



**Forest Genetics Council of BC
Business Plan 2009 – 2010**

**Compiled and edited by
Jack H. Woods
FGC Program Manager**

Message from the FGC Co-Chairs

We are pleased to present the Forest Genetics Council's 2009/10 Business Plan. This plan outlines activities and budgets prepared by the Forest Genetics Council of BC (FGC), and its technical advisory committees, for implementing the Forest Investment Account (FIA) Forest Genetics Conservation and Management Program (FGCM). This is the ninth consecutive Business Plan of the FGC, and was made possible through the co-operative effort by many people in government, industry, and universities throughout the province. Also noteworthy is the ongoing support of Minister Pat Bell, the Forest Investment Council, and provincial Chief Forester, Jim Snetsinger.

As in previous years, this Business Plan outlines a balanced set of activities, including genetic conservation, tree breeding, seed production, pest management, technical support, and extension. New this year is a separate subprogram to address seed transfer issues and genecology research. Council implemented this new subprogram to better prioritize investments that will lead to comprehensive provincial policy supporting climate-based seed transfer. This objective is part of Council's newly completed Strategic Plan for the period 2009-2014.

Tree improvement and associated forest genetics activities provide a significant return on investment relative to many other silviculture opportunities. This success has allowed the FGCM Program to continue to leverage other investments by industry, government and universities. The cooperative production and delivery of select seed subsequently contributes to operational planting, enhances future timber supply, and increases the value of our forests.

Economic issues in the forest industry and falling government revenues are creating significant challenges for all activities linked to forest management. This program is not an exception. Funding provided by the Forest Investment Account was reduced by over 10% this fiscal year. In addition, central government has imposed limitations on spending. This has created challenges, and we encourage all involved to look for ways to reduce costs and improve efficiencies while focusing on our longer-term strategic objectives. Only through collaborative effort can we bring this program through these difficult times.

The success of this program is dependent upon the dedication, hard work, knowledge-sharing, and cooperation of members of Council and its affiliated committees, including staff from government, industry, and universities. Their respective contributions are greatly appreciated, and we would like to recognize and thank all involved as we head into another year of cooperative program delivery.

Kerry McGourlick, RPF
FGC Co-chair
Western Forest Products Ltd.

Brian Barber
FGC Co-chair
Ministry of Forests and Range

**Budgets list allocations of funds provided by the
Forest Investment Account through the
Forest Genetics Conservation and Management Program**

Budgets in this Business Plan were approved
by the Forest Genetics Council of BC on
April 30, 2009

Compiled and edited by
Jack Woods
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1.0 Introduction

This section overviews the relationship between the multi-stakeholder Forest Genetics Council and its co-operators in the planning and implementation of forest genetic resource management activities in British Columbia, and for the management and allocation of funds under the Forest Investment Account (FIA) Forest Genetic Conservation and Management Program.

1.1 Forest Genetics Council of BC

The Forest Genetics Council of BC (FGC) is a multi-stakeholder group representing the forest industry, Ministry of Forests and Range (MFR), universities and the Canadian Forest Service. Council's mandate is to lead a provincial forest genetic resource management (GRM) program that encompasses the conservation, controlled use, and value-enhancement of the genetic resources of forest tree species, and to advise the Provincial Chief Forester on forest genetic resource management policies.

The FGC provides a forum for stakeholder representatives to set objectives and to oversee the development and delivery of a Business Plan to fulfill these objectives. The vision statement and objectives set out in the FGC Strategic Plan for the period 2009 to 2014, are:

Vision statement:

BC's forest genetic resources are diverse, resilient, and managed to provide multiple values for the benefit of present and future generations.

Objectives:

1. Adequately conserve the genetic diversity of key populations of all forest tree species native to BC by 2015, through a combination of in situ, ex situ, and inter situ conservation.
2. By 2020, high-quality genecology research information will guide operationally efficient climate-based seed transfer policy and practice for all trees planted in BC.
3. Increase the average volume gain of select seed used for Crown land reforestation to 20% by the year 2020.
4. Increase select seed use to 75% of the provincial total sown by 2014.
5. Coordinate stakeholder activities and secure the resources needed to meet Business Plan priorities.
6. Monitor and report progress in genetic resource management activities.

This Business Plan defines the annual set of activities and budgets needed to achieve these objectives.

1.2 A Co-operative Effort

Forest genetic resource management in BC is a co-operative effort. The MFR leads tree breeding activities, while both private industry and the MFR manage seed orchards for the operational production of select seed. Genecology research is undertaken by the MFR and by universities in

support of seed transfer policy, climate-change response, and genetic conservation. Research in the areas of pest management and other GRM activities is carried out by universities, the MFR Research Branch, and the Canadian Forest Service. Policy development for Crown lands is the responsibility of the MFR, with advice provided to the Provincial Chief Forester through the FGC.

1.3 Forest Investment Account Forest Genetic Conservation and Management Program

Beginning in fiscal year 2003/04 the provincial government introduced the Forest Investment Account (FIA) as a mechanism for promoting sustainable forest management in British Columbia. FIA is founded on a Vote of the Legislature and includes three major objectives:

- Support sustainable forest management practices;
- Improve the public forest asset base;
- Promote greater returns from the utilization of public timber.

FIA is delivered through five programs; including the FIA Forest Genetic Conservation and Management Program (FGCM). Prior to 2008, this program was called the FIA Tree Improvement Program.

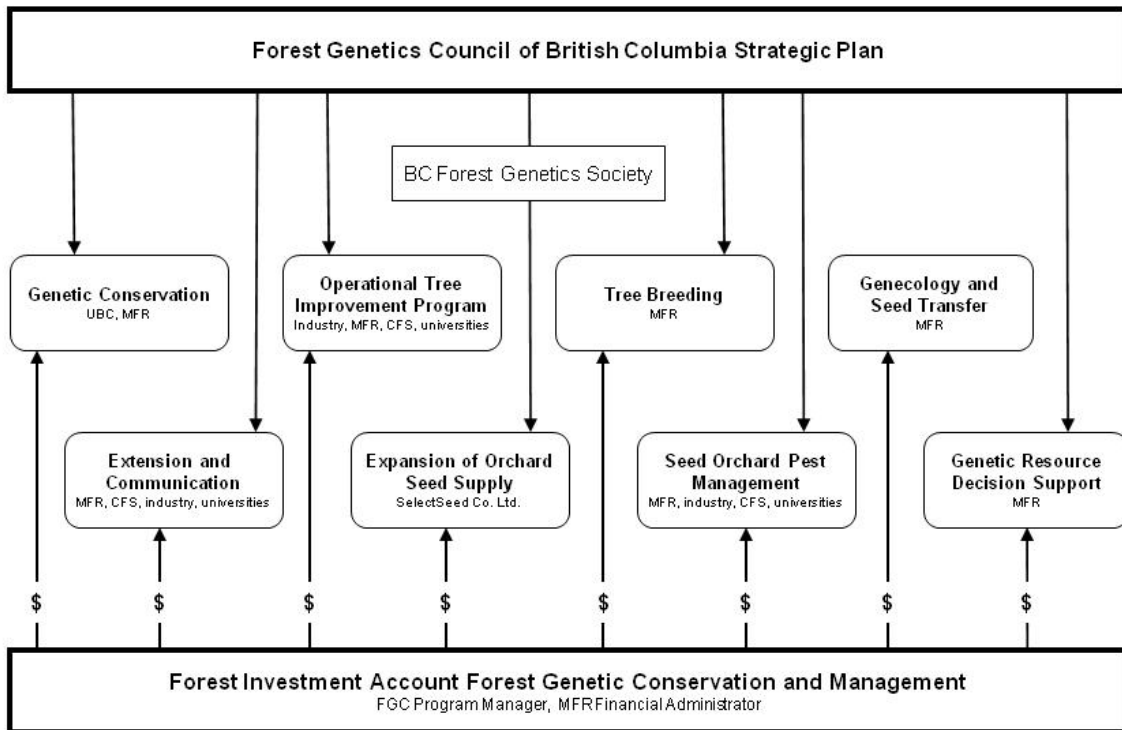
FIA investments are guided by the Forest Investment Council, and administered by the MFR. The MFR has decision-making authority with respect to FIA expenditures, and with assistance from other provincial government ministries, establishes objectives and delivery standards.

FIA investments in genetic resource management are made under the provincial FGCM program. The Forest Genetics Council has responsibility for setting priorities and developing an annual business plan to meet provincial objectives. The MFR administers funding through the subprogram areas identified in the FGC Strategic and Business Plans (Figure 1).

Business planning is carried out through the existing FGC-led process, with Technical Advisory Committees (TACs) undertaking specific planning activities, developing budgets, and making operational recommendations (Figure 2). The FGC reviews and makes final recommendations for subprogram budgets and activities, and ensures the overall program meets FIA objectives and administrative requirements. The program is managed and coordinated by the FGC Program Manager on behalf of the FGC, with substantial input from FGC Co-Chairs, Technical Advisory Committee (TAC) Chairs, and others.

In addition to FIA investments in genetic resource management, the MFR and private companies also fund activities under Council's Business Plan. The species plans found in Appendix 3 outline general strategy, predict seed orchard seed production and gain, summarize conservation status, and provide key seed use and availability statistics for individual species and seed zone combinations known as seed planning units (SPU).

Figure 1 Relationship between the FGC Strategic Plan, Forest Investment Account FGCM, and business plan development through FGCM subprograms.



2.0 Process for Business Plan Development

2.1 The Role of Council and its TACs

FGC members, representing the MFR, forest companies, universities, and the Canadian Forest Service, provide strategic direction to the provincial forest genetic resource management program. FGC Technical Advisory Committees provide technical and policy information to Council and contribute to the development of FGC plans and associated budgets. The FGC Business Plan consolidates the subprogram plans and budgets into a comprehensive set of activities that address Council’s objectives.

Council’s seven TACs lay the groundwork for the FGC Business Plan:

- The Coastal and Interior TACs, through their Species Committees, review and advise on Species Plans (Appendix 4) that outline strategy and activities for the Tree Breeding, Operational Tree Improvement Program (OTIP), and the Expansion of Orchard Seed Supply (SelectSeed Company Ltd.) subprograms.
- The Genetic Conservation TAC (GCTAC) advises Council on issues related to genetic conservation and genetic diversity, and identifies required activities and budgets under the Genetic Conservation Subprogram.

- The Seed Transfer TAC develops strategy and activities for genecology research and climate-based seed transfer policy .
- The Extension TAC (ETAC) is responsible for developing a strategy and annual activity plans for the Extension and Communication Subprogram.
- The Seed Orchard Pest Management TAC identifies information and research needs, and guides both research and extension activities for the control of seed orchard insect and disease pests.
- The Genetic Resources Decision Support Steering Committee oversees the development of activities and budgets for the Genetic Resource Decision Support Subprogram.

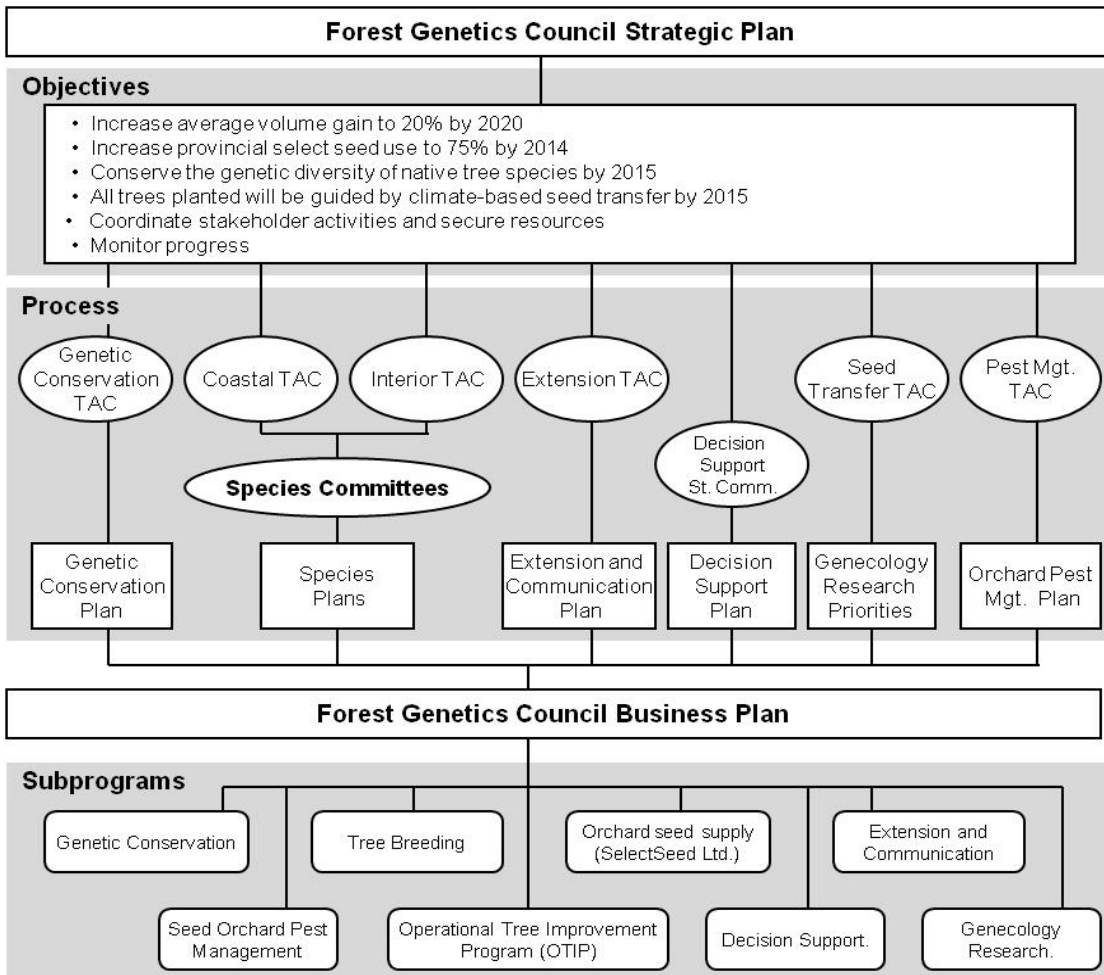
In addition to the seven advisory committees, Council establishes other committees as needed to advise on shorter-term projects such as cone induction research (University of Victoria) and applied forest genetics and biotechnology research (University of BC). All projects are supported through FGC-directed funds.

Program financial administration is led by the MFR Tree Improvement Branch. Program management, including business plan and annual report compilation, is led by SelectSeed Company Ltd. (SelectSeed), on behalf of Council.

Council reviews all strategies, plans, or recommendations from its TACs and from SelectSeed for approval (or revision) before incorporating them into the FGC Business Plan. Figure 2 illustrates this hierarchical structure and the link between FGC objectives, planning processes, and the seven subprograms through which it is implemented.

The process by which the Council Subcommittees or other agencies define activities and budgets for each subprogram is discussed in Section 3. As it is difficult to accurately predict project spending, subprogram leaders are authorized to reallocate funds within their subprograms as necessary throughout the fiscal year, subject to limits and review process.

Figure 2 The link between FGC objectives, planning processes, and the subprograms of the FGC Business Plan



3.0 Subprogram Planning and Management

3.1 Genetic Conservation Subprogram

Genetic conservation activities monitor and catalogue indigenous tree genetic resources, research conservation methods and needs, provide background genecology information for non-commercial species, and provide guidance on policy development.

3.1.1 Planning

Genetic conservation activities are developed through the FGC Genetic Conservation TAC (GCTAC), with programs and spending approved by the FGC.

3.1.2 Management

Subprogram delivery is primarily through the Centre for Forest Conservation Genetics at the University of BC (CFCG), with the GCTAC setting broad objectives. The Centre provides expertise, research, and strategic planning related to genetic conservation, and evaluates levels of protection of genetic diversity.

The Centre receives funding through a Transfer Agreement with the Ministry of Forests and Range Tree Improvement Branch under the FIA Tree Improvement Program. In addition, the Centre collaborates with other groups and agencies, and seeks funding from other sources as opportunities arise. Significant adjustments in technical objectives or budgets must be approved by the GCTAC.

Ex-situ seed collections for conservation purposes are coordinated through the Centre or by Provincial Tree Seed Centre staff, under the planning guidance of the CFCG.

3.1.3 Activities and Budget

The Centre for Forest Conservation Genetics will help identify specific *in situ* and *ex situ* conservation needs and strategies, and will assist with forest certification and climate change issues as they relate to genetic conservation and management. Investments through the CFCG also allow leveraging of funds with other provincial, national, and international agencies in the area of conservation genetics. Centre staff continue to develop the ClimateBC model that is now widely used for understanding climate-change impacts in forest ecosystems.

In the 2009/10 fiscal year, the Centre will receive \$282,000 for projects listed in Table 1. In addition, the Centre will continue to provide expertise on climate change impacts, seed-transfer options, and ongoing planning and policy developments related to climate change.

A budget of \$16,000 (including overhead) is allocated to the Provincial Tree Seed Centre for *ex-situ* seed bank collections. These seed collections will be added to the genetic conservation seed bank maintained at the Provincial Tree Seed Centre.

Funds allocated under the Genetic Conservation subprogram will also support salary and operational funds for a scientist in the Research Branch of the MFR. Projects are listed in Table 1.

Table 1 Conservation subprogram budget for 2009/10. Only activities funded by the Forest Investment Account are shown here.

Project	Budget	Products
CENTRE FOR FOREST CONSERVATION GENETICS		
Climate change		
Testing climate change prediction for Pa and Pli	\$ 34,993	1 report
Modelling seed transfer options	\$ 43,510	1 report
Bioclimatic envelope modelling of BEC zones and spp.	\$ -	Improved model
Genetic response to climate change (growth chamber)	\$ 49,480	1 report
Non-Commercial species		
Genecology of Garry oak	\$ 18,346	1 report
Ecological genetics of <i>Arbutus menziesii</i>	\$ 37,760	1 report
Other projects		
Cataloguing conservation status	\$ 15,040	1 report
Genetic structure and conser. of mgd. Sx populations	\$ 24,698	1 report
General CFCG expenses		
Extension	\$ 9,360	
Assistant Director	\$ 13,924	
Office, lab and computing expenses	\$ 14,000	
Total cost	\$ 261,111	
UBC Overhead 8%	\$ 20,889	
Ex situ seed collections	0	
TOTAL UBC CONTRIBUTION AGREEMENT	\$ 282,000	
MIN. OF FORESTS AND RANGE TREE IMP. BR.		
Ex situ seed collections	\$ 16,000	
MIN. OF FORESTS AND RANGE RES. BR.		
Conservation position and expenses	\$ 75,000	
Ch. 2 Catalogue Tech Rep. Publishing	\$ 4,000	1 report
Ground truthing	\$ 12,000	1 report
Inter situ linkage to CAFGRIS	\$ 500	
GCTAC meetings and travel	\$ 1,500	
In situ climate change work with U. of Alberta	\$ 5,000	
TOTAL MFR Research Branch	\$ 98,000	
TOTAL BUDGET	\$ 396,000	

3.2 Tree Breeding Subprogram

The Tree Breeding Subprogram focuses on the continued development of select parent trees for the production of seed and vegetative materials for reforestation. Tree breeding activities include selecting parents in wild stands, propagation, testing offspring, mating, establishing/maintaining/measuring trials, and technical support. Selections from wild populations are largely complete, as all breeding programs are in advanced generation breeding and testing. The Subprogram also includes genecology trials and research to support the information needs of seed planning unit (SPU) programs as described in Species Plans. Tree breeding and genecology work is led by the MFR Research Branch.

3.2.1 Planning

FGC Interior and Coastal TACs and their associated Species Committees assisted with planning and strategy development for the Tree Breeding Subprogram. Through the development of species plans (Appendix 4), Committees estimated seed demand, orchard seed production, and

program needs for each SPU. Breeding, genecology, and genetics research strategies developed by MFR tree breeders were reviewed, and direction was given to ensure alignment with FGC strategic objectives and with ongoing operational needs and programs. Species Committees also review proposed budgets and progress reports for each SPU.

The budget for the Tree Breeding Subprogram was developed for individual SPU by Species Committees in the fall of 2008. It was then adjusted by the Manager, Forest Genetics, MFR Research Branch to find efficiencies and to meet the total expected Subprogram budget allocation, with input from MFR tree breeders, the FGC Program Manager, and the MFR Tree Improvement Branch Director. Final programs and budgets were reviewed and approved by the FGC on April 30, 2009.

3.2.2 Management

The MFR manages Tree Breeding Subprogram activities, and reports to the FGC. The Manager of Forest Genetics, MFR Research Branch, has authority for project re-allocations in support of FGC objectives. Substantial re-allocations between seed planning units or from breeding activities to technical support activities require the approval of the Director, Tree Improvement Branch and the FGC Program Manager.

3.2.3 Activities and Budget

The 2009/10 budget for the Tree Breeding Subprogram is \$2.032 million. Table 2 contains approved budgets and key performance indicators (KPI) for breeding activities by SPU. Approximately of \$1,100,000 of the total budget will cover MFR Research Branch salary costs, and an additional \$85,000 worth of projects will be risk-managed by the Research Branch.

3.3 Operational Tree Improvement Program (OTIP)

The OTIP supports FGC objectives to increase the quality and quantity of select seed produced from existing private and MFR seed orchards. It also provides technical support for orchard production and management.

3.3.1 Planning

OTIP investment is based on input from SPU (species) plans developed by species committees reporting to the Interior and Coastal TACs (see Appendix 3). Species plans outline seed production strategies within each SPU. Based on these strategies, and on priority lists approved by the TACs, a formal call for proposals is issued.

FGC committees review and rank all proposals against FGC objectives and SPU priorities, based on technical merit, impact, value, and cost. OTIP projects are selected to increase the genetic gain in seed made available for reforestation and to increase the quantity of seed produced from existing orchards. They support FGC short-term objectives for gains in the growth rate, pest resistance, and wood quality of reforestation materials. They also support FGC long-term objectives through the replacement of trees in existing seed orchards with trees of higher genetic value. The total budget allocation for OTIP is recommended by the FGC to FIA administrators in the MFR.

3.3.2 Management

The MFR Tree Improvement Branch administers OTIP in accordance with recommendations from the FGC. Requests for re-allocations or for new funding are handled by the MFR Tree Improvement Financial Administrator in consultation with the appropriate TAC and the FGC Program Manager. All projects report on key performance indicators to enable tracking of planned activities.

3.3.3 Activities and Budget

The 2009/10 OTIP budget is \$747,000. Table 3 outlines approved OTIP budgets and KPI for all seed planning units.

3.4 Expansion of Orchard Seed Supply Subprogram (SelectSeed Co. Ltd.)

This subprogram was established in 1999 to address a need for seed orchard capital investment to meet FGC objectives. For seed planning units (SPU) with insufficient orchard capacity, as determined by the ITAC and CTAC at the time, orchard-expansion investments were initiated through SelectSeed Company Ltd. using competitive bids and long-term contracts.

SelectSeed is wholly owned by the Forest Genetics Council through the B.C. Forest Genetics Society. All Society members are on Council. The SelectSeed Board of Directors is elected by Society members (Figure 3). SelectSeed’s mission is to “support Forest Genetics Council objectives for the development of seed orchard facilities to meet the provincial demand for high quality, genetically adapted tree seed through investments, cooperative work with FGC members and effective program management.”

Figure 3 Organizational relationships among SelectSeed Ltd., Forest Investment Account, Forest Genetics Council, and the B.C. Forest Genetics Society

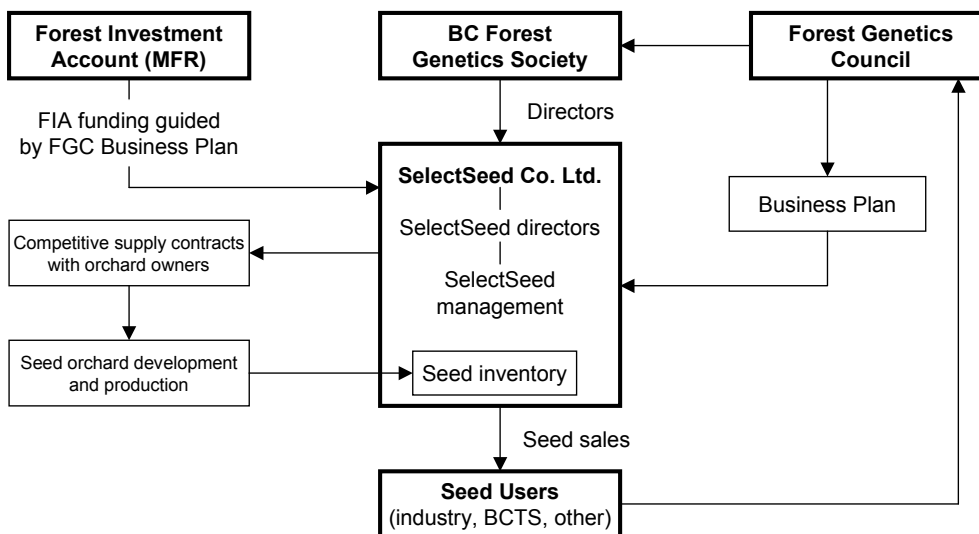


Table 2 2009/10 budgets (\$ x 1000) and KPI by seed planning unit for tree breeding and associated technical support activities.
See Species Plans (Appendix 3) for more detail on seed planning units. Category numbers relate to Work Breakdown Structure (Figure 5).

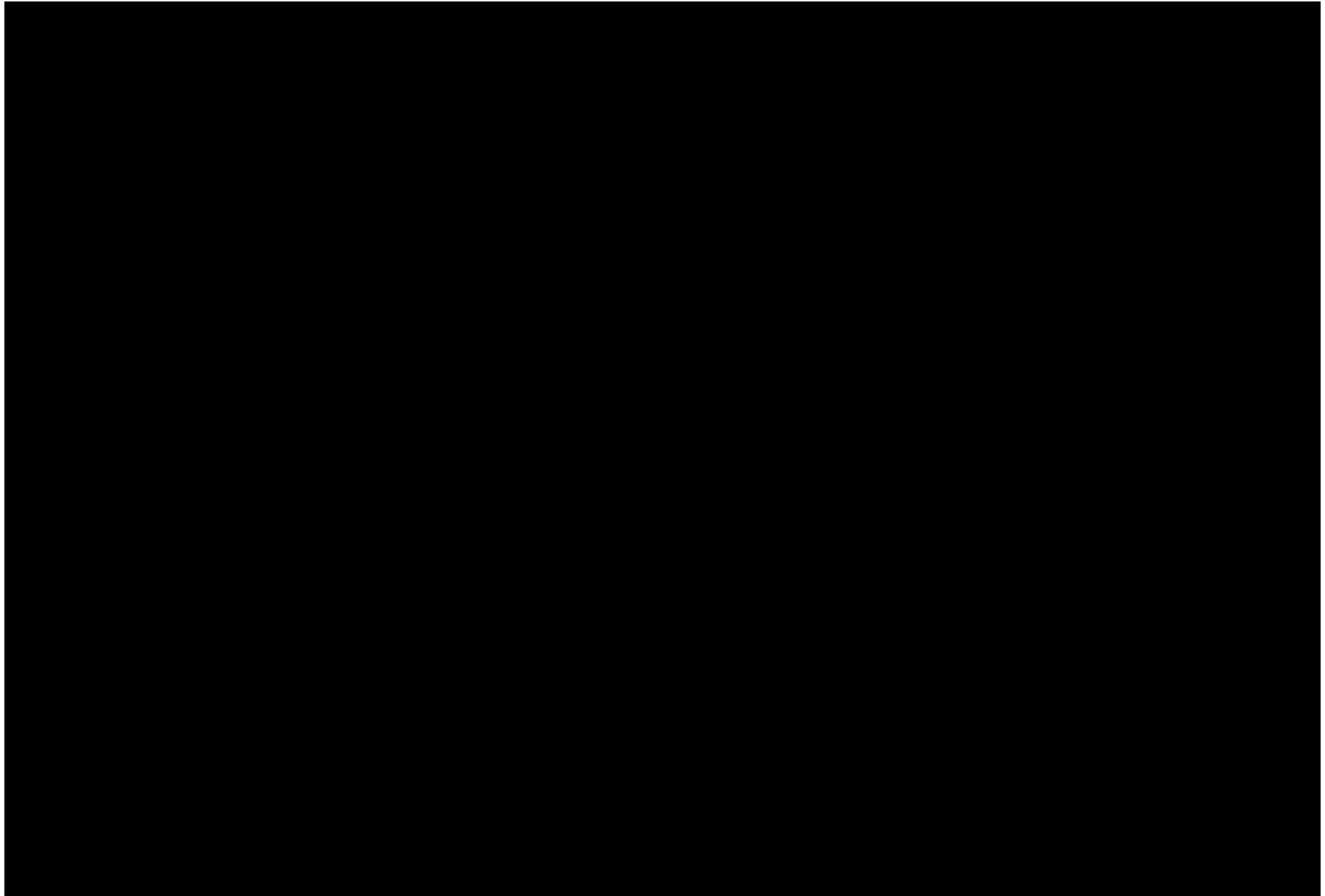




Table 3 2009/10 budgets (\$ x 1000) and KPI by seed planning unit for OTIP projects.
Category numbers relate to the Work Breakdown Structure shown in Figure 5. See species plans (Appendix 3) for SPU detail.

Seed Planning Unit				320 Quality / Quantity Boosts												330 Cuttings		340 Pest Management						350 Tech Sup.		Total \$ x 1000		
				321		322		323		324		325		326		327		331		341		342		343			# of projects	
#	Spp	SPZ	Elev (m)	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	
1	Fdc	M	1-900	1	4	1467	3	1232	3	296	4	1760	18	580	3	8857	22			5509	14	3515	1	1771	1	1	10	82.7
2	Cw	M	1-700	300	2	1922	4	222	3	407	5	80	2	140	1	3124	8			270	3			1124	2	1	5	34.5
3	Hw	M	1-600									117	1	227	1	764	3							764	0			4.3
4	Sx	NE	1000-1700			147	0	9	0			598	1	199	1	279	1			2145	7	2145	1	2145	1	1	21	33.3
5	Sx	NE	1700-2100			197	0	5	0			538	1	179	1	252	1			2028	6	2028	1	2028	1			11.0
6	Ss	M	1-500									551	2	3	2	551	2			551	2							8.1
7	Pli	NE	700-1600	70	1	746	2	64	0	22	0	2611	6			764	2			11129	17	4691	3	16166	8	6	39	78.0
8	Pw	M/SM	1-1000					250	1	52	1					495	3			1095	3			600				7.1
9	Ba	M	1-1000																									0.0
10	Pli	TO	700-1400	160	1	160	0	93	0	60	1	4900	9			740	1			5811	8	2211	3	5811	3			26.8
11	Yc	M	1-1100													4778	5	9743	11	7191	1					2	6	22.4
12	Pli	PG	700-1400	1000	13							10835	15			4725	12			14496	21	4946	1	15319	6	1	1	68.5
13	Lw	NE	700-1600			4	0	42	1							424	1			1255	9	1697	1	1697	1			11.9
14	Sx	PG	600-1400			800	1			1686	27								4299	4					1	5	36.3	
15	Pw	KQ	500-1400	150	1	68	0	78	1			1861	6			562	1			5047	23	2246	1	5186	6			39.9
16	Pli	TO	1400-1600							198	6	3860	7			430	0			7720	10	608	1	7720	3			26.8
17	Pli	BV	700-1400	500	6					196	4	11467	18			1913	5			21788	27	8155	3	19137	9			71.4
18	Pli	CP	700-1300	500	6							8643	12			1000	4			15436	21	1300	0	11193	5			48.8
19	Fdc	SM	200-1000							200	3					1153	5			1153	1							8.4
20	Pli	NE	1600-2000																									0.0
21	Fdi	NE	400-1200									1900	4	600	3					1000	6			1000	1			13.2
22	Fdi	NE	1000-1800									1471	4	490	2	797	2			3187	12	3187	1	2000	1			21.1
23	Sx/Ss	SM/NST	all																									0.0
24	Hw	M	600-1100	33	0	80	0	9	0			215	1			215	1							305	0			2.8
25	Sx	EK	750-1900																									0.0
26	Pli	PG	1400-2000																									0.0
27	Cw	SM	200-1000																									0.0
28	Sx	TO	1300-2100									1513	3	1000	3					1513	4			2083	1			11.0
29	Pli	EK	1500-2000																									0.0
30	Sx	TO	700-1500																									0.0
31	Fdc	M	900-1200	16	0	65	0	27	0							384	3			164	3	164	0	285	0			6.4
32	Pli	EK	800-1500									1314	4			596	1			2383	5	2383	1	2000	1			12.3
33	Cw	M	700-1500																									0.0
34	Lw	EK	800-1700																									0.0
35	Sx	BV	500-1400	50	0	251	1	7	0			434	2	1067	4	177	0			3120	5	3120	1	3120	1			15.0
36	Bg	M	1-700																									0.0
37	Fdi	QL	700-1400									338	4	200	1					1119	5							9.2
39	Fdi	EK	700-1400													270	1			1080	1	1080	0	1080	1			3.4
40	Sx	PR	650-1200																	2793	1	2793	0	2793	0			2.7
41	Fdi	PG	700-1200									607	3	220	1					1282	5							8.6
42	Sx	PG	1200-1550																	1017	3							2.8
43	Fdi	CT	600-1400									962	3	400	1					962	8							11.7
44	Sx	NE	1-1000									400	1			225	1			900	4	900	0	900	1			6.5
45	Pli	BB/CHL	all																									0.0
46	Bl	all int.	all																									0.0
47	Bn	M	all																									0.0
48	At/Ep/	interior	all																									0.0
49	Dr/C/	Coast	1-900	1	4	1467	3	1232	3	296	4	1760	18	580	3	8857	22											0.0
50	Lw	NE	1-700	300	2	1922	4	222	3	407	5	80	2	140	1	3124	8											0.0
Totals				2780	36	5907	12	2038	10	3117	49	56975	129	5305	21	33475	83	9743	11	127443	236	47169	20	106227	52	13	87	747.0
Risk managed amount																										0		
Total FIA supported budget																										747		

3.4.1 Planning

SelectSeed's Business Plan and investments are based on the long-term and annual business plans prepared by the FGC and its associated committees. Species plans (Appendix 3) contain analyses of projected orchard expansion needs that guide SelectSeed investments. Specific technical advice is sought as required from Species Committees or others with the needed expertise.

3.4.2 Management

Management discretion for spending lies with the SelectSeed Board of Directors,¹ and is limited by the terms of the SelectSeed Multi-Year Agreement with the MFR. Investments in new orchards followed a request for proposals (RFP) process, with emphasis on both the technical quality of developments and on cost. SelectSeed's annual business plan was approved by the Forest Genetics Council on March 11, 2009.

3.4.3 Activities and Budget

In 2009/10, SelectSeed will continue to focus on the management of 11 long-term orchard agreements covering the development and operation of 14 orchards (Table 5). No new orchard agreements are anticipated during the year.

Seed orchard management and development activities for the fiscal year include planting 295 ramets in orchards, and the propagation and holding of 500 ramets. Ramets currently planted in the 14 seed orchards, combined with new planting during 2009/10, will result in approximately 34,937 ramets under management by year end. The total completed size for SelectSeed contract orchards is 35,147 ramets. All grafting and holding work is done through contracts.

Other activities will include program management on behalf of the Forest Genetics Council, including Business Plan and budget development, committee support, managing program development and subprogram interactions, and preparation of mid-term and annual reports.

Spending for 2009/10 is projected at \$957,000, of which \$710,000 will be FIA supported (Table 4), down from \$770,000 the previous fiscal year. Seed sale revenues are forecast at \$231,000. Forecasts are based on long-term production curves for similar orchards, but annual production can vary widely from forecasts.

¹ The Board is comprised of representatives from the private sector.

Table 4 SelectSeed Company Ltd. 2009/10 budget by category

Category	expenses / income
Expenses	
Existing orchard development contracts	566,000
Propagation and holding	12,000
Management and administration (FGC and SelectSeed)	220,000
FGC Program support and NSERC Industrial Chair	35,000
Crop production / seed extraction	114,000
FGC program contingencies	10,000
Total Expenditures	957,000
Income	
Seed sales	231,000
Interest from investments	16,000
Total Income	\$247,000
Total MYA support	\$710,000

Table 5 Orchards under contract to SelectSeed Company Ltd.

<i>Seed planning unit</i>					
SPU#	Species	Seed zone	Planned # ramets	# ramets currently established	Location
21	Fdi	NE low	2187	2187	Armstrong - Grandview
37	Fdi	QL	776	776	Vernon
41	Fdi	PG	786	786	Vernon
28	Sx	TO high	1056	1051	Armstrong - Eaglerock
30	Sx	TO low	454	452	Armstrong - Eaglerock
7	Pli	NE low	1000	1000	Armstrong - Grandview
10	Pli	TO low	4796	4796	Armstrong - Grandview
12	Pli	PG low	4884	4831	Kettle Valley
12	Pli	PG low	4500	4500	Vernon
16	Pli	TO high	3508	3508	Armstrong - Eaglerock
17	Pli	BV low	3000	2882	Vernon
17	Pli	BV low	3100	3088	Sorrento
18	Pli	CP low	2000	2000	Sorrento
18	Pli	CP low	3100	3080	Kettle Valley
TOTALS			35,147	34,937	

3.5 Extension and Communication Subprogram

The Extension and Communication Subprogram supports FGC goals and objectives through:

- extension (providing client focused solutions and training to seed users and tree improvement specialists),
- communication (developing and disseminating information on the program and its activities to all FGC target audiences),
- training (fostering support for the education of tree improvement specialists and technologists, including continuing education).

3.5.1 Planning

Extension and communication activities are developed and guided by the FGC Extension Technical Advisory Committee (ETAC). ETAC includes representatives from operations (MFR and industry), MFR research, and the private consulting community.

The ETAC extension and communication strategy is based on three broad goals:

1. To work closely with Council and its TACs to coordinate and manage extension efforts in support of Council's provincial forest genetic resource management program.
2. To provide information and policy advice to Council on issues related to extension
3. To act as a forum for user feedback.

3.5.2 Management

ETAC identifies goals and audiences for extension, communication and education activities, and with the assistance of an Extension Coordinator from the MFR – Tree Improvement Branch, develops a business plan. The Coordinator is responsible for the management of ETAC activities, and the coordination of ETAC work in conjunction with Council and other committees of Council. Projects are undertaken through contracts or through direct delivery by cooperators. Budget development for FIA funds is first done by the ETAC, with final approval by the FGC. Project spending is approved by the ETAC Chair and the FGC Program Manager, and must meet administrative guidelines set out for FIA funds. ETAC reports to Council on activities, progress, and spending at mid-year and year end.

3.5.3 Activities and Budget

The extension and communication budget for 2009/10 is \$14,000, plus Ministry of Forests and Range salary support for a communication specialist. In-kind, staff time and other contributions by affiliated companies and agencies are incremental to this amount and are not listed. Projects and budgets are summarized in Table 6.

Table 6 Extension and communication projects and budgets for 2009/10

Project	Budget (\$)
ETAC meetings	250
TIC <i>talk</i> newsletter	2,750
Coast field tour including deer resistance of redcedar	2,000
Coast white pine mini-conference	1,500
Whitebark pine ecosystem foundation conf. support	1,000
Coast cone induction workshop	3,500
Interior and coast seed and cone pest workshops	1,000
Coastal Tree Improvement History meeting	1,000
Administration and opportunities	1,000
Subtotal	14,000
Salary for extension specialist (MFR – Tree Improvement Branch)	\$85,000
Total FIA Tree Improvement Program Contribution	\$101,000

3.6 Genetic Resource Decision Support Subprogram

The Genetic Resource Decision Support Subprogram (GRDS) supports FGC goals and objectives through the development of genetic information management systems. These systems assist clients in decision making, seed policy and planning, seed use (registration, storage, selection & use, and transfer), timber supply analysis, effectiveness evaluation and monitoring and other GRM activities.

3.6.1 Planning

GRDS projects are developed and guided by the Genetic Resource Decision Support steering committee comprised of ministry, industry and academic representatives.

3.6.2 Management

The GRDS Steering Committee, led by the Ministry of Forests and Range, Tree Improvement Branch, identifies short- and long-term goals that support clients GRM information needs. Significant project changes or re-allocations of funds from the approved Business Plan require approval of the Steering Committee and the FGC Program Manager on behalf of the FGC.

3.6.3 Activities and Budget

Funding is shared between FIA and the Ministry of Forests and Range. Total funding allocated from the FIA Tree Improvement Program will be \$40,000 for 2009/10. Specific projects are listed in Table 7.

Table 7 Genetic Resource Decision Support subprogram projects and budget for 2009/10

Project	Budget (\$) *
1. Strategic Planning and Analysis Policy, impact and vulnerability assessments; mountain pine beetle impacts	20,000
2. Resource Information Management New GRM datasets and spatial updates	10,000
3. Monitoring and evaluation State of the Forest GRM reporting	10,000
Total FIA Tree Improvement Program Contribution	40,000

3.7 Pest Management Subprogram

The Pest Management Subprogram supports FGC objectives by reducing orchard seed losses to insect and disease pests through research, technical support, and the development of integrated pest management strategies in conjunction with orchard managers and pest management research and extension specialists.

3.7.1 Planning

The Subprogram is guided by a Pest Management Technical Advisory Committee, with membership from industry and government orchards, the Canadian Forest Service and universities. Issues are identified and ranked by the TAC based on the perceived impact on seed losses, and the effect of these seed losses on FGC objectives. The TAC also makes recommendations to Council regarding subprogram organization and management.

3.7.2 Management

Following general direction from the PMTAC, research proposals were developed by the pest management scientist and pest management specialists supported through the subprogram. These were subsequently reviewed by Pest Management TAC members, and recommendations made for project modifications and acceptance.

The MFR Tree Improvement Branch manages the financial administration of projects approved by the Pest Management TAC through in-branch allocations, or through allocations to the MFR Research Branch. Significant priorities and changes during the fiscal year will be dealt with through consultation with the TAC and approvals by the FGC Program Manager and the MFR Tree Improvement Financial Administrator. All projects will report quarterly on spending and at mid-year and year-end on progress.

As set out in a pest management plan approved by the FGC in 2005, FIA funds will also support salaries for two positions in the MFR; a Pest Management Research Scientist reporting through the Research Branch, and a Cone and Seed Pest Management Biologist reporting through the Tree Improvement Branch.

3.7.3 Activities and budget

The total Pest Management subprogram budget for 2009/10 is \$360,000. In-kind, staff time and other contributions by affiliated companies and agencies are incremental to this amount. Projects and budgets are summarized in Table 8.

Table 8 Pest Management Subprogram projects for 2009/10.

Project	Species impacted	Budget (\$)	Products
<i>Dioryctria</i> (Douglas-fir cone moth) biology, ecology and life cycle study to better understand control methods (in conjunction with the University of Alberta)	Sx, Fdi, Fdc, Lw, Pw	39,300	Progress report
<i>Leptoglossus occidentalis</i> (western conifer seedbug); visible and infrared light host detection (with SFU)	All except Cwr & Yc	33,400	Progress report
<i>Leptoglossus</i> mark, release, recapture (with UBC-Okanagan and UNBC)	All except Cwr & Yc	45,000	Progress report
<i>Contarinia</i> pheromone development (SFU)	Fdi, Fdc, Lw	11,000	Progress report
Tests of systemic insecticides for cone and seed insect control	All	29,100	Progress report
Development of a cone and seed pest field guide	All	4,000	
Research scientist lab operational costs		10,000	
Support for interior pest-management extension		18,200	Pest extension reports
MFR salary support for applied pest management specialist and pest research scientist	All interior	170,000	
Total budget		\$360,000	

3.8 Genecology and Seed Transfer Subprogram

The FGC implemented the Genecology and Seed Transfer Subprogram (GSTS) in September 2008 following recommendations set out in a report from the Genecology and Seed Transfer review committee. The 2009/10 fiscal year is the first year of operation for this subprogram. The GSTS purpose is to effectively direct funding to priority genecology and seed transfer projects in support of FGC strategic objectives and provincial seed transfer policy development.

3.8.1 Planning

The subprogram is guided by the Seed Transfer TAC (STTAC), with representation from stakeholders from the MFR, industry and universities. Priorities for genecology and seed transfer information needs are set within the context of other work currently underway, such as in the Breeding subprogram, existing genecology trials, and seed transfer policy needs. The TAC leads the development of a call for proposals for projects and makes recommendations to the FGC regarding budgets, Subprogram priorities, and process for delivery.

3.8.2 Management

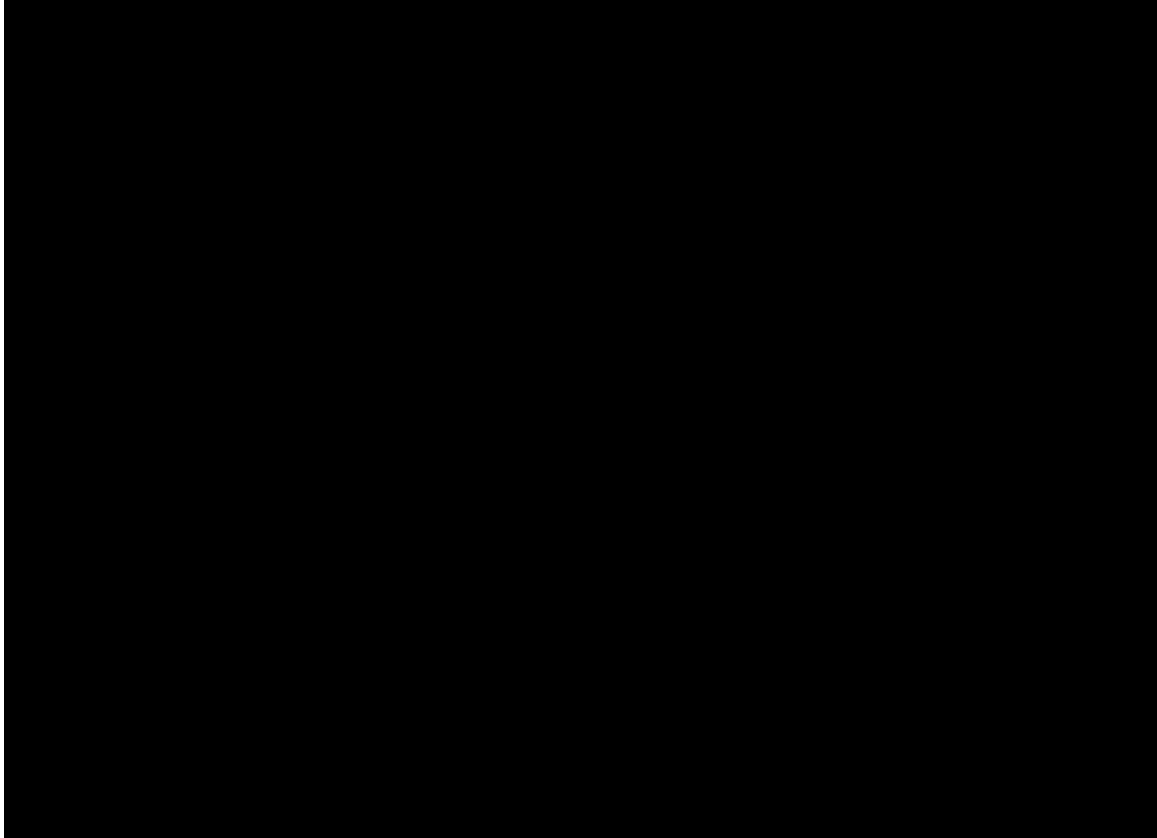
The STTAC developed a list of priority topics for genecology and seed transfer projects by species and type of work. Based on these priorities, a call for proposals was released by the MFR Tree Improvement Branch (TIB). Proposals were screened by a subcommittee of the STTAC and funding recommendations were made to the FGC. The FGC reconciled funding among subprograms and made a final decision regarding which projects will be supported.

The MFR Tree Improvement Branch manages the financial administration of approved projects through contracts or allocations to the appropriate MFR Branch. Project financial and progress reporting is managed through the TIB, and incorporated in annual FGC reports.

3.8.3 Activities and budget

The total budget allocated to the Genecology and Seed Transfer Subprogram for 2009/10 is \$300,000, in support of 16 projects (Table 9).

Table 9 Genecology and Seed Transfer Subprogram projects, recommended funding, and performance indicators (KPI) (\$ x 1000)



3.9 Administration

Administration of the FIA Tree Improvement Program is provided by the Tree Improvement Branch of the MFR. There are three components to this work:

- the administration of FIA funds allocated to subprograms managed by the MFR, including Tree Breeding, OTIP, Genecology and Seed Transfer, Extension and Communication, Pest Management, and Genetic Resource Information Management,
- the administration of contracts with successful proponents through the OTIP and Genecology and Seed Transfer proposal calls, and with universities and SelectSeed Company Ltd.,
- support for the business of the FGC, including scheduling meetings, assistance with information distribution, and dealing with queries and planning.

3.9.1 Costs

The costs for MFR administration are reviewed by the FGC, and a recommendation is made for support under FIA. The administration budget is approved by the FGC in conjunction with other FIA Tree Improvement Program budget items.

3.9.2 Management

Overall program management is carried out on behalf of the Forest Genetics Council by the FGC Program Manager working for SelectSeed Company Ltd. This work includes planning, coordination of committees, Business Plan development, reporting, correspondence, and representing the FGC in daily business. The MFR Tree Improvement Branch provides administrative support, overall financial management, and assistance with the coordination of FGC business.

3.9.3 Activities and Budget

The 2009/10 budget for the Administration Subprogram is \$15,000. This amount includes all program administration costs incurred by the MFR Tree Improvement Branch.

3.9 Incremental projects

Projects listed in Table 10 were approved by the FGC, and are supported through FIA FGCM funds. Only projects not directly managed through an existing subprogram (listed above) are described. Each project received review through a FGC steering committee set up to provide advice on the specific project.

Table 10 2009/10 projects not listed under subprogram activities and budgets.

Project	FIA Budget (\$ x 1000)	Delivery mechanism	Description	Project development and reporting process
Applied Tree Improvement and Biotechnology (UBC)	160	MFR / UBC Contribution Agreement	Multiple projects, including methods for estimating seedlot parental contribution and nursery seed utilization improvement in nurseries	<ul style="list-style-type: none"> • Subcommittee review and recommendation to the FGC • Reports to Subcommittee
Cone induction and reproductive biol. (UVic)	139	MFR / UVic Contribution Agreement	Lodgepole pine and Douglas-fir reproductive biology and hormonal methods for cone induction	<ul style="list-style-type: none"> • Subcommittee review and recommendation to the FGC • Reports to Subcommittee
Total	\$299			

3.10 Budget Summary

A Forest Investment Account Tree Improvement Program budget allocation of \$5.0 million is approved for the 2009/10 fiscal year, and is summarized in Table 11.

Table 11 2009/10 budget summary for Forest Investment Account contributions to subprograms (\$ x 1000).

Subprogram	Allocation (\$ x 1000))
Genetic Conservation	396
Tree Breeding	2,032
Operational Tree Improvement Program (OTIP)	747
Extension and Communication	101
Genetic Resource Information Management	115
Seed Orchard Pest Management	360
Expansion of Orchard Seed Supply (SelectSeed Ltd.)	710
Genecology and Seed Transfer	300
Administration (Tree Improvement Branch)	15
Incremental projects (see table 9)	299
Total FIA Forest Genetic Conservation and Management Program Contribution	5,000

4.0 Funding and Administrative Mechanisms

This section outlines the agreements through which the Forest Investment Account Forest Genetic Conservation and Management Program funds activities in the FGC Business Plan.

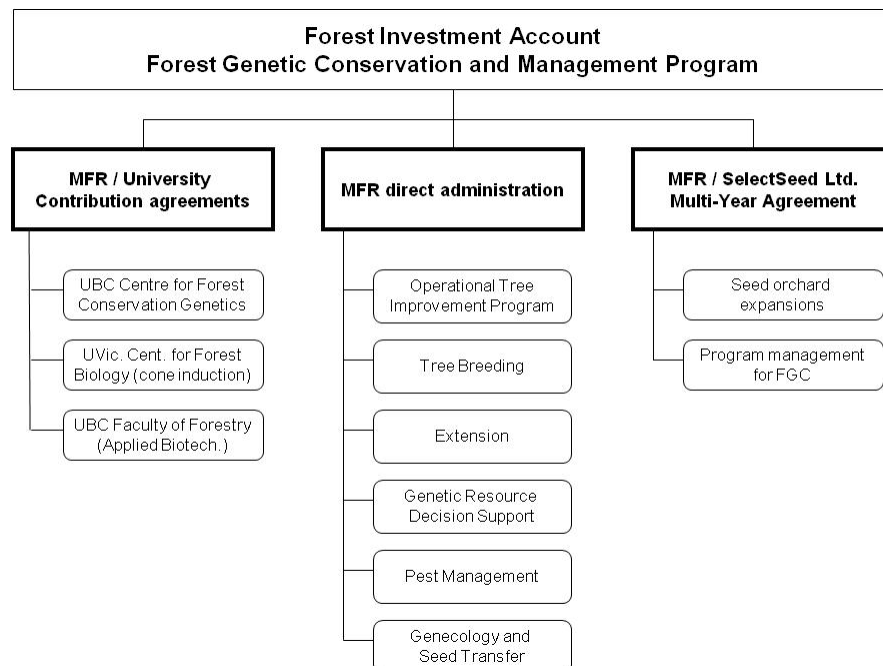
4.1 Funding Agreements

The Forest Investment Account Forest Genetics Conservation and Management program is administered by the Tree Improvement Branch of the Ministry of Forests and Range. FGC Business Plan activities are supported through the following administrative mechanisms:

- MFR/SelectSeed Co. Ltd. Multi-Year Agreement and Transfer Letter
- MFR contracts
- MFR/University of BC Contribution Agreements
- MFR/University of Victoria Contribution Agreement
- MFR/University of Northern BC Contribution Agreement
- MFR direct management and administration

The subprograms associated with each of the mechanisms are shown in Figure 4. Resources from other agencies include in-kind facilities, staff and direct funds. Seed sales from orchards also provide revenue to support seed production. Only Forest Investment Account funding is detailed in this Business Plan.

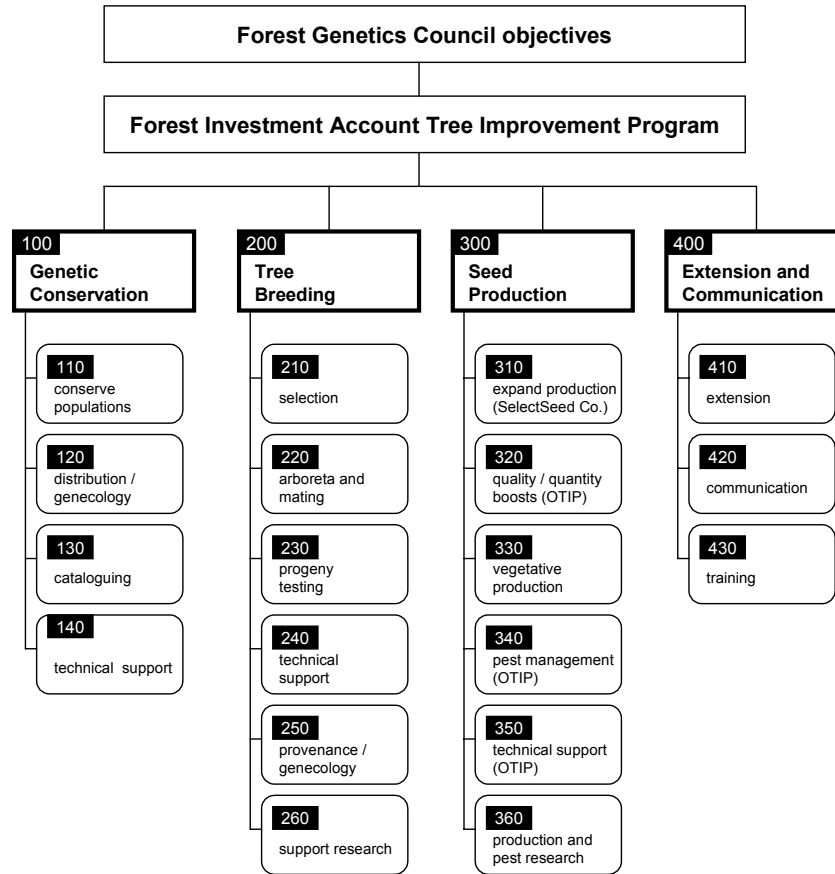
Figure 4 Administrative mechanisms for the delivery of the FIA Forest Genetics Conservation and Management Program.



4.2 Monitoring and Reporting

Monitoring progress is an important objective of the FGC program. All FIA funded activities report on performance relative to criteria. In addition, progress is measured at the provincial level for all FGC activities to determine progress towards long-term objectives. To facilitate monitoring, activities are categorized using the work breakdown structure shown in Figure 5.

Figure 5 Work breakdown structure for program administration, monitoring and management.



4.2.1 Reporting for the Genetic Conservation, Extension and Communication, and Genetic Resource Information Management Subprograms

For the Genetic Conservation, Extension, and Genetic Resource Decision Support subprograms, the TAC chair or subprogram leader will submit written reports on activities and spending to the MFR Tree Improvement Program Administrator on or before October 30, 2009 and April 30, 2010.

4.2.2 Reporting for the Tree Breeding, OTIP, SelectSeed, and Genecology and Seed Transfer Subprograms

Progress for the Tree Breeding, OTIP, SelectSeed, and Genecology and Seed Transfer subprograms will be reported using key performance indicators (KPI) and spending. Progress

towards FGC objectives for increasing genetic worth and increasing the use of orchard seed will be reported using provincial summaries.

4.2.3 Project-Level Reporting

Project activities are organized into the categories identified in the work breakdown structure (Figure 5) (e.g., 320 Quality/Quantity Boosts). Individual projects (e.g., 321 grafting for ramet replacement) will report on KPIs (e.g., number of grafts made) and spending for each year of implementation. Tree Breeding and OTIP project reports will be summarized to formats shown in Tables 2 and 3, and the Genecology and Seed Transfer Subprogram will be summarized in the format shown in Table 9. Reporting for technical support projects, which are more variable in nature, will use indicators designed for each project. Where actual work or spending differs substantially from that planned, variance reports explaining the reasons will be required of project proponents. Work quality will be periodically audited through Review Committees and site visits.

4.2.4 Provincial-Level Reporting

Activities and spending will be summarized at the provincial level using KPI and budgets from project-level reports. In addition, actual progress towards FGC objectives 2 and 3 will be summarized across all SPUs using SPU-level reports.

Table 12 identifies the reporting requirements for Tree Breeding and OTIP subprograms.

Table 12 List of reports, responsibilities, distribution, and preparation dates for FIA-supported Tree Breeding, OTIP, Genecology and Seed Transfer, and SelectSeed projects.

Type of report	Prepared by	Prepared for	Distribution	Dates due
Interim project status	Project leader	MFR program administrators for early FY reallocations	On request	Aug 1
Project level	Project proponent	MFR Program Administrator	On request	Oct 30 April 30
Mid-Year Progress Report	Program Admin. MFR; FGC Program Manager	FGC; MFR	FGC; TACs; FGC website	Nov 30
Annual report and progress summary	FGC Program Manager, Program Administrator MFR; project leader contributions	FGC; MFR Chief Forester; TACs; general distribution	FGC members; TACs; FIA administrators; MFR; general distribution; FGC website	Oct 15

* Note: The Interim Project Status report is an informal report intended only to identify projects that are not progressing as planned, and for which funds may be re-allocated.

Appendix 1: Seed Planning Units and Categories

The following table lists seed planning units and their activity category. Note that SPUs are adjusted for new seed transfer standards which came into effect in the fall of 2008. Seed use numbers shown graphically in each species plan, and reflect these new seed transfer standards.

All provincial SPUs are grouped to one of four categories using a protocol developed by the FGC Strategic Planning Committee. The protocol evaluates SPUs based on the net present value of tree improvement investments, feasibility criteria, uncertainty, opportunities, and seed transfer information needs. Listed SPUs have a Species Plan in Appendix 3, and only include SPUs falling into categories 1 to 3. Annual planting is the 5-year mean of 2005–2009 seedling requests to SPAR. Categorization for SPUs # 6, 8 and 15, are based on an expectation of increased planting with pest resistant material.

Program categories include;

1. Advanced-generation program,
2. First-generation program,
3. Genecology, and
4. No genetics program.

#	Seed planning unit (SPU)			Program	Value
	Species	SPZ	Elev. band (m)	category	rank
1	Fdc	M	1-900	1	1
2	Cw	M	1-700	1	4
3	Hw	M	1-600	1	10
4	Sx	NE	1000-1700	1	11
5	Sx	NE	1700-2100	1	7
6	Ss	M	1-500	1	3
7	Pli	NE	700-1600	1	5
8	Pw	M/SM	1-1000	1	13
9	Ba	M	1-1000	3	41
10	Pli	TO	700-1400	1	12
11	Yc	M	1-1100	1	17
12	Pli	PG	700-1400	1	2
13	Lw	NE	700-1600	1	14
14	Sx	PG	600-1400	1	6
15	Pw	KQ	500-1400	1	16
16	Pli	TO	1400-1600	2	25
17	Pli	BV	700-1400	1	9
18	Pli	CP	700-1300	1	8
19	Fdc	SM	200-1000	2	29
20	Pli	NE	1600-2000	3	38
21	Fdi	NE	400-1200	1	18
22	Fdi	NE	1000-1800	2	35
23	Sx/Ss	SM/NST	all	3	44
24	Hw	M	600-1100	2	23
25	Sx	EK	750-1900	1	20
26	Pli	PG	1400-2000	3	40
27	Cw	SM	200-1000	3	42

#	Seed planning unit (SPU)			Program	Value
	Species	SPZ	Elev. band (m)	category	rank
28	Sx	TO	1300-2100	1	19
29	Pli	EK	1500-2000	3	39
30	Sx	TO	700-1500	2	36
31	Fdc	M	900-1200	2	31
32	Pli	EK	800-1500	2	30
33	Cw	M	700-1500	2	27
34	Lw	EK	800-1700	1	21
35	Sx	BV	500-1400	1	15
36	Bg	M	1-700	3	45
37	Fdi	QL	700-1400	2	34
38	Hw	M north	1-600		
39	Fdi	EK	700-1400	2	33
40	Sx	PR	650-1200	2	22
41	Fdi	PG	700-1200	2	32
42	Sx	PG	1200-1550	2	26
43	Fdi	CT	600-1400	2	37
44	Sx	NE	1-1000	2	28
45	Pli	BB/CHL	All	3	43
46	Bl	all int.	all	3	46
47	Bn	M	all	3	47
48	Aspen/birch/poplar	Interior	-	3	48
49	Alder/poplar/maple	Coast	-	3	49
50	Lw	NE	1200-1800	2	
51	Py	S. Interior	300-1200	2	NA

Note regarding pending Seed Zones

Seed zones are adjusted from time to time based on new research information, or on administrative needs. For information updates on seed zones, please contact Leslie McAuley of the Ministry of Forests and Range Tree Improvement Branch (leslie.mcauley@gov.bc.ca)

Appendix 2: Forest Genetics Council and Technical Advisory Committee Members

Forest Genetics Council of BC

Name	Affiliation	Representing
Brian Barber (Co-Chair)	MFR, Tree Imp. Br.	Ministry of Forests and Range Co-Chair
Kerry McGourlick	Western Forest Products Ltd.	Industry Co-Chair
Judi Beck	Canadian Forest Service	Canadian Forest Service
Dr. Rob Guy	University of BC	Universities
Scott King	Lousiana Pacific	Southern interior industry
Joe Leblanc	Interfor Ltd.	Coast industry
Tim Lee	Vernon Seed Orchard Co.	Interior Technical Advisory Committee
Al McDonald	BC Timber Sales	Ministry of Forests and Range and BCTS
Bruce MacNicol	West Fraser Timber Ltd.	Interior industry orchard owners
Madeline Maley	MFR, SI Region	Ministry of Forests and Range
Larry Promnitz	Consultant / TimberWest Forests Ltd.	Coast industry orchard owners
Gerry Still	MFR , Research Br.	Ministry of Forests and Range
Annette van Niejenhuis	Western Forest Products Ltd.	Coastal Technical Advisory Committee
Gernot Zemanek	Roserim Forest Nursery	Woodlots and nurseries

Genetic Conservation Technical Advisory Committee

Name	Affiliation	Name	Affiliation
Dave Kolotelo (Chair)	Ministry of Forests and Range	Tory Stevens	Ministry of Environment
Dr. Sally Aitken	University of BC	Dr. Tongli Wang	University of BC
Lee Charleson	Ministry of Forests and Range	Jack Woods	SelectSeed Ltd. / FGC
Dr. Scott Green	University of Northern BC	Alex Woods	Ministry of Forests and Range
Dr. Andreas Hamann	University of Alberta	Dr. Alvin Yanchuk	Ministry of Forests and Range
Jodie Krakowski	Ministry of Forests and Range		

Coastal Technical Advisory Committee Ministry of Forests and Range

Name	Affiliation	Name	Affiliation
Annette van Niejenhuis (Chair)	Western Forest Products	David Reid	Ministry of Forests and Range
Dr. Sally Aitken	University of BC	Dr. John Russell	Ministry of Forests and Range
Charlie Cartwright	Ministry of Forests and Range	Brian Saunders	Island Timber Ltd.
Tim Crowder	TimberWest Forests	Dr. Michael Stoehr	Ministry of Forests and Range
Diane Douglas	Ministry of Forests and Range	Dr. Joe Webber	ProSeed Consulting
Dr. John King	Ministry of Forests and Range	Dr. Chang-yi Xie	Ministry of Forests and Range
Dave Kolotelo	Ministry of Forests and Range	Dr. Alvin Yanchuk	Ministry of Forests and Range

Interior Technical Advisory Committee

Name	Affiliation	Name	Affiliation
Tim Lee (Chair)	Vernon Seed Orchard Co.	Mike Madill	MFR, SI Region
Dr. Michael Carlson	MFR, Research Branch	Al McDonald	BC Timber Sales Ltd.
Krista Copeland	Tolko Ltd.	Anna Monetta	MFR, NI Region
Keith Cox	MFR, Tree Imp. Branch	Wayne Nuyens	West Fraser Timber Ltd.
Vince Day	Canadian Forest Products	Greg O'Neill	MFR, Research Branch
Diane Douglas	MFR, Tree Imp. Branch	Doug Perdue	Dunkley Lumber
Hilary Graham	Pacific Regeneration Technologies	David Reid	MFR, Tree Imp. Branch
Dr. Chris Hawkins	University of Northern BC	Alistair Schroff	Burns Lk. Community Forest
Barry Jaquish	MFR, Research Branch	Chris Walsh	MFR, Tree Imp. Branch
Dave Kolotelo	MFR, Tree Imp. Branch		

Extension Technical Advisory Committee

Name	Affiliation	Name	Affiliation
Diane Douglas (Chair)	MFR, Tree Imp. Branch	Roger Painter	Mr. GreenGenes consulting
Dr. Michael Carlson	MFR, Research Branch	Jill Peterson	MFR, Research Branch
Charlie Cartwright	MFR, Research Branch	Debbie Poldrugovac	MFR, Tree Imp. Branch
Keith Cox	MFR, Tree Imp. Branch	Don Summers	DWSummers & Co
Tim Crowder	TimberWest	Kathie Swift	FORREX
Peter Forsythe	Huckleberry Forestry Ltd.	Dave Trotter	Min. of Agriculture and Lands
Hilary Graham	Pacific Regeneration Technology	Nick Ukrainetz	MFR, Research Branch
Tia Wagner	Vernon Seed Orchard Co. Ltd.	Jack Woods	SelectSeed Ltd. / FGC

Pest Management Technical Advisory Committee

Name	Affiliation	Name	Affiliation
Dr. Robb Bennett (Chair)	MFR, Tree Imp. Branch	Dr. Staffan Lindgren	University of Northern BC
Jim Corrigan	MFR, Tree Imp. Branch	Dr. Ward Strong	MFR, Research Branch
Tim Crowder	TimberWest Forests Ltd.	Chris Walsh	MFR, Tree Imp. Branch
Dan Gaudet	Vernon Seed Orchard Company	Jack Woods	SelectSeed Ltd. / FGC
Dr. Peter de Groot	Canadian Forest Service		

Appendix 3: Species Plans

Species plans present information for seed planning units with active or planned breeding programs, seed orchards, or genecology work, including SPUs that are not supported through FIA Tree Improvement Program funding. Information presented includes breeding strategy (where applicable), seed orchard production forecasts, gain forecasts, historic seed use, seed in storage, genetic conservation status, and genecology/seed transfer projects. The plans are organized by species.