

# Interior Technical Advisory Committee Meeting Minutes

---

## Interior TAC Meeting Minutes

January 15-16, 2013

**Members attending:** Tim Lee (chair), Michael Carlson, Krista Copeland, Dan Gaudet, Barry Jaquish, Dan Livingstone, Mike Madill, Anna Monetta, Wayne Nuyens, Greg O'Neill, Doug Perdue, Chris Walsh

**Regrets:** Guy Burdikin, Vince Day, Diane Douglas, Hilary Graham, Dave Kolotelo, Roger Painter, David Reid.

**Guests:** Randy Armitage, Val Ashley, Brian Barber, Vicki Berger, Mike Brown, Lee Charleson, Krista Copeland, Larry Gardner, Jerome Girard, Rick Hansinger, Steve Joyce, Jim Kusisto, Penny Major, Gisele Phillips, Tim Sexton, Ward Strong, Walter Tymkow, Nick Ukrainetz, Kori Vernier, Tia Wagner, Jack Woods

**Minutes:** Lee Charleson

1. *Welcome by Tim Lee*

Introductions and meeting logistics

2. *Introductory comments from Brian Barber*

Commented on the stability of Land Based Investment Program funds to Tree Improvement, recognition of tree improvement work during the Mountain Pine Beetle mid-term timber supply review which led to cabinet direction to maintain funding to tree improvement work, and a review of the Select Seed.

3. *Breeding report – Nick Ukrainetz*

- Western white pine – as presented by Nick
  - i) Question. When would the next wave of selections go into the orchards? Progeny test results are needed prior to selecting for orchards.
  - ii) Question. What are other rust hazards? Dothistroma, Pw is susceptible to it.
  - iii) Question. Can rust risk be quantified for Pw at age 15, an age when the free growing declaration may be declared? No, it cannot
  - iv) Comment. Western gall rust is seen on Pw in the Kootenays.
  - v) Question. Is MGR breaking down. Yes, it is breaking down in the US.
  
- Ponderosa pine – as presented by Nick
  
- Lodgepole pine – as presented by Nick

**ACTION ITEM. Nick. Review orchard 307 dataset for clonal attack rate and geographic location of parent trees.**

Questions/comments . What are the limitations of the program, what is holding the Pli program back? What are the operational problems? Comandra risk is a big issue and some family resistance seems to exist.

Table 1. Breeding operating budget for Pli, Pw and broadleafs as presented by Nicholas Ukrainetz.

Seed Planning Unit				220 Selection and Breeding								230 Progeny testing								240 Technical Support				Total \$ ,000																							
				211		221		222		223		224		231		232		233		234		240-1			240-2																						
				# genotypes selected		# genotypes establ. in arboreta / archives		# gntyps. maint. in breeding arboreta		# pollen collections (genotypes)		# crosses made (# diallel cells)		test sites sown (# sites)		progeny sites establ. / prepped (# sites)		progeny sites maintained (# sites)		progeny sites assessed (# sites)		Projects																									
#	Spp.	SPZ	Elev (m)	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	\$																							
7	Pli	NE	700-1400			500	49	1700	5							6	22	1	1						77																						
10	Pli	TO	700-1400													6	22	5	16						38																						
12	Pli	PG	700-1200	100	14						90	10.4													24																						
16	Pli	TO	1400-1600															5	10						10																						
17	Pli	BV	700-1200							30	4							5	24						28																						
18	Pli	CP	700-1100							30	4														4																						
20	Pli	NE	1400-2000																						0																						
26	Pli	PG	1200-2000													6	20								20																						
29	Pli	EK	1500-2000																						0																						
32	Pli	EK	800-1500													1	5								5																						
	Pli	NST								30	4									1	17				21																						
45	Pli	BB/CHI	all															4	11						11																						
<b>Pli total</b>																																														\$ 237	
	Pw	M																								0																					
15	Pw	KQ	500-1400			100	4	50	1			190	16			3	7	1	2						\$ 29																						
<b>Pw total</b>																																															
48	t/Ep/C	interior	all																							0																					
<b>Overall total</b>																																															\$266

4. Report by the Chief Forester

- As presented by Dave Peterson
  - i) Question: what is the tree improvement role, what should we emphasize. Response: FGC is a classic example of collaboration and he expects it to be a model of the future. Be as open as possible to the forces of change such as the role of genetics in climate change, economic forces and the bioeconomy.
  - ii) Question. FGC is collaborative, but we also need to have continuous improvement in the model. Foresters struggle to receive and incorporate technical information and formulate adaptive management and find government policy obstructs their efforts. Industry wants the flexibility to adapt; what is the Chief Forester’s role to improve the situation. Response: i) there are 6 ministry-led workshops on climate change province wide beginning in February, ii) put factual, science based information in the hands of the decision maker, iii) provide risk and uncertainty tools to decision makers (he believe this is currently a weakness).

---

5. *FGC Achievement Award*

- Dave Peterson presented the FGC Achievement Award to Dr. Michael Carlson.

6. *Breeding report - Barry Jaquish*

- Interior Douglas-fir - as presented by Barry.

**ACTION ITEM: Barry Jaquish: Send all updated breeding values to Susan Zedel for entry into SPAR.**

- Western larch - as presented by Barry
- Interior spruce – as presented by Barry
- New tools for tree breeding – developing interior spruce genetic markers to predict insect resistance - as presented by Tim Sexton
- Questions/comments
  - i) What is going on with Armillaria? Early screening of Fdi families for resistance/tolerance showed a few promising families. The screening program is expanded and underway with some stock grown at PFC.
  - ii) Can you estimate growth loss in western larch when attacked by needle problems, specifically *Hypodermella*. It is present with greater frequency but no, there the impacts to growth are not quantified. A side note is that *Meria* is more frequent too.
  - iii) Is there breeding work for spruce or fir bark beetles? No, no work is being done for these pests.
  - iv) What do you need to advance the breeding program? Recommend expanding the pest work, need a dedicated pathologist, Ward is advising in entomology, need better inoculation facilities, need good statisticians, the data load is huge, need good connections between breeders and provincial pathologists and entomologists. Wood traits are important, equipment and evaluation capacity need building.
  - v) How to integrate genomics into BC's tree improvement program? Tim sees incorporating traditional phenotypic work with a genomics check-in every few years. Costs have come down significantly. Genetic markers are now being used in the selection of loblolly pine. Other industries, namely animal breeding, use genomics in their selection programs.

Table 2. Breeding operating budget for Fdi, Lw and Sx as presented by Barry Jaquish.

				220 Selection and Breeding								230 Progeny testing								240 Technical Support											
				211		221		222		223		224		231		232		233		234		240-1		240-2		240-3		240-4			
Seed Planning Unit				# genotypes selected	# genotypes establ. in arboreta / archives	# gntyps. maint. in breeding arboreta	# pollen collections (genotypes)	# crosses made (# diallel cells)	test sites sown (# sites)	progeny sites establ. / prepped (# sites)	progeny sites maintained (# sites)	progeny sites assessed (# sites)	Projects								Sub-total	Total									
#	Spp.	SPZ	Elev (m)	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	\$,000	
21	Fdi	NE	400-1000							100	5					3	15	2	20	1	10									50	
22	Fdi	NE	1000-1600							100	5																			5	
37	Fdi	OL	700-1200																											0	
39	Fdi	EK	700-1400																											0	
41	Fdi	PG	700-1000																											0	
43	Fdi	CT	600-1200																											0	
Sub-total				0		0		0		0		10		0		0		15		20		10		0		0		0		55	
18	Lw	NE	700-1400			2,000		20		100	5					1	8			3	30									63	
34	Lw	EK	800-1500							100	5																			5	
50	Lw	NE	1200-1800																											0	
Subtotal				0		0		20		0		10		0		0		8		0		30		0		0		0		68	
4	Sx	NE	1000-1500							100	5																			5	
5	Sx	NE	1500-1800																											0	
14	Sx	PG	600-1200																	2	28	1	10	2	70					108	
25	Sx	EK	750-1700																											0	
28	Sx	TO	1300-1800																											0	
30	Sx	TO	700-1300									139	0	3	20															20	
35	Sx	BV	500-1200	75	18											3	15	5	50	5	20									103	
40	Sx	PR	650-1200													4	25	4	15											40	
42	Sx	PG	1200-1550																											0	
44	Sx	NE	1-1000							35	5																			5	
Subtotal				18		0		0		0		10		0		20		40		65		20		28		10		70		281	
Total				75	18	0	0	0	20	0	0	30	139	0	3	20	11	63	11	85	9	60	2	28	1	10	2	70	404	404	

7. FGC Annual Report

- As presented by Jack Woods. Report available on the FGC website.

8. TAC reports for OTIP, STTAC, DSAC and ETAC

- As presented by Lee Charleson
- Jim Corrigan will provide a pest workshop in March or April. More information will be provided as details are confirmed.
- And a note was made about the upcoming Forest Genetics 2013 meeting in Whistler, July 22-25, 2013. For more information go to [www.forestgenetics2013.ca](http://www.forestgenetics2013.ca)

9. Orchard opportunities

- Fdi  
TO high, a SelectSeed-PRT orchard. Rootstock and grafts are in preparation. The orchard will be installed at the PRT Armstrong site.  
TO Low, located at Kalamalka. Approximately half of the necessary grafts are completed, some have been transplanted to the orchard. Final size of orchard not decided.
- EK 2<sup>nd</sup> generation spruce

---

The first generation orchard is removed and higher BV parents are saved as grafts. Forward selections have been made. Still need to decide if a second generation is warranted considering the roughly 30 year seed supply.

- Interior Cwr

It is too early to discuss orchard development due to the young age of the provenance tests. Program focus for browse resistance may be more desirable than volume gain.

10. *Cone and pest research*

- Orchard research project as presented by Gary Giampa
- Projects – as presented by Ward Strong

11. *Orchard manager reports were presented.*

- As presented by
  - i) Jack Woods
  - ii) Rick Hansinger
  - iii) Tia Wagner
  - iv) Mike Brown
  - v) Chris Walsh
  - vi) Dan Gaudet

12. *Non-orchard reports*

- Nurseries as presented by Dan Livingstone
- BCTS as presented by Steve Joyce

13. Warming climate – Seed-use changes, and Assisted Migration Adaptation Trial

- As presented by Greg O’Neill
- Questions and comments
  - i) Some orchard have parents from very disparate BEC zones, how is that accounted for? Response was that although parents may be from a wide geographic the climate distances (differences) are small.
  - ii) A standard (in policy) has little flexibility; would like more flexibility and use of guidance. Suggestion to move to a risk tolerance model used by professionals.

14. OTIP eligibility

- Will be addressed during the review committee meeting.

15. *ITAC business meeting*

Pli, Pw and broadleaf Budget (see table 1 above)

**A motion** was made by Nick Ukrainetz to accept the proposed Pli and Pw breeding activities and budget. Seconded by Mike Carlson. Motion was passed.

---

Fdi, Lw and Sx budget (see table 2 above)

**A motion** was made by Barry Jaquish to accept the proposed Fdi, Lw and Sx breeding activities and budget. Seconded by Wayne Nuyens. Motion was passed.

Tim Lees made a **motion** to adjourn the business meeting. Seconded by Barry Jaquish. Meeting was adjourned.