means forest professionals are in the midst of working on a diverse set of operational challenges and complexities in our forests. From assessing the impact of cross-channel falling and yarding, harvesting timber on slopes greater than 35%, or investigating methods to minimize the environmental impact of road operations; forest professionals are there making the magic happen.

Stewardship policy forester, Kerri Brownie, RPF, outlines the benefits of a new provincial karst management database — a valuable planning tool to help forest managers reduce redundancies in field surveys and protect the environmental, cultural, and recreational significance of such sensitive geographical topography.

Moving further up the slope, Ryan Potter, RPF, looks at the transition back to steep slope harvesting in the Interior; and Darlene Oman highlights industry performance in meeting the operational requirements of the *Forest and Range Practices Act* and the *Wildfire Act* in a Forest Practices Board audit summary.

Regional roads engineer, Lyle Unwin, RPF, discusses the need for an effective team approach to the planning and layout of geometric road designs — helping to ensure the public and forest professionals have access to safe assets for generations to come; while Caroline Ventézou presents FPInnovations and Ducks Unlimited Canada best management practices for minimizing the environmental and operational impacts of building resource access roads through wetlands.

We also present an important follow-up to an article in our May–June social license issue. Bill Bourgeois, PhD, RPF, discusses the responsibilities of key BC forest sector players and what it's going to take to achieve social license through resilient long-term forest stewardship leadership.

Plus, Jeff Waatainen, forestry law expert, is back talking about taxes and divided reforestation obligations in BC; and senior ecosystems biologist, Lisa Nordin, provides a framework of best practices for managing blue-listed frog species in harvesting areas around perennial coastal streams.

On a personal note, I'd like to express my gratitude to our members. Your keen minds and passionate forestry knowledge have made my first three months of forestry education here at the ABCFP an absolute pleasure. If you're interested in authoring an article or you have a science-in-action piece to share, e-mail me at editor@abcfp.ca. Let's chat. ✕



The Principles of Stewardship¹ and Forest Operations (Engineering)

Forest operations is where 'the rubber hits the road' when it comes to showing the public and stakeholders how forest stewardship considerations are being incorporated into forestry activities. Adequate consideration of the 11 *Forest and Range Practices Act* (FRPA) values, certification requirements, non-statutory agreements and First Nations', and local stakeholder values need to occur well in advance of the road being punched through or the first tree being cut in a planned harvest area. Adequate spatial and temporal scales must be considered to ensure long term resiliency of ecological function.

For transparency and to ensure adequate communications, proper stewardship requires clear goals and objectives to guide management activities on forestry land. Materials must be easy to understand for those local First Nations and stakeholders and opportunity must be available to ensure adequate communications does occur. Adaptive learning and management is a key requirement to ensure knowledge is current and progress is being made in the overall practice of forestry. Knowledge and values are constantly changing: science is being updated, local values can adjust, and learnings from past practices can influence future planning and our overall success as forest professionals.

¹ The main document can be seen at http://member.abcfp.ca/WEB/ABCFP/Practising_in_BC/Practising_in_BC.aspx

A New Way of Managing Karst Data in British Columbia

Around the province there are intriguing geological features that can be seen on the surface of the ground, such as sinkholes, disappearing streams, and vertical shafts. All of these surface features are linked to the subsurface, presenting themselves underground in the form of accessible and inaccessible caves. This is karst; it results from water in the form of rainfall or flowing water acting on calcium rich limestone.

Karst is a sensitive geological topography that can have special ecological significance — providing habitat to bats and other creatures. It can also have cultural heritage significance to First Nations; and can be of recreational interest to the public and cavers. Due to its sensitivity, karst requires special management during forestry, silviculture, and road related activities. Karst is such a significant feature that it has garnered protection under the *Forest and Range Practices Act* through government action regulations (GAR). For example, a GAR order for karst was established for the Campbell River Forest District in 2007, and five other coastal forest districts also have GAR orders for karst.

Ensuring important karst features are adequately protected requires having the most up-to-date and best knowledge of their characteristics and location. On Vancouver Island there was good communication — mainly driven by a desire to address safety concerns related to forest road, cutblock development, and to protect cave features — between the parties that had knowledge of karst features, such as cavers, forest licensees, and the province. However, over time there have been gaps in communication and information sharing. A strong desire to improve this situation led the Strait of Georgia Business Area of BC Timber Sales (BCTS), with full support of BCTS headquarters staff and executive director Mike Falkiner, to take the lead to develop a karst database. Karst data is stored in a secure central database and is available to forest managers and caving groups who provide input into the database. BCTS is work-


both surface and subsurface features. The database consists of several spatial layers. One main layer is a point file that describes karst feature types with a surface and a subsurface worker danger rating and provides linkages to more detailed information. Another useful layer is a buffered cave survey layer which displays the zone the surveyed cave lays beneath. More analysis layers will be created once the initial loading of data is completed later this year. One of the more useful layers will be the probability layer, which shows the most probable location of significant undiscovered cavities.

Contributors to the karst database are comprised of qualified parties who have karst information, have signed on to the karst MoU, and who have committed to meet annually to discuss the data to be collected and submitted. The database securely houses the karst information and allows contributors access in order to identify the operating areas managed by each party, as well as to exchange information about these areas. The details exchanged are limited to basic location data and the relative sensitivity/significance of the karst features. The database also provides contact information for each karst feature so that more detailed subsurface survey information can be obtained.

The benefits of the karst database are:

1. it provides a valuable planning tool for forest managers who develop forest roads and cutblocks in proximity to karst features;
2. it helps to reduce the duplication of field surveys resulting in reduced costs;
3. it helps to facilitate better collaboration between the caving community, government, and the forest industry;
4. it should lead to better forest and cave management with fewer conflicts;
5. it will result in improved data integrity with less likelihood of data being lost;
6. it will enable knowledgeable parties to review karst features more closely to ensure proper assessment and management strategies have been completed; and
7. it will also be of assistance to the BC Cave Rescue (BCCR) members in emergency response by providing location details and a tracking system with consistent naming conventions for caves.

An example of improved cave management is the use of predictive modelling, which uses karst data along with elevation models to flag potential subsurface concentration areas where larger cave features may be located. Forest professionals can use this information to prioritize areas for more detailed field assessments in order to locate these potential caves and confirm their location and features. Having confirmed cave locations supports safer and more effective management of these features. This



Kerri Brownie, RPF, is the stewardship policy forester for BC Timber Sales (BCTS). Her current responsibilities involve developing guidance, supporting staff, and representing BCTS on a wide range of stewardship topics including climate change, fire management, silviculture, and the use of professional reliance. Her past experience includes working for the Forest and Range Evaluation Program (FREP) to review the karst protocol. Kerri currently works in the BCTS office in Campbell River where staff are actively engaged in karst data management.

ing in partnership with the BC Speleological Federation (BCSF), the umbrella group for various caving groups across BC, Western Forest Products Inc., and TimberWest Forest Corp. From this partnership arose the first karst sharing and communications memorandum of understanding (Karst MoU) which includes a two-year pilot project to assess the effectiveness and benefits of a shared karst database.

The karst database is provincial in scope and houses data on

Please see **Karst** continued on page 30




Photo: Kerr Brown, RPF



Meeting Operational

Every year, the Forest Practices Board (FPB) carries out about 10 audits in BC, looking at 10-20 forest tenures of all sizes, from small family woodlots to major forest companies. Audits are in addition to the topic-specific investigations the FPB does, such as the recent report on forest stewardship planning, which identified some widespread issues with the preparation of these plans.

The audits provide a good indication of how forest professionals and licensees are doing when it comes to meeting the operational requirements of the *Forest and Range Practices Act* and the *Wildfire Act*. Looking back over the last 10 years, during which the number of audits done each year has remained fairly steady, there has been an increase in the number of problems identified since 2010. The overall increase in the number of findings in the last five years is concerning. With the 2016 audit season now underway and 10 audits planned or in progress, the wait is on to see if this trend continues.



Darlene Oman is the director of corporate performance and communications for the Forest Practices Board. With FPB since 1997, Darlene was previously FPB's director of special projects. The FPB is BC's independent watchdog for sound forest and range practices, reporting its findings directly to the public and government. The FPB audits and investigates forest and range practices on public lands and can make recommendations for improvement to practices and legislation.

In the last three years, the issues have involved three main areas: planning and reporting, fire protection, and roads and bridges. Since 2013, there have been 11 issues involving planning and reporting by nine different licensees. Six

of the issues were failures to meet annual reporting requirements, of which five were woodlots, and one was a non-replaceable forest licence (NRFL). The other five planning issues were related to measures to address invasive plants, visual quality objectives specified in a forest stewardship plan, plans that were inconsistent with features on the ground, site plans with stocking standards that were inconsistent with the forest stewardship plan, and incorrect stream classification.

Wildfire is an ongoing issue in BC and a topic that is regularly in the news. In the past three years, FPB audits found 16 licensees of all sizes did not complete fire hazard assessments — a requirement of the *Wildfire Act*. Fourteen of the licensees abated the fire hazard by piling and burning slash as a standard practice. Although the fire hazard was abated, the FPB concluded that licensees need to comply with the *Wildfire Act* and considered this an area of improvement. The remaining two licensees neither assessed nor abated the fire hazard and the FPB concluded that they did not comply with the *Wildfire Act*. Other fire prevention issues found in recent audits include an escaped burn, failing to shut down operations during high fire hazard conditions, and failing to have a water supply on site during active operations.

The third major area of concern is forest operations involving roads and bridges. In the last three years, FPB audits have found 11 issues with road and bridge construction and maintenance. Except for two woodlot licensees, one community forest licensee, and one major licensee, all of the findings involved timber sale licence (TSL) holders. Three bridges were poorly built and one had an inadequate as-built plan and was not signed off by a professional — in violation of the professional practice guidelines for forest



Requirements in BC Forests

Photo: Adobe Stock

road crossings. One bridge had structural deficiencies and was not blocked or signed to restrict industrial use. The road issues were three cases of failing to maintain natural surface drainage patterns and three problems with wooden box culvert installations.

Planning and reporting are critical to sharing information with decision makers, and to ensuring professionals are not only doing the right thing, but can demonstrate what they did if a problem occurs. Planning drives what actually happens on the ground. And good decision making by government depends on having good information. If plans are not prepared or followed, or if government information is not current, stewardship decisions won't be based on the best available information, and the public won't have confidence that forests are being well managed.

For example, while documenting fire hazards may seem unnecessary when treating the hazard anyway, the lack of a documented assessment could prove costly in the event of a wildfire. Section 29 of the *Wildfire Act* states that if a person demonstrates due diligence to prevent a contravention of the Act, that will be considered an adequate defense for the contravention. Without this documentation, a licensee would be unlikely to prove due diligence and could be liable for millions of dollars in fire suppression costs. Due to the number of findings of undocumented fire hazard assessments, the FPB has issued a bulletin on the topic of fire hazard assessments and what we look for in our field audits.

The findings about roads and bridges are of most concern. Despite all of the attention to the FPB's 2014 bridge investigation, and the response of licensees, the ABCFP, and APEGBC to provide

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Please see **Operational Requirements** continued on page 30

Steep Slope Harvesting in the Interior:

The Times They Are a-Changin'

Many BC Interior licensees were harvesting large proportions of their timber from relatively flat terrain as recently as 2012, as they wrapped up the last of the mountain pine beetle salvage. Fast forward to 2016 and almost every licensee in the Interior is facing a literal mountain of timber that is all located on steep slopes (slopes greater than 35%).

The transition back to steep slope harvesting has had to occur quickly in some parts of the Interior. Licensees have gone from harvesting less than five percent of their annual cut on steep slopes, to over 30% in only a few years. This harvesting comes with many challenges that our coastal neighbors' know all too well, including increasingly technical planning and layout, higher costs of harvesting, and an increased risk of accidents. Historically, steep slope harvesting in the Interior has relied on utilizing ground based equipment to harvest as far up the hillsides as possible, often isolating the remaining timber on the slopes. Cable systems have also been used with some success, especially in areas with good deflection and large timber. Today, however, most of the easier ground and larger wood has long since been harvested. This has led a few licensees to look for innovative ways to safely and productively harvest this remaining timber.

Planning steep slope harvesting has always been labor intensive and costly. It involves walking numerous road grade options and deflection lines to establish what is possible given the terrain. This field time has been reduced by up to half through the use of LiDAR, which uses lasers mounted on an aircraft to measure the ground profile. The data gathered is then used to build a digital elevation model from which deflection lines can be run and road locations found — all from the office. LiDAR has proven to not only significantly reduce the amount of field time required to develop steep slope blocks, but also improve the quality of those plans.



Ryan Potter, RPF, is an area supervisor specializing in steep slopes for Tolko Industries Ltd. as part of their Southern Interior Operations group. Ryan has over 15 years' experience working throughout the BC Interior and has a passion for steep slope harvesting operations. Over the last three years, one of his main focuses has been working with the ClimbMAX Steep Slope Harvester.

The ground based equipment of the past has evolved to deal with slopes and become an option for safely harvesting areas over 35%. Technology such as tilting feller bunchers, hoe chucks, six wheel drive skidders, and eight wheel drive forwarders have allowed operations to plan and harvest timber safely well beyond where they have in the past. These machines are larger, wider, and much more stable than their predecessors. Once beyond where feller bunchers and skidders can work safely, hand falling and cable yarders have traditionally been the system of choice to bring the wood economically to the roadside. They still hold an important role today. However, the number of handfallers is steadily

decreasing and many yarding contractors are struggling with the shortage of good cable machines and skilled operators. These factors have resulted in many Interior licensees not having the capacity to harvest steep slopes, but this is changing quickly with recent innovations coming into BC.

Winch-assist technology from New Zealand and Europe is quickly revolutionizing the way steep slopes are harvested in the Interior. These systems allow wheeled and tracked machines to harvest timber safely on slopes up to 100%, provided approved operating procedures are followed. This technology has been used in parts of the world for over 10 years, but has only recently garnered attention from BC contractors. The first winch-assist machine to be utilized in BC was the ClimbMAX Steep Slope Harvester. It has been safely and productively harvesting steep slopes throughout the Interior since 2013. More recently, a winch-assist harvester and forwarder system started working in the North Thompson region and there is the possibility of at least another five systems to be in operation in the Interior by the end of 2016.

There are over 10 different winch-assist systems available on the market, each with its strengths and weaknesses. A simple search on YouTube showcases the spectrum of options out there. The two main classes of winch-assist are static and live line systems. With the static line systems, the winch is mounted to the machine on the slope and is typically anchored to a stump. The wire rope doesn't move on the ground. In contrast, the live line system involves one machine at the top of the slope with a winch mounted on it and another machine on the slope that is assisted in ascending and descending by a cable that moves up and down with it. From there it breaks down to a number of assist cables, remote control or automatic tensioning systems, size, design, and many other factors. They all share the same premise: to make steep slope logging safer by putting people in the cabs of machines rather than under hard hats.

Winch-assist systems can be a safer alternative to hand falling and cable systems if they are correctly planned and implemented. However, these systems require a much higher level of operator training, contractor and licensee planning, and supervision to ensure the system is used within the standards for which they are designed. The speed at which winch-assist systems are being implemented is a sign contractors and licensees see the potential safety and productivity gains, as well as the ability to access fibre that may not have been economically feasible to access until now.

Interior steep slope logging has many similarities to the coast, but also some unique challenges. Poor fibre quality, low stand volumes, and small piece sizes increase the complexity. The move from the pine flats to the mountain sides is underway and with this transition, the adoption of innovation will be necessary to improve safety and productivity on steep slopes. The traditional harvesting systems will have their place in the toolbox, but winch-assist technology is set to make a significant mark on the safety, productivity, and accessibility of fibre located on steep slopes as we move forward. 🌲



Photo: Courtesy of Ryan Potter, RPF

Meeting Access Goals and Objectives: The Critical Role of Geometric Road Design

The validity of geometric road design, sometimes referred to as road design, in the forestry sector seems to come up from time to time. Rightly so, as the content and use of such designs has varied over the years, depending in which part of the province you work in. However, as we move further up the slope onto steeper terrain, geometric road designs will play a critical role in reaching those control points and meeting your access goals and objectives.

A phased approach, or identifying key phases to completing a geometric road design, often leads to greater success. A great place to start is making reference to the phases outlined in the ABCFP and APEGBC document *Guidelines for Professional Services in the Forest Sector – Forest Roads*.

Along with key phases, it is also important to think ahead to any problems and sources of error that may arise along the way. Impatience can set in and the key phase of office study can be overlooked. Maps, air photos, and digital applications such as Google Earth can provide valuable information on terrain, slope, timber profile, and con-



straints, which can then be further investigated in the field. Plus, there is strength in numbers; work with a diverse team with remote access planning and design experience. Road building contractors and natural resource district staff are also a wealth of information, given their experience and local knowledge.

When fieldwork begins, and the area is thoroughly traversed by foot to confirm those features found during the office study. After the preliminary line is established, engage other members of the team to review the progress and to discuss options. All too often folks can get stuck on a specific route and lose sight of other options that may provide greater benefit. Keep an open mind and view this as an opportunity.

The greatest source of error can be made during the key phase of survey and control.

Survey Level 2 — the industry standard since the advent of truck roads — is completed with a tight chain, hand compass, and clinometer. There's still a place for this type of survey today. However, horizontal and vertical error (and accuracy) must be thoroughly understood, especially if critical control points need to be reached. Modern technology, such as total stations, GPS, LiDAR, and even UAV drones are becoming more commonplace and when accessing complex terrain, they may offer greater accuracy and control than a Survey Level 2. Be cautious when mixing survey methods and consult with an expert about topics such as data mergers and reconciliation. Common locations where significant error can occur are stream crossings, where a completed Survey Level 2 meets a total station site plan.

Lyle Unwin, RPF, PEng, is a professional forest engineer with over 15 years of experience relating to resource transportation system design and forest operations throughout BC. As the regional roads engineer with FLNRO, Lyle works collaboratively with a diverse group of land managers and users in aspects of access management planning in the Southern Interior. Lyle is also the current chair of the ABCFP's Professional Practice Committee.





Photos: Lyle Urwin, RPF, PEng

At the onset of design, the content and specifications (standards) must be determined and agreed upon. This is a common oversight and often leads to unnecessary back and forth discussions and costly revisions. The design team must have an understanding of the eventual uses of the entire design to ensure all needs and requirements are met. For example, the information contained within a geometric road design is used in silviculture, appraisals, total chance planning, and asset management planning to name a few. The uses are far more reaching than simply construction.

The designs themselves take on many forms and one can look very different from the other. Regardless of the specific content, the primary views of plan, profile, and cross section offer a unique look at the alignment from a different perspective. However, the most overlooked view is the mass haul diagram. Mass haul diagrams have been met with skepticism due to the limited subsurface investigation commonly completed during the survey phase. If you rely on the team to contribute valuable information to input into the designs, this will lead to a more accurate diagram. Proper analysis is poorly understood and thus rarely completed. Vehicle tracking, including sightline analysis, is becoming as important to safety as it is to end use. It's also wise to specifically design for vehicle limitations, such as turning radius and breakover angle (the maximum crest angle that can be driven over without the apex touching the underside of the vehicle).

Geometric Road Design

"The geometric design of roads is the branch of highway engineering concerned with the positioning of the physical elements of the roadway according to standards and constraints. The basic objectives in geometric design are to optimize efficiency and safety while minimizing cost and environmental damage. Geometric design also affects an emerging fifth objective called "livability", which is defined as designing roads to foster broader community goal."

Source: https://en.wikipedia.org/wiki/Geometric_design_of_roads

Survey Level 2

(for location surveys on stable terrain)

"Application: for location surveys on stable terrain with a low likelihood of landslides and for situations where a geometric road design, construction surveys, or as-built surveys are desired. Equipment may include hand compass, clinometer and steel or fiberglass chain.

Horizontal accuracy: turning points are to be established to a relative accuracy of 1:300.

Vertical accuracy: $= 1.0 \times \sqrt{\text{total distance in kilometres, expressed in metres}}$. For example, the vertical accuracy for a 1 km road is 1 m. For a 2 km road, the vertical accuracy is 1.41 m."

Source: https://www.for.gov.bc.ca/hth/engineering/documents/publications_guidebooks/manuals_standards/Eng-Manual.pdf

Carrying geometric road design through to completion is much more than generating material volumes for input into engineering cost estimates. Perhaps it is mounting pressure to be on time and on budget, but construction staking and field review are unfortunately lacking at the key phase of implementation. Construction staking and continuous field review should become more common, especially as we move to steeper, more complex terrain. The value in projecting the design onto the natural ground to not only locate key hinge points, but aid construction crews in identifying changed conditions cannot be overestimated. Staking and field review is a way to ensure designs are followed, the alignment is where it should be, and the value of the investment made to date is realized.

As resource operations advance further upslope and onto more complex terrain, geometric road designs can and should be relied upon to aid in meeting your access goals and objectives. A phased approach and team effort can lead to greater success, be more rewarding, and ultimately leave the public with a safe and limited risk asset

for generations. As the landowner, the public relies on forest professionals to make sound decisions on access management planning. By recognizing the value of geometric road design, the resulting infrastructure can shift the culture from viewing our resource roads as liabilities to the true assets they are. ✪

Resource Access Roads and Wetlands: Minimizing Impacts Caused by Operations

Wetlands — such as fens, bogs, swamps, and marshes — are integral components of forested landscapes. They provide many vital ecological functions and play a pivotal role in regulating local and regional forest hydrology. Often, resource access roads pass through these wetlands, which create environmental and operational challenges for road managers. The health and continued hydrologic function of wetland crossings are becoming an increasing concern for Canada’s forest industry, other resource-based industries, governments, and conservation organizations.

Dead and dying trees, as well as ponded water, are common visual clues that the hydrology of a site may have been affected by a road that blocked surface and possibly subsurface flow. Maintaining wetland flow is critical for many aspects of a well-functioning wetland.

“A road can be located to minimize the impact on the wetland while still meeting operational, economic, and safety requirements,” explains Mark Partington, senior researcher at FPInnovations. “Although it is the preferred planning scenario, avoiding wetlands is not realistic in various locations in Canada because of the vastness of wetlands across the landscape.”

To address these challenges, FPInnovations along with Ducks Unlimited Canada is playing a key role in developing and implementing industry management best practices to minimize negative impacts on wetlands caused by operations. With careful planning, knowledge of the various wetlands and associated wetland functions, and the development and use of best management practices (BMP), it is anticipated that both wetlands and resource roads can function as anticipated (Partington and Gillies 2010). The results can be cost effective, ecologically sensitive (Rummer 2004), and not necessarily excessively restrictive to forestry operations (Sheehy 1993).

“The need for a practical applications guide focusing on building resource roads across wetlands was apparent once the initial literature search was conducted and it was shown that there was a real lack of operational guidance,” states Clayton Gillies, RPF and senior researcher at FPInnovations.



Caroline Ventérou is a senior communications specialist for FPInnovations. She previously worked at the Association for the Development of Research and Innovation in Quebec as communications manager. Caroline has a degree in communications and journalism from University Jean Moulin Lyon 3, France.

As a result, in June 2016 FPInnovations and Ducks Unlimited Canada released a guide targeted at field practitioners entitled *Resource Roads and Wetlands: A Guide for Planning, Construction, and Maintenance*. It focuses on two primary issues: ensuring resource

roads that cross wetlands function at the required design and performance levels to allow forest access and hauling operations in a cost-effective manner, and reducing the impacts of resource roads on the flow characteristics of wetlands.

“Providing flow characteristics for the four primary wetland types helps to ensure that the chosen BMP will be compatible with the long-term health of the wetland,” explains Gillies. “It is a unique and innovative advancement for the protection and maintenance of wetland crossings.”

TYPE OF FLOW	Stagnant	Slow lateral flow	Seasonally fluctuating	Inundated/flooded
CLASS OF WETLAND	Bogs	Fens ^a	Swamps ^b	Marshes and shallow, open-water wetlands

^a Where they can be identified, treed nutrient-poor fens should be considered stagnant.

^b When conifer swamps are isolated and not part of flowing systems, they should be considered stagnant.

Planning for water management where roads cross wetlands has become an additional focus among road practitioners who have historically been challenged with the poor bearing capacity of these sites. To address these challenges, FPInnovations and Duck Unlimited Canada recommend the use of corduroy sections which, by laying logs parallel to each other and in alignment with the flow, allow water to pass through the numerous voids between logs and provide the hydrologic connectivity for the wetland. Additionally, other BMP include the use of culverts, with spacing distances correlated to wetland type and their flow requirements, and rock or aggregate mattresses that are built to promote flow through a designated seam. The guide also describes practices aimed to improve the poor bearing capacity of typical wetland soils.

The characteristic of a wetland can be subtle and require careful attention. Road-planning and road-building practitioners need to understand wetlands and their hydrologic functions in order to better manage water movement; training and knowledge transfer are critical for successful uptake and implementation.

Note: *Resource Roads and Wetlands: A Guide for Planning, Construction, and Maintenance* was funded by Natural Resources Canada and the Sustainable Forestry Initiative Conservation and Community Partnerships Grant Program. For more information about the guide, please contact Clayton Gillies at clayton.gillies@fpinnovations.ca or visit www.fpinnovations.ca ☺

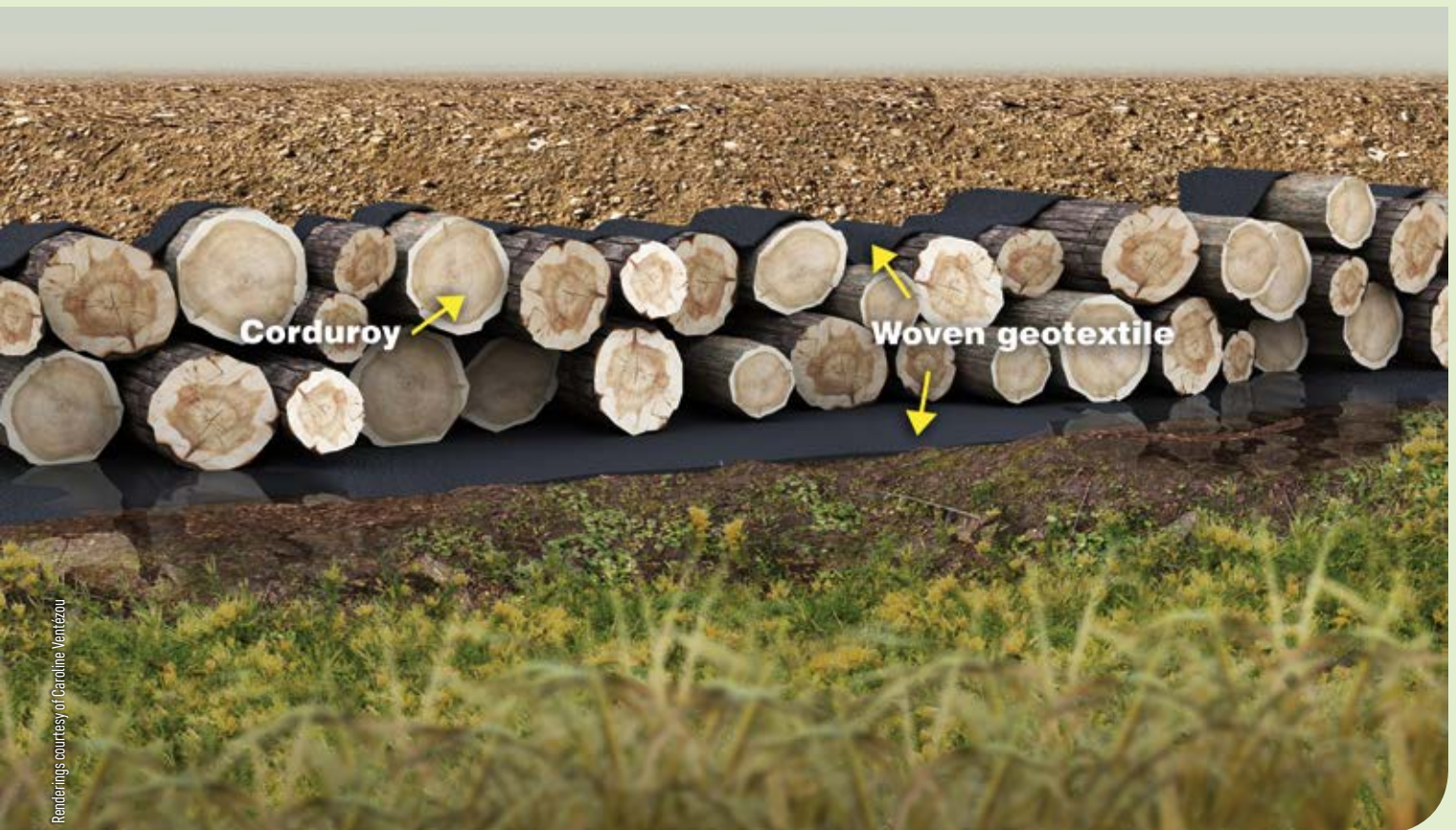
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ABOVE: *Culverts may be installed in the approaches to defined water crossings to enable hydrologic connectivity of the wetland.*

BELOW: *Example of a corduroy structure to provide water flow through a road.*



Renderings courtesy of Caroline Ventezou

Consideration of Values for Riparian Management Around Perennial Coastal Streams

Introduction

Coastal tailed frogs are a blue-listed species that inhabit small, usually non-fish bearing, fast-flowing streams with a moderate to high gradient, draining relatively small (<10 km²) watersheds (Dupuis and Friele 2003). Up to 46% of the streams in the mid-coast of BC support tailed frog populations where the habitat is suitable (Michelfelder 2008). Like other amphibians, the tailed frog requires both aquatic and terrestrial habitats to complete its life cycle and studies have found regulations around riparian retention that were originally created to protect fish in larger streams also provide similar benefits to amphibians. However, small fish-bearing streams and streams that do not contain fish in BC are not protected from harvesting in the same way, which could jeopardize populations of tailed frogs in these areas.

In 2015, field assessments were conducted across the mid-coast at stream reaches that were inside or adjacent to recently (five years) harvested blocks. The sample sites were selected at reaches that were predicted to contain suitable tailed frog habitat but where a riparian reserve may not have been mandatory and the harvest prescription was based on the licensee's professional evaluation of the site. The study data was then compiled into an index that was used to rate the habitat quality of each site, and given a score for riparian retention that reflected the extent of harvesting.



Fig. 1



Fig. 2



Fig. 3



Lisa Nordin, MSc, RPBio, is a senior ecosystems biologist, habitat officer, and water officer with FLNRO in Bella Coola. She has more than a decade of experience with stream and riparian assessments across the Central Interior and coastal regions of BC, and provides science-based guidance within the framework of FRPA, the GBR Order, and the WSA for routine and non-routine activities.

Results: Habitat Quality and Riparian Harvesting

Not surprisingly, the relationship between riparian retention and tailed frog habitat quality was positive among the 27 sample reaches, indicating that habitat quality is higher with increased riparian retention. Habitat quality was significantly lower at reaches that had been clearcut to both banks compared to the remaining retention strategies. Cross-channel falling and yarding

(Fig. 1) contributed to the elimination of both aquatic and terrestrial potential habitat.

Five out of 11 sites that scored high for habitat quality were also subject to partial riparian harvesting. However, there was little disturbance noted in these channels, which may be explained by their bedrock-dominated morphology (Fig. 2) and the practise of falling and yarding away. Tailed frog tadpoles were observed in two of the reaches where riparian timber was thinned or cut to the edge of one bank, but flow, temperature, and substrate remained within ranges determined to be ideal for the species (COSEWIC 2011).

Despite resistance to disturbance, bedrock-dominated reaches may have facilitated the transport of road debris to downstream bottleneck or flatter areas, thereby contributing to blockages and/or dewatering. Dewatering was observed at several sites where a road crossed upstream of sample reaches composed primarily of bedrock (Fig. 3).

Recommendations

The following recommendations are suggested best practices for harvesting around perennial coastal streams that do not require a specific reserve. Note that this guidance is not intended to provide for comprehensive tailed frog habitat protection. Rather, it is written to support site-level prescriptions for riparian management areas on the coast of BC where tailed frogs may be present.

I. Riparian Retention for Erodible Stream Channels

Also known as alluvial, erodible stream channels consist of loose, unconsolidated soil or sediments which are easily detached from the channel bed and bank and transported by water. These channels are recognized as containing more fine sediment, sand, gravel, and cobble in the channel than boulders and bedrock. The recommendation for these streams is to retain a minimum 10 metre full riparian reserve on both sides of the channel to provide bank stability and protect the habitat from harvest-related impacts.

II. Riparian Retention for Non-Erodible Stream Channels

Non-erodible channels are identified as those that are composed mainly of bedrock. At a minimum, all non-merchantable timber, understory, and shrubs should be retained within 10 metres of the stream bank to limit disturbance, provide shade to the stream, supply future wood debris, and regulate bank microclimate. Merchantable timber within this zone should be fallen away from the channel and cross-channel yarding should not occur.

III. Riparian Retention for Known Tailed Frog Streams – All Channel Types

Although tadpoles were observed where riparian logging had occurred in this study, cutting is not recommended where this species-at-risk is known to be present. Studies on selective-harvesting impacts to adult frog populations are too few to support the sanction of partial retention; therefore, the recommendation is to default to the Accounts and Measures for Managing Identified Wildlife (MoE 2004), which recommends a 30 metre

reserve plus a 20 metre management zone around known tailed frog reaches.

IV. Road Debris Control – All Channel Types

In all cases, road crossings should be designed, constructed, and maintained such as to eliminate the potential for road debris to enter any stream channel. Careful planning and appropriate road maintenance can prevent downstream blockages and subsequent changes to channel morphology and/or dewatering.

Summary

The retention recommendations given above are consistent with the Objectives for Upland Stream Areas in the new Great Bear Rainforest Order (2016). These best practices would also be appropriate for perennial streams in coastal areas outside the GBR where there are no legislated reserves under FRPA (S4-S6 reaches).

Increased retention in riparian management areas has repeatedly been concluded as an effective measure to mitigate or avoid harvest impacts to small streams, as evidenced by FREP monitoring results and other relevant research (Rex et al. 2011; Richardson et al. 2011). By applying the above recommendations, not only do we recognize these results in practice but we also inherently integrate the consideration of potential habitat for a sensitive amphibian on the west coast.

For more information on verified tailed frog streams on BC's mid-coast, please contact the North Island Central Coast district biologist. 📧


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Forest Stewardship Lead

Social license for the management of BC forests is equivalent to general acceptance of the forest land actions of decision makers. BC communities have asked for a focus on long term stewardship of their forests and away from short term economics. They recognize a change is needed to become resilient and have the forestry sector continue to be a major component of their economy.

Many believe we lack leadership in long term stewardship of our forests. Without demonstrable leadership in this regard, it is difficult to convince communities they should award the social license to those making the decisions. The BCIT School of Business defines leadership as: “1) establishing a clear vision; 2) sharing that vision with others so that they will follow willingly; 3) providing the information, knowledge, and methods to realize that vision; and 4) coordinating and balancing the conflicting interests of all members and stakeholders.”

Forest leadership is required at both the provincial and local levels. Government needs to provide communities with assurance the infrastructure will deliver their visions and goals. The forest industry needs to demonstrate their plans and practices are contributing locally. Recently, issues such as the Forest Practices Board (FPB) reports on Forest Stewardship Plans (FSPs) and *Forest and Range Practices Act* (FRPA) performance, have challenged delivery in both of these areas.

Bill Bourgeois, PhD, RPF, is president of New Direction Resource Management Ltd. Bill's career has focused on improving forest management in BC. He has been a research scientist, a terrain stability specialist, a forest company manager and executive, and an associate on the Commission on Resources and Environment (CORE) to “end the war in the woods.” Currently, Bill is consulting on long-term forest stewardship policies and practices, community forest resources economic diversification, and community and student forest education.

The mandates and missions of the key BC forest sector players relative to providing leadership and promoting long-term forest stewardship are:

- The Ministry of Forests, Lands and Natural Resource Operations’ responsibility is to manage, protect, and conserve the forest and range resources of the government, having regard to the immediate and long term economic, and social benefits they may confer on BC.
- The mandates of forest industry associations, as a reflection of forest companies, vary as follows:
 - The Council of Forest Industries advances the strategic interests of the BC Interior forest industry with government and the public.
 - The Coast Forest Products Association takes a leadership approach to ensuring BC’s coastal forestry sector continues

to thrive, so it can support individuals and communities, and sustain the health of our forests and ecosystems for generations to come.

- The Interior Lumber Manufacturers Association’s role is to be the voice of local forestry companies working in the southern interior.
- The Truck Loggers Association’s mission includes nurturing effective communication with members, industry, government, First Nations, and local communities.
- The Interior Logging Association works with the provincial and municipal governments to ensure members’ interests are recognized in policy and regulations that impact their industry, businesses and the communities they live and work in.
- The mandates or mission statements of forest professional associations are:
 - The Association of BC Forest Professionals is to ensure BC has qualified forest professionals and to support them in providing excellence in forest stewardship.
 - The Canadian Institute of Forestry’s (CIF) is to foster public awareness of Canadian and international forestry issues, while promoting sustainability and competence among forestry professionals.
- Each local government is required to foster the current and future economic, social, and environmental well-being of the community.

All of these organizations claim to support forest stewardship. Experience has shown that activities of organizations are guided by the official mission and mandate statements. If something is not specifically included, it tends not to be a priority, especially when resources are in short supply as we have experienced over the last decade. Organization focuses tend to be:

- Government and industry – on issues commonly related to short-term economics, competitiveness, building markets, international trade agreements, and creating or maintaining jobs.
- ABCFP – on issues related to promoting forest stewardship to government, industry, and members. Operating policy encourages private government discussions with limited or no public communications on potentially controversial issues.
- Communities – on issues within the community and expecting others to deal with the long term forest stewardship topic. They believe it is not part of their mandate, while identifying it as a major factor in their economic development and diversification.
- First Nations – focus discussions on issues related to consultation, and rights and title which may include issues related to forest stewardship
- CIF-BC – on member issues, which rarely reach out to the public regarding forest stewardship.

It is impracticable to think one or more of these organizations will change their priorities to take on this leadership challenge, as

ership and Social License

they believe their actions meet the priorities of their members and organizations. As noted, the granting of social license is dependent on demonstrating leadership. Failure to do so is a deferral to groups talking to the public about forest stewardship with a focus on specific issues that tend to reduce harvesting, preserve old growth, stop log exports, and advocate for secondary wood manufacturing.

Who has the responsibility to provide the leadership required to achieve the social license? Applying the BCIT leadership definition to the stewardship of BC forests suggests it is a shared responsibility.

When it comes to social license leadership, the recent approach in the sector is to attack it independently. Coordinated initiatives with many sources of leadership were tried in the 1970 - 2000 period with some success but are unlikely to be repeated today. Coordination and collaboration with a single source of leadership is more appropriate under today's conditions.

Trust and respect are critical requirements for leadership acceptance. Unfortunately, at this time the players we normally look to in this regard (i.e. government and industry) frequently are not seen to have these qualities. The FPB and professional foresters are the two community-trusted and respected bodies. However, the FPB mandate limits its advice on forest stewardship to *FRPA* and the *Wildfire Act*. Therefore, it appears foresters — in collaboration with the FPB and other parties — provide the best option to adopt the leadership role.

If the ABCFP and/or CIF, on behalf of foresters, are to accept this role, they have to be willing to operate as both an advocate and activist with extensive public conversations which are not seen to be constrained by industry or government. They will also have to be willing to modify their current and past operational methods. This would involve being visible to the public on contentious issues and taking a strong position on what is required for long term stewardship. In some cases it may include being the leader in the public debate and in opposition to government and industry positions. In all cases, being respectful and impartial while advocating for forest stewardship. This requires skill, dedication, and conviction

which both organizations possess but do not always use.

Achieving social license is a journey, not an event. Current conditions suggest this cannot be acquired through one organization and continuity in funding and resources are critical to success. A commitment to a collaboration/partnership model is proposed to provide the necessary resources and capitalize on the expertise in the various organizations. Although a team approach is suggested, it has to be led by one organization or individual. Work needs to be done in developing a suitable partnership model. ✕

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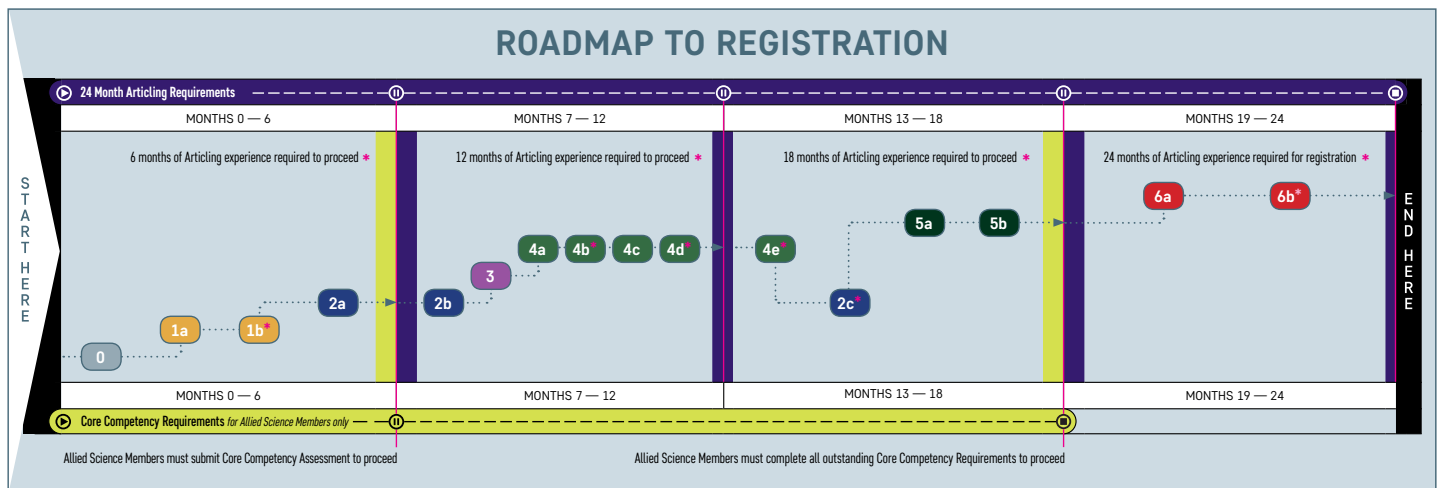
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Our Thanks to All the New Registration Process Contributors



EXPERIENCE AREAS TO BE COMPLETED IN THE ORDER SHOWN ABOVE

Orientation	Area One	Area Two	Area Four	Area Five	Area Six
Orientation Module Orientation Webinar (Optional)	Regulation and Ethics 1a : Regulation and Ethics 1b : Regulation and Ethics: Exam *	Professional Reliance 2a : Professional Reliance: Introduction 2b : Professional Reliance: Advanced 2c : Professional Reliance: Application *	Forest Legislation & Policy 4a : Forest Legislation & Policy 4b : Forest Legislation & Policy: Exam * 4c : Other Legislation & Policy 4d : Other Legislation & Policy: Exam * 4e : Forestry Legislation & Policy: Application *	Business of Forestry 5a : Framework for the Business of Forestry 5b : Internal Workings of the Business of Forestry	Communicating Professional Advice 6a : Communicating Professional Advice 6b : Professional Document Submission *
		Area Three 3 : BC Forest Professionals Working with Aboriginal Communities			

* Sponsor Sign-off Required

As most of our members know, the ABCFP has successfully launched the new process for member registration. This is a big step for the profession and a significant transformation from the historical process. The new process could not have happened without the support and effort of many people over the past two years. The people, who worked in both a volunteer and contractor capacity, were instrumental in the design, development, testing, and rollout of the new system. We would like to recognize these people and take a moment to reflect on their contribution to this milestone for the profession.

While our staff worked very hard at all points, we would like to extend special thanks to the following contributors.

Volunteers

Kyle Anderson, RPF; Peter Baird, RPF; Dennis Bendickson, RPF(Ret); Michael Blackstock, RPF; Gail Brewer, RPF(Ret); Derek Burdikin, RPF; Sarita Burgoon, RFT; Warren Burkinshaw, RFT; Rick Chester, BA, MNRM; Vincent Day, RPF; Andrew Flegel, RPF; Larry Gardner, RPF; Ralph Hausot, RPF; Craig Hewlett, RFT; Denise Hogue, RPF; Tara Holmes, RFT; Ye Huang, RPF; Jason Hutchinson, RPF; Christopher Johnston, RPF; Aline Lachapelle, RPF; Kim Lefebvre, RPF; Jennifer Leslie, RPF; Tom W. Lewis, RPF; Jonathan Lok, RFT; Andrea Lyall,

RPF; Peter Marshall, PhD, RPF; Stephen Mitchell, PhD, RPF; Robin Modesto, RPF; Lisa Perrault, RFT; Gordon Prest, Honorary Member; Peter Schroder, MSc, MBA, RPF; Sally Sellars, RPF; Norm Shaw, RPF(Ret), ATE, Life Member; Jeremy Shelford, JD, RPF; Kerri Simmons, RPF; Miles Trevor, RPF; Walter Tymkow, RFT, LL; Colin Vandergaag, RPF; and Catherine Wishart.

Contractors

Martina Blanchard, EMB Consulting, a division of PR Blanchard Associates Ltd.; Philip Blanchard, RPF; Rhona Flynn, WBT systems; Andrea Lyall, RPF; Mark Massyn, Massyn Design; John McLeod, Pathwise Solutions; Teresa Ryan, PhD; Michael Tsao, Exam Guardian; and Claudio Violato, Exam Guardian.

Draw Winner

We wanted to show our appreciation for our members who took the time and energy to review our new online modules and exams, so we entered all of them into a draw for a 2017 full conference package. The winner is Miles Trevor, RPF! Thank you Miles, for your keen attention to detail and for your strong engagement on our new registration process. 🍀

Taxes and Divided Reforestation Obligations in BC

“In this appeal, the Court is called upon to answer the age-old question: If a tree falls in the forest and you are not around to replant it, how does it affect your taxes?”

Rothstein J, on behalf of the Supreme Court of Canada in the 2013 decision regarding Daishowa-Marubeni International Ltd. v. Canada, with quite possibly the greatest opening line of a Supreme Court of Canada decision ever.

While the Supreme Court of Canada (SCC) delivered its opinion in *Daishowa-Marubeni International Ltd. v. Canada* in 2013 (the “DMI Case”), it is still worthy of note for its characterization of reforestation and similar liabilities from a tax perspective in the context of a disposition of a Crown forest tenure. Since the DMI decision was made in relation to Alberta forest tenures and applicable Alberta legislation, there is also the question of whether anything is potentially different in BC.

The case concerned the disposition of two separate forest tenures in Alberta from DMI to two separate purchasers. In each case, the purchaser assumed liability for outstanding reforestation required on account of DMI’s past harvesting activities. In its income tax returns for the years in question, DMI did not reflect any amount in its income on account of the transferred reforestation liability. However, the minister of national revenue determined the transfer of reforestation obligations was analogous to circumstances where a purchaser of real property agrees to pay-out an existing mortgage on behalf of the vendor — the discharge of the vendor’s liability under the mortgage is income for the vendor since the vendor is relieved of the outstanding liability.



Jeff Waatainen is an adjunct professor of law at UBC, has practiced law in the forest sector for nearly 20 years, and currently works in the Forestry Law Practice Group of DLP Piper (Canada) LLP’s Vancouver offices (formerly Davis LLP).

On appeal the SCC sided with DMI, and held that the assumption of outstanding reforestation liability was not income. In Alberta, a transfer of a forest tenure cannot take place without the consent of the government, and the evidence before the SCC was that government consent requires the purchaser to assume outstanding reforestation liability. So, the SCC concluded the existing reforestation obligation was embedded in the forest tenures and, therefore, was something that depressed the value of the tenures to any purchaser. In other words, the purchase price paid for the forest tenures accounted for the fact that the purchasers were required to assume reforestation liability. This was not analogous to a mortgage on real property — a mortgage does not depress the value of the real property. Rather, the sale of a forest tenure that has outstanding reforestation obligations

is more like the sale of a house that requires repair: the fact that a purchaser assumes responsibility for the repairs upon purchase does not constitute income for the vendor; it simply lowers the purchase price of the house.

The purchaser of a forest tenure in BC is liable for outstanding reforestation obligations associated with that tenure by operation of the *Forest Act*. Accordingly, one would expect that the theory endorsed in the DMI decision would also apply in BC. There is one difference, though. In the DMI Case the SCC specifically brought attention to the fact that “the vendor is relieved of any liability for completing the reforestation obligation” upon a transfer of the tenure. Although, as noted, in BC the purchaser becomes liable for outstanding reforestation associated with a tenure transfer, under our *Forest Act* the vendor also remains liable in its own capacity, and jointly with the purchaser, for the outstanding reforestation liability. In other words, if the existing reforestation obligation is not satisfied, the government of BC can go after the purchaser, the vendor, or both. So, while reforestation obligations are still embedded in the forest tenure in the sense that in a disposition they will follow the tenure to the purchaser and, therefore, serve to depress the value of the tenure from the purchaser’s perspective, these obligations also continue to exist outside of the tenure with the vendor.

Whether the divided obligation for outstanding reforestation obligations has any implications for the DMI decision in BC is uncertain. But the fact that, in BC, the vendor and purchaser are both liable for the repair of a forest tenure house after it is sold is a difference that the SCC did not have to consider in the DMI decision. ✕



Jeff Waatainen
Associate

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Effective April 17, 2015, Davis LLP combined with DLA Piper LLP, and adopted the name DLA Piper (Canada) LLP.

Forestry Law Group

The DLA Piper (Canada) LLP Forestry Law Group advises and represents clients across Canada and abroad on virtually all issues affecting the forest sector.

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. The association sends condolences to the family and friends of the following members:

Edward Raymond Mattice

RPF # 537 (Retired)

July 5, 1940 – February 18, 2016

On the morning of February 18, 2016, following a short illness, Ted passed from the arms of his wife Margaret, to the arms of his Lord.

He leaves his greatest loves: wife Margaret; son Glenn Mattice, his wife Sue, and their children Amanda and Kayla; daughter Marla Connor, her husband Trevor, and their children Matthew, Sydney, and Courtney; and his sister Myrna Bosomworth and her family.



Ted graduated with a forestry degree from UBC in 1963. In his final year he served as vice president of the Forest Undergrad Society. His trademark claim in class was "I want to be a fire fighter." However, having earned his BSF, he spent his career as a professional forester with BC Forest Products and Fletcher Challenge, progressing from a field forester to divisional forester and on to woodlands manager. From his postings in Caycuse, Port Renfrew, Campbell River, Hope, and Boston Bar, he pursued practical and efficient forest management. A stickler for detail, his habit of reminding his staff of their upcoming duties earned him the nickname of "Memo Mattice". Over his career he established many cherished friendships and was recognized for his community volunteerism. He was awarded the *For Outstanding Service* plaque by the Campbell River Chamber of Commerce and the *Paul Harris Service above Self* award by Rotary. Ted was also active in the Canadian Institute of Forestry, and while in Campbell River, served a term as president of the Vancouver Island section.

In spite of his career being cut short by disability, his indomitable spirit enabled him to embrace life and to continue his dedication to Rotary, student exchange programs, the Board of Examiners for the Association of BC Forest Professionals, the YMCA, and to the communities in which he lived.

His primary passion was his family. They always came first and his biggest joy was dropping whatever he was doing to give full attention to the latest happenings related to each person. He was known to always respond with his quirky, dry sense of humor, and a wealth of wisdom. His legacy of compassion will be remembered by a multitude of lifelong friends.

May his spirit soar over his beloved mountains and forests where he is free to run, ski, and hike in the woods.

Submitted by Robert Beard, RPF(Ret), with the assistance of Ted's wife, Margaret, and Don McMullan, RPF(Ret)

Donald J. Hall

RPF #454 (Retired)

October 10, 1930 – March 30, 2016

Don passed away on March 30, 2016 at St. Joseph's Hospital at age 85, nine days after a sudden stroke. He was a vigorous, active, going concern for his entire life, right up to the end.

And what a life he led. Despite losing both his Ontario farming parents when he was a teenager, he managed with the support of his aunt and uncle to get a forestry degree from University of New Brunswick in 1952. He never forgot the help they provided and the great opportunities he had as a result. He returned the favour by assisting them greatly in their old age.

He moved to the West Coast in the early 1950s and worked 34 years in the logging industry with Crown Zellerbach and its successor companies. Early in his career he worked on rigging as a hooktender, and then worked on forestry crews (engineering and cruising) on southern Vancouver Island. In the mid-1950s he accepted a job as a logging side-foreman in Bella Coola, and from there took the position of mid-coast log production superintendent in Ocean Falls in 1959.

It was there that he learned to fly and purchased his first Cessna floatplane. He logged 4,000 hours on three aircraft over the next 20 years, flying into logging camps all over the coast between Campbell River and Kitimat.

From Ocean Falls he transferred to Kitimat as divisional manager from 1972 to 1977, and finished his career in 1985 after eight years as manager of Courtenay/Johnstone Straits Division.

Don loved his work, and the people he worked with. He often said "if you're in the company of loggers, you're in good company."

Retirement was no less productive — every day started at 5:30 am sharp. He was an avid runner, skier, fisherman, golfer, pilot, and pursuer of seemingly endless projects around the house. Around the house, not in the house. On his best days he'd run early, play 18 holes with his friends, and go fishing. Or some combination of that, depending on the weather, tides, and what other projects he might have on the go.

Over the years he was a generous donor of his time with friends and neighbours, and a consistent supporter of many charities.

He will be missed by his wife Yvonne, son Peter (Eileen, Kate, and Alex) and the many friends he made in his 85 years.

Don's family would like to thank the staff at St. Joseph's for their compassionate care. Flowers gratefully declined. Please consider a donation to the Red Cross Society or St. Joseph's Hospital.



Submitted by Yvonne Hall

Charles Raymond Jessee

RPF #490 (Retired)

June 15, 1939 - January 31, 2016

In fond memory of the late Ray Jessee, RFP(Ret), who passed away on January 31, 2016 in Nanaimo General Hospital after a brief illness. Ray is remembered by all who knew him as an avid outdoorsman, fisherman, and mushroom forager par excellence.

He is survived by his wife Judy; his children Michael (Miyuki), Janna (Mike), and Erin (Marc); and by his four much-loved grandchildren Ben, Isadora, Morgan, and Owain.

In his third year at the University of British Columbia, Ray was social convener for the Forestry Undergrad Society and the organizer of the Undercut and the Woodchoppers Ball. In his fourth year, he was president of the Forestry Undergrad Society.

Ray's career history included time with Weldwood in Quesnel, and Pacific Inland Resources in Smithers, as well as several years as owner/operator of cedar remanufacturing mills in Smithers and Kelowna.

Ray loved to be independent and he owned a cattle ranch in the Bulkley Valley, a small orchard in west side of Kelowna, and a vineyard and greenhouses in the west side of Kelowna.

Before retiring in 1998, Ray and his wife Judy owned and operated the tropical butterfly garden, *Butterfly World*, for seven years near Lakeview Heights, where tropical butterflies flew freely and reproduced on site. This last effort was pure forestry, as it involved providing a controlled environment for many species, and was a popular educational field trip for schools in the area.

Ray will be fondly remembered and forever missed. No service by request.

Submitted by Judy Jessee



Ray Robazza

RPF #2418

March 13, 1961 - May 4, 2016

It is with great sadness and heavy hearts that we say goodbye to Ray Robazza, RPF. Ray passed away peacefully at home May 4, 2016, with family by his side.

We will remember Ray for his quick wit, for his infectious laugh, for his love of fun, and for his unqualified, unapologetic zest for life. We will also remember Ray for how absolutely important his family and friends were to him. Ray put up an incredibly inspiring and courageous fight against cancer, with an unwavering positive attitude even when things were very difficult.

Ray graduated from the UBC Resource Management program in 1988 and began his career with Western Forest Products based out of Vancouver; working in Sewell Inlet, Naka Creek, and Loughborough Inlet. He subsequently moved through increasingly senior roles in Jeune Landing, Holberg, Jordan River, Englewood and Campbell River. In his latest role as senior timberlands engineer, Ray visited all WFP Timberlands operations as often as he could, to keep in touch with issues, provide advice, and to lead continual improvement wherever possible.

Western Forest Products was important to Ray and he cared greatly about the people. He looked to the future of the company, playing a vital role in leading the summer student recruitment program for many years. Ray was also instrumental in driving First Nations business ventures to success. Ray approached everything he did with determination, integrity and fairness and was well respected by all who knew him.

Ray enriched so many lives with his humor, energy, and honesty; family, friends and colleagues will miss him greatly.

Submitted by Ray's colleagues at Western Forest Products



Membership Statistics: ABCFP — April 2016

Note: Individuals may have applied for a change to their status since this posting. Check the membership directory on the ABCFP website at abcfp.ca/web for the most current list of members.

NEW REGISTERED MEMBERS

Ashley Rozalia Adamczyk, RPF
Ole Ahrens, RPF
Maxime Bernier, RPF
Jody Michelle Bradwell, RPF
Karen Leigh Bridget Burk, RPF
Sean Corey Fogarty, RPF
Russell Ellis Fountain, RPF
Riley James Kelly, RPF
Allan Michael Knapp, RPF
Kyle Stanley Krupop, RPF
Stephanie Jane Lauer, RPF
Tanner Gary LeBourdais, RPF
Adam Kyle Lloyd, RPF
Katherine Maria Pelkey, RPF
Staci Lynn Potratz, RPF
Maria Carolina Silva Olguin, RPF

NEW ASSOCIATE MEMBERS

Andrew Robert Bell, ATC
Eric Pegura, NRP

NEW ENROLLED MEMBERS

Cory Shayne Argue, TFT
Nadia Pedley Chan, FIT
Mandy Zheng Cummings, FIT
Alexander Peter Flett, FIT
Gregory Allen Greene, FIT
Jeffrey David Hamilton, FIT
Jamie Leigh Hopkins, TFT
Thomas David Elwood Martin, FIT
David Panofsky, FIT
Ira James Sutherland, FIT
Kurt Russell Torbohm, FIT
Daniel Shelton van der Merwe, FIT
Frederik Coenraad Vroom, FIT
Heather Monica Wakelin, FIT
Michael William Watson, FIT

REINSTATEMENTS FROM LEAVE OF ABSENCE (REGISTERED MEMBERS)

Gino Amato, RFT, ATC
Stacey H. Gould, RPF

Donald A. McDermid, RPF
Karl Dean Sjodin, RFT

REINSTATEMENTS (REGISTERED MEMBERS)

Ross Takashi Hamilton, RPF
Joseph Walter Schochter, RFT
Patrick Milton Sproule, RFT
Edward R. Mattice, RPF(Ret)
Ian Graham Priestly, RFT

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

RESIGNED (RETIRED MEMBERS)

Daniel A.J. Bélisle

Membership Statistics: ABCFP — May 2016

Note: Individuals may have applied for a change to their status since this posting. Check the membership directory on the ABCFP website at abcfp.ca/web for the most current list of members.

NEW REGISTERED MEMBERS

Tyrell B. Law, RPF
Nicholas Anthony Reynolds, RPF

NEW ENROLLED MEMBERS

Alexandre Valentin Arseneault, TFT
Molly Christiansen, TFT
Darren MacDonald Cowan, FIT
Jeffrey John Lewis Crossley, FIT
Erin Kelly Poulson, FIT
Caitlin Peri Scheliga, FIT
Robert Stephen Williams, TFT

NEW ASSOCIATE MEMBER

Guillaume Dessureault-Hamelin, ATC
Maxime Dessureault-Hamelin, ATC

REINSTATEMENT FROM LEAVE OF ABSENCE (REGISTERED MEMBERS)

Paul Christian Ekele, RFT
Richard Lee Winje, RFT

REINSTATEMENT (REGISTERED MEMBERS)

Suzanne W. Simard, PhD, RPF

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

NEW RETIRED MEMBERS

Randall G. Hart, RPF(Ret)

Workplace Safety: Phase Congestion

This information was contributed by Carole Savage from WorkSafeBC.

Everyone has a role to play in keeping a healthy and safe workplace. This is especially true in forest operations, where the high-risk nature of the work poses unique safety risks. Many of these risks come from phase congestion.

Phase congestion is when logging phases — such as planning, blasting, road construction, and harvesting — become bunched up or congested. This can create a higher risk of unsafe conditions, which may result in an incident. Phase congestion can occur within one logging phase or when different phases work too closely together.

To prevent phase congestion, it's essential to properly plan and schedule forest operations before the work starts. A worksite can become congested due to weather events, delays in completing a phase, or other unexpected circumstances. It's important to have a plan to address these challenges in a timely manner so that worker safety isn't compromised.

Forest professionals should reflect on their professional practice and consider how to keep workers safe in forest operations.



Plans change. Make effective communication part of your operation.

The planning decisions you make today can affect the health and safety of workers tomorrow. Find resources to help prevent accidents and injuries at worksafebc.com/safetyatwork.

WORK SAFE BC

STAY SHARP



BC Forest Safety Council
Unsafe is Unacceptable

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

Karst continued from page 10

information also provides statutory decision makers with a more complete knowledge of the karst resource which will help inform government decisions.

Predictive modelling can also forecast subsurface flow locations where the subsurface is inaccessible by cavers and can help forest professionals in identifying the best location for roads. The LiDAR hillshade image (Fig. 1) shows sinkholes and the associated hydrological flows underground, the different colours and widths of the lines represent the amount of flow and cavity size that is projected. LiDAR sees surface features, and predictive modelling can help better understand the extent of known subsurface caves.

The karst database was initially focused on the collection of karst information on Vancouver Island where many karst features are located. The intent is to make the database a provincial database with the collection of known karst information from locations all over BC starting this year. There are currently five main contributors to the karst database and the first karst data sharing meeting was held in April, 2016. Following the successful completion of the karst database pilot, contributors will make annual submissions to the karst database of the karst features in their operating areas and efforts will continue to recruit more contributors including licensees and interest groups. ✕

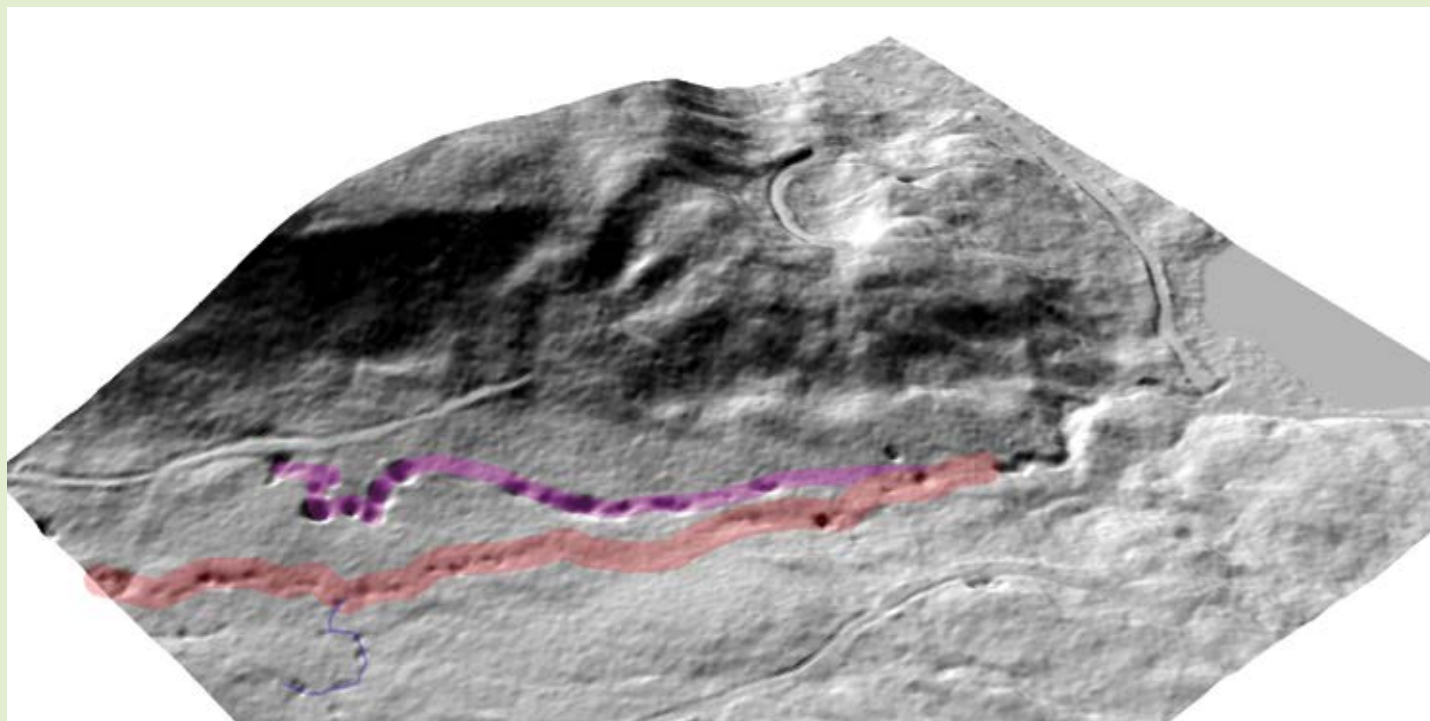


FIG. 1 LiDAR hillshade showing sinkholes and associated hydrological underground flows. The different colours and widths of the lines represent the amount of project flow and cavity size.

Operational Requirements continued from page 13

training and guidance on proper stream crossing work, FPB audits continue to find significant issues with the planning, design, and construction of some bridges and roads. These issues have led to a new special investigation currently underway that is examining road construction practices in steep terrain. That investigation examined 26 road sections in five natural resource districts. The final report will be published later this year.

On the overall question of how industry is doing in carrying

out forestry operations, the FPB is finding that roads and bridges still need more attention, as do planning, reporting, and fire protection activities. While some might conclude many of these findings are just paperwork, proper documentation and record keeping can demonstrate to the public that licensees and professionals are carrying out their responsibilities appropriately and deserve the public's trust when it comes to managing public forests. ✕



A Moment
in **Forestry**

Sowaqua Mist *Nick Reinhardt, RPF*

Corey Plester, TFT, and Bill Wright, FIT (left to right), hike up the Sowaqua Creek Drainage in the early morning mist in late October 2015.

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