



Coastal Silviculture Committee

*2019 Winter Workshop
Vancouver Island University
February 26th, 2019*

"Will Tradition work in the Transition?"

*- Exploring challenges and new approaches in a
rapidly changing coastal climate -
The Coastal Transition Zone (CTZ)*



photos by Don Pigott & Ralph Schroeder

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Acknowledgements

The Coastal Silviculture Committee (CSC) wishes to thank the following people for contributing their time and efforts in organizing the 2019 Winter Workshop:

- Dave Weaver (Workshop Chair)
- Doug Corrin (VIU org)
- Shaun Mason
- Neil Hughes
- Craig Wickland (President)
- Chelsey Toth
- Jocelin Teron (Workshop Co-chair)
- Don Pigott
- Jack Sweeten (Vice President)
- Lauchlan Glen
- Margaret Symon

Special thanks to Jake Bapty and Tyler Rochon of Strategic Natural Resource Consultants for serving as CSC directors for 3 years.

The CSC would like to thank Vancouver Island University for the venue.

A big thanks to Mosaic Forest Management for sponsoring the coffee breaks.



And finally, 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.

In Memory of John Russell

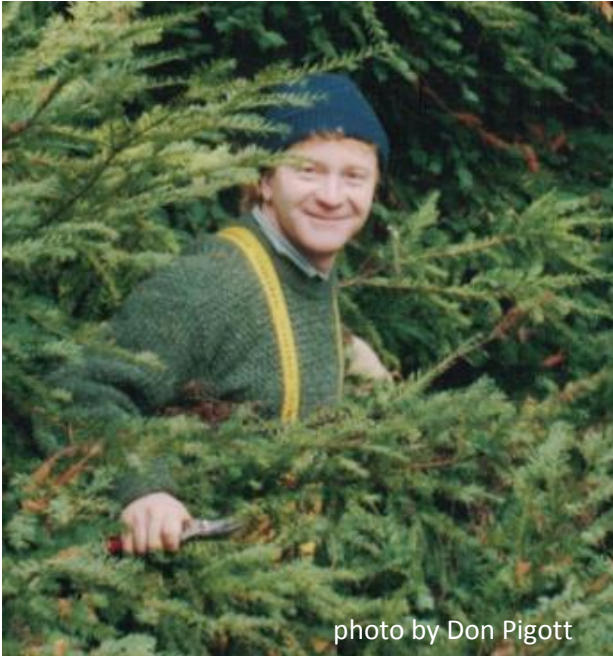


photo by Don Pigott

The Directors of CSC would like to acknowledge the sad passing of John Russell RPF PhD, on Dec 20, 2018. John contributed greatly over the years to CSC and was always available and engaging when asked to speak at CSC workshops. John was the principal research scientist examining growth, genetics and survivability of the western red cedar and yellow cedar for the B.C. Ministry of Forests. He co-authored more than 40 papers in scientific journals and organized an international symposium in Victoria on the two species in 2010. John lived in Maple Bay, and died of kidney cancer at the age of 63. Originally from Brantford, Ont., John

obtained his bachelor of science degree in forestry from the University of Toronto. He completed a master's degree at the University California Berkeley and joined the Forests Ministry research centre at Lake Cowichan in 1985. While with the ministry, he completed his PhD at the University of British Columbia.

Testimonials and Stories from John's colleagues:

Barb Hawkins, a professor in the Centre for Forest Biology at the University of Victoria, called John a friend and good colleague and said "He was always generous with his knowledge and ideas and forever supportive, especially with students. John was a true scientist, and he will be greatly missed."

Alvin Yanchuk, once the head of genetics research at the Forests Ministry, said "When John first started work on the cedars over 25 years ago, many believed the trees carried little genetic variation. But John's harvesting, cloning and the planting and monitoring proved them wrong. His plantations are now the seed orchards used to replenish forests in B.C. Basically he started something out of nothing".

John Russell is survived by his wife, Valerie, and three grown children, Heather, Andrew and Christopher. A celebration of his life is being planned, possibly for the spring.

Exerts from the Times Colonist Jan 2, 2019

"Will Tradition work in the Transition?"

Exploring challenges and new approaches in a rapidly changing coastal climate - The Coastal Transition Zone (CTZ)

This CSC workshop will immerse you the participant into the rapidly changing and challenging world of Forest Management in the Coastal Transition Zone. This zone is that beautiful area of the coastal BC ecosystem that begins to shift – climatically in temperature and precipitation – into a more BC Interior like climate. Geographically, we are referring to the areas around and beyond the Pemberton and Boston Bar communities and the back ends of our major remote coastal BC inlets.

The CTZ has always been an area of pluses and minuses regarding silviculture success. And now, given this zone is even more rapidly changing due to climate change and shifts in the tree growing seasons, it is timely to gather as a coastal silviculture community and openly discuss solution options - *Does the status quo work anymore or what can we do differently?*

The intent of this Winter Workshop is to wet your appetite for the CTZ challenges and set the stage for the Summer 2019 CSC field Workshop planned for Pemberton on June 18 and 19th.

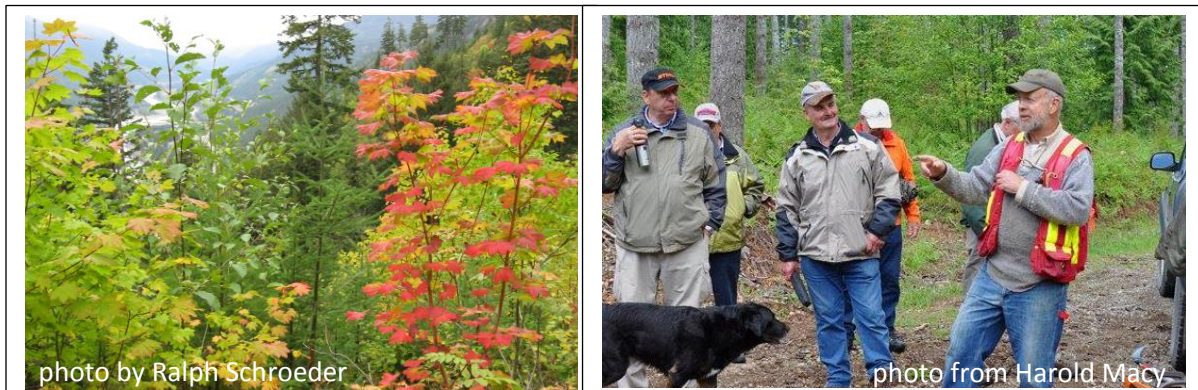
In this workshop, topics covered by experts from around BC and even from our neighbours in Oregon, will include:

- *Forest Health issues; Vegetation management approaches; Comparisons of A and B Class seed performance; Climate Change Modelling and Species Selection; and Reforestation in the Oregon Coastal Transition Zone*

The opening to this workshop will be provided by the veteran CTZ practitioner and retired silviculturalist Norm Caldicot. As well, to wrap up the session, Norm will be chairing an informal all-presenter panel discussion on whatever you the participant need more discussion on.

So be prepared to be engaged and enjoy. Refreshments, snacks, and a hot lunch will be provided.

Dave Weaver CSC Winter 2019 Chair – on behalf of the CSC workshop organizing committee and the CSC directors



2019 Coastal Silviculture Committee (CSC) Winter Workshop – Feb. 26, 2019
Vancouver Island University – Building 355 Room 203 (211 break room)

“Will Tradition work in the Transition”			
Explore the challenges and new approaches in the most rapidly changing coastal climate			
– Coastal Transition Zone (CTZ) -			
Times	Topic Theme	Specific Topic Details	Speakers
9:00 am (5 min)	Workshop Chair Welcome	Introductions, Safety, Washrooms, CSC committee, Agenda	Dave Weaver Chair Jocelin Teron Co-Chair
9:05 am (20 min)	Introduction to the reality and challenges of the CTZ	The Transition zone has had problems for years and is now even getting worse!!	Norm Caldicott RPF retired (BCIT) North Vancouver Intro Jack
The Transition Zone’s Past and Present			
9:25 am (35 min)	Scary Forest Health issues past and present in CTZ	Ba Fd Bark beetle; Spruce Budworm? Balsam woolly adelgid; – what else??	Babita Bains RPF MoFLNRO Provincial Entomologist, Victoria Intro Lauchlan
10:00 am	Coffee Break – Sponsored by Mosaic		30 mins
10:30 am (35 min)	Is Vegetation Management an issue in the CTZ?	Issues in the CWH ds1 sites at the back of a few coastal inlets in the CTZ	Ralph Schroeder RPF Practices Forester BCTS Chilliwack Intro Jack
11:05 am (30 min)	Do A or B Class seed perform better in CTZ?	The “holy grail” of tree improvement” opened up due to CTZ challenges	Michael Stoehr RPF MoFLNRO Forest Genetics, Victoria Intro Don
11:35 am (25 min)	CSC Business Meeting Student Awards		Dave Weaver - Treasurer Jocelin Teron ; Chelsey Toth
12:00 am	Lunch - Room 103 - downstairs		
The Transition Zone’s Future			
1:00 pm (45 min)	A Climate Change Informed Species Selection Tool for British Columbia – Case Study Fraser TSA	Highlight the species alternatives in the CTZ. Use Fdc or Fdi in the future???	Will Mackenzie Smithers Pamela Dykstra Victoria MoFLNRO Research Ecologists Intro Dave
1:45 pm (40 min)	Physiological approaches to reforestation of Oregon's CTZ.	Environmental stresses on Fd seedling growth and development	Rebecca Sheridan Oregon State University Forest Management Intro Michael
2:25 pm	Coffee Break - Sponsored by Mosaic		15 mins
2:40 pm (50 min)	Panel Discussion: What’s next in the CTZ?	All presenters answer questions from audience	Chair Norm Caldicott
3:30 pm	Intro CSC Summer 2019	Pemberton June 18 & 19 th 2019	Katherine Lawrence Squamish
3:35 pm	Miller Time!!		

Introduction to the reality and challenges of the Coastal Transition Zone

9:05

Name: Norman Caldicott RPF

Affiliation: Independent; sometimes employed by:
Infinity-Pacific Stewardship Group Ltd;
Green Admiral Nature Restoration Ltd.

Responsibilities: His passion, and the focus of most of his work, is applied silviculture in coastal BC.

Academic training: B.Sc. Zoology, B.S.F., Diploma in Advanced Silviculture – SIBC.

Previous employment: Norm has worked in applied natural resource management, mainly in southern BC, since 1966.

Recently Norm retired from BCIT in the spring of 2018, after teaching at BCIT since fall 2000. Subject matter included plant identification, soil assessment, ecosystem classification, plant propagation, practicums, projects and all things silviculture in their Renewable Resources Programs.



Presentation Abstract:

I'm going to identify the major silvicultural problems that I have encountered during my involvement with forest management in the Coast-Interior Transition Zone. My involvement with that area has been from the Vancouver Forest Regional Office, from the Squamish District Office, from head-office Interfor, as a consultant and contractor and as an instructor at BCIT. My involvement with the CITZ began in 1981 and continues today. If you've got something you think I can help you with, please let me know.

I think it's important to clearly state that other than being inquisitive, observant, perhaps somewhat OCD, fascinated by and passionate about field silviculture, everything insightful I think I know, I have learned from others smarter and much harder working than I. I'll try to identify some of them as I work through the problems; my regrets to the legions unmentioned.

I will address:

- factors affecting plantation establishment
- damage agents of young stands
- social constraints

[illegible]

Scary Forest Health issues past and present in CTZ

9:25

Name: Babita Bains RPF

Affiliation: Resource Practices Branch of the B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development

Position: Provincial Forest Entomologist

Academic training: Master of Science in Forest Entomology from the University of British Columbia.

Previous employment:

Prior to joining the Resource Practices Branch she was the Seed and Seedling Planning Officer with BC Timber Sales from 2016-2017, and before joining the Ministry in 2016, Babita worked as a consultant with B.A. Blackwell & Associates Ltd. While working as a consultant, Babita completed and contributed to numerous projects related to forest health, environmental impact assessment, community wildfire protection planning and urban forestry



Presentation Abstract:

Provincial and Coastal Forest Health Overview

This presentation will provide a provincial overview of the major forest health factors impacting the province with highlights of current coastal forest health issues, including an update on the status of the balsam woolly adelgid regulation.

[illegible]

Is Vegetation Management an Issue in the Coastal Transition Zone?

10:30

Name: Ralph Schroeder, RPF

Affiliation: British Columbia Timber Sales

Position: Practices Forester

Responsibilities: Timber Harvest Planning

Academic training: Bachelor of Science in Forestry

Previous employment:

-1988 to 2005: Timber Cruiser, Assistant Silviculturist, Silviculturist, and Silviculture Forester, International Forest Products Ltd.

-2005 to 2006: Forester, N&R Forest Management, Squamish, B.C.

-2006 to 2018: Compliance and Enforcement Forester, Natural Resource Officer, Ministry of Forests, Lands, Natural Resource Operations and Rural Development

-2018 to Present: Practices Forester, British Columbia Timber Sales



Is Vegetation Management an Issue in the Coastal Transition Zone?

Answer: Yes

Timing: Winter and early spring harvesting opportunities.

Planting Stock: Everyone has their preference for planting stock type, but most important is getting trees into the ground as soon as possible after harvesting.

Vegetation Management: Starts at the block planning stage: Having available planting stock (always sow extra sub maritime Douglas-fir), access to the block, approved pest management plan.

Planting: Get trees into the ground as soon as possible after harvesting. Better to cream the block out and have some stocking than waiting a year for slash to break down. You can always fill plant.

Monitor, monitor, monitor: Back in the day of root die back, we always walked our blocks a few weeks after planting and again in the fall to understand the amount of stocking in the block. Also, monitor for brush competition with seedlings.

Brushing:

When: As often as required to give the seedlings a chance.

How: Brushing options will depend on where you are and what constraints are to be followed. This presentation will use photos from the past to present successful reforestation outcomes in the CWH ds1 area.

[illegible]

Do A or B Class seed perform better in Coastal Transition Zone?

11:05

Name: Michael Stoehr RPF

Affiliation: Forest Improvement and Research Mgt. Br.

Position: Coastal Team Lead

Responsibilities: Coastal Douglas-fir Breeding

Academic training: BScF, MScF, PhD, RPF

Previous employment: Post Doc at UVic



Presentation Abstract:

A versus B class seed in CTZ: Who will be the winner?

Several tests with Douglas-fir in the CTZ showed that coastal seed performed well in height growth but showed slightly higher mortality when compared with other, more local (CTZ) seed sources. Fortunately, there was much variation in the tested CTZ families in the progeny tests which resulted in the selection of superior parents that are now included in the SM seed orchard. As the CTZ is a difficult and challenging zone to establish successful regeneration, a secondary selection criterion was included to emphasize and improve the regeneration potential of the seed orchard seedlots. However, this testing and selection was all done “before” climate change and with the current anticipated effects of CC, the circumstances and conditions will change or have changed already. Therefore, I will also show the Implications of the new Climate Based Seed Transfer (CBST) and will discuss how these new transfer rules were developed. Finally, I will demonstrate the result of the new Seed Selection tool to facilitate the selection of the most suitable seedlots for regeneration and by using this tool, reduce risk of plantation failure in the future.

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Coastal Silviculture Committee Business Meeting Agenda February 26, 2019

Agenda

1. New Logo - Jocelin Teron.



2. Financial Statement – January 2018 – December 2018
(next page – Dave Weaver).
3. Student Award Presentations - Chelsey Toth:
VIU recipients:
Nicola Littleton
Leif Wagner

BCIT recipients:
Milo Friesen
Andrea Facey

UBC recipients
Alexandra Iannantuono
Chenying Li
4. Nominations for Silviculturalist of the Year Award (to be awarded in the summer of 2019) – updated criteria on the website – Jocelin Teron
5. Post Workshop Evaluation – Email Survey - Jocelin Teron.
6. Adjourn.

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A Climate Change Informed Species Selection Tool for British Columbia – Case Study Fraser TSA

1:00

Name: Will Mackenzie and Pamela Dykstra

Affiliation: Ministry of Forests, Lands, and Natural
Resource Operations (FLNRO)

Position: Provincial Research Ecologist – Biogeoclimatic
Ecosystem Classification

Responsibilities: Provincial BEC Classification and
Climate Change

Academic training: BSc. (UVic)

Previous employment:



Presentation Abstract:

Climate changed informed tree species selection should account for changes in the ecological suitability of species under a spectrum of plausible future climate conditions over a rotation period. The objective should be to reforest using species and provenances that perform adequately now and well in most future climates and to reduce use of species anticipated to decrease in suitability in the future. To address this complicated problem, the BEC program of FLNRO has developed an analysis and webtool that aligns current site-based tree species suitability with anticipated suitability ratings over a range of 30 modelled future climates. The tool helps identify where changing climates may lead to improving species suitability and new reforestation options, or where current species recommendation will be under increasing stress.

A Modern Portfolio Theory analysis of the climate change projections of suitability can provide foresters with a risk-return optimized ratio of climate adapted species for reforestation over a landscape.

We will demonstrate the tool and its recommendations for reforestation planning using examples from the Fraser Timber Supply Area on the south coast.

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Physiological approaches to reforestation of Oregon's Coastal Transition Zone.

1:45

Name: Rebecca Sheridan

Affiliation: Oregon State University

Position: PhD Candidate

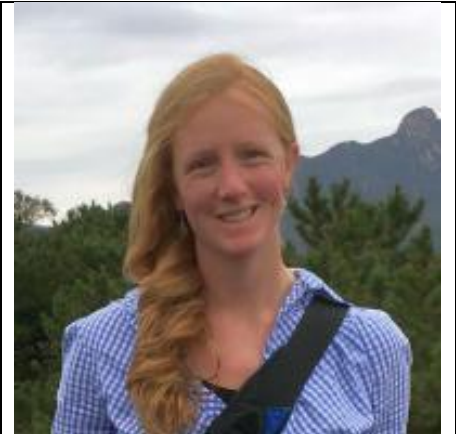
Responsibilities: Research on Douglas-fir seedling physiology and root function

Academic training: MS, University of Idaho

Previous employment:

University of Washington, Biology Dept. (2011-2013)

Washington Conservation Corps (2009-2011)



Presentation Abstract:

The establishment of planted seedlings is a critical step for reforestation efforts, especially as we face a changing climate. Therefore, it is important to understand how seedlings adjust to the outplanting site. In particular, root morphology, growth, and function are critical for seedlings to access soil moisture, to support shoot growth and photosynthesis. Across the Northwest, foresters are seeing establishment failures for Douglas-fir seedlings; their observations indicate that the root systems on these seedlings may be underperforming. With this in mind, we set up a series of experiments to evaluate the growth and function of roots on Douglas-fir seedlings. Using seedlings transplanted into large containers, we followed root growth over the course of the first growing season. We measured new root tips, new root volume, and new root mass classified by root size. We also measured the supply of water from seedling's root system (root and stem conductance), seedling water status (leaf water potential), and water loss through transpiration. When considered with morphological measurements, we can determine whether a seedling's water supply is sufficient for demands created by survival and growth. The outcomes of this research are relevant for informing seedling grading criteria and planting decisions, as well as predicting seedling survival in the face of challenging outplanting environments.

[illegible]

Panel Discussion:
What's next in the Coastal Transition Zone?
All presenters will answer questions from the audience
2:40

Panel Chair: Norman Caldicott RPF



Presenters on the Panel:

- **Norm Caldicott** RPF retired (BCIT) North Vancouver
- **Babita Bains** MoFLNRO Provincial Entomologist, Victoria
- **Ralph Schroeder** RPF Practices Forester BCTS Chilliwack
- **Michael Stoehr** MoFLNRO Forest Genetics, Victoria
- **Will Mackenzie** Smithers MoFLNRO Research Ecologist
- **Pamela Dykstra** Victoria MoFLNRO Research Ecologist
- **Rebecca Sheridan** Oregon State University Forest Management

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