

**Joint Northern, Southern Species Committee and TAC Interior Meeting
Vernon and Prince George, BC.
November 10 and 13th , 2003**

Attendance: Mike Carlson, Joe Webber, Keith Cox, Alistair Schroff, Guy Burdikin, Peter Forsythe, Doug Perdue, Steve Jenvey, Tim Lee, Anna Monetta, Alvin Yanchuk, Greg O'Neil, David Reid, Barry Jaquish, Chris Walsh, Rita Wagner, Mike Madill, Mark Faliszewski, Debbie Zandbelt,

Others: Roger Painter, Jack Woods

Regrets; Dave Basaraba, Chris Hawkins, George Nicholson, Hilary Graham, Clare Kooistra, Mark Montville, Mark Trebiz,

Guests: Tong-Li Wang, Leslie McAuley, Brian Barber, Andreas Hamann, Cheng-Yi Xie, Dianne Douglas, Craig Newton, , Alvin Yanchuk, Ward Strong, Debbie Poldrugovac,, Rich Hunt, Vicky Berger, Gary Giampa, Hadrain Merler, John Murphy. Lisa Leilith, Frank Gundersen, Rick Hansinger, Don Summers, Dave Kolotelo.

1. Forest and Range Practices Act – Brian Barber/ Anna Monetta
 - **Brian and Anna provided an update on the development of Chief Forester's Standards for tree gene resource management. Forest and Range Practices Act was introduced last year. Jack Woods is working on CF Standards with MoF on behalf of the FGC. The FGC was provided with a draft of the Standards for review and comment in early October. Jack Woods and the TAC chairs have distributed the draft and TAC members are asked to give comments to Jack before November 14th. Brian stressed that members should not be concerned with the fine details in the actual document, particularly not the legal wording. In replying members are asked to comment on specific items and to refer to the number in the Act. Outstanding issues will be brought before the Chief Forester for resolution/decision. There has been a lot of discussion on seedlot selection (A over B+ over B and genetic worth). The final document has to be in place by December. February 2004 is the target date set for training.**

Miscellaneous FGC Business

2. Recent Forest Genetics Council Activities:
 - **Chief Forester's standards related to Tree Gene Resource Management.
The Chief Forester has asked for recommendation on key points.
Jack Woods representing Council was on the drafting committee representing Council.
Review of the Standards has included the FGC and it's TACs.**

- **Strategic Plan**

New Strategic Plan is being developed to replace the original 1998 plan. This has been needed to meet changing situations and resources. The process of updating the Strategic Plan started over a year and a half ago with the formation of a Council sub-committee review its Plan and FGC Bylaws

So far the Draft Strategic Plan has developed updates to reflect changes in:

- **Membership**
- **Exec. Secretary**
- **Responsibility to the Program Manager and Program Financial Administrator.**

The Draft will be tabled at the December 3, 2003 meeting.

The overall objectives for the Strategic Plan need to be updated

- **The current gain target in the FGC strategic plan shows an increase of 6% to 12 % by 2007. Possible changes to this target would either be 0.5% per year or a target of 20% by 2020.**
- **The “Use of orchard seed” target of 75% by 2007 has proven to be overly optimistic. It has been suggested that a more realistic target would be 75% by 2014.**
- **The current objective of “Manage a Gene Conservation program” would likely not be changed.**
- **The objective of “Identify and fund long-term productivity capabilities required to meet Business Plan priorities” may be changed to “:co-ordinate stakeholder activities and identify resources to meet Business Plan objectives”.**
- **The objective of “ Monitor progress in all aspects of Gene Resource Management would likely not change.**
- **There are currently 4 technical committees CTAC, ITAC, ETAC and GCTAC along with special function committees for Gene Resource Information Management and Seed Pest Management. No change expected to occur in this area.**
- **The priorities for investment currently include 4 specific categories**
 - **Advanced generation**
 - **First generation only**
 - **Genecology work**
 - **No recognized program.**

3. New Council membership

Now there is a Northern Interior Seed User Rep. and a CFS representative.

Council Position	Incumbent	Recommendation
Co-chairs		
Industry	Shane Browne-Clayton	Shane Browne-Clayton
Industry		
Southern interior seed user	Mark Hopkins (Ainsworth)	Mark Hopkins
Northern interior seed user	None – new position	Frank Gundersen (Abitibi Consolidated)
Interior producer	Art Lacourciere (Weldwood)	Walter Matosevic (Canfor)
Coast seed user	Diane Medves (Weyerhaeuser)	Diane Medves
Coast producer	John Barker	John Barker
Technical Advisory Com. Reps		
Interior	Mike Carlson (MoF)	Mike Carlson (MoF)
Coast	Sally Aitken (UBC)	Sally Aitken (UBC)
FIA (non-voting)	New	Ken Baker
University	Chris Hawkins (UNBC)	Chris Hawkins (UNBC)
Canadian Forest Service	New	Gary Hogan

4. FIA continuation:

There is a need to lobby for FIA continuation overall as well as a need for a co-ordinated effort to continue FIA support for Tree Improvement in the Forest Investment Council. The SelectSeed Board and the Forest Genetics Council will be involved in lobbying but this is a strong program and we need to make sure that the program continues to have the support it currently enjoys. TAC members should try to help in ensuring that decision-makers are aware of the value of this program.

5. FGC Business Planning process:

October /November

- Species committees meet issues and strategies discussed.
- 04/05 OTIP project eligibility list update
- Breeders present 04/054 programs and budget estimates.
- Issues recommended for FGC attention.

December

- FGC Meets
- Process and issues discussed
- Parameters set for business plan development
- OTIP RFP developed and released

January - February

- OTIP Reviews
- Species plans updated
- Subprograms develop budget proposals
- Select seed co business plan developed

March

- FGC meets
- All programs and budgets discussed ; adjustments made
- Final budget decision made
- Recommendation to Forest Investment Council

April

- Business Plan compiled and printed

6. Andreas Hamann: Gene Conservation cataloguing update:

Cataloguing in situ protection of forest genetic resources in British Columbia

Loss of genetic diversity can be due to a variety of causes and might take place unnoticed even in widespread and frequent species. In situ reserves can be a very efficient method of protecting genetic resources if they are sufficiently large and spatially well distributed. We use a geographical information system (GIS) based approach to assess the level of *in situ* protection based on forest inventory data and botanical sample data. We investigated how well populations defined by seed planning units for 11 major commercial conifers (and by BEC zones for minor tree species) are represented in protected areas. Due to a systematic expansion of protected areas in the 1990s, it appears that conifer genetic resources are now well represented in protected areas. No species-zone combination is entirely without protected area coverage. We identified the remaining gaps where lack of data or low protected area coverage requires ground truthing to confirm expected population sizes in protected areas. In addition, we evaluated and ranked all protected areas in British Columbia for their importance with respect to conservation of tree species populations.

Impact of climate change on in situ protection status of forest genetic resources

Using high-resolution species range and frequency maps that are based on a BEC variant coverage's from the above project, we explored the possibility of describing species ranges and frequencies as a function of climate variables. First we derived a climate model for all BEC variants of British Columbia using a commercially available climate model for current conditions (PRISM). Then we use a multiple second degree polynomial stepwise regression of principal components of climate variables on GIS selected species frequency data. The resulting maps of expected species frequency as a function of climate variables were then modified by applying changes to climate variables according to anticipated climate changes scenarios. The above approach can be used to identify reserves that cannot provide habitat for populations of a species under a particular climate change prediction. Species and populations most vulnerable to climate change can be identified. Also, we showed that this approach can easily be expanded to model productivity in plantations (instead of species frequency in natural stands) using genetic data.

7. OTIP Eligibility - Roger Painter

Roger discussed changes to the OTIP Eligibility activities for 2004-05. The call for Proposals will be issued on December 1, 2003 and will close on January 15, 2004. The FGC has passed a motion that eliminates financial support for cone harvest where crops have been supplementally pollinated. Council also asked the two TAC chairs to form sub-committee to review the current SMP standards.

He asked for comments on what should be eligible under Section 327 General orchard management. The committee felt that foliar and soil analysis and crown management, should be allowed and specific projects that meet a need for increasing orchard crops and quality that can be decided by review committees.

8. Elevational Creep – Alvin Yanchuk

Alvin discussed how seed transfer has seen the use of seed from lower elevations being used in higher elevations where they were not intended. This has happened by the use of seed based on parental location rather than on where they have been tested. This is specific and particular to where specialty collections/crops are being made to meet higher elevational needs from high elevation parents located in lower elevational orchards. Technically, this is a concern particularly when one considers that the pollen cloud in the orchard will still contain low elevation parents. Using the origin of the parents rather than where the parents are being tested is not technically sound and not based on performance. Alvin feels that there is need to move back to selections based on-site testing rather than parental origins

9. Leptoglossus and other pests – Ward Strong. Tree Improvement Pest Management.

Ward discussed :

Leptoglossus studies: Damage assessment studies continue in an effort to quantify damage levels. Damage levels on pine are well known; new studies were started to determine damage potential on spruce and larch. Bagging studies were also used to determine at what phenological stage Leptoglossus causes the most damage. Trapping studies have proven unproductive and are being discontinued. A male released pheromone study funded under FGC-FIA is in being worked on by Gerhard Gries at SFU. They have identified 3 of the 4 components for producing a pheromone. He has also initiated a project that holds some promise related to a sound produced by Leptoglossus and thought to be a female attractant. The possibility exist that both pheromone and sound may be needed to control Leptoglossus.

Dioryctria: This pest is worst on Western Larch and Douglas-fir. Current work related to Dioryctria includes (Felix Sperling and Gary Grant) looking at the species life complex and pheromones (Gary Grant and Jocelyn Miller) development and control studies (Ward) related to sprays. (FGC -FIA funded)

Seed Fungi: Dave Kolotelo has had a fungal assay program in progress at the Tree Seed Centre since 1992. With cuts in budgets last year they decided to discontinue. Ciroccus and Fusarium appear to be the most serious fungi with Western Larch and Douglas-fir being the hardest hit from Fusarium in the Interior. If people wish to hve this tested for in the future, it will involve a fee.

Megastigmus Spermatropus (Douglas-fir Seed Wasp): They are currently working with Jean Turgeon and Alain Rocques from France on some basic work.

Other pests: European Pine shoot moth, which attacks new shoots, is still very much of interest. This has shown to be a serious problem for Lodgepole pine and has been noted particularly at VSOC. Current work is being done its life cycle.

Spruce cone aphid: Distorts the cone and attacks new shoots. Samples have been sent to Ottawa for identification. This pest can be sprayed for.

10. Directions for Climate Change Research for Tree Improvement in BC – Greg O’Neil

Global mean annual temperature is expected to increase by 1.4 to 5.8 °C (depending in the model) by 2100 (relative to the temperature in 1990), with the most extreme increases expected in temperate and polar regions. While increases in average temperature are moderate, the frequency of extreme events will increase dramatically, posing significant risk to forests.

While most western conifer species occupy an enormous environmental range, the adaptational range of individual populations is small relative to anticipated changes in climate. Consequently, productivity losses are expected to be significant in some areas. Three potential research areas are discussed:

- predicting species and population range shifts to re-assess species selection and seed transfer;
- estimating increases in planting densities required to compensate for losses in the proportion of planting stock that are adequately adapted due to climate change;
- modelling the effects of seedlot mixtures on productivity.

Research in these areas is restricted by the limited number of wide-ranging provenance studies; Efforts are need to expand the province’s provenance program, including establishing long-term tests outside of the current range of each species.

Greg has started an interior spruce long-term provenance climate study. He will be planting 98 B class sources from Idaho to the Yukon and 30 A class lots from BC and Alberta sources. They will be planted on 15 field sites in BC Alberta and Yukon. He will use the results to look at species and population shifts and productivity impacts.

11. Differences Between Wild and Orchard Produced Seed - Dave Kolotelo

Dave reviewed the differences between orchard and wild stand seed, They include:

Genetic Differences

Selected for productivity and health
 Inbreeding : orchard < wild
 Greater Variability from orchards (recombination)

and

‘Cultural’ Differences

Cone production environment
 Maintenance of tree health, spacing
 Cone induction practices
 Cone harvest timing

For those interested in a detailed discussion her referred the meeting to his paper: Kolotelo, D. 2000. “Differences in seed and seedling attributes between select (orchard produced) and standard (wild stand) seedlots”. FNABC Proceedings

As far as physical differences it is generally assumed that orchard practices result in larger cones producing larger seed as per this table:

Species	Seeds Per Gram		
	Wild	Orchard	Wild/Orchard
Lw	276 (11)	180 (5)	1.53
Pw	58 (14)	44 (14)	1.32
Pli	320 (17)	245 (17)	1.31
Sx	432 (14)	365 (15)	1.18

This has certain advantages including seed being handled more easily with mechanical sowing machinery. However seed size is quite variable between families and between years for the same families. In QA monitoring of sowing requests it has been noted that there are significant differences in stratification moisture contents for wild and orchard produced seed.

Species	Stratification Moisture Content (5-Year Mean)		
	Wild	Orchard	Difference
Sx	31.1% (42)	26.1% (95)	5.0%
Pli	30.2% (109)	28.4% (21)	1.8%

However it should be noted that was no significant difference in Fdc. He said that in the future they would be increasing their Quality Assurance sample sizes to obtain more data on this issue!
Seed Quality Differences (TSC 5-Year Averages)

Species	Germination Capacity (%)		Seed Yield (Kg/Hl)	
	Wild	Orchard	Wild	Orchard
Sx	90 (157)	91 (55)	0.865	0.714
Pw	85 (23)	91 (20)	0.435	0.476
Pli	94 (266)	96 (49)	0.259	0.253
Lw	88 (52)	91 (10)	0.544	0.928

David closed by stating that in the future they hope to initiate some quantifying physiological dormancy tests with Michael Stoehr across all.

12. David Kolotelo – CTIA Meeting

A joint meeting between WFGA CTIA and NWOMA will be held July 26-29, 2004 to be held in Kelowna. Conference Topic “Climate Change and Forest Genetics”.

13. Joe Webber: Lodgepole Pine seed-set Research updates.

Joe reviewed the progress on the work done to date on this problem. The major problem has been determined to be Leptoglossus insect attacks with certain cultural concerns which should be taken into consideration by orchardists. Cultural treatments still require monitoring as there have not been any years with high temperatures to test against such possibilities since the problem of reduced seed set became noticeable. Although there was a small drop in cone retention and cone weight in the current year’s monitoring there appears to be no significant differences at this point since Leptoglossus control has become a regular part of pest management. Soil moisture continues to be monitored as one of the cultural concerns. Joe feels that after 4 years of work on this he is confident that North Okanagan orchards can produce good quantities of seed as long as Leptoglossus is controlled and soil moisture is kept high through good irrigation.

14. Rich Hunt – CFS. White Pine Blister Rust.

The original Pw MOU was signed in 1983 and recently completed. Screening was initiated in 1985 following Idaho protocols, but inoculations failed. Success was not achieved until 1987 when the WI method of using fine water droplets on the needles was followed. Inoculations continued thru 1995/6. The Idaho protocols look for NO, RNLF, NS, FSS, and BkRx. Each inoculation-screening of 2 year-old seedlings took 6 years to complete. Over several inoculation-screening cycles they realized that there were few seedlings classified as NO, NS and FSS, and all but very few became cankered on re-inoculation. Therefore these initial classifications were not considered useful to a resistance program. But, they assumed this worked within Idaho Seed Orchard seed in the interior, but not at the coast. In test plantations families that were selected for RNLF were no less cankered than families with high numbers of infection spots. Additionally, they did not see any BC families segregating in 1:1 ratios as has been seen in sugar pine or Champion Mine Pww with hypersensitive resistance genes.

A total of 307 candidate trees were selected in the forest for testing with 216 being screened along with 83 trees from Idaho. There were two groups of responses: clean seedlings which survived the first inoculation which were inoculated and a few that were clean after the second inoculation, but which only had a few cankers compared to most of the inoculated seedlings. As a result they called seedlings with 0 to 3 cankers difficult to infected, or DI trees.

The second group is the SCG seedlings, where *C. ribicola* has only a small orange margin of hyphae on the periphery of the canker that sometimes heal-up entirely. These seedling have never been in testing over 1200 seedlings in the interior, but one or more individuals were found in 42% of the coastal candidate selections. These individuals are widely distributed. There is a strong tendency for DI individuals to be found primarily in SCG families. Both of these types, i.e., DI and SCG have gone to the clone bank and the Bailey Road seed orchard. Similar results were found for coastal Pww. **The interior orchard is**

largely composed of Idaho selections with BC SCG and DI seedlings scattered within it. They are currently testing crosses among the Idaho trees in the interior orchard.

Lately they have been examining Champion Mine Pww from Oregon growing in BC plantations for hypersensitive spots. Their goal was to find 10 individuals homozygous for this trait. All seedlings resulting from the pollen of these individuals will be canker-free. In Oregon this gene effectively protected trees for about 40 years. This summer they confirmed the identity of 10 homozygous trees, which now need to be cloned. A couple of weeks ago they (Carlson, King & Hunt) examined Champion Mine trees growing in 5 plantations in the Interior. All seemed to be growing well!

They also examined RTBF₂ (Moscow arboretum) at Golden and it was growing very, very well (19 years in the ground) compared to local Pw. The RTBF₂ was 82% canker-free compared to 34% canker free for the local stock. The best sale for using RTBF₂ stock is the Vlem plantation which is planted in the same experimental design as the plantation at Golden. Here about 5 local trees are still alive, but cankered, all others are cankered dead (a bit of Armillaria); while stock RTBF₂ is 65% canker free. The RTBF₂ stock is suppose to be canker free because the needles are infected and have spots in the spring, but these needles are shed by fall (47%). They have found that needle shedding is a result of environmental stress. They are not certain why the RTBF₂ stock is resistant, but it seems to be enhanced by a short growing season and may increase with tree age.

15. Mike Carlson: SMP Project eligibility protocols under OTIP.

Mike led a discussion of the current SMP protocols. Orchard manager currently feel that the SMP protocols for funding should stay as it stands for the present. It was suggested that as orchards reach a certain age, based on species they would not then be eligible for funding SMP work. The only issue under SMP that has not been sorted out is at what maturity point in the orchard should it be cut off. Some of the issues and discussions included:

- SMP where new orchards that don't have enough pollen, or where there is the opportunity to increase GW in orchards, or where there is the possibility of swamping pollen contamination.
- In young orchards.
- Consider the amount of seed in the bank
- For early and late clones this is also important to make sure that Pan-mixis is correct however this is more species specific.
- Some feeling that it often needs to be made on a case by case basis. It was suggested that a sub-committee could look at each application for SMP.

Joe Webber agreed to also review any projects with this in it. Decisions should be made at the OTIP Review committee level.

16. Species Plan eligibility tables. Roger Painter

Both the Southern and Northern Interior Species committees reviewed and updated the current tables for OTIP eligibility. Two of the current Orchards were not present and Roger was asked to query them for information as well.

17. Orchard Managers Reports;

Vernon Seed Orchard Company

Orchard #	Litres of cones	Kgs of Seed Extracted
214	45,916	N/A
211	10,166	47.756 kgs
218	2,185	1.846 kgs
219	9,295	17.646 kgs
222	3,000	3.145 kgs
231	N/A	0.709 grams
226	1,676	4.774 kgs

Prince George Tree Improvement Station:

Orchard Name	Orchard #	SPU	Plann.Zone	Total HL	Total kg Seed - 0.36 kg Seed/HL
Willow-Bowron	220	12	PG low	10.1	3.6
Central Plateau-Finlay	223	18	CP	4.6	1.7
Bulkley	228	17	BV low	38	13.7
				53	19

Riverside Seed Orchards

Cone Collection for 2003

Orchard 303 Spruce:

High Elevation: 64 HL of cones: mean elevation of 1831 m.

Low Elevation: 49.2 HL of cones: mean elevation of 922 m

Orchard 310 Pli:

- 19.5 HL of cones: Mean elevation of 1296

- No grafting or orchard in-filling was done for these orchards as they have been upgraded under Select Seed Contract.

- Intense spray program was initiated for the control of Leptoglossus in both orchards.

PRT - Grandview Seed Orchards

The Hectolitre produced in the Pli orchard has increased considerably. However the grams of seed per cone for all three Pli has gone down on an average of 20-25%.

Orchard kg seed hl/cones grafts established

Pli 308	8.4		50.1	n/a
Pli 311	9.3		41.5	n/a
Pli 313	8.7		30.6	n/a
Fdi 321	0.75	1.57		1914 out of 2187
Pli 337	n/a			900 out of 1000
Pli 338	n/a			3350 out of 4800

Kalamalka Seed Orchards:

Kalamalka 2003 Crop Data

orch	Spu	GW	HI	kg	sdlg
304	Sx EK all	24	136	122.2	20,625
305	Sx NE mid	12	16	12.5	2,109
306	Sx NE high	12	11	8.8	1,485
307	Pli NE low	7	120	39.6	6,405
332	Lw NE low	29	54	46.9	4,929
333	Lw EK all	12	43	41.7	4,384
335	Pw KQ all	n/a	37	7.8	140
620	Sx BV low	25	5	4.2	714

Total	422	283.8	40,790
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Skimikin Seed Orchards

<u>S/L</u>	<u>Orchard</u>	<u>Species</u>	<u>HI</u>	<u>Kg</u>
60438	229/208Sx		37.8	42.68
60439	609	Pw	68.6	19.428
60440	302	Sx	4.2	3.23

Staff planted 1052 grafts in the holding area in September for the Hudson Hope, Fort Nelson, Bulkley Valley, Nelson Mid, and Nelson High (all Sx). They produced 3 seedlots in 2003 (See above). They had a considerable amount of Leptoglossus in the orchards and had to spray considerably. They removed about 1000 trees and have almost retired Orchard 205. They also removed 8 to 10,000 trees from the Research plantations.

Sorrento Seed Orchards:

Both orchards have now been established. . Orchard 240 was planted last year with 2700 of 3100 ramets are now planted. And Orchard 241 was also planted last year with 1650 ramets established.

Kettle River Seed Orchard Company

- grafts established for Pli CP low = 3205 total planted
- orchard size =3106, vacancies remaining = 173, net surviving established = 2933.
- **grafts established for Pli PG low = 4662 total planted**
- **orchard size =4891, vacancies remaining = 451, net surviving established = 4440.**

18. Tree Breeding:

Interior Douglas-fir, Western Larch and Interior Spruce, Lodgepole pine

Both Barry Jaquish and Mike Carlson led a review of Orchard Production, and Tree Breeding activities in 2003-4 and plans for 2004-5.

Barry Jaquish reviewed Interior Spruce, Western Larch and Interior Douglas-fir activities and covered what has been accomplished and what is proposed for 2004-5. Key accomplishments included 340 DFI crosses completed in 5 zones, five progeny testsites measured and maintained for 15 year height, 20year height growth measurement on two other sites and support on research projects related to the elevational transect study and Armillaria study. In Western Larch clone banks are being established at Barns Creek, 82 crosses completed and samples were collected for wood density testing following thinning at one site. In Interior Spruce 35 controlled crosses were completed and 6 20 year old first gen. Progeny sites were maintained and measured along with maintenance of 4 5year old sties in the Peace River area and poly cross tests were evaluated by CFS for weevil resistance at Skimikin. Supporting research continues on inter-zonal crossing, realized gain trials, somatic embryogenesis, seed orchard after effects and gene ecology testing. Next year should see a fairly intensive effort in terms of crossing and maintenance of 2nd generation tests. In measurements, there are the Nelson spruce 10-year measurements. The Fort Nelson-Peace River tests are coming up for 6-year measurements as well.

Mike Carlson reviewed Lodgepole pine Western White Pine activities. He highlighted Pli data from realized gain trials in the Thompson Okanagan SPU at the Mabel Lake testsite at 5 years. The data indicates a 13 to 19 % increase from orchard seed and 26 to 30% from elite crosses over wild stand material.

Mike also showed some results for realized gain trials at Baird Lake site at 6 years. Wild seed lots are showing 20% infected whereas Moscow and Skimikin and Bailey Rd. are showing a 10% infection rate.

Specific details by SPU are as follows.

SPU 14 Sx - Orchard reports Two orchards at VSOC # 211 had its first crop of 47.7 kg. Will be adjusting for weevil resistance over time. #214 produced approx. 250kg. The Ministry has now removed its PG orchards.

Breeding Program this year: 35 crosses done with 15 crosses to do next year. Maintained 4 –20 year sites. 3 –2nd gen. sites plus 2 GW sites were measured. The seed orchard after effects site was also maintained. They also established 4 sites related to the gene ecology work.

Next year: A total of \$63,000 in projects are proposed. Including completing the crosses for that zone, maintenance and measurement of 3 provenance sites and measurement of the gene ecology study.

SPU 35 Sx. Orchards 207, 208 and 229. At Skimikin, 208 was rogued quite heavily.

Breeding: Maintained and measured 5 testsites.

Next year: Plan calls for Maintain and measure 2nd generation sites.

SPU 40 Sx Peace River orchard is in the establishment phase. The other orchard at Kalamalka is a clonal row orchard and is not registered yet. The GW is now up to 25. 4.2 kg of seed were produced this year. OTIP funded SMP and crown pruning.

Breeding; Maintained Kalamalka breeding orchards, maintained 4 OP progeny tests and maintained and measured 2 demonstration/realized gain sites.

Next year: Maintenance at Kalamalka will continue as will further maintenance and measurement of progeny tests.

SPU 42 Sx : Orchard 239 is still young and is not producing yet. Orchard #206 will be kept in production until 239 comes into production

Nothing is happening in breeding in this SPU yet.

SPU 12 Pli Orchards: Orchard 236 (new select seed) and 222 had some production (3.14 kg) this year. Over the years they have done 4 separate roguings to this orchard. They have been using forward selections for replacement. Orchard 237 established in 2002 (Select Seed) consists of 4900 ramets. The GW is 15 %. Orchard 220 (provenance based) orchard (1400 trees) had a very small crop (3.6 kg) this year.

There was some discussion of reviewing the current needs for PL with reference to the Mountain Pine beetle replacement needs. Problem is that current figures are based on past 5-year needs rather than next 5 year needs. By the time the orchards could be upgraded to handle the spike in seed need the amount of seed required would have declined.

Breeding: They planted 2nd generation tests on 3 sites, and brushed 6 realized gain trials.

SPU 17 Pli Orchard # 219, 17.64 kg was produced. Pollen supply is starting to develop and orchard is almost totally planted. Sorrento orchard was planted last year 2700 of 3100 ramets are now planted in the last year. Orchard 234 (select seed) is now established at VSOC. Orchard 228 at PGTIS produced 13.7 kg of seed.

Breeding: Grown 140 families for testing. Prepared 3 sites for planting this material out and maintained 2 other sites.

Next year: Plant the three sites and measure progeny.

SPU 18 Pl. Orchard 223. 1.7 kg produced. Orchard 236 (Select Seed) has now been planted. Orchard 218 at VSOC. 1.8 kg produced last year. Sorrento Orchard is almost totally established

Breeding; 95 crosses were made.

Next year: They will evaluate 2 sites for gall rust.

SPU 41 Dfi: The two VSOC orchards Orchard # 225 and new Select Seed orchard are still in non-production phase.

Breeding; Nothing done.

Next year: Plans call for 20 year height measurements on 4 sites.

Caribou Transition Orchard 231 – Seedling demand for this zone is 0.5 Million annually. Presently the orchard will be too large for final needs. GW for the orchard will be 20.

Breeding: A small amount of crossing was done.

Next year: Nothing is planned.

Quesnel Lakes: VSOC orchard (Select Seed) 232 is in the establishment phase. Orchard 226 produced 4.8 kg of seed.

Breeding; Nothing was done in this SPU.

Next year : nothing planned .

Armillaria screening in Interior Fir: They grew 88 families from 4 zones Shuswap-Adams, Mica Creek, and West Kootenay low and high. They were successfully inoculated. Mortality has so far ranged from 0 to 75% with some families having no mortality at all. This test will go for another two years before reporting out.

19. ITAC Meeting Motions and action items.

Motion: That the ITAC recommends that an NE Low Spruce orchard and an EK Douglas-fir be developed and that interested parties be sought. Moved T. Lee/ Kolotelo. Passed.

Action Item: Mike Carlson will seek interested parties. A notice will be sent out immediately. The material for these orchards was developed by MoF, Tree Improvement Branch and it should be noted that all costs associated with producing the material, orchard establishment and management will need to be assumed.

Motion That ITAC present to Terri Carter and Dave Walden an appropriate gift recognizing their long-term work in the field of tree improvement. Mike Carlson/Barry Jaquish.

Motion: (ITAC) That the ITAC approved the amended OTIP Eligibility Tables. Carlson/ Lee. Carried.

Motion: That the Interior TAC recommend to FGC that Keith Illingworth be presented with the FGC achievement award. MikeCarlson/ BarryJaquish.

Motion to adjourn.