



Bringing the North to the South

Submitted by: Brenda Hartley MRM, PAg., Director, Authorizations Initiatives Branch, and the Major Projects Office



The igloo is used to help the students learn about Canada's northern communities, as well as about geometry and the cool things we can do to re-purpose and re-use materials. The igloo quickly becomes a popular place for students to retreat to when reading. An unexpected benefit of the igloo has been a wonderful calming effect on the kids.

Lift a glass (or jug!) to Kevin for his great investment in our community!



For the last several winters, Kevin Johnston, Team Lead (Forest Inventory Field Operations) has rallied the FLNRO, MARR, AGRI and MEM staff in the Kamloops Resource Building to bring in all of their empty (and cleaned!) 4l milk jugs. Anyone walking past his office during the collection period might assume that Kevin likes milk...a lot.

In reality, Kevin collects the empty 4l jugs to bring to one of the local Kamloops elementary schools to help them construct an igloo inside their class room.

Advisory Group Vision:

"True to our proud histories, informing ministry staff through balanced and timely communication"

The Dirt Facebook



To join "The Dirt" facebook page, simply go to the link below and ask to join the group. <https://www.facebook.com/groups/flnrnews/>

Issues of "The Dirt" will be posted online quarterly. The newsletter and facebook group are for all employees and former employees of the Ministry of Forests, Lands and Natural Resource Operations and is intended to provide up-to-date information on the organization. **Let us know where you worked within the ministry.**

Add your story to *The Dirt* facebook account. "Participating in social media means contributing content or comment. When doing so, we trust you to be professional, personable, and relevant." –Social media guidelines.

Sudoku - do you play?

7					6		3	4
	2			8	5	7		
6	4	1	3					
	7	6		4				9
1			8		2			5
5				9		2	4	
					4	5	9	7
		9	7	2			1	
3	6		9					8

Sudoku Solution

The Dirt Contents, September 2016

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AROUND THE MINISTRY (check out Facebook)

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Retirees Receive The Dirt!

If you are a former employee and want to keep up with the latest Dirt, please contact Richard Dominy and he will add you to the retiree's email distribution list. Provide email, home phone and home mailing address. You can contact Richard directly at: Richard.Dominy@gov.bc.ca.



Matthew Hutchinson

Memorial fundraiser success

The Flathead Unit Crew presents a check to B.C. Professional Fire Fighters' Burn Fund in Cranbrook

Matthew Hutchinson was a member of the Flathead Unit Crew during the 2015 wildfire season. He had a passion for firefighting as demonstrated in his work with the BCWS along with his volunteerism as a structural firefighter in the United States. He is fondly remembered by crews for his hard work and positive attitude on the fire line.

The Flathead Unit Crew worked together to fundraise for the B.C. Professional Firefighters Burn Fund--a charity befitting of Matthew's memory. The unit crew sold commemorative t-shirts and raised over \$2000 to donate to this worthwhile charity.



Matthew Hutchinson, 2015

Continued...

Matthew Hutchinson Con't

A message from the Flathead Unit Crew

Matthew Hutchinson was part of the Flathead Unit Crew during the 2015 fire season. He brought with him an incredible attitude: hard working, eager to learn everything about the job and the ability to keep the crew laughing. During the busy fire season, while working long days, he was a core contributor to keeping crew morale high. His goofy grin never left his face and his motivation to support the crew never faltered.

We want to remember and celebrate Matt through a strong passion of his firefighting. Matt also worked as a structural firefighter in New York, where he attended university. We started a Fundraiser in his name, and through selling t-shirts throughout the province, we have raised \$2152 for the B.C. Professional Fire fighters Burn Fund.

This organization works to provide essential programs, services, equipment and support needed by burn survivors, their families, caregivers and hospitals.

Matt's memory will be cherished and his impact on our crew will never be forgotten. We are grateful for the time we shared with him and the memories that we made.

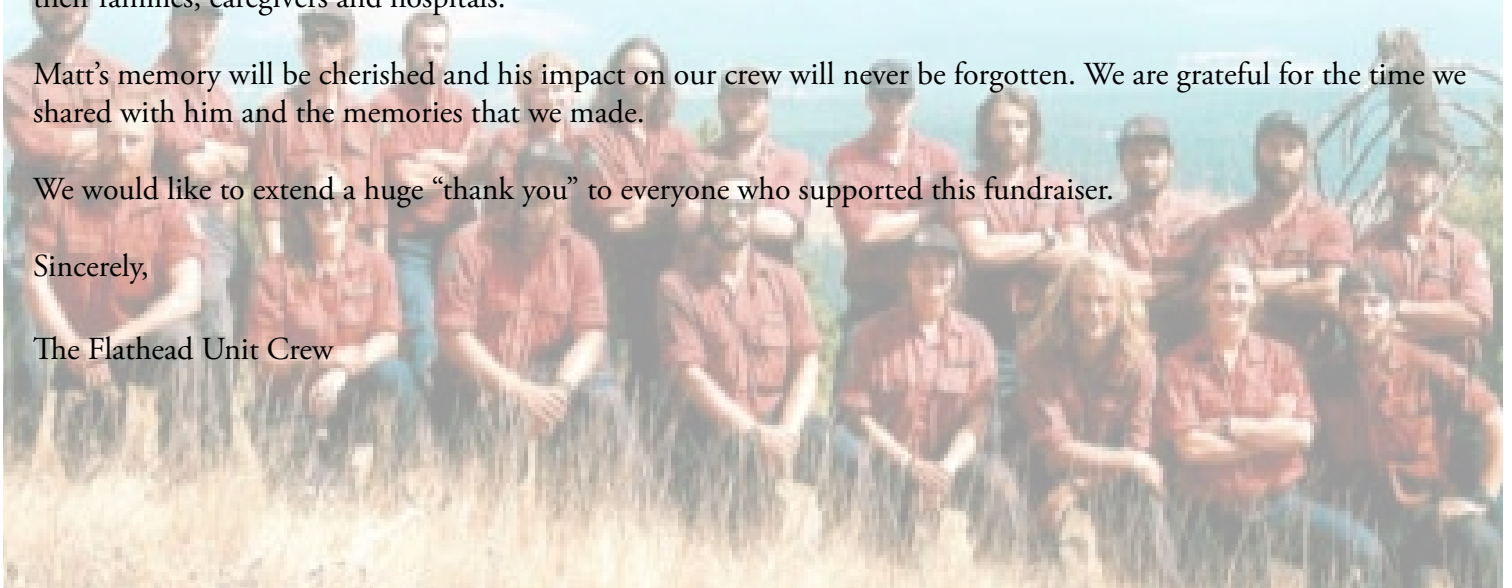
We would like to extend a huge "thank you" to everyone who supported this fundraiser.

Sincerely,

The Flathead Unit Crew



In the spirit of Hutch's passion for Hockey, the crew created a commemorative patch to be worn on their uniforms, taking from a tradition of sports teams. The Hutch patch sits above the Flathead Unit Crew patch on the crew's reds, and is a great reminder of Hutch's contribution to the crew.



Great Bear Rainforest receives special designation



Together our forests will thrive

As part of the Royal Tour, Their Royal Highnesses the Duke and Duchess of Cambridge officially endorsed the Great Bear Rainforest under The Queen's Commonwealth Canopy initiative.

The Great Bear Rainforest was originally established through land-use decisions first announced in 2006. Earlier this year, after extensive discussions with First Nations and stakeholders, a final ecosystem-based management system was agreed to and additional new areas will be protected.

Under the Great Bear Rainforest land use order, 85% of the forest is now

protected and 15% will be available for logging, supporting local jobs. The area available for logging is under the strictest logging rules in North America. The Great Bear Rainforest is globally recognized for its unique biodiversity and is one of the largest intact tracts of coastal temperate rainforest in the world.

Agreements were reached between the Province of B.C., Coastal First Nations and Nanwakolas Council for management of the area, based on recommendations submitted by three environmental groups (Greenpeace, Sierra Club BC and Stand) and five forest companies (BC Timber Sales, Catalyst

Paper, Howe Sound Pulp & Paper, Interfor and Western Forest Products).

The Queen's Commonwealth Canopy was launched in 2015 with the goal of uniting the Commonwealth's 53 members in conserving forests for future generations. The initiative, in The Queen's name, will raise the awareness of the Commonwealth's 2.3 billion citizens of the value of saving forests and facilitate knowledge exchange between Commonwealth members, sharing best practices and creating new, collaborative initiatives for forest conservation.



Continued...

Great Bear Rainforest cont...



Chief Forester's Leadership Team

Submitted by: Allan Powelson, A/Senior Manager, Tenure Operations and Sustainability, BCTS

The team's vision is to:
"Create unified leadership to help shape future forests through management rooted in science to promote healthy, ecologically diverse, resilient forests that will sustain a strong forest sector in B.C."



Back row (behind rail) L to R: Shawn Hedges, Al Powelson, Mark Tamas, Domenico Iannidinardo, Atmo Prasad, Lorne Bedford, Albert Nussbaum, Romona Blackwell, Don Hudson
 Front row (in front of rail) L to R: Rick Monchak, Pam Silver, Shannon Janzen, Michelle Todd, Diane Nicholls, Ric Slaco, Sharon Hadway

In summer 2015, a group of major licensee Chief Foresters from across British Columbia, who operate on Crown lands, were brought together by the Province's Chief Forester Diane Nicholls, to have a "think tank" session on forest sustainability in the context of current challenges. From those initial meetings, the Chief Forester's Leadership Team (CFLT) was established.

As part of meeting that vision the CFLT had a few days in the field in July this year to examine, relative to some of the CFLT's proposed fibre sustainability metrics, the outcomes of 10-year measurements of the Silviculture Treatments for Ecosystem

Management (STEMS) research site in the Sayward Forest near Campbell River. The CFLT discussed the ties between field condition, reporting, timber supply determinations, forward looking planning and management unit specific fibre sustainability metrics. As well, the CFLT also examined parts of the Discovery Islands to discuss how science and fibre sustainability metrics fit within the social and economic realities.

The following morning the CFLT met with North Island community leaders to have an informal discussion, in relation to the recent Union of British Columbia Municipalities Forest Policy Survey, on how forest companies

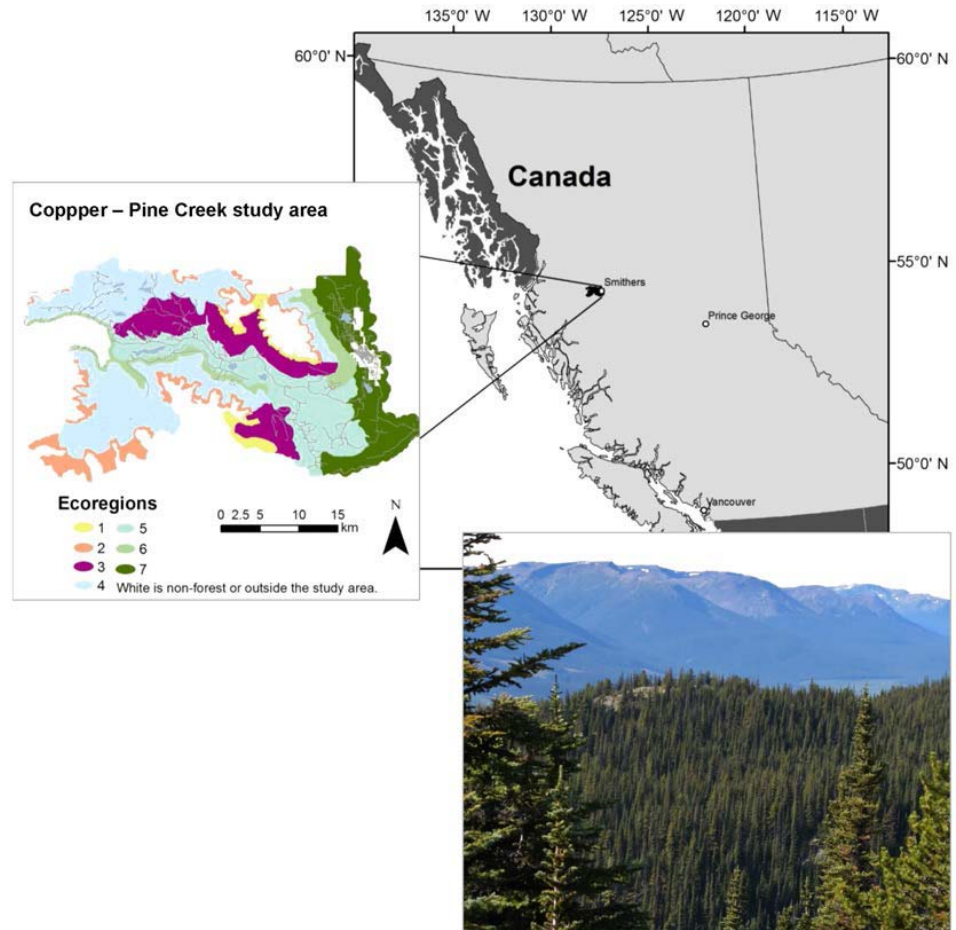
and the province can better engage with communities on the topic of forestry and resource management.

The Chief Forester Leadership Team's discussions provide a starting point for developing and testing measures for sustainable forests, which will be reasonable and implementable within the context of the current and future economic situations and consider B.C.'s societal goals and objectives for long-term supply of economic fibre and environment health.

New research results on climate change effects on forest productivity and carbon: Case study of the Copper-Pine Creek Valley

Submitted by: Caren Dymond, Research Scientist, Competitiveness and Innovation Branch

BACKGROUND: Both internal and external stakeholders are urging FLNRO to do more to mitigate and adapt to climate change in our management of natural resources. As part of our response, we have initiated a research program into projecting potential climate change impacts on natural resources and assessing adaptive management strategies. We have completed the initial phase of a project within this larger program—The Copper-Pine Creek Impact Assessment. For a 73,400 ha valley west of Smithers, we assessed the climate change impacts and risks to timber supply and carbon sinks until 2050. This was done using simulation modelling of four different productivity scenarios, with and without climate change.



RESULTS: The projections indicated that forest productivity and growing stock is expected to increase for the ESSFmc, ESSFwv and ICHmc1 variants due to warmer conditions. However, the SBSdk productivity and growing stock may decrease or remain the same as it has been historically. The productivity and growing stock of the SBSmc2 was projected to increase under some scenarios, and decrease under others. Over much of the valley, the increased productivity was projected to result in greater carbon sinks. However, in some scenarios, the ICHmc1, SBSmc2 and SBSdk were net sources of carbon to the atmosphere. Due to the short time frame of the simulations (to 2050) and the age class distribution of the forests, harvest rates were unaffected by climate change impacts because we are harvesting the existing, mature stands. Western hemlock biomass increased under climate change, but it showed no signs of spread, possibly due to the short time period.



Dave Coates, Research Silviculturist, Skeena Region

Continued...

Copper Pine continued...

CONCLUSION: There are large uncertainties associated with any future projections; therefore tree productivity needs to continue to be monitored to determine the appropriate adaptive management. If the productivity of the ESSF variants increases, greater harvest rates may be sustainable. Furthermore, it may be desirable to diversify the reforestation of SBS variants to include species or provenances from warmer areas of BC that may be able to counter the loss in productivity and sources of carbon emissions projected in this study. Climate change impacts varied among species and site conditions—this indicates that both of these components need to be taken into account in when considering climate change mitigation activities and adaptive management.

NEXT STEPS: The next phase of this project will lengthen the projections to 2100; assess different management strategies, risks to lodgepole pine from insects and diseases and implications for wildlife habitat.

Dymond, C.C., Beukema, S., Nitschke, C.R., Coates, K.D., & Scheller, R.M. (2015). Carbon sequestration in managed temperate coniferous forests under climate change. *Biogeosciences Discussions* 12, 20283-20321.

<http://www.biogeosciences-discuss.net/12/20283/2015/bgd-12-20283-2015.html>



National Forest Week is sponsored across Canada by many individuals and diverse governmental and non-governmental organizations across Canada. National Forest Week started in the 1920s, National Forest Week is a great opportunity to celebrate the many benefits we enjoy from our forests. This year, National Forest Week was celebrated September 18 – 24, 2016.

This year's theme, True North, Strong and Green! Canada's forest sector is stronger, more diverse and more high-tech than ever. Creating renewable, wood-based products, materials and energy, we are helping to fight climate change while bringing new growth to an economy deeply rooted in healthy sustainable forests. From car parts, to bio-plastics, to tall-wood construction, our future looks green!

The Dirt wants to hear about how you celebrated Forest Week—find us on [Facebook](#) and tell us your stories and share your photos!



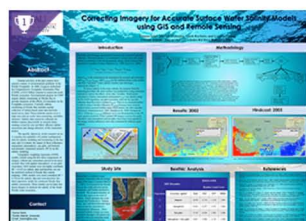
UC ESRI USER CONFERENCE

June 27 – July 1, 2016 | San Diego Convention Center

Azadeh's submission entitled "Landslide Susceptibility and Elements at Risk Assessment" took 3rd place in the map gallery award for "Analytic Presentation" at the ESRI UC Conference, San Diego, US (June 27 – July 01, 2016). This category represents work that identifies and communicates a problem or issue using maps and additional graphics but with a focus on the methods, techniques and processes used in the analyses. This year, over 700 maps were submitted for the Map Gallery. A select number of international qualified ESRI judges are privileged to evaluate and assess these entries each year. (for more information: <http://www.esri.com/events/user-conference/exhibits/map-gallery-results>).



ANALYTIC PRESENTATION MAP



First Place

Title: Correcting Imagery to Make More Accurate Models in GIS

Authors: Donna Selch, Mark Rochelo & Dr. Caiyun Zhang

Organization: Florida Atlantic University

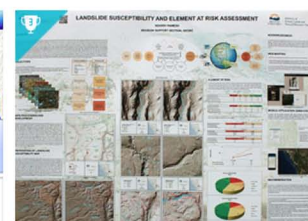


Second Place

Title: Protecting Los Angeles County's Scenic Ridgelines

Authors: Martha Selig

Organization: Los Angeles County Department of Regional Planning



Third Place

Title: Landslide Susceptibility and Element at Risk Assessment

Authors: Azadeh Ramesh

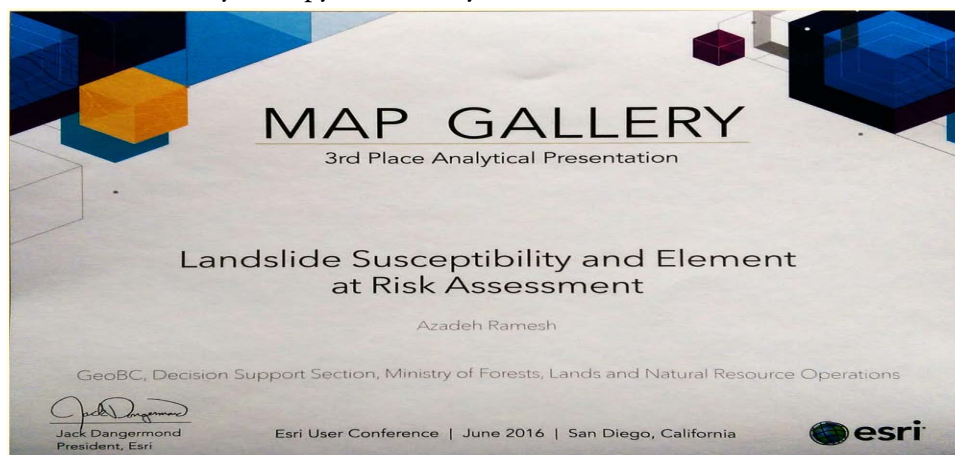
Organization: GeoBC, Decision Support Section, Ministry of Forests, Lands and Natural Resource Operations



10 Best Places to Work
2016 Winner

GeoBC

Bio: Azadeh Ramesh obtained her PhD in Physical Geography from the University of Vienna and was involved in various natural hazard/risk projects for a number of years. She also received a research award from the University of Vienna for outstanding research on flood hazard assessment. Azadeh is currently working with GeoBC, and within the Decision Support Section group, she deals with hazard mapping and LiDAR related topics. She is assessing and testing the application of LiDAR in forest inventory/canopy, ECA analysis, and hazard/risk assessment.



Larry Pedersen, former Chief Forester Plants a Tree

Submitted by: Brian T. Barber, BSF, MA, RPF, Director, Tree Improvement Branch



It has been a long-standing tradition to plant a tree in honor of those who have made significant contributions to forest management and research at the ministry's historic Cowichan Lake Research Station.

On August 6, 2016, over 30 people attended a tree planting ceremony and lunch at the station's Conference Centre for Larry Pedersen, former Chief Forester 1994-2004. Larry began his Public Service career with the Inventory Division in 1975 and retired as Deputy Minister, Ministry of Agriculture in 2010. Larry was instrumental in revamping BC forest practices, timber supply reviews and forest genetics program. Larry, known for his oratory skills, shared several entertaining stories of his experiences and gratitude for the many passionate people he worked with over the years. He selected a lodgepole pine to be remembered by. A coastal sapling was selected so it may survive the milder wetter conditions. Many thanks to Tree Improvement Branch and CSNR staff who helped make this event possible.

Note: the Cowichan Lake Research Station Conference Centre is available for work-related meetings and events. Further information and contact information is found on its [website](#).



BROTHER CREWS: A new approach to building crew cohesiveness

Submitted by: Andrew Wood



Over July 12th-14th, the Chilcotin Ravens unit crew visited the Pemberton base of the Heatseekers and Salish unit crews. The trip was an initiative three years in the making. It started in 2013, when Bob Mitchell, Forest Protection Technician of the Cariboo-Chilcotin Zone, began speaking with Dave Pascal, the Heatseekers crew supervisor. In 2014, the Ravens had their first non-First Nation crew members join, a transition 18-year veteran Dave Pascal, experienced with the Heatseekers in 2000.

After experiencing significant turnover on the crew in 2015, retention of new recruits, good leaders and experienced crew members are objectives the Ravens have deemed important to their success. With that in mind, Ravens crew supervisor Tristan Hansen's ultimate goal for the trip was "to initiate a change in mentalities, to build our self-awareness, foster our personal strengths and start

working together to drive the crew towards success." It was with this in mind that the Ravens travelled to Pemberton, eager to learn how to improve crew buy-in and establish mentorship while maintaining a strong First Nation heritage.

Speeches during the visit highlighted the value of strong crew relationships and a sense of commitment to the job, while also speaking to common challenges all three crews face.

In a presentation woven together by sharp personal anecdotes, Rob Dombowsky, Forest Protection Officer for the Pemberton Zone, highlighted the use of an employee-signed charter of expectations. He emphasized the importance of strong relationships with colleagues in overcoming personal adversity, as did many other presenters.

Heatseeker crew supervisor Dave Pascal's speech touched on common recruitment issues for small communities, such as Alexis Creek,

where the Ravens are based, and in the Mount Currie Indian Reserve, located outside of Pemberton. Without the option of street hires, local recruitment for small, rural communities has become difficult. Pascal acknowledged that the Heatseekers have a regional crew identity, with members from Mount Currie, Pemberton and Whistler and was enthusiastic that the Ravens have their first-ever junior crew member.

Junior crew member Vince Austin was impressed to learn how much commitment people can have for a job they are passionate about. "As someone entering the workforce, it inspires me to see people who have achieved that level of commitment."

Other activities for the visit included fitness and building a hand-carved sign with all three crew's logos. Time was also set aside for valuable interaction between crew members.

While all of the crews learned from each other, the legacy of the Salish

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Brother Crews cont...



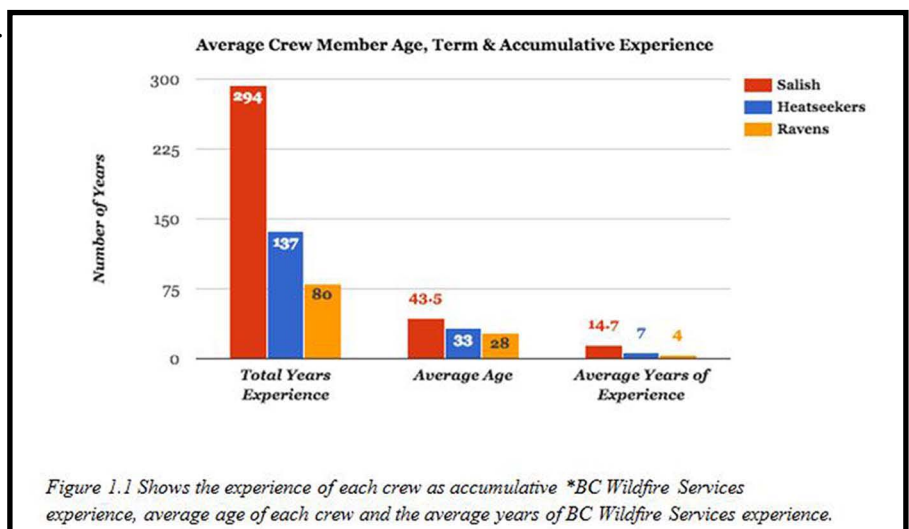
unit crew is truly extraordinary and commands respect. At an average crew member age of 43.5, with 10 crew members in their 50's and with an accumulated 294 years of BCWS experience, it isn't hard to look up to a crew with the legacy of the Salish.

The Salish unit crew also embodies a unique sense of comradery and teamwork that extends well beyond the fire season. Although their contracts with the BCWS do not begin until spring, on January 1st of each year, members of the Salish unit crew begin meeting 5 days a week to hike a marked trail, timing themselves and preparing for the fitness test that fire fighters need to complete in under 14 minutes and 30 seconds before returning to work each season. The Salish unit crew has hung flagging tape at the 14 minute and 30-second mark along a First Nation heritage trail; a trail that coincidentally has maintained fitness and helped to establish the Salish unit crew's ongoing legacy.

The trip to Pemberton allowed the Ravens to form relationships with other crews, to learn how they build multiple decades of cohesion and allowed the Ravens to experience the strong sense of pride and community within the Pemberton crew. It also allowed for ongoing mentorship to be established between the squad bosses. Bradley Jimmie, was asked by 25-year veteran Marshall Ritchie: who do you represent?" Jimmie, an eight-year crew member and first-year squad boss replied: "I am a proud member of the Ulkatcho First Nations Community." To which Ritchie said "good" and explained "95 % of people answer by pointing to the patch."

During the trip debrief, Jimmie explained Ritchie's mentality to the crew. "It's not just the patch on the arm—they aren't doing it to represent just the Forest District—they are representing much more—their heritage, their culture, their families, and where they come from. That was one of the biggest things I got from the trip."

While Jimmie was talking about his personal experience, it also pertains to the evolving identity of the Ravens unit crew: proud of where we come from, proud of our history and proud to be part of the Chilcotin Ravens unit crew family.



Noosgulch Bridge

Submitted by: Kerry Phillips, RFT, Bella Coola Field Office, North Island - Central Coast



“The Great flood of 2010”

in the Bella Coola Valley was one of those movie like moments that you witness on TV and can't really comprehend unless you are there living it. Leaving my water surrounded house via helicopter with my 2yr old beside me and my 3 month old in a carrying pack strapped to my chest was terrifying to say the least. Now as the 6yr anniversary of the event draws closer and the FLNRO engineering projects are all finally completed one particular project stands out to me. The rebuilding of the Noosgulch 1km bridge and regaining access to the Noosgulch Valley.

The September 2010 flood in the Bella Coola Valley was an enormous 1:200 year style flood which caused

significant damage to much of the Valley's infrastructure and triggered a Provincial State of emergency. Forest Service roads (FSR) and bridges were damaged or destroyed and millions of dollars of damage occurred to highways, bridges, protective dike works and individual properties. As a result of the event access to the Noosgulch drainage, located on the North Side of the Bella Coola Valley, was lost when the bridge at approximately 1km on the Noosgulch (FSR 8302) washed out as a result of the September 2010 Flood Event. The FSR provided access to nine separate parcels of private properties, one of which was a permanent private residence and timber harvesting land base for the Bella Coola Community Forest. Additionally, we were also advised

that a channel of the Noosgulch alluvial fan was currently washing over a registered archaeological site with more than 80 graves and was in danger of exposing it.

The project was daunting to say the least, requiring significant involvement and cooperation from a diverse team of individuals which included other Government agencies, private property owners, FLNRO staff and local First Nations to come up with a workable solution to restore access back to the North Side of the Noosgulch River. It was a challenging task to come up with a solution that was agreeable by all invested parties, as interests between stakeholders and professionals differed significantly depending on their motivation and area of

Continued...

Noosgulch Bridge cont...

expertise. Additionally, we had to meet the expectations of Emergency Management British Columbia (EMBC, PEP) with regards to standards and budgeting for funding the project.

The complex project involved numerous individuals with entrenched interests(i.e. land owners not wanting to deal with government or lose land, First Nations feeling it was their land and affecting their site, and business owners with invested interest in the area). Similarly the team of experts (biologists, engineers, contractors, etc.) which supported the project often had contradicting ideas and options on how to complete the project as they were focused on their area of expertise rather than the project as a whole. (i.e. temporary bridges vs ford, fish windows, blasting options, road layout, water management etc.)

It was felt that immediate (1-2yr) access wasn't required to support current resource opportunities, and that energies should be focused towards obtaining/creating appropriate professional assessments (hydrological, archaeological, engineering) for the drainage and exploring possible private land negotiations to ensure that a more suitable crossing site was obtained to better secure long term public access and support resource opportunities. We began the process of engaging and working with the Competiveness & Innovation Division (Real Estate Services Branch) and developed a team of district engineers, hydrologists, terrain specialists, archeologists, and local Nuxalk First Nations to work through the above recommendations.

After working closely with the team and listening to all of the different opinions we were able to finally source out a suitable option for a new right-of-way and bridge crossing. It was decided that although all the land that the proposed relocated road and bridge crossing sites would be on was presently private land,

once the Crown purchased the land and went through the process of establishing an FSR a Statutory Decision would be required. Under the Province's commitment to the Coastal First Nations (CFN) Engagement Framework Agreement (a legal entity of seven or more bands) we follow the Reconciliation Protocol and a Consultation Engagement Framework Agreement. It was determined the best course of action would be to initiate consultation with the local First Nations whose territory the road lays in before the Crown purchased the road from the private land owners.

As a result of the overall duration of the project, number of stakeholders involved and distance between individuals working on the project there were numerous cooperative challenges with regards to methods and options for completing the project. We arranged field meetings and brought in experts in given fields to provide advice and support to team members and stakeholders and worked to provide a variety of options and where possible compromised effectively gaining the trust of the road foreman and respect of the road and bridge contractors as well as private property and Nuxalk First Nations Band members. By personally engaging and interacting with each of the various team members, (archeologists, hydrologists, engineers, real-estate branch, First Nation's and private property owners), and keeping clear, concise and open communications with all stakeholders and team members we were able to work through the various challenges as they developed and build trust amongst the group and successfully complete the project.

I'm extremely proud to have been involved with the project and the working together of many FLNRO staff, land owners and First Nations has resulted in re-establishment of a new bridge in a site that will likely be the last bridge to wash out in any future enormous flood.



Have a photo for the next "Photo Contest?"
Review the contest guidelines and send your photo's
to the [*FS News*](#) Advisory Group!



2016 Fire Season

Submitted by: Ian Douglas, Wildfire Enforcement / Prevention Officer and Kally Khaira, Deputy Manager, BCWS Wildfire Risk

The 2016 fire season started with a fury in the Prince George Fire Centre (PGFC) during a mid-April fire storm that resulted in the ignition of 71 fires over a period of several days. All these fires occurred within the Dawson Creek and Ft. St. John Fire Zones.

In response, BCWS deployed a team of Fire Origin and Cause (FOC) Specialists to commence the process of determining the origin and cause for many of these wildfires. In addition, 17 BCWS staff members from all fire centres, trained in FI-210 Origin and Cause Determination, were deployed to support the PGFC resource request. The deployment also added a BCWS Legal Clerk to the team to provide administrative support. Over a 2 week period, the BCWS Fire Origin and Cause teams investigated 47 of the 71 fires. All the fires were determined to be human caused, many with significant consequences. In addition to the support received from the other fire centres and zones; the PGFC also received support from our colleagues at the Compliance and Enforcement Branch (CEB), who deployed a team of 20 Officers

to conduct contravention and non-compliance investigations. The CEB Officers worked in collaboration with our Fire Origin and Cause staff.

Although these fire incidents were serious and had the potential for tragic consequences, in hind sight, there were many positive outcomes. The rash of fires provided extensive opportunities for our BCWS Fire Origin and Cause Investigators to receive mentoring from the Fire Origin and Cause Specialists. The event provided a year's worth of mentoring experience over a short period of time. Also, the good team work experienced by the BCWS and CEB staff has fostered new working relationships and collaboration between BCWS and CEB.

To further highlight the activities of 2016, BCWS also provided support to the Government of Alberta during the Fort McMurray wildfire crisis, deploying two Fire Origin and Cause Specialists to conduct investigations. Ian Douglas and Mike Sidow were deployed to assist with

investigations on two separate Canadian Interagency Forest Fire Centre (CIFFC) resource requests.

BCWS FOC Investigators continued to work steadily throughout the 2016 fire season, with notable deployments to the Kamloops and Coastal Fire Centres. During these deployments, there were continual opportunities for mentorship and relationship building with our partners in law enforcement.

As a result of these efforts, significant costs will be recovered in 2016 and a strong contribution has been made to the BCWS prevention program. BCWS would like to acknowledge the team work and collaboration between BCWS and CEB; along with acknowledging the support of the Fire Origin and Cause Specialists for leading investigations and helping to build BCWS investigative capacity.

Summer Students

Submitted by: Pat Berston - Resource Specialist Revenue, Quesnel Natural Resource District



Leor Oren, Danielle Zandbergen, Evan Horley, Janelle Harder and Jake Guerin

The Quesnel Natural Resource District was fortunate to have five super students working in our office this summer. They primarily worked in our Range, Stewardship, Revenue and Habitat Programs, but were willing to lend a hand wherever they were needed—it was a great win/win. They had all sorts of opportunities to broaden their learning experience and we got to take advantage of their energy and new perspectives. The students were amazed about the diversity of all the different programs the Ministry of Forests, Lands and Natural Resource Operations (FLNRO) has to offer, we are so much more than tree harvesting.

The ability to have these students working in our office this past summer was a very positive experience for staff. Their energy and smiles were contagious and their zest for learning had many of us scrambling for answers.

Mentoring and growing young people is vital to our organization, these folks are the future of FLNRO. With so many of us looking to retire over the next few years, it is important we continue to utilize the summer student program.

Retirees Receive *The Dirt*!

If you are a former employee and want to keep up with the latest Dirt, please contact Richard Dominy and he will add you to the retiree's email distribution list. Provide email, home phone and home mailing address.

You can contact Richard directly at: Richard.Dominy@gov.bc.ca.



**Submit an Article to *The Dirt*
and receive a Notebook!**





A male wolverine at a site in Garibaldi Provincial Park

Wolverines (*Gulo gulo luscus*) are a Blue Listed (special concern) species in BC, and federally they are considered of special concern, primarily due to their sensitivity to human activities. Wolverines are also listed under the Identified Wildlife Management Strategy (IWMS) as a vulnerable species. While their populations are widespread throughout the northern hemisphere, within their distribution wolverine numbers are quite low in comparison to other carnivores such as grizzly bears (*Ursus arctos*).

The South Coast Region is unique in that it has high species diversity and is bounded by significant human populations: the US border, Metro Vancouver, Fraser Valley, and the Sea to Sky corridor. Despite the close proximity to major metropolitan centres, this area supports a high diversity of carnivore species despite human pressures. However, this extensive human presence can also affect the persistence of many

South Coast Wolverine

Submitted by: Cliff Nietvelt, M.Sc., R.P.Bio., Wildlife Ecologist

species of carnivores in the South Coast, primarily grizzly bears and wolverines.

Given these factors, there is a need to better understand the distribution and abundance of wolverine in the South Coast. Baseline information on wolverines in the South Coast was required to help better manage major projects, recreation and roads. In order to estimate the distribution and abundance of wolverines in portions of the South Coast, remote cameras with integrated hair snaggers were established at 71 sites, covering almost 10,000 km² in the Squamish and Chilliwack Natural Resource Districts. The technique involves a runpole with an aircraft cable strung between 2 trees. Bait (beaver, deer, elk or moose plus a cattle bone) is strung directly in front of the runpole as an attractant and a trail camera is placed on the tree opposite of the runpole. A lure (beaver, skunk and marten scents) is also applied to the runpole and adjacent trees as an attractant, and cattle blood is spread around the periphery of the site. This setup allows for the wolverine to be identified based on their chest and throat markings, which are unique to each animal. Hair is also collected via alligator clips and barbed wire, to help ID the animal (individual and sex) when a clear photo of their chest is not available. The hair snaggers consist of square plastic posts with alligator clips to grab the hair, while the support structure allows the wolverine to climb up it to get at the bait. Barb wire loops were also added to ensure enough hair samples are collected.

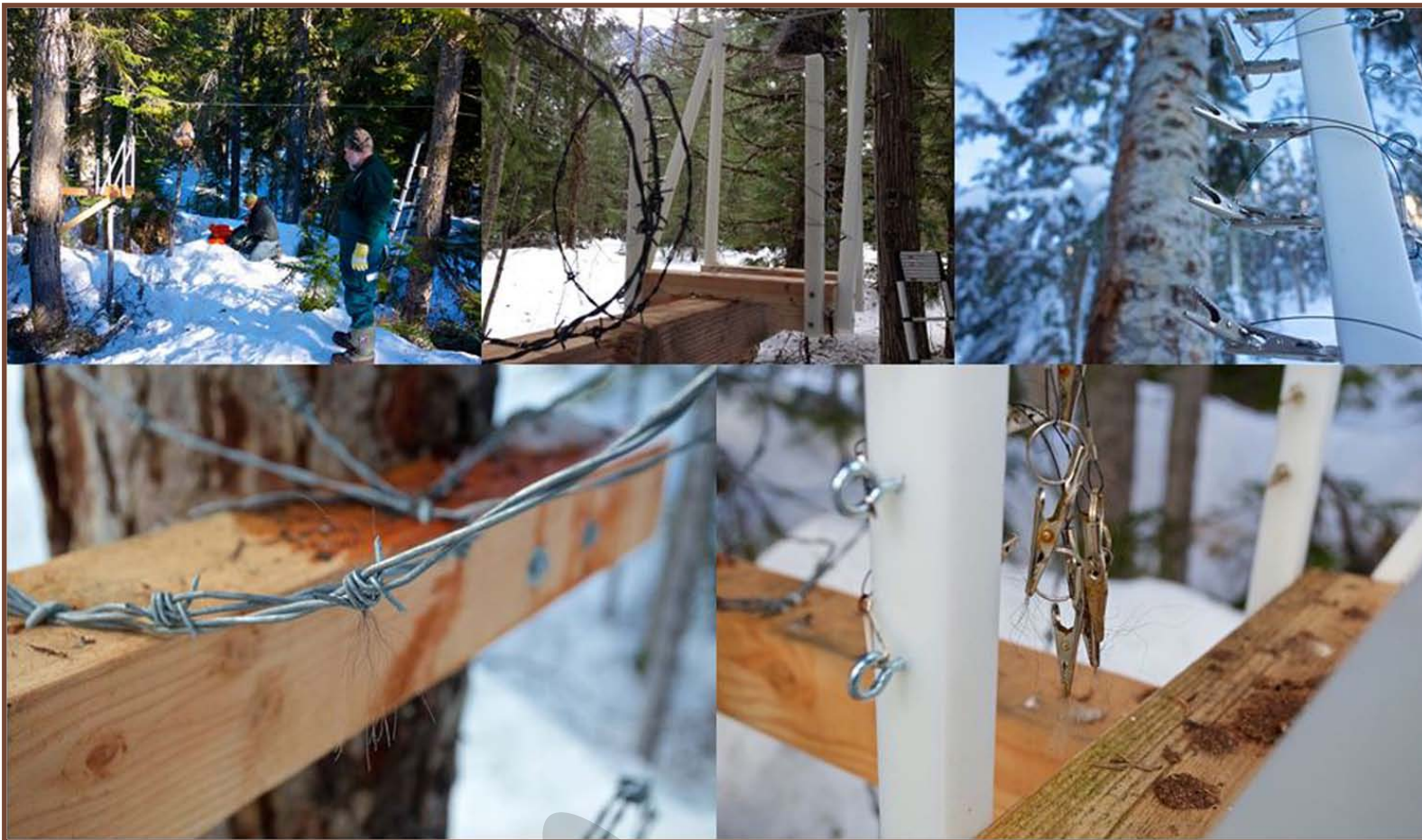
Key findings to date include:

- More wolverines were detected in the Coastal ecosystems than was predicted in a Provincial model. However, wolverine distribution is likely not even throughout the South Coast.
- Wolverines were detected at ~75% of all sites sampled.
- The highest wolverine abundance and detections appear to occur in areas isolated from human developments and activities and adjacent to a reliable food source (mountain goats or deer).
- One site can have as many as six different wolverines visit during the course of the sampling season, and at times two wolverines visited at the same time (Feb-May).

Future work will consist of: 1) analyzing the hair samples for the past two winters; 2) calculating actual wolverine densities in each study area; 3) and examining the factors that affect wolverine abundance and distribution (e.g., food, human disturbance, etc.). Analysis of the DNA will also shed more light on the effects of habitat fragmentation on wolverine populations. We assume that the major highways and human settlements are a barrier, but this needs to be tested by examining genetic variability. Future work will also look at determining the impacts human use and developments have on wolverine habitat use and movements. In order to best answer this question, research will have to look at radio collaring wolverines.

Continued...

Site Set up South Coast Wolverine Cont...



Have a Story idea?

Send *The Dirt* Advisory Group your ideas!

Don't forget about the Facebook page
<https://www.facebook.com/groups/flnrnews/>

Add your story to *The Dirt* facebook account.
"Participating in social media means contributing content or comment. When doing so, we trust you to be professional, personable, and relevant."

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Association of BC Forest Professionals — Climate Change Innovator Award

Submitted by: Brian Barber, Director, Tree Improvement Branch and Barry Jaquish, Research Scientist



Barry Jaquish and Jonathon Lok, Past-President, ABCFP



western larch growth -
Brian Barber

The climate is changing faster than BC's trees have adapted to in the past. The ministry's extensive research trials also demonstrate how trees maladapted to their environment are less vigorous and more susceptible to damage and pests. New strategies are therefore required to help maintain health and productivity of BC's forests.

In February 2016, the Association of BC Forest Professionals (ABCFP) presented its annual Climate Change Innovator Award to two ministry staff: Barry Jaquish, Research Scientist, Tree Improvement Branch in Vernon, and Frank Varga, BC Timber Sales in Burns Lake, who recently moved to a position with the Burns Lake Community Forest. Barry was recognized for his pioneering research in forest genetics, climate change and assisted species migration. Barry, and his colleague Dr. Gerry Rehfeldt, US Forest Service (Retired), used Global Circulation Models, forest inventory data, ecological information and western larch genetic test data to predict the contemporary and future distribution of western larch and its seed planning zones.

This map ([map link](#)) shows the contemporary range of western larch in green. The areas in yellow and blue, outside the contemporary range, were determined to be climatically suitable for western larch. Over time, western larch is projected to expand into these areas through natural seed dispersal and planting. [The Chief Forester's Standards for Seed Use](#) permit foresters to transfer western larch into the yellow and blue areas where it is ecologically appropriate and no more than 10% of total trees planted. The Standards which facilitate the migration of this native deciduous conifer will also enhance tree species diversity within the defined regions. Observations to-date indicates the young western larch stands are healthy and productive. More information on this topic, and other forest stewardship climate actions, can be found at above link and at: <https://www.for.gov.bc.ca/het/climate/index.htm>





Jennifer Hayek, a fire weather forecaster for BC Wildfire Service in Prince George, noticed during the first week of July that a temporary weather station set up at Philip Creek (near Mackenzie) stopped sending realistic wind readings. The station was still sending information but it was obvious from the data that the wind sensors were on the ground. She notified the radio shop, the unit that had set it up. Based on previous experience, the electronics technician suspected that an animal had passed through the area and inadvertently displaced the equipment.

Eric Arsenault, Electronics Technician at the Radio Shop in Prince George, returned to the site, accompanied by Errol Widdis, Wildfire Technician. Not only had a young bull moose been through the site and dislodged the sensors, it was still caught by the antlers in the guy wires that held up the radio antenna. The moose had been there for several days and had created a clearing around itself. Its attempts to break free only worsened the entanglement, as the tower remained anchored in the ground. It looked like a leashed animal. Flies were thick in that area but the moose could not get away to food or water. It was stressed, exhausted, suffering

Moose Rescue

from cuts and abrasions, and was certain to die or be attacked if left alone. There was no way to help without an intervention, so Eric and Errol contacted the local Conservation Officer, Denny Chretien. Denny led the rescue by tranquilizing the moose, cutting and removing the wire from the antlers, then giving it a reversal shot to revive him. The young moose got back on his feet and walked away to freedom again.

This was all in a day's work for the Conservation Officer, BCWS, and FLNRO Electronics Technicians, but it demonstrates the kind of collaboration that takes place locally within the Natural Resource Sector to maintain our capacity for resource and wildfire management. The weather station did not fare so well. Eric says, "I don't expect that

we will reinstall the station as a temporary station, but we may reinstall it as a permanent station with a free standing tower and no guy wires," demonstrating the safety ethic that goes into our daily work. Our wildlife friends also will definitely appreciate avoiding more meetings of this kind!

The Radio Shop is part of Information Management Branch, which is one of the branches supporting Corporate Services for the Natural Resource Sector. Behind this good news story, we see the flexibility and resourcefulness shown by CSNR staff to maintain support for our clients beyond the call of duty, when even the best-laid plans of moose and men can go wrong.



CO Helps
Moose
Recover

THANKS GUYS!!



Carrying on the legacy, championing innovation in the Forestry Sector

Submitted by: Mike Watts, RFT, Revenue/Tenures Supervisor, Thompson Okanagan Region



The Ministry of Forests, Lands and Natural Resource Operations is conducting a number of streamlining projects for the sector, some of which are supported by the Natural Resource Permitting Project (NRPP). There are currently two active Forestry projects: Cutting Permits and Occupant Licence to Cut.

Where my story began

My interest in the NRPP started a few years ago when a gentleman named Butch Morningstar came to our district to share his vision for a unified and streamlined way of doing business with government's natural resource sector.

I was working as a revenue-tenures supervisor in the Okanagan-Shuswap Natural

Resource District in Vernon, and saw a lot of similarities in the streamlining our team was already doing including early advances in our cutting permit process.

So when the time came to start gathering people to participate in Occupant Licence to Cut and Cutting Permit working groups, I eagerly put my hand up.

Now, nearly two years later, I am all in, and currently on a temporary assignment to help support the success of the NRPP Forestry Project as a business lead for the Cutting Permits (CP) Streamlining project.

How do I fit in?

When I first joined the team I wasn't sure how I'd fit into the bigger picture. Now, I see that my operational perspective, the relationships that I've built and my experience working in a number of different districts (Bella Coola, Terrace, Dawson Creek and Vernon) have been very useful in turning the vision into real life work.

I have become a champion of the Natural Resource Permitting Project's CP Streamlining Project. I see the value in the work that we are doing, and have seen the benefits of streamlining in my own district, the Okanagan Shuswap Natural Resource District. We've pioneered efficiencies like delegated decision making by staff and

embracing and supporting professional reliance.

Where we're at now

Right now we have 23 different districts and 23 different ways of doing things. This didn't happen overnight. We all started with the same manual but over time people have found ways to adjust to meet the needs of their area.

So, I fully understand the challenge in bringing everyone's unique perspectives to the table, but I also know that it is possible.

I attended an early meeting with Kevin Kriese, Assistant Deputy Minister - North Area where he said that we are embarking on a generational opportunity that we need to embrace. Communities are ripe for innovation and there is continued pressure on staff resources, as well as shifting priorities in government. NRPP provides a window of opportunity to update our processes and support the improvements that many in the industry have been waiting for.

We can work together to create a provincial approach that positions each of our 23 Natural Resource (Forest) Districts and all of our licensees in a space where we share common ground. We can bring consistency to the application process and to how we adjudicate and issue cutting permits.

Continued...

New Natural Resource Officer Training Academy has new recruits hitting the ground running

Submitted by: Brad Bowman, Natural Resource Officer, Compliance and Enforcement Branch – Coast Region



Earlier this year, the Compliance and Enforcement Branch hired 23 new Natural Resource Officers, who were selected through a rigorous competition that saw approximately 500 applicants come through. This elite group of individuals have been employed across all 8 regions in the organization bolstering the on the ground presence to 165 Officers across B.C.

They were the inaugural class of the very first Natural Resource Officer Academy. This intensive five week Academy took place at The Pacific Regional Training Centre (PRTC), a world renowned training facility also home to the Department of National Defence, Canada Border Services,

and the Royal Canadian Mounted Police.

The Academy started on February 1, 2016 and the 23 new recruits received their certificates, authorities and delegations at Graduation day on March 2, 2016.

The training consisted of introductory courses: Legislation, Policy, Procedures, Standards of Conduct, Safety Protocol, Roles and Responsibilities, Systems, Basic Law, Enforcement Techniques, Verbal Judo, Confrontation Management, Investigations, Compliance Options, and scenario based field training. The week prior to the academy uniforms, work stations and

government onboarding also occurs so that the new recruits have the equipment and government access to be actively working once the academy is complete.

With the help of the new recruits, the Compliance and Enforcement Branch can have a greater impact protecting B.C.'s land, water, forests and cultural resources for future generations.

A new competition will be initiated soon and another training academy is in the works for the next recruitment drive. The second Natural Resource Officer Academy is expected in January 2017.

Continued...

C and E New Recruits cont...



Back row, left to right:

Levi Bauder, Kyle Bueckert, Robert Grouchy, Braeden Lattanzi, Maegan Pauls, Zane Testawich (since left to join COS), Shayla Frechette, Katrina Iverson, Tammy Jones, Tristan Hopkins and John Coles

Front row, left to right:

Adam Vojnic, Doug Gow, Christopher McLean, Debbie Flaata, Erin Badgero, Logan Donovan, Tony Temple, Perry Temoin, Chris Emslie, Elliot Molsberry and Sam Isaak. Missing from photo: Shannon Dixon.

Submit an Article to *The Dirt* and receive a Notebook



44th Annual BCFS Golf Tournament



Ominous Williams Lake sky just before the Saturday afternoon weather delay

Just like Old Faithful, Williams Lake hosted the 44th annual BCFS golf tournament September 10-11, 2016. The 49 golfers who participated were in an extremely effervescent mood that the Saturday afternoon thunderstorm couldn't even dampen. A short frost delay on Sunday resulted in most golfers finishing their round under a bright and warm Cariboo sun!

Results

<i>Flight</i>	<i>Category</i>	<i>Name</i>	<i>Score</i>
Men's overall	Low Gross	Rob Bardossy	161
Ladies overall	Low Gross	Rachelle Satrum	179
Men's Overall	Low Net	Steve Dodge	137
Ladies Overall	Low Net	Shannon Carson	152



Low Gross Rob Bardossy



Low Gross Rachelle Satrum

Continued...

44th Annual BCFS Golf Tournament cont...



Retiree Low Gross Rob Bowden



Ladies Low Net Shannon Carson



Low Net Steve Dodge



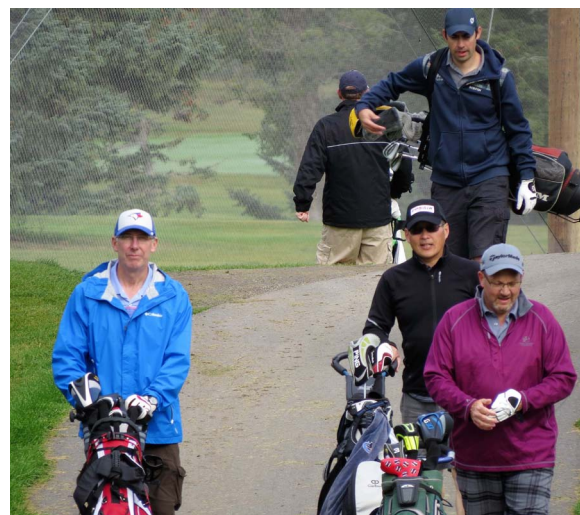
Blue Boy Winner Matt Sherlock



Harold Stolar photographer



Man and cart down 150 yards from 10th green



2 down, 34 to go for Quesnel team #2

The Dirt Photographers!

Time to get out and snap some photos! *The Dirt* Advisory Group increasingly requires good quality digital photos for the quarterly newsletter. We acknowledge that there are skilled photographers among ministry staff and would like to showcase your photos in each quarterly edition.

Categories

Photos can consist of:

- Workplace images – individuals or groups / teams in office and field settings; health, wellness and social activities;
- Community involvement;
- Wildlife; or
- Scenic.

Submission Details

- Deadline for submissions is changed with each edition and will be noted on the previous edition.
- Images can be submitted to: FLNRNews@gov.bc.ca
- The contest is open to all ministry employees and retirees.
- Interested staff can make submissions to as many editions (season/category) as they want, but there is a limit of five images per category.
- We are looking for recent photos, please limit your entries to shots taken within the past 2 years.

Prizes and Judging

- There will be an overall 'Best' image in each category;
- Judging will be done by the Advisory Group;
- Images will be judged on composition, clarity, exposure, creativity, relevance to the ministry and category fit;
- The winner of the 'Best' image in each category will be sent a prize for their photo;
- Individuals can win only one prize; and
- All winners will be announced with their photo in the edition of the newsletter.

Technical Specifications/Requirements

The following specifications and requirements have been established to ensure that images can be used in a variety of applications.

1. All images must have relevance to the ministry and be submitted in digital format.
2. All images must be in full colour or black and white.
3. Photo dimensions (image size) should be at 300 dots per inch (DPI) and preferably in a jpg format and sent to FLNRNews@gov.bc.ca
4. Images can be digitally enhanced (i.e., colour / exposure adjusted composite photos are okay), but not digitally altered (i.e. NO "Photo-Shop" images must portray subjects and / or material in photo as they were captured).
5. When submitting images, some descriptive information should also be included – category of image and location.
6. All images submitted, whether or not selected as a winning image, may be published in future issues of the newsletter.

For further information, contact:

FLNRNews@gov.bc.ca

DEADLINE IS December 9, 2016.

View and Select your Prize!!
(embroidery: *The Dirt* - Newsletter Advisory Group)

Prizes

Don't forget to try your hand at writing a limerick or poem. Send *The Dirt* Advisory Group your ideas!

September Edition Photo Contest Winners!

Thank you to all who submitted a photo!

Wildlife Category - Jellyfish at Sidney Spit

Photo taken by: Robin Howe, Team Lead, Web Infrastructure



Photographers, please contact the [Advisory Group](#) to claim your prize or contact [Sonia Donison](#) directly.

Scenic Category - Klinaklini Glacier located in the coast mountains. I flew past it while servicing BCWF weather stations this summer.

Photo taken by: Schuyler Den Dulk, Information Management Branch



Photographers, please contact the [Advisory Group](#) to claim your prize or contact [Sonia Donison](#) directly.

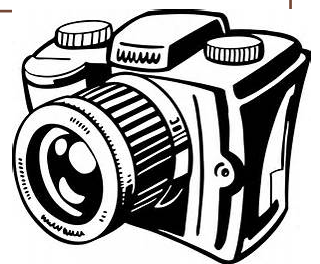
Workplace Category - Tough day at the office; Barclay Sound, west coast Vancouver Island, Residue & Waste surveys.
Photo taken by: Peter J. Goode, Natural Resource Officer, West Coast Region, Compliance and Enforcement Branch

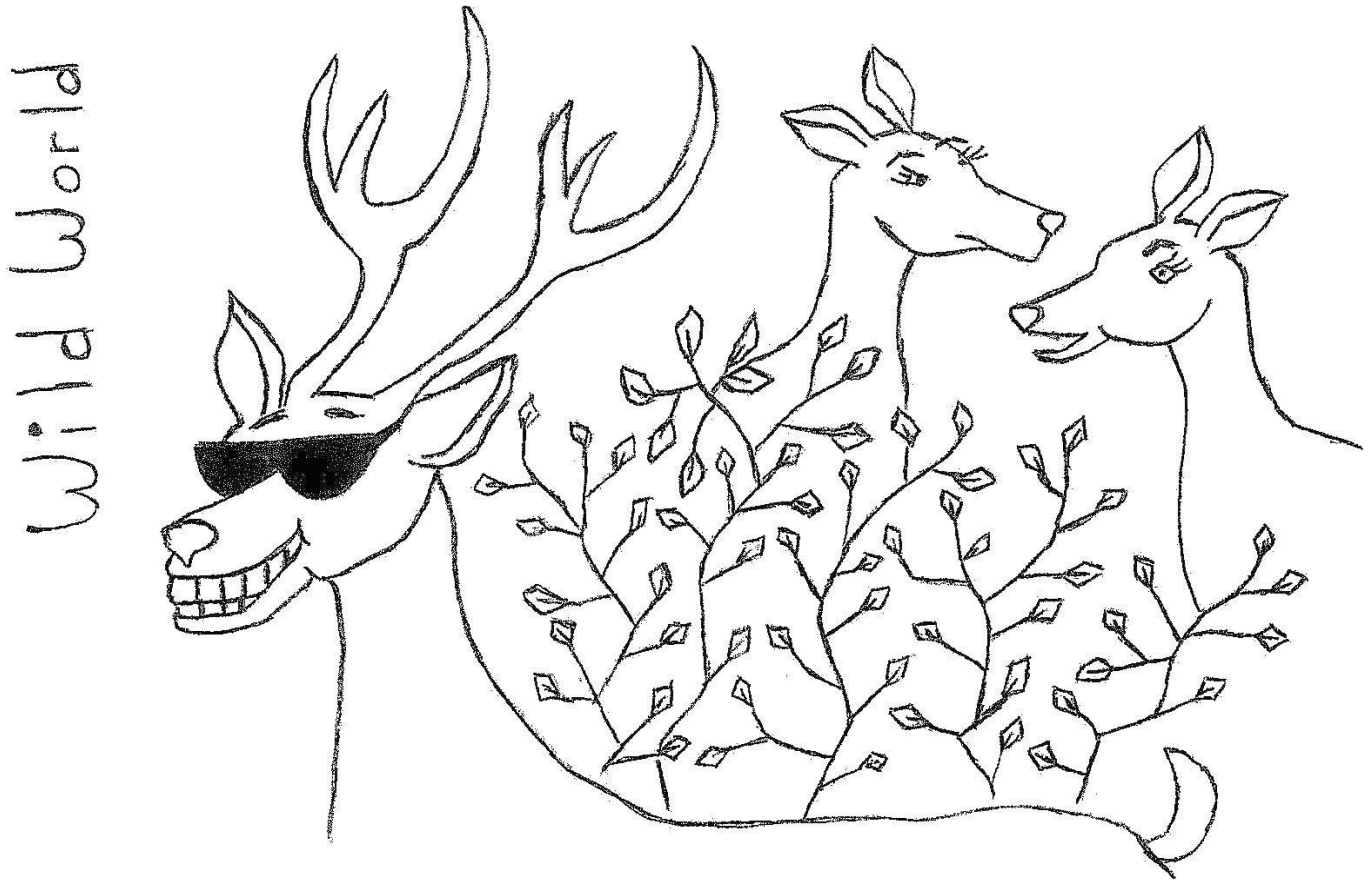


Photographers, please contact the [Advisory Group](#) to claim your prize or contact [Sonia Donison](#) directly.



Have a photo for the next “Photo Contest?”
Review the contest guidelines and send your photo’s to
the [FS News](#) Advisory Group!





There's been no living with him ever since he was featured on the new FLNRO logo.

Sheila Tucnik

The Dirt is a quarterly newsletter for all employees and former employees.

Sonia Donison is providing management and coordination support for the newsletter. Questions or comments about the newsletter should be directed to Sonia at 250-356-9638 or via [email](#).

Call for Stories/Ideas

The success of the newsletter depends upon the active engagement of staff throughout the organization. One way for people to support the newsletter is to share your ideas, news, stories, successes, experiences with revitalization and learning, celebrations and photos for use in future

editions of the newsletter. People are asked to check with Sonia at 250-356-9638 or via [email](#) about their idea or ideas before writing a story. Stories are to be submitted no later than 2 weeks prior to each quarterly edition—

deadline for articles is

December 9, 2016



SUBMISSION GUIDELINES