



**Forest Genetics Council of BC
Business Plan 2008 – 2009**

**Compiled and edited by
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FGC Program Manager**

Message from the FGC Co-Chairs

We are pleased to present the Forest Genetics Council's 2008/09 Business Plan for implementing the Forest Investment Account (FIA) Forest Genetics Conservation and Management Program (FGCM). It is noteworthy that the name of this program was changed recently from the FIA Tree Improvement Program to better represent the broad range of activities undertaken. This is the eighth consecutive Business Plan of the Forest Genetics Council of BC, and it is a product of substantial co-operative effort by many people in government, industry, and universities throughout the province.

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. The FGCM Program leverages other investments by industry, government and universities, and is a key part of the integrated planning associated with the provincial production and delivery of select seed to operational planting programs, of knowledge and program development in the area of forest genetics, and of policy recommendations to the Provincial Chief Forester. This document contains overview plans for 50 important seed planning units (SPU). These plans outline breeding and seed orchard programs, expected orchard seed supply and gain over the next 20 years, historic seed use, seed in storage, and key genetic conservation statistics. The SPU plans are useful reference documents for seed and program planning.

Seed supply issues associated with the provincial mountain pine beetle epidemic remain at the forefront in the coming year. In particular, meeting needs for select lodgepole pine seed is an ongoing challenge. Pine orchard expansions put in place in the early part of the decade by Council-owned SelectSeed Ltd. are beginning production, but demand still greatly exceeds supply. Forecasts of seed needs and orchard development needs is also a substantial issue, as the combination of industry economic difficulties, shifting and reduced harvest in the post-MPB era, and increasing demand from government-supported planting programs developed in response to the MPB, are creating a level of uncertainty regarding longer-term seed needs and orchard development needs. These will continue to be evaluated, with responses from individual orchard operators or collectively through the FGC.

During the period of this plan, the FGC will be developing a new five-year strategic plan for the period 2009 to 2014. This plan will require careful analysis of all aspects of forest genetics programs, from seed needs, timber supply priorities, conservation needs, seed transfer guidelines, and response to climate change. Knowledge development must be strategically linked to the operational needs of the broad spectrum of programs that Council oversees. Climate-change response is a particularly significant issue that requires expansion of genecology research to coordinate with climate modeling and seed-transfer policy developments. Council is reviewing this program area, and changes in the delivery mechanism and priority-setting process are likely.

The cooperative investments associated with this program are dependant upon the hard work of members of Council and affiliated committees, as well as the dedication of staff in the MFR, industry, and universities. Their combined effort is greatly appreciated, and we would like to recognize all involved as we head into another year of cooperative program delivery.

John Elmslie, RPF
FGC Co-chair
Winton Global 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
March 12, 2008

Table of Contents

1.0	Introduction	1
1.1	Forest Genetics Council of BC	1
1.2	A Co-operative Effort.....	1
1.3	Forest Investment Account Forest Genetic Conservation and Management Program.....	2
2.0	Process for Business Plan Development.....	4
2.1	The Role of Council and its TACs	4
3.0	Subprogram Planning and Management.....	6
3.1	Genetic Conservation Subprogram	6
3.2	Tree Breeding Subprogram.....	7
3.3	Operational Tree Improvement Program (OTIP).....	9
3.4	Expansion of Orchard Seed Supply Subprogram (SelectSeed Co. Ltd.).....	12
3.5	Extension and Communication Subprogram	14
3.6	Genetic Resource Decision Support Subprogram.....	15
3.7	Pest Management Subprogram	17
3.8	Administration	18
3.9	Incremental projects	19
3.10	Budget Summary	20
4.0	Funding and Administrative Mechanisms	21
4.1	Funding Agreements.....	21
4.2	Monitoring and Reporting.....	22
Appendix 1:	Seed Planning Units and Categories.....	24
Appendix 2:	Forest Genetics Council and Technical Advisory Committee Members.....	26
Appendix 3:	Species Plans	28

List of Figures

Figure 1	Relationship between the FGC Strategic Plan, Forest Investment Account FGCM, and business plan development through FGCM subprograms.....	3
Figure 2	The link between FGC objectives, planning processes, and the subprograms of the FGC Business Plan.....	5
Figure 3	Organizational relationships among SelectSeed Ltd., Forest Investment Account, Forest Genetics Council, and the B.C. Forest Genetics Society.....	12
Figure 4	Administrative mechanisms for the delivery of the FIA FGCM Program.....	21
Figure 5	Work breakdown structure for program administration, monitoring and management.....	22

List of Tables

Table 1	Conservation subprogram budget for 2008/09..	7
Table 2	2008/09 budgets (\$ x 1000) and KPI by seed planning unit for tree breeding, genecology, and associated technical support activities.....	10
Table 3	2008/09 budgets and KPI by seed planning unit for OTIP projects.	11
Table 4	SelectSeed Company Ltd. 2008/09 budget by category.....	13
Table 5	Orchards under contract to SelectSeed Company Ltd.	14
Table 6	Extension and communication projects and budgets for 2008/09.....	15
Table 7	Genetic Resource Decision Support subprogram projects and budget for 2008/09	16
Table 8	Pest Management Subprogram projects for 2008/09.	18
Table 9	2008/09 projects not listed under subprogram activities and budgets.	19
Table 10	2008/09 budget summary for Forest Investment Account contributions to subprograms (\$ x 1000).	20
Table 11	List of reports, responsibilities, distribution and preparation dates for FIA-supported Tree Breeding and OTIP projects.	23

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 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 goals and objectives and to oversee the development and delivery of a Business Plan to fulfill these goals. Council's goal and objectives, as stated in the FGC Strategic Plan for the period 2004 to 2008, are:

To lead the cooperative management of tree genetic resources in British Columbia consistent with scientific and conservation principles, by:

1. Increasing the average volume gain of select seed¹ used for Crown land reforestation to 20% by the year 2020.
2. Increasing select seed use to 75% of the provincial total sown by 2013.
3. Supporting genetic conservation research and the cataloguing of indigenous-tree genetic resources.
4. Coordinating stakeholder activities and securing resources to meet Business Plan priorities.
5. Monitoring progress in genetic resource management activities.

The FGC Business Plan defines the annual set of activities and budgets needed to achieve these objectives. A new Strategic Plan for the period 2009 to 2014 will be developed during the year, and will set out objectives to lead the program forward in the next half-decade.

1.2 A Co-operative Effort

Forest genetic resource management in BC is a co-operative effort. The MFR leads tree breeding activities, while 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

¹ "Select" describes seed and vegetative material having a level of genetic gain ($GW > 0$). Seed and vegetative lots derived from orchards and production facilities (genetic Class A) and superior provenances (genetic Class B+) are generally considered to be select.

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.

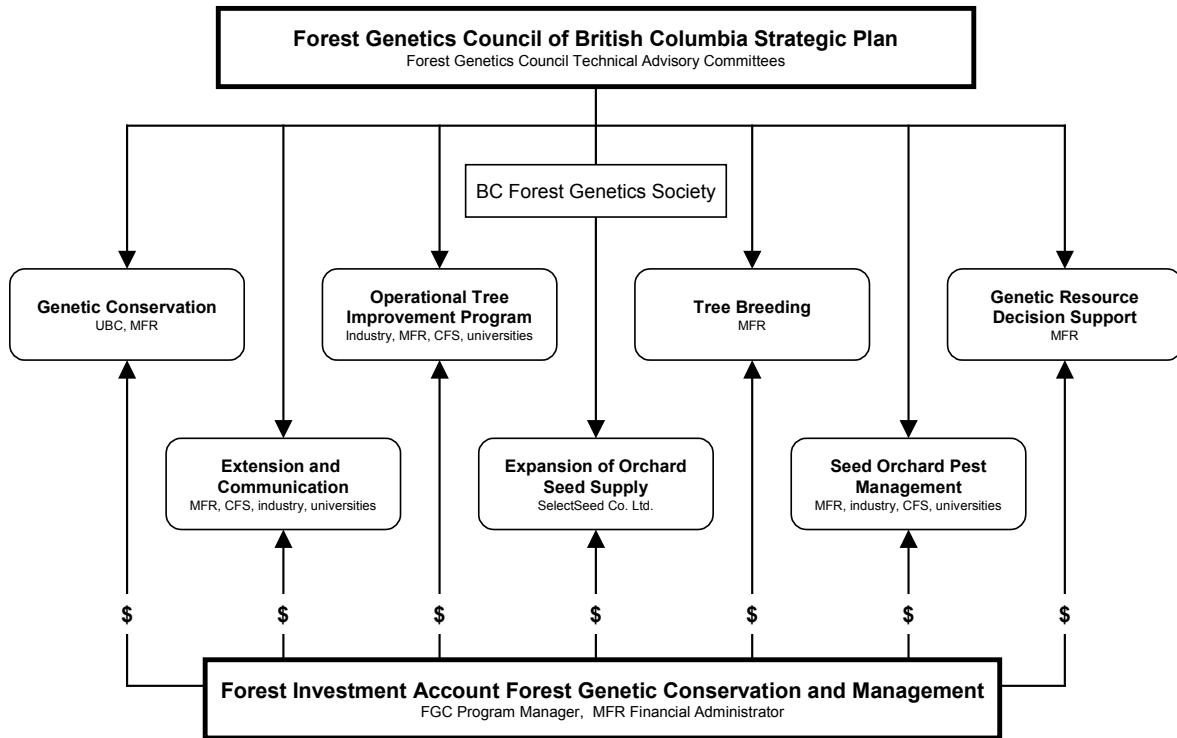
FIA investments are guided by the Forest Investment Council, and administered by the MFR. The MFR has decision-making authority with respect to FIA expenditures, and with assistance from other provincial government ministries, establishes objectives and delivery standards.

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, and by the FGCM Program Administrator on behalf of the MFR .

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 (TACs) 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 package that addresses Council's objectives.

Council's six TACs lay the groundwork for the FGC Business Plan:

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

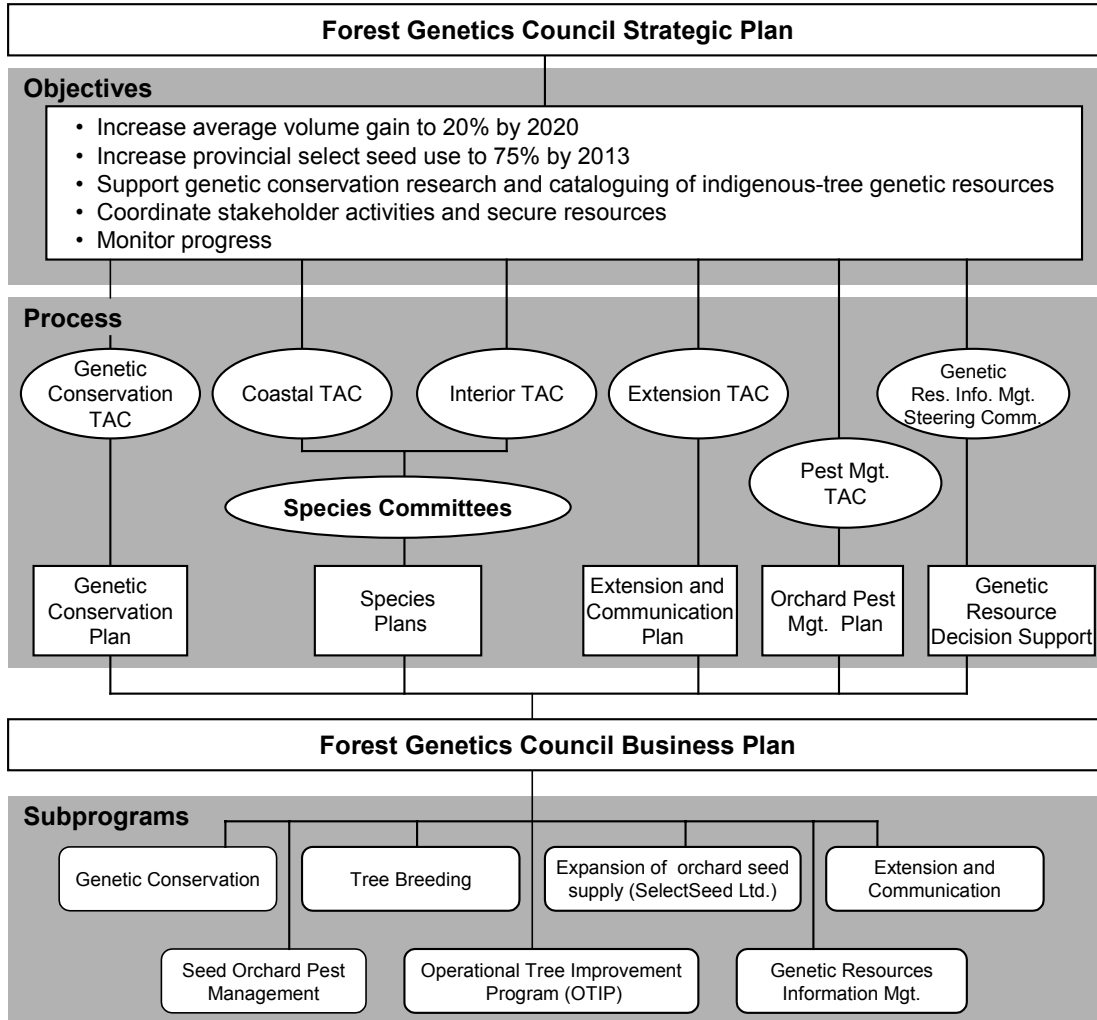
In addition to the six advisory committees, Council establishes other committees as needed to advise on shorter-term projects such as cone induction research (University of Victoria), applied forest genetics and biotechnology research (University of BC), and post-doctoral fellowships in forest genetics (University of Northern 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 the 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. Since 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 some 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 allows leveraging of funds with other provincial, national, and international agencies in the area of conservation genetics. Staff at the Centre continue to develop the ClimateBC model that is now widely used for understanding climate-change impacts in forest ecosystems.

In the 2008/09 fiscal year, the Centre will receive \$270,000 to continue cataloguing tree genetic resources, investigate the genetic structure of non-commercial tree species, model climate change impacts and seed-transfer options, and contribute knowledge and resources to ongoing planning and policy developments related to climate change. In addition, the Centre will receive \$33,000 (including overhead) for *ex-situ* seed bank collections that will be added to the genetic conservation seed bank maintained at the Provincial Tree Seed Centre (Table 1). In addition to CFCG work, staff at the Provincial Tree Seed Centre will carry out two projects related to the conservation of indigenous tree species (Table 1).

A plan prepared by the GCTAC and accepted by the FGC in 2007 included a recommendation for a full-time person in the MFR Research Branch who would be responsible for a number of support activities in the area of genetic conservation, including ground-truthing population estimates derived through the cataloguing process and developing collaborations with other agencies to coordinate conservation activities and approaches. This position has not yet been

established, and is subject to further discussion by the MFR, the GCTAC and the FGC. In anticipation of completing these discussions, an additional budget amount of \$100,500 was set aside to support the conservation position and expenses.

Table 1 contains the Conservation subprogram budget for 2008/09. In addition, in-kind contributions from UBC will include staff time, lab and office space, computing facilities and IT support. Industry and MFR contributions will include staff time and logistical support for specific projects.

Table 1 Conservation subprogram budget for 2008/09. Only activities funded by the Forest Investment Account are shown here.

Project	Budget (\$)	Products
CFCG Projects		
Cataloguing conservation status	44,640	Updated report on the conservation status of 50 indigenous tree species
Testing climate-change predictions for whitebark and lodgepole pine	41,000	2 progress reports
Genecology of Garry oak	34,000	1 progress report
Population genetics and genecology of Pacific dogwood	18,851	1 progress report
Ex situ seed collections to fill conservation gaps identified in the cataloguing process	30,000	1 progress report; seed in storage
Seedlot response to climate variables	52,775	1 progress report
Other expenses		
Assistant Director	19,250	Activities coordinated
Extension	8,928	100 clients served / 1 website maintained
CFGC Expenses (office, lab, computer)	25,000	
8% UBC overhead	28,556	
Total approved CFCG budget	303,000	
Provincial Tree Seed Centre projects		
Seed bank testing	2,500	1 report
Bigleaf maple storage	5,000	1 report
Conservation position and expenses	100,500	1 report
Total Conservation Subprogram budget	\$ 411,000	

3.2 Tree Breeding Subprogram

The Tree Breeding Subprogram focuses on the continued development of improved 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 2007. 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 March 12, 2008.

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 2008/09 budget for the Tree Breeding Subprogram is \$2.421 million. Table 2 contains approved budgets and key performance indicators (KPI) for breeding activities by SPU. Approximately of \$1,080,000 of the total budget will cover MFR Research Branch salary costs, and an additional \$59,000 worth of projects will be risk-managed by the Research Branch.

About 70% the effort and funding will go towards tree breeding programs, including the establishment, maintenance, and measurement of progeny and provenance tests. The remainder of the budget is for genecology research and associated research activities. Increasing genecology research for broadleaf species is reflected in this budget.

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 4). Species plans outline seed and cutting 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 Ministry of Forests and Range .

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 2008/09 OTIP budget is \$760,000, with a further \$31,000 in approved projects to be funded through risk management (expected project under-spending during the year). Table 3 outlines approved OTIP budgets and KPI for all seed planning units.



Table 3 2008/09 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.

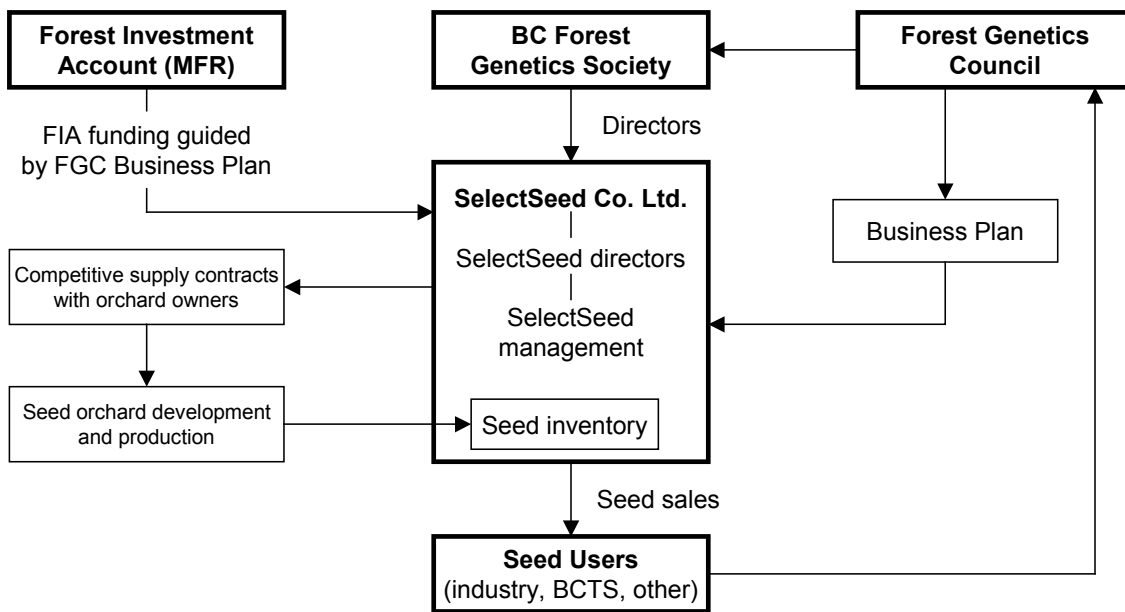
Seed Planning Unit				320 Quality / Quantity Boosts												330 Cuttings		340 Pest Management						350 Tech Sup.		Total \$ x 1000		
				321		322		323		324		325		326		327		331		341		342		343			# of projects	
#	Spp	SPZ	Elev (m)	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	KPI	\$	\$		
1	Fdc	M	1-710	1	4	170	1	1027	2	470	6	470	8	3010	8	8442	22										72	
2	Cw	M	1-600			3935	7	75	1	75	1	866	7	540	4	1413	5										40	
3	Hw	M	1-600									417	5	237	1	1200	4										10	
4	Sx	NE	1000-1500	50	0	118	0	253	3	29	0	549	1	874	3	287	1										43	
5	Sx	NE	1500-1900	50	0	90	0	159	2	21	0	484	1	828	2	252	1										14	
6	Ss	M	1-500									400	4			553	3										8	
7	Pli	NE	700-1400	70	1	1548	3	1733	25	32	1	3698	7			814	2										110	
8	Pw	M/SM	1-1400									600	4														40	
9	Ba	M	1-1000																								0	
10	Pli	TO	700-1400	140	1	140	0	149	0	82	1	6125	9			908	1										27	
11	Yc	M	1-1100													4358	5	13731	13								45	
12	Pli	PG	700-1200									6500	9			1457	6										33	
13	Lw	NE	700-1400	40	1	8	0	83	1	37	1					421	1										11	
14	Sx	PG	600-1200			2300	4																				16	
15	Pw	KQ	500-1400			185	0	17	0			1916	9			571	1										33	
16	Pli	TO	1400-1600									3459	7			3459	2										90	
17	Pli	BV	700-1200					79	1			5602	14			1989	5										48	
18	Pli	CP	700-1100									4646	7			1000	3										21	
19	Fdc	SM	400-1000							350	5					939	4										9	
20	Pli	NE	1400-2000																								0	
21	Fdi	NE	400-1000									1900	4	1900	3												13	
22	Fdi	NE	1000-1600					22	0			1363	4	454	2	756	1										19	
23	Sx/Ss	SM/NST	all																								0	
24	Hw	M	600-1100																								0	
25	Sx	EK	750-1700																								0	
26	Pli	PG	1200-2000																								0	
27	Cw	SM	200-1000																								0	
28	Sx	TO	1300-1900									1513	5			1513	2										12	
29	Pli	EK	1500-2000																								0	
30	Sx	TO	700-1300																								0	
31	Fdc	M	700-1200	5	0	417	2	250	1					165	2	250	2										7	
32	Pli	EK	800-1500									1337	4			514	1										11	
33	Cw	M	600-1500																								0	
34	Lw	EK	800-1500																								0	
35	Sx	BV	700-1200	100	1	149	0	360	4			434	2	1067	3	177	0										17	
36	Bg	M	1-700																								0	
37	Fdi	QL	1-600									4	3	120	0												7	
39	Fdi	EK	700-1400																								0	
40	Sx	PR	650-1200									2	1														3	
41	Fdi	PG	700-1000									7	4	170	0												10	
42	Sx	PG	1200-1550																								3	
43	Fdi	CT	600-1200									3	2	393	1												12	
44	Sx	NE	1-1000									400	1			225	1										7	
45	Pli	BB/CHL	all																								0	
46	Bl	all int.	all																								0	
47	Bn	M	all																								0	
48	At/Ep/Ct	interior	-																								0	
49	Dr/Ct/M	Coast	-																								0	
50	Lw	NE	1200-1800																								0	
Totals				456	8	9060	18	4128	41	1175	16	42695	120	9758	29	31498	72	13731	13	120791	230	47366	22	95199	45	19	177	791
Risk managed amount																								21				
Total FIA supported budget																								770				

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, ecologically 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



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 4) 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,² and is limited by the terms of the SelectSeed Multi-Year Agreement with the MFR. Investments in new orchards

² The Board is comprised of representatives from the private sector.

followed a request for proposal (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 12, 2008.

3.4.3 Activities and Budget

In 2008/09, 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.

Activities for the fiscal year include planting 955 ramets in orchards, and the propagation and holding of 1,310 ramets. Ramets currently planted in the 14 seed orchards, combined with new planting during 2008/09, will result in approximately 34,800 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. Development of a new five-year Strategic Plan in conjunction with Council will also be focus during the year.

Spending for 2008/09 is projected at \$875,000, of which \$770,000 will be FIA supported (Table 4). This is down from an forecast total spending of \$932,000 in 2007/08. The decrease is the result of lower costs for orchard management. Seed sale revenues are forecast at \$67,000; lower than actual sales during the 2007/08 fiscal year . Forecasts are based on long-term production curves for similar orchards, but annual production can vary widely from forecasts. FIA costs for this subprogram are down \$99,000 from 2007/08, and are expected to drop in future years as seed production increases and seed-sale revenue displaces costs associated with the SelectSeed Multi-Year Agreement.

Table 4 SelectSeed Company Ltd. 2008/09 budget by category

Category	expenses / income
Expenses	
Existing orchard development contracts	588,167
Propagation and holding	15,833
Management and administration (FGC and SelectSeed)	218,000
NSERC Industrial Chair support	10,000
Crop production / seed extraction	43,000
Total Expenditures	875,000
Income	
Seed sales	67,000
Interest from investments	30,000
Total Income	\$97,000
Total MYA support	\$770,000

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	995	Armstrong - Grandview
10	Pli	TO low	4796	4621	Armstrong - Grandview
12	Pli	PG low	4884	4633	Kettle Valley
12	Pli	PG low	4500	4500	Vernon
16	Pli	TO high	3508	3508	Armstrong - Eaglerock
17	Pli	BV low	3000	3000	Vernon
17	Pli	BV low	3100	3100	Sorrento
18	Pli	CP low	2000	1952	Sorrento
18	Pli	CP low	3100	2997	Kettle Valley
TOTALS			35,147	34,558	

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. Members are involved with forest genetic resource management and the use of improved reforestation materials.

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. Project ideas or proposals from any interested party are considered.

Projects are undertaken through contract delivery, 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 2008/09 is \$32,000, 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 2008/09

Project	Budget (\$)
ETAC meetings	500
TICtalk newsletter	3,500
Whitebark pine rack card	2,000
Client survey	2,000
Update of Forest Genetics Council display	5,000
White pine workshop	3,500
Forest genetics field tours	2,500
Publication: Anatomy and Physiology of Conifer Tree Seed (Nursery Tech. Series)	5,000
Spruce manual for seed orchardists	3,000
Administration and opportunities	5,000
Subtotal	32,000
Salary for extension specialist (MFR – Tree Improvement Branch)	\$85,000
Total FIA Tree Improvement Program Contribution	\$117,000

3.6 Genetic Resource Decision Support Subprogram

The Genetic Resource Decision Support Subprogram (GRDS) supports FGC goals and objectives through the development of genetic resource conservation and management (GRM) decision support and 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. Projects in this subprogram include strategic planning and analysis, resource information management, decision support system planning, design and tool development, effectiveness evaluation and monitoring, and training and extension.

3.6.1 Planning

The primary objective of the GRDS Subprogram is to develop a provincial genetic resource information management system and decision support framework for the delivery of an effective GRM program. GRDS projects are developed and guided by the Genetic Resource Decision Support steering committee comprised of ministry, industry and academic representatives, and the FGC Program Manager.

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 with GRM decisions, information management, and activities. GRDS information management (IM/IT) business case and annual subprogram project plans and budgets are developed by the GRDS Steering Committee. 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 \$115,000 for 2008/09. Specific projects are listed in Table 7.

Table 7 Genetic Resource Decision Support subprogram projects and budget for 2008/09

Project	Budget (\$) *
1. Strategic Planning and Analysis Business case development for a new climate-based seed transfer system.	35,000
2. Resource Information Management Update data management protocols to meet data quality standards in preparation for climate-based seed transfer.	35,000
3. Monitoring and evaluation Development of new reports in support of performance monitoring for the 2009-2014 FGC Strategic Plan and State-of-the-Forest Report.	30,000
4. Training and Extension Development of web-based information for land-use planning and timber supply analyses. Training sessions, tutorial and guide development.	15,000
Total FIA Tree Improvement Program Contribution	115,000

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. Some projects were also rejected due to funding and timing issues.

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 2008/09 is \$420,000. 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 2008/09.

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	40,740	Progress report
<i>Leptoglossus occidentalis</i> (western conifer seedbug); visible and infrared light host detection (with SFU)	All except Cwr & Yc	33,653	Progress report
<i>Leptoglossus</i> mark, release, recapture (with UBC-Okanagan and UNBC)	All except Cwr & Yc	54,088	Progress report
<i>Adelgid</i> biology and impact (with UBC)	Sx, Fdi, Fdc, Lw, Pw	33,800	Progress report
Tests of systemic insecticides for cone and seed insect control	All	15,000	Progress report
Development of a cone and seed pest field guide	All	28,000	
Technical support for research scientist		12,804	
Research scientist lab operation costs		14,458	
Support for interior pest-management extension		24,457	Pest extension reports
MFR salary support for applied pest management specialist and pest research scientist	All interior	163,000	
Total budget		\$420,000	

3.8 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, Extension and Communication, Pest Management, and Genetic Resource Information Management,
- the administration of contracts with the University of BC, the University of Victoria, the University of Northern BC, Simon Fraser University, and SelectSeed Company Ltd.,
- support for the business of the FGC, including scheduling meetings, assistance with information distribution, and dealing with queries and planning.

3.8.1 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.

3.8.2 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.

3.8.3 Activities and Budget

The 2008/09 budget for the Administration Subprogram is \$55,000. This amount includes all program administration costs incurred by the MFR Tree Improvement Branch.

3.9 Incremental projects

Projects listed in Table 9 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 in Table 9. Each project received review through a FGC steering committee set up to advise on the specific project.

Table 9 2008/09 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)	245	MFR / UBC Contribution Agreement	Multiple projects, including methods for estimating seedlot parental contribution; co-ancestry in yellow cedar; nursery seed utilization improvement; and GRM activity monitoring at the landscape level.	<ul style="list-style-type: none"> • Subcommittee review and recommendation to the FGC • Reports to Subcommittee
Forest Genetics research at UNBC ³	150	MFR / UNBC Contribution Agreement	Two Post Doctoral Fellowships at UNBC (currently filled; projects under development)	<ul style="list-style-type: none"> • Subcommittee review and recommendation to the FGC • Reports to Subcommittee
Cone induction and reproductive biol. (UVic)	148.8	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	\$543.8			

³ Final year

3.10 Budget Summary

A Forest Investment Account Tree Improvement Program budget allocation of \$5.613 million is approved for the 2008/09 fiscal year, and is summarized in Table 10.

Table 10 2008/09 budget summary for Forest Investment Account contributions to subprograms (\$ x 1000).

Subprogram	Allocation (\$ x 1000)
Genetic Conservation	411
Tree Breeding	2,421
Operational Tree Improvement Program (OTIP)	760
Extension and Communication	117
Genetic Resource Information Management	115
Seed Orchard Pest Management	420
Expansion of Orchard Seed Supply (SelectSeed Ltd.)	770
Administration (Tree Improvement Branch)	55
Incremental projects (see table 9)	543.8
Total FIA Tree Improvement Program Contributions	5,613

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.

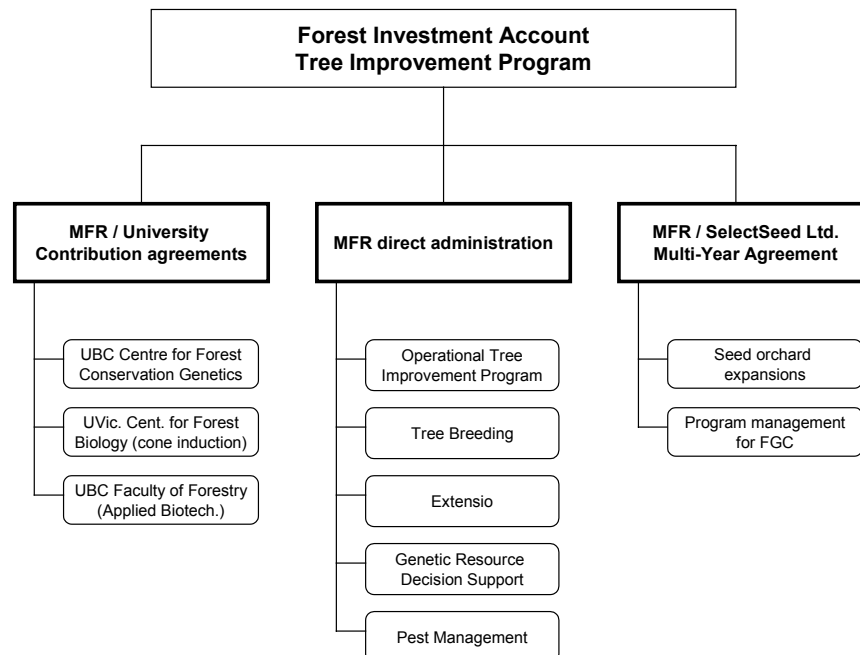
4.1 Funding Agreements

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. Multi-Year Agreement and Transfer Letter
- MFR contract
- MFR/University of BC Contribution Agreement
- 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.

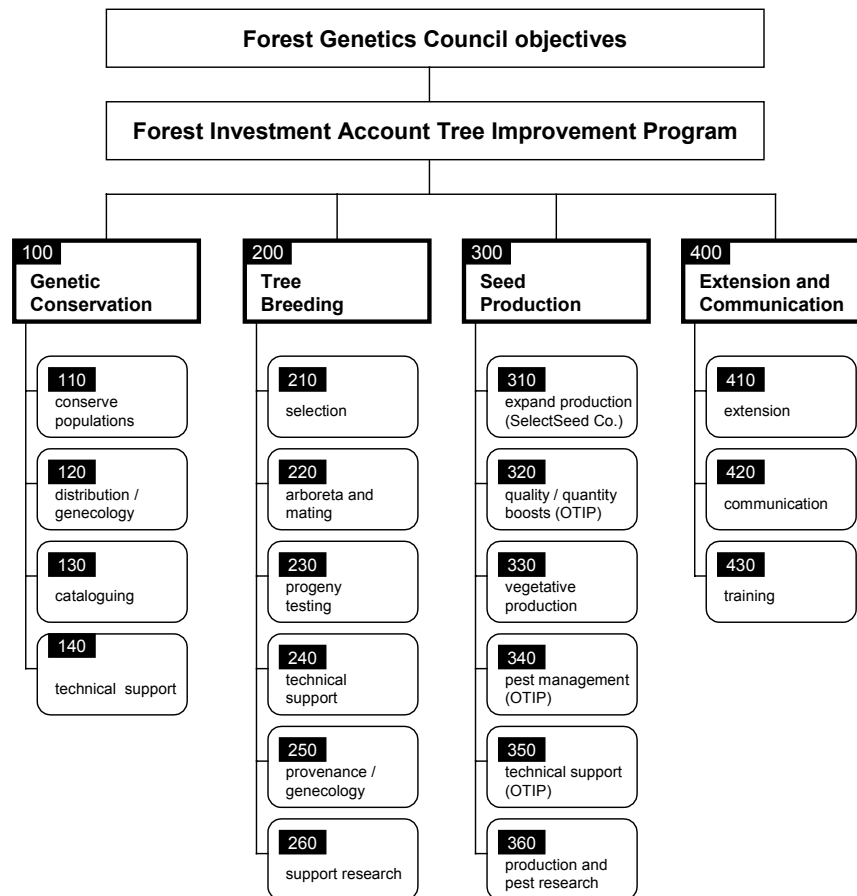
Figure 4 Administrative mechanisms for the delivery of the FIA Forest Genetics Conservation and Management Program.



4.2 Monitoring and Reporting

Monitoring progress is an important objective of the FGC program. All FIA funded activities are monitored and report on performance relative to criteria. Progress at the provincial level for all FGC activities is measured to determine progress towards long-term objectives. To facilitate monitoring, activities are categorized using a work breakdown structure (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, 2008 and April 30, 2009.

4.2.2 Reporting for the Tree Breeding, OTIP, and SelectSeed Subprograms

Progress for the Tree Breeding, OTIP, and Expansion of Orchard Seed Supply (SelectSeed) subprograms will be reported using key performance indicators (KPI) and spending. Progress towards FGC objectives 1 and 2 (increasing genetic gain, increasing use of orchard seed) will be reported using provincial summaries of orchard seed use and genetic worth.

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. 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

At the provincial level, total activities and spending will be summarized using KPI and budgets from project-level reports. In addition, actual progress towards FGC objectives 1 and 2 will be summarized across all SPUs using SPU-level reports.

Table 8 identifies the reporting requirements for Tree Breeding and OTIP subprograms.

Table 11 List of reports, responsibilities, distribution and preparation dates for FIA-supported Tree Breeding and OTIP projects.

Type of report	Prepared by	Prepared for	Distribution	Dates due
Interim project status (breeding and OTIP)	Breeder or OTIP project proponent	MFR program administrators for early FY reallocations	On request	Aug 1
Project level - Breeding	Breeder	MFR Program Administrator	On request	Oct 30 April 30
Project level - OTIP	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 15/08

Note: The Interim Project Status report is an informal report intended only to identify those 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. 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 2003–2007 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)			Annual planting (millions)	Program category	Value rank
	Species	SPZ	Elev. band (m)			
1	Fdc	M	1-700	12.3	1	1
2	Cw	M	1-600	7.3	1	4
3	Hw	M	1-600	1.1	1	10
4	Sx	NE	1000-1500	4.9	1	11
5	Sx	NE	1500-1900	5.1	1	7
6	Ss	M	1-500	0.9	1	3
7	Pli	NE	700-1400	3.1	1	5
8	Pw	M/SM	1-1400	0.3	1	13
9	Ba	M	1-1000	0.8	3	41
10	Pli	TO	700-1400	14.4	1	12
11	Yc	M	1-1100	1.3	1	17
12	Pli	PG	700-1200	38.1	1	2
13	Lw	NE	700-1400	3.2	1	14
14	Sx	PG	600-1200	31.6	1	6
15	Pw	KQ	500-1400	0.8	1	16
16	Pli	TO	1400-1600	9.3	2	25
17	Pli	BV	700-1200	17.1	1	9
18	Pli	CP	700-1100	7.3	1	8
19	Fdc	SM	400-1200	1.4	2	29
20	Pli	NE	1400-2000	2.7	3	38
21	Fdi	NE	400-1000	2.3	1	18
22	Fdi	NE	1000-1600	3.2	2	35
23	Sx/Ss	SM/NST	all	0.5	3	44
24	Hw	M	600-1100	0.7	2	23
25	Sx	EK	750-1700	1.9	1	20
26	Pli	PG	1200-2000	5.9	3	40
27	Cw	SM	200-1000	0.6	3	42
28	Sx	TO	1300-1900	4.5	1	19
29	Pli	EK	1500-2000	2.1	3	39
30	Sx	TO	700-1300	1.5	2	36
31	Fdc	M	700-1200	1.7	2	31

#	Seed planning unit (SPU)			Annual planting (millions)	Program category	Value rank
	Species	SPZ	Elev. band (m)			
32	Pli	EK	800-1500	2.8	2	30
33	Cw	M	600-1500	1.3	2	27
34	Lw	EK	800-1500	1.8	1	21
35	Sx	BV	700-1200	10.3	1	15
36	Bg	M	1-700	0.1	3	45
37	Fdi	QL	700-1200	0.9	2	34
38	Hw	M north	1-600		Part of SPU 3 Hw M low	
39	Fdi	EK	700-1400	1.1	2	33
40	Sx	PR	650-1200	5.2	2	22
41	Fdi	PG	700-1000	2.8	2	32
42	Sx	PG	1200-1550	2.8	2	26
43	Fdi	CT	600-1200	1.1	2	37
44	Sx	NE	1-1000	1.2	2	28
45	Pli	BB/CHL	All	11.1	3	43
46	Bl	all int.	all	1.6	3	46
47	Bn	M	all	0.06	3	47
48	Aspen/birch/poplar	Interior	-	NA	3	48
49	Alder/poplar/maple	Coast	-	NA	3	49
50	Lw	NE	1200-1800	1.5	2	
51	Py	S. Interior	300-1200	1.1	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
John Elmslie (Co-Chair)	Winton Global Ltd.	Industry Co-Chair
Brian Barber (Co-Chair)	MFR, Tree Imp. Br.	Ministry of Forests and Range Co-Chair
Annette van Niejenhuis	Western Forest Products Ltd.	Coastal Technical Advisory Committee
Larry Promnitz	Consultant / TimberWest Forests Ltd.	Coast industry orchard owners
Dr. Michael Carlson	MFR, Research Br.	Interior Technical Advisory Committee
Frank Gundersen	Abitibi Consolidated	Northern interior industry
Dr. Chris Hawkins	University of Northern BC	Universities
Dr. Gary Hogan	Canadian Forest Service	Canadian Forest Service
Scott King	Lousiana Pacific	Southern interior industry
Bruce MacNicol	West Fraser Timber Ltd.	Interior industry orchard owners
Joe Leblanc	Interfor Ltd.	Coast industry
Al McDonald	BC Timber Sales	Ministry of Forests and Range and BCTS
Mike Madill	MFR, SI Region	Ministry of Forests and Range
Dr. Alvin Yanchuk	MFR, Research Br.	Ministry of Forests and Range
Craig Sutherland (non-voting rep)	MFR, Deputy Chief Forester	Forest Investment Account

Genetic Conservation Technical Advisory Committee

Name	Affiliation	Name	Affiliation
Dave Kolotelo (Chair)	Ministry of Forests and Range	Dr. Greg O'Neill	Ministry of Forests and Range
Dr. Sally Aitken	UBC	Dr. Tongli Wang	UBC
Brian Barber	Ministry of Forests and Range	Jack Woods	SelectSeed Ltd. / FGC
Dr. Scott Green	UNBC	Alex Woods	Ministry of Forests and Range
Dr. Andreas Hamann	UBC	Dr. Alvin Yanchuk	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
Patti Brown	Canadian Forest Products	Brian Saunders	Island Timber Ltd.
Charlie Cartwright	Ministry of Forests and Range	Dr. Michael Stoehr	Ministry of Forests and Range
Tim Crowder	TimberWest Forests	Dr. Joe Webber	ProSeed Consulting
Diane Douglas	Ministry of Forests and Range	Dr. Chang-yi Xie	Ministry of Forests and Range
Dr. John King	Ministry of Forests and Range	Dr. Alvin Yanchuk	Ministry of Forests and Range
Dave Kolotelo	Ministry of Forests and Range		

Interior Technical Advisory Committee

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

Extension Technical Advisory Committee

Name	Affiliation	Name	Affiliation
Dr. Chris Hawkins (Chair)	UNBC	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	Doug Stables	Trust for Sustainable Forestry
Diane Douglas	MFR, Tree Imp. Branch	Kathie Swift	FORREX
Peter Forsythe	Huckleberry Forestry Ltd.	Dave Trotter	Min. of Agriculture and Lands
Lauchlan Glen	Glenviron Consulting	Nick Ukrainetz	MFR, Research Branch
Hilary Graham	Pacific Regeneration Technology	Jack Woods	SelectSeed Ltd. / FGC
Tia Wagner	Vernon Seed Orchard Co. Ltd.		

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	Forest Genetics Council
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.