



## AGENDA

**9:00 am – 4:00 pm  
Wednesday, March 21, 2012**

**Location:**

Tree Improvement Branch main office  
2<sup>nd</sup> floor board room, 727 Fisgard Street, Victoria, BC  
(Take the elevator from the 2<sup>nd</sup> floor lobby and ask the guard where to go)  
(Jack's cell 250-715-6285)

Time	Length (min.)	#	Item	Presenter
9:00	5	1	Review of agenda	
9:05	10	2	Old business and action items from December 14, 2011	Jack
9:15	5	3	Approval of minutes from December 14, 2011	
			<b>Updates:</b>	
9:20	15	4	- FGC bylaws - Genetic Conservation Plan - Alberta	Jack
9:35	20	5	FGC Achievement Award criteria	Annette, Barrie, Jack
9:55	20	6	Climate Based Seed Transfer and the project charter	Lee Charleson
10:15	15	7	Potential conflict-of-interest on subcommittees; discussion	Annette, Scott, Tim
10:30	15		<b>Break</b>	
10:45	15	8	Succession in tree breeding programs	Barrie, Brian
11:00	15	9	FPB report on seed transfer	Lee Charleson
11:15	10	10	Update on meeting with Jim Snetsinger	Brian, Jack
11:25	35	11	Subprogram budgets and business planning for 2012/13	
			- LBIS expectations; business-planning process	Brian / Jack
			- Tree Breeding	Barrie
			- OTIP	Darrell
			- Genetic Conservation	Jack
<b>12:00</b>	<b>60</b>		<b>Lunch – to be provided</b>	
1:00	120	11	Budgets - continued	
			- SelectSeed Ltd.	Jack
			- Extension	Diane Douglas
			- Seed and Cone Pest Management	Jack for Jim Corrigan
			- Seed Transfer / Genecology	Lee Charleson
			- Genetic Resource Decision Support	Susan Zedel
			- Applied Tree Improvement and Biotech	Jack
			- Final budget allocation and recommendation	Jack
3:00	20	12	New business	Brian
3:20			Adjourn	

Next meeting June 13, 2012 – Conference call – FGC meeting plus BC Forest Genetics Society and SelectSeed AGMs

## Agenda item 2 – Old Business and action items from December 14, 2011

Action items from Dec. 14, 2011 meeting

<b>Responsibility</b>	<b>Action requested</b>	<b>Action</b>
Jack	Request input from the Biotechnology Steering Committee on structuring of biotechnology support for FGC objectives.	Done
Jack	Lead printing of about 100 copies of the FGC 2010/11 Annual Report and distribution to interested people.	Done
Jack	Conduct an email vote by FGC members on acceptance of the revised Genetic Conservation plan on January 30, 2012.	Done
Darrell	Update FGC mailing list with email addresses.	Underway
Jack	Include cost and revenue projections for the Fdi TO high orchard in the SelectSeed Business Plan to be presented to Council in March.	Done
Bylaw committee	Complete edits to draft bylaws and lead a vote by email among FGC members on acceptance of the bylaws.	Done
Dave Kolotelo	Accept comments on the new Genetic Conservation plan until January 13, 2012. A revised plan will be distributed to FGC members by January 23, 2012.	Done
Lee Charleson	Distribute the current draft of the Climate-Based Seed Transfer project charter to FGC and STTAC members for input in advance of the March 14, 2012 FGC meeting.	Done
Annette van Niejenhuis, Barry Phillips, Jack Woods	Develop criteria to use when nominating and choosing people for the FGC Achievement Award..	Draft to be presented

## Agenda item 4 – Updates

### FGC bylaws:

Bylaws were approved by Council in a vote conducted by email on March 1, 2011. Jim Snetsinger, prior to his retirement, agreed to sign a letter ratifying the bylaws. This appears to have been lost in the poor timing (his last day was March 1) and is currently being dealt with by Brian and Barrie.

### Genetic Conservation Plan:

The new genetic conservation plan presented to Council on December 14<sup>th</sup> was approved by an email vote on January 30, 2012.

### Alberta forest genetics program:

As reported at the December 14<sup>th</sup> meeting, Jack was invited to speak to an Alberta forest genetics group about the organizational structure for forest genetics cooperative programs in BC. A brief overview will be provided.

## **Agenda item 5 – FGC Achievement Award criteria – Annette, Barrie, Jack**

The following criteria statement was prepared for discussion:

### **Forest Genetics Council Achievement Award**

The Achievement Award is the Forest genetics Council's highest award, given to an individual who has made exceptional and lasting contributions to forest genetic resource management (GRM) in British Columbia over a period of a decade or more. Not more than one award will be given in any year.

- Recipient is a champion of GRM who has delivered beyond the expectations of his or her role.
- Recipient's contributions to GRM are significant scientific advancement, exceptional facilitative leadership, extraordinary mentoring, or a combination thereof.
- Recipient's contributions have resulted in broadened stakeholder and public participation in GRM.
- Recipient's contributions have resulted in extraordinary delivery of GRM programs and results.

Nominations are accepted from any member of the Forest Genetics Council. Technical Advisory Committee members are invited to suggest nominees through Council representatives.

Nominations may be submitted at any time of year, and will be considered at a Council Meeting within six months of receipt.

Nominations should be provided in writing, should not exceed two pages in length, as nominees will be known to Councilors, and should demonstrate how the nominee meets all four criteria for this award.

## **Agenda item 6 – Climate-based seed transfer and the project charter – Lee Charleson**

At the December 14<sup>th</sup> FGC meeting Lee provided an overview of the project charter for developing a climate-based seed transfer system. A draft charter was circulated for comment after the meeting and subsequently revised. Lee will provide an update on the charter and the overall project direction.

See separate "Charter" document sent by email with this agenda.

## **Agenda item 7 – Potential conflict-of-interest on subcommittees**

The forest genetics community in BC is limited in size. From time to time this results in subcommittees voting on budget matters where some members of the committee may benefit through budget allocations to work they are leading or involved with. These conflicts-of-interest are managed by committee chairs and members. At times, if all members potentially benefitting from a budget vote are excluded, there would be too few members remaining to achieve a quorum.

Guidance from the FGC would be helpful and could include criteria such as:

1. What constitutes a conflict-of-interest,

2. Situations where members of a committee cannot vote on a broader budget matter (i.e. it may be okay to vote if the part of a budget that creates a conflict is not greater than 25% of the budget being evaluated and if the component creating the conflict has been recommended by a subcommittee which the member is not part of).
3. How subcommittees should define a quorum for budget votes.

### **Agenda item 8 – Breeding program succession – Brian/Barrie**

As has been discussed at previous meetings, the retirement of tree breeding staff (scientific and technical) in Tree Improvement Branch is threatening the long-term viability of the provincial program. Options are being discussed within and outside the MFLNRO and will be presented.

### **Agenda item 9 – Pending Forest Practices Board report on seed transfer – Lee Charleson**

The FPB has been investigating adherence to seed transfer policy and will soon release a report. Lee will provide an overview of this report.

### **Agenda item 10 – Update on meeting with Jim Snetsinger**

Brian and Jack met with Jim on January 25<sup>th</sup>. The following are notes from the meeting.

1. FGC bylaws: Jim will plan to ratify the bylaws once they've been approved by FGC.
2. Regarding transitioning to a new Chief Forester, Jim advises that messaging on CBST is important as this is the only proactive means to deal with climate change. We should also point out the research and policy development needs associated with this.
3. Budgets: 2012/13 will be okay. 2013/14 could result in a reduction and we should prepare for a lower budget. This could change, however.
4. His view on how we should go forward with the provincial forest genetics program: Stick to what we're doing as it works well and the FGC has provided excellent leadership for over a decade.
5. Regarding options for dealing with succession in breeding programs, Jim advised that Council should do whatever is necessary, including utilizing SelectSeed as a means of training key people.

## Agenda item 11 – Budgets

### Breeding

Breeding Subprogram budgets for 2012/13 were presented to the CTAC and ITAC by MFLNRO breeders responsible for each species. The following budgets are recommended by the CTAC and ITAC.

\$ x 1000

Species	Budget recommended by TAC
<b>Coast</b>	
Coastal D-fir	138
Redcedar	210
Yellow cedar	58
Western hemlock	62
Sitka spruce	69
White pine - coast	60.5
Broadleaves	28
Amabilis fir	0
Grand fir	0
<b>TOTAL COAST</b>	<b>625.5</b>
<b>Interior</b>	
Lodgepole pine	126
White pine - interior	89.5
Interior spruce	112
Interior D-fir	69
Western larch	70
Broadleaves	0
<b>TOTAL INTERIOR</b>	<b>466.5</b>
Clonebanks	30
<b>TOTAL</b>	<b>1122</b>

### Operational Tree Improvement Program (OTIP) – Darrell Wood

#### Process:

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

#### OITP proposed budget options:

##### Requested amount following review committee \$ recommendations

Coast	\$ 115,600
Interior	\$ 468,400
<b>Total Option 1 budget request</b>	<b>\$ 584,000</b>

**Option 2 – not developed**

**Genetic Conservation Subprogram – Jack for Dave Kolotelo**

**Process:**

Genetic conservation work is directed by a plan approved by the FGC in January, 2012. Activities are discussed by the GCTAC, and projects developed by the MFLNRO (led by Charlie Cartwright), the UBC Centre for Forest Conservation Genetics (led by Sally Aitken), and the Tree Seed Centre (led by Dave Kolotelo).

The following subprogram budget options are recommended by the GCTAC. Further detail on budgets follows this table.

<b>Group</b>	<b>Option 1</b>	<b>Option 2</b>
UBC Center for Forest Conservation Genetics (see breakdown table below)	147,420	147,420
Tree Imp. Br. - Genotyping (trembling Aspen)	13,000	13,000
Tree Seed Center - Bigleaf maple seed testing / Seed bank moisture content testing	7,000	7,000
<i>Ex Situ</i> seed collections	37,500	25,000
Genetic conservation catalogue (Report 3 – Genecology)	1,000	1,000
Whitebark pine blister rust screening (seed collections/proposal year 1)	13,800	13,800
<b>Total</b>	<b>\$219,720</b>	<b>\$207,220</b>

**Genetic Conservation subprogram - UBC CFCG component  
Proposed draft budget for 2012-13**

<b>Project</b>	<b>BUDGET 2011-2012 From Genetic Conservation Subprogram - Option 2</b>	<b>2011-2012 Other sources of funding</b>	<b>2012-13 GCTAC Request</b>	<b>2012-13 Other sources of funding</b>	<b>Comments</b>
<b>CENTRE FOR FOREST CONS. GENETICS</b>					
<b>Climate change</b>					
Testing climate change predictions for whitebark and lodgepole pine	0	0	500	500	Measurement of Peak 2 Peak whitebark
Modelling seed transfer options	0	42,420	0	n/a	
Genetic response to climate change (larch and cedar growth chamber expts)	0	7,455	0	n/a	STTAC Genecology - final 2 month
<b>AdapTree Project</b>		1,336,824		1,845,802	Genome Canada, Genome BC, Alberta Innovates - Bio Solutions, FGC STTAC
Climate modelling and assistance with all projects	95,928		88,000	0	T Wang, Associate Director - Co-funding for AdapTree
Computing supplies	1,000		2,000	0	
CFCG website update	6,000		4,000	0	
Adaptive diversity in seed orchard lots	16,665		16,500	5,500	0.75 FTE research assistantship for Ian MacLachlan; Cofunding for AdapTree
<b>Non-Commercial species</b>					
Genecology of Garry oak	5,000	0	6,000	0	Maintenance, measurement, manuscript revision
Populations genetics and genecology of Pacific dogwood	1,000	0	0	n/a	
Arbutus genecology			5,000		New Arbutus common garden site; part of US trial
<b>Other projects</b>					
Cataloguing conservation status	0	0			
Genetic structure and conservation of managed interior spruce populations	5,000	10,000	9,000	3,000	Completion of three publications
<b>General CFCG expenses</b>					
Extension	3,000		3,000		Travel, outreach and publications
Office, lab and computing expenses	3,000		3,000		
<b>Total expenses</b>	<b>136,593</b>		<b>136,500</b>		
UBC Overhead 8%	10,927		10,920		
<b>TOTAL UBC CONTRIBUTION AGREEMENT</b>	<b>147,520</b>		<b>147,420</b>		

## SelectSeed Ltd. Business Plan and budget – Jack Woods

The SelectSeed Business Plan was sent as a separate document

### Process:

SelectSeed develops and manages orchards through contracts to meet objectives set by the FGC. SelectSeed also provides management services to Council. The SelectSeed Business Plan and the budget listed below were approved by the SelectSeed Board on March 5, 2012. Board members are Glen Dunsworth (Chair), Reid Carter, Russ Clinton, Jim Burbee, and Henry Benskin.

### Projects:

See pages 11 to 13 of the Business Plan for long-term cash flow forecasts. Work includes:

- contract management of 14 seed orchards
- propagation (for mortality replacement and for a new Fdi Thompson Okanagan orchard)
- seed production and sales
- management services for the FGC
- meeting business and financial obligations for SelectSeed Company, and for the BC Forest Genetics Society

### Budget:

The 2012/13 budget from the Business Plan is summarized below. Options to reduce this budget are limited, as most costs are fixed by contract. However, there are options to reduce the operating capital held by the company. These are discussed in the Business Plan. Seed production and sales are highly uncertain from year to year.

### **2012/13 budget by category (Table 6 from SelectSeed Business Plan).**

Category	Total projected expenses / income
<b>EXPENSES</b>	
<b>SelectSeed</b>	
Orchard management	466,000
Propagation , holding and orchard support	22,000
Crop production / seed extraction	149,400
SelectSeed management, legal, accounting	128,800
<b>Total SelectSeed costs</b>	<b>\$766,200</b>
<b>FGC management and support</b>	
Management, legal, communication, etc.	128,800
NSERC Industrial Chair support	55,000
<b>Total FGC costs</b>	<b>\$183,800</b>
<b>Total Expenditures</b>	<b>\$950,000</b>
<b>INCOME</b>	
Seed sales	600,000
Interest from investments	10,000
<b>Total Income</b>	<b>\$610,000</b>
<b>Income minus expenses</b>	<b>(\$340,000)</b>
Cash from reserves	\$100,000
<b>Total MYA support requested</b>	<b>\$240,000</b>

**A resolution approving the Business Plan is required to meet the terms of the SelectSeed Multi-Year Agreement.**

## Extension – Diane Douglas

### Process:

The Extension Technical Advisory Committee (ETAC) developed project lists and budget recommendations. ETAC also oversees project delivery. Work is carried out primarily by Diane Douglas (TIB) and by contractors. The projects and budget shown below are recommended by the ETAC. Reduced options would be discussed with ETAC members and adjustments made as advised.

### 2012/13 Extension Subprogram projects and budget

<b>Project</b>	<b>Budget</b>
<b>Workshops</b>	
Climate Based Seed Transfer Information Workshop (Victoria)	\$6,000
Forestry workshop for genomics students, post docs, interactions with forest genetics group and seed orchards (CLRS or Kalamalka)	\$1,500
Introduction to Tree Improvement/Forest Genetics (Haida Gwaii or Northwest)	\$5,500
<b>Field days</b>	
Silviculture committees or silviculture working groups (various parts of the province)	\$2,000
<b>Publications</b>	
Tree Improvement in BC update and printing	\$2,000
Seed orchard/production in BC companion brochure – development and printing	\$5,000
Dr. Tongli Wang; Flying BEC zone publication	\$2,000
<b>Administration, opportunities and travel</b>	<b>\$4,000</b>
<b>Total</b>	<b>\$28,000</b>

## Seed and Cone Pest Management – Jim Corrigan (Jack to present)

Proposals submitted to the PMTAC have been evaluated by the Committee based on priorities outlined in its business plan. Proposals for work in 2012-13 were solicited from collaborators in the fall of 2011 and winter of 2012. Submitted proposals and their associated budgets were reviewed by the PMTAC at meetings held on 14 February and 1 March, 2012. Meetings to discuss the Pitch moth and Minor Use pesticide trials (both PMTAC- and Federally-sponsored) involving the PMTAC Chair, Ward Strong, Mario Lanthier and Tia Wagner were held on 7 and 16 February. Proposals and budgets were finalised on 12 March 2012

### 2012/13 Pest Management Subprogram budget recommendation.

<b>Projects</b>	<b>Amount</b>
Operational support for MFLNRO cone & seed pest biologist	25 000
Operational support for MFLNRO cone & seed pest research laboratory	6 300
Minor use pesticide trials	49 000
Synanthedon pitch moth bole spray trial	8 400
Synanthedon pitch moth attract-and-kill trial	16 800
Detecting Leptoglossus seed bug feeding punctures on lodgepole pine seeds	7 000
<b>Total</b>	<b>112,500</b>



### **Genecology and Seed Transfer Subprogram – Lee Charleson**

The proposal call resulted in two project proposals this year. They were reviewed by a committee and funding was recommended for both. One of these projects leverages substantial Genome Canada funds.

Tree Improvement Branch Forest Genetics session staff (breeders) developed a plan for genecology activities, including the Assisted Migration Adaptation Trial. This was reviewed and approved by the STTAC.

Total funding requested and STTAC-recommended options are shown below.

#### **2012/13 Seed Transfer Subprogram budget recommendations.**

<b>Project/species</b>	<b>Budget</b>
Assessing the adaptive portfolio of reforestation stocks for future climates: Common garden experiments	\$59,281
Implications of ectomycorrhizal fungal maladaptation on successful seed transfer	\$32,650
<b>Total Call for Proposals</b>	<b>\$91,931</b>
Assisted migration adaptation trial	\$176,100
<b>Genecology funding requests by species</b>	
Pli	-
Fdi	70,000
Cwr	-
Fdc	3,000
Sx	55,000
Hw	18,000
Bl	19,500
Lw	-
Cwi	22,500
Ba	22,500
Pw	10,000
Yc	-
Ss	14,000
Dr	-
Ep	-
Bg	1,000
At	-
Act	10,000
Py	6,000
Mb	10,000
Bn	15,000
<b>AMAT</b>	<b>176,000</b>
<b>Total Tree Imp. Branch, Forest Genetics</b>	<b>\$452,600</b>
<b>Total all projects</b>	<b>\$544,531</b>

### **Genetic Resource Decision Support – Susan Zedel**

The following projects were developed by Tree Improvement Branch staff, and were reviewed and recommended by members of the Genetic Resource Decision Support steering committee. Both projects would be delivered through the Tree Improvement Branch.

#### **2012/13 Genetic Resource Decision Support project recommendations.**

<b>Project</b>	<b>Option 1</b>	<b>Option 2</b>	<b>Option 3</b>
Creation of Spatial Seedlot Area of Use and Infrastructure	\$25,000	\$20,000	\$15,000
Climate Based Seed Transfer Decision Support	\$65,000	\$65,000	\$65,000
<b>Total:</b>	<b>\$90,000</b>	<b>\$85,000</b>	<b>\$80,000</b>

### **Applied Tree Improvement and Biotechnology - Jack**

#### **Process:**

In the past two years this subprogram has provide research support to Dr. Yousry El-Kassaby (UBC), in addition to a \$55,000 grant in support of his NSERC Industrial Chair position that is provided through SelectSeed Ltd. A steering committee (SC) provides guidance to Dr. El-Kassaby, reviews plans and reports, and makes budget recommendations to the FGC. There has been discussion at the FGC level about expanding this subprogram to allow possible support for new research that could advance FGC objectives. However, the broad nature and limited funding available has restricted this opportunity.

During the winter of 2012, Dr. El-Kassaby submitted a proposal for his ongoing project, plus a proposal for an additional project (see table below). In addition, Dr. Patrick von Aderkas (UVic), who previously worked on a 3-year project with FGC-directed funds, submitted two proposals, one of which is a more applied extension of his previous work.

On March 6, 2012, the steering committee reviewed the four proposals. The results of this review are shown in the following table. One of the four projects submitted was not supported by the review committee and is not shown here.

#### **2012/13 Applied Tree Improvement and Biotechnology budget recommendations.**

<b>Project description</b>	<b>Proponent</b>	<b>Recommended budget</b>
Parental contributions to seedlots (Douglas-fir; redcedar)	El-Kassaby	\$117,720
Pli seed shortfall and cone induction in Pli and Douglas-fir	von Aderkas	\$118,800
Pli climatic response functions for cone and seed production	von Aderkas	\$52,740
<b>TOTAL</b>		<b>\$289,260</b>

**Overall 2012/13 budget recommendations for all subprograms**

The expected allocation from the Land Base Investment Fund to the Tree Improvement Program is \$3.5 million. This could change, but it is not expected to be less.

<b>Subprogram</b>	<b>2011/12</b>	<b>2012/13 requests</b>
Genetic Conservation	\$205,000	\$ 220,000
Tree Breeding	\$1,156,000	\$1,122,000
Operational Tree Imp. Prog.	\$765,000	\$584,000
SelectSeed Ltd.	\$440,000	\$240,000
Extension and Communication	\$20,000	\$28,000
Cone and Seed Pest Mgt.	\$130,000	\$112,500
Genecology and Seed Transfer	\$620,000	\$544,531
Genetic Resource Decision Sup.	\$60,000	\$90,000
Administration*	\$30,000	\$30,000
<b>Subtotal</b>	<b>\$3,426,000</b>	<b>\$2,971,031</b>
<b>Incremental projects</b>		
Applied Tree Impr. and biotechnology	\$137,000	\$288,500
<b>Subtotal</b>	<b>\$137,000</b>	<b>\$288,500</b>
<b>TIB risk maangement</b>	<b>\$63,000</b>	
<b>TOTAL</b>	<b>\$3,500,000</b>	<b>\$3,259,531</b>
<b>Difference</b>	<b>\$0</b>	<b>\$ 240,469</b>