

ITAC Business Meeting Minutes – February 1, 2018

Location: Vernon Seed Orchard Company, 6555 Bench Rd., Vernon, BC

Participants:

ITAC Members:

Kori Vernier (Chair), Alan Rasmussen (BCTS), Barry Jaquish (FLNR), Dan Gaudet (VSOC), Dan Livingston (PRT), Dr. Greg O'Neill (FLNR), Gary Giampa (FLNR), Hilary Graham (SelectSeed), Krista Copeland (Tolko), Lance Loggin (WestFraser), Mike Brown (PRT), Nicholas Ukrainetz (FLNR), Richard Reich (CNC), Stephen Joyce (FLNR), Tia Wagner (VSOC), Todd Schmidt (WestFraser),

Others:

Alvin Yanchuk (FLNR); Brian Barber (FGC), Darrell Wood (FLNR), Ian Weyland (FLNR), Katherine Spencer (FLNR), Marie Vance (FLNR), Margot Spence (FLNR), Michael Stoehr; Miriam, Isaac-Renton (FLNR), Scott King (LP & FGC), Dr. Trevor Doerksen (FLNR), Val Ashely (FLNR), Dr. Ward Strong (FLNR).

Regrets:

Dave Kolotelo (FLNR)

Summary of Motions:

1. The minutes of the January 19, 2017 ITAC Business Meeting are hereby approved. Hilary/Stephen. CARRIED.
2. The minutes of the December 13, 2017 ITAC Species Committee meeting are hereby approved. Stephen/Nick. CARRIED.
3. The ITAC budget recommendations for 2018/19 as presented* are hereby approved, with any subsequent adjustments required to meet budget targets to be based on ministry tree breeders' input of priorities and impacts. Todd/Stephen. CARRIED (*see budget table in item #11).

Summary of Action:

1. Brian to post the approved ITAC meeting minutes on the ITAC website.
2. Brian to circulate the analysis conducted that supported FGC's strategic new goal and performance measure for pest resistant seed use (50% of all select seed used by 2035).
3. ITAC members to solicit feedback from forest professionals on the needs and priorities for pest-resistant tree breeding and seed production (e.g. at SICSO and NSC).
4. Kori (ITAC Chair) and Annette van Niejenhuis (CTAC chair) to combine and present the ITAC/CTAC budget recommendations to FGC on March 14.
5. Brian to prepare budget templates for ITAC and CTAC members to present budgets for ease of presentation and roll-up (next fiscal).
6. An ITAC Pli Species Committee to meet in fall 2018 to discuss new Pli zones, seed demand by BEC, and parent tree selections.
7. Brian to initiate FGC communication review (subject to further FGC direction).
8. Barry to provide copy of Chad Lingren's tree improvement extension report (circa 1998).

9. ITAC and CTAC to review and update the Species Investment Priority Matrix after CBST impacts and seed demand are better understood.

1. Proceeding

The ITAC business meeting was preceded by the annual ITAC Extension Meeting held at the Prestige Hotel in Vernon. This workshop was attended by 66 persons from across BC and Alberta, including new many participants involved in reforestation and tree improvement. The agenda for this meeting is included in Appendix 1, and presentations are posted at:

<http://www.fgcouncil.bc.ca/inte-area1506.html>

The ITAC business meeting was hosted by the Vernon Seed Orchard Company. Coffee was provided by VSOC and PRT. Lunch was provided by SelectSeed on behalf of FGC. There being a quorum of members present, Kori Vernier, ITAC Chair, called the meeting to order and welcomed members and guests at approx. 8:15 am. Brian Barber was assigned to record minutes.

2. Membership

Kori reviewed ITAC membership and status. Jack Woods was replaced by Hilary Graham as SelectSeed's representative. Richard Reich was invited to join as a forest health expert. Katherine Spencer, the Ministry's new Skimikin Seed Orchard Supervisor was appointed. There being an appropriate balance ministry and industry reps, no other membership changes were recommended.

3. Agenda

The agenda circulated in advance (see Appendix 2)

Motion: The agenda as presented is hereby approved. CARRIED.

4. Previous Meeting Minutes and Action Items

Draft minutes of the previous ITAC meetings were circulated with the agenda in advance.

Motion: The minutes of the January 19, 2017 ITAC Business Meeting are hereby approved. Hilary/Stephen. CARRIED.

Motion: The minutes of the December 13, 2017 ITAC Species Committee meeting are hereby approved. Stephen/Nick. CARRIED.

Action: Brian to post the approved ITAC meeting minutes on the ITAC website.

Action items from the Dec 2017 species committee meeting were reviewed.

1. Review species program categories and rankings at next ITAC business meeting.
2. Stephen to convey the recommendations to the CBST Policy Working Group where CBST results in a shortage or absence of Class A seed.
3. Brian to discuss CBST seed supply analysis and criteria with Margot Spence, and develop further with Greg, Scott, Kori, Stephen and Brendan.
4. Add kgs of seed to species plans.
5. Update expected annual seedling production per ramet – range, seeds/kg and production forecast by orchard in kgs

6. To prioritize forest health issues, vet data through and seek input from foresters with local experience before priorities are set by breeders. Foresters should connect with District and Regional Forest Health specialists as they create maps, analyze data which are used to set priorities.
7. Update SPAR query to find resistant seed.
8. Confirm with Susan if seedlots have been updated with new BEC and understand how changes in seedlot BEC will be tracked over time considering impacts on seed transferability.

All action items are in-progress or will be discussed during this meeting. Kori also solicited feedback on FGC's forest health goal and performance measure target for 2035 (see discussion under agenda item #6.2 below).

5. FGC and Budget Update

Brian provided an overview of FGC's streamlined governance model and business planning process which was adopted in October 2017. The new model aligns TACs, programs and budgets with FGC goals for Conservation, Value and Resilience. Activities under the value goal include tree breeding for growth and pest resistance, and seed production (including OTIP). CBST and provenance testing are included under the Resilience goal.

The FGC co-chairs issued a letter to TAC chairs and members on January 12 with instructions for preparing budget recommendations for 2018/19. Budget targets were assigned to the FGC's programs for two scenarios totaling \$2.5M and \$2.7M, respectively. The budgets for interior and coastal will therefore need to be combined before presenting to FGC in March. Experience and feedback re the new planning process will be used to improve it for next fiscal.

6. Tree Breeding Program – activities and budgets

The ministry tree breeders summarized the activities undertaken in 2017 and priorities for next fiscal year. The main activities were described in greater detail at the ITAC extension meeting held the previous day. ITAC extension presentations are posted on ITAC members website at: <http://www.fgcouncil.bc.ca/inte-area1506.html>.

6.1 Interior Spruce (Sx) – Dr. Trevor Doerksen

Trevor acknowledged the assistance received from ministry auxiliary staff, Dr. Justin Whitehall (Sx weevil resistance) and Dr. John King (Sx Nass-Skeena trials) in 2017. The 20-year somatic seedling (SE) field trials established by Dr. Chris Hawkins were also examined in 2017.

Sx activities and estimated expenditures for **2107/18** included:

Activity	\$ (x1000)	Done
weevil research, postdoc support	15	Y
Salary transfer to PGTIS (clone bank)	6	Y
Kalamalka base station support	15	Y
weevil screening, S. SO parent clones	5	Y
maintenance & measure PG genecology	24	Y
hybrid spruce provenance test (Naskeena)	20	N
crossing Peace River SPZ	20	Y
maintenance & measure 6 somatic embliing tests		Y
TOTAL	105	

Sx projects proposed and their est. budgets for **2018/19** include:

Activity	\$ (x1000)	Done
Nelson low elevation 2 nd -cycle testing (250 families)		
• grow seedlings, lift, cold storage & transport	20	
• locate and prepare 4 sites for planting	40	
Peace River low elevation SPZ		
• four sites maintenance & measurement	60	
Southern seed orchard parents weevil screening		
• rear and release 10–12,000 weevils Kalamalka	20	
Post doc SpruceUp – weevil and Phellinus research	15	
## PGTIS clone bank maintenance ##	6	
Subtotal	161	

6.2 Interior Douglas-fir (Fdi) – Dr. Trevor Doerksen

Trevor provided overview of activities and their expenditures in 2017/18. These included wood quality measurements in Nelson progeny tests, and Phellinus and spruce budworm resistance studies.

Fdi activities and estimated expenditures for **2107/18** included:

Activity	\$ (x1000)	Done
final maintenance & measure NE high - 30yr (2 sites)	47	Y
• NOTE: 2 sites (1 low, 1 high) measured AV instead of height		
Salary Kalamalka maintenance support (salary aux)	50	Y
Salary transfer to Skimikin	14	N
Phyllinus study (KAL greenhouse)	10	Y
grafting – TO spruce budworm	5	Y
final maintenance & measure N.Skeena – 30yr (3 sites)	27	Y
crossing NE high (aux salary)	40	Y
removed poplar plantation & prepared site (Kal)		Y
maintained & expanded Barne's Creek clone bank		Y
Subtotal	193	

Fdi projects proposed and their est. budgets for **2018/19** include:

Activity	\$ (x1000)	Done
Wood acoustic measurements in 1 st cycle progeny tests		
• Mica SPZ (Key Road): 150 families*8 trees	20	
• Quesnel Lake (Mitchell Bay): 400 families*8 trees	35	
Fence removal (Crawford Bay)	20	
Phyllinus resistance screening support	20	
## Salary transfer to Skimikin - site maintenance ##	14	
Subtotal	109	

6.3 Western larch (Lw) - Dr. Trevor Doerksen

2017 projects included measuring 1st gen and establishing 2nd gen progeny tests in the Nelson SPU, and preparing growing stock and preparing sites for 2018.

Lw activities and estimated expenditures for **2017/18** included:

Activity	\$ (x1000)	Done
Nelson 2 nd cycle		
• plant 7 progeny tests	60	Y
East Kootenay 2 nd cycle		
• sow/lift/store seedlings	15	Y
• grow seedlings	15	Y
• locate & prepare 4 test sites	40	Y
1 st cycle maintenance & measure NE series I - 25yr (3 sites)	47	Y
Barnes Creek maintenance (arboretum)	25	Y
Barnes Creek expansion (arboretum)	25	Y
Subtotal	227	

Lw projects proposed and their est. budgets for **2018/19** include:

Activity	\$ (x1000)	Done
2nd cycle progeny tests		
• East Kootenay SPZ – layout, plant, map 4 sites	80	
• Nelson SPZ – survival counts, maintenance 4 sites	40	
Realized Gain studies		
• Nelson SPZ – maintain and measure 3 sites	35	
## Barnes Creek Clone Bank ##		
• maintenance, planting and crossing	25	
• site expansion (site preparation)	15	
Subtotal	195	

In addition to the above, Trevor estimated auxiliary labour required in support of the Sx, Fdi and Lw programs will cost **\$114k**. A Lidar project in support of the Fdi program will also cost **\$10k**.

Sx, Fdi and Lw budget summary for **2018/19**

Activities	Species	Amount
Breeding	Interior spruce	161,000
	Interior Douglas-fir	109,000
	Western larch	195,000
Auxiliary employee support at Kalamalka *		114,000
Lidar support **		10,000
Total		589,000

* includes support for breeding, planting, cone collection, seed processing, seedling lift and site maintenance at Kalamalka

** process existing data and report on program application

6.4 Lodgepole pine (Pli) – Nick Ukrainetz

Nick recognized the assistance of ministry staff Sarah Leroux, Jarrett Columbus, and Petra Nielson, during the 2017 field season. The 2017 Pli projects included the College of New Caledonia (CNC) doing disease surveys in Pli progeny tests to identify susceptibility and resistance of parents/families to several diseases. Second cycle measurements were undertaken in the PG SPU. Realized gain trials were maintained, and BV test sites were tagged. Forward selections of 27 parents with resistance to Comandra blister rust were made. Screening for Dothistroma has been initiated. Scion from 80 Nelson low parents also selected for grafting, establishment and breeding at Skimikin. Nick also plans to establish a duplicate Pli clone bank at the PGTIS – grafting in 2019.

The Pli projects proposed and their est. budgets for **2018/19** include:

SPZ	Description	KPI	Total
SOUTH	Disease Contract with CNC	15	\$70,000
BV	F1 15 Year Measurements	3	\$20,000
TO HI	FIA 15 Year Measurements	6	\$30,500
BB-CH	FIA 15 Year Measurements	4	\$20,000
SOUTH	SORGG 15 Year Measurements	9	\$23,000
SOUTH	RGG 20-Year Measurements	4	\$23,000
NE	Plant forward selections	80	\$3,500
TO	Forward Selection	80	\$12,000
ALL	Clone Bank Maintenance	1500	\$36,000
NORTH	Breeding for Gall Rust Resistance	40	\$15,000
ALL	Dothistroma Inoculations		\$6,000
ALL	Travel (meetings and staffing)		\$4,000
ALL	Auxiliary Support		\$37,000
TOTAL			\$300,000

Nick was asked about using realized gain trails for tours. There is significant variation between the Pli realized-gain test sites, and insufficient replication within each. As such, they are not suitable for demonstrating genetic gain on field tours. However, they do demonstrate spacing treatment differences well.

Nick was also asked how priorities for pest resistance breeding was determined. Nick replied that a BEC variant pest risk rating analysis is required. Knowing the “hot-stops” would help determine priorities.

A discussion ensued regarding the determination and feasibility of FGC’s 2015-20 strategic objective for pest resistance seed use. The performance measure for this objective is 50% of all select seed used by 2035 will be have a genetic worth for pest resistance. Alvin indicated the ministry is standardizing the GWs for insects and disease across species. New GW codes will be added in SPAR that identify the pest and resistance measure. The baseline resistance of a wild population is 50% in most cases, so GWR of 70% would imply a 20% improvement in resistance over untested wild populations. Ministry will share new codes once implemented in SPAR.

Brian said the performance measure was based on survey Jack Woods conducted with forest health specialist and tree breeders in 2014/15. The former were asked to identify the main pests by region, species and SPU, and estimate the potential demand of pest-resistant seedlings a percent of SPU planting. The ministry geneticists were subsequently asked if breeding efforts were underway or feasible for the identified pests and SPUs. The survey results indicated a demand and breeding potential of ~70% of all seedlings planted in BC grown from pest-resistance seed sources. FGC considered this to be rather optimistic so set a pest resistant seed use target at 50% of all select seed use (not total seed use) by 2035.

Action: Brian to circulate the analysis conducted that supported FGC’s strategic goal and performance measure for pest resistant seed use (50% of all select seed used by 2035).

Action: ITAC members to solicit feedback from forest professionals on the needs and priorities for pest-resistant tree breeding and seed production (e.g. at SICSO and NSC).

6.5 White pine (Pw) — Nick Ukrainetz

In 2017, Pw realized gain trials were assessed and measured. Grafting to replace mortality in Kal clone banks (causes unknown, new root disease suspected). Breeding continues for major-gene resistance (MGR).

The Pw projects proposed and their est. budgets for 2018/19 include:

SPZ	Description	KPI	Total
KQ	Series 5 Assessment and Maint	3	\$16,250
KQ	Cleary Sites Maint. And Measure	3	\$4,000
KQ	Clone Bank Maintenance	200	\$2,250
KQ	Breeding	40	\$8,500
KQ	Auxiliary Support		\$15,000
TOTAL			\$47,000

Pli and Pw budget summary for **2018/19**

Species	Total
Lodgepole Pine	\$300,000
Western White Pine	\$47,000

6.6 Pest Resistance lab support – Ward Strong

Ward's budget was previously included in the Pest Management subprogram. As this subprogram was merged with OTIP in the new governance and business planning model, Ward's budget is being requested under the tree breeding program.

Pest resistance lab support (W. Strong) activities and budget **2018/19**

ITEM	COST
Travel	
Field sites: 5 x \$250	1250
Conference: Pest Resistance in Trees, Ohio	1500
Conference: Entomological Society of BC/Canada/USA, Vancouver	1200
Camera body	800
Lab equipment	1000
TOTAL	\$5750

6.7 Tree Breeding Budget Summary – Michael Stoehr

Michael summarized the ministry's tree breeding budgets in table format. The costs associated with breeding for value (growth) vs pest resistance were subsequently estimated and included in the ITAC budget recommendations in item **#11**.

7. Climate-based seed transfer

Margot presented an overview of the CBST policy project activities, projected expenditures 2017/18 and two budget scenarios for 2018/19 – full request and reduced.

Activities/ Deliverables	Description	2017/18 Projections	2018/19 Proposed (Full Request)	2018/19 Proposed (Reduced)
CBST Project Management	Project planning and reporting; scoping, research & analysis; document preparation	14,828	10,000	10,000
GIS support for CBST	GIS-based analysis and impact assessment (including B class seed, gap analysis, seed inventory analysis)	55,000	55,000	50,000
CBST revisions to SPAR and RESULTS ¹	RESULTS and SPAR enhancements for CBST, SPAR help functions, CBST data updates	1,000	40,000	10,000
Extension, Communications materials, Outreach, Stakeholder and FN Engagement	Discussion Paper(s); Presentations, Meetings and discussion forums; Travel	11,611	15,000	10,000
TOTAL		\$77,439	\$120,000	\$80,000

1. Estimates are that changes to track CBST directly in RESULTS will be in the neighbourhood of \$20,000. To complete the SPAR help screens work not completed in 2017/18 \$10,000 is required (contract in place). The remaining funds acknowledge that IMB has minimal funding set aside for SPAR in 2018/19, and SPAR upgrades will not be completed by March 31, 2018.

8. AMAT and Sx Genecology trials – Greg O'Neill

Greg presented an overview of the Assisted migration and adaptation trial (AMAT) and the Sx genecology field trials. These trials are designed to test a variety of species and populations across a wide range of climates and to determine seed transfer distances (e.g. CBST).

The following table outlines the AMAT/Sx Genecology activities and budget for **2018/19**

Project	# Sites	Amount
AMAT		
replace stakes	3	\$ 1,800
insert pins	0	\$ -
remove wildlings/veg	7	\$ 16,800
measure	11	\$ 52,800
download	24	\$ 3,000
travel - field	8	\$ 15,000
travel - meetings	2	\$ 1,000
weather stations		\$ 6,000
materials		\$ 5,000
Sx genecology		
thin	1	\$ 2,400
download	5	\$ 6,000
brush	0	\$ -
measure	0	\$ -
travel - field	1	\$ 1,000
travel - meetings	0	\$ -
weather station parts		\$ 3,000
materials		\$ -
CBST		
travel - meetings	6	\$ 3,000
Auxiliary tech (7 months)		\$ 28,000
TOTAL		\$ 144,800

There were few questions of clarification. The importance of this on-going research was acknowledged.

9. CoAdapTree

Sally Aitken presented an overview of the CoAdapTree project at the ITAC Extension meeting. She also submitted a proposal to ITAC and CTAC for ongoing co-funding for fiscal 2018/19. A description of the project can be found at: <http://coadapttree.forestry.ubc.ca/>

This is the second-year funding has been requested from the Ministry via the Forest Genetics Council for this 5-year project. The following table includes the budget for funds requested from the Ministry for 2018/19.

Table 1. Requested funds for the CoAdapTree for activities related to coastal and interior Douglas-fir and western larch climate adaptation and climate-based seed transfer for the 2018-19 Fiscal year.

Item	Cost
Two PhD research assistantships (partial support)	\$21,000
Undergraduate summer research assistant (partial)	\$4,900
Greenhouse rental	\$1,680
Greenhouse and lab phenotyping supplies	\$2,000
Technician (0.2 FTE plus benefits)	\$8,707
Travel	\$2,000
Subtotal	\$40,287
UBC overhead (25%)	\$10,072
Total	\$50,359

These Ministry funds, along with funds provided by TimberWest, Western Forest Products and Vernon Seed Orchard company, are used to leverage significant funding from Genome Canada and Genome BC. Total budget for this 5-year project is \$5.8M.

It was noted the Ministry committed to providing on-going \$ support to CoAdapTree during the project proposal phase, subject to available annual funding. It was therefore questioned why this budget proposal therefore needs to be vetted/approved by ITAC and CTAC. It was also noted that ministry's tree breeding expenditures also serve as in-kind contributions to leverage Genome Canada/BC funds for other genomics projects (e.g. [Spruce-Up](#)).

10. Operational Tree Improvement Program (OTIP)

Darrell Wood provided an overview of the OTIP call for proposals and review process for 2018/19. Coast, interior and pest management trials were combined under one OTIP call in accordance with the streamlined model. Proposals submitted will be reviewed by a committee consisting of ITAC, CTAC and former PMTAC members. Results and recommendations will be shared with FGC at their March meeting.

11. ITAC Budget Recommendations 2018/19

It was noted there was only one budget scenario for the ministry's tree breeding and provenance budgets. It was therefore not clear to ITAC members which activities would be eliminated or curtailed if budgets are subsequently reduced. Magnitude of potential budget reductions are not known, since coastal breeding and genecology budgets are unknown. ITAC members therefore agreed the Ministry should decide how to prioritize and allocate funding to their breeding and genecology activities should the LBIS budget be insufficient to cover their requested amounts.

Some inconsistencies between the budget presentations, such as auxiliary labour costs, were also noted. There was also some confusion between the goals/budgets for breeding for tree breeding (forest health vs value) and between pest resistance and resilience (i.e. CBST). It was therefore recommended that budgets be presented in a standardized format (e.g. template) next year.

ITAC's Recommended projects and budget for **2018/19**:

Projects	Tree Breeding		Resilience	Total
	Forest Health	Value		
<i>Interior tree breeding</i>				
Hybrid Spruce	\$ 35,000	\$ 126,000	\$ -	\$ 161,000
Western Larch	\$ -	\$ 195,000	\$ -	\$ 195,000
Douglas-fir	\$ 20,000	\$ 89,000	\$ -	\$ 109,000
White Pine	\$ 47,000	\$ -	\$ -	\$ 47,000
Lodgepole Pine	\$ 195,000	\$ 105,000	\$ -	\$ 300,000
Pest Resistance lab support	\$ 5,750	\$ -		\$ 5,750
Lidar (Fdi)	\$ -	\$ 10,000	\$ -	\$ 10,000
Auxiliary Labour (Sx, Fdi, Lw)	\$ 57,000	\$ 57,000		\$ 114,000
Subtotal	\$ 359,750	\$ 582,000	\$ -	\$ 941,750
<i>Provincial Projects</i>				
AMAT/Spruce genecology		\$ -	\$ 144,800	\$ 144,800
CoAdaptree			\$ 50,359	\$ 50,359
CBST	\$ -	\$ -	\$ 120,000	\$ 120,000
Subtotal			\$ 315,159	\$ 315,159
Total	\$ 359,750	\$ 582,000	\$ 315,159	\$ 1,256,909

Post-script: The above Lidar project (\$10k) was subsequently added to the Fdi Value budget, and Auxiliary Labour costs (\$114k) were added to the Sx, Fdi, and Lw budgets (\$38k each) in the combined ITAC and CTAC budget presented to FGC on March 14, 2018.

Motion: The ITAC budget recommendations for 2018/19 as presented are hereby approved, with any subsequent adjustments required to meet budget targets to be based on ministry tree breeders' input of priorities and impacts. Todd/Stephen (CARRIED)

Action: Kori (ITAC Chair) and Annette van Niejenhuis (CTAC chair) to combine and present the ITAC/CTAC budget recommendations to FGC on March 14.

Action: Brian to prepare budget templates for ITAC and CTAC members to present budgets for ease of presentation and roll-up.

11. Northern Pli 2nd Generation Strategy

Letters from VSOC and the Ministry sent to FGC in the fall of 2017, and FGC's responses to those letters were circulated to ITAC members in advance. These organizations expressed interest in establishing new Pli orchards and FGC offered its conditional support. The question of OTIP funding eligibility for grafting new orchards (expansion vs replacement) remains.

Nick has proposed four new Pli 'deployment zones' for new orchards based on progeny test results and CBST-informed BEC variants. The scientific methodology and zones are subject to peer review/confirmation to be completed by fall 2018.

Stephen presented a preliminary analysis of how to determine Pli orchard ramet needs and timelines for establishing orchards to serve the four proposed zones. Seed demand estimated under the new CBST standards are required to estimate the number of orchard ramets needed. Forsite, under contract with the Ministry, is determining past seed demand by BEC variant. Furthermore, scion to be collected in the winter of 2018/19, sections would need to be made in the summer or fall of 2018.

Action: An ITAC Pli Species Committee to meet in fall 2018 to discuss new Pli zones, seed demand by BEC, and parent tree selections.

12. Communication and Extension Activities

The FGC Streamlining Committee's report included a recommendation to develop an FGC communication and extension strategy. ITAC members were asked for ideas. Suggestions included outreach through ABCFP, social media, and review of past reports. Insufficient time on agenda limited discussion.

Action: Brian to initiate FGC communication review (subject to further FGC direction)

Action: Barry to provide copy of Chad Lingren's tree improvement extension report (circa 1998).

13. Species Investment Priority Matrix

This matrix, used to rank and prioritize investments in tree breeding and seed orchards, was circulated in advance of the meeting. The matrix was last updated in 2012, with climate change included as a new criterion.

This matrix should be reviewed again once CBST impacts and seed demands are better understood. This exercise could be follow or be combined with updates to individual species plans – which also need to be updated to reflect the new CBST standards.

Action: ITAC and CTAC to review and update the Species Investment Priority Matrix after CBST impacts and seed demand are better understood.

Meeting sponsors and participants were thanked. A motion to adjourn the meeting was made at approx. 2 pm. Dan/Kori (CARRIED)

Draft minutes by B Barber, May 14, 2018, updated Jan 2019.

Approved at ITAC Business Meeting Feb 6, 2019, Vernon.

Appendix 1 ITAC Extension Meeting – Wed. Jan. 31th, 2018

Location: Prestige Hotel and Conference Centre, [4411 32 St, Vernon, BC](#), V1T 9G8
Rooms available \$99 + taxes. Call (250) 558-5991 or (877) 737-8443 to reserve under "ITAC"

Registration Fee \$25. Cash or Cheque payable to: *SelectSeed Co. Ltd.*
Please register and identify dietary needs by emailing kori.vernier@canfor.com by noon, **Jan 22, 2018**.

Time	Min.	Topic	Presenter
8:00	30	Coffee and snacks	
8:30	15	Welcome, Introductions and Agenda	Brian Barber (FGC)
8:45	15	FGC Update including new TAC structure	Brian Barber
9:00	15	2017 Seed Orchard Cone Crop Update	Stephen Joyce (FLNR)
9:15	45	Breeding Program updates - by species Spruce, Douglas-fir & Larch	Barry Jaquish & Trevor Doerksen (FLNR)
10:00	15	Coffee Break	
10:15	45	Breeding Program updates - by species (con't) Lodgepole, western white and ponderosa pines	Nick Ukrainetz (FLNR)
11:00	20	Characterizing Drought Tolerant Lodgepole Populations for Planting Under Climate Change	Miriam Isaac-Renton (FLNR)
11:20	20	Fungal Colonizers and Seed Shortfall in Lodgepole Pine Seed Orchards	Paul de la Bastide (UVic)
11:40	20	Pest Management in Seed Orchards	Jim Corrigan (FLNR)
12:00	60	Lunch	Registration Required
1:00	60	Climate-based Seed Transfer Policy and Technical Updates	Margot Spence & Greg O'Neill (FLNR)
2:10	30	Novel Climates Trajectories of climate change beyond the boundaries of BCs forest management knowledge system	Colin Mahony (UBC)
2:40	20	Assessing Range-Wide Genetic Structure in Subalpine Larch	Marie Vance (FLNR)
3:00	15	Coffee Break	
3:15	30	CoAdapTree - Genomics Project Update Douglas Fir, Western Larch and Lodgepole Pine	Sally Aitken (UBC)
3:45	15	Whitebark Pine Rust-resistant screening, conservation and best mgmt. practices	TBC
4:00	10	ITAC Species Committee Report Aligning Seed Production with Seed Demand	Kori Vernier (ITAC Chair)
4:10	20	Open Forum Discussion ITAC direction, communication, improvements	Kori Vernier
4:30		Adjourn	

Meeting Sponsors: *PRT Growing Services, SelectSeed, Tolko, & Vernon Seed Orchard Co.*

Appendix 2 – ITAC Business Meeting Agenda – Feb 1, 2018

Location: Vernon Seed Orchard, 6555 Bench Row Rd, Vernon, BC

Committee members: See *FGC Business Plan*

Others: Michael Stoehr, Trevor Doerkson, Ward Strong, Margot Spence, Brian Barber, Darrell Wood.

Time	Min.	Topic	Presenter
8:00	15	Coffee and snacks – provided	Vernon Seed Orchard Co.
8:15	10	Welcome, Membership Update and Agenda	Kori Vernier (Chair)
8:25	20	Review Minutes and Action Items from Jan 2017 and Species Committee Dec Meeting (attachment)	Kori Vernier
8:45	10	FGC Update and Business Planning for 2018-19	Brian Barber
8:55	55	Tree Breeding Program – Plans and Budgets Sx, Fdi and Lw Pli, Pw, Py Summary of budget request, options and trade-offs	Barry Jaquish Trevor Doerkson Nick Ukrainetz Michael Stoehr
10:00	15	Coffee and Snacks (break when needed)	
10:15	35	Tree Breeding Budgets and Breeding Plans (Con't)	
10:50	10	Species Investment Priority Matrix See separate attachment	Brian Barber
11:00	40	Resilience Program Budget CBST Budget and 2018 Plan AMAT Ministry Genecology Research CoAdapTree	Margot Spence Greg O'Neill Michael Stoehr
11:50	10	Lab Expenses Previously part of PMTAC budget	Ward Strong
12:00	30	Lunch	SelectSeed Co
12:30	30	Operational Tree Improvement Program Budget Summary of proposals & FGC Review in 2018	Darrell Wood Brian Barber
1:00	30	2 nd Gen Pli Orchards Letters of interest, FGC response, status update	Kori Vernier
1:30	15	Communication and Extension Activities, Highlights 2017 and FGC Review in 2018	All
1:45	15	New Business	Kori Vernier
2:00		Adjourn	