

ITAC Business Meeting Minutes - February 6, 2019

Location: Vernon Lodge, Prestige Hotels, Vernon, BC

Participants:

ITAC Members Present:

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

ITAC Member Regrets:

Barry Jaquish (FLNR), Hilary Graham (SelectSeed), Katherine Spencer (FIRM), Mike Brown (PRT), and Krista Copeland (Tolko),

Guests:

Bill Laing (Conifex), Brian Barber (FGC/SelectSeed), Gary Giampa (FLNR), Keith Thomas (FLNR), Marie Vance (FLNR), Margot Spence (FLNR), Michael Stoehr (FIRM), Rick Hansinger (Kettle River), Robert Taylor (FIRM), Susan Zedel (FIRM), and Ward Strong (FLNR).

Summary of Motions:

Motion: The minutes of the Feb 1, 2018 ITAC Business Meeting are hereby approved.
Todd/Alan. CARRIED.

Motion: The ITAC budget recommendations for 2019/20 as presented are hereby approved, with any subsequent adjustments required to meet budget targets to be based on the Ministry tree breeders' input of priorities and impacts. Richard/Dan. CARRIED.

Summary of Actions:

1. Brian re-send Jack's analysis that supported FGC's strategic new goal and performance measure for pest resistant seed use (50% of all select seed used by 2035).
2. Keith to combine the 2019/20 Coast and Interior Tree Breeding and Resilience program budgets and present to FGC with support from ITAC and CTAC chairs..
3. Ministry to consider alternative names to the CBST "Bulkley Valley" breeding zone.
4. Brian to circulate SelectSeed's Pli orchard site selection criteria to ITAC members for review and comment.
5. FGC to clarify review and approval process for new seed orchards, including ITAC's role.
6. Brian to summarize ITAC extension meeting feedback and share with planning committee.
7. Leads of ITAC Extension Meeting Break-out Sessions to follow-up as appropriate.

Proceedings:

The ITAC business meeting was preceded by a 1.5 day ITAC Extension Meeting attended by 66 persons from across BC and Alberta. Total cost of meeting was approx. \$5000, with expenses recovered through \$50 registration fees and sponsorship from PRT, VSOC, PRT and SelectSeed.

Agenda, presentations and summary of breakout sessions are posted at:

<http://www.fgcouncil.bc.ca/inte-area1506.html> Extension meeting agenda also included in Appendix 1.

There being a quorum of members present, Kori Vernier, ITAC Chair, called the ITAC business meeting to order at approx. 1:30 pm.

1. Membership

Under [FGC Bylaws](#) Article 4, Section 4, the ITAC Chair may appoint ITAC members. Kori reviewed current ITAC membership. Barry Jaquish, FIRM, retired in 2018 was removed and replaced by Trevor Doerkson, FIRM tree breeder. Mike Brown, PRT, won recently won the competition for PRT Skimikin Nursery Manager was also removed. Dan Livingston will continue to represent PRT on ITAC. No other membership changes were made.

2. Agenda

A draft agenda circulated in advance (included in Appendix 2) was reviewed and approved.

3. Feb 1, 2018 Meeting Minutes and Actions

Draft minutes of the Feb 1, 2018 ITAC business meeting was circulated in advance. The draft minutes were reviewed and accepted.

Action items from the last meeting and their status reported:

Action	Status
Brian to post the approved ITAC meeting minutes on the ITAC website.	Completed
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).	Not completed Carry forward
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).	In progress
Kori (ITAC Chair) and Annette van Niejenhuis (CTAC chair) to combine and present the ITAC/CTAC budget recommendations to FGC on March 14, 2018.	Completed
Brian to prepare budget templates for ITAC and CTAC members to present budgets for ease of presentation and roll-up (next fiscal).	Keith Thomas to present
ITAC Pli Species Committee to meet in fall 2018 to discuss new Pli zones, seed demand by BEC, and parent tree selections.	Deferred
Brian to initiate FGC communication review (subject to further FGC direction).	Deferred
Barry to provide copy of Chad Lingren's tree improvement extension report (circa 1998).	Completed
ITAC and CTAC to review and update the Species Investment Priority Matrix after CBST impacts and seed demand are better understood.	Deferred

4. FGC Budget Process 2019/20 – Brian Barber

On Jan 22, 2019, Pat Martin, FGC co-chair, issued a letter to TAC chairs outlining the business planning process and budget targets for FGC’s four programs - Conservation, Breeding, OTIP and Resilience - for fiscal 2019/20.

FGC Program	Preliminary budget targets for 2019/20
Genetic Conservation	\$ 200,000
Tree Breeding	\$ 1,450,000
Operational Tree Improvement Program (OTIP)	\$ 350,000
Resilience	\$ 500,000
Total	\$ 2,500,000

The total anticipate budget from the Land-based Investment Strategy (LBIS) program is \$2.5M, same as the previous year. TACs were requested to prepare a recommended list of projects and budgets, and advice on priorities. FGC will review at its meeting to be scheduled for late March or early April.

5. Tree Breeding Program – Keith Thomas

Keith, A/Manager, Forest Genetics Section, summarized the Ministry’s interior tree breeding program and resilience activities and budgets for 2018/10 and 2019/20, respectively. Ministry geneticists presented details during the ITAC Extension meeting.

5.1 Interior Tree Breeding – 2018/19

The 2018 requested breeding (forest health and value) and resilience budgets were reduced and adjusted to remain with the total \$2.5M allocation and to accommodate other pressures. 2018/19 budget allocations and highlights by species below.

Activity	Forest Health \$	Value \$	Resilience \$	Request \$	Allocation \$
Sx	35,000	164,000	-	199,000	159,200
Lx	0	233,000	-	233,000	186,400
Fdi	20,000	137,000	-	157,000	125,600
Pw	47,000	0	-	47,000	37,600
Pli	195,000	105,000	-	300,000	240,000
Pest Lab	5,750	0	-	5,750	5,750
Total	302,750	639,000	-	941,750	754,550

Interior spruce (Sx)

- Released breeding (R) values for resistance to terminal pine weevil for Sx parents in the Prince George breeding population.
- Raised a population of weevils to artificially infest a raised-bed progeny test of interior spruce parents from the Nelson seed orchards.

Western larch (Lw)

- Planted 2nd cycle western larch progeny tests for the EK breeding population.

Interior Douglas-fir (Fdi)

- Characterized two Douglas-fir sub-populations for acoustic velocity, a surrogate measure of wood quality.

White pine (Pw)

- Assessed realized gain trials to confirm resistance values.
- Supported research into mortality in clone banks and seed orchards.

Lodgepole pine (Pli)

- Measured two sets of realized gain trials, data to be used to verify our predicted breeding values.
- Reorganized the breeding program and created plans for new Buckley Valley orchard expansion.
- Continued to characterize trees for disease resistance to comandra blister rust, gall rust and dothistroma.

5.2 Interior Tree Breeding – 2019/20

Keith summarize the proposed budgets and activities for geneticists Trevor Doerkson (Sx, Lw and Fdi), Nick Ukrainietz (Pw, Pli) and Marie Vance (Py, Cwi), respectively. Budget adjustments have been made to reflect where each program is at relative to others. 20-year breeding plans are being prepared. Budgets include support for research station maintenance and Ward Strong’s laboratory. Summary of requested budgets and proposed activities below.

Activity	Forest Health \$	Value \$	Resilience \$	2019 Request \$	2018 Request \$
Sx	6,000	254,000	-	260,000	199,000
Lx	0	186,000	-	186,000	233,000
Fdi	15,000	110,000	-	125,000	157,000
Pw	1,800	-	-	1,800	47,000
Pli	94,000	293,000	-	387,000	305,750
Cwi		25,000	-	25,000	-
Py		43,000	-	43,000	-
Total	116,800	911,000	-	1,027,800	941,750

Interior spruce (Sx)

- Plant 2nd cycle interior spruce progeny tests (4 sites) for the Nelson Low breeding population, includes terminal weevil tolerance assessments.
- Grow seedlings for Bulkley Valley progeny test planting.

Western larch (Lw)

- Introduce previously-tested, western larch material from US sources into the BC breeding population(s), via scion collection & grafting, to ensure long-term genetic variation available for growth and adaptation to climate change.
- Measure & survival assessment of western larch progeny tests for the Nelson breeding population.

Interior Douglas-fir (Fdi)

- Construct a database of all Douglas-fir progeny test records (with Jong Leong) for large MET analysis, using all records to-date.

- Collaborate with UBC Wood Science on sampling & milling logs from a progeny test, to make link between the value of non-destructive/indirect and destructive/direct measure of wood quality.

White pine (Pw)

- Complete breeding and plan for future progeny testing.

Lodgepole pine (Pli)

- Maintain and measure several key progeny tests
- Survey sites for disease and continue to develop methods for screening young seedlings
- Support Bulkley Valley orchard expansion

Interior Cedar (Cwi)

- New program proposed based on projected range expansion under climate change and increased seed demand (see Extension meeting presentation by Marie Vance).
- Open pollinated seed collection from parents in the Barnes Creek clone bank.
- Preliminary analysis of provenance test data, some sites are very young (Ages 3-8 yrs).

Ponderosa Pine (Py)

- New breeding program proposed based on anticipate range expansion and increased seed demand. (See extension meeting presentation by Marie Vance).
- Identification of plus trees and/or stands for seed/scion collection in BC.
- Seed and scion collection from USDA Forest Service Orchards.

It was noted that Cwi is not currently ranked as a Category 1 or 2 species warranting a tree breeding program nor has a business case (e.g. estimated potential return on investment) been prepared. However, TAC members supported pursuing a breeding program (including for deer browse resistance) for this valuable interior species.

6. Resilience Program

The Resilience Program includes activities that support FGC’s goal for implementing climate-based seed transfer. It does not include ‘pest resilience’, which under the tree breeding (and conservation) programs.

6.1 Climate Change and Adaptation Research – Keith Thomas

Climate change and adaptation research (CCAR) activities include maintenance, measurements and analysis of the Ministry’s extensive Assisted Migration and Adaptation Trial (AMAT) and the Sx genecology study. Also includes a new multi-seedlot (genetic diversity) study overseen by Greg O’Neill and some funding for a whitebark pine project conducted by Ward Strong in collaboration with Parks Canada. The total amount requested for CCAR is slightly higher requested in 2018.

Activity	Forest Health \$	Value \$	Resilience \$	Request Total \$	2018 Request \$
CCAR	-	-	148,000	-	
Total	-	-	-	148,000	144,800

6.2 Climate-based Seed Transfer Project – Margot Spence

Margot presented an overview of the CBST project activities and budget expenditures for 2018/19, and proposed activities and budget requested for 2019/20.

Key accomplishments in 2018/19 included...

- Chief Forester Standards for Seed Use amended April 5, 2018
- 58% of all seedlings requested entered in SPAR as of Feb 4, 2019 were actioned under CBST
- Impact Assessment and Gap Analysis Tools & interactive pdf maps - made available by March 31
- Initial provincial analysis by species completed (by March 31)
- SPAR functionality for CBST added and SPAR training delivered
- Development of CBST Maintenance and Support Plan
- Presentations at 2018 Cone Collection Workshops, CSC, Tree Seed Centre’s “Connections through Seed”, and to Interfor, WFP, FIRM Provincial Stewardship groups, plus articles and webinars.
- Distribution of CBST Project Report on policy and implementation for review
- Continued work on GIS analysis, SPAR HELP screens, coordination with CCISS
- Reviewed several CBST Alternatives to the CF Standards for Seed Use.

CSBT Project Budget 2018/19

CBST Project Component	2018/19 Approved Budget	Actuals Projected to March 31/19	Difference
Project Mgmt	\$15,000	\$13,600	\$1,400
GIS Analysis	\$50,000	\$50,000	\$0
SPAR CBST HELP functions	\$10,000	\$8,000	\$2000
Travel for Extension	\$5,000	\$5,000	\$0
TOTAL CBST Project	\$80,000	\$76,600	\$3,400

Planned activities for 2019/20 include:

- Continue work on options for mitigating CBST seed use impacts and gaps;
- Continue to advance SPAR and RESULTS capacity for CBST;
- Continue GIS analysis and tool development;
- Establish CBST monitoring and reporting framework;
- Finalize and make available summary components of the CBST Policy Report;
- Validate and test CBST science foundation baseline data updates in SPAR and the CBST tool;
- Update the Chief Foresters Standard for Seed Use for April 1, 2020 to be effective August 1, 2021;
- Complete series of CBST information notes.

TAC recommended an additional \$5k for CBST-related communications and extension, including travel, to advance understanding and implementation. Follow-ups to break-out session discussions will continue to occur via the CBST stakeholder working group and other forums.

CSBT Project Proposed Budget 2019/20

CSBT Project Component	2019/20 Proposed Budget
Project Management (last year of contract)	\$10,000
GIS Analysis and Tools (new contract)	\$25,000
Completion of SPAR HELP functions and tutorials (last year of contract)	\$10,000
Extension, Communications (to increase again in 2020/21) <i>ITAC recommends</i>	\$5000
TOTAL CSBT Project	\$50,000

Margot and Susan Zedel announced their plans to retire soon, and this is their last ITAC meeting. Both were thanked for their dedication and support.

6.3 Co-AdapTree Project

Margot tabled a report and budget prepared by Sally Aitken, UBC, for [CoAdapTree](#), a genomics project funded in part by the Ministry. See separate report provided by Sally for details. Ministry funds contributing to this multi-million \$ project are copied in the table below.

Table 1. Funds received for the CoAdapTree project from the CTAC and ITAC Subprograms of the Forest Genetics Council for the 2018-19 fiscal year, and funds requested for 2019-20.

Item	2018-19 funding	2019-20 request
PhD student 1 - Douglas-fir adaptation	\$10,500	\$5,000
PhD student 2 - Western larch adaptation	\$10,500	\$5,000
Summer student - supplement to NSERC Summer Research Award	\$4,900	\$4,900
Greenhouse rental	\$1,680	\$1,680
Greenhouse and lab phenotyping supplies	\$2,000	\$2,000
Technician	\$8,707	\$17,420
DNA lab supplies	\$0	4,000
Subtotal		\$40,000
Overhead 25%		\$10,000.00
Total		\$50,000

7. Operational Tree Improvement Program (OTIP)

Brian reported the 2019/20 OTIP Call for Proposals was issued on Nov 7 and closed on Dec. 15, 2018. Proposals received are being compiled by Darrell Wood. He will invite several CTAC and ITAC members to review and score the proposals. The OTIP committee's recommendations will subsequently be presented to FGC.

8. ITAC Budget Recommendations

Most ITAC members stated they do not have sufficient information to recommend adjustments to the Ministry's proposed breeding activities in order to bring the total \$ requested in line with the program targets outlined in Pat's budget letter. ITAC members entrust the Ministry to prioritize work and allocate the LBIS budgets as necessary. A motion similar to last year's was therefore proposed and supported.

Motion: The ITAC budget recommendations for 2019/20 as presented are hereby approved, with any subsequent adjustments required to meet budget targets to be based on the Ministry tree breeders' input of priorities and impacts. Richard/Dan. CARRIED.

Action: Keith to combine the 2019/20 Coast and Interior Tree Breeding and Resilience program budgets and present to FGC with support from ITAC and CTAC chairs.

9. 2nd Generation Pli Orchards

Kori, Brian and Nick outlined the considerations leading to the Ministry's recent decision to select and graft 15,000 ramets to establish three 2nd generation Pli seed orchards for the new CBST-based "Bulkley Valley" breeding zone. The Ministry, VSOC and SelectSeed will each receive 5000 ramets over a 3-year period commencing in 2020. The parents will be selected for growth and form, and consist of forward and backward selections, and seedlings from several controlled-crosses. Separate selections will be required for additional pest resistant orchards.

Stephen said the Ministry will establish its orchard at the Prince George Tree Improvement Station. Dan Gaudet said VSOC has extended its fencing and begun site preparation to accommodate its 5000-ramet allocation at their Quesnel site. Dan indicated Pli seed production (filled seeds per cone) is higher in Quesnel than Vernon, but there is considerable variation between parents/families, and between grafted ramets vs seedlings. These differences should be considered in estimating future seed production.

Seed from 1st generation seed orchards will continue to be required seed from the 2nd generation orchard becomes available, and for an period of overlap. It was also noted the new BV zone extends well beyond the Bulkley Valley - east of Prince George. It may also be confused with the old BV seed planning zone.

Action: Ministry to consider alternative names to the CBST "Bulkley Valley" breeding zone.

10. SelectSeed Pli Orchard Business Case - Brian Barber

On Sept 27, 2018, FGC directed SelectSeed to propose a business case for a 2nd generation Pli seed orchard for the new BV zone in the range of 5,000-10,000 ramets. Brian and Jack Woods subsequently proceeded to identify the criteria for a suitable site and conducted a field reconnaissance in Oct. 2018. A financial analysis was also initiated. A status report was provided to FGC at its meeting on Dec. 11, 2018. See [FGC website](#) for meeting minutes.

Brian presented an overview of the site selection criteria, including ClimateBC data, used to evaluate sites, optimize seed production and minimize pollen contamination. Feedback and comments from ITAC members and guests were solicited. Comments will be incorporated into final report and recommendations for SelectSeed's Board of Directors and FGC's approvals in April.

Brian was asked why SelectSeed did not have to go through the same process as the Ministry and VSOC to be considered for a 2nd generation orchard (e.g. submitting an expression of interest letters to ITAC followed by FGC approval). It was noted FGC reviewed and supported VSOC's and Ministry's expressions of interest at its Dec 8, 2017 meeting.

Brian explained that SelectSeed is owned by FGC. FGC requested a review of the company's financial forecasts and a business case before granting its approval to proceed with a new 2nd generation Pli seed orchard. Since ITAC reports to FGC, FGC already provided SelectSeed with the aforementioned mandates, and due to timing, a letter of interest to ITAC was not deemed necessary. SelectSeed's intentions were, however, being declared at this ITAC meeting, consistent with [CF's Guiding Principle #5](#) – Notice of Significant Changes.

No comments on the site selection criteria were offered, but Brian was asked if SelectSeed would have a site selected and prepared by Spring 2020 to receive and plant the first grafts. Brian responded it will be subject to FGC approving a business case and the site selection process. 1st year grafts could also be held and planted in with 2nd year grafts in Spring 2021.

Action: Brian to circulate SelectSeed's Pli orchard site selection criteria to ITAC members for review and comment.

Action: FGC to clarify approval process for new seed orchards, including ITAC's role.

11. New Business - ITAC Extension Meeting Review

No new business was identified. Members, however, briefly reviewed the extension meeting and some feedback. Positive feedback was received regarding the 1.5 day format and break-out sessions.

ITAC meeting planning committee members and meeting sponsors were thanked.

Action: to summarize ITAC extension meeting feedback and share with planning committee.

Action: Leads of ITAC Extension Meeting Break-out Sessions to follow-up as appropriate. e.g. it was recommended the Ministry examine potential seed sources from Alberta and USA to fill CBST seed gaps for the NE and SE areas of BC, respectively.

12. Adjournment

Motion: this meeting is hereby adjourned at approx. 3:30 pm. Kori/Nick. CARRIED

Draft minutes by B Barber Jan 11, 2020. Approved at ITAC Business Meeting Jan 23, 2020.