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JULY - AUGUST 2011

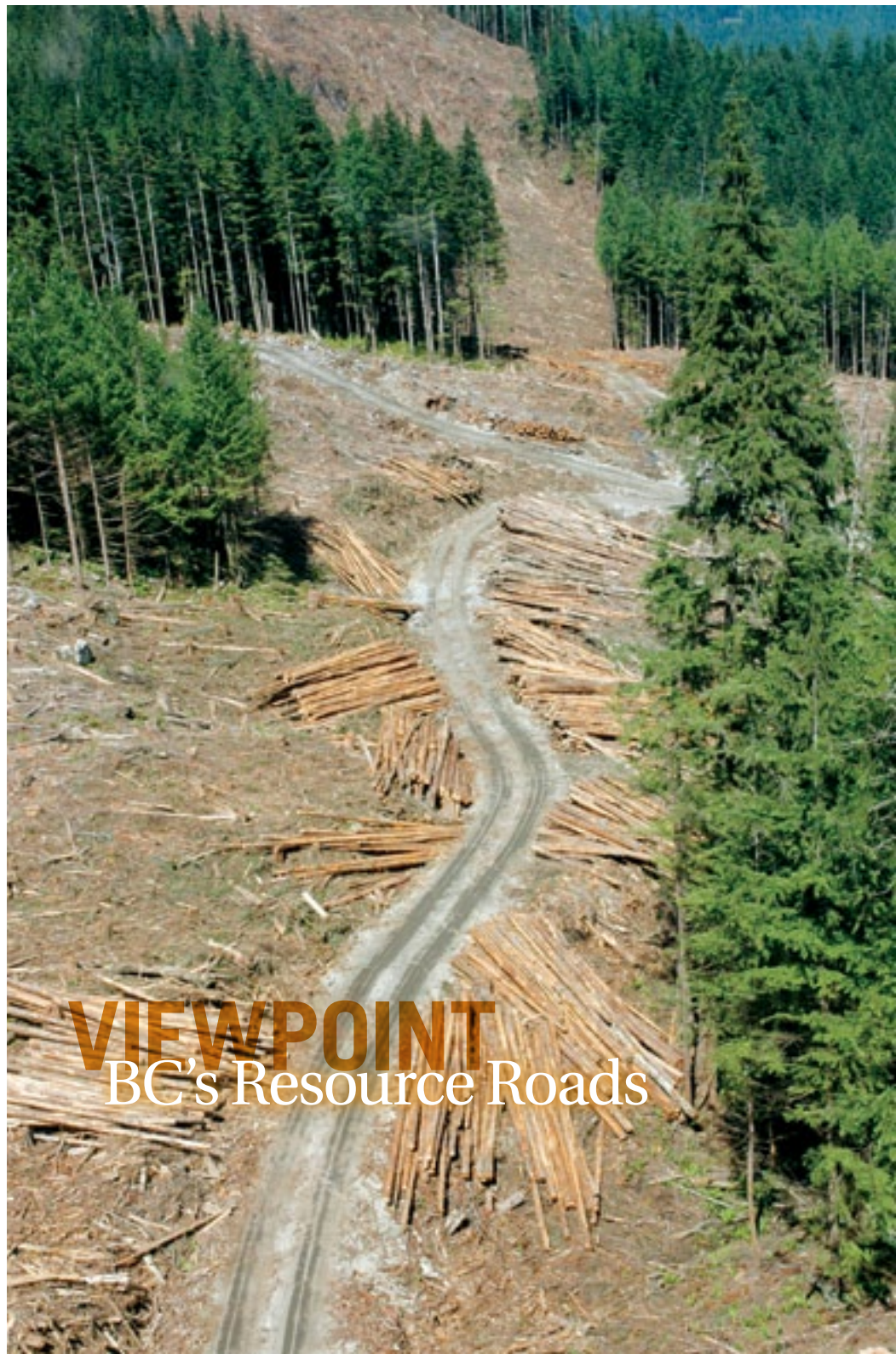
Forest

PROFESSIONAL

Supporting Tomorrow's
Forests Through
Today's Students

**A Land Ethic for
Resource Managers**

The Practice of Forestry:
**Defining and Enforcing
the *Foresters Act***



VIEWPOINT
BC's Resource Roads

Use your Radar to stay safe

Controlling the dangers of your job means keeping a sharp eye out for them. But spotting a hazard is just the beginning. You need to judge the odds of it hurting you or other workers. Then you need plan and take effective preventive action.

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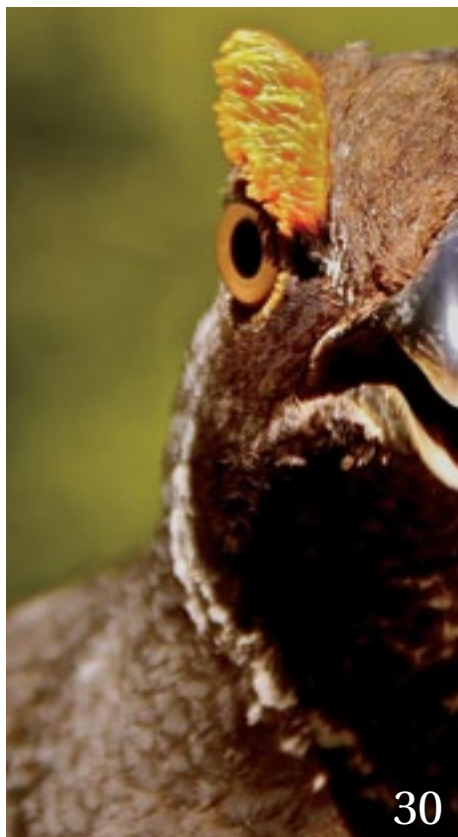
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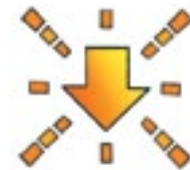
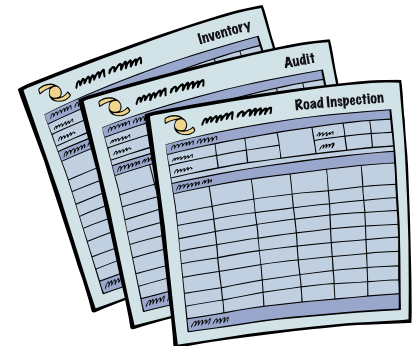
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NSR Challenge for British Columbia

As BC's Chief Forester, the issues of reforestation and NSR in BC are of great importance to me. From my perspective, the article, "NSR and British Columbia's Reforestation Crisis," (May/June 2011) regarding not satisfactorily restocked (NSR) forests over-estimates the NSR situation in British Columbia.

There is currently about 715,000 ha of NSR in the RESULTS database of which about 240,000 ha is not associated with a forest licensee or BCTS legal obligation to reforest. We estimate that there is the potential for an additional 650,000 ha of NSR arising from mountain pine beetle and 200,000 from other sources such as wildfire for a potential total NSR area (that is not associated with a legal obligation), that is closer to about 1.1 million ha.

I do not believe that the assumptions underpinning the May-June article adequately incorporate factors such as:

- The net down for areas outside the Timber Harvesting Land Base.
- The amount of area that will regenerate naturally and/or have sufficient residual stocking levels.
- The amount of area that will be harvested and carry legal obligations.

Regarding the last point it, is too early to say definitively how much mountain pine beetle-impacted area will ultimately require government reforestation funding because harvesting and regeneration of dead pine stands will continue for the next few years.

Industry and government are focusing harvesting on beetle-attacked and burned stands where we can capture current timber value and reforest in a timely manner. It is also clear that additional harvesting and regeneration will result from bio-energy and other new uses for beetle-killed wood. Past experience has taught us that what may seem uneconomical today can become a much more valuable resource tomorrow.

Reducing the impacts of wildfires and pest infestations is also a key priority of the 'Forests For Tomorrow' (FFT) program under the Land Based Investment Strategy. In areas where it is clear that harvesting will not be an option, FFT is using innovative and cost-effective techniques to survey and reforest productive sites (e.g. 45,000 ha of reforestation through 2010.)

In addition, given the significant area burned by wildfires in 2009 and 2010, the FFT program will be assessing the damage, and identifying the best opportunities, to re-establish sufficient stocking.

It will take a collective effort on the part of forest professionals to address stewardship issues such as reforestation and addressing NSR. In an upcoming issue of the **BC Forest Professional** I will be providing more detailed information related to the determination of Ministry NSR estimates and how we are responding to the NSR challenge.

**JIM SNETSINGER, CHIEF FORESTER
MINISTRY OF FORESTS, LANDS AND
NATURAL RESOURCE OPERATIONS**

Put in Your Two Cents

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 in **BC Forest Professional**.



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**MANAGER, PROFESSIONAL DEVELOPMENT
AND MEMBER RELATIONS**
Brian Robinson, RPF

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Vancouver Sun OpEd Offensive and Outrageous

Sharon Glover's opinion editorial that recently ran in The Vancouver Sun is both offensive and outrageous ("Forests require flexible management", April 26, 2011).

I cannot find words strong enough to convey to our president and council the damage this editorial has done to the credibility of the association and to the independence granted its members under the *Foresters Act* to serve the public interest.

The editorial appears to have been badly ghost written using "spin" from government and industry sources. It parrots the empty rhetoric, clichés and mantras of the forest industry and government used over the last decade to promote government forest policy and to justify deregulation.

In an overt, politically partisan defence of government forest policy, the association's council through Sharon Glover has badly overstepped its authority defined by the duty and objects of the association under the *Foresters Act*. Ms. Glover herself may well be in contravention of section 19(3) of the *Foresters Act* by writing the editorial and by purporting to speak for the profession. This amounts to passing herself off as a member, which she is not.

What is more reprehensible is the singling out of competent forest professionals as "critics" who have had the courage to exercise their powers granted under Bylaw 11 and to fulfill their responsibility to the public under the association's code of ethics.

To exercise one's responsibility to the public is difficult enough for most professionals. The professional in government is greatly constrained by the standards of conduct for public servants forbidding public criticism of ministry policy. Likewise, the professional in industry is also constrained by expectations of conduct being in the corporations' best interests.

Continued on page 27: Offensive

Administrative Fairness in Investigation/Decision for Case 2009-1

I believe that Case 2009-1 was not handled in an administratively fair manner by the ABCFP. The investigation took twice as long as posted on the ABCFP website. I believe several pieces of critical evidence were not considered by all parties—the registrar, the discipline panel and the investigation committee. Also, I was given significantly less time with the investigation committee than the hostile local participant. High financial risk forced me to choose not to go to a full hearing and accept a negotiated settlement instead. (If I had been found guilty, I could have been responsible for the full cost of the hearing and the investigation committee report.)

I appreciate the importance of association's legislated mandate to regulate forest professionals in British Columbia. However, I feel justice was not served in this case.

RODNEY J. ARNOLD, RPF, KASLO

EDITOR'S NOTE: A summary of Case 2009-1 is available on page 29 in this issue of *BC Forest Professional*. The full case digest is available on our website.

Expanded Uses for LiDAR in Northeast BC

A new approach to using Light Detection and Ranging Systems (LiDAR) is leading to more powerful information on the land base. The Science and Community Environmental Knowledge (SCEK) Fund, a BC focused research and development fund, recently sponsored a LiDAR based project with the University of Victoria and the BC Oil and Gas Commission. The project built on the forest inventory concepts discussed in the article "Making Better Business Decisions Using Enhanced Forest Inventories" (May/June 2011) by integrating LiDAR data with hyperspectral imaging. The result was an enhanced understanding of the land base including data on hydrology, geomorphology, elevation and ground cover from the canopy to the forest floor and in between.

The project involved flying and mapping a 700 square kilometre area in the Horn River Basin in the northeast area of BC. The resulting

Continued on page 27: LiDAR

NSR and British Columbia's Reforestation Crisis

With 40 years' experience as an inventory specialist in British Columbia, I read with interest Anthony Britneff's thorough portrayal of the public record on NSR (May/June 2011).

Britneff's careful and conservative estimate of the extent of inventory NSR area challenges the whole notion of certification of sustainable forest management in British Columbia.

Also, the extent of NSR in British Columbia has huge implications for estimates of carbon dynamics and of mitigation potential for the forest sector. These implications need to be determined as we rapidly enter a carbon-conscious economy.

One would think that the worst ecological disaster in Canada's history—the mountain pine beetle infestation—would warrant federal assistance in financing both forest inventory and reforestation.

As Britneff suggests, the only immediate solution is for the provincial government to act in the interests of the public and the forest industry by investing immediately in good, expanded inventory and reforestation programs.

JERRY STENBERG, RPF, VICTORIA



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Advocacy and Governance: How They Work Together

I believe advocating for principles of good forest stewardship is something every forest professional in BC supports. It is part of the ABCFP's mandate and dear to many members' hearts. However, ABCFP members hold a wide variety of opinions about good forest stewardship. This means there will often, if not always, be debate as to how, when and why advocacy work is undertaken.

There was some dismay that Sharon Glover, MBA, our Chief Executive Officer, signed the OpEd that was published in The Vancouver Sun on April 26, 2011. One main concern, I think, was that Sharon is not a forest professional but spoke on behalf of the association and its members.

Sharon is the ABCFP spokesperson. She remains CEO of the ABCFP while presidents change each year. She provides continuity for media and the public. Year after year, the ABCFP has one voice that speaks out on behalf of the ABCFP and forestry in BC. Past councils recognized this benefit and instructed our CEO to take on this role.

However, Sharon is not alone in her role as

spokesperson. She is supported by a team of forest professionals. These men and women ensure Sharon has the information she needs when developing public statements.

The fact that Sharon holds this spokesperson role comes out of our governance model, called the Carver Model. Back in 2007, council chose to adopt the Carver governance model to create an organization that was efficient and effective.

The way the Carver model works, council is responsible for providing the association's direction by defining the mission, vision and strategic goals and setting its conditions and constraints for these. The CEO is responsible for realizing the mission, vision and strategic goals and for the daily operations of the association within these boundaries. Being the ABCFP spokesperson fits within these tasks.

I think the model can best be described by Vince Battistelli in his paper, *Leadership-Focused Governance*: "Leadership focused governance centers of the idea that organizational governance consists of two necessary and complementary dimensions, governing and managing, and that for an organization to function effectively the council and CEO must work as leadership partners in these areas."

I've spoken with past presidents who experienced the old operational model and they tell some scary stories of long meetings and considerable time and resources spent weighing in on operational issues. This prevents a council from governing well and slows down the operations. A council of 12 managing operational issues often ends up with council members redoing work already done by the staff. People who, in most cases, are better qualified to do the job in the first place.

In my short time on council, I've been able to see us evolve out of the operations and focus more on strategic issues and leadership-based governance. I believe this simple change will result in an efficient and effective organization. It's been a bit of a paradigm shift learning how to stay out of the kitchen yet remain in control of the menu. I'm lucky to have 11 hard working council members to help me along this journey.

Returning now to the general idea of advocacy for good forest stewardship, Council heard loud and clear that members wanted the ABCFP to speak up on issues and not be silent. As part of council's yearly work plan and in light of the recent developments, we are reviewing our communications policy. Very soon we will have a new communications strategy that is up-to-date and meets our members' needs.

If you would like to get more involved in advocating for good forest stewardship in your community but aren't sure what your role should be, try reading the *Code of Ethics: Guidelines for Interpretation* on the ABCFP website. I revisited them recently and they helped me get a better handle on my role in advocating for good forest stewardship, especially on Bylaws 11.3.4 to 11.3.6.

Members expressing their opinions and taking on advocacy work is a good thing. It highlights the issues of importance that we, as forest professionals, need to debate and address. I value the positive energy these people bring with them and their momentum that gets the ball rolling on important issues.

If you have any questions about this President's Report, please email me at president@abcfp.ca. ☺



The Practice of Forestry: Defining and Enforcing the *Foresters Act*

The ABCFP is working hard to better understand who is practising professional forestry in BC and to ensure that those people are members of the association. We're doing this because the ABCFP was created by the *Foresters Act* with three duties:

- to serve and protect the public interest;
- to exercise its powers and functions, and to perform its duties, under the *Act*; and,
- to enforce the *Foresters Act*.

One of the ways that the association upholds the public interest with respect to the practice of professional forestry is by ensuring that each person engaged in the practice of professional forestry is accountable to the association.

So, how do we define what the practice of professional forestry is? We don't. The definition of the practice of professional forestry is defined in the *Foresters Act*.

Recently, we've had a number of members come to us and tell us that they are not practising professional forestry and don't need to be registered with the ABCFP. On further examination, we find a few dominant themes in these conversations:

- Members tell us that our definition is wrong.
- Members tell us that their employer has told them that they are not practising professional forestry.
- Members tell us that only a small part of their job is the practice so they don't really need to be members.
- Members tell us that their employer has determined that they are not practising because they don't want to pay the member's fees to the association.

I would like take a moment to address these lines of thought:

Our definition is wrong. The definition of the practice of professional forestry is found in the *Foresters Act*. Our council and committees use the definition of the practice of professional forestry when performing their duties in the *Foresters Act*. The Professional Practice Committee has been delegated the task of addressing concerns relative to the practice of professional forestry. So we are not at liberty to change the definition or adjust it.

Your employer has told you that you are not practising. It is the association that determines who is practising and who is not. If you think you are practising and

your employer has said you are not, use our Professional Practice Committee to decide.

Only a small part of your job is the practice. If the practice of professional forestry is contained in any part of an employment position then the individual undertaking that work must be a registered member of the ABCFP. It doesn't matter how small a portion it is. Only members of the association are permitted to practise professional forestry. The *Foresters Act* also provides for some exceptions to the exclusivity of practice and one such instance is where an individual is supervised by a registered member. In this case the supervising registered member accepts the accountability for the individual.

Your employer doesn't want to pay the member's fees. The association governs registered members who practise professional forestry. And if any part of a task falls within the definition, then the person is practising professional forestry and we expect them to be members. It is not appropriate for employers to determine who is practising based on the amount of money they might have to pay the association.

If you are a member and aren't sure if you are practising forestry, the association can determine whether or not registered membership is required. The Professional Practice Committee can help assess whether activities and actions fit within the practice of professional forestry. We also work with employers to help them determine which functions within their organization are the practice of professional forestry.

If you have any questions about this CEO's Report, please email me at sglover@abcfp.ca. 🍌

Transparency of the ABCFP Discipline Process

The ABCFP and the public have an interest in ensuring that the ABCFP discipline process is as transparent as possible. Justice must be done and equally importantly, it must be seen to be done. This can best occur with the publication of the names of ABCFP members who are found guilty of contraventions of the *Foresters Act* and/or the bylaws of the ABCFP.

As a general rule, in cases where the ABCFP discipline process finds a member or members guilty of breaching the *Foresters Act* and/or the ABCFP bylaws, the ABCFP will publish the name of the member(s) and a description of the circumstances in the case.

For more information, please read the associated policy, "Publication of the Names of Members Who are Found Guilty of Breaching the *Foresters Act* and/or the ABCFP Bylaws." It can be found on the ABCFP website by clicking on Regulating the Profession and then Policies.

Policy Review Seminar Coming in September

As we did last year, the annual ABCFP Policy Review Seminar will be held in-person on September 8 and 9 in Kamloops at Thompson Rivers University. The session will also be broadcast live online for those not able to attend in person. Online participants will be able to ask questions and have them answered in real time.

July Members Meetings in Grand Forks and Nelson

Member meetings provide a chance for members to hear about the latest ABCFP initiatives, ask questions and provide feedback.

Grand Forks Member Meeting

Where: Interfor boardroom, 570 – 68th Avenue.

When: Tuesday, July 12, 2011 from 4:30 to 6 pm.

Brian Robinson, RPF, manager of professional development and member relations and Randy Trerise RPF, registrar, will be the staff representatives at the meeting.

Nelson Member Meeting

Where: MFLNRO office boardroom at 1907 Ridgewood Rd.

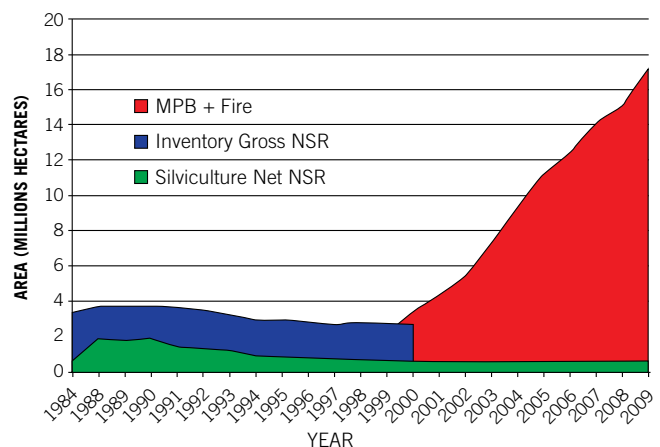
When: Wednesday, July 13, 2011 from 4:30 to 6 pm. (If you don't work in that office, make sure you arrive a few minutes before 4:30 pm when the doors are locked.) Curt Nixon, RPF, will be the council representative and Brian Robinson, RPF, manager of professional development and member relations, and Randy Trerise RPF, registrar, will be the staff representatives at the meeting.

Forest Legislation and Policy Reference Guide Available in mid-July

The forest legislation and policy reference guide is updated annually by forest management experts and summarizes important and relevant forest policies that affect the practice of forestry in BC. It can be used as a reference for those studying to write the ABCFP registration exams or for any forest professional wanting to increase their policy knowledge. Look out for more information in July on the Policy Seminars page of the website and in *The Increment*.

Correction of the May/June issue of BC Forest Professional

In the printing of "NSR and British Columbia's Reforestation Crisis" in the May/June issue of BC Forest Professional, the editor is responsible for a couple of errors. First, DNA stands for "Data Not Available" not "Date Not Available" as printed. Secondly, the coloured chart was not printed as submitted and two dates on the x-axis were wrong: 1980 and 1981 should have read 1990 and 1991, respectively. The editor has re-printed the chart here as submitted to illustrate the public record on NSR statistics as the author had intended.



Around the Clock:

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BC's Resource Roads: Safety, Technology and Access

Photo: Sandy McKellar

AS FIELD SEASON HITS FULL SWING, WE BRING YOU A DISCUSSION ABOUT RESOURCE ROADS.

We tried to tackle this topic from three different angles so there would be something of interest for all our members.

First, there are two parts to safety on the road—driving safely on the road and building the road so it's safe. Mary Arcand talks about the safety behind driving. She discusses factors that contribute to accidents and pressures that will build “as natural resource industries ramp up over the coming years.” Dennis Bendickson, RPF, addresses the responsibility forest professionals must take for roads “not being designed and built to consider the design and limitations of the vehicles meant to use them.”

Second, there's lots of different road building technology out there. In this issue, we bring you two kinds. John Nelson, PhD, RPF, discusses road network projection models and how they can assist with long-term planning. Then Allan Bradley, RPF, PEng, tells us about new technology being used to build ice bridges in the Northwest Territories during our recent warmer winters. These are just two kinds of road building technology. If you know of something new and innovative happening on BC's resource roads, email me at editor@abcfp.ca and let me know.

Finally, Chris Petersen, RFT, and Greg Rowe, RPF, talk about road access. Chris works for the Campbell River Natural Resource District and he discusses the role he plays in maintaining road access for rural homes and communities. Then Greg takes a different angle and explains how access management can be handled by consultants when writing strategic land use plans and managing the public's interests.

We also have an inspiring special feature in this issue. “Supporting Tomorrow's Forests Through Today's Students,” highlights five ForesTrust winners—forestry students who earned a ForesTrust scholarship or bursary. Take a moment to read their stories. You will be heartened to learn about the young hands you will be leaving BC's forest in. 🌲



Driving Our Lives Away

LET'S FACE IT, WE LOVE TO DRIVE. WE DRIVE FOR WORK AND WE DRIVE for pleasure. We drive with a purpose and we drive for the heck of it. But we drive. And we put our lives at risk every time we do.

Road safety can generally be considered from two broad aspects: the driver and the road environment. Serious safety challenges on both sides contribute to the unfortunate fact that, for most of us, driving is the most dangerous thing we do—particularly in the context of our work in the forest industry.

RCMP, ICBC, WorkSafeBC and coroner's statistics clearly show that in 86% of crashes in BC, the driver is at fault. WorkSafeBC calls it "human factors," RCMP calls it "human error," ICBC calls it "blame," and the coroner calls it "deceased." No matter what you call it, the fact is that we make mistakes while we drive. These mistakes include errors in judgement, mistakes due to distraction or impairment of some kind, or through risk-taking behaviour.

We are all familiar with campaigns against drunk driving and distracted driving. But what about other things? We do everything in our vehicles but drive, it seems. Drivers have been shaving, reading the newspaper and painting their toenails (true story!). We make notes, some drivers actually work on their laptops, we play with the GPS, we're on the two-way radio or the phone, we eat, we drink... the list goes on. All these activities take our hands off the wheel and our minds off the task.

On a broader level, we're also facing the issues of an aging population, whose reaction times are slower and who have medical issues while driving. Fatigued driving is another huge issue, whether the drivers are older or have been working long hours. The number of log truck drivers who had heart attacks this past winter would surprise and scare you. There is a direct correlation between how good you feel and how well you drive. There is a reason the average life expectancy of a truck driver in Canada is 14 years less than the average Canadian male.

As drivers, we need to take our responsibilities behind the wheel a lot more seriously. Most people believe they are good drivers; but we need to challenge ourselves with honest self-assessment. What do you do when you're behind the wheel? Are you fully engaged in the task of driving and the moment-by-moment multi-tasking and decision making safe driving demands? Or do you look at driving as the means

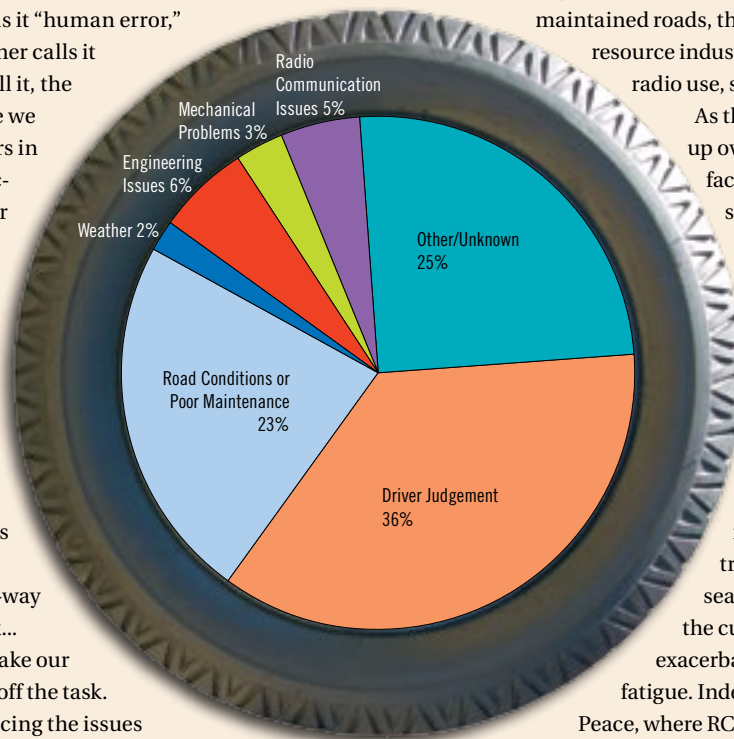
to an end and find yourself drifting across the centre-line, onto the shoulder, because your mind or hands were engaged elsewhere?

The roads we drive on are another story. We have an ageing and sometimes inadequate infrastructure. Often we're driving on roads not designed for the types of vehicles or the volumes of traffic we experience today. British Columbia has approximately 47,000 km of public roadway, and upwards of 400,000 km of resource roads of varying size and condition. Working in the forest industry, most of us will experience a mix of highway and resource road driving over the course of a day, and face the challenges of single lane marginally maintained roads, the interface of the public with natural resource industry traffic, and inconsistencies in radio use, signage and "rules of the road."

As the natural resource industries ramp up over the coming years, additional risk factors will be introduced to our road system. The worker shortage will see an increase in foreign workers, for whom English, spoken and written, is a challenge. On a radio-assisted road system, this will bring increased risk. A new generation of workers, most of whom are unfamiliar with "bush driving," will enter the natural resource extraction industries and be driving resource roads without adequate training. The economic imperative of seasonal production schedules cultivates the culture of "hurry up" and "get 'er done," exacerbating risk factors such as speed and fatigue. Indeed, this is already the case in the Peace, where RCMP statistics confirm that the three greatest contributing factors in crashes in the region are "booze, belts (lack of seatbelt use), and speed."

While we may not all drive for a living, most of us drive to help us make our living, whether getting to and from work or driving as part of our job duties. The risk is no less real when you're driving your kids to soccer or going to get groceries than it is hauling logs or laying out blocks. We need to take driving seriously and taking simple steps to keep ourselves and those with whom we share the road safe. Keeping ourselves healthy, focusing our minds on the road and our driving when we're behind the wheel, and driving according to conditions will help. As our RoadHealth slogan says, "It's in YOUR hands." 🐾

MaryAnne Arcand is executive director of the Central Interior Logging Association and co-ordinator of the RoadHealth Coalition. Her passion for road safety stems from losing her younger sister in a crash.



This chart shows the cause of the 212 crashes of forestry-related vehicles in 2005.



Road Network Projection Models: Planning Roads for the Long Term

Anyone travelling by air will be amazed at the extent of harvesting and forest roads across the BC landscape.

Google™ Earth also gives a broad picture of how the landscape has been altered by harvesting and forest roads (Figure 1).

It's hard to find out how many kilometers of forest roads we have in the province. However, if I take the annual harvest as 180,000ha and note that 3.5% of the harvest area is in permanent access structures (BC Ministry of Forests, Lands and Mines, 2010) and then consider that an average road right-of-way of 20m, and I get 3,150 km of roads built per

year – very close to the distance from Vancouver to Toronto by air. At rate of 3,150 km/year, our forest roads circumnavigate the globe every 12.7 years. That's a lot of road and we have been doing this for decades.

So how are these road networks planned and designed? While there have been strategic decisions to develop certain areas with high-class, forest service roads, such as the Morice River Road, and mainline access to new drainages and operating areas, much of the existing road network was developed using a short-term planning horizon of about five to 10 years. Hence, many of the secondary and branch roads have been located and constructed based on a limited view of the entire life cycle of these roads.

Until recently, there have been good reasons for why this short-term planning has been the case. First, it is an enormous task to manually project an entire road network. Even projecting a road network for single drainage is time consuming as it requires multiple trials based on yarding distance, landing locations, grades, alignment and soils—just to name a few. Creating alternative networks based on different assumptions (e.g. yarding distance, maximum grade, alignment, etc.) is not a timely/cost effective option if the process is done manually.

Second, we rarely have a long-term view of the life cycle of each road segment within the network. We typically don't have reasonable estimates of how much volume will be hauled over the road and when during the next rotation and beyond. Without this information, it is difficult to make the best decisions regarding deactivation/reactivation strategies and the standard of road to construct.

Finally, we don't have the means to answer strategic questions such as how yarding distance and road design parameters affect the total length and cost of the network, area of productive land lost to roads and the amount of sensitive habitat within a specified distance of a road.

At this point it is important to distinguish between the strategic planning of a road network and the final, field location of a specific road. At the strategic level, we want to answer the 'what if' questions,



Figure 1. Google™ Earth image north of Vanderhoof, BC showing harvest units and forest roads on an area of approximately 540 sq. km. Source: Google™ Earth, accessed April 25, 2011.

not the operational 'when and where' questions. The dynamic nature of economic, social and environmental goals in forest management means that many changes can occur between the time of planning and the actual construction of the road. Further, thorough field work by professionals is required before any forest road is approved for construction.

Recent advances in decision support systems for road network planning have removed many of these barriers. First, road network projection models

have been developed that automate the manual process of projecting roads (Anderson and Nelson, 2004; Stuckelberger et al., 2007) and are capable of creating complete road networks within a matter of hours, depending on the size of the forest estate. Multiple networks based on different inputs and assumptions can easily be generated to evaluate alternatives and answer strategic questions. There are a number of forest planning consultants in the province that offer these services and the new timber supply model being developed by the Forest Service includes a road network projection module.

Second, models that determine the optimal road construction class and deactivation/reactivation strategy for each road segment in the network have been developed (Anderson et al., 2006). By linking the projected road network to a forest estate model it is possible to determine the amount and timing of volume transported over each road segment throughout the strategic planning horizon. Different assumptions about construction, maintenance and deactivation/reactivation costs can be quickly assessed with this type of model, as can the assumptions about silviculture systems and harvest timing in the forest estate model. The optimal road class models have been used on research projects, but to my knowledge, they haven't been used by industry and consultants in road network planning applications.

Like all planning, road network planning is a continuous process where we plan, implement, monitor/assess and re-plan on a regular basis so that changes in management goals, technology, markets, etc. are incorporated in future projections. Given that roads represent an enormous financial investment and bring both desirable and undesirable consequences, it makes sense that that we plan them carefully, evaluate our underlying assumptions and assess alternatives. 🐿

John Nelson, RPF, is program director of the Forest Resources Management Program at the University of British Columbia.



Above: Häggglunds amphibious vehicles are used in early stages of ice bridge construction.



Below: Ground penetrating radar towing arrangement. (Left: operator console shows ice depth and presence of small cracks at ice sheet bottom.)

Opposite page: Express lane for unloaded traffic on the Tibbett-Contwoyto Winter Road (March 2011).





ICE ROADS, SUCH AS THOSE MADE POPULAR BY THE NEW TV SHOW “Ice Road Truckers,” have recently captured the imagination of the general public. However, Canadian resource companies have used ice bridges for over a century to extract resources in areas where ground conditions make building and maintaining summer roads difficult.

The term ‘ice bridge’ refers to that part of the ice road that crosses a frozen body of water such as a lake, river or ocean. Crossings are often not ready to use until January and may be opened for two months or less.

Monitoring the ice frequently and comprehensively is vital to ensure the ice bridge is strong enough throughout the operating season. Ground penetrating radar, calibrated with a few boreholes, is currently the most economic and accurate way to do this.

The radar also provides a continuous profile of ice thickness as it is dragged behind a snowmobile, Hägglunds (see opposite page) or pickup truck. With the continuous record, operators can confidently determine minimum ice thickness, ice quality (e.g.



Building Ice Bridges: Adapting Technology for Climate Change

The warmer, shorter winters caused by climate change are threatening to eliminate ice bridging as a viable technique. In response, some organizations are adapting ice bridge designs and operations.

The Tibbett-Contwoyto Winter Road, a well established Canadian ice road, celebrates its 30th anniversary this year. Starting near Yellowknife, the route extends 600 km north-east to four diamond mines and 87% of its length consists of ice bridges across a series of shallow lakes.

Nuna Logistics carefully manages driver training, the timing and composition of truck convoys on the road, and compliance with the rules of the road. Nuna Winter Road Services manages the road’s construction, monitoring and repair. EBA Engineering has developed ice thickness guidelines specifically for this winter road, and its engineers use the road as a test bed to improve ice bridge design, construction and operation.

Together these groups have achieved an excellent safety record. Over 2.3M tonnes of mine supplies have been trucked in on this route in the last 11 years at an average of 2750 tonnes per day. Trucking has been concentrated because the road opening has averaged only 67 days per year.

In the last five years, shorter winters have reduced operating seasons by two weeks or more and increased the importance of logistics control, accelerated construction techniques and a risk management approach to operations.

Risk caused by shorter winters is managed in the early construction stages with safe work practices and staged introduction of lightweight vehicles (snowmobiles, snowcats, Hägglunds) based on ice thickness.

presence of weak layers), the extent of cracking, and even whether the bottom of the ice sheet is being eroded by water currents.

Another recent advance in ice bridge building is how ice quality is defined. Older guidelines about safe ice thickness assumed manufactured ice was half as strong as naturally formed ice and, therefore, twice as much was required. However recent testing by EBA Engineering and others found that good quality ice can be manufactured by freezing water (with or without compacted snow) onto the ice bridge surface.

This new understanding is reflected in current techniques to accelerate ice manufacture. Nuna crews compact a snow layer on the ice surface before flooding and Northwest Territories’ government crews flood the surface with a spray of super-cooled water called “spray ice.” By spraying the water upwards, where it is chilled by the air before falling to the ice bridge surface, the water freezes much faster than if it were pumped directly onto the surface.

The latest provincial ice bridge guidelines allow higher acceptable risk levels when picking a safe ice thickness. Meaning that a thinner ice thickness is allowed if more intensive management practices are used. This approach improves safety and, perhaps just as importantly in the face of climate change, it reduces construction times for ice bridges. 🐾

Allan Bradley, RPF, PEng, is a principal researcher of resource roads with FPInnovations and can be contacted at (604) 222-5667 and allan.bradley@fpinnovations.ca.



High Stakes: Taking Responsibility for our Resource Roads

THE LOG TRUCK'S TRACTOR WAS FACING STRAIGHT DOWNHILL; THE LOAD of logs had pushed the water tank forward into the cab, pinning the driver between his seat and the steering wheel before spreading out like a game of pick-up sticks. The trailer wheels were in the air, still turning slowly as the first witness scrambled over and under logs to get to the driver's door. The synopsis of this accident stated that the driver had lost control on a steep switchback.

The details, however, revealed some disturbing facts: Although design specifications stated a maximum grade of 8% for a switchback, this one was 35% at mid-curve. Survey notes indicated no effort was made at a vertical design for the road and the road crew built the road as it was designed.

Minimum curve radius specifications were based on actual measurements of unloaded logging trucks' minimum as taken in the shop yard—on a hard flat surface. This curve was not flat, the surface was loose gravel and the truck was being pushed by an 80 tonne load. This produced a slippage that dramatically increased the truck's actual turning radius.

There was nothing mechanically wrong with the truck. The driver did everything that could be expected of the best of his peers. This was not a case of failing to drive to the conditions of the road. It was a case of a road not being designed and built to consider the design and limitations of the vehicles meant to use it.

How many foresters, engineers or technologists consider the fact that the way they lay out a road could be a significant factor in a fatality? How many of those same professionals have been members of an accident investigation committee that has concluded that a rollover or runaway was primarily the result of a mechanical failure or driver error. Concluded this while oblivious to a physical attribute of the road that exceeded accepted design specifications and could have contributed to the accident?

How many log truck drivers acknowledge that a road is extremely steep, or too narrow, or so poorly aligned that it is a challenge to keep the trailer wheels on the road? But then drive on because that is "just the way the roads are?"

The ability to construct roads that optimize the concerns of access, safety, multiple resource objectives and economic efficiency is significant. The development of earth moving equipment since World War II has given the ability to precisely blast, excavate, sort, move and place material. Road builders do not, however, have a choice of where the road will be built.

Road builders are usually presented with a felled and bucked right-of-way that's 20 meters wide, with the road centerline at the middle. The road grade and alignment will be dictated by those boundaries. Cuts and fills will be balanced as best as possible. Road widths will be just enough for construction trucks and equipment. If widening is needed in a tight curve, or significant cuts or fills are needed for a switchback, that information must be communicated through plans or supervisors.

Steep grades, tight curves and insufficient width are three factors that are cited in most single vehicle incidents on resource roads. Is this because those features are absolutely essential? Or is something missing in the training, understanding, communication, responsibility or accountability of the people involved?

Roads are arguably the most significant alteration to a landscape. They are the feature that sets the pattern and sequence of all future resource planning. They can have a significant impact on present and future environmental concerns. They will be a ribbon of concentration of all human activities on the land base.

Roads also tend to be permanent features. Once they are built, they become part of the landscape and are accepted as they are. Any flaws in design or construction receive a live-with-it attitude at about the same level as a rock bluff or avalanche track.

Although WorkSafeBC, the BC Forest Safety Council, government, industry, and workers all have incentives to address road safety, the responsibility for creating the physical road falls on the professionals that plan, engineer, and supervise construction. Those entrusted with these positions must be confident in their

ability to produce a transportation network that is safe, efficient and environmentally integrative.

Workers in the forest industry live with hazards and risk. A major part of the job is identifying and managing that risk. While the natural risk will always be present, introduced risk of the flawed product of another worker can be the most insidious because it is a trap set by someone that is trusted.

Competence, due diligence and professional reliance: when applied to roads, the stakes are high. 🐾

Dennis Bendickson, RPF, worked in the forest industry from the age of 16 and is currently director of the forest operations program at UBC. He has been a Registered Professional Forester since 1973. He was the witness described in the first paragraph.

Concerned? A few suggestions:

- Review the Standards of Professional Practice.
- Examine standard operating procedures & road specifications. Question anything that seems to "push the limits."
- Consult with an appropriate professional whenever you know or suspect that you have a knowledge gap or just need some help.
- Have an experienced professional peer review your work.
- Inspect your roads during and after construction.
- Communicate any concerns and document the communication.



Steep grades, tight curves and insufficient width are three factors most cited in single vehicle incidents on resource roads.



Photos: By Dennis Bendickson, RPF

How Will You Get Home Tonight?



Maintaining Road Access for Rural Communities

OUR PRIMARY FOCUS IN THE ENGINEERING team in the Ministry of Forests, Lands and Natural Resource Operations (MFLNRO) is forest service roads accessing rural residences and communities.

Roads accessing rural residences and communities are of paramount importance in delivering emergency services, goods and supplies, transportation of friends and families, as well as industrial and commercial services. These residents depend on road maintenance that does not stop and rely on safe, dependable transportation for their daily lives. It's the kind of thing the vast majority of British Columbians don't have to worry about. However it's a responsibility not to be taken lightly.

For these rural access roads, the MFLNRO is the primary maintainer only when no industrial user is present. We use numerous tools to ensure that roads are cared for from environmental and safety aspects. These tools include memorandums of understanding, road advisory committees, along with the road use permitting process. These tools help us to work with other road users, prioritize issues, and schedule activities in an amicable fashion.

In an ideal situation where there is only one road user, such as residents or a single company, maintenance operations can be carried out cost efficiently, focusing on road user safety and protection of the environment. In an instance where there are multiple road users and, perhaps, some seasonal users, more elaborate systems must be used.

In instances with more than one user present, a primary user is designated with road

maintenance responsibilities. Secondary users must enter into road use agreements to fairly share road maintenance costs and coordinate road maintenance activities. This process involves individual road user's due diligence and honoring maintenance obligations. Good relationships and teamwork are essential.

Head Bay Forest Service Road is a local example of a successful Memorandum of Understanding (MOU). In the MOU, MFLNRO, Ministry of Transportation and Infrastructure and Western Forest Products work together to ensure the road receives the care and attention it needs—structures are kept up and surface maintenance is maintained. Another example is the Road Advisory Committee for the Zeballos Forest Service Road. The committee ensures local concerns are communicated and proper seasonal planning is conducted.

As mentioned, my primary concern is rural residence/community access and this is where I focus the majority of my resources. However, other road classifications that we use include:

- Industrial roads, where the primary use of the road is for industrial purposes. These roads have maintenance completed through the issuance of Road Use Permits. (This work is mostly done by the other engineering team in our office that works through BC Timber Sales.)
- Wilderness roads, where the road doesn't fit into a set categories but needs to be held in a non-deactivated state. The maintenance focus on these roads is for environmental protection and access is not guaranteed.
- Recreational road, where roads access high value recreational sites and trails.

The maintenance focus on these roads is public safety and environmental protection.

- Deactivated roads, where a road is no longer required for any of the above-mentioned purposes. Deactivation, though never a popular choice, protects the environment, protects some form of the initial road structure investment and reduces safety and environmental liability. Challenges we face range from an aging workforce as our history and important relationships head out the door to greener pastures, to strained and reduced operation budgets, to seasonal storms that seem to be getting stronger each event. Public safety, worker safety and protection of the environment are at the forefront of our responsibility.

Clearly identifying specific road use is an important first step in planning and budgeting maintenance activities. Assessing who is obligated to do what activity ensures fairness in multi-user roads, ensuring all needed activities are completed. Keeping the road inventory lean through deactivation and transfer to road permit—where applicable—is important when it comes to identifying road maintenance issues with limited operational funds. Lastly, if weather and budgets permit, being proactive rather than reactive, improving known maintenance issues can be a big key to success. 🍌

Chris Petersen, RFT, is the engineering officer for the Campbell River Natural Resource District. Chris has worked for the Ministry for 20 years in the Revelstoke, Sunshine Coast, Mackenzie and Campbell River Districts.



Access Management: Resolving Complex Road Issues

ROAD ACCESS CAN BE EITHER BENEFICIAL OR DETRIMENTAL TO SOCIETY depending on the perspective and the values being considered. The challenge is to manage road access to public resource lands in a way that attains an acceptable balance between economic, social and environmental values and also provides an equitable allocation of the costs and benefits associated with the road.

In addition to providing access for a variety of purposes, roads can also have significant environmental impacts both directly through site impacts, and indirectly through bringing people and motorized vehicles to sensitive areas. Access management of resource roads can be a very broad issue that is central to the implementation of land use plan zoning.

The issue is large. There are 400,000 to 500,000 kilometers of resource roads in BC (FPB, 2005). Resource roads are presently administered under a number of provincial acts and associated regulations including the *Forest Act*, the *Forest and Range Practices Act* (FRPA), the *Land Act*, the *Petroleum and Natural Gas Act* and the *Mines Act*. An initiative was started to consolidate all resource road administration under one act—the *Resource Road Act*—but this has not been finalized.

At present provincial policy avoids the creation of more “non-status” roads. Therefore in order to avoid continuing responsibility for maintenance, industrial users are encouraged to de-activate roads they no longer require. This can lead to a situation where some stakeholders may want the road left in a drivable condition and others don’t.

As an example of the potential level of complexity we could have a situation like this:

- The forest company holding the road permit finished the first pass, no longer requires the road and would like to de-activate it.
- An independent power producer wants the road for periodic access but wants it closed to public use.
- A commercial recreation operator uses the road for access to his tenure.
- Recreationists use the road to access a trailhead.
- There is concern about the impact of access at certain times of the year on wildlife.
- First Nations use the area.
- No one wants to be responsible for a gate.
- Individually, the non-industrial users are cannot afford the maintenance costs of taking over responsibility for the road.

When the Forest Practices Code (FPC) was first introduced there was a requirement for forest licensees to include an access management plan with the forest development plan (FDP). This provided an opportunity for planning and public consultation on road access issues. The requirement for access management plans was eliminated with the “streamlining” of the FPC in 1997 (FPB 2005) and FRPA has no access planning requirements. Strategic Land Use Plans can provide general, high level direction for access but usually lower level strategic planning is required to address this effectively.

In situations where the access issues are complex, it is helpful to have a structured, transparent, planning process in which all stakeholders can participate as equals, issues and interests can be clarified, options generated, solutions agreed upon, and implementa-



Photo: Sandy McKellar

Current provincial policy avoids the creation of more “non-status” roads. This encourages industrial users to deactivate roads and can lead to complex stakeholder debate.

tion plans produced. The coordinated access management planning (CAMP) process has been used by the BC Ministry of Forests since the early 1970's. It provides a mechanism for all forest road users to provide advice with respect to access management decisions.

The following principles can be helpful in guiding access management initiatives:

- Sensitive values and objectives should be clearly defined and communicated both within the planning group and to the public so it is clear why changes in access are occurring. Successful implementation will require a significant information and education initiative.
- All stakeholders should recognize the problems giving rise to an access plan and assume some of the responsibility for successful resolution.
- The access management planning process should address both restricting access and maintaining access. In many cases access management has been primarily oriented towards deactivating roads or restricting access through installing gates, removing bridges, etc. In some areas where the use is shifting from an industrial to recreational and local conditions require significant maintenance to keep roads passable, the recognition of particular roads as priorities for on-going non-industrial access can be critical to gaining acceptance of the plan.

- Access decisions should be made in the context of a large enough plan area in order to accommodate the full spectrum of user demands.
- Consider operational aspects including choosing workable locations for access control points, funding levels, safety of road users, providing objectives and leaving operational flexibility with respect to achieving them so that the most appropriate tool can be used for each situation.
- Consider ways of transferring maintenance responsibility to other users or groups of users.

Resolving complex road access issues is a critical component of successful natural resource planning and management. Finding the right balance between continued access for resource users, protection for sensitive areas, and sustainable road maintenance costs is a major step towards effective management of our public resource lands. While the best approach for attaining this balance will vary according to local conditions, careful consideration of general access management principles is a good starting point. 🐾

Greg Rowe, RPF, is a consulting forester based on Vancouver Island. He has worked in consulting, government and industry throughout BC for the past 30 years with involvement in a wide variety of strategic and operational planning projects.

A Land Ethic for Resource Managers

"I have read many definitions of what is a conservationist, and written not a few myself, but I suspect that the best one is written not with a pen, but with an axe. It is a matter of what a man thinks about while chopping, or while deciding what to chop. A conservationist is one who is humbly aware that with each stroke he is writing his signature upon the face of his land. Signatures of course differ, whether written with axe or pen, and this is as it should be."

Aldo Leopold

VIRTUALLY EVERYONE INVOLVED IN AND RESPONSIBLE FOR RESOURCE management in BC is bound by codes of ethics that convey the primary obligation of managing the resources entrusted to them in an exemplary manner to the best of their capabilities for the public good. To ensure the fulfillment of this obligation, a properly developed land ethic is necessary to guide them in their lifelong work. Such evolves with time, relevant circumstances and with increasing knowledge and experience.

Natural resource professionals are ethically and morally bound to a continuing, diligent improvement in their code of conduct, their decisions influenced by ethics, morals, values and integrity.

As per the *Foresters Act*, the primary duty of the Association of BC Forest Professionals is "to serve and protect the public interest." By way of further explanation it states that forest professionals must "advocate and practice good stewardship of forest land based on sound ecological principles to sustain its ability to provide those values that have been assigned by society."

As resource professionals make independent decisions regarding the allocation and management of natural resources, they inherently weigh each aspect or area of responsibility involved and decide which has priority over the other(s).

While the weighing varies with circumstances, the following ranking of priorities should almost always predominate:

1. The land and the resources
2. The public
3. The profession
4. The client or employer
5. Other members

The ultimate decision is always made by the individual.

The age-old challenge resource professionals face nearly every day of their working lives is how best to meet and fulfill their highest obligations of serving the public interest by managing the province's natural resources in a manner that best meets the public's environmental, social and economic objectives.

For example, the process of locating a cut-block boundary involves hundreds of small management decisions, including which trees will be cut relative to size and species, how large the opening will be, wildlife and biodiversity considerations, the location of the boundary relative to water courses, aesthetics etc. These decisions indicate the professional's interpretation of the public's interests influenced by their employer's or client's objectives and monetary considerations.



Interest

By Fred Marshall, RPF, PAg, Cert. Arb.

Photo: iStockphoto

Professional decisions reflect professional integrity and associated values on the landscape. It is a reflection as to what the individual deems to be most important to best meet the competing interests. The cumulative result for all resource professionals should always favor the environmental values as humanity cannot survive without a healthy, functioning ecosystem.

Aldo Leopold's essay, "The Land Ethic," offers some of his related thoughts:

"All ethics so far evolved rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in that community, but his ethics prompt him also to co-operate (perhaps in order that there may be a place to compete for).

...In short, a land ethic changes the role of homo sapiens from conqueror of the land community to a plain member and citizen of it. It implies respect for his fellow members, and also respect for the community as such."

A land ethic, then, reflects the existence of an ecological conscience, and this in turn reflects a conviction of individual responsibility for the health for the land. Health

is the capacity of the land for self-renewal. Conservation is our effort to understand and preserve this capacity.

Examine each question in terms of what is ethically and esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

May the ethical reflections on the landscape created by resource professionals always be ones that exemplify the principles outlined above with all choices being those of ultimate value—our complex natural resources residing in healthy, functioning ecosystems.

The full version of Fred Marshall's Land Ethic Statement is available from him. To receive a copy, please email him at fmarshall@telus.net.

Fred Marshall, RPF, PAg, Cert. Arb., and his wife Jane operate a small cattle ranch and woodlot located near Midway where they have owned property for nearly 40 years. Fred works as an independent resource consultant teaching and working on a wide variety of resource-related projects.

Supporting Tomorrow's Forests Through Today's Students

Photo: iStockphoto

FORESTRUST IS THE ABCFP'S REGISTERED CHARITY. THROUGH IT, we work to create endowments at post-secondary institutions across British Columbia. Income earned on these endowments is used to grant scholarships and bursaries to forestry students—individuals who are the future of the forestry profession.

As you will read in the following stories, forestry students today are bright and diverse. Two of our scholarship winners—Chelsea and Acacia—moved to BC to study forestry which shows a real commitment to the profession. Others, such as Mark, bring a new skill set with them. Mark grew up on cattle ranch and is interested in integrating forestry with other industries. Tara has already studied forestry in Finland and next hopes to work in New Zealand. Ian is excited by the radical changes happening in forestry with the advent of GIS technology and climate change. When you support ForesTrust, you're supporting students like them.

ForesTrust needs your help to continue its tradition of helping fund the education of forestry students. There are several ways you can support forestry students in BC.

Make a Cash Donation

Donations to ForesTrust are tax deductible and can be made by cheque, money order, Visa or MasterCard. It's also possible to contribute a gift in the memory of a colleague or include a charitable bequest in your will.

Donate to the Silent Auction

The host committee holds a silent auction during the ABCFP forestry conference and annual general meeting. Last year this one event raised more than \$7,000. They have just started seeking donations for next year's auction. If you have an item you'd like to donate, contact Martin Watts, silent auction subcommittee chair, at martin_watts@telus.net.

Bid on Silent Auction Items

Many fantastic items will be available for bid and purchase at the annual forestry conference in Victoria on February 22 to 24, 2012.



Tara Salmon

**University of Northern British Columbia
Association of BC Forest Professionals
Award for Excellence (\$2,000)
Hometown: Golden, BC**

Tara's dream job would be working in an environment that encourages innovative forestry and offers an opportunity for a variety of experiences. "It would also let me escape from the behind the desk and work in the field sometimes," said Tara.

Tara's favourite class at UNBC was forest health and disturbance. "I think current changing environmental conditions and the looming midterm timber supply issue is going to present the forestry sector with more challenges," said Tara.

Tara would also like to get some international experience. She's already completed a university exchange program in Finland. Over the course of a year she gained a more global (and Finnish) understanding of forest management practices and ideologies. What's next? "I intend to practice forestry in New Zealand," said Tara.

Tara's already got quite a bit of experience in forestry. As a summer student in the forestry industry, she's worked a range of jobs including junior layout technician, regeneration surveys, planting quality surveys, brushing and forest fire fighting.

Finally Tara would like to thank the ABCFP for supporting her education. "It all went towards my tuition fees!"

Thompson Rivers University

**ABCFP Award (\$1,000)
Hometown: Savona, BC**

Mark's dream job is to be a range agrologist and manager. He has a keen interest in agriculture and how it can fit with forestry.

"Growing up on a cattle ranch allowed me to gain a respect for land stewardship and an interest in maintaining our natural resources," said Mark. "Forest and range management provides an avenue to pursue my interest in land stewardship."

Mark enjoys discussing multiple-use issues particularly between grazing and forestry or agroforestry. "I bring

an interesting aspect to forestry with my agriculture background. I feel that integration of the industries would be beneficial for both stakeholders."

When he's not at school, Mark continues to help on the family ranch where he still lives.

What would Mark tell someone considering forestry as a career? "I feel that forestry and range management is a field in which people can seek a successful career while enjoying the natural world. It is also a great way to see a lot of country!"

Mark put his award money towards tuition for his natural resource science degree. He'd like to thank the ABCFP for supporting his education.



Mark Haywood-Farmer



Acacia Nethercut-Wells

**University of British Columbia
Association of BC Forest Professionals
Scholarship in Forestry (\$1,000)
Hometown: Santa Rosa, CA, USA**

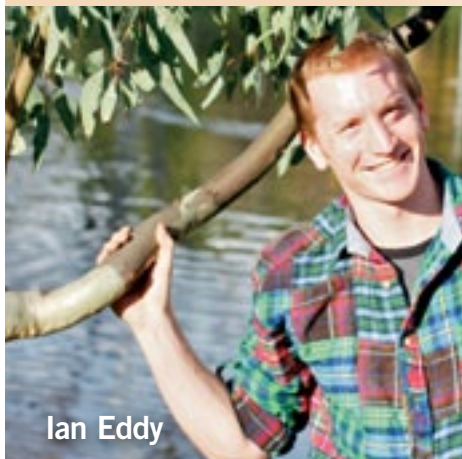
Acacia has no idea what her forestry dream job is. "I'm starting to explore the answer to that question by working as an engineering intern for Washington's Department of Natural Resources this summer," said Acacia.

When she first moved to California from Vermont, Acacia was amazed by the differences between redwood forests and forests of the east—and not just their size. But it wasn't until late in high school that she realized forestry was the right choice. "I couldn't have been more right," said Acacia, "I love what I'm learning."

Acacia enjoyed all of her classes in UBC's faculty of forestry, but tended to like classes that are more math oriented. "I've found the forest operations classes that I've taken to be challenging, but that's what makes them so great!"

What would Acacia tell someone considering forestry as a career? "I would say go for it! I have been interested in everything I learned and can easily see how it can be applied to real situations," said Acacia. "I think these are critical components of a valuable degree."

Finally, Acacia wants to thank ABCFP for the scholarship. "The scholarship I received has made paying for my education much more practicable."



Ian Eddy

University of British Columbia – Okanagan

Association of BC Forest Professionals Award (\$675)

Hometown: Merritt, BC

Ian's already had his dream job. "I was fortunate enough to land an NSERC grant for a research job looking at the role mycorrhizae could play in tree migration," said Ian. "It was a nice blend of greenhouse, lab and field work and I had an amazing time!"

Ian sees forestry as a nice blend of applied science, environmentalism and management. "It's an interesting time to study forestry," said Ian. "Like many environmental

sciences, it is undergoing some radical changes with the advent of GIS technology and climate change."

Ian really enjoyed his GIS class. But his favourite has been forest wildlife management.

What would Ian say to someone considering getting into forestry? "It's obviously a tough time but every industry has its highs and lows," said Ian. "I also feel people often have this one dimensional perception of foresters being lumberjacks when in reality the discipline has evolved far beyond that. There are many different job opportunities available for people that have forestry skills."

Finally, Ian would like to thank the ABCFP for his award. "It went straight into the black hole of tuition payments!"

University of Northern British Columbia

Association of BC Forest Professionals Bursary (\$1000)

Hometown: Medicine Hat, AB

Chelsea's forestry dream job would definitely involve research. "As I learn more about forestry, I hope to contribute in a way that helps move the industry in a direction that is more sustainable and environmentally conscious while remaining economically, socially, and politically acceptable," said Chelsea.

"Right now, I'm mostly involved with silviculture and doing surveys is still really exciting for me," said Chelsea. "Another favorite of mine is the bush work. Being outside all the time affords enjoyment of the job that can't be

obtained behind a desk."

Later on, Chelsea would also like to get involved with the forest industry in poor countries where control of the industry has been difficult and standards of best practice are either not in place or not enforced.

What would Chelsea say to people considering getting into forestry? "I would tell them that it is a very rewarding career opportunity, keep a constant eye on professional development opportunities, and the good days out number to tough ones by far—if you don't forget your bug spray.

Finally Chelsea would like to thank the ABCFP for supporting her education. "I received \$1000 and used it to pay part of my tuition for the 2011 winter semester at UNBC."



Chelsea Barker

OTHER WINNERS

Shane Vandewater
College of New Caledonia
ABCFP Award (\$500)
ABCFP Natural Resources Studies Scholarship (\$1,000)

Mark Balogh
University of Northern British Columbia
Association of BC Forest Professionals Bursaries (\$1,000)

Jordan Bemmels
University of British Columbia
ABCFP Graduating Prize in Forestry (\$300)

Andrew Spence
University of British Columbia
ABCFP Graduating Prize in Forestry (\$200)

British Columbia Institute of Technology, Nicola Valley Institute of Technology and Selkirk College, had not yet selected their award winners at the time of printing. Vancouver Island University did not award any scholarships or bursaries this year.

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British Columbia's Inland Rain Forest: Ecology, Conservation and Management.



Stevenson, S.K., H.A.Armleder, A.Arsenault, D.Coxson, S.C.DeLong & M. Jull.
UBC Press, 2011
456pp, illustr.
ISBN 978-0-7748-1849-0 (hardcover)
978-0-7748-1850-6 (paperback)

This is a comprehensive, wide-ranging and profusely illustrated account of our inland rainforest—the very wet cool (vk) and wet cool (wk) sub-zones of the Interior Cedar-Hemlock (ICH) biogeoclimatic zone. The introduction states, “The purpose of the book is to synthesise the best available information about the ecology and management of the ICH for the benefit of those interested.”

The authors set out to achieve this in nine chapters: an introductory overview; followed by a description of the geology and soils; an account of ecology and productivity; a history of changing views and values then, more specifically, of logging and silviculture; a discussion of changing climate and the carbon cycle; a review of applied ecological management; finally, a hopeful vision of ideal management of this unique and threatened ecosystem. All but one chapter is headed by a relevant quotation and there is a glossary, a list of abbreviations and an extensive bibliography. It all adds up to a very full and comprehensive description.

How well have the authors achieved their purpose? They have pulled together a wealth of detailed information about the attributes and characteristics of our inland rain forest. There may be just a bit too much information. It sometimes reads like an ecological primer and at other times like a listing of species occurrence. This probably reflects the interests and enthusiasm of the authors which could have been curbed by rigorous editing. Handicapped at times by “a general paucity of empirical data” and conceding that “cumulative ecological effects...are unknown,” the authors have cautiously extrapolated from the adjacent BWBS (Boreal Black and White Spruce) and ESSF (Englemann Spruce - Subalpine Fir) zones to attempt predictions of changes resulting from management or climate impacts. They have cast a wide net of comparisons reaching not just to our comparable Coastal Western Hemlock (CWH) zone but as far afield as Finland and New Zealand.

The result is an informative account and a valuable repository of currently available information—a very useful contribution to BC's forest literature. It does not always make for easy reading and, given the calibre of the contributors, it is surprising that the ICH is said to lie at “high latitudes” when it is in fact well south of the Arctic Circle and that old forests are reputedly “irreplaceable.”

Reviewed by Roy Strang, RPF (Ret)

RANKING: 4 OUT OF 5 CONES



Offensive: Letter continued from page 5

If council had acted in the best interests of both its membership and the public, Sharon Glover's editorial would have encouraged professionals to exercise their independence and to serve the public interest by speaking out about forest stewardship issues of concern and forest policies that are not working well; instead, she publicly castigated those that have recently criticized government policy and she whitewashed real problems with forest management in British Columbia that they have identified.

As a result, council, through Sharon Glover, has compromised the most precious power granted forest professionals, which is freedom to voice independent opinion in the public interest. President Ian Emery owes every forest professional a public apology for what can only be considered immature judgment on the part of council.

ANTHONY BRITNEFF, RPF (RET)
VICTORIA

LiDAR: Letter continued from page 5

data collected through LiDAR can be used to determine forest inventory information such as species, canopy height and stocking as well as vegetation classification. The hyperspectral imaging component gives us an idea of the functioning of the forest such as the health of the trees and the effects of pathogens, forest pests and water related stresses.

Operational uses for the data include planning operations around riparian areas through better information on wetlands and soil wetness. Road design and layout can be enhanced through the interpretation of the wetlands, fens and bogs to efficiently route roads and design drainage patterns. The identification of potential gravel pits can be achieved through interpretation of the bare earth models mapping moraines, dune fields and shorelines. Detailed habitat mapping for wildlife species at risk can also be done through the LiDAR data.

These operational uses of the enhanced LiDAR data are just the start. Now that we have the data, we can focus on further analysis and applications of the data. We believe we have only scratched the surface of the potential uses for information from LiDAR and hyperspectral imaging in managing the natural resource base.

More information on the project can be found on the SCEK Fund website at <http://www.scek.ca/projects-completed.aspx>.

HOWARD MADILL
SCEK FUND MANAGER
DIRECTOR, STEWARDSHIP, BC OIL AND GAS COMMISSION

Literature Cited: Continued from page 11

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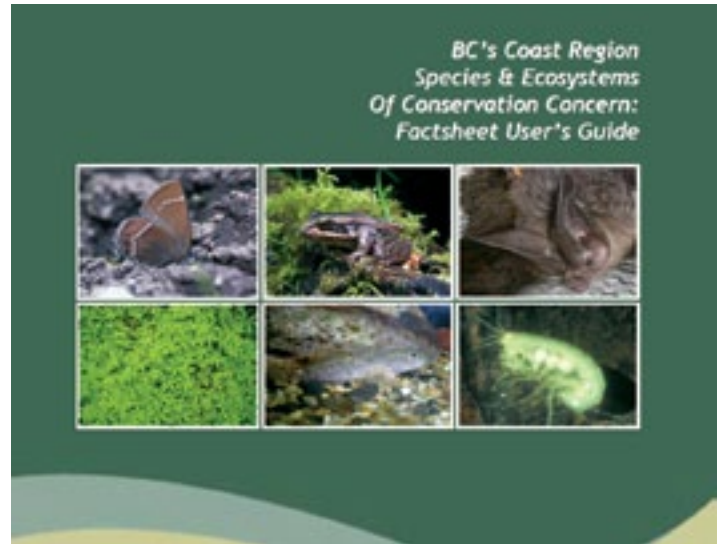
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New Online Fact Sheets Inform Species-At-Risk Decisions



A new website, *BC Coast Region: Species and Ecosystems of Conservation Concern*, makes the effective management of species-at-risk more achievable by providing easy access to the latest information.

The website provides information for a vast array of plant, animal, and ecological communities through a series of fact sheets. Fact sheets have a consistent layout and include the following information:

- physical description including pictures
- similar species that can confuse identification
- distribution
- habitat preferences and critical features
- seasonal life cycle
- threats
- conservation and management objectives
- citations of reference material used to generate the fact sheets

As a professional, one must make decisions concerning the appropriate management of a particular at-risk species based upon regulatory responsibilities combined with sound and reliable information. These fact sheets help provide that necessary support for a professional decision.

Some say that forest management isn't rocket science and they are right....it's more complicated! Thanks to all the supporters of this initiative for making this happen: South Coast Conservation Program, Interfor, Sustainable Forestry Initiative (SFI) and the University of British Columbia. It will only make our forest management decisions better for us, our business, and for the at risk species that co-exist on the land base.

Visit the Website and Find Out More!

Visit BC Coast Region: Species and Ecosystems of Conservation Concern at www.geog.ubc.ca/biodiversity/factsheets

Alternate Complaint Resolution Settlement: Admission and Negotiated Settlement

Discipline Case: 2009-01

Subject Member: Rodney Arnold, RPF

Date of Decision: January 2011

Type: Conditional Admission and Negotiated Settlement approved by Discipline Panel

The complaint was that Mr. Arnold:

1. Moved a road without consultation with the geotechnical engineer who had made the original recommendations regarding the road construction and end hauling of materials for the road construction.
2. Changed the road construction methods from end haul to side casting without consultation and approval of the geotechnical engineer who made the original recommendations about the road design.
3. Signed Site Plans (SPs) after the approval and/or submission of the cutting permits in contradiction of signed letters to the District Manager stating that the SP's were signed and on file.
4. Failed to adequately supervise SP data collection through field verification of the data.
5. Failed to have field data to verify site assessments and field work for submitted and signed SPs.
6. Changed timber harvesting systems in contravention of the SP and appraisal submission for a cutblock.

7. Potentially caused excessive erosion and sedimentation due to poor road construction methods.

The Decision

The Discipline Panel found that Mr. Arnold incompetently engaged in the practice of professional forestry or acted in a manner unbecoming of a member of the ABCFP, failed to inspire confidence in the profession, failed to meet the standard of practice required of members, and his actions were inconsistent with sections of the Code of Ethics and Standards of Practice. On this basis, the Discipline Panel has concluded that his actions did indeed harm the profession and public.

Full Discipline Case Digest

To read the entire Discipline Case Digest and see the specifics of the complaint, negotiated settlement and penalty, and decision, go to the Complaints Records page on our website by clicking on Regulating the Profession, Complaints, Complaint Records.

ABCFP Membership Statistics Association of BC Forest Professionals – May 2011

NEW REGISTERED MEMBERS

Anthony John Brewis, RPF; Emily Mulloy Carpentier, RPF; James Ronald Crawford, RPF; Erik Jan Leslie, RPF; Dustin Leonhart Meierhofer, RPF; Rebecca May Adeline Misener, RPF; Nicholas Roy Plett, RPF.

NEW ENROLLED MEMBERS

Corry Douglas Cooper, FIT; Bryan Munro Halvorson, FIT; Stacey Leigh Jacobs, TFT.

REINSTATEMENTS FROM LOA

Jullian Jane Atmore, FIT; Darrell Devlin, RPF.

REINSTATEMENTS

Eugene A. Desnoyers, RPF; Rodney John Gibney, RFT; Kevin Jock Honeyman, RFT; Jean W. Mather, RPF; Kent Douglas Pincott, ATC; Shawn Torin Murray, RPF.

DECEASED

Anthony Stanevicius, RPF.

The Following People Are Not Entitled to Practice Professional Forestry In British Columbia:

LEAVE OF ABSENCE

Terence Russell Dodge, Penny A. Hendricks, Stephanie Marie Sambo.

RESIGNATIONS TO RETIRED STATUS

Andrew L. Brazier, RPF(Retired); Norman Ralph Pelton, RPF(Retired).

A Moment in Forestry

Submit your moment in forestry to Brenda Martin at: editor@abcfp.ca



Submitted by Berry Wijdeven, Species at Risk Recovery Coordinator, Haida Gwaii

“Sooty Grouse can look kinda dull when you see them standing by the road, but up close they’re really rather pretty. We’re currently studying Haida Gwaii Sooty Grouse, a distinct genetic population which has been in serious decline, to learn more about their habitat use and seasonal migration patterns.”

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