FGC

Forest Genetics Council of British Columbia

AGENDA

Conference Call: 9:30 – 12:00 AM - Wednesday, December 16, 2009

Call numbers:

1-866-596-5278
2499357#
(Jack's cell 250-715-6285)

Time	Length (min.)	#	Item	Presenter
9:30	5	**1**	**Welcome and introduction of new Council member**	Kerry / Brian
9:35	5	2	**Approval of minutes from September 16, 2009**	
9:40	10	**3**	**Action items from September 16th**	Jack
9:50	10	**4**	**Update on 2009-10 Allocations and Expenditures**	Darrell
10:00	15	**5**	**Breeding Priority Ranking Committee report**	Jack
10:15	15	**6**	**Genecology priorities and call for proposals**	Lee Charleson
10:30	15	7	**Genetic Resource Decision Support subprogram recommendations**	Lee / Brian
10:45	10	**7**	**Updates from CTAC and ITAC chairs**	Annette / Tim
10:55	5		**Break**	
11:00	10	**8**	**MFR Research Br. Forest Genetics Section review**	Barrie
11:10	20	**9**	**Public and Private Seed Orchard Principles**	Brian
11:30	15	**10**	**Vernon Seed Orchard Co. requests to Ch. Forester and FGC re support for new and existing Pli orchards**	Bruce / Tim
11:45	10	**11**	**Climate-based seed transfer and interim measures for for Lw and Fdi – updated**	Brian / Barrie
11:55	10	**12**	**2010/11 budget expectations, planning process, and direction to subprogram leaders**	Brian
12:05			**Adjourn**	

Next meeting – March 17, 2010

Attachments to the agenda (December 16, 2009)

Agenda item 3 – September 16th action items

Responsibility	Action requested	Action taken
Program Manager	Post email addresses on the FGC website for Kerry and Gernot.	Done
	Chair and establish a sub-committee to review and update SPU ranking and process, and report to FGC by late November.	Done. Report to be presented Dec. 16th
	Prepare a paper on behalf of the FGC to submit to the Silviculture Strategy Review process.	Done. Paper submitted September 30th.
	send FGC members a broad agenda for the December 16, 2009 FGC meeting	Done
Brian and Jack	Report to FGC members on new budget allocations to the FIA Forest Genetic Conservation and Management program by October 15, 2009.	Not done in October. No information to pass along. Brian will update December 16th
Program Financial Coordinator	Prepare a summary of spending by subprogram for the current fiscal year for discussion at an FGC conference call in late October.	Will be presented December 16th.

Agenda item 5 – Breeding Priority Ranking Committee report

At the request of Council on September 16th, a Committee was struck to rank breeding priorities at the seed planning unit level. The following people participated on the Committee:

Annette van Niejenhuis, Barrie Phillips, Alvin Yanchuk, Tim Lee, David Reid, Atmo Prasad, Guy Burdikin, Jack Woods (chair),

Ranking of seed planning units used the following criteria:

A. Incremental net present value: defined as the value of future timber supply over the next 20 decades that is due to genetic gain in select seed use OVER and above the gains that currently exist in seed orchards. A 4% "social" discount rate was applied.

B. Technical feasibility for breeding: A subjective rating on the biological feasibility and probability of success of a breeding program (i.e. Larch is easier; amabilis fir is harder)

C. Deliver feasibility: defined as rough seed production per ha of seed orchards for each species, based on past experience. This measure is a surrogate for seed production cost.

D. Timber supply fall-down: A timber supply fall-down index was developed for each management unit (index = lowest forecast timber supply in the next 5 decades / average timber supply forecast in the next decade). This index was then averaged across seed planning units and weighted on accordance with the intersect area of each SPU with each MU. Thanks to Atmo for providing us with timber supply forecasts for all TSAs and TFLs, and to Matt Leroy for providing GIS data on MU by SPU intersects.

E. Climate change; The change in size of the climate envelopes that define each seed planning unit was estimated by Tongli Wang using the Climate BC model. These data were interpreted as a percentage increase or decrease of each SPU area at the target year of 2025, and provided a broad determination of whether the SPU is expected to expand or contract.

F. Opportunities: Defined as opportunities that exist to obtain further gains in timber supply through specific pest breeding or other specialty breeding and selection efforts.

The following table summarizes information and outputs. Note that criteria are not weighted equally. Weightings are shown in the upper right.

SPUs are categorized as follows (categories recommended by the committee are in the table):

1. Advance generation breeding
2. First-generation breeding program only
3. Pre-breeding research only
4. No genetics work

Seed Planning Unit Evaluation of Priority for Investment based on Strategic Planning Committee Criteria

Nov 23 2009 - Updated in TIIP using 5-year averages for 2005 to 2009 sowing years and lower wood values (centered on $116/m3 in MFR State of Forest Report).

Discount rate 4% | Adjacency percentage used 0.00% (no value given for adjacency)

Program categories:

1. Proceed with advanced generation breeding and orchards
2. First generation program only; complete 1st gen testing and orchard development
3. Pre-breeding research
4. No genetics work

Weighted Mean Tree Improvement Score for the SPU:
The weighted mean tree improvement score for the SPU is the mean score weighted by the following for each criteria.

Criteria for program categorization (10 = very high; 1 = very low):

		Criteri	Weightin
A. NPV	Increm. NPV from TIIP model; scores = 10 x (SPU NPV)^.5 / (NPV for highest SPU)^.5; neg. NPV =	A	0.5
B. Technical feasibility for breeding	Biological feasibility and probability of success of a breeding program based on other programs, etc.	B	0.1
C. Delivery feasibility	Relative orchard cost based on est seedl. / ha / yr scaled using 10 * sqr rt value / sqr rt max value	C	0.05
D. TSR value to mgt. units	Value of timber supply gains in the mgt. units based on existing timber supply analyses, adjacency	D	0.2
E. Climate change	Expected relative change in range size by 2025 based on climate change	E	0.1
F. Opportunities	Specific opportunities for higher gains through pest breeding, clonal deployment, etc.)	F	0.05
		total	1

NOTE:
NOTES:
Weighting shown were set by Jack
These need discussion

				VALUE INPUTS			INFORMATION		CRITERIA FOR PROGRAM CATEGORIZATION						SCORES			R
Seed planning unit				Increm.	Incr.	Total	5-yr. ann.	Adjacency	A.	B.	C.	D.	E.	F.	Wtd.		Cummulative	A
SPU #	Species	SPZ	Elev. band (m)	NPV mm$	NPV rank	NPV mm$	planting (million)	benefit included	NPV Score	Breeding feasibility	Delivery feasibility	TSR value	Climate change	Oppor-tunities	Mean TI Score	Program category	% prov. planting	N K
12	Pli	PG low	700-1399	$87.1	2	$266.5	40.0	N	7.8	8	3.8	7.1	4	9	7.2	1	17%	1
1	Fdc	M low (south)	1-899	$142.9	1	$604.0	13.0	N	10.0	7	3.5	1.5	3	7	6.8	1	22%	2
14	Sx	PG low	600-1399	$28.8	3	$280.7	32.1	N	4.5	10	6.6	6.8	1	9	5.5	1	35%	3
17	Pli	BV low	700-1399	$26.1	4	$99.7	17.4	N	4.3	8	3.8	7.6	3	7	5.3	1	43%	4
10	Pli	TO low	700-1399	$19.1	5	$74.8	12.4	N	3.7	8	3.8	6.5	6	9	5.1	1	48%	5
4	Sx	NE mid	1000-1699	$13.2	6	$60.4	6.8	N	3.0	10	6.6	3.1	8	9	4.7	1	51%	6
13	Lw	NE	700-1599	$8.9	9	$71.6	3.5	N	2.5	9	8.8	3.3	8	8	4.4	1	52%	7
7	Pli	NE low	700-1599	$8.4	10	$50.5	3.5	N	2.4	8	3.8	3.4	10	9	4.3	1	54%	8
30	Sx	TO low	700-1499	$0.5	33	$11.8	2.8	N	0.6	10	6.6	9.3	3	8	4.2	1	55%	9
43	Fdi	CT	600-1400	$0.7	30	$5.7	1.3	N	0.7	8	4.0	10.0	4	6	4.1	2	55%	10
21	Fdi	NE low	400-1199	$5.2	12	$41.6	2.7	N	1.9	8	4.0	3.5	8	8	3.9	1	56%	11
44	Sx	NE low	<1000	$1.6	21	$13.8	1.0	N	1.1	10	6.6	3.0	10	8	3.9	1	57%	12
18	Pli	CP low	700-1299	$12.7	7	$82.2	10.0	N	3.0	8	3.8	4.1	2	7	3.8	1	61%	13
35	Sx	BV low	500-1399	$1.8	19	$92.4	9.9	N	1.1	10	6.6	3.5	8	8	3.8	1	65%	14
2	Cw	M low (all lat.)	1-699	$10.2	8	$96.6	6.7	N	2.7	8	10.0	2.1	3	9	3.8	1	68%	15
16	Pli	TO high	1400-1600	$5.9	11	$38.5	10.6	N	2.0	8	3.8	6.3	2	6	3.7	2	72%	16
28	Sx	TO high	1500-2100	$0.0	38	$7.5	3.6	N	0.1	10	6.6	9.0	1	7	3.7	2	74%	17
45	Pli	BB/CHL	all	$2.3	16	$2.3	9.6	N	1.3	8	3.8	7.6	2	6	3.6	3	78%	18
61	Fdi	TOA&TOD	all	$0.9	26	$0.9	4.0	N	0.8	8	4.0	6.5	3	6	3.3	2	79%	19
34	Lw	EK	800-1500	$1.6	20	$16.2	2.1	N	1.1	9	8.8	2.9	4	8	3.2	2	80%	20
25	Sx	EK	750-1899	$1.1	24	$23.1	3.0	N	0.9	10	6.6	2.9	4	7	3.1	1	81%	21
5	Sx	NE high	1700-2100	$0.8	28	$8.9	2.1	N	0.8	10	6.6	2.6	6	6	3.1	2	82%	22
37	Fdi	QL	700-1400	$0.9	27	$9.3	1.0	N	0.8	8	4.0	5.0	4	6	3.1	2	83%	23
20	Pli	NE high	1600-2000	$2.5	15	$4.2	1.6	N	1.3	8	3.8	2.9	5	7	3.1	2	83%	24
41	Fdi	PG	700-1199	$2.8	14	$21.4	2.8	N	1.4	8	4.0	5.1	0	6	3.0	2	85%	25
51	Py	All s. int.	all	-$1.1	47	$2.7	1.2	N	0.0	7	3.8	6.5	4	8	3.0	2	85%	26
42	Sx	PG high	1200-1550	$0.5	34	$6.3	1.9	N	0.6	10	6.6	4.1	2	7	3.0	2	86%	27
63	Fdi	BB/CHL	all	-$0.8	45	-$0.8	0.6	N	0.0	8	4.0	7.6	2	6	3.0	4	86%	28
71	Pwi	KQ PEST (incr)	500-1400	$0.1	37	$12.4	2.0	N	0.2	6	6.2	3.4	8	9	3.0	1	87%	29
69	Cw	S. Int. (all)	0-750	-$0.7	44	-$0.7	2.0	N	0.0	8	10.0	3.4	6	6	2.9	3	88%	30
22	Fdi	NE high	>1200	$0.3	36	$11.7	2.2	N	0.4	8	4.0	3.3	7	6	2.9	2	89%	31
32	Pli	EK low	800-1499	$0.3	35	$3.8	2.7	N	0.5	8	3.8	2.8	6	8	2.8	2	90%	32

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72	**Pwc**	Cst (PEST) (incr	0-1000	$3.8	13	$28.0	1.5	N	1.6	6	4.9	1.7	3	9	2.7	1		33
29	**Pli**	EK high	1500-2000	$1.8	18	$1.8	2.1	N	1.1	8	3.8	2.9	2	6	2.7	2	89%	34
26	**Pli**	PG high	1400-2000	$0.7	29	$1.6	0.7	N	0.7	8	3.8	3.9	1	7	2.6	3	89%	35
50	**Lw**	NE high	1600-1800	-$0.1	40	$0.0	1.2	N	0.0	9	8.8	3.1	6	0	2.6	2	90%	36
40	**Sx**	PR mid	650-1200m	$1.2	22	$14.8	4.5	N	0.9	10	6.6	0.0	3	7	2.5	1	91%	37
33	**Cw**	M high	700-1500	$0.6	31	$0.6	0.9	N	0.6	8	10.0	1.8	2	5	2.4	2	92%	38
67	**Pli**	BV high	1400-2000	-$1.2	51	-$1.2	0.0	N	0.0	8	3.8	5.5	0	6	2.4	4	92%	39
15	**Pwi**	KQ PEST (currer	500-1400	-$3.3	56	$0.8	0.7	N	0.0	6	6.2	3.5	8	0	2.4		92%	40
19	**Fdc**	SM	400-1199	$2.0	17	$7.3	1.4	N	1.2	7	3.5	1.7	3	5	2.3	2	93%	41
60	**Pli**	PR low	<1000	$1.2	23	$1.2	1.9	N	0.9	8	3.8	1.6	2	7	2.3	3	93%	42
62	**Hw**	NST	1-599	$0.5	32	$0.8	0.4	N	0.6	7	6.5	2.1	3	5	2.3	3	94%	43
65	**Pli**	NS low	<1100	-$1.5	53	-$1.4	0.0	N	0.0	8	3.8	3.8	2	7	2.3	3	94%	44
27	**Cw**	SM	200-1000	-$1.1	50	-$1.1	0.5	N	0.0	8	10.0	2.0	3	5	2.2	2	94%	45
66	**Pli**	PR high	>1000	$1.0	25	$1.0	2.0	N	0.8	8	3.8	1.8	2	6	2.2	3	95%	46
64	**Pli**	CP high	>1300	-$1.0	47	-$1.0	0.0	N	0.0	8	3.8	3.4	2	6	2.2	3	95%	47
73	**Sx**	PR low	<650m	-$1.1	49	-$0.6	4.5	N	0.0	10	6.6	0.3	3	8	2.1	1	97%	48
39	**Fdi**	EK	700-1399	-$0.6	44	$3.4	1.4	N	0.0	8	4.0	1.4	5	6	2.1	2	97%	49
3	**Hw**	M (south)	1-599	-$0.1	41	$13.2	0.9	N	0.0	7	6.5	2.0	3	4	1.9	2	97%	50
24	**Hw**	M high	600-1100	-$0.3	43	$3.9	0.6	N	0.0	7	6.5	1.8	2	4	1.8	2	98%	51
23	**Ss**	SM/NST	all	-$2.4	55	-$2.4	0.5	N	0.0	7	6.2	2.2	3	0	1.7	3	98%	52
6	**Ss**	M all PEST	1-500	-$6.2	62	$11.4	0.8	N	0.0	7	6.2	2.1	3	0	1.7	2	98%	53
68	**Ss**	M all PEST (incr)	1-500	$0.0	39	$35.1	1.5	N	0.0	7	6.2	2.0	3	0	1.7	2	99%	54
31	**Fdc**	M High	900+	-$0.1	42	$3.6	0.5	N	0.0	7	3.5	1.4	2	6	1.7	2	99%	55
11	**Yc**	M	1-1100	-$2.2	54	$4.4	1.2	N	0.0	5	3.9	2.0	2	6	1.6	2	100%	56
8	**Pwc**	Cst (PEST)	0-1000	-$5.0	61	-$1.8	0.2	N	0.0	6	4.9	1.7	3	0	1.5		100%	57
70	**Hm**	M high (all)	600+	-$1.4	52	-$1.4	0.1	N	0.0	5	2.5	2.0	2	5	1.4	4	100%	58
9	**Ba**	M	<1000	-$3.9	60	-$3.3	0.6	N	0.0	2	2.2	2.0	3	5	1.3	3	100%	59
36	**Bg**	M low	<700	-$3.4	58	-$3.3	0.1	N	0.0	5	2.2	0.4	3	0	1.0	3	100%	60
46	**Bl**	NST	all elev.	-$3.3	57	-$3.3	0.0	N	0.0	2	2.2	2.1	2	0	0.9	3	100%	61
47	**Bn**	M	600+	-$3.6	59	-$3.6	0.0	N	0.0	2	2.2	2.0	2	0	0.9	3	100%	62
74	**Aspen**														0.0	3		
75	**Birch**														0.0	3		
76	**Alder**														0.0	3		
77	**Ctnwd**														0.0	3		
78	**B. L.Mpl**														0.0	3		
						Total planting	242.3											

Agenda item 6 – Seed Transfer TAC report on Genecology call for proposal – Lee Charleson

The Seed Transfer TAC developed a set of priorities for the genecology research call for proposals. This work was led by Lee Charleson (TAC chair) and Jodie Krakowski (MFR Research Branch), with input from other committee members. Project priority ranking was done in two steps; 1. Ranking species for the need for genecology research, and 2. Determining what types of projects should be eligible under a call for proposals. The following two tables show both the species rankings and project eligibilities developed by the committee.

Criteria for ranking priorities at the species level included:

A. Current species range

B. Future forecast species range under climate change

C. Health / disturbance – a subjective rating

D. Genetic conservation status based on the conservation catalogue

E. Average cubic meters harvested

F. 5-year average planting

G. MFR stumpage revenue

Table showing scaled data for genecology priority ranking information, weights, and scores by species. Data developed by the Seed Transfer TAC to guide priorities for the 2010/11 Genecology call for proposals.

Species			Current dist.	Future dist.	Health / disturbance	Cons. Status	M3 harvest	5-year plant	Revenue	
	RANK	CATEGORY	A	B	C	D	E	F	G	TOTAL
Criteria weights			1	2	1	0.5	0.5	3	1	Score
Pli	1	H	9.9	10.0	10.0	5.0	10.0	10.0	10.0	347.4
Fdi	2	H	7.4	8.5	5.0	0.0	6.8	8.1	9.1	253.9
Cwc	3	H	4.7	6.4	5.0	0.0	7.8	7.8	9.3	243.8
Fdc	4	H	3.4	2.6	0.0	0.0	7.7	8.3	9.0	237.4
Sx	5	H	8.6	5.0	5.0	0.0	8.3	9.7	6.9	226.9
Hw	6	M	7.2	8.4	0.0	0.0	7.5	6.5	8.9	201.6
Bl	7	M	10.0	5.7	10.0	0.0	6.9	6.2	8.8	199.4
Lw	8	M	2.1	1.8	0.0	0.0	4.1	7.6	7.9	188.0
Cwi	9	M	4.0	6.3	5.0	0.0	5.5	6.5	8.3	186.2
Ba	10	M	5.6	4.3	5.0	0.0	6.5	5.8	8.4	170.2
Pw	11	M	5.2	4.0	10.0	10.0	1.6	5.9	7.5	161.0
Yc	12	M	5.1	0.5	5.0	0.0	6.4	6.0	8.1	159.2
Ss	13	L	5.7	5.7	5.0	0.0	7.9	5.6	4.9	108.1
Dr	14	L	4.3	1.8	0.0	0.0	2.8	4.2	5.8	81.9
Ep	15	L	8.9	7.2	5.0	0.0	3.0	3.0	5.3	77.4
Bg	16	L	0.0	0.0	0.0	10.0	0.3	2.7	6.4	56.2
At	17	L	9.7	8.3	0.0	0.0	5.2	0.0	7.1	29.0
Act	18	L	9.3	8.4	0.0	0.0	3.8	0.0	6.2	28.0
Py	19	L	1.7	4.4	5.0	5.0	0.5	5.9	0.0	18.2
Mb	20	L	1.1	4.0	0.0	0.0	0.0	0.0	4.4	9.2

Attachments to the agenda (December 16, 2009)

Genecology research priorities for 2010/11

Table developed by the Genecology Research Ranking Committee for the Seed Transfer TAC (December, 2009)

250 Genecology Research		**xxxx** high priority		**xxx** medium priority			**xx** low priority	**x very low priority**
	KPI	251	252	253	254	255	256	257	
		Seed procurement for genecology trials	Seedling production for genecology trials	Genecology trial establ.	Genecology trial maint.	Genecology trial measur.	Genecology assessments for pests and health	Genecology trial data analysis	Specific technical areas
Species		# sources	# seedlings	# trials *	# trials *	# trials *	# trials *	# trials *	
Pli	**lodgepole pine**		**xxxx**	**xxxx**	**xxxx**		**xxxx**	**xxxx**	Maintenance of existing genecology trials, Pest assessments in existing trials
Fdi	**interior Douglas-fir**	**x**	**xxxx**	**xxxx**	**xxxx**	**xxx**	**xx**	**xx**	Range-wide transfers outside current zones
Cwc	**western redcedar coastal**		**xxxx**	**xxxx**	**xxxx**	**xxxx**			
Fdc	**coastal Douglas-fir**	**xx**	**xxxx**	**xxxx**	**xxx**	**xxxx**		**xxxx**	SM / M zone transfers and elevational transfers
Sx	**interior spruce**	**xx**	**xxx**	**xxx**	**xxxx**	**xxx**	**xxx**	**xxx**	Maintenance of existing climate-change trials.
Hw	**western hemlock**	**x**	**xxx**	**xxx**	**xxx**	**xxx**		**xxxx**	Analysis of transfers outside current range
Bl	**subalpine fir**	**xxx**	**xxx**	**xxx**	**xx**	**xx**		**xxx**	Seed procurement & establ. of trials in the primary areas of int. seed use, Assessment of existing trials
Lw	**western larch**	**x**	**x**	**x**	**xx**	**xx**	**xx**	**xx**	Analysis of transfers outside current range
Cwi	**western redcedar interior**	**xxx**	**xxx**	**xxx**	**xxx**				Trials in the ICH BEC zone and refinement of interior seed transfer standards
Ba	**Pacific silver fir**			**xx**	**xxx**	**xxx**		**xxx**	Maritime and sub-maritime zone transfers
Pw	**western white pine**		**xxx**	**xxx**	**xxx**	**xxx**	**xxx**		
Yc	**yellow-cedar**	**xxx**			**xxx**	**xxx**		**xx**	Yellow-cedar dieback
Ss	**Sitka spruce**			**x**	**xx**	**x**	**xx**	**xx**	Weevil assessments and hazard evaluation in existing trials
Dr	**red alder**				**xx**	**xx**		**xx**	Establ. of new BC range-wide trials including transfers outside existing range
Ep	**paper birch**	**xx**			**xxxx**	**xx**	**xx**		
Bg	**grand fir**			**x**	**x**				Maintenance of existing genecology trials
At	**trembling aspen**	**xx**							Material collection for range-wide trials that build on existing aspen genecology info.
Act	**black cottonwood**				**xxxx**	**xx**	**x**	**x**	Range-wide transfers outside current zones
Py	**Ponderosa pine**	**xx**	**xx**	**xx**	**xx**				Establ. of new BC range-wide trials including transfers outside existing range
Mb	**bigleaf maple**				**xxxx**	**xx**		**xx**	Range-wide transfers outside current zones
Ls	**Siberian larch, noble fir & other non-indigenous species**					**x**		**xx**	Proposals must link potential research results with economic benefits; information summary from existing non-indigenous species trials

Agenda item 7 – Genetic Resource Decision Subprogram Review recommendations - Lee Charleson

During the March, 2009 FGC meeting, Council requested a review of the GRDS subprogram. Lee Charleson has been working on that review and will provide an update during the conference call.

Agenda item 9 – MFR Research Branch Forest Genetics Section review – Barrie Phillips

Summary to be sent separately

Agenda item 10 – Chief Forester Seed Orchard Principles – Brian Barber

Based on FGC recommendations to Chief Forester, Jim Snetsinger, a set of principles has been prepared. These principles set out MFR process and expectations with respect to seed orchards and seed orchard developments.

Please see the Principles document sent as a separate file.

Agenda item 11 – Requests from Vernon Seed Orchard Company regarding support for new seed orchards and for lodgepole pine seed orchards – Bruce MacNicol and Tim Lee

Requests to be presented to Council during the conference call. These requests have been presented to the MFR and were raised during the process of reviewing private sector participation in seed orchards. Both VSOC and the MFR are seeking FGC discussion.

Next meeting – March 17, 2010