

## MINUTES

### Forest Genetics Council

### Business Meeting – 14 March 2017

Location: Executive Airport Plaza Hotel, Richmond, BC

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#### Attendees:

Pat Martin - FLNR-TIB (Co-chair)	Domenico Iannidinardo - TimberWest	Annette van Niejenhuis – WFP
Mark Tamas- Tolko (Co-chair)	Scott King– Louisiana Pacific	Kori Vernier - CanFor
Shane Ford - FLNR-TIB	Joe LeBlanc- Interfor	Gernot Zemanek – BC Fed. of
Rob Guy - UBC	Jeff Mycock – West Fraser	Woodlot Associations
Mark Hay - FLNR-BCTS	Dan Peterson- FLNR-Region	

#### Regrets:

Jennifer Davis- FLNR-RPB  
Raoul Wiart – Canadian Wood  
Fibre Centre

#### Guests:

Diane Nicholls – FLNR-Office of the Chief Forester (08:30-08:45)  
Brian Barber- FGC / Select Seed  
Jack Woods – SelectSeed  
Stephen Joyce- FLNR-TIB  
Margot Spence – FLNR- TIB  
Alana Phillips - FLNR-TIB  
Agnes Baross – Genome BC (11:30-13:45)  
Jim Ferrell – Genome Canada (11:30-13:45)  
Catalina Lopez-Correa – Genome BC (11:30-13:45)

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#### Summary of Motions

1. **MOVED** (King/van Niejenhuis): The agenda prepared for the meeting is hereby approved without changes. *CARRIED.*
2. **MOVED** (van Niejenhuis/LeBlanc): The Minutes of the meeting held December 14, 2016, with minor corrections identified prior to this meeting, are hereby approved. *CARRIED.*
3. **MOVED** (van Niejenhuis/King): The FGC authorizes SelectSeed to pay for room rental and food costs for one one-day business meeting for ITAC and CTAC, annually. *CARRIED*
4. **MOVED** (van Niejenhuis/LeBlanc): The SelectSeed Business Plan for 2017/18 is hereby approved with amendments as listed in the minutes. *CARRIED*
5. **AMENDED MOTION** (Zemanek/King): That the FGC recommends to the Office of the Chief Forester a total budget of \$2,888,264. *CARRIED.*

6. **MOVED** (Iannidinardo/Van Niejenhuis): That the FGC strike a subcommittee to review FGC TACs and business planning processes and provide streamlining recommendations to FGC by October 31, 2017.

*CARRIED*

7. **MOVED** (LeBlanc/ Iannidinardo): There being no further business, the meeting is hereby adjourned.

*CARRIED.*

### Summary of Action Items

Responsibility	Actions
Margot Spence	Produce regular updates from the CBST Stakeholders' Group that can be sent to all orchard distribution lists.
Annette van Niejenhuis, Kori Vernier	Share CBST Stakeholders' Group communications and discussions with orchard managers (as CTAC and ITAC chairs).
Pat Martin, Brian Barber, Jeff Mycock	Scope out a seed planning model that accounts for future seed demand and TSR, and report back to FGC at the June meeting.
Kori Vernier (Chair of ITAC), the tree breeders, and the three parties (SelectSeed, VSOC and Ministry)	Present a plan for identifying the materials and timelines for advancing towards establishment of the new second generation orchards.
Pat Martin, Brian Barber	Include justification and context with FGC funding request to the Office of the Chief Forester, as outlined in these Minutes.
FGC TAC Streamlining subcommittee (Pat Martin, Annette van Niejenhuis, Dan Peterson, Brian Barber, Margot Spence, Alana Phillips/Darrell Wood)	<ol style="list-style-type: none"> <li>1. Develop some terms of reference for the review, including principles and scope, for FGC approval;</li> <li>2. Undertake review and report progress to Council in June and Sept 2017; and</li> <li>3. Deliver a final report and recommendations to FGC by October 31, 2017.</li> </ol>
Pat Martin, Mark Tamas	Draft a letter to the Chief Forester regarding representation of genetic gain in timber supply reviews.
Pat Martin	Set up conference call with Brian Barber, Mark Tamas and Dan Peterson to discuss a potential Forest Enhancement Society proposal to be submitted by Friday March 17, 2017.
Brian Barber	Issue a Doodle Poll to identify available dates/times for the June meeting.

**1. Welcome from the Chief Forester** *Diane Nicholls, FLNR-Office of the Chief Forester*

Diane Nicholls began the meeting via conference call. She provided an overview of current priorities in BC forestry and reflections on the work and mandate of the Forest Genetics Council. Key points:

- The FGC has a leadership position in the BC forest industry, in particular due to the collaboration between industry, ministry and other stakeholders with the council. The FGC has evolved over recent years and this is a good opportunity to reflect on changes to improve efficiency (for example, TAC functions). In addition to the key FGC objectives, Diane is expecting the FGC Business Plan to focus on linking the genetics program with forest pests, developing the Climate-Based Seed Transfer policy, and supporting program succession.
- The Forest Carbon Initiative (FCI) has recently been announced, with timeline targets of 2030/2050. The primary focus is on carbon sequestration through restoration (including tree planting) and promoting efficient use of fibre, including reduction of burning to reduce carbon emissions. There is an opportunity for funds to be allocated to enhanced silviculture (e.g. increasing tree densities). The delivery mechanism of FCI is via the Forest Enhancement Society of BC (FES) which is an independent entity from government that has been allotted \$85M towards supporting four mandated deliveries. Ministry staff are working closely with FES and will also be looking for other external partners for opportunities for carbon sequestration.
- The FCI mandates have implications to FGC for seed use. More information will come at the next FGC meeting (June 2017), with a focus on talking points for communicating to stakeholders how FCI and other initiatives will affect seed use / seed production.
- It is not anticipated that the initiatives will create pressure on forest health funding for FGC, nor should there be a conflict in funding priorities between forest health and CBST. Other climate change initiatives might be able to assist with funding CBST, although most initiatives focus on carbon sequestration, e.g., mitigation of current effects. FGC will be better able to coordinate with the Integrated Planning Group now that Dan Peterson and Jennifer Davis are council members.

**2. Agenda** *Pat Martin, FLNR-Tree Improvement Branch*

An agenda and several attachments were forwarded to members in advance via email. Heading #s below are the same as Item #s in the agenda.

Raoul Wiart and Jennifer Davis sent regrets; no proxies were given.

There being a quorum of members entitled to attend and vote, and proper notice having been given, Pat Martin, Chair, called the meeting to order at 8:25 am.

**MOTION** (King/van Niejenhuis): The agenda prepared for the meeting is hereby approved without changes.  
**CARRIED.**

### 3. Minutes and action items from Dec. 14, 2016 *Pat Martin, FLNR-Tree Improvement Branch*

The Council reviewed the draft minutes of the December 14, 2016 FGC conference call.

#### Action Items

Responsibility	Actions	Status
ITAC, CTAC and TIB OTIP Coordinator	Action OTIP Eligibility recommendations, and include statement in call for proposals for including measures of success.	Proposals under review, statement already in call and contracts.
Jack	Incorporate Type 4 Silviculture Strategies' species harvest data into the seed needs analysis.	To be discussed (Item #5)
ITAC	Confirm additional number of ramets required, if any, to meet future seed demand for the SPUs noted, and use CF Principles and annual business plan process to guide orchard expansions where and when deemed necessary.	To be discussed (Item #5)
Co-chairs	Review FGC representation/liaisons on TACs at next meeting.	To be discussed (Item #17)
Brian	Contact Mark re BCTS's Richmond hotel for FGC's March meeting	Completed

**MOTION** (van Niejenhuis/LeBlanc): Minutes of the FGC meeting held December 14, 2016, with minor corrections identified prior to this meeting, are hereby approved. *CARRIED.*

The Approved minutes will be posted on the FGC website, which is accessible to the public.

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

Margot Spence, Seed Policy Officer provided updates on CBST policy development. The Interim Policy is under review and a decision should be announced within the next 6 months. Estimated actual expenditures through March 31, 2017 are \$84,200.

#### Discussion:

- Council members noted that orchard managers have some anxiety regarding potential cross-over, competition, underselling, inside-information, transition, etc., and would like more transparency with information/decisions being made on the CBST Stakeholders' Group by orchard managers in the group. Better communication to all orchard managers is needed.

**ACTION:** Margot Spence to send out regular updates from the CBST Stakeholders' Group that can be sent to all orchard distribution lists.

**ACTION:** Annette and Kori (as CTAC and ITAC chairs) to share CBST Stakeholders' Group communications and discussions with orchard managers. .

Shane Ford, Manager, Forest Genetics, provided updates on staff succession planning within TIB's forest genetics section.

- Biggest risk is protection and integrity of data sets going back 40 years. Competition for a Manager of Provincial Tree Improvement Data is underway.

- Chang-Yi Xie (coastal hardwoods) retired in March 2017. This vacant breeder's position will be based in Vernon; a competition is underway. Coastal hardwoods programs will be managed by Michael Stoehr and Alvin Yanchuk, with support from Charlie Cartwright.
- Barry Jaquish, Fd, Lw and Sx breeder, may retire at the end of this fiscal year. Thanks to SelectSeed for supporting Trevor Doerksen's position; having Trevor overlap with Barry has greatly benefited knowledge transfer.
- Co-op graduate student Marie Vance completed her two work terms, assisting John Russell and Greg O'Neill. Greg O'Neill will have an undergraduate co-op student this summer. A post-doc secondment is planned for the summer to work on forest health issues with Ward Strong.

## **5. Interior Seed Supply and Demand Kori Vernier, Canfor, and Jack Woods, Select Seed**

Following a presentation and discussion on interior seed demand and supply projections at FGC's Dec. 14 meeting, FGC requested that data from Type 4 Silviculture Strategies be incorporated into the analysis, and the updated analysis and recommendations subsequently be reviewed by ITAC. The analysis and recommendations for orchard adjustments were discussed at the ITAC business meeting held in Vernon on Jan. 23, 2017. The following resolution and strategy was agreed upon:

*Resolution: (ITAC) To confirm additional number of ramets required, if any, to meet future seed demand for the SPUs noted, and use CF Principles and annual business plan process to guide orchard expansions where and when deemed necessary.*

### *ITAC's Proposed Northern Pli Class A Supply Strategy*

1. Proceed with selecting and establishing second-generation orchards to replace first gen orchards.
2. Keep 1st gen orchards until supply increases and/or demand declines
3. Remove 1st gen in sequential order by GW (low to high) subject to demand/supply.
4. N Pli orchard managers to submit expressions of interest to establish new 2nd gen orchards to ITAC.
5. FGC/ITAC to recommend to FLNR (CF) which orchards (and public resources) to proceed with based on EOIs and as per CF Principles, including projected seed yields (per hl, ramet, and/or area).
6. FLNR to start identifying selections in 2017 for grafting and future allocations.
7. Continue to examine and refined future seed demands including government programs.
8. Strategy allows ITAC to incorporate new information and decisions re CBST, SPU areas, and forest health objectives.

Kori Vernier, ITAC Chair, and Jack Woods, Technical Advisor, SelectSeed, provided an overview of ITAC's deliberations, decisions and next steps.

### Discussion:

- Due to uncertainties with respect to seed demand, establishing 2<sup>nd</sup> gen Pli orchards provides seed producers with flexibility and options.
- Item 4: change the wording from "expressions of interest" to "statements of intent".
- When FGC is funding an orchard activity (e.g., OTIP), the Chief Forester's Principles should be followed.
- Items 4 and 5 allow for transparency/oversight and avoid companies getting access to material ambiguously.
- A sustainable model is needed to predict seed demand. Need to consider what analyses are needed, what are the deliverables, coordination with FAIB, links to CBST.

The FGC recognizes ITAC's "Proposed Northern Pli Class A Supply Strategy" as brought to council, and requests ITAC bring forward recommended next steps following discussion with the Pli tree breeder and parties involved.

**ACTION:** Pat Martin, Brian Barber, and Jeff Mycock to scope out a seed planning model that accounts for future seed demand and TSR, and report back to FGC at the June meeting.

**ACTION:** Kori Vernier (Chair of ITAC), the tree breeders, and the three parties (SelectSeed, VSOC and the Ministry orchards), to present a plan for identifying the materials and timelines for advancing towards establishment of the new second generation orchards.

**6. Summary of 2016/17 LBIS expenditures** *Pat Martin, FLNR-TIB*

In 2016/17, \$2.5M in LBIS funds were allocated to various FGC subprograms and activities. These allocations are identified in FGC's 2016/17 Business Plan, and the budget tables below.

Pat Martin, A/TIB Director, provided an estimate of year-end LBIS expenditures by FGC subprogram for fiscal year 2016/17.

**7. SelectSeed Business Plan 2017/18** *Brian Barber, SelectSeed*

SelectSeed's Annual Business Plan for fiscal 2017/18 was reviewed and approved by the SelectSeed Board of Directors on March 2, 2017. Brian Barber, CEO SelectSeed, provided an overview of the business plan.

**MOTION** (Van Niejenhuis/King): The FGC authorizes SelectSeed to pay for room rental and food costs for one one-day business meeting for ITAC and CTAC, annually. *CARRIED*

**MOTION** (Van Niejenhuis/LeBlanc): The SelectSeed Business Plan for 2017/18 is hereby approved with the following amendments:

- Page 10, First sentence under 8.1.1. Expenditures: should be \$939,713 as listed in table, not \$936,713 as listed in text.
- Budget to include support for ITAC/CTAC annual meetings as outlined in motion above.
- Correction of minor typos within text and tables.

*CARRIED*

**8. FGC Subprogram budgets 2017/18** *Brian Barber, FGC*

Brian Barber presented an overview of the FGC Subprogram budget development. On Jan. 16, 2017, Pat Martin and Mark Tamas, FGC Co-chairs, sent an email to TAC chairs requesting they work with the FGC Program Manager to develop subprogram budget options that align with two budget scenarios totaling \$2.5M and \$2.8M. No caps or targets were imposed, but 3-year funding averages for each subprogram were provided for reference. TACs were to clearly identify project priorities, funding amounts and linkages to FGC's program goals, so council members would not have to "delve into details if and when subprogram allocations need to be adjusted to balance the overall budget."

TACs subsequently prepared budgets for the various subprograms. These are identified in the following items and summarized in item #16.

**9. Tree Breeding** *Annette van Niejenhuis, WFP (CTAC Chair), and Kori Vernier, Canfor (ITAC Chair)*

Annette Van Niejenhuis, CTAC Chair, and Kori Vernier, ITAC Chair, provided an overview of the recommended budget and activities, supported by Shane Ford (FLNR-TIB). ITAC and CTAC business meetings were held on Jan 22 and Mar 2, 2017, respectively. Ministry tree breeders outlined the activities they undertook in fiscal 2016/17, and their proposed activities for 2017/18.

ITAC and CTAC passed the following resolutions respecting the breeding subprogram budgets. CTAC adopted ITAC's resolutions, only amending the \$ requested. These have been combined here for brevity.

- (1) To fully support the \$807,000 (requested) for the interior breeding program and \$608,500 (requested) for the coastal breeding program as submitted;*
- (2) If requested to make cuts to the program due to funding, that the genetics section internally prioritize, make cuts and inform ITAC of the resultant cuts and programs that will not be completed; and*
- (3) To submit concurrently as an unfunded pressure this difference, and if subsequently funded, notified of this early enough in the season so that field work can be started before the window closes.*

Consequently, no B or C breeding budget options were recommended by ITAC or CTAC. Members, however, provided feedback to assist with establishing priorities should FGC reduce the recommended funding.

CTAC also passed the following resolution:

*Resolved, that FGC define budget targets for CTAC Breeding Program by January 01, annually.*

Breeding budget recommendations for 2017/18:

<b>Species</b>	<b>2016/17 Requested</b>	<b>2016/17 Allocated</b>	<b>2017/18 TAC Recommended</b>
<b>Coast</b>			
Coastal D-fir	\$ 139,000	\$ 109,859	\$107,000
Redcedar	\$ 283,000	\$ 223,670	\$333,000
Yellow cedar	\$ 30,000	\$ 23,711	\$31,000
Western hemlock	\$ 48,000	\$ 37,937	\$42,000
Sitka spruce	\$ 52,000	\$ 41,098	\$45,000
White pine - coast	\$ 41,000	\$ 32,405	\$15,000
Alder	\$ 62,000	\$ 49,002	\$35,500
<b>TOTAL COAST</b>	<b>\$655,000</b>	<b>\$517,683</b>	<b>\$608,500</b>
<b>Interior</b>			
Lodgepole pine	\$ 296,000	\$ 233,945	\$300,000
White pine	\$ 41,000	\$ 32,405	\$53,000
Interior spruce	\$ 141,000	\$ 111,440	\$61,000
Interior D-fir	\$ 265,000	\$ 209,444	\$166,000
Western larch	\$ 95,000	\$ 75,084	\$227,000
Ponderosa Pine	\$ -	\$ -	\$0
Broadleaves	\$ -	\$ -	\$0
<b>TOTAL INTERIOR</b>	<b>\$838,000</b>	<b>\$662,317</b>	<b>\$807,000</b>
<b>Coast + interior</b>	<b>\$1,493,000</b>	<b>\$1,180,000</b>	<b>\$1,415,500</b>

#### Discussion:

- CTAC was unanimous that the original ask be fully supported. CTAC noted it would be more efficient for FGC to provide budgets and timetables well in advance of their winter meeting.
- ITAC was also unanimous that the original ask be fully supported. ITAC noted that in past cuts have been made to breeding budgets even though costs are increasing. ITAC reiterated that cuts to budgets will result in inability to fully support FGC objectives. Also, Interior work is more limited by snow etc, so less ability to risk-manage budgets. Focus in the Interior is on selecting for pest resistance.
- Mark Tamas noted that it's difficult for FGC to assess the options and consequences if TACs put forth the total ask without specifying which activities could/would be cut. Shane Ford clarified that (as noted in resolutions above) the TACs want the breeding program to determine where cuts will be made. This is key to prioritizing spending, as it does not make sense in terms of species' breeding cycles to make cuts across the board. Breeders can best advise which projects can be deferred a year, etc.
- TAC chairs are confident that Shane and breeders will adjust budgets and projects to align with FGC objectives.

# **10. Operational Tree Improvement Program (OTIP)** *Annette van Niejenhuis, WFP (CTAC Chair), and Kori Vernier, Canfor (ITAC Chair)*

Annette Van Niejenhuis, CTAC Chair, and Kori Vernier, ITAC Chair, provided an overview of the recommended OTIP budget and activities, supported by Alana Phillips and Stephen Joyce (FLNR-TIB). The purpose of the OTIP subprogram is to enhance the quality and quantity of seed produced in BC's seed orchards, and provides funding for activities that orchard managers may not otherwise undertake. CTAC and ITAC reviewed and updated the eligibility criteria for OTIP proposals in Nov-Dec 2016. A call for proposals was subsequently issued by the ministry on Dec. 20, 2016. Fifty-five proposals were received and reviewed by OTIP Review Committees on the coast and in the interior, respectively. Reviewers included staff from TIB, BCTS, private seed orchards, and forest companies. Proposals were evaluated against the eligibility criteria, cost effectiveness, impact and value, feasibility and competencies of the proponent. Meetings were conducted in Vernon on Feb. 22, and Saanichton on Feb. 27, 2017. Recommended funding for some activities was reduced or eliminated, resulting in A and B funding options for the coast and interior, respectively.

OTIP budget recommendations for 2017/18:

Area	Total Approved 2016/17	No. proposals received	Total requested 2017/18	"A" option	"B" option
Coast	\$134,100	17	\$180,034	\$159,820	\$134,197
Interior	\$290,318	38	\$333,957	\$236,265	\$236,265
<b>Total</b>	<b>\$424,418</b>	<b>55</b>	<b>\$513,991</b>	<b>\$396,085</b>	<b>\$370,462</b>

## Discussion:

- CTAC (AVN): CTAC offered an A and B option. B option removes pest surveys and some other activities. Tech support projects include developing genetic markers to assess genetic diversity in western redcedar and Douglas-fir, and Fdc seedling losses to Fusarium etc.
- ITAC (KV): Strong consensus that induction and pest management were a priority. ITAC Review committee was stringent in analyzing eligibility. There was substantial discussion about replacements in existing orchards. ITAC did not provide a B option as it feels that it has already made sufficient cuts (>\$100K) during the review process and for its A option.
- Discussion re holding a contingency fund for insect control if needed so that funds can be mobilized quickly, for operational pest management (as opposed to research trials). Priority on supporting pine production (49%). This would be an internal discussion within the ministry as to how this would be managed (e.g., contracts). Enables Interior orchards to access funds when insects flying rather than wait till end of season when funds are traditionally returned.

# **11. Genetic Conservation** *Jack Woods, SelectSeed, on behalf of Pia Smets, GCTAC Chair*

Jack Woods (on behalf of Pia Smets, GCTAC chair) provided an overview the recommended budget and activities. The 2015-2020 Genetic Conservation Strategy was reviewed and supported by FGC in December 2016. FGC also asked GCTAC to identify on-going activities vs. new activities in future budget requests, to better understand the priorities. The GCTAC subsequently developed priorities and budgets for 3 funding level options. No call for proposals was issued as existing funding was required to support on-going work including ex-situ seed collections, whitebark pine (a species at risk), and the conservation catalogue maintained by the Centre for Forest Conservation Genetics at UBC (established by FGC in 2000).

Genetic Conservation subprogram budget recommendations 2017/18:



Proponent	Approved 2016-17	2015-20 Strategic Plan	Requested 2017-2018	Option A	Option B	Option C	Activities
Tree Seed Centre	\$ 38,000	\$ 40,000	\$ 45,000	\$ 45,000	\$ 40,000	\$ 38,000	Ex-situ collections + seed bank mgmt
TIB - Genetics	\$ 40,000	\$ 40,000	\$ 43,500	\$ 43,500	\$ 42,500	\$ 37,500	White bark pine field screening, parent tree marking, clone bank
Region - M Murray	\$ 19,450	\$ 30,000	\$ 32,000	\$ 32,000	\$ 29,000	\$ 24,000	White bark pine resistance testing, seed extraction, nursery, etc.
Centre Forest Conservation Genetics	\$ 91,250	\$ 110,000	\$ 146,158	\$ 146,158	\$ 126,158	\$ 108,658	Conservation catalogue, AdapTree Genomics project, WBP assisted migration trial, other
Other		\$ 30,000	\$ -	\$ -	\$ -	0	
<b>total</b>	<b>\$ 188,700</b>	<b>\$ 250,000</b>	<b>\$ 266,658</b>	<b>\$ 266,658</b>	<b>\$ 237,658</b>	<b>\$ 208,158</b>	

**Discussion:**

- Note that this budget conforms to the GCTAC's 5 year Strategic Plan and includes mostly ongoing projects. There is limited scope for new projects. The collective requests for Whitebark pine are justified to support BC's recovery plan for this species at risk, and its comparatively large budget is temporary (<3 yrs).

**12. Genome Canada/Genome BC: Forest Sector Initiatives**

**Jim Ferrell**, Vice Chair, Board, Genome Canada, **Catalina Lopez-Correa**, Chief Scientific Officer and Vice President, Sector Development, and **Agnes Baross**, Manager, Sector Development (Forestry), Genome BC, presented an overview of Genome BC's forest sector strategy and other initiatives of interest to FGC.

Genome Canada recently approved the following forestry genomics projects for funding:

- CoAdapTree. Sally Aitken (UBC), Samuel Yeaman (University of Calgary), and Richard Hamelin (Université Laval)
- SpruceUp. Joerg Bohlmann (UBC) and Jean Bousquet (Université Laval)
- BioSafe: Richard Hamelin (UBC), Cameron Duff (Canadian Food Inspection Agency), Ilga Porth (Université Laval)
- CEDaR. John Russell (FLNR) and Joerg Bohlmann (UBC)

The former two large-scale applied research projects (LSARP) and the latter Genomic Applications Partnership Program (GAPP) project are supported by FLNR, several forest companies and others with cash and in-kind contributions.

Genome BC invests in research, entrepreneurship and commercialization in life sciences to address challenges in key sectors such as health, forestry, fisheries, mining, environment, etc. Over \$780M in total project funding secured since inception. In the forest sector, genomics addresses issues such as: pest and pathogen diagnostics, traceability of BC timber, tree breeding programs, value added bio-products.

Genome BC supports a Forest Sector Advisory Council, whose mandate is to offer advice and guidance on its portfolio of projects, identify gaps, etc. New funding opportunities through Genome BC include: GAPP (ongoing); GeneSolve – open innovation platform to connect users with problems to experts with solutions. Sector Innovator Centres: to bring together funders and expertise. "Barcode for Life" is another exciting program.

Genome BC welcome further opportunities to collaborate and interact with FGC.

**13. Seed Transfer, Genecology and Decision Support** *Margot Spence, FLNR-TIB*

The Seed Transfer and Genecology and Decision Support TACs were combined again this year for the purposes of developing priorities and budget recommendations. The ‘amalgamation’ acknowledged overlap in committee members and shared interests in advancing climate-based seed transfer. The proposed budgets for these subprograms have, subsequently, also been combined. No call for proposals was issued as resources are required to support on-going projects. Project leads submitted progress reports for 2016/17, and proposals and budgets for 2017/18. These were reviewed by the combined TACs, who prepared two funding options.

Seed Transfer, Genecology and Decision Support budget recommendations for 2017/18:

Project	2016/17 Requests	2016/17 Approved	2016/17 Projected Actuals (estimates)	2017/18 OPTION A	2017/18 OPTION B	Activities
CBST Project (TIB, Policy)	\$ 85,000	\$ 76,500	\$ 89,500	\$ 140,000	\$ 111,200	CBST Policy development and engagement
Genecology (TIB, Genetics)	\$ 338,000	\$ 233,050	\$ 375,000	\$ 409,500	\$ 402,735	Provenance testing, maintenance. Option B includes AMAT
AMAT (TIB, Genetics)	\$ 120,100	\$ 109,500		\$ 59,650		Assisted migration and adaptation trial
Climate Modelling / Climate WNA	\$ 56,250	\$ 56,250	\$ 56,250	\$ 67,500	\$ 59,063	Dr. Tongli Wang, UBC (0.5 FTE)
AdapTree/CoAdapTree	\$ 37,500	\$ 30,000	\$ 30,000	\$ 41,850	\$ 39,850	Genomics projects: Dr. Sally Aitken et al
<b>Subtotal excluding CBST</b>	<b>\$ 551,850</b>	<b>\$ 428,800</b>	<b>\$ 461,250</b>	<b>\$ 578,500</b>	<b>\$ 501,648</b>	
<b>Total SSTAC and DSTAC</b>	<b>\$ 636,850</b>	<b>\$ 505,300</b>	<b>\$ 550,750</b>	<b>\$ 718,500</b>	<b>\$ 612,848</b>	

Discussion:

- Critical to move CBST Project forward in next 2 years; B option would result in increased risk of not achieving CBST by 2020.
- Genecology and AMAT funding required for maintenance and measurements; B option would result in loss of quality provenance data.
- ClimateBC Project is 0.5 FTE towards Tong-li Wang’s salary (balanced with Conservation subprogram).
- CoAdaptree Project includes support for two grad students’ salaries, and leverages significant funds from Genome Canada.

**14. Cone and Seed Pest Management** *Brian Barber (SelectSeed) on behalf of Tia Wagner, VSOC*

In January 2017, the Pest Management TAC developed a list of priorities for applied research based on seed orchard managers’ challenges and information gaps, potential project costs and feasibility. Several target pests and objectives were identified to improve management practices, tree health and seed yields. A call for proposals was issued by FLNR on Feb. 7. Five proposals were received – one for each eligible pest/objective. The proposals were evaluated against the eligibility criteria, cost effectiveness, impact and value, feasibility and competencies of the proponent. All projects were supported by PMTAC, though some activities within a proposal were recommended at reduced or no funding. Funding to support FLNR staff providing cone and seed pest management services is also recommended. Two budget options (A and B) are presented for FGC’s consideration. Two projects will conclude in spring 2018.

**Cone and Seed Pest Management Subprogram budget recommendations for 2017/18:**

<b>Pest</b>	<b>Proposal Title</b>	<b>Agency</b>	<b>Amount (\$) Requested</b>	<b>2017/18 Option A</b>	<b>2017/18 Option B</b>	<b>\$ required for 2018/19</b>
Coneworms -Dioryctria sp. and Barbara colfaxiana	Determine the efficacy of perm up to control coneworms in an interior Douglas fir orchard, as a viable alternative to Dimethoate.	FLNR	\$ 7,483	\$ 7,483	\$ 7,483	\$0
European pine shoot moth - Rhyacionia bouliana	Field trial for testing the efficacy and phytotoxicity of 2 insecticides for control of European pine shoot moth (Rhyacionia bouliana)	CropHealth Advising & Research	\$ 7,839	\$ 4,999	\$ 4,999	\$2,840
Needle rust - Lophodermella concolor	Field trial for testing the efficacy and phytotoxicity of 2 fungicides for control of needle rust (Lophodermella concolor)	CropHealth Advising & Research	\$ 10,445	\$ 6,185	\$ 6,185	\$2,840
Needle rust - Lophodermella concolor	Lophodermella risk factor diagnostics in North Okanagan seed orchards.	College of New Caledonia	\$ 28,300	\$ 22,300	\$ 19,300	\$0
Western conifer seed bug - Leptoglossus occidentalis	Comparative effects of Matador, Perm, and Surround+Matador on lodgepole pine orchard seed set.	SelectSeed	\$ 32,119	\$ 28,555	\$ 24,900	\$0
<b>Call for Proposals subtotal</b>			<b>\$ 86,186</b>	<b>\$ 69,521</b>	<b>\$ 62,867</b>	<b>\$5,680.00</b>
TIB - Ward Strong	Research lab funding	FLNR	\$ 2,000	\$ 2,000	\$ 2,000	\$0
TIB - Jim Corrigan	Cone and Seed lab funding	FLNR	\$ 20,000	\$ 20,000	\$ 20,000	\$0
<b>Annual FLNRO funding request</b>			<b>\$ 22,000</b>	<b>\$ 22,000</b>	<b>\$ 22,000</b>	<b>\$0.00</b>
<b>Total Requested for PMTAC</b>			<b>\$ 108,186</b>	<b>\$ 91,521</b>	<b>\$ 84,867</b>	<b>\$ 5,680</b>

No discussion.

**15. Applied Tree Improvement and Biotechnology *Brian Barber (SelectSeed)***

Brian Barber, FGC Program Manager, provided some background on historical funding under the Applied Tree Improvement and Biotechnology TAC, and an overview of a proposal from UVic received in Feb 2017..

Background: In 2007/08, the FGC/Ministry received a \$1.3M increase in funding from the Forest Investment Account. \$550k of this was allocated to “incremental projects” conducted at universities, the balance was distributed between existing FGC subprograms. The university-based incremental projects included:

- UBC (Dr. El Kassaby) genetic (DNA), seed use and deployment studies - \$257K
- UVic (Dr. von Aderkas) reproductive biology and cone induction in Pli and Fdi - \$143K
- UNBC (Dr. Hawkins) forest genetics research - \$150K

Steering committees were established to review project proposals and reports. The projects were funded at similar levels in 2008/09 through contribution agreements (e.g. transfer letters and grants). Funding for the UNBC research was discontinued in 2009/10, and funding for the former two projects were reduced to \$160k and \$139k, respectively. UBC’s project was also named Applied Tree Improvement and Biotechnology (Applied Biotech).

FGC’s recommended budget for UBC’s Applied Biotech was \$122k in 2010/11 and \$137k in 2011/12. No funds were identified for UVic’s projects in FGC’s 2010/11 and 2011/12 Business Plans. (A call for other “incremental projects” was issued in 2010/11, and \$143k was awarded to 11 projects.)

In 2012/13, an Applied Biotech funding category was established to receive proposals that contribute to FGC’s objectives but fall outside the scope of other subprograms. UBC received \$117,200 for its continued research in parental contributions and pollen contamination. UVic received \$171,540 for two projects that resumed its research in cone induction and reproductive biology. These projects aimed to improve Pli and Fdi seed yields and help explain significant seed losses (filled seeds per cone) observed in July and August in the Okanagan Pli

seed orchards. UVic's research identified clonal responses to various induction treatments (e.g. spray vs stem injections) and discovered the presence of *Sydowia* fungi inside pine seeds. Funding to UBC's Applied Biotech project was discontinued in 2013/14. Funding to UVic continued through to 2016/17: \$55,000 Applied Biotech (cone induction, seed set) and \$50,000 Pest Management (fungi).

In Feb 2017, UVic provided a progress report on these projects. UVic also provided a presentation attended by Nick Ukrainetz (contract manager), Jack Woods, Shane Ford, and Brian Barber. Reports were also reviewed by PMTAC, Dave Kolotelo (TSC) and interior seed orchard managers. UVic subsequently submitted a proposal to the Program Manager totaling \$243k in February 2017. Acknowledgement of receipt and a response was provided, but no reduced funding options were subsequently offered.

Discussion:

- Discussion around whether funding these activities is in alignment with FGC goals and objectives.
- Reminder that FGC is not a research organization and that proponents should not assume that continuous funding will be provided by the ministry.

As the UVic proposal was not solicited by FGC nor by the ministry through a call for proposals, and alignment with FGC objectives and priorities was unclear, council did not provide any recommendations regarding the funding of this work.

## 16. FGC LBIS Budget Recommendations *Brian Barber (SelectSeed)*

The following table summarizes budget recommendations received from FGC's TACs. If an Option B or C were not provided, the Option A amount was included under these column headers.

Summary of FGC subprogram recommendations for 2017/18:

Subprogram	2016/17 Requested	2016/17 FGC Approved	2017/18 Requested	2017/18 A	2017/18 B	2017/18 C
Genetic Conservation	\$ 250,768	\$ 188,700	\$ 266,658	\$ 266,658	\$ 237,658	\$ 208,158
Tree Breeding	\$ 1,493,000	\$ 1,180,000	\$ 1,415,500	\$ 1,415,500	\$ 1,415,500	\$ 1,415,500
Operational Tree Imp. Prog.	\$ 483,668	\$ 424,000	\$ 513,991	\$ 396,085	\$ 370,462	\$ 370,462
Cone and Seed Pest Mgt.	\$ 172,100	\$ 137,000	\$ 108,186	\$ 91,521	\$ 84,867	\$ 84,867
Seed Transfer & Decision Support	\$ 636,850	\$ 505,300	\$ 718,500	\$ 718,500	\$ 612,848	\$ 612,848
Applied Tree Impr. and Biotech.	\$ 62,100	\$ 55,000	\$ 242,781	\$ -	\$ -	\$ -
Administration	\$ 10,000	\$ 10,000	\$ -	\$ -	\$ -	\$ -
<b>Total</b>	<b>\$ 3,108,486</b>	<b>\$ 2,500,000</b>	<b>\$ 3,265,616</b>	<b>\$ 2,888,264</b>	<b>\$ 2,721,335</b>	<b>\$ 2,691,835</b>
FLNR risk managed (Breeding and Genecology)		<b>\$ 300,000</b>				

Discussion:

- Council noted that it is challenging to make these decisions when there is uncertainty around the total funding available from LBIS, and whether funding decisions are made by the Chief Forester or other FLNR executive.
- Forest Health goals and progress towards objectives should inform priorities and decision making re: budget recommendations.
- Suggestion that policy development might not be considered an operational expense for FGC and perhaps could be funded by other provincial government sources to reduce pressure on LBIS funding.
- Suggestion to create an FGC Budget sub-committee that takes into consideration all of the funding requests.
- Suggestion to weight some subprograms higher than others based on FGC priorities.

- Historically, the FGC request has been cut back every year and activities are not adequately funded. This year FGC should communicate to the Office of the Chief Forester that additional funds are required to achieve goals and objectives. In particular, CBST will not be completed by 2020 if funding is reduced.
- An important consideration this year is that the Province will be subject to an interregnum budget due to the provincial election. The interregnum period coincides with the biological window for crops, when a high proportion of spending needs to be allocated in first 2 months.

**MOTION** (Van Niejenhuis/LeBlanc): That the FGC recommends to the Office of the Chief Forester a total budget of \$2.8M (with the subsequent funding cut of \$888K being applied to tree breeding and seed transfer decision support). *SEE AMENDMENT BELOW.*

Discussion:

- This motion assigns risk management of the \$888K to the ministry programs rather than to the private companies.
- Suggestion to specify a schedule of payments so that orchards don't miss the biological window; a month-by-month allocation would be efficient for the spring.
- Discussion as to whether FGC should amend the motion to the full request of \$2.88M, rather than \$2.8M as moved. It was noted that the FGC TACs had already reduced the funding request (Option A) by \$465K from the proposals submitted.
- Because the FGC was not given a firm number (e.g., \$2.5M vs \$2.8M), and the funding request after initial vetting (Option A) was \$2.88K, FGC should ask for the full amount requested of \$2.88K.
- Important to recognize and communicate to the Chief Forester the following key factors:
- Funding specific projects this year also commits to funding measurements for those projects in subsequent or future years (e.g., in the case of Whitebark pine).
- Some expenses are fixed cost such as salaries (all or nothing)
- Some projects also have matching funding from external stakeholders (e.g., UBC, Genome BC, etc.).
- Suggestion for next year to ask for a 3- or 5-year budget from each TAC to forward to the Chief Forester.

**AMENDED MOTION** (Zemanek/King): That the FGC recommends to the Office of the Chief Forester a total budget of \$2,888,264. *CARRIED.*

**ACTION:** Pat Martin / Brian Barber to include justification and context with FGC funding request to the Office of the Chief Forester, as outlined in the notes above.

**17. Streamlining FGC Business Planning Process** *Brian Barber (SelectSeed)*

A need for improving the effectiveness of FGC TACs and business planning process was identified in 2015. The FGC should consider opportunities to merge committees, streamline administrative processes while respecting government's procurement policies and procedures, and align subprograms and/or budget allocations with FGC goals. On FGC's December 2016 conference call, a motion was also made to review FGC representation on TACs.

**MOTION** (Iannidinaro/Van Niejenhuis): That the FGC strike a subcommittee to review FGC TACs and business planning processes and provide streamlining recommendations to FGC by October 31, 2017. *CARRIED*

The subcommittee will be made up of the following council members and support personnel:

- Council: Pat Martin, Annette van Niejenhuis, Dan Peterson
- Support: Brian Barber, Margot Spence, Alana Phillips/Darrell Wood

**ACTION:** The FGC TAC Streamlining subcommittee will:

1. Develop some terms of reference for the review, including principles and scope, for FGC approval;
2. Undertake review and report progress to Council in June and September 2017; and
3. Deliver a final report and recommendations to FGC by October 31 2017.

Subject to FGC's review, recommendations could be implemented to guide business planning for 2018/19.

#### **18. Class A Seed and Timber Supply Review** *Pat Martin (FLNR-TIB)*

During the October 2016 field tour in Campbell River, Joe LeBlanc reported a discrepancy in Class A seed use data used in a recent timber supply analysis and current practice. Scott King subsequently reported significant differences in how Class A seed use was described in several recent AAC Rationales. A need for standardizing Class A seed use in timber supply reviews and reports was discussed with the Chief Forester and Ministry staff. Pat Martin provided an update to FGC on FLNR actions currently underway.

##### Discussion:

- Class A seed use seems to be reported differently between districts. Some TSRs still use Class A seed data from 2000. Some districts use a blended number of wild seed and some natural regeneration that provides a total estimated contribution of genetic gain over the amount of stands.
- Need to coordinate expertise within the ministry (esp. research branches vs. districts) so that values reported in TSRs are the most current possible. There is an opportunity to create a framework to model genetically improved seed and its contribution to timber supply. There should be input from expertise within groups like FAIB, CRIT (Coast Regional Implementation Team) Silviculture Working Group, etc.
- Refer to FGC Technical Report #1 – Incorporating Genetic Gain in Timber Supply Analysis (March 2001)
- The FGC is looking for support and leadership on this issue from the Chief Forester. TSRs are produced every couple of months and Class A seed use needs to be correctly reported.

**ACTION:** Pat Martin and Mark Tamas to draft a letter to the Chief Forester regarding representation of genetic gain in timber supply reviews.

The letter and discussion will consider the following:

- A concern was raised at the FGC Meeting that genetic gain is not being appropriately represented in documents (in particular, TSRs). The Council felt that this discounts the work of the FGC to some degree.
- The FGC would like to ask Diane to confirm the processes that her staff are using to develop the values in the TSRs.
- The FGC is looking for support from Diane (especially as she introduced the meeting, and the FGC reports to her) to ensure that the genetic gain values going out in the TSRs are correct and have been vetted by FLNR expertise (e.g. FAIB, others).
- The FGC's hope is that Diane will reach out directly to the expertise on her team to investigate the issue and develop an appropriate framework for modeling genetically improved seed and its contribution to the timber supply.

#### **19. New Business: Forest Carbon Initiative** *Pat Martin (FLNR-TIB)*

##### Discussion:

- The Forest Carbon Initiative (FCI) funding is administered by the Forest Enhancement Society (FES). Government transferred \$150M to FES this year. One particular goal that aligns with FGC's mandate is to improve the management of greenhouse gases through restoration and treatments.

- FCI and other new initiatives may be good sources of funding for tree improvement and genetic resource management. This could be coordinated via the Office of the Chief Forester. Dan Peterson and/or Jennifer Davis could provide a liaison with FGC.
- FES's next call for proposal closes on March 17, 2017.

**ACTION:** Pat Martin to set up conference call with Brian Barber, Mark Tamas and Dan Peterson to discuss a potential proposal to be submitted by Friday March 17, 2017.

**20. Next FGC Meeting / Meeting Adjournment** *Brian Barber (SelectSeed)*

A 2-3hr conference call is required mid-June 2017. Agenda items will include FGC business, and AGMs of the BC Forest Genetics Society and SelectSeed.

**ACTION:** Brian Barber to issue a Doodle Poll to identify available dates/times for the June meeting.

**MOTION** (LeBlanc/ Iannidinardo): There being no further business, the meeting is hereby adjourned. *CARRIED.*

The meeting was adjourned by Pat Martin at 4:10pm. Thanks to Tree Improvement Branch for providing lunch, and to BCTS for providing the conference room and the coffee.

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Minutes prepared by Alana Phillips, FLNR-TIB and Brian Barber, SelectSeed, April 26, 2017.

Minutes approved by FGC June 14, 2017