



FGC  **Forest Genetics Council
of British Columbia**

SelectSeed 

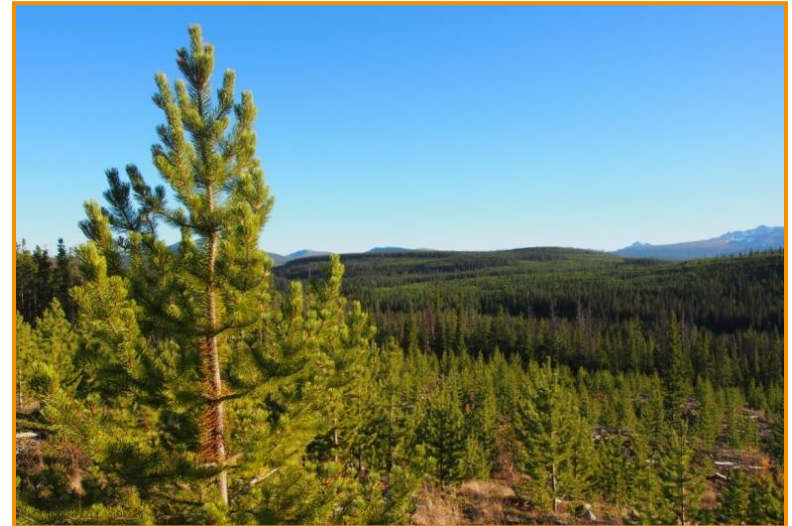
**Serving You
...and BC's Forests**

Brian T. Barber, RPF
Program Manager, FGC
CEO, Select Seed Co. Ltd.

**Oct 16, 2018
Tree Seed Centre 60th Celebration**

Overview

- Forest Genetics Council
 - Foundations (History)
 - Mandate & Members
 - Goals and Measures
 - Plans and Activities
 - Current Initiatives
- Select Seed Co. Ltd.
 - Mandate
 - Governance and Relationships
 - Seed Orchard Operations
 - FGC Support
 - Board and Staff



Why the Forest Genetics Council of BC?

- Crown forestlands
 - Coordination, information sharing, & efficiencies
 - Cost-sharing, access funding
 - Social license
- Timber supply
 - Increase quantity and value
 - Shorter rotations, more wood on less land
- Reforestation
 - Cost of doing business
 - 1000's of kg of seed required to plant >250M trees
- Responses to Changing Conditions
 - Policies and practices
 - Seed supply and demand
 - Pests and disease, species at risk (e.g. whitebark pine).
 - Climate change



Foundations (History)

1950-60's

- BC Forest Services hires Dr. Allan Orr-Ewing
- Coastal Douglas-fir range-wide crosses, selections 1960's
- Plus Tree Board and Plus Tree Weeks
- Tree Improvement Cooperatives established
- Provenance testing started in 1960s

1970-80's

- Coastal and Interior Tree Improvement Councils
- Breeding and seed orchard expansions
- Credits to Stumpage funding ends 1988

1990s

- Forest Practices Code – Tree Seed Guidebook
- Tree Improvement Program Review 1997-99
- Forest Renewal BC
- Forest Genetics Council of BC and SelectSeed est. 1999
- Centre for Forest Conservation Genetics est. 2000



Mandate

- Advice to the Chief Forester
- Strategic and business planning
- Coordinate activities

Membership

- BC Government
- Private forest companies
- Natural Resources Canada
- Universities



FGC Fall Field Tour
Golden
Sept 26, 2018

FGC Members – October 2018

Name	FGC Position	Position / Employer
Pat Martin, RPF	FLNR Co-chair	Director, Forest Improvement and Research Management Branch (FIRM)
Dommenico Iannidinardo, RPF, PEng, RPBio	Industry Co-chair	Chief Forester, TimberWest Forest Corporation
Bevin Wigmore, PAg.	Coastal Seed Producer	Manager, Tree Improvement, TimberWest Forest Corporation
Robert Johnson, RPF	Coast Seed User	Forestry Manager, Capacity Forest Management
Jeff Mycock, RPF	Interior Seed Producer	Chief Forester, West Fraser Mills Ltd.
Bill Laing, RFT	Interior Seed User - Large Tenures	Silviculture Superintendent, Conifex Mackenzie Forest Products Inc.
Gernot Zemanek	Interior Seed User - Small Tenures	Woodlot Licensee, Roserim Nurseries Ltd.
Annette van Niejenhuis, RPF	Coastal TAC Chair	Tree Improvement Coordinator, Western Forest Products Inc.
Kori Vernier, RPF	Interior TAC Chair	Silviculture Coordinator, Canfor Corp.
Tony Hopkins	Natural Resources Canada	Director, Entomology & Phytosanitary Research, Natural Resources Canada
Dr. Jürgen Ehling	Academia	Associate Professor, Centre for Forest Biology, University of Victoria
Shane Ford, RPF	FLNR Research	Manager, Forest Genetics, FIRM, FLNR
Mark Hay, RPF	FLNR BCTS	Manager, Seed and Seedling Services., BC Timber Sales, FLNR
Dan Peterson, RPF	FLNR Regional Operations	Director, Regional Operations, FLNR South Area



FGC Vision and Goals

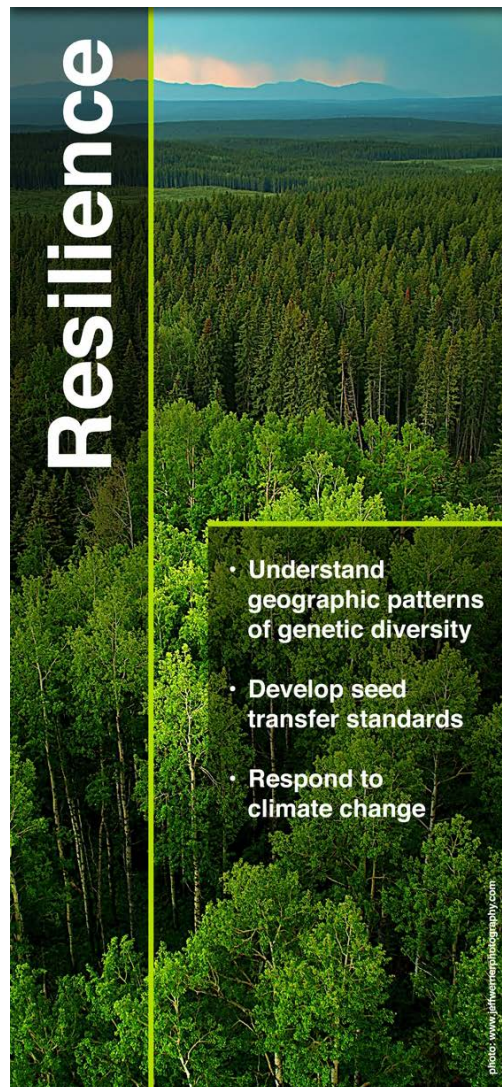
BC's forest genetic resources are diverse, resilient and managed to provide multiple values for the benefit of present and future generations



Value

- Select for fast growth, wood quality, and pest resistance
- Produce seed of high genetic quality

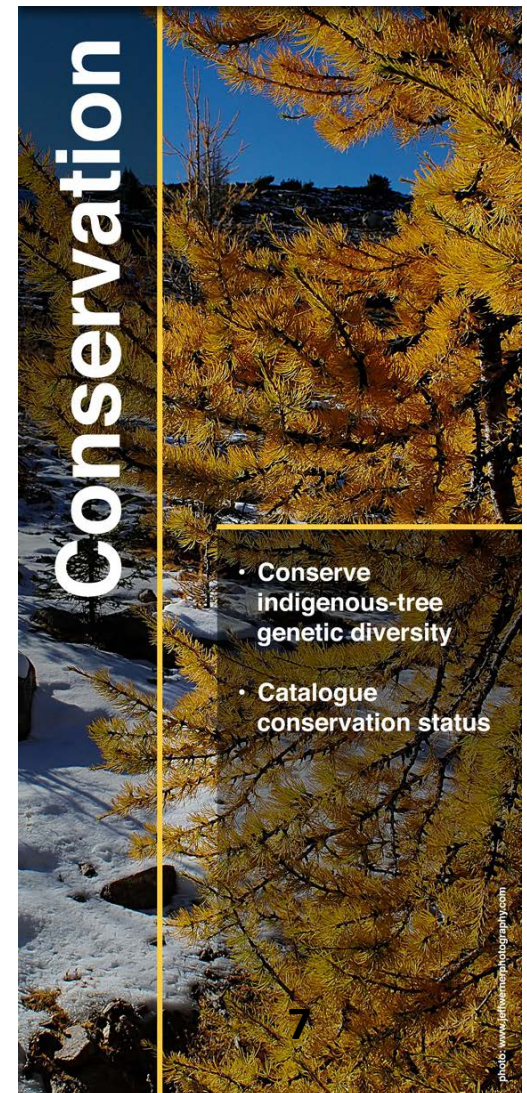
photo: J. Wozniak



Resilience

- Understand geographic patterns of genetic diversity
- Develop seed transfer standards
- Respond to climate change

photo: www.janwernerphotography.com



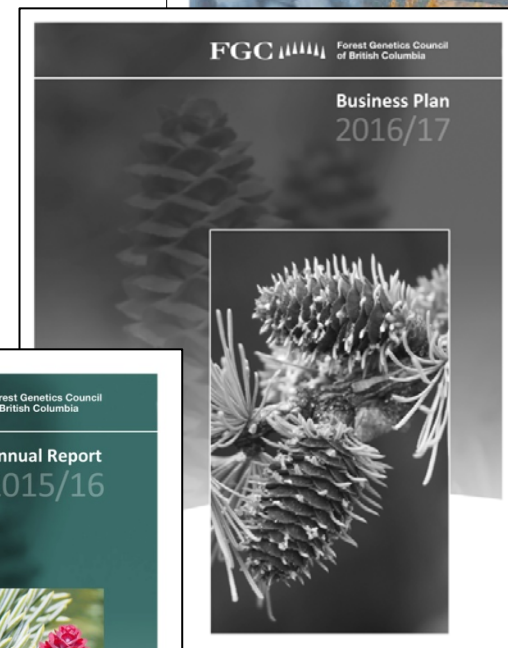
Conservation

- Conserve indigenous-tree genetic diversity
- Catalogue conservation status

photo: www.janwernerphotography.com

Plans and Other Documents

- 5-year Strategic Plan
- Annual Business Plans
- Annual Reports
- Species Plans
- Technical Reports
- Extension Notes
- See website
www.fgcouncil.bc.ca



FGC Performance Measures by Goal

Value: 75% of all seedlings planted* from select seed with ave. genetic gain (volume) of +20%** by 2020

Value and Resilience: 50% of all select seed used has a measure of pest resistance by 2035

Resilience: All seed used for reforestation selected based on climate-based seed transfer standards by 2020

Conservation: Adequately conserve genetic diversity of all native tree species

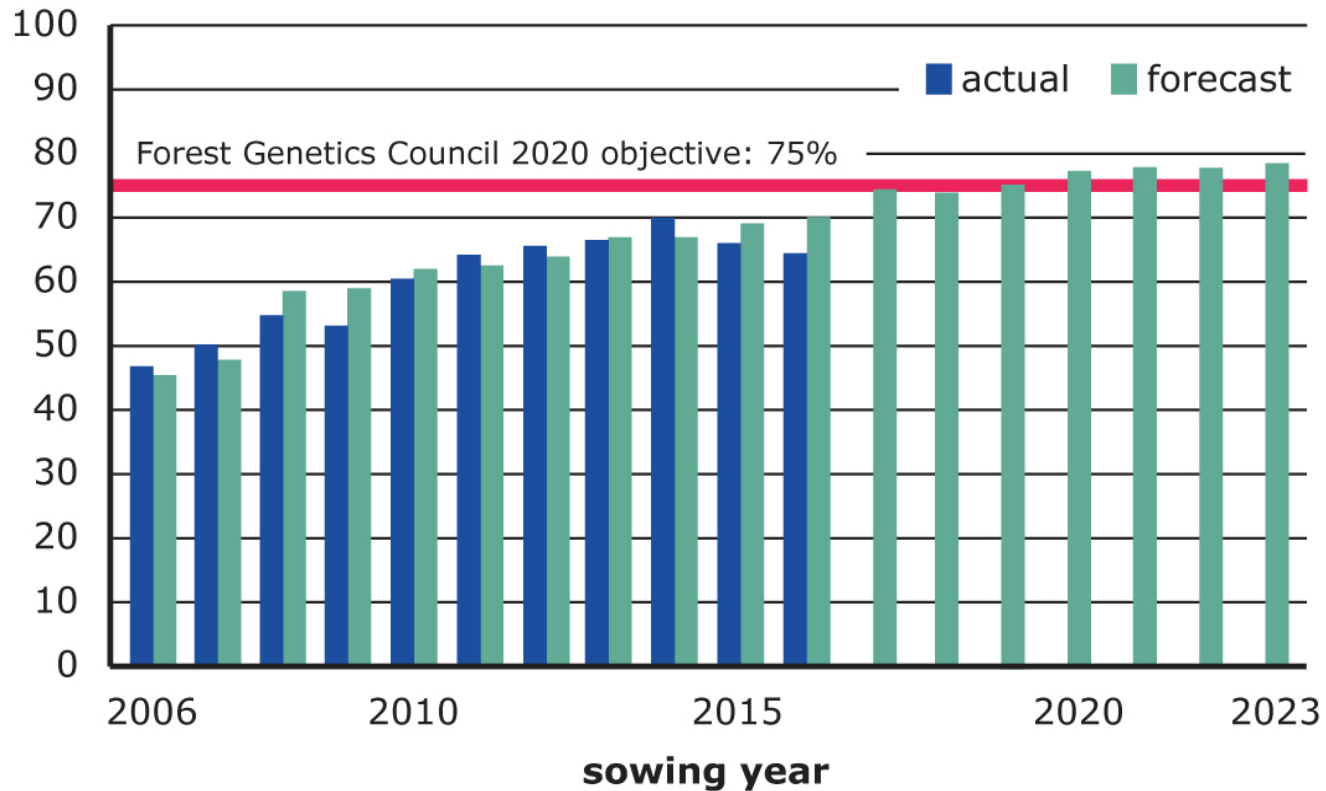
* Total seedlings requested in 2017 = 260M

** Additional volume at rotation compared to wild seed.



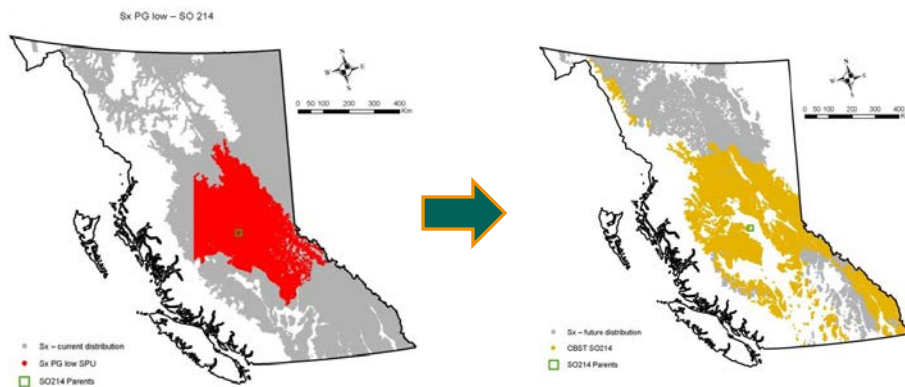
Performance Measure: % select seed sown

Increase select seed use to 75% of the provincial total sown by 2020.



FGC Coordinated Activities

- Genetic Conservation – *in situ* status, *ex situ* collections
- Research – pesticide trials, reproductive biology, genomics
- Provenance testing and tree breeding - Priorities
- Seed Production – New orchards, CF Principles
- Policy & Practices – CBST, Seed use
- Extension – Species Plans, Workshops
- Funding - Recommendations to Ministry



FGC Programs & Technical Advisory Committees

Process	FGC Strategic Plan 2015-2020				
Goals	Conservation	Resilience	Value		
Objective # and Performance Measure	1. Adequately conserve genetic diversity of all tree species...	2. by 2020 selection and transfer of all tree seed guided by CBST	3. Increase select seed use to 75% of total sown by 2020	4. Increase avg. genetic gain of select seed to 20% by 2020.	5. Increase use of seed with genetic gain for pest resistance to 50% of select seed sown by 2035.
Programs	1. Conservation	2. Resilience	3. Tree Breeding 4. Operational Tree Improvement (OTIP)		
Plans	2017-2022 Conservation Strategy	Genecology 5- year plan including AMAT	1. Species Breeding Priority Ranking and Matrix 2. 5-year Breeding Plans by Species or Spp. groups 3. Species Plans – included in annual business plans (seed supply and demand; orchard production targets)		
Budget lines within Program (examples)	Conserv. Catalogue Ex situ collections Whitebark Pine Extension	Provenance trials by spp. (Coast/Interior) AMAT, CBST , CoAdapTree Ext. & Dec. Support	Progeny trials by spp. - Coast and Interior OTIP Projects – Coast and Interior Extension and Decision support		
Governance	Forest Genetics Council of BC (FGC)				
TACs	Genetic Conservation (GCTAC)	Coastal and Interior TACs (CTAC & ITAC)			
Subcommittees		Species Committees	1. Species committees – coast and interior 2. OTIP review committee – provincial		

2018/19 Land-base Investment Strategy (LBIS) Budget Summary

Program	2017/18 Allocation	FIRM Initial Allocations (April 20 2018)
Genetic Conservation	\$ 164,094	\$ 193,994
Tree Breeding (Vol & Pests)	\$ 1,341,238	\$ 1,521,006
Resilience (e.g. CBST)	\$ 571,085	\$ 460,000
OTIP	\$ 423,584	\$ 325,000
Total	\$ 2,500,000	\$ 2,500,000

FGC Current Initiatives

- New 2nd Gen Pli seed orchards
 - New orchards
 - Estimating seed needs for new CBST zones based on future timber supply
- OTIP Funding Eligibility
 - Ramet replacement vs replacement orchards
- Extension and Communication Strategy
- Dashboard for tracking initiatives
- Implementing CBST & Forest Health Goals

All four new zones

Historic (2014-2018) demand = 88,602 million					
Per-ramet "seedling" production					
% historic planting	1000	1200	1400	1600	1800
100%	115.2	96.0	82.3	72.0	64.0
90%	103.7	86.4	74.0	64.8	57.6
80%	92.1	76.8	65.8	57.6	51.2
70%	80.6	67.2	57.6	50.4	44.8
60%	69.1	57.6	49.4	43.2	38.4
50%	57.6	48.0	41.1	36.0	32.0



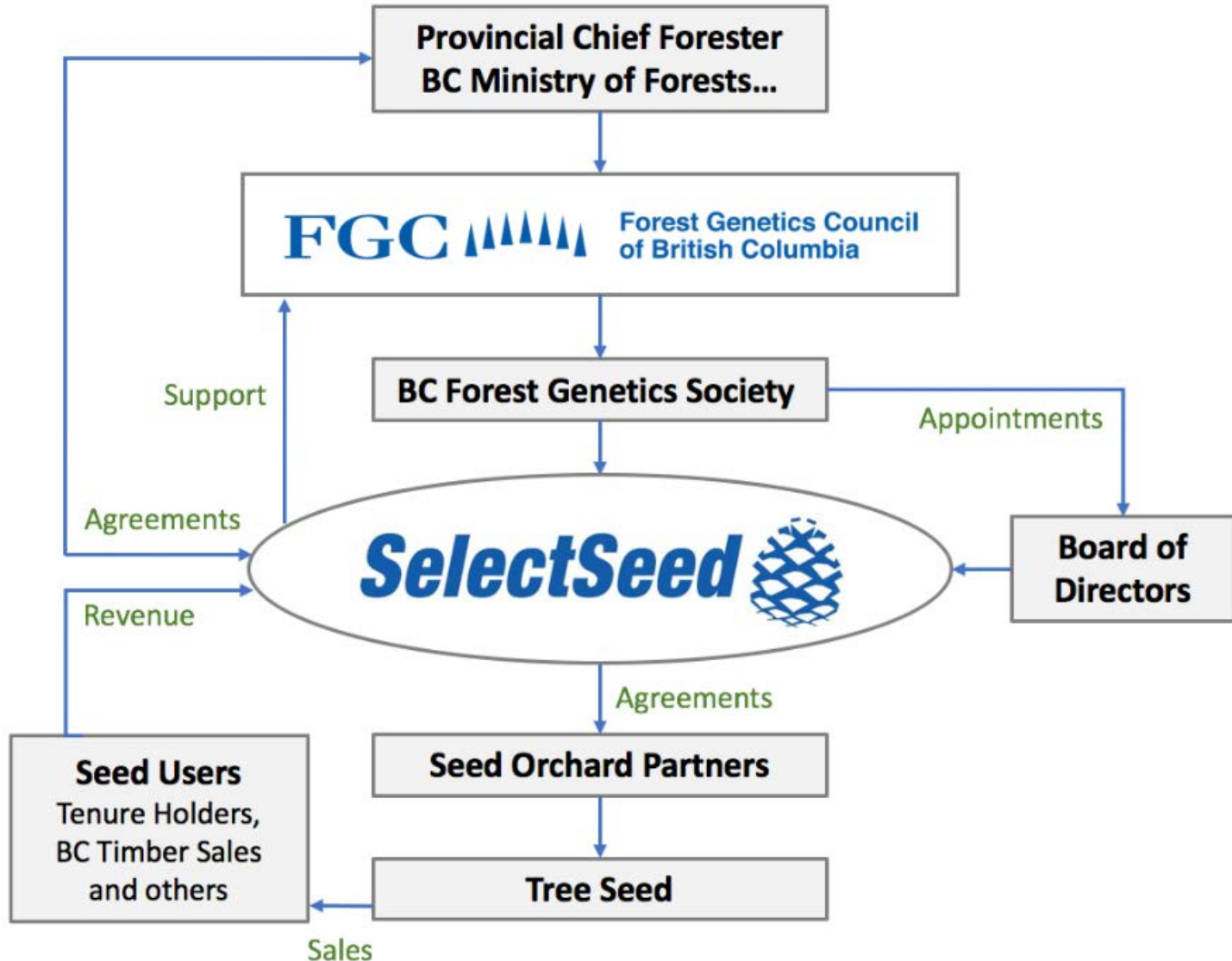
SelectSeed

Mandate

- Established in 1999 to help FGC achieve its select seed goals through agreement with FRBC (transferred to Ministry 2004).
- Expand seed orchard capacity in the private sector
- Produce and sell seed at competitive prices
- Become \$elf-sufficient ASAP
- Provide management services to FGC



Governance & Relationships



SelectSeed



Board of Directors

- Mr. Henry J. Benskin, RPF(Ret) - President and Chairman
- Mr. Reid E. Carter, RPF - Secretary
- Mr. James W. Burbee, RPF - Director
- Mr. Kerry J. McGourlick, RPF - Director
- Mr. Rodney A. Willis, RPF(Ret) - Director



SelectSeed

Seed Orchard Operations

- Manage 13 seed orchards under contract with five partners - VSOC, PRT, Tolko, Sorrento Nursery & Hansinger Irrigation
- 9 Lodgepole pine, 2 Interior Spruce, 2 Interior Douglas-fir (~30,000 ramets of ~110,000 in province)
- \$944k in seed sales in 2017/18



SelectSeed



Forest Genetics Council Support

- Annual report, business plans, species plans
- FGC, TAC and Subcommittee meetings
- Analyses and ad hoc reports (e.g. seed demand and supply)
- Extension, communications & workshops
- Financial support for Ministry Tree Breeder Position.



SelectSeed

Staff

- Brian Barber, RPF, CEO
- Jack Woods, RPF, Technical Advisor
- Hilary Graham, BSc (Ag), Manager, Seed Orchards
- Bev Dilorio, Bookkeeper



Dinner for Glen Dunsworth – Aug 23 '18

Outgoing SelectSeed Board President .

