



Embracing the Boom – Growing the Demand

**Joint Annual General Meeting of the
Forest Nursery Association of BC and the Western
Forest and Conservation Nursery Association**

Mary Winspear Centre
Sidney, BC

September 30 – October 2, 2019

Monday September 30, 2019

Pre-Conference Tours

- 11:00 – 1:00 Butchart Garden “Behind the Scenes” Tour
- 1:30 - 2:30 & 2:30 – 3:30 Shaw Ocean Discovery “Behind the Scenes” Tour
- 1:30 – 2:30 Inca Dinca Do Farm & Fibery Tour
2:30 - 4:30 Golf at Cordova Bay Golf Course

12:00 – 5:30 Exhibitor Set up

6:00 - 10:00 Registration/ Ice Breaker and Commercial Exhibits
Appetizers/Cash Bar

Charity Casino Fundraiser for SPCA in memory of Terri Lee Baird.

Meet our suppliers and start filling out your PASSPORT TO PRIZES!
Conference attendees are given a *Passport* upon registration, which once signed by our exhibitors qualifies them for the prize draw at the end of the conference.

2019 Passport Prizes

Grand Prize – Vancouver Island Getaway

2nd Prize – OYOYO Heated Jacket

3rd Prize – OYOYO Heated Jacket

Charity Casino Sponsors

The FNABC and WFCNA would like to thank and acknowledge the following sponsors for their support.



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Tuesday October 1, 2019

7:00 - 8:00	Breakfast, Registration and Commercial Exhibits
8:00 - 8:10	Welcome and Opening Remarks FNABC President, Tsawout First Nation Elder and Mayor of Sidney
8:10 – 8:50	What a Forester Wants from the Nursery Dennis Farquharson – Gro Trz Consulting Inc.
8:50 – 9:30	Seedling Ecophysiology: Nursery to Field Question and Answer Session Steve Grossnickle – Nursery ToForest Solutions
9:30 – 10:00	Exhibitor Forum
10:00 - 10:30	Coffee Break and Commercial Exhibits
10:30 – 11:10	Applicability of Root Growth Potential Testing to Predict Seedling Survival and Growth in the Inland Northwest Andrew Nelson, University of Idaho
11:10 - 11:50	Lifting Dates, Chilling Hours and Storage Duration on RGP, Growth and Survival Ryan Nadel, Auburn University
11:50 - 1:00	Lunch Break and Commercial Exhibits
1:00 - 1:40	LED Lighting and Greenhouse Crop Production Roberto Lopez, Michigan State University via webcam
1:40 – 2:20	Diseases and Pesticide Screening Mario Lanthier, CropHealth Advising & Research
2:20 – 2:50	Coffee Break and Commercial Exhibits
2:50 - 3:30	Using DNA-based detection technology to prevent conifer seed-borne pathogen diseases Nico Feau, University of British Columbia
3:30 – 4:15	FNABC Business Meeting (all FNABC members welcome)
5:00 - 6:00	Cash Bar
6:00 – 11:00	Banquet Chief Forester’s Seedling Growing Award (412A Fdc) Green Timbers Award Live Entertainment Stand-up comic Morgan Cranny followed by music with Doug Folkins

Wednesday October 2, 2019

- 8:00 - 8:45 **Breakfast, Registration and Commercial Exhibits**
- 8:45 - 8:50 **Updates** – FNABC President Steven Kiiskila
- 8:50 - 9:30 **MSI Prevention During Tree Planting**
Robin McCullough, Brinkman Reforestation
- 9:30 – 10:10 **A Wild Winter at Webster Nursery: Weather Impacts of Winter 2018-2019**
Nabil Khadduri, Webster Forest Nursery, Washington Depart of Natural Resources
- 10:10 – 10:40 **Advances in Whitebark Pine Germination at the U.S. Department of Agriculture, Forest Service, Coeur d’Alene Nursery**
Aram Eramian, Coeur d’Alene Nursery, USDA
Randy Moody, Whitebark Pine Ecosystem Foundation of Canada
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- 10:40 – 11:00 **Coffee Break and Commercial Exhibits**
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- 11:00 – 11:45
 - **Balsam Woolly Adelgid Update** – Dave Trotter, Phytofor Consulting
 - **Ag Environmental Management Code of Practice Update** – Marg Crowley, BC Ministry of Environment & Climate Change Strategy
 - **Government Seedling Demand Forecast Update** – Neil Hughes, BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development
 - **BC Timber Sales Update** – Alan Rasmussen, BC Timber Sales Seedling Services
- 11:45 – 12:00 **Exhibitor Passport Draw**
- 12:00 – 12:10 **Conference Wrap-up**
- 12:40 – 3:00 **Arbutus Grove Nursery and WFP Saanich Forestry Centre Nursery Tours**
Pick up Bag Lunch and Board Buses
- 3:00 **End of Conference – Buses Drop off Passengers at Conference Centre**

Sponsors of the Joint Annual General Meeting of the Forest Nursery Association of BC and the Western Forest and Conservation Nursery Association

The FNABC and WFCNA would like to thank and gratefully acknowledge the generous contributions of the following sponsors in support of the 2019 Annual General Meeting and their ongoing efforts for the reforestation nursery sector.



Abstracts and Biographies

Tuesday October 1, 2019

8:10 – 8:50 What a Forester Wants from the Nursery

Dennis Farquharson – Gro Trz Consulting Inc.

ABSTRACT

Dennis plans to take us on a seedling to free growing and well beyond, photo journey compressing his 30 years of silviculture field experience and observations into this presentation. While doing so he is going to share with us his perspective on what the forest nurseries of BC are doing well, as well as suggestions that the forest nurseries might consider making (small and larger) that would help and support silviculture foresters, planting contractors and planters to help them establish better plantations and maybe a bit more easily.

BIOGRAPHY

Dennis Farquharson is an RPF Silviculture Forester who graduated from UBC Forestry in 1985 and in 2002 obtained a UBC diploma in Advanced Silviculture. He worked for Tolko Industries Ltd in the Thompson Woodlands Division from 1988-2009 and was responsible for the management of all silviculture activities. He has been a longstanding member of SISCO since 1993 and since 2010 has been a forestry consultant.

During his career Dennis has managed all activities related to the planting of more than 60,000,000 seedlings and the declaration of more than 35,000 hectares 'free growing' forests. He has been involved in many operational trials over the years include fall planting, exponential fertilizer loading of Douglas-fir, mature needle Lodgepole pine, various deer browse control techniques, tea bag fertilization, hydro-gel moisture augmentation, herbicide application and climate change out-planting trials.

8:50 – 9:30 Seedling Ecophysiology: Nursery to Field Question and Answer Session.

Steve Grossnickle – Nursery ToForest Solutions

ABSTRACT

Ecophysiology examines the physiological and morphological processes of plants in response to their surrounding environment. Merging biological knowledge of the forest species with an understanding of environmental conditions that influence seedling performance allows practitioners to create a cultural process to grow quality crops of seedlings. In addition, monitoring of the cultural process and assessing the final product ensures the delivery of quality seedlings to the forest restoration program. Production of quality seedlings is the objective of all nursery programs because it is the critical component for successful seedling field performance within any forest restoration program. This question and answer session is designed to allow the nursery practitioner to ask about the biological processes of conifer seedlings and how to integrate this knowledge into developing nursery cultural protocols.

BIOGRAPHY

Dr. Steve Grossnickel has conducted work in the natural sciences/forestry field for over thirty years throughout the U.S. and Canada, regarding ecological and physiological processes of plants in operational nurseries, ecosystem restoration projects and forested areas. He graduated with a PhD in 1983 from Colorado State University. He has worked as an Assistant Professor at the University of

Toronto in silviculture from 1984-85, was Assistant Director and Research Scientist with the Forest Biotechnology Centre at BC Research from 1987-99; Program Lead and Director at Cellfor Inc. from 2000-11 and has been a forestry consultant since 2012.

10:30 – 11:10 Applicability of Root Growth Potential Testing to Predict Seedling Survival and Growth in the Inland Northwest

Andrew Nelson, Center for Forest Nursery & Seedling Research, University of Idaho

ABSTRACT

Root growth potential (RGP) is one of the most widely tested metric of seedling quality by nurseries across the Northwest. Prior to outplanting, seedlings are placed in an environment with optimal temperature, moisture, and light conditions. At the end of testing seedlings are removed and new root growth is measured, such as the count of new roots or the length of the longest new root. The Center for Forest Nursery and Seedling Research at the University of Idaho has refined an aeroponic mist chamber system to rapidly test RGP of multiple seedlots at once. The Center routinely tests 80-100 seedlots per year for public agencies and private landowners. All Inland Northwest seedlots have been planted annually at three sites per years that span a broad geographic and site quality distribution where survival and growth are measured for the first two or year years after planting. First year survival and growth of Interior Douglas-fir and western larch were poorly correlated with RGP when planted in 2018, except for extremely low RGP seedlots suggesting a potential RGP threshold for survival. This presentation will focus on correlations of growth and survival two and three years after planting from various trials installed across the region to continue work on developing RGP thresholds by species.

BIOGRAPHY

Dr. Andrew Nelson is the Tom A. Alberg and Judith Beck Endowed Chair of Native Plant Regeneration and Director of the Center for Forest Nursery and Seedling Research at the University of Idaho. He has 10 years of experience studying forest regeneration in forests of New England, the southeastern United States, and the Inland Northwest. He currently researches ways to improve seedling quality in the nursery, environmental factors influencing outplanted seedling survival and growth, and modeling forest regeneration responses to climate, competing vegetation, and seedling quality.

11:10 – 11:50 Lifting dates, chilling hours and storage duration on Root Growth Potential (RGP), Growth and Survival

Ryan Nadel, School of Forestry and Wildlife Sciences, Auburn University

ABSTRACT

Annually the southern United States produces over a 1 billion forest tree seedlings, the majority are conifers (pine) produced as bareroot seedlings. Typically grown in native soil, in open fields for less than a year they are removed from the soil during lifting, prior to being sent for outplanting. Once seedlings are lifted, they are packed in boxes, bags or bundles, stored in a cooler and transported to sites for reforestation. Lifting operations occurs between late November to February /March each year. All forest tree seedlings, during this short time period, need to be lifted and planted to optimize chances of seedling survival and growth. Once lifted seedlings are often held in cold storage prior to outplanting. One concern with this process is that, seedlings stored for longer than recommended have an increased chance of developing mold and decreasing seedling survival once outplanted. Storing forest tree seedlings is thus a foremost challenge due to the short time period between lifting and planting for optimal seedling survival. Weather conditions are often not conducive for tree planting once seedling

have already been lifted from the nursery, requiring seedlings to be stored for longer time periods than recommended. Over three lifting seasons we investigated the impact of pine seedling storability over a 14-week period compared to delayed lifting dates and their impact on both survival and growth after outplanting. This research showed that despite longer storage times, chilling hours are not necessary for successful storage of seedlings. However, increased storage time did result in decreased root growth potential (RGP) and seedling outplanting survival. Seedlings harvested later in the lifting season resulted in decreased survival after outplanting. Delaying the lifting of seedlings over the recommended lifting season and storing in a cooler for extended periods of time will reduce outplanted seedling growth and survival.

BIOGRAPHY

Dr. Ryan Nadel is an Assistant Research Professor in the School of Forestry and Wildlife Sciences at Auburn University, working for the Southern Forest Nursery Management Cooperative. His current research focus is on seedling quality and methodologies that minimize the environmental impact of nursery cultural practices, while maximizing the cost effectiveness of artificial regeneration forestry systems.

1:00 – 1:40 LED Lighting and Greenhouse Crop Production

Roberto Lopez, Department of Horticulture, Michigan State University

ABSTRACT

Does the lighting lingo put you in the dark? Roberto will cover the common definitions, guidelines, and strategies used for high-intensity light-emitting diode (LED) supplemental greenhouse lighting for seedlings. He will also discuss the plant responses that you can expect under LED supplemental and photoperiodic lighting. Lastly, he will discuss key factors to consider when making a decision between high-pressure sodium (HPS) lamps and LED fixtures, including lamp longevity, efficacy, cost, light spectrum, electricity rate, utility rebates, and various growing scenarios.

BIOGRAPHY

Dr. Roberto Lopez is an assistant professor and controlled environment/floriculture extension specialist with a 45% research, 30% teaching, and 25% extension appointment in the Department of Horticulture at Michigan State University. His research focuses on propagation and production of young and finish plants (floriculture, leafy green, and culinary herb crops) in greenhouses, growth rooms/containers, warehouse-based plant factories, and vertical farms. The primary objective of his research is to determine how light (quantity, quality, and duration), substrate and air temperature, and carbon dioxide in controlled-environment agriculture (CEA) production influences crop timing, rooting, yield, quality, flavor, nutrition, and subsequent performance.

1:40 – 2:20 Update on Pesticide Registrations for Canadian Seedling Nurseries

Mario Lanthier, CropHealth Advising & Research

ABSTRACT

Since 2017, the British Columbia association has sponsored projects to generate new pesticide registrations for Canadian forest seedling nurseries. In fall 2018, two trials funded by the industry examined “newer” fungicides registered for Botrytis in greenhouse production, but not specifically for conifer trees. The products Luna Tranquility (fluopyram + pyrimethanil), Palladium (cyprodinil + fludioxonil) and Pristine (boscalid + pyraclostrobin) gave good to excellent control of Botrytis, without

phytotoxicity. This trial highlighted the need for better information on rate of spray volume applied per area of production. In summer 2019, representations were made to the Canadian agency to modify label wording on fungicides of interest for this industry. All the newer fungicides have this statement on the label: “Do not apply this product through any type of irrigation system”. The wording prevents widespread use of the newer products as chemigation is the most common application method at seedling nurseries. Recently, funding was approved by an agency of the BC Ministry of Forests traditionally reserved for seed orchards. The funding will support two trials in 2020 to test newer fungicides for *Fusarium* root rot and newer insecticides for Lygus bugs.

BIOGRAPHY

Mario Lanthier and his company provide consulting services related to pest management and plant health to nurseries, greenhouses, public agencies and landscape companies in British Columbia and Alberta. Mario has been working in the horticulture industry for many years (the exact number is unknown). He is a friend of bugs who thinks that compost is great. Since 2017, his company has worked with FNABC to obtain a wider choice of pesticide products for use in seedling nurseries. Some of the work was presented at the Salmon Arm meeting one year ago. The presentation at this meeting will be an update on the work conducted in 2019.

2:50 – 3:30 Using DNA-based detection technology to prevent conifer seed-borne pathogen diseases

Nicolas Feau, Faculty of Forest Sciences & Conservation, University of British Columbia

Millions of conifer seeds with improved growing performance are produced in BC every year. However, these seeds may be source of pathogens, with seed-borne and surface-infecting fungi causing root rot and damping off during seedling development. Seed-borne fungal pathogens of the genus *Fusarium* are responsible for economically important diseases of Douglas-fir in production nurseries. The high cost of genetically improved seeds makes even small losses due to *Fusarium* diseases unacceptable. Under nursery production conditions, the most effective disease management strategy is exclusion which is accomplished by using seed detection assays to screen seed-lots. The conventional assay used in BC consists of planting seeds on artificial media to enhance growth of *Fusarium* species. However, this approach is labor intensive, and relies only on morphological characterization of spores, limiting the identification of *Fusarium* to the genus level. DNA-detection assays based on the real-time polymerase chain reaction (qPCR) are among the most accurate, rapid and cost-effective methods for detecting pathogens at the species level. The development of a DNA identification system for seed-borne *Fusarium* species will increase accuracy and speed of detection and allow targeting only problematic *Fusarium* species. Proper development of this tool requires identifying the most abundant and pathogenic *Fusarium* species found in conifer seeds. A preliminary survey on three coastal Douglas fir seed-lots resulted in the identification of four *Fusarium* species, with *F. proliferatum* and *F. oxysporum* present in high frequencies (84.0 and 11.3% of the infested seeds, respectively). If this result is confirmed, these two pathogenic species will be incorporated as the main targets in our DNA-detection assay. Due to the inability to predict disease potential each year our routine DNA-based identification assay will help forest nurseries make cost effective management decisions.

BIOGRAPHY

Dr. Nicolas Feau is a forest pathologist and mycologist working as a Research Associate in Dr. Richard Hamelin’s lab at UBC. He completed his PhD at the Université Laval in Québec and a post-doc at the French National Institute of Agronomy (INRA) of Bordeaux. He conducted studies in several patho-

systems, from poplar rusts and cankers, to blue stain fungi and oak powdery mildews. Nicolas is working on developing bioinformatics tools and resources to compare and analyze genomes of tree pathogens and develop DNA-based detection assays. He also uses population genomics approaches to get a better understanding on the emergence and evolution of forest pathogens.

Wednesday October 2, 2019

8:50 – 9:30 MSI Prevention During Tree Planting

Robin C. McCullough, Brinkman Reforestation

ABSTRACT

Robin McCullough, Occupational Health & Safety Coordinator for Brinkman Reforestation, shares three approaches for reducing MSIs in treeplanters: Education and Structural Support, Increasing Granularity, and Activating Self-Management. Like nursery workers, treeplanters perform highly repetitive work during a relatively short season; each day lost to injury represents significant income loss. How can this be mitigated? Having incorporated Total Physiotherapy's training, assessment, and injury management tools (increasing granularity) into their OH+S program (education + structural support), Brinkman Reforestation has seen an increase in reporting of early injury signs, with a corresponding decrease in advanced/severe injuries, and an increased level of worker engagement with their own injuries, including at the preventative stage (activating self-management). Ms. McCullough will provide detail on these approaches, and address questions on their application to nursery workers.

BIOGRAPHY

Robin McCullough has been the Occupational Health & Safety Coordinator for Brinkman Reforestation Ltd since 2013. Previous to this, she worked as a treeplanter, Crew Lead, and Project Manager. Her MA thesis focused on communication within silvicultural operations, specifically the work that Crew Leads do in the field, to action the prescriptions of silviculture foresters. Her current work encompasses MSI prevention, in which communication and structural support are key components.

9:30 – 10:10 A Wild Winter at Webster Nursery: Weather Impacts of Winter 2018-2019

Nabil Khadduri, Webster Forest Nursery, Washington Department of Natural Resources

ABSTRACT

Washington DNR's Webster Nursery, just south of Olympia, endured a series of weather extremes this past winter. An unusually powerful lightning strike on the night of December 18 knocked out windows and damaged electrical equipment at the greenhouse and seed plant complex, causing 70 thousand USD in damage. That was a precursor to a historically cold and snowy period from early February to early March that transitioned to record warm temperatures by mid-March. The second half of the talk focuses on operational decisions taking into account seedling physiology, labor availability, and the benefits and limits of irrigation frost protection. The talk concludes with a discussion of seedling impacts and lessons learned.

BIOGRAPHY

Nabil Khadduri received his Master's in horticulture and statistics in 2002 from New Mexico State University. Since then, he has worked at Washington DNR in greenhouse and bareroot seedling production as well as in the seed orchard program. As the nursery scientist, he enjoys working with growers to conduct applied research in an operational setting.

10:10 – 10:40 Advances in Whitebark Pine Germination at the U.S. Department of Agriculture, Forest Service, Coeur d’Alene Nursery

Aram Eramian, Coeur d’Alene Nursery, USDA

Randy Moody, Whitebark Pine Ecosystem Foundation of Canada

ABSTRACT

Whitebark pine (*Pinus albicaulus* Engelm.) is a high-elevation foundation species that acts as a critical food source for many species. Populations are rapidly declining due to White pine blister rust (*Cronartium ribicola* Fischer), Mountain pine beetle (*Dendroctonus ponderosae* Hopkins), and successional replacement by more shade-tolerant species. Restoration efforts are key to ensuring that this species does not vanish from the landscape. The USDA Forest Service, Coeur d’Alene Nursery has grown Whitebark pine, for restoration purposes, for almost 30 years, producing 182 thousand seedlings in the 2017 growing season. The protocol followed by the Coeur d’Alene Nursery is constantly evolving as continued research leads to new discoveries. This pilot study, conducted in 2017, examined the germination rates of Whitebark pine seeds from four locations. It tested the current protocol and three variations to determine which yielded the highest germination rates. It also provided the answers to three main questions and laid the foundation for a much larger study to follow.

BIOGRAPHY

Aram Eramian started his Forest Service career as a seasonal employee in 1978 and spent the first 15 years in timber, fire and Silviculture. In 1992, he started his nursery career at Coeur d’Alene managing the Tree Improvement program for 11 years. In 2002, he switched to bare root production and assistant to the Nursery Manager. In 2015, he became the Nursery Manager or as he would like to refer to it as the Natural Resource Accountant.

Randy Moody has an MSc and is a Professional Biologist from Kimberley BC. He is the President of the Whitebark Pine Ecosystem Foundation of Canada and has been working on whitebark pine recovery for 16 years. His clients include mining companies, forestry companies, ski areas, provincial and federal governments, non-profits, and First Nations; all interested in whitebark pine recovery work. He co-authored the Federal Recovery Strategy and has developed several other guidance documents for the Province of BC.

11:00 – 11:10 Balsam Woolly Adelgid Update

David Trotter, Phytofor Consulting

ABSTRACT

Balsam Woolly Adelgid, *Adelges picea*, (BWA) is now established in the South Coast Forest Region, the West Coast Forest Region (excluding Haida Gwaii Forest District), and the Cascades Forest District. Recent surveys have confirmed presence of BWA in interior production areas and forests, including the Okanagan, Shuswap, Rossland, and as far north as Quesnel and Clearwater areas. As a result of the widespread detections of BWA in southern BC, the provincial BWA regulation under the BC Plant Protection Act has been repelled as of March 6, 2019. Therefore, the Ministry of Agriculture is not requiring growers to apply for *Abies* permits for 2019 or beyond. The implications to seedling requests and BMPs will be discussed.

BIOGRAPHY

David Trotter is a professional agrologist and completed his Master’s at Simon Fraser University in 1981. Until recently, he was with the BC Ministry of Agriculture, working in the areas of agroforestry, riparian

management and Environmental Farm Planning. Previously, he was the Provincial Reforestation Nursery Pest Management & Extension Specialist with the BC Forest Service. He is currently the Secretary for the FNABC.

11:10 – 11:20 Ag Environmental Management Code of Practice Update

Marg Crowley, BC Ministry of Environment & Climate Change Strategy

ABSTRACT

Marg will provide an overview of the new Code of Practice for Agricultural Environmental Management (AEM Code), as a result of the review of the previous Agricultural Waste Control Regulation. The AEM Code regulates discharges into the environment from agricultural operations and covers all agricultural operations in BC, which includes Forest Tree Seedling Nurseries. The presentation will briefly cover the general requirements that all agricultural operations need to follow, and the requirements specific to various agricultural activities, focusing on what is important for forest nurseries to know and understand.

BIOGRAPHY

Marg Crowley has a B.Sc. and M.Sc. in agriculture and is a professional agrologist. She is currently the Senior Environmental Management Officer in the Environmental Standards Branch of the Ministry of Environment & Climate Change Strategy in Victoria, BC. Her focus is agricultural practices and agriculture-related environmental policy and regulations. She previously worked for the BC Federation of Agriculture (former agricultural organization to the current BC Agriculture Council), on many agricultural and environmental programs and projects for the BC agriculture industry and associations; and as a consultant for a few years, prior to working for the BC Public Service.

11:20 – 11:30 Government Seedling Demand Forecast Update

Neil Hughes, BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development

ABSTRACT

Neil will provide a short update on the current projected demand for seedlings along with the factors driving this situation. The provincial demand is growing rapidly from 2018 due to the tail end of mountain pine beetle salvage, the wildfires of 2017 and 2018 along with the injection of federal funding for the Low Carbon Leadership Fund. Managing this growth at a sustainable level is key to the provinces success in delivering a reforestation program.

BIOGRAPHY

Neil Hughes is an RPF with over 30years of silviculture and planning experience both in Scotland and coastal BC working for licensees until 2015 when he took his current position as Forest Establishment Leader for MFLNRORD.

11:30 – 11:40 BC Timber Sales Update

Alan Rasmussen, BC Timber Sales Seedling Services

ABSTRACT

Alan will discuss the results of the Storability Trial – Year 1 (Fall 2017) of this trial indicated that the current BCTS Seedling Services storability testing protocols were appropriate for Sx and Pli and there was potential for a change in the Lw testing protocol, which could allow nurseries to lift Lw 3-5 weeks earlier than the historical norm. Year 2 (Fall 2018) of the trial focused on Lw only. A new Lw storability testing protocol has been developed and will be implemented operationally in 2019. The previous protocol required a minimal after shot damage reading of 75% of the pre shot to pass, the new protocol requires an average after shot damage reading of 37% to pass. Alan will discuss other small-scale Initiatives such as the potential of no wrap packaging, biodegradable plastic box liners and biodegradable wrap.

BIOGRAPHY

Alan Rasmussen is an RPF with 30 years' experience in operational silviculture. He has spent the past 10 years as a Reforestation Specialist with BCTS Seedling Services.







