# Surplus Plotter Film repurposed as Medical Face Shields

Submitted by: Chris Ens, Geospatial Services Team Lead, Thompson Okanagan Region

In March, as much of society shut down for COVID-19 prevention measures, our ministry was able to contribute to the support of frontline healthcare workers by handing over our surplus mapping film and overhead projectors slides as supplies for creating medical face shields.

The Kamloops Makerspace, a non-profit society for the DIY community, was approached by Royal Inland Hospital enquiring about helping with making 3D printed face shields that would use overhead projector slides. Working further with Dr. Bill Stinson at the hospital they came up with a simpler face shield design held in place by glasses and is produced quickly using a laser cutter. It was dubbed the "Dr. Bill".

The next issue to overcome was to source transparent plastic which was sold out across the continent as manufacturing of PPE ramped up. This is where our ministry got involved. Chris Cummings, Geospatial Services Team Lead in the Cariboo Region and an avid CBC listener, overheard a morning show interview with Nicholas Adams from the Makerspace talking about his production of face shields and difficulty sourcing materials. Chris thought that the clear plastic film that we used to use for plotting transparent map layers may be the sort of plastic they could use. After contacting Nicholas to enquire further, he bounced the idea off his counterpart in Kamloops, Chris Ens. They quickly got the word out to their fellow team leads in the Geospatial Resource

continued page 3

***Advisory Group Vision:***

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



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# *The Dirt* Facebook

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Issues of "*The Dirt*" will be posted online quarterly. The newsletter and facebook group are for all employees and former employees and is intended to provide up-to-date information on the organization. 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.

**Submit an Article to *The Dirt* and receive a Notebook or Fruit Infused Water Bottle**

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## Medical Face Shields continued...

Coordination Team, and with the help of Regional Executive Administrator, Janice Sapp, sent to colleagues across the FLNRORD ministry. Surplus plastic plotter film as well as overhead projector slides were shipped to our office in Kamloops and sent into immediate production at the Makerspace.

By mid-April the Makerspace had produced 4000 medical face shields from our supplies and probably double that with supplies that were provided since. They have been put to use by doctors, nurses, and community service workers.

In passing on his gratitude Nicholas says "I have had people break down in tears when they received their Dr. Bills. Recipients are telling us how much of a piece of mind they have gained wearing the shields." He included this photo of Dr. Keith Hutchison and Dr. Anders Ganstal. "Both wear their shields every shift. Patients can see and hear them well. They appreciate the extra full-face protection over their lenses and mouth masks. Light, clear, and easy to clean. Kept in their lockers post shift. They relay their thanks."

Thanks everyone for your contributions! It is great to see our surplus used for such immediate and important needs!

## Memories of early firefighting days

Pat Harris, Asset Management Assistant of the Penticton Fire Zone, BC Wildfire Service; photos of fires her crew had been on in 1987. There was some amazing flying by the airtanker on that fire. The fire was the Riva Ridge fire (1987) Southwest of Penticton.

# Compliance and Enforcement Border Assistance

Submitted by: Heath Hilchey, Natural Resource Officer Supervisor, Penticton Field Unit

Natural Resource Officers across the province have been called upon to help implement the Provincial Public Health Order regarding COVID-19. The Compliance and Enforcement Branch has participated in many ways, one of them requiring officers being deployed to federal border crossings. Our goal has been to establish COVID-19 checkpoints and intercept non-commercial traffic crossing the federal border and entering British Columbia. A large percentage of the individuals being contacted are Canadians returning from abroad (U.S.A) or dual citizens that have residents on both sides of the border. In addition to this we also intercept U.S.A. residents that are travelling though British Columbia on route to Alaska and essential service workers travelling for occupation.

**Tammy Jones, Erin Badgero, Sue Pelletier**

Our primary focus is to ensure individuals entering, and remaining in, British Columbia adhere to the 14 days self isolation requirement to ensure we are reducing the spread of COVID-19. The majority of individuals coming through the COVID-19 check points have either submitted an approved self isolation plan or can verbally satisfy the officer of their plan. In the later case, the Natural Resource Officer supplies the individuals with the necessary information on how to formally submit their self isolation plan for approval. In the event an individual or party does not have a self isolation plan and cannot satisfy the officer that they can successfully implement one as per the requirement, the Natural Resource Officer will work with the Canadian Red Cross to ensure accommodations, food and essentials are coordinated. Registered self isolation plans are often followed up by the public health officials to ensure compliance.

The presence of Natural Resource Officers at the federal border crossings has been well received by the Canadian Border Service Agency. Most officers have felt this to be a safe and positive environment to work in and are grateful to have had the opportunity to contribute in a positive way to the COVID-19 pandemic. Additionally, the majority of the interactions at the COVID-19 check points have been well received and positive by members of the public entering British Columbia.

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**You can contact Michelle directly at Michelle.Larstone@gov.bc.ca. Don't forget our Facebook page!**

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# The Planting Season that almost Wasn't…

Submitted by: Shane Berg, RPF, Executive Director - Deputy Chief Forester

The 2020 planting season was shaping up to be largest reforestation effort in BC's history, with much of the focus on reforesting areas impacted by the 2017/2018 wildfires. Sowing requests 18 months previous had signaled a massive planting program in the spring of 2020, resulting in the planting industry warning of planter shortages and increased prices as the contracts were tendered in the fall of 2019.

Planting began as usual, on BC's coastal cut blocks in early February of this year and a few short weeks later, COVID-19 hit. News began to spread about the global pandemic and serious concerns were being raised as to the province's ability to successfully deliver 305 million trees scheduled to be planted across BC. Of those, 250 million seedlings were scheduled to be planted in the interior over a 10-week period, starting in early May.

As the COVID-19 statistics started to swell, so did the calls from many BC communities. Municipal and First Nations leaders joined a host of concerned public, all demanding that the 2020 planting season be "post-poned or canceled" to keep the virus from spreading. The planting season was in peril.

A core group of FLNRORD silviculture staff representing the various planting-accountable divisions and branches (BCTS, Office of the Chief Forester, Resource Practices Branch, Climate Change and Integrated Planning Branch (CCIPB), Regional Operations, District Managers and key Stewardship staff) put together a joint working group of forest licensees, Forest Enhancement Society of BC, and the planting community represented by the Western Forestry Contractors Association (WFCA) to begin looking at the unfolding challenges facing this spring's planting program. . It became clear that the health and safety of both the planters and the communities they would be operating near, was going to be the highest priority.

On March 26, the Minister of Public Safety and Solicitor General added "forestry and silviculture" to the province's list of essential services. With this confirmation in place, the WFCA developed guidance for their workers to operate in a COVID-19 world including cost-increase estimates to facilitate the various COVID-19 operational requirements. BC's Chief Forester requested any planting operations not yet initiated be delayed until the beginning of May to afford companies the opportunity to prepare for the additional requirements of working in a COVID-19 environment.

The joint industry/government working group collaborated with the Ministry of Health to develop health and safety measures specific to planting camps and operations and on April 23, Dr. Bonnie Henry,

continued...

## Planting Season continued...

Provincial Health Officer (PHO), announced the Industrial Camp Standard and Guidance for Silviculture Camps which were to be followed for all tree planting contracts. The measures were now in place to protect workers and communities and control the spread of the virus should it be encountered. A web-based "attestation form" was created for planting companies to assert their compliance with the PHO order and guidance. This submission data base was used to schedule the mandatory inspections carried out by Conservation Officers and Natural Resource Officers, confirming Infection Prevention and Control protocols were being followed (physical distancing, use of masks, hygienic practices and facilities in place etc). A "COVID-coordinator" was assigned for each locale and general camp hygiene and transportation/vehicle use and cleanliness. As an added precaution, security services were deployed to ensure planting companies were adhering to the PHO measures, while staying in hotels/motels across the province.

Throughout this two-month period of uncertainty, many planting crews already working on Vancouver Island were successfully completing their contracts on the coast, and heading into BC's Interior to begin reforesting the wildfire areas…all the while being "virus free"! This record of performance coupled with an agreed upon process to address COVID-19 related cost-increases saw the planting season begin to unfold in early May…and then we waited for (what we thought would be) the inevitable "COVID-19 confirmation"…

…but it never came. The contractors put the PHO measures into place, the planters followed the guidance, and the trees got planted. Mother Nature assisted with some unseasonably cool, wet weather in June which helped with the initial planting delays. To date over 50 planters exhibiting "flu like symptoms" have been put through the PHO COVID-19 protocol…all proving to be negative. There has not been a single confirmed case of the COVID-19 virus amongst the 5400+ planters working across BC today.

As of the beginning of July we estimate that planting will be 85% complete. There have been over 310 web-attestations submitted and over 220 inspections carried out, with 100% compliance. Thirty-six hotel/motels have had security staff deployed. Planting is scheduled to take place until the end of July (summer planting). With a little (more) luck, BC's largest planting season on record will go into the books as having been successfully implemented, despite the challenges created by the COVID-19 pandemic…but like talking about a "shut-out" before the 3rd period is over…I'll reserve my final assessment until July 31st.

A huge thanks to the FLNRORD Silviculture and Stewardship professionals who have worked tirelessly with their forest companies, First Nations and planting contractors to achieve the almost impossible this spring. In addition, without the collaboration of agencies like the Ministry of Health, Ministry of Energy, Mines and Petroleum Resources, Emergency Management BC and Ministry of Agriculture, much of the innovative guidance and operational directives we co-developed, would never have seen the light of day. Way to Go Team Government! And last but not least, to the tree planting community, for persevering under tremendous pressure and frankly, not being welcomed warmly as they carried out their important work this year. Without their dedication to doing a job well, there wouldn't be ANY planting numbers to share this season! I hope to share further "good news" and final numbers in the Fall DIRT edition.

# National Indigenous Peoples Day

Submitted by: Michelle Larstone, Community Enagement Specialist, North Area

This June 21 was National Indigenous Peoples Day! Most of the annual events were cancelled due to COVID-19, but there are many virtual ways to recognize and participate in this important topic any day of year.

I spent National Indigenous Peoples Day camping on Wet'suwet'en territory with my family. I also introduced my teenage daughters to some of the podcasts and playlists that have been shared with me. Thanks to my colleagues who pulled together the awesome list below (all the links can be found with a simple internet search). Another excellent resource is https://www.ictinc.ca/blog/11-ways-to-virtually-celebrate-national-indigenous-peoples-day .

**TRAINING**

- **Allyship 101**: Standing in Solidarity - House of Indigenous Learning (PSA)
- **Strengthening Indigenous Relations Through Awareness and Action** - House of Indigenous Learning (PSA)
- **Land acknowledgements:** https://native-land.ca/territory-acknowledgement/ This website is a great resource when planning to do a land acknowledgement.

**PODCASTS**

- **Red Man Laughing** - Ryan McMahon
- **Métis in Space** - Molly Swain and Chelsea Vowel
- **Unreserved** (CBC)
- **Ideas:** Reconciliation Can't Happen without Reclamation of Land (CBC)
- **Knowledge Keepers** - Elders on Vancouver Island Recount Indigenous History
- **Thomas King** - The Truth About Stories: The Native Narrative

**BOOKS**

- 108 Indigenous writers, as recommended by CBC readers
- Hoffman, Ross & Joseph Alfred. (2019). **Song of the Earth: The Life of Alfred Joseph**
- Henley, Thom. (2018). **The Raven Walks Around the World**
- Paul, Cecil & Penn, Briony. (2019). **Stories from the Magic Canoe of Wa'xaid**
- Gyetxw, Hetxw'ms (Brett D. Huson). (2019). **The Grizzly Mother**

**VIRTUAL TOURS**

- BC Museum of Anthropology Online Collection and **360˚ Virtual Tour**
- **Indigenous Exhibitions** at the Royal BC Museum, including Living Languages Project and Residential Schools and Reconciliation
- **First People's Gallery** at the Royal BC Museum
- **Nisga'a Museum**

**PLAYLISTS**

- Kitsumkalum (N'we Jinan Artists) **"The Highway"**
- **CBC 60 Years** of Indigenous Music Gamechangers
- **CBC Indigenous Music Playlist**
- **CBC Reclaimed**

## *Become a Part of The Dirt Advisory Group!*

Wouldn't you like to be part of this exciting team? If so, we would love to hear from you.

*The Dirt* newsletter advisory group members represents a number of locations around the ministry, but always looking for new recruits to add to our team.

The Advisory Group represents the overall balance of interests from across the ministry. Members of *The Dirt* Advisory Group have:

- ☐ High level of interest in the newsletter;
- ☐ Passion for enhanced communication across the ministry and to retirees;
- ☐ Ability to provide a corporate perspective;
- ☐ Ability to objectively look at story content ideas and story plans, and provide guidance as appropriate;
- ☐ Ability to recognize good story ideas;
- ☐ Able to commit approximately four (4) - six (6) hours per "quarterly" edition; and
- ☐ Editorial or communications experience would be helpful, but not considered as mandatory.

If you are interested or know someone who may be interested you can contact FLNRNews@gov.bc.ca

# Incorporating Climate Change in the Cumulative Effects Framework

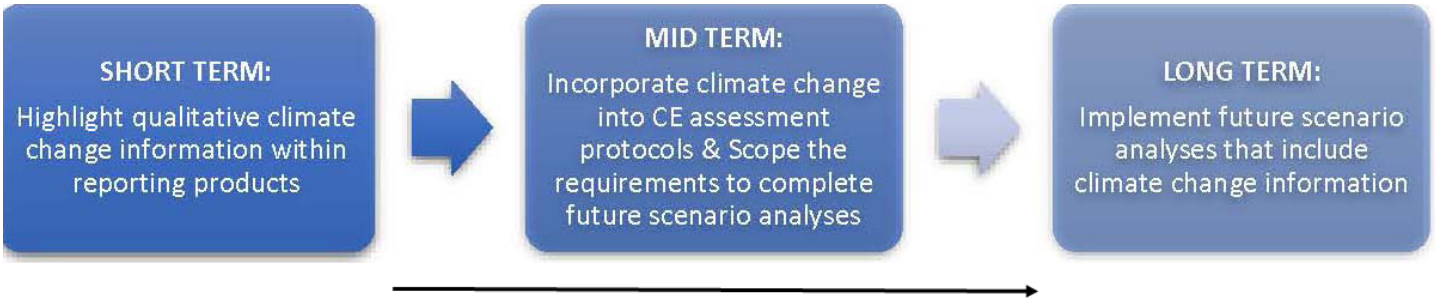
Submitted by: Hayley O'Neil, MSc, Policy Analyst, Climate Change and Integrated Planning Branch and Melissa Lucchetta, Strategic Projects Coordinator & Policy Analyst, Resource Planning and Assessment Branch

The Cumulative Effects and Integrated Monitoring (CE&IM) Team held a workshop in November 2019 with CE value leads, staff involved with CE reporting, and provincial climate scientists. The goal of this workshop was to build a common understanding of the existing information, tools and expertise available on climate change and to define ways to incorporate climate change into cumulative effects assessments to support future strategic assessments and planning.

This two-day workshop explored multiple case studies where climate change information is being incorporated within our Branch and Division. From the discussion, the CE&IM Team identified that quantitative and qualitative climate change information can be incorporated into CE value protocols and reporting products including current condition assessment reports and cumulative effects assessment and management reports, which provide information on the current state of a value, and management responses to mitigate cumulative effects, respectively.

Additionally, climate change can also be incorporated into the CE assessment process by conducting future scenarios analyses to predict how values may change in the future under the effects of climate change. This is an integral piece as cumulative effects assessments aim to consider the effects of past, present and future human activities and natural disturbances on values that are important to British Columbians.

Throughout this process, we will continue to engage internally to ensure that this information has high utility for resource managers and decision makers. The CEF program is benefitting from the work of the OCF Climate Solutions group to define common data and information layers for use in this type of assessment.




For more information on the Cumulative Effects Framework, please visit https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/cumulative-effects-framework

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Okanagan Shuswap Natural Resource District staff:
Sarah Mortenson, Harold Hetherington, Rob Dinwoodie, Meaghan Murphy

# COVID Response

## Temporary Foreign Workers (TFW) Inspections

Written by Rob Dinwoodie

Adequate cleaning supply and products

Barrier requirement for shared rooms

In the world of FLNRORD there are many acronyms that staff get accustomed to using. I bet you have never heard of TFW. Neither had the Range Team until COVID-19 pandemic and the ministries declaration of essential services.

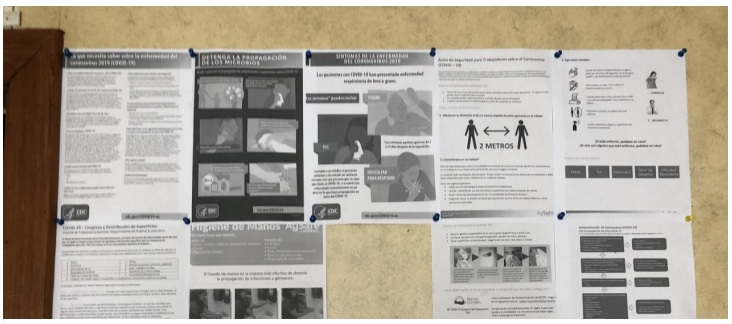
When Agriculture was deemed essential by the Provincial Health Officer, then food production and associated activities got the green light, so to speak. BC's Agriculture is highly dependent on Temporary Foreign Workers (TFW) to be able to deliver the many food and agricultural commodities that we as a hungry population have grown accustomed to purchasing from our local stores, without recognizing where and how they are grown. Products such as cherries, apples, grapes, vegetables, and more would not reach the supermarkets or farmers markets without the aid of TFWs.

As a service to our sister ministry Agriculture, DOS staff assisted in farm inspections for COVID-19 compliance before TFWs are allowed out of the14-day quarantine. Sarah, Harold, and Rob from the Range program, as well as Meaghan from the First Nations department, and Brent Smith from Ministry of Agriculture, inspected farms throughout the Interior to ensure the farms had the equipment and accommodation that met provincial standards for COVID-19 compliance. Signage, farmer COVID-19 knowledge, wash basins, disinfectants, towels, and adequate space for social distancing were a few of the many things assessed by the inspection team.

Overall, the inspections were met with gratitude by farmers who were anticipating a difficult season due to the pandemic. What we learned as a team was that in a critical time of health and economic concerns the contribution of a few can go a long way in ensuring that business' can safely continue, and we can enjoy living, working, and eating fruit (and drinking wine) from the best place on earth!

**There have been 213 inspections completed in the Interior, and 380 in total. Approximately 40 inspections have been completed in the Interior by the Range team so far! More to come!**

Individual plates, cups, utensils, sanitary spray

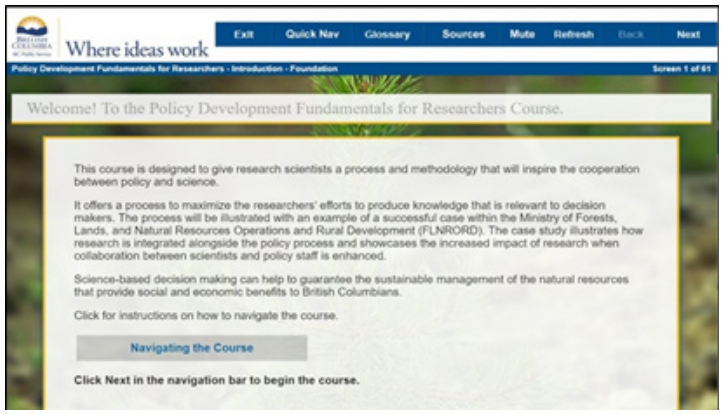



Signage requirement (posted in language spoken by all workers).

# Training opportunities to enhance Science and Policy Integration

Submitted by: Luisa Ramirez (Mitacs Canadian Science Policy Fellow)

As a part of the efforts for enhancing the integration of science into policy and decision making an e-Learning course in Policy Development Fundamentals for Researchers and a workshop in Theory of Change have been developed for two training purposes.




The e-Learning course Policy Development Fundamentals for Researchers was launched on June 1st and is available through the Learning Centre. The course is for research scientists from the Natural Resources Ministries, including FLNRORD, interested in policy development and science and policy integration. Non-researchers curious about science and policy will also benefit from this learning opportunity.

The course provides a basic understanding of: policy development, the decision-making process, and strategies for facilitating the integration of science into policy. An innovative feature of the course is the use of the Climate Base Seed Transfer (CBST) project to illustrate the collaboration between researchers and policy staff. Through videoclips, a Research Scientist and a Policy Officer involved in the CBST project share their successful experience integrating science and policy.

Another training opportunity, recently offered to Research Scientists, is the Theory of Change workshop. This workshop trained our researchers and decision makers on the use of logic models for research planning and evaluation. Theory of Change helps identify the relationship among research activities, outputs, and policy and operational outcomes providing a tool for better implementation and communication of science for policy development purposes.

The online workshop was offered on June 10 but the recording is available on the Research Program intranet webpage.

If interested in this and other science-policy opportunities please contact: Luisa.Ramirez@gov.bc.ca, MITACS Canadian Science Policy fellow.

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# Planning for Resilient Crown Range Resources under a Changing Climate

Submitted by: Francis Njenga, Rangeland Stewardship Officer, Nancy Elliot, Rangeland Analyst and
Clayton Bradley, Rangeland Practices Specialist (FLNRORD)
Lisa Zabek (AGRI), Andrew Pantel (Pantel Environmental)

FLNRORD's Range Program together with government and industry partners have been working to develop, test and pilot planning tools to enable and increase ecosystem and cattle industry resiliency to climate change. This project uses future climate scenarios and surface water risk assessment to develop maps on the risks to water quantity and quality under climate change scenarios at a regional, district, range unit, or watershed scale (Figure 1).

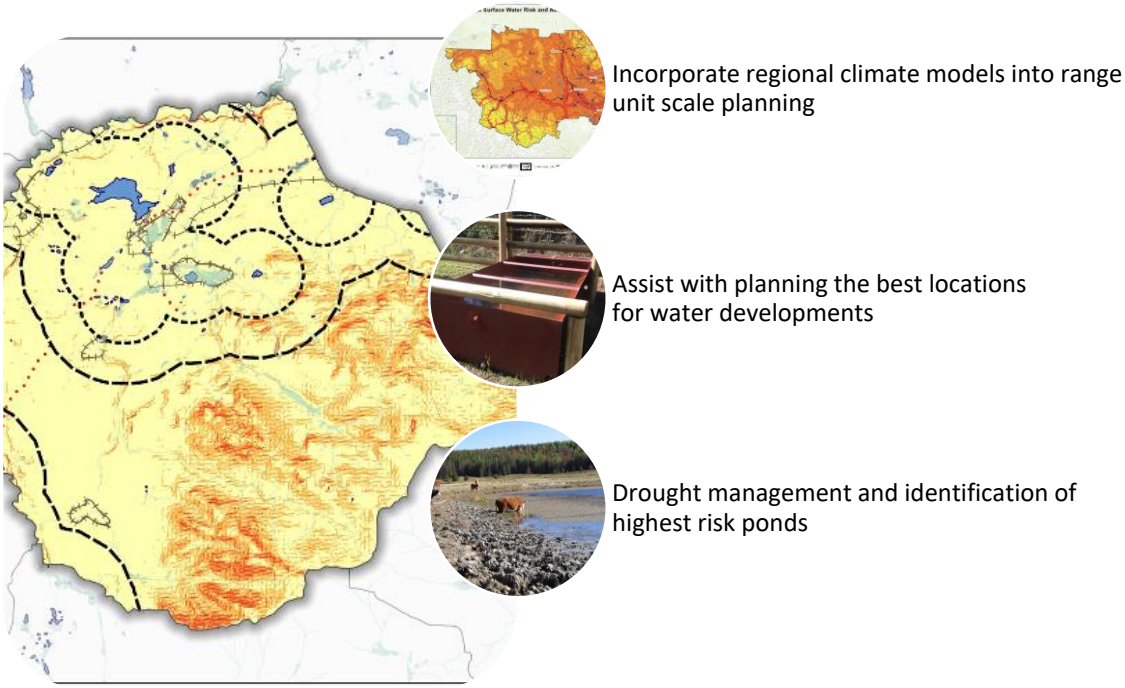



**Figure 1:** The surface water risk assessment and the associated climate modelling are a tool to visualize the risks to current water quantity and quality within climate change scenarios at a regional, district, range unit, or watershed scale.

The maps can be used to:

- determine potential water deficit;
- identify the best locations to invest in range developments, such as water developments and fencing;
- estimate potential carrying capacity at a range unit scale;
- stratify range units for effectiveness monitoring and rangeland health assessments;
- develop future drought and land-use management plans using the available future scenarios; and
- facilitate the development of operational plans including range-use plans, forest operation maps, harvesting and silviculture strategies, wildfire management, agroforestry strategies, cut-block seeding strategies, and land-based investment opportunities.

Within each map, climate change projections and range management layers can be turned on and off to customize the map for individual user needs.

The following layers are available to turn on and off within each range unit map:

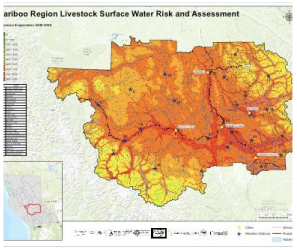
continued...

## Resilient Crown Range Resources continued...

### 1. Reference Evaporation and Climatic Moisture Deficit

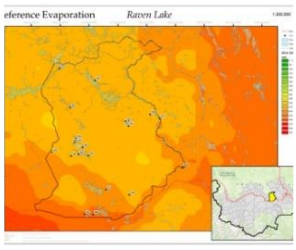
The model provides the atmospheric water demand as the annual reference evaporation for the current and future climate for all ponds greater than 2ha. Reference evaporation and the predicted change in pond size and volume is calculated monthly through the grazing season (Figure 2). This estimate of pond change provides guidance for season of use for different areas of a range unit. Reference evaporation estimates can also be calculated for water troughs and dug outs. Combining atmospheric demand and livestock use assists with determining water loss and is used to match the herd size to the water requirement.

The water quality of closed basin ponds changes as the volume of water decreases through evaporation, which increases the concentration of bacteria, salts and minerals, such as sulfates. Therefore, water quality is assumed to be reduced through the grazing season. In areas with high risk ponds, a key management recommendation may be to use the water sources early in the season to avoid the issue of poor water quality and poor access associated with closed basin ponds in late season.



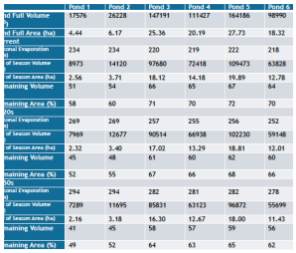

Regional Scale

Reference Evaporation for the 2050s climate scenario for the Cariboo Regional District




Range Unit Scale

Reference Evaporation for a Range Unit in the IDF in the Cariboo Regional District



| | Pond 1 | Pond 2 | Pond 3 | Pond 4 | Pond 5 | Pond 6 |
|---|---|---|---|---|---|---|
| d Full Volume | 17576 | 26228 | 147191 | 111427 | 164186 | 98990 |
| d Full Area (ha) | 4.44 | 6.17 | 25.36 | 20.19 | 27.73 | 18.32 |
| reat | | | | | | |
| ual Evaporation | 234 | 234 | 220 | 219 | 222 | 218 |
| of Season Volume | 8973 | 14120 | 97680 | 72418 | 109473 | 63828 |
| of Season Area (ha) | 2.56 | 3.71 | 18.12 | 14.18 | 19.89 | 12.78 |
| maining Volume | 51 | 54 | 66 | 65 | 67 | 64 |
| maining Area (%) | 58 | 60 | 71 | 70 | 72 | 70 |
| 30s | | | | | | |
| ual Evaporation | 269 | 269 | 257 | 255 | 256 | 252 |
| of Season Volume | 7969 | 12677 | 90514 | 66938 | 102230 | 59148 |
| of Season Area (ha) | 2.32 | 3.40 | 17.02 | 13.29 | 18.81 | 12.01 |
| maining Volume | 45 | 48 | 61 | 60 | 62 | 60 |
| maining Area (%) | 52 | 55 | 67 | 66 | 68 | 66 |
| 90s | | | | | | |
| ual Evaporation | 294 | 294 | 282 | 281 | 282 | 278 |
| of Season Volume | 7289 | 11695 | 85831 | 63123 | 96872 | 55699 |
| of Season Area (ha) | 2.16 | 3.18 | 16.30 | 12.67 | 18.00 | 11.43 |
| maining Volume | 41 | 45 | 58 | 57 | 59 | 56 |
| maining Area (%) | 49 | 52 | 64 | 63 | 65 | 62 |

Wetland/Pond Scale

Pond evolution through the grazing season presented as pond volume and pond area.

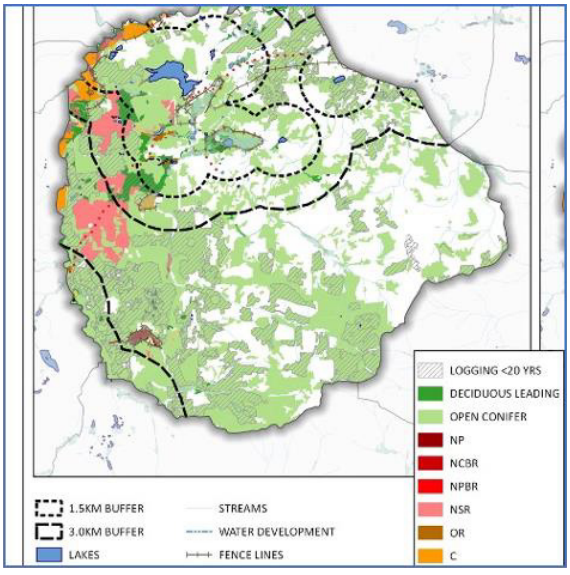
**Figure 2:** Reference evaporation assesses risk to non-flowing sources of water, such as lakes, ponds, and open storage. The water budgets assume that ponds are closed basin. Closed basin ponds less than 5ha in size are identified as unreliable in future climate scenarios.

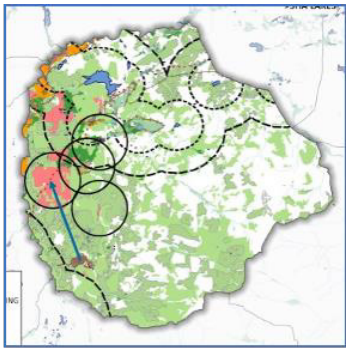
### 2. Distance to Water

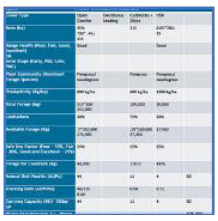
A 1.5km buffer overlay provides a visual assessment of the areas with predicted livestock use based on the distance to a reliable source of drinking water. The buffer requires adjustment at the site level to include existing water developments, open basin ponds, and locations where livestock have point access along streams and springs.

### 3. Existing Range Developments

By overlaying existing range developments and Range Vegetation Inventory (RVI) (Figure 3), it is possible to assess potential zones of livestock-use under each climate scenario. This will assist in determining the best locations for future range development and other land-based investments such as thinning treatments, ecological restoration to increase forage production and to manage livestock.





continued...

## Resilient Crown Range Resources continued...

**Figure 3:** A reliable water source is assumed to be >2ha and >5ha, as closed basin ponds <5ha are susceptible to a decrease in area or volume of 50% or more in future climate scenarios. The buffer can overlay the Range Vegetation Inventory (RVI) to determine if the predicted zones of use overlap with the primary range.

The climate change projections and water deficit modelling process are being used in the following projects exploring and testing operational application:

**1. Managing fine fuels using livestock**

- Identify most suitable locations for water developments;
- Identify locations not likely to be grazed by livestock (therefore higher fine fuel loads);
- Identify which water bodies are at greater risk to grazing – those that require more frequent monitoring, or those that will require protection; and
- Incorporate into stratification of the site and decisions of where to locate monitoring plots.

**2. Cariboo Surface Water Risk Assessment Pilot Projects**

- Determine potential forage supply;
- Determine sites where to install three water developments; and
- Inform site stratification for monitoring.

This work has been made possible by a partnership between FLNRORD Range Program, BC Cattlemen's Association, Ministry of Agriculture, and, BC Agriculture and Food Climate Action Initiative. Pantel Environmental is developing the surface water risk assessment tools and the associated climate models, currently being piloted. Funding support has been provided by the Governments of Canada and British Columbia, through the Canadian Agricultural Partnership, a 5-year, $3-billion investment by federal, provincial and territorial governments to strengthen the agriculture and agri-food sector.

Interested in reading past newsletters?

You can find archived ministry newsletters dating all the way back to 1922 at:

https://www.for.gov.bc.ca/ftp/HEX/external/!publish/Web/News_Letters/

We hope you enjoy reading about the past!

# Meeting Online: Plan for Engagement

Prepare for engagement by applying some key principles outlined below to plan and lead your virtual meeting. This checklist/planning guide will help you apply the key points shared in the webinar to improve results.

| | Structure | Communication | Engagement | Technology |
|---|---|---|---|---|
| **Considerations >** | Clarify the purpose Manage time Organize flow | Adapt to different participant preferences | Design for group development – from norming to performing | Make time to practice and experiment so you feel confident |
| **Prep for Meeting** | Plan in 5 min bites Allocate time/person to each agenda item | Prepare info/materials Send in advance | Choose tools to support objectives | Test tools Have backup options |
| **Before Meeting** | Finalize agenda Pre-work/pre-thinking Check logistics | Invite Participants Send reminder ~48 hrs | Practice Have options | Set up and test |
| **Start of Meeting** | Outline agenda & outcomes | Welcome people Acknowledge territory Confirm protocols | Do a fun pre-activity (relevant icebreaker) Ask if OK to record | Perform tech check<br><br>Record the meeting |
| **During Meeting** | Allocate time to: Generate Ideas Get info/relate Make decisions | Introduce, assess interests, present, demonstrate, listen, capture, summarize | Ask questions Delegate process Seek feedback | Monitor, log issues & solutions so you can learn |
| **End of Meeting** | Recap meeting agenda and discussion Assign tasks Set next meeting | Share where recording and materials can be accessed | Acknowledge contribution Assess meeting value | Use tools to collect feedback / questions |
| **After** | Debrief with team Plan next meeting Adapt agenda | Follow-up on decisions, tasks and questions | Show you are using people's ideas | Debrief tech Change approach to improve quality |

# Resources

- There are many self-service, on-demand resources available in the Remote Work Toolkit: https://gww.bcpublicservice.gov.bc.ca/learning/virtualtools
- Learning Centre courses: *FIVE: Facilitating in a Virtual Environment and Leading Virtual Teams*, and *Meeting Online: Virtual Engagement*. Search Learning System: https://gww.gov.bc.ca/groups/learning-bc-public-service
- Visit the FiVE and Presentation Skills Communities of Practice. Search @Work: https://gww.gov.bc.ca/
- Training Magazine: https://trainingmag.com/activities-virtual-staff-meetings

# Earthworm Invaders

Submitted by: Diane Millar, RPF, Stewardship Forester, Selkirk Natural Resource District

Are earthworms invasive in the Province of BC? This was the question from our local invasive species society: the Columbia Shuswap Invasive Species Society (CSISS), who were updating their invasive species watchlists. Note: they have no affiliation to Canada's Security Intelligence Service (CSIS)!

As a young child growing up making mud pies for friends and family, I was curious if the worms in my garden soil were invaders or not? Having a nature sanctuary in my back yard, I was told by one of the Naturalists working there that some earthworm species are invasive in North America due to their efficient recycling of the forest floor and outcompeting native worms; but that conversation happened over 32 years ago! What about now? Is there enough of a problem in BC to warrant them being listed as a Priority Invasive Species?

Turns out, there are 6 native earthworms in BC, and 18 introduced. Earthworms (native and invaders) are present in 11 of the 14 biogeoclimatic zones in the province but are absent in high-elevation, cold northern areas (Marshall and Fender (2007).

Without dissection, some earthworm species are too difficult to tell apart and are not listed as a Priority Invasive Species in BC at this time. However, given the potential impacts on local ecosystems, discussions are ongoing about the current status of introduced earthworms in BC and how to best prevent unintentional releases to the environment, such as during composting and fishing.

Some native earthworm facts (E-Fauna BC):

- The native Arctiostrotus perrieri was the first earthworm described in British Columbia (Marshall and Fender 2007).
- Arctiostrotus vancouverensis is the most widespread of our four native species (Marshall and Fender 1998).
- Bimastos lawrenceae appears to be endemic, "known only from a limited area on the west part of Vancouver Island" (Marshall and Fender 2007).

Some invader earthworm facts (Global Invasive Species Database (GISD)):

- Lumbricus rubellusis is one of the most widespread earthworm invaders in the world.
- Invaders are a problem in previously earthworm-free temperate and boreal forests of North America dominated by Acer, Quercus, Betula, Pinus and Populus (Frelich et al., 2006).
- Invaders mix soil horizon layers, cause extreme reduction of the litter layer, change nutrient concentrations and cycling in the soil, and physically disrupt plant roots and mycorrhizal associations (Hale et al., 2008; Addison, 2009).

If you want to learn more about Earthworms check out: https://cfs.nrcan.gc.ca/publications?id=27481 or listen to this Podcast where Dr. Lee Frelich from the University of Minnesota Center for Forest Ecology, discusses the problem of Earthworm Invaders!

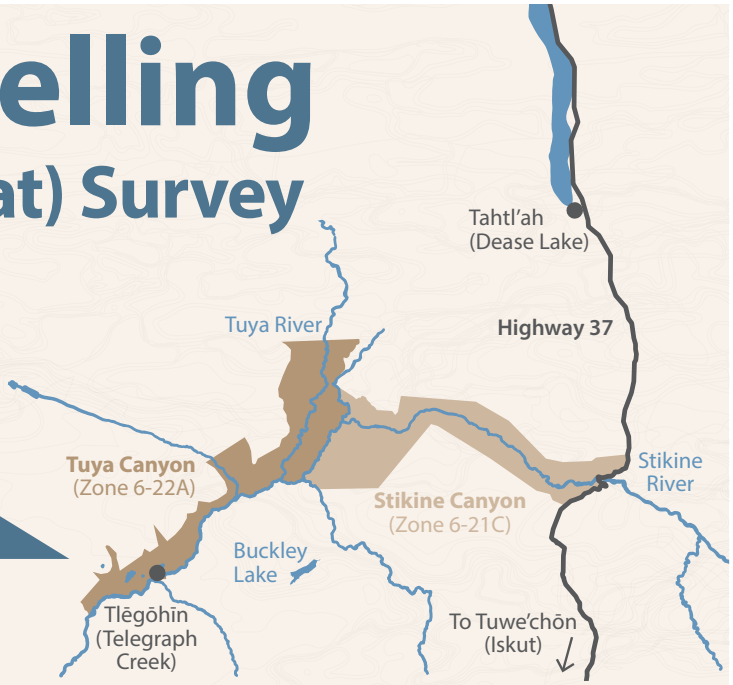
For the full technical report from the 2020 Stikine and Tuya Canyons mountain goat survey, please email Kara.MacAulay@gov.bc.ca.

# Canyon-dwelling
## Iṣbā* (Mountain Goat) Survey

**iṣbā is the Tahltan word for mountain goat*

In 2018, the Government of British Columbia **extended the boundary of Limited Entry Hunt Zone 6-22A to include Tuya Canyon**, a large area that had previously been General Open Season for mountain goats.

This change was made in response to increased harvest observed in the Tuya Canyon, potentially from increased human access.



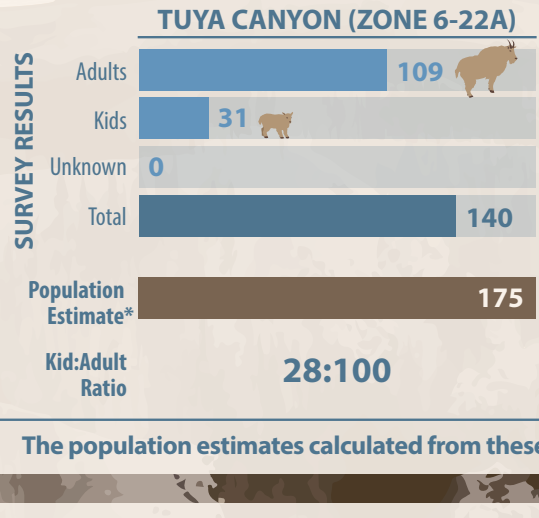

*One five-hour helicopter flight*

*A Wildlife Guardian from the Tahltan Central Government and two B.C. Wildlife Biologists were observers on the survey*



*Assumes 75% of goats were seen*

The change to hunting regulations, as well as impacts to canyon-dwelling mountain goat habitat by the Alkali Lake fires, created a need for up-to-date population estimates. **In 2020, a population survey was performed in Tuya Canyon and the neighbouring Stikine Canyon (Zone 6-21C)**, which falls within the Stikine River Provincial Park.




**Incidental Sightings:**

Tuya Canyon (Zone 6-22A)
- 3 thinhorn sheep
- 35 elk
- 28 moose

Stikine Canyon (Zone 6-21C)
- 10 moose

** Population estimates are calculated using a correction factor that assumes that 75% of goats were seen.*

**The population estimates calculated from these surveys will be used to inform harvest management for the area.**

The survey was conducted through a collaborative effort between the Province and the Tahltan First Nation and was funded through the Collaborative Stewardship Framework. The total cost of the survey was $8,020.

BRITISH COLUMBIA

3Nations BC COLLABORATION & STEWARDSHIP

TĀŁTĀN TAHLTAN CENTRAL GOVERNMENT

For more detailed information on this survey, please contact **skeena.wildlife@gov.bc.ca** and/or **wildlifedirector@tahltan.org**

# BC Wildfire Service Launches Mobile App

Submitted by: Hayley O'Neil, MSc, Policy Analyst, Climate Change and Integrated Planning Branch and Hannah Swift, Communications Assistant, BCWS

The BC Wildfire Service mobile app has officially been launched and is available for free download. The new app is one of the many proactive initiatives that the BC Wildfire Service has undertaken to give members of the public, media and stakeholders access to consistent, accurate and timely wildfire information throughout the province.

Key features of the mobile app include:

- **Wildfire map** – The app's landing page is an interactive wildfire map, providing real-time wildfire information that users can customize to display a variety of fire-related data, including:
  - current fire danger ratings
  - active fires
  - fires that have been declared "out"
  - open burning prohibitions (including campfire bans)
  - evacuation alerts and evacuation orders
  - area restrictions
  - current wildfire statistics
  - perimeters of wildfires for the current season (April 1 through March 31 of the following year)
  - boundaries of BC's six regional fire centres
  - BC Parks closures and recreation site closures
  - wildfire search tool (search by active fire name, fire number or location)
  - Drive BC events (e.g. advisories and closures)
- **Location services**
  - Search functionality by active fire name, fire number or by location
  - "Near Me" functionality for wildfire information from within a 50-kilometre radius of current location
- **Latest news and advisories**
  - Latest informational tweets directly from the @BCGovFireInfo Twitter feed
  - Latest advisories (related to open burning bans and prohibitions, area restrictions, evacuation alerts and evacuation orders) are also available on the app
- **Wildfire statistics for the current wildfire season**
- **Fire reporting tool**

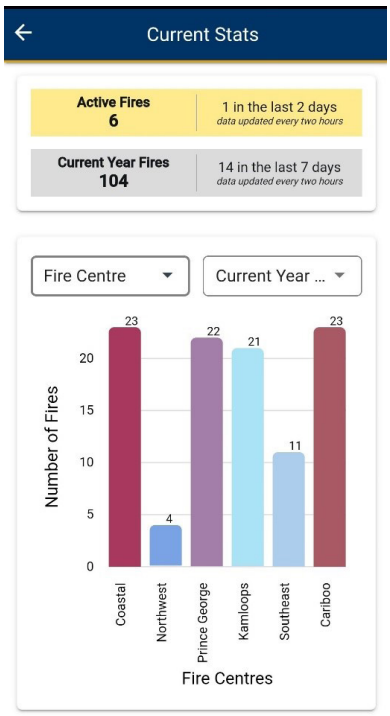
Available now:

The app is available for Apple (IOS) and Android devices and is free to download in the App Store and Google Play.

- **Android:** The BC Wildfire Service mobile app can be downloaded at Google Play.
- **Apple** (IOS): The BC Wildfire Service mobile app can be downloaded from the App Store.

**Learn more:**

For further details about the BC Wildfire Service mobile app, refer to the online BC Wildfire Service Mobile App Reference Guide. Please direct comments, questions or concerns to BCWS.PublicMobileApp@gov.bc.ca.



# Asian Giant Hornet UPDATE and ALERT NOTICE

Submitted by: Moufida Holubeshen, Business Planning and Strategic Projects Manager, West Coast Natural Resource Region

While we've all been adjusting to COVID-19 in the last few months, the honeybees are still buzzing, and BC Beekeepers continue to watch over their sweet bearing charges, to monitor honeybee pests such as the Asian Giant Hornets (AGH), and chase after spring honeybee swarms.

## Confirmed Sightings

Since the last fall DIRT a few more confirmed sightings were discovered in the winter: one specimen in White Rock in November 2019 and 2 specimens in Washington State in December 2019. Three recent confirmed AGH queen sightings on the Mainland (May 15, 2020, Langley BC, May 27th, 2020, Custer WA, June 6th, Bellingham WA) have increased the probability of AGH's establishment in the Pacific Northwest and raised concern around how far inland the possible spread of the AGH might be. This is a game-changer and has increased the focus on monitoring.

## How They Got Here?

It is unclear how this species was introduced to the area; however, DNA testing showed that the Nanaimo specimens came from Japan and those from Washington State came from South Korea. It is suspected that the increase in international trade traffic is a factor. Like the introduction of the Vespa Velutina to Europe—a sister species—the AGH queens may have been introduced as stowaways in shipping containers holding cargo simulating conditions comparable to their winter hibernation environment; for example, stacked garden pots.

## Monitoring

While we believe that the nest in Nanaimo was the only nest on Vancouver Island, for peace of mind, spring/summer monitoring plans for the AGH were made for Central Vancouver Island. In anticipation of an early spring, my husband John and I built over 60 yellow jacket and AGH monitoring bottle traps and distributed these at the end of February with bait and identification instructions. A few queen sap traps were also designed, built and deployed by Conrad Berube. With the permission of the City of Nanaimo, a few AGH traps were also deployed near the former Nanaimo AGH nest site.

The Ministry of Agriculture (AGRI) invited the public to look for and report AGH sightings. Paul van Westendorp, the provincial AGH lead and chief apiarist, has put traps up near the border with Washington State. Washington State has been monitoring with their sightings map site here.

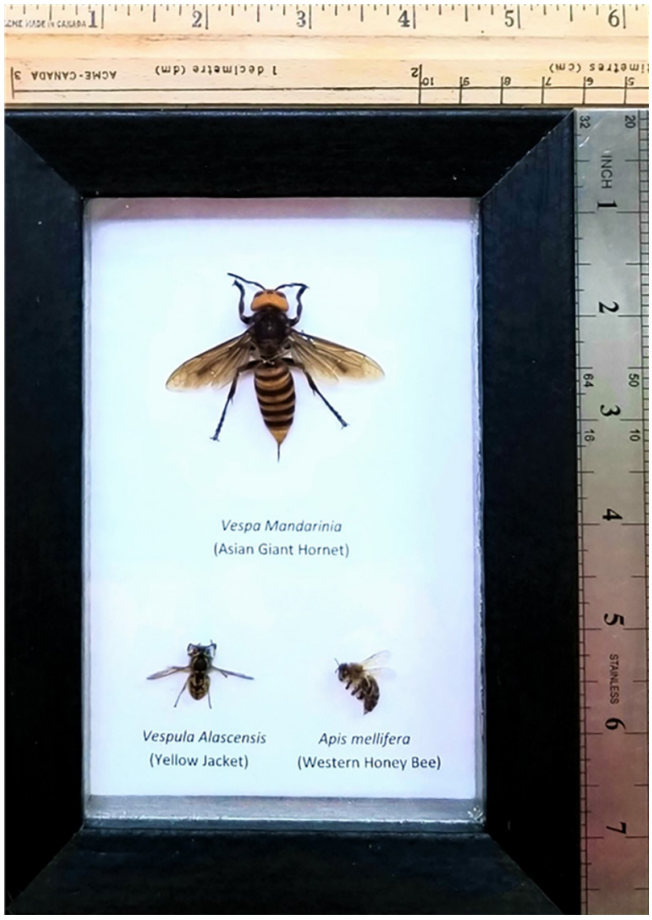
Washington State Department of Agriculture (WA) posted trap and bait recommendations in April from research into AGH trapping that is done in Japan. This included a simple bottle trap design and bait recipe targeted at Asian Giant Hornet workers. If you wish to put up a trap and monitor, the information is posted here.

## May Media Frenzy

In early May, a fear-mongering New York Times article 'Murder Hornets' in the U.S.: The rush to Stop the Asian Giant Hornet caused a media frenzy. The Nanaimo team explained the September extraction and eradication of the Nanaimo AGH nest (150/200 worker specimens and 600 larvae). This media opportunity was used to dispel the "murder" moniker, and further encourage local AGH monitoring.

## Asian Giant Hornet continued...

Since the media surge, reports of suspected sightings have increased significantly to the Nanaimo Beekeeping Club, the North/Central Island Bee inspector, Paul van Westendorp, and the BC Invasive Species Council. We've worked together on sharing local sighting information. So far, all of the reports on Vancouver Island have been bumble bee queens, yellow jacket queens, elm sawfly, crane fly, cicada nymphs, etc. with no confirmed AGH sightings. Most sightings reports have no photos or specimens but usually come with a great story.




### Forest Field Workers

Please be cautious working in low lying forested areas as the AGH is a ground nester. If you suspect seeing an AGH, please if safely able to, provide a picture and/or a dead specimen and report your sighting to: https://bcinvasives.ca/report (1-888-933-3722, mailto:info@bcinvasives.ca). Do not approach a hornet's nest as they may be aggressive within 15 meters of their nest.

Stay well everyone and keep reporting your stories, pictures and specimens.

## FLNRORD Research Program – Brief Summary of Achievements – North Area

Submitted by: Francesco Cortini PhD RPF, Research Management Lead, Forest Improvement and Research Management Branch

The North Area includes: Skeena, Omineca and Northeast regions, and the Research Program is represented by 17 research scientists that conducted 52 research projects during the past fiscal year (2019-20). These projects fall under the Research Program's portfolios as follows:

**Water - 20 projects;**
**Ecosystem Health and Disturbance – 11 projects;**
**Ecosystem Stewardship – 11 projects;**
**Timber – 7 projects;**
**Species and Habitat – 2 projects; and**
**Bioeconomy – 1 project.**

The research scientists from the North Area also worked on 8 additional research projects funded outside the program.

A good example of the research conducted in the Skeena region led by research scientists Erica Lilles and Anne-Marie Roberts is a project on long-term response of forest bird communities to retention forestry in northern temperate coniferous forests. Tree retention in partial-cutting systems mitigates impacts to birds that prefer mature coniferous forest and creates habitat for other bird species. Very high retention levels, mimicking gap-phase

continued...

## Research Program - North Area continued...

dynamics in stands with rare natural stand-replacing disturbance, are perceived as similar to unharvested forest by most forest birds in these coast/interior transition ecosystems of BC. Aggregated patch retention at high levels (40% in this study) partially or fully mitigates harvest impacts for birds associated with mature coniferous forest. In addition, it increases structural and compositional heterogeneity in mesic mature forest, providing new habitat for mixed-forest and open-habitat species. Long term landscape planning to maintain habitat for breeding bird communities and abundance should consider diversification of silvicultural systems beyond the most common clear-cut with reserves and retention at both stand and landscape scales.

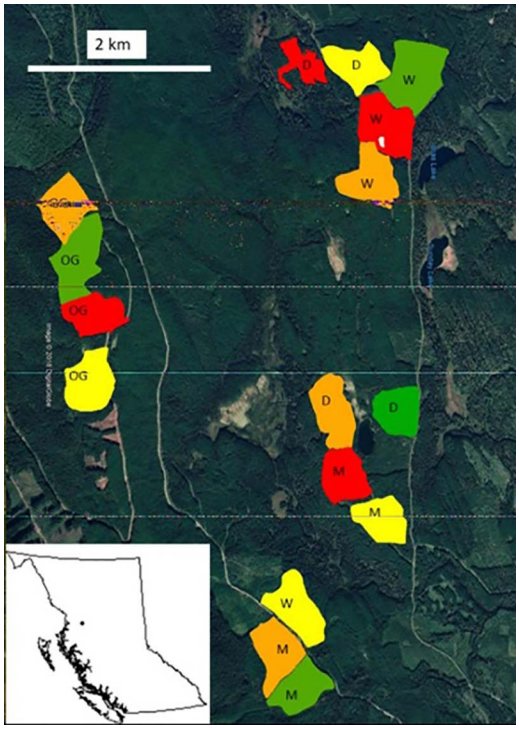



**Figure 1.** Study site. Map of Date Creek Experimental Forest with 16 stands coloured by treatment.

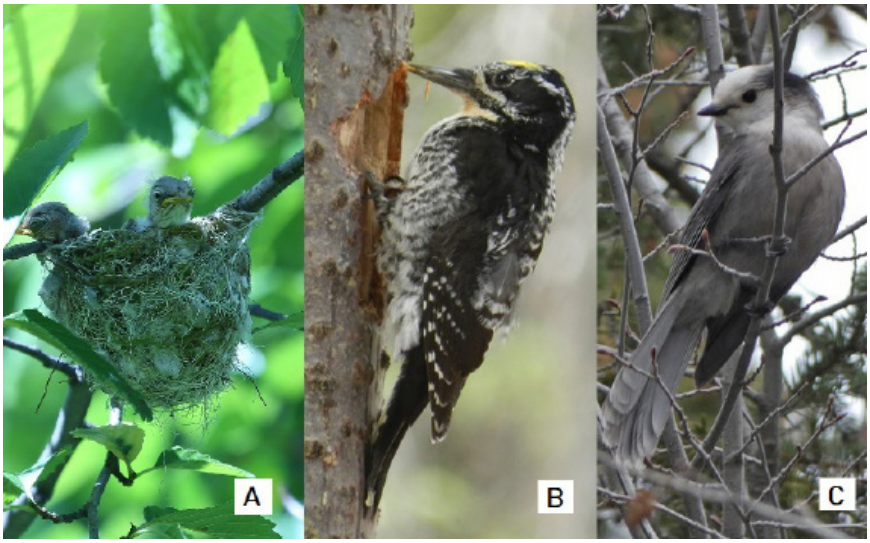



**Figure 2.** Nestlings of warbling vireo (A) photo credit: Lis Rach. American three-toed woodpecker (B) and Canada jay (C) photo credit: Pam Laing.

continued...

## Research Program - North Area continued...

A good example from the Omineca region is the work conducted by Marten Geertsema on landslides in glacier and permafrost zones. Climate changes are greatest in extreme environments such as BC's mountains. Glacier retreat and permafrost degradation can destabilize mountain slopes resulting in far-travelling landslide process chains. Communities, pipelines, other infrastructure, and aquatic habitats can be at risk. Landslides appear to be increasing in size and in temporal frequency in these zones. The key findings indicate that:

- Long runout landslides tend to initiate in recently deglaciated zones and areas of degrading permafrost.
- Rock slides tend to transfer into debris avalanches and debris flows.
- The farthest travelling historic landslides in BC were 12 and 25 km long (in 2010).
- Landslide spikes appear to correlate with the warmest years on record.

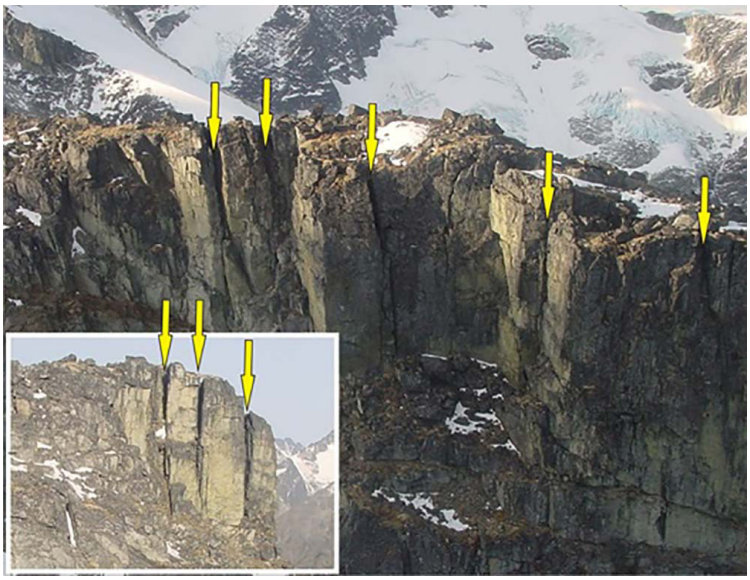


**Figure 3.** Glacier thinning and retreat results in the loss of support for rock walls and often results in the widening of joints and fractures. Sometimes this results in catastrophic slope failure. Photo. Marten Geertsema, Telkwa Pass.

For more information please contact Francesco Cortini at Francesco.Cortini@gov.bc.ca.

## *Become a Part of The Dirt Advisory Group!*

Wouldn't you like to be part of this exciting team? If so, we would love to hear from you.

*The Dirt* newsletter advisory group members represents a number of locations around the ministry, but always looking for new recruits to add to our team.

The Advisory Group represents the overall balance of interests from across the ministry. Members of *The Dirt* Advisory Group have:

- ☐ High level of interest in the newsletter;
- ☐ Passion for enhanced communication across the ministry and to retirees;
- ☐ Ability to provide a corporate perspective;
- ☐ Ability to objectively look at story content ideas and story plans, and provide guidance as appropriate;
- ☐ Ability to recognize good story ideas;
- ☐ Able to commit approximately four (4) - six (6) hours per "quarterly" edition; and
- ☐ Editorial or communications experience would be helpful, but not considered as mandatory.

If you are interested or know someone who may be interested you can contact FLNRNews@gov.bc.ca

# *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 5 images per category.
- We are looking for recent photos; please limit your entries to shots taken within the past 2 years.

## The DIRT Prize Inventory

Fruit infusers/water bottles Blue or Green

Men's small hoodie, navy

Drybag for phone or tablet

Portable power bank

Golf Towel – dark blue

Pocket magnetic flashlight – colours as shown

## 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 (see Prizes available);
- 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 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 is to be included – category or image and location.
6. All images submitted, whether or not selected as a winning image, may be published in future issues of the newsletter or potential other sources (The Dirt Facebook account)

For further information, contact:
FLNRNews@gov.bc.ca

**DEADLINE IS SEPTEMBER 18, 2020**

# Photo Contest Winners

## Wildlife Category - grizzly bear was taken near Haines Alaska

Photo taken by: Norm Parry, RPF (Retired)

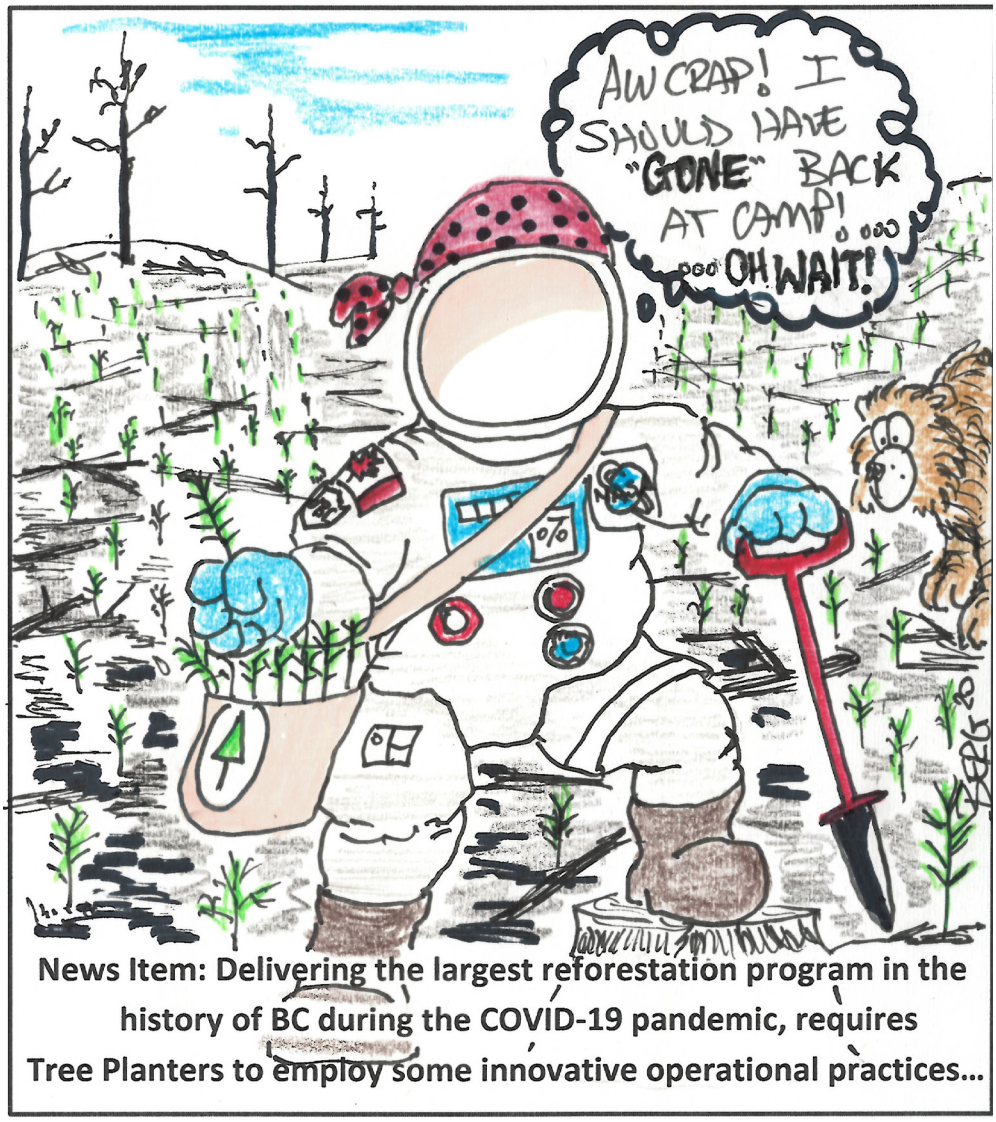
## Workplace Category - tree topper from deck in Terrace

Photo taken by: Norm Parry, RPF (Retired)

Photographers, please contact the Advisory Group to claim your prize or contact Kimm Magill-Hofmann directly

Scenic Category - Groundhog Lake on March 18, 2020, near Wells BC. Spring sledding.
Photo taken by: NRO Calvin Groll, RFT., Natural Resource Officer | Field Unit Supervisor, Special Provincial Constable Quesnel Field Unit | Cariboo Region

# BERG'S EYE VIEW by Shane Berg




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

Sonia Donison is providing management, coordination and production for the newsletter. Questions or comments about the newsletter should be directed to Sonia at 778 974-5834 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 778 974-5834 or via email about their idea or ideas for an article prior to writing the story. Stories are to be submitted no later than 2 weeks prior to each quarterly edition (March, June, September, December). Article deadlines for the next edition is September 18, 2020.

SUBMISSION GUIDELINES