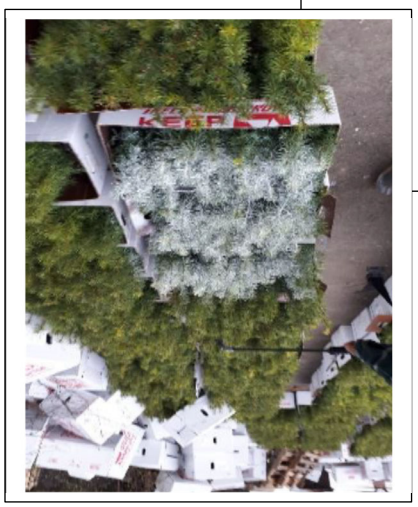
Coastal Silviculture Committee

2024 Summer Workshop

June 18th,19th, 2024

Managing for Multiple Resource Values through Silviculture



Acknowledgements and Introduction

On behalf of the CSC, the organizing committee would like to thank all the presenters for taking the time out of their very demanding schedules and lives to share their experience and knowledge with the rest of us.

The Coastal Silviculture Committee (CSC) would also like to thank the following people for contributing their time and efforts in organizing the 2024 Summer Workshop:

- Craig Wickland (President)
- Neil Hughes
- Laura Gilbert
- Cole Schneider
- Kwadwo Omari
- Ritchard LaBoucane
- Marissa Halloway
- Jack Sweeten (Vice President)
- Margaret Symon (Secretary)
- Don Pigott
- Paul Kutz
- Daniel Oxland
- Jocelin Teron

Managing for Multiple Resource Values through Silviculture

With 2 million people living in the Fraser valley there is nowhere else in BC that has urban and forest interface issues like the Chilliwack district! We are going to spend two days looking at forest management issues related to the pressures of such a large urban population on the edge of some of our most productive forests in the province. Add on top the challenges that climate change is bringing and we will quickly see that the Fraser valley is becoming an increasingly complicated place to practice forestry.

June 18th we will be in the Chilliwack valley starting out by looking at recreational road issues followed by managing for wildfire risk reduction in an area of heavy public use. In the afternoon we will look at two different ends of the spectrum, managing for old growth and then vegetation management for reforestation on rich sites. Day 2, June 19th, we are north of the Fraser on the Lost Creek FSR to continue with a theme of climate change related issues and public interactions. We will look at a wildfire reforestation site, Swiss needle cast surveys and a hemlock gain trial while (hopefully) having a demonstration of drone seeding. With several fires in the valley having been started by people shooting and also some young plantations having been severely damaged, to say nothing of the safety risk for others in the forest, we will discuss previous efforts to address the use of guns in our urban interface forests.

2024 CSC Summer Workshop: June 18-19

Fraser Valley – Chilliwack/ Mission

Theme	*"Managing for Multiple Resource Values through Silviculture"*

Day 1 – Chilliwack River Valley

Times	Topic Theme	Specific Topic Details	Speakers	Introduction
7:30 am	**Registration**	Clarion Hotel Parking lot - Abbotsford		
8:00 am	**Depart Clarion Hotel for Chilliwack Valley**			
9:00 am	**Opening remarks**	Review agenda, opening remarks Safety briefing	**Neil Hughes** **Paul Kutz**	
9:10 am	**STOP 1 -First Nation Welcome**	Welcome to Fraser Valley Brief history of area from a First Nations perspective	**Kevin Webber**	Jack Sweeten
10:10 am	**Coffee**	25 minutes		
11:15 am	**STOP 2 – Managing for spotted owl**	Understanding the stand structural attributes of spotted owl habitat. Can silviculture practices be used to create these attributes	**Brian D'anjou – Consultant** **Louise Waterhouse** **Melissa Todd** **Wildlife Research Biologists Coast Area (FOR)**	Jack Sweeten
12:20 pm	**Lunch**	Food truck – Riverside Recreation Site – 1 hour		
1:30 pm	**STOP 3 – Old Growth**	Understanding the stand structural attributes of old growth forests. Can silvicultural practices be used to accelerate the development of these attributes	**Deb Mackillop – Ecology Team Lead -Forest Science, Planning and Practices Branch (FOR)**	Jack Sweeten
2:40 pm	**STOP 4 – Forest Investment**	Forest investment program and projects	**Jason Hutchinson (FOR)**	Craig Wickland
3:25 pm	**Snacks**			
4:10 pm	**STOP 5 – Vegetation Management Issues in Fraser Valley**	Reforestation in the urban interface and the challenges that come along with that. How reforestation practices have changed over time and how they will continue to evolve.	**Kevin Webber, Ts'elxwéyeqw Tribe Management Ltd**	Jack Sweeten
4:55 pm	**Day 1 -wrap up**	Return to Clarion Hotel by 5:30 pm	**Jack Sweeten**	
6:00 pm	**Banquet Dinner**	Clarion Hotel		
7:30 pm	**Dinner Speaker**	Management of Stanley Park Summary of Silvicultural Treatments	**Jeff Fisher**	Jack Sweeten

Day 2 – Lost Creek near Misson

Times	Topic Theme	Specific Topic Details	Speakers	Introduction
8:00 am	**Bus departs Clarion Hotel for Lost Creek FSR**	Clarion Hotel Parking lot - Abbotsford		
9:15 am	**Opening Remarks**	Review agenda Day 2 Safety briefing	**Elske Von Hardenberg**	
9:10 am	**STOP 1 – Western hemlock provenance trial**	Discussion of results from Western hemlock provenance trial	**Charlie Cartwright – Forest Improvement and Research Management Branch (FOR)**	Don Pigott
10:10 am	**Coffee**	25 minutes		
10:55 am	**STOP 2a – Wildfire Risk Reforestation**	District wildfire reforestation practices	**Peter Cherniwchan Chilliwack Natural Resource District (FOR)**	Jack Sweeten
10:55	**STOP 2b – Tree Track Drone**	Aerial seeding demonstration and discussion around new seedpod technology to ensure optimal germination rates	**Amir Soleimano, Tree Track Intelligence Inc.**	Elske Von Hardenberg
12:40 pm	**Lunch**	Bagged lunch		
1:30 pm	**STOP 3a – option for reducing ungulate browse**	Use of Trico on western red cedar seedlings as a practice to reduce ungulate browse damage.	**Jacquilin McNicol - Infinity Pacific, Cole Sneider _ Mosaic, Paul Kutz - Western Forest Products**	Paul Kutz
1:30 pm	**STOP 3b – Wind firm practices**	Treatments designed to reduce windthrow	**Susan Pichugan, Calvin Lee – Teal Cedar products**	Elske Von Hardenberg
3:10 pm	**Snacks**	30 minutes		
3:40 pm	**STOP 3c – Swiss needle cast survey**	Discussion specific to swiss needle cast and monitoring of incidence	**David Rusch, Coast Area (FOR)**	Craig Wickland
4:30 pm	**Workshop -wrap up**	Bus leaves for Clarion Hotel	**Jack Sweeten**	

If you have any questions or get lost on the field tour, please contact Jack Sweeten: (604)-768-8260

Presenter Biography and Abstract

Biography:

Name: Kevin Webber
Affiliation: Ts'elxwéyeqw Tribe Management Ltd
Position: Forestry Manager
Responsibilities: Forest Planning, Operations, Reforestation, Special Projects
Academic training: BSF Resource Management
Previous employment: Western Forest Products

Presentation Abstract:

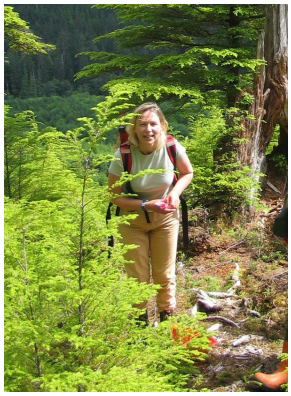
Field Tour: Introduction to the Chilliwack River Valley

Kevin will give an overview of the Chilliwack River Valley: First Nations and forest management history in the Valley and how embracing the past is changing our future. We will also present a high level discussion of the issues that managing forests on the doorstep of 3 million people presents. We look forward to a lively question and answer period.

Presenter Biography and Abstract

Biographies:

Name: Louise Waterhouse
Affiliation: MoF Coast Area Research; RPF, RPBio
Position: Research Wildlife Habitat Ecologist (1991 …)
Responsibilities: Wildlife Research focused on identification and management of habitat for Species-at-Risk and biodiversity.
Academic training: MSc



Name: Brian Danjou
Affiliation: Private
Position: Research Silviculturist
Responsibilities: Measurement and reporting of silviculture research trials and collaboration with Wildlife professionals investigating silviculture for spotted owl habitat management.
Academic training: UBC Forestry (1979)
Previous employment: Ministry of Forests: 1979 - 2010

Presenter Biography and Abstract

Biography:

Name: Melissa Todd
Affiliation: BC MOF Coast Area Research
Position: Research Wildlife Ecologist, RPBio
Responsibilities: Applied research into the response of wildlife species, communities, and habitats to forest management and climate change.
Academic training: MSc
Previous employment: Weldwood Northern Operations / West Fraser Mills (1995-2005); BC Ministry of Environment, Lands and Parks Habitat Protection Skeena Region (1994-1995); Canadian Forest Service Model Forest Network Hinton AB (1992-1993)

Presentation Abstract:

Topic: Understanding the stand structural attributes of spotted owl habitat. Can silviculture practices be used to create these attributes?

Recovery of the 'Endangered' Northern Spotted Owl in southwestern British Columbia includes habitat management under the Spotted Owl Management Plan. Harvest with Retention (HWR) or Habitat Enhancement Practices (HEP) may be applied as general wildlife measures within designated Wildlife Habitat Areas. The GWMs are based on Best Management Practices developed by Spotted Owl biologists, Habitat and Forest Research Scientists, and Forestry Experts. Our research project focusses on designing a structured experimental framework and indicators, including modelled indicators in TASS3, to monitor, compare and evaluate how forest stands harvested under these practices are developing into Spotted Owl habitat. We will provide an overview on our project and observational insights and commentary on findings relative to silvicultural practices and interpretation of the GWMs.

D'Anjou, B., F.L. Waterhouse, M. Todd, and P. Braumberger. 2015. A systematic review of stand-level forest management for enhancing and recruiting Spotted Owl habitat in British Columbia. Prov. B.C., Victoria, B.C. Tech. Rep. 091. https://www.for.gov .bc.ca/hfd/pubs/Docs/Tr/Tr091.htm.

D'Anjou, B., F.L. Waterhouse, M. Todd, and J. Stone. 2024. A visual classification to examine tree retention patterns from harvest practices in managed Northern Spotted Owl habitat in British Columbia. Prov. B.C., Victoria, B.C. Exten. Note 127. *In press*.

NOTES

Presenter Biography and Abstract

Biography:

Name: Deb MacKillop
Affiliation: Ministry of Forests
Position: Provincial Forest Ecologist
Responsibilities: Coordinate the BEC Ecology Team and p
forest ecology and biodiversity management
Academic training: MSc (UBC Forestry); RPF
Previous employment: Kootenay Regional Ecologist

Presentation Abstract:

Topic: Silviculture for Old Forest Management

Old forests are important for many reasons. They provide unique attributes that are not available or abundant in younger forests and it takes a very long time for a harvested or otherwise disturbed old forest to be replaced. With an increasing focus on old forest management, many are asking how silviculture can be applied. This presentation will discuss options, barriers, and challenges in using silvicultural techniques to recruit old-growth attributes across different ecosystems. Topics include: (1) maintaining some attributes of old forests in managed stands, (2) reducing impacts of increasingly common disturbances, and (3) accelerating development of old forest attributes. Some of these management activities may be more feasible than others, and context will always be key.

Presenter Biography and Abstract

Biography:

Name: Jason Hutchinson
Affiliation: Ministry of Forests
Position: Technical Advisor
Responsibilities: Forest Investments Coast Area
Academic training: BSc – Forestry UNBC
Previous employment: Strategic Natural Resource Consultants Inc.

Presentation Abstract:

Topic: Forest Investment Program Highlights:

Jason will share some information about the Forest Investment Program including the program's recently approved strategy, the program timelines for project submissions and funding criteria. He will highlight some of the coast area 2024/25 approved investment projects including reforestation, road rehabilitation and forest nutrient applications.

NOTES

Presenter Biography and Abstract

Biography:

Name: Kevin Webber
Affiliation: Ts'elxwéyeqw Tribe Management Ltd
Position: Forestry Manager
Responsibilities: Forest Planning, Operations, Reforestation, Special Projects
Academic training: BSF Resource Management
Previous employment: Western Forest Products

Presentation Abstract:

Field Tour: Chilliwack River Valley Reforestation Sites

The site visits will include cutblocks planted between 2010 and 2024 on licenses W0084 and FL A75807 owned by Ts'elxwéyeqw Tribe. We will discuss the issues around reforestation in the urban interface and the difficulties that come along with that. Reforestation with an eye towards cultural needs and wellbeing has created unique opportunities and a willingness to do things differently. We will discuss how we've changed reforestation practices over the last 14 years and how we will continue to evolve going forward.

These tour stops are meant to be open discussions on the successes and difficulties of our reforestation practices. Ts'elxwéyeqw's first cutblock was planted in 2010, so the tour stops are limited to sites where a free growing stand is the main objective. We look forward to the interactions and sharing of ideas.

Presenter Biography and Abstract

Biography:

Name: Charlie Cartwright
Affiliation: MoF, Cowichan Lake Research Station
Position: Licensed Science Officer
Responsibilities: Hembal Genetics, Gene Conservation
Academic training: BSc (UBC), MS (UCB)
Previous employment: Forest Technician

Presentation Abstract:

Topic : Second Cycle Hemlock Realized Gain Trials

Tree improvement programs for Douglas-fir and hemlock started with parent tree selections in the 1950s and progeny testing in the 1970s. Hemlock work was largely discontinued in the 1980s but revived in the 1990s. Second cycle testing in cooperation with American agencies in Oregon and Washington was in the ground by 2000 but the BC hemlock breeding program was shut down due to limited use of it and increased reliance on natural regeneration on hemlock ground.

As planting of hemlock fell in BC from almost 10 million seedlings a year in the 1990s, it rose in the US Northwest to similar numbers, largely due to effects of Swiss Needle Cast (SNC). To demonstrate and quantify their second-generation hemlock gains, the Americans established trails which we emulated in BC, but with the added goal of evaluating success of natural regeneration. Each of our 3 trails has 4 repetitions of three treatments - best second cycle (elite) stock, wood's run standard (Std), and natural regeneration (NR) - each represented by a block of roughly 100 planting spots in each rep. Though NR is very much less costly, there is likely to be a regen delay of 2 years. It may be patchy or over-stocked, suffer from inbreeding depression, and not be as well adapted to current and future climates as hemlock from breeding programs. At age 5 years NR covered 60% of the ground compared to 90% for planted Std and elites, averaged across the 3 sites. Elite trees were 20% taller than Std, and 350% taller than NR. By age 8 the coverage of NR had increased somewhat and height gains by the elites increased to 24% compared to Std but had dropped to 160% relative to ingress.

Douglas-fir clearly has superior value and drought tolerance relative to hemlock, but in environments where SNC is virulent, planting other species such as hemlock is logical.

NOTES

Presenter Biography and Abstract

Biography:

Name: Peter Cherniwchan, RPF
Affiliation: Ministry of Forests – Chilliwack
Position: Stewardship Officer
Responsibilities: Chilliwack Stewardship Department
Academic training: BSc Forestry (FRM), UBC
Previous employment:
Practices Forester – BC Timber Sales (2018-2022)
Forester – DWB Consulting Services (2016-2018)

Presentation Abstract:

Topic: Post Wildfire Reforestation and Liquid Microbial Inoculate Trial

Post Wildfire Reforestation:

From 2003 to 2023, 6% of the crown forested land within the Chilliwack Natural Resource District (District) has been impacted in some way by wildfire and varied in burn severity and size. Over this time span, the total area of forested crown land impacted by wildfire is roughly 48,000ha, with 32,000ha of this occurring from 2021, 2022, and 2023 wildfires.

District staff look at reforestation opportunities on areas of non-obligation crown land impacted by natural disturbances to support the delivery of the Provincial Forest Investment Program. Typically, wildfire areas are reviewed for planting eligibility and then trees are transferred, acquired, or sowed for planting. After planting, the District monitors the site like that of a Free Growing obligation. Most recently, in spring of this year, the Districts planting program consisted of 366,195 trees and planting occurred in areas impacted by the 2023 Davis Lake, Mystery Creek, and Kookipi Creek Wildfires. Eligibility Surveys are underway for the remaining areas impacted by the recent wildfires, however, District utilized surplus trees from other Forest Districts and licensees to immediately reforest areas of cultural significance, sensitive riparian areas, and higher brush potential.

Liquid Microbial Inoculate Trial

The District has taken the opportunity to trial Liquid Microbial Inoculate (LMI) in two areas that were planted within the 2023 Davis Lake and Kookipi Creek Wildfires. The LMI used in the Districts trial is a product produced by Fixed Earth (https://fixed.earth/) in Fort Saint John, British Columbia.

LMI consists of a blend of fungal endophytes (symbionts), soil fungi, a specialized bacterium, and some broad-spectrum microbes. All specialized microbes used in the blend are derived from western Canada. However, microbe isolation can be acquired from the specific planting site. The fungal endophytes are well documented in the literature to promote overall plant growth and health and improves plant's ability to tolerate abiotic stresses such as nutrient poor soil, drought, heat, pollution, and so on.

The District will be monitoring both trial sites to compare seedlings drought resistance, root growth, survival, and overall health.

Presenter Biography and Abstract

Biography:

Name: Amir Soleimano
Affiliation: Tree Track Intelligence Inc.
Position: CEO & Co-Founder
Responsibilities: Plant science department
Academic training: Ph.D in Horticulture
Previous employment: PRT

Presentation Abstract:

Topic: Tree Track's Revolutionary Seedpod Technology: Ensuring High Germination and Wildlife Protection

Tree Track is leading the charge in sustainable forestry solutions, leveraging cutting-edge technology and a commitment to environmental stewardship. With a team of experts at the helm, including CEO and Co-founder Amir Soleimani, a Ph.D. horticulturist with a decade of industry experience, and CTO and Co-founder Sam Sarabi, a visionary in technological innovation, Tree Track is poised to revolutionize the forestry sector.

At Tree Track, we're proud to introduce our groundbreaking Seedpod technology, a game-changer in the realm of sustainable forestry. Developed to ensure optimal germination rates while safeguarding seeds from wildlife interference, our Seedpods represent a new frontier in reforestation efforts.

Designed with precision and care, our Seedpods offer unparalleled protection for seeds, shielding them from the elements and wildlife alike. With a focus on high germination rates and successful seedling establishment, our Seedpods are engineered to provide the ideal environment for seed growth, even in challenging conditions.

But that's not all – our innovative dispersal mechanism takes reforestation to new heights. Attached to drones, our dispersal system allows for the precise dropping of Seedpods, ensuring optimal spacing and distribution across hectares of land. By offering customizable spacing options and the ability to disperse Seedpods individually, our technology enables efficient and effective reforestation efforts on a large scale.

With Tree Track's Seedpod technology and dispersal mechanism, we're not just planting trees – we're planting the seeds of a greener, more sustainable future. Join us as we revolutionize reforestation and pave the way for a brighter tomorrow.

NOTES

Presenter Biography and Abstract

Biography:

Name: Jacqulin McNicol, RFT

Affiliation: Infinity Pacific Stewardship Group Ltd.
Position: Tenures Manager
Responsibilities: Planning, appraisals, cutting permits, engagement, silviculture, harvest development, loving the forest industry and navigating the challenges of owning a business that is reliant upon it.

Academic training: BCIT Tech Program

Previous employment: Inter Coastal Log Services many eons ago.

Presentation Abstract:

Effectiveness of Trico on Western Red Cedar against ungulate browse

My colleague Norm Caldicott and I conducted a series of research trials on behalf of Kwizda Agro between 2018 and 2022, to test the efficacy of Trico, a natural repellant used to reduce browse on seedlings by deer and elk. The active ingredient of Trico is sheep fat, the idea derived from years of farmers effectively using wool as a repellant against deer in their crops. Research plots were selected in areas where historic and current browse pressure is rated high to extreme in the north and south of Vancouver Island and Texada Island. The results of the trials were extremely positive and led to the registration of Trico in Canada in 2022. Increased challenges for successful reforestation due to forest health and climate change, combined with growing elk and deer populations in parts of BC has led to a decrease in planting site appropriate species where efforts to reduce browse have been unsuccessful. Through the ongoing operational implementation of Trico and continued monitoring, I look forward to learning more and advising on positive solutions that will maintain biodiversity on the landscape. It's been a fun six years with more positivity, research, and effective solutions yet to come.

My stop will look at western red seedlings treated with Trico and planted this spring. Discussions around application methods and locations where Trico is currently being used are welcome.

Trico is listed on Schedule 2 of the Integrated Pest Management Regulation as an Excluded Pesticide.

Presenter Biography and Abstract

Biography:

Name: Susan Pichugin, RPF
Affiliation: Contractor with Teal Cedar Products Ltd.
Position: Stewardship Forester
Responsibilities: Site Plans, FSP, Special Projects
Academic training: UBC BSF- Forest Resources Management
Previous employment: Wedeene Consulting (Kitimat), CANFOR (Harrison), Lakeside Pacific Forest Products Ltd.

Name: Calvin Lee, RPF
Affiliation: Teal Cedar Products Ltd.
Position: Forest/Operations Engineer
Responsibilities: Operations Planning, Engineering, Appraisal
Academic training: UBC BSF- Forest Resources Management
Previous employment: Coastal Natural Resources Management, MFLNRO – GIS Analyst (Smithers), MKRF- Intern,

Presentation Abstract:

Topic and/or Title: Crown Modification for Windthrow Management

We will be discussing Teal's experience and ongoing experimentation with applying Crown Modification (helicopter pruning) as a way to mitigate windthrow. Teal's Fraser Valley Operation has been applying helicopter pruning on boundaries determined to have a high risk of windthrow since 2018. The initial applications were in the Norrish Community Watershed. At the time, newly observed windthrow within the community watershed was a concern, as windthrow was resulting in additional sediment entering streams…not what you want to have happen in a community watershed! Teal has since expanded the use of crown modification into its Stave and West Harrison Operating Areas, in areas known to have fish streams.

These boundaries have been monitored and, overall, the results have been good. The more recent use of drones has very much aided our observations and documentation.

NOTES

Presenter Biography and Abstract

Biography:

Name: David Rusch
Affiliation: Ministry of Forests
Position: Regional Pathologist
Academic training: MSc in Forest Science from UBC

I graduated with a M.Sc. in Forest Science from UBC in 1993, where I studied laminated root rot. After that I ran a small consulting company, Rot Rooters Forest Consulting, based out of Parksville. In 2007, I joined the Ministry of Forests as a forest health technician in the Chilcotin. I served a brief stint as regional entomologist for the Cariboo in 2013 and then became the regional pathologist for the Cariboo and Thompson Okanagan from 2013 to 2021. In 2021, I became the regional pathologist for the coast area. I have 2 adult daughters and live with my wife of 29 years in Nanaimo.

Abstract:

Topic: Swiss Needle Cast and monitoring

NOTES