

AGENDA

**9:00 am – 3:35 pm
Thursday, March 10, 2016**

Location:

TimberWest Forest Corp, #201 - 648 Terminal Ave., Nanaimo, BC
Phone: (604) 716-3700 (for information on TWest location)
(Jack's cell 250-715-6285)

Time	Length (min.)	#	Item	Presenter
8:30			Coffee available	
9:00	5	1	Review agenda	
9:05	15	2	Minutes, old business and action items from Dec. 10, 2015	Jack / Brian
9:20	15	3	FGC membership	Brian
			Standing items:	
9:35	15	4	- Climate-based seed transfer - Program staff succession	Brian
9:50	30	5	Interior seed supply and demand report update	Stephen / Jack
10:20	15		Break	
10:35	15	6	Summary of 2015/16 FGC LBIS budget expenditures	Darrell Wood
10:50	20	7	SelectSeed 2016/17 Business Plan	Jack
11:10	50	8	2016/17 LBIS Tree Improvement Program budget	
			- Overview	Jack
			- Tree Breeding	Brian / Shane Ford
			- OTIP	Darrell/Annette / Stephen
			- Seed Transfer / Genecology	Margot Spence
			- Genetic Resource Decision Support	Margot Spence
12:00	60		Lunch – to be provided	
1:00	60	9	SelectSeed Ltd. CEO and FGC program manager succession	Henry Benskin / Glen Dunsworth / Brian
2:00	30	8	Budgets continued	
			- Seed and Cone Pest Management	Jack for Ward Strong & Tia Wagner
			- Genetic Conservation	Jack for Pia Smets
			- Applied Tree Improvement and Biotechnology	Jack
			- Additional requests (BCSOMA, UVic conference)	Jack
2:30	15		Break	
2:45	20		- Final budget allocation and recommendation	all
3:05	20	10	Subprogram review (LEAN)	Brian, Darrell, Jack
3:25	10	11	New business	
3:35			Adjourn	

**Conference call planned for June ?, 2016
FGC meeting plus BC Forest Genetics Society and SelectSeed AGMs**

Agenda item 2 - Old business, minutes, action items from Dec. 10, 2015

Action Items

Responsibility	Action	Action taken
Jack	Include an update on stocking standards in the March, 2016 FGC meeting agenda.	Deferred
Annette, Stephen	Include an update on stocking standards in CTAC and ITAC meetings on seed supply and demand.	Done
Annette, Stephen	CTAC and ITAC will look for opportunities to engage with ENGO reps	Discussed at meetings.
Scott, Joe, Gernot, Brian, Jack	Work with the appropriate private-sector groups, COFI, CLMA and ILMA to get nominations for replacements or renewals for FGC members whose membership terms have lapsed.	Done
Brian, Jack	Reach out to Universities with forestry programs to seek renewal or new nominations for an academic rep on Council (UBC, UVic, UNBC).	Done
Jack	Put FGC membership as a standing item for all June FGC meetings.	Done
Stephen	ITAC is asked to review the report "Class A seed Supply and Demand Profiles for Interior Lodgepole Pine, Spruce, and Douglas-fir Seed Planning Units - Dec. 2015" and provide recommendations to the FGC.	Done; to be discussed
Brian, Mark T.	On behalf of Council, draft a response to the October 15, 2015 letter received from the Vernon Seed Orchard Company.	Done
Brian	Communicate FGC wishes regarding SCL CEO / FGC Program Manager recruitment with the SCL Board of Directors and continue to interface with the Board on this issue.	Done; to be discussed
Industry members of Council	Speak to MFLNR executive about the need for succession planning in tree breeding programs.	Ongoing
Brian	Communicate with TAC chairs about the new Call process that will be used for non-Ministry projects not included in OTIP or the UBC Center for Forest Conservation Genetics funding.	Done
Jack, Annette, Stephen, Michael	Organize overall 2016/17 LBIS Tree Improvement Program budget numbers in a matrix that shows projects and strategic objectives.	Done
Brian	Council requests that TACs consider the new pest resistance Strategic Objective and bring forward actions in support of this objective. Brian will prepare a memo to TAC chairs with this request.	Done
Darrell Wood	Prepare a listing, in spreadsheet format, of issues raised by FGC members during the LEAN review discussion for distribution to Council prior to the March, 2016.	Ongoing
Jack	Poll FGC members to find a meeting date in the first two weeks of March on a Tuesday, Wednesday, or Thursday.	Done

A resolution approving minutes from December 10th is needed.

3. FGC membership

To be reviewed by Brian. The following changes have taken place:

- Shane Ford replaces Dr. Michael Stoehr as Ministry Rep.
- Three year renewal of memberships for Scott King, Joe LeBlanc, and Gernot Zemanek following discussion with the appropriate industry associations.
- Three year renewal for Dr. Rob Guy following discussions with various university people.
- Three year renewal for Raoul Wiart following discussion with Judy Beck and others at the Pacific Forestry Center

4. Standing items: Climate-based seed transfer and program succession

Updates to be provided. Four technical positions within the MFLNR Tree Improvement Branch were advertised in February. These are for the replacement of people retiring this year.

5. Interior seed supply and demand - Stephen and Jack

The report presented in December was updated with new seed supply information agreed upon by a committee of orchard managers. The revised report was reviewed by ITAC in January. The following motion was passed by ITAC:

To support orchard expansion for the three northern SPUs for Lodgepole pine with best available material, to seek more information on projected demand, and delay retirement of first generation orchards.

Concern was expressed by ITAC members regarding the veracity of seed demand data. This is acknowledged in the report.

Stephen will provide an overview of ITAC input.

Next steps will be discussed, including:

- should more analysis be undertaken (i.e. bring in harvest flow data from the Ministry - partially done - example to be presented)?
- should FGC ask for interest in undertaking Pli orchard expansions for northern SPUs and for the East Kootenay?

6. Summary of 2015/16 LBIS expenditures - Darrell Wood

Darrell will provide an update on actual expenditures during the current fiscal year.

7. SelectSeed Business Plan

The SelectSeed Business Plan was sent as a separate document.

SelectSeed develops and manages orchards through contracts to meet objectives set by the FGC, and provides management services to Council. This plan was approved by the SelectSeed Board of Directors on February 29, 2016.

The full set of activities and a budget are described in the Business Plan. No LBIS funds are requested through the SelectSeed Multi-Year Agreement. SelectSeed anticipates spending \$243,000 on FGC business and support, including \$100,000 for an interior breeder, on a total budget of \$874,000. Seed sales and other income for the fiscal year ending March 31, 2016 are forecast to be \$903,000.

8. 2016/17 LBIS Tree Improvement Program budgets by subprogram

A budget table summarizing amounts for all subprograms is provided on page 7.

Breeding (Brian, Shane, Annette, Stephen)

Breeding Subprogram budgets for 2016/17 were presented to the CTAC and ITAC by FLNR Tree Improvement Branch breeders responsible for each species. The following budgets are recommended by the CTAC and ITAC.

Reduced budget options were discussed. Given the number and complexity of projects, however, there is general agreement that any reductions should be applied to the total allocation by the FGC and management of the reductions should be done by TIB management and breeders. As a result, only the full amount requested is shown here. The budget table with all subprograms (page 7) shows 90% and 80% amounts for reference.

Breeding budget recommendation for 2016/17 (\$ x 1000)

Species	recommended by TACs	
Coast		
Coastal D-fir	\$	139
Redcedar	\$	283
Yellow cedar	\$	30
Western hemlock	\$	48
Sitka spruce	\$	52
White pine - coast	\$	41
Alder	\$	62
TOTAL COAST	\$	655
Interior		
Lodgepole pine	\$	296
White pine	\$	41
Interior spruce	\$	141
Interior D-fir	\$	265
Western larch	\$	95
Broadleaves	\$	-
TOTAL INTERIOR	\$	838
Coast + interior	\$	1,493

Operational Tree Improvement Program (OTIP) (Darrell / Annette / Stephen)

The OTIP call for proposals process was unchanged from previous years. It included Species Committee and TAC recommendations on priorities and eligibility, a Call for Proposals, submission of projects, review of proposals by committees, and presentation of a recommended list of projects to the FGC. The budgets listed below are recommended by OTIP Review Committees.

OITP proposed budget options for 2016/17

Area	No. proposals received	Total requested	Total recommend by review committees (A)	"B" option	"C" option
Interior	46	\$377,617	\$325,556	\$310,714	\$290,318
Coast	18	\$161,063	\$158,112	\$149,000	\$134,100
Total	64	\$538,680	\$483,668	\$459,714	\$424,418

Seed Transfer and Genecology (Margot Spence)

Projects were reviewed by a combined Seed Transfer TAC and Decision Support Steering Committee. Staff from the Genetics Section of the Tree Improvement Branch submitted a 5-year budget request and project descriptions. A UBC project associated with a large genomics project proposal will leverage funds provided through this program several times as it will facilitate additional Genome Canada and GenomeBC support. Half of the ClimateWNA modeling work previously under the Genetic Conservation

budget was moved here at the request of Brian Barber as it supports climate-based seed transfer work. This funding is also leveraged with the UBC genomics project.

Option B is 90% of option A (C is 80%) for projects other than ClimateWNA. The ClimateWNA project is shown at the full amount for all options as it is a key part of climate change work in genetics and many other areas and could fail if salary funding is not provided (no other sources).

2016/17 Seed Transfer TAC budget recommendations

Seed Transfer TAC budget	Option A	Option B	Option C
Ministry genecology work	\$ 338,000	\$ 304,200	\$ 270,400
Assisted Migration Adaptation Trial (AMAT)	\$ 120,100	\$ 108,090	\$ 96,080
ClimateWNA model (UBC - Wang)	\$ 56,250	\$ 56,250	\$ 56,250
AdapTree/CoAdapTree analysis of climate adaptation from genomic data (Pli, Sx, Fd, Lw) (UBC – Aitken)	\$ 37,500	\$ 33,750	\$ 30,000
TOTALS	\$ 551,850	\$ 502,290	\$ 452,730

Genetic Resource Decision Support – Margot Spence for Jason Regnier

The following projects were developed by Tree Improvement Branch staff, and reviewed and recommended by members of a combined Genetic Resource Decision Support steering committee (Chair, Jason Regnier) and Seed Transfer TAC (chair Margot Spence) All projects to be delivered through the Tree Improvement Branch.

2016/17 Genetic Resource Decision Support project recommendations. Reduced budget allocations will be managed by TIB and are not shown specific to projects.

Project	Recommended budget	B budget at 90%	C budget at 80%
A GIS (Geographic Information System) support Climate Based Seed Transfer (CBST) project	\$45,000		
B management and facilitation First Nations engagement and communication	\$25,000		
C materials	\$15,000		
Total	\$85,000	\$76,500	\$68,000

Seed and Cone Pest Management (Jack for Ward Strong and Tia Wagner)

Proposals for work in 2016/17 were contributed by scientists and practitioners, and developed by FLNRO pest management staff in conjunction with Pest Management (PMTAC) members. Proposals and associated budgets were evaluated by the PMTAC using priorities for tree species and pests impacting attainment of FGC objectives. This year’s budget contains a project investigating seed fungi that was previously funded under the Applied Biotechnology area.

2016/17 Cone and Seed Pest Management Subprogram budget recommendation.

PEST SPECIES	ORCHARDS	Description	WORK DONE BY	Option A	OPTION B	OPTION C
European Pine Shoot Moth (<i>Rhyacionia bouliana</i>)	Pli, Pw and Py	Pesticide trials; pheromone-based control	FLNRO	\$10,000	\$10,000	\$10,000
Fir coneworm (<i>Dioryctria abietivorella</i>)	Primarily Fd, Sx, and Lw	Registration of alternative insecticides; bring pesticide trials to operational scale.	FLNRO	\$20,000	\$15,000	\$15,000
Pine foliar diseases (<i>Dothistroma</i> , <i>Lophodermella</i> , <i>Elytroderma</i>)	Pw, Pli	1. Determine fungal species involved (using PCR or other methods)	FLNRO	\$20,000	\$10,000	\$10,000
		2. Screen a range of fungicides for efficacy	FLNRO	\$15,000	\$15,000	\$15,000
Cone midges (<i>Contarinia oregonensis</i> , <i>Mayetiola thujae</i> , <i>Kaltenbachiola</i> spp)	Fd, Cw, Spruce (all)	Small-plot trials of Movento in Cw, operational-scale trials in Fd	FLNRO	\$20,000	\$15,000	\$15,000
Pest Biologist's Operating Funds		In-house projects, surveys, travel, materials & supplies	FLNRO	\$20,000	\$20,000	\$20,000
Research Lab Budget		Projects, materials & supplies, travel	FLNRO	\$5,000	\$2,000	\$2,000
Seed fungi (<i>Sydowia</i>)	Pli, possibly others	Determine if fungus is a causal agent. Identify source & timing of infection. Determine if vectoring by insects occurs.	External Call for Proposals	\$62,100	\$50,000	\$50,000
TOTALS				\$172,100	\$137,000	\$137,000

Genetic Conservation (Jack for Pia Smets)

Genetic conservation work is directed by a plan approved by the FGC in January, 2012 and revised by the Genetic Conservation TAC (GCTAC) in February, 2016. Activities were discussed by the GCTAC, and projects developed by proponents and approved by the GCTAC are listed below. Detail on individual line items will be provided at the FGC meeting.

Note that for 2016/17 50% of the costs (\$56,250) associated with the ClimateWNA model were shifted to the Seed Transfer TAC.

Genetic Conservation subprogram budget recommendations

Project	Budget recommendations		
	Option A	Option B	Option C
UBC Center for Forest Conservation Genetics (Aitken)	\$106,250	\$91,250	\$91,250
Tree Improvement Branch - Forest Genetics Section projects (Cartwright)	\$42,000	\$40,000	\$40,000
Tree Improvement Branch - Tree Seed Center project (Kolotelo)	\$45,000	\$38,000	\$38,000
S. Int. Region (FLNRO) Whitebark pine blister rust screening (Murray)	\$25,350	\$19,450	\$19,450
Larix lyallii genetic diversity and conservation (von Aderkas/Vance)	\$32,168	\$25,000	\$0
Total	\$250,768	\$213,700	\$188,700

Applied Tree Improvement and Biotechnology - Jack

This subprogram provides funding to technical proposals that support FGC objectives but do not fit other categories. A steering committee reviews proposals. Only one proposal was considered this year. It is an ongoing multiyear project directed at improving cone and seed production in lodgepole pine and Douglas-fir orchards with the use plant growth hormones.

2016/17 Applied Tree Improvement and Biotechnology budget recommendations.

Project title	Budget request	Recommendation	Option B	Option C
Cone induction to increase seed yields in lodgepole pine and Douglas-fir (W. Hintz and L. Kong, U. Vic)	\$ 62,100	\$62,100	\$62,100	\$55,000

Other budget requests

1. The BC Seed Orchard Managers Association has asked for funding in support of their June 2016 meeting (Bevin Wigmore).
2. The Canadian Association of Botany has asked for sponsorship support for a May, 2016 Victoria meeting (Patrick von Aderkas).

Summary of 2016/17 LBIS – Tree Improvement Program budget recommendations

The expected allocation from the Land Base Investment Fund to the Tree Improvement Program is \$2.5 million. The following table summarizes budget recommendations from FGC advisory committees. Note that the level of risk management (if any) the TIB is willing to take has not yet been determined.

“A” budgets for each subprogram are divided up to show the amounts contributing to each FGC strategic objective.

Minor changes to this table may occur to this table prior to March 10th. An updated version of this table will be presented at the March 10th meeting.

Subprogram	2015/16 approved in B. Plan	2016/17 A	2016/17 B	2016/17 C	Genetic conservation	Climate-based seed transfer	Select seed use	Genetic worth	Pest resistance	Resources and efficiency	Monitor and report
Genetic Conservation	\$ 238,970	\$ 250,768	\$ 213,700	\$ 188,700	\$ 225,691	\$ 25,077					
Tree Breeding	\$ 1,130,734	\$ 1,493,000	\$ 1,343,700	\$ 1,194,400		\$ 149,300	\$ 74,650	\$ 821,150	\$ 447,900		
Operational Tree Imp. Prog.	\$ 502,622	\$ 483,668	\$ 459,714	\$ 424,418			\$ 352,455	\$ 79,495	\$ 51,718		
Extension and Communication	\$ -	\$ -	\$ -	\$ -							
Cone and Seed Pest Mgt.	\$ 71,072	\$ 172,100	\$ 137,000	\$ 137,000			\$ 86,050	\$ 86,050			
Seed Transfer and Genecology	\$ 361,052	\$ 551,850	\$ 502,290	\$ 452,730		\$ 496,665			\$ 55,185		
Decision Support	\$ 60,000	\$ 85,000	\$ 76,500	\$ 68,000		\$ 85,000					
Tree Imp. Branch administration	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 1,000	\$ 1,000	\$ 2,000	\$ 2,000	\$ 1,000	\$ 2,000	\$ 1,000
Applied Tree Impr. and Biotech.	\$ 125,550	\$ 62,100	\$ 62,100	\$ 55,000			\$ 62,100				
Miscellaneous (conferences)	\$ -										
Subtotal	\$ 2,500,000	\$ 3,108,486	\$ 2,805,004	\$ 2,530,248	\$ 226,691	\$ 757,042	\$ 577,255	\$ 988,695	\$ 555,803	\$ 2,000	\$ 1,000
TIB risk mangement	\$ 160,000										
TOTAL	\$ 2,340,000	\$ 3,108,486	\$ 2,805,004	\$ 2,530,248	\$ 226,691	\$ 757,042	\$ 577,255	\$ 988,695	\$ 555,803	\$ 2,000	\$ 1,000
Surplus or (Deficit)		\$ (608,486)	\$ (305,004)	\$ (30,248)							
SelectSeed Ltd. contribution	\$ 242,600	\$ 243,000	\$ 243,000	\$ 243,001	\$ 12,150	\$ 12,150	\$ 36,450	\$ 36,450	\$ 24,300	\$ 48,600	\$ 72,900

10. LEAN subprogram review - Darrell

Update to be provided at the meeting.

Conference call planned for mid June, 2016 – DATE TO BE DETERMINED
FGC meeting plus BC Forest Genetics Society and SelectSeed AGMs