
*Forest Genetics Council of
British Columbia
Operational Tree
Improvement Program
2010/2011*

**OTIP Call for Proposals
Application Form and Guidelines
Budget Form and Guidelines**



Forest Genetics Council
of British Columbia



December 1, 2009

Dear Recipients:

Please find enclosed a copy of the Forest Genetics Council of British Columbia, *Call for Proposals*, for the Operational Tree Improvement Program for 2010-2011. As with past years, the *Call* will focus on increasing the quantity and quality of genetically selected material for regenerating British Columbia's forests. It will also provide opportunities for incremental activities related to Mountain Pine Beetle reforestation needs.

Funding for this program is to be provided under the Forest Investment Account – Forest Conservation and Management Program. Please be aware that final approval of all projects is subject to the availability of funding, as well as, the recommendation of the selected committee based on criteria, priorities and funding allocation

As with previous years, the Council wishes to ensure that distribution of the *Call for Proposals* is as wide as possible and reaches as many parts of the forest sector that have an interest in tree improvement. If you are not the individual within your organization responsible for tree genetics, seed production or use, please forward the proposal to the appropriate person.

The submission deadline for proposals is 4:00 P.M. on **January 12, 2010**. Please refer to the application forms for greater detail on the submission. An electronic version of the application forms and the *Call* are also available on the [Ministry of Forests and Range, Tree Improvement Branch website](#) along with the "OTIP Eligible Activities" by Species table.

Please note changes made in recent years and maintained for 2010-2011. These changes have provided reviewers with clearer information for each proposal.

- The budget sheet has been modified to provide clearer information to the review committee:
 - Proponents must calculate the cost per KPI (excluding administration costs).
 - Proponents are asked to provide loaded hourly rate information (if applicable).
- Proponents are asked to provide financial information on the **unit price of certain activities** such as the cost per cone for extraction or the cost per litre of pollen collected.
- When providing cost/orchard pest surveys – proponents must indicate the relative orchard size (small, medium or large).
- Proponents should provide the annual seedling needs for each SPU where a proposal is being submitted.
- Proponents are asked to provide specifics about the actual product to be created from the project.
- All final reports for Technical Support (Activity 350) projects will be forwarded to the Extension Technical Advisory Committee for review, with the possibility of using the information for technical transfer.
- **MPB Incremental projects** should be prepared and identified separately. A box on the front of the application form has been provided to indicate the type of proposal.

If you have questions or require further information please contact me at 250-356-1127 or by e-mail at Darrell.Wood@gov.bc.ca.

Yours truly,

Darrell Wood
Manager, Business Operations
for - The Forest Genetics Council of British Columbia



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Forest Genetics Council of British Columbia
Operational Tree Improvement Program

OTIP
Call for Proposals



Forest Genetics Council of British Columbia
Operational Tree Improvement Program

Call for Proposals

Introduction

This is a Call for Proposals for funding under the Forest Genetics Council (FGC) of British Columbia's Operational Tree Improvement Program (OTIP) for 2010/2011. This program is funded by the Forest Investment Account and administered by the Ministry of Forests and Range on behalf of the FGC. Proposals under this call will be received from seed users and producers, breeders, nursery propagation facilities, and other groups. Guidelines for reviewing, recommending, and accepting proposals are based on the Forest Genetics Council's Species Plans, which are developed on a seed planning unit basis and updated by review committees. Relevant information from the Species Plans is available from the Tree Improvement Branch website (<http://www.for.gov.bc.ca/hti/speciesplan/index.htm>). If you need more information please contact Darrell Wood at 250-356-1127.

Final approval of all projects is subject to the approval of funding and the availability of funds. Funding levels may be less than expected and priorities will be placed on goals and priorities as set out in this Call for Proposals. Approval for funding is for this year only and does not guarantee funding in subsequent years. All contracts ending this calendar year will be expected to clearly state how materials will be distributed at the end of the project.

The application and review processes will be similar to past years. Operational Production and Technical Support activities are eligible for funding through this Call for Proposals. However, technical support proposals for cone and seed pest management research will no longer be available through this program and proposals should be directed to the Pest Management Program committee. Also note that breeding and gene conservation activities are not eligible, and will be funded through other mechanisms.

If you have any comments regarding the procedures, please contact us. We welcome your input. Eligibility guidelines are described in the section entitled *General Guidelines*.

Priority will be given to proposals that:

- address the needs and priorities identified in Table 3 (OTIP Eligible Activities)
- are consistent with the objectives of the Forest Genetics Council and general funding principles
- are aimed at producing seed, propagule, or other genetically selected material for species or areas where current supplies do not meet demand
- will improve the genetic quality of reforestation materials (e.g., producing custom seed lots)
- are based on requests for improved material from users
- address critical technical needs

In 2010/2011 this program will specifically focus on opportunities for creating material of improved genetic quality, such as:

- cone induction activities for 2010/2011 crops
- increasing seed production of seed of high genetic quality (e.g. SMP, pollen collections)
- enhancing genetic quality of orchards through roguing
- operational pest management activities related to crop survival
- technical support for improved seed production

- activities that focus on mitigating the effects of Mountain Pine Beetle or improving seed delivery in lodgepole pine
- operational testing or implementation of new knowledge, and operational scale development of new technologies

Restrictions and Qualifications

- Please note that final reports of all Technical Support (Category 350) projects will be forwarded to the Extension Technical Advisory Committee (ETAC) for review and for possible development as internal or external extension notes or technical papers. Further funding for such material will come from ETAC.
- Projects that are more than one year in duration will continue to be considered on a year to year basis. Funding for each year of such projects will be subject to the availability of annual funding and will only be approved following a progress review. **All projects approved in April 2009 that asked for continued support in 2010/2011 will require reapplication for funding. A 2009/2010 Progress Report must accompany the application.**
- Establishment of new orchards and expansions of existing orchards will not be considered in this process.
- Crop harvest is a normal operating activity and therefore is not considered eligible for financial support.
- Supplemental pollinations are an accepted method of enhancing crops. Protocols for providing funding of SMP activities are attached in Appendix C.
- Breeding program activities will not be considered through this funding mechanism.
- Extension, education and communication activities will not be considered through this funding mechanism. However, OTIP projects that require funding for extension activities should include information and budget requirements in their proposals.
- Material produced must be for use on Crown Lands. Investments in all projects are intended to benefit the people of British Columbia and are not specifically for private gain.
- Special Note: All technical support projects that are related to cone and seed pest management research will no longer be accepted under this Call for Proposals. Please refer all questions related to [Robb Bennett](#), Chair of the Pest Management Technical Advisory Committee
- Projects associated with Incremental Mountain Pine Beetle mitigation will be reviewed separately. (See page 8 for details).



General Guidelines

Research/Operational Activities

This program is designed for operational investment in tree improvement, not research. Technical Support projects that are consistent with species plans may be acceptable. For the purpose of this program, the following definitions will be used to guide proposal status:

- Research is defined as creative work undertaken on a systematic basis to increase knowledge and the use of this knowledge to devise new applications.
- Operational application of new knowledge includes work directly focused on improving goods and services produced based on previously acceptable research and/or knowledge. This includes all activities that require testing, calibration, or investigation to directly improve operational efficiency, or deal with cost effectiveness or the quality of a product, or provide information for policy development.

Incrementality

The definition of incrementality will be judged by review committees with guidance from the Forest Genetics Council Strategic Plan. Incrementality is based on the principle that all programs from different organizations have annually floating base commitments and that empowered review committees' are in the best position to judge the acceptability of an incremental activity. Funding provided by the FIA, Land-Based program for activities that are also approved under OTIP will result in reductions in funding from this program. Any questions on incrementality can be referred to Darrell Wood, Manager of Business Operations at 250- 356-1127.

Project eligibility

The Forest Genetics Council and associated technical committees have ranked seed planning units (SPU) (species/seed zone/elevation band) based on economic criteria. For each of the priority SPU listed in Table 1, "species plans" have been developed which provide information on seed orchards, gains, and seed production..

Only projects which are indicated on Table 3 entitled "OTIP Eligible Activities" will normally be considered. Technical support projects not listed may be eligible, but applicants must provide compelling reasons which show why the project will support Forest Genetics Council objectives.

Table 1. Forest Genetics Council of BC Seed Planning Units

Seed planning unit (SPU)			Program
Species	SPZ	Elev. band (m)	category ¹
Fdc	M	1-900	1
Cw	M	1-700	1
Hw	M	1-600	1
Sx	NE	1000-1700	1
Sx	NE	1700-2100	1
Ss	M	1-500	1
Pli	NE	700-1600	1
Pw	M/SM	1-1000	1
Ba	M	1-1000	3
Pli	TO	700-1400	1
Yc	M	1-1100	1
Pli	PG	700-1400	1
Lw	NE	700-1600	1
Sx	PG	600-1400	1
Pw	KQ	500-1400	1
Pli	TO	1400-1600	2
Pli	BV	700-1400	1
Pli	CP	700-1300	1
Fdc	SM	200-1000	2
Pli	NE	1600-2000	3
Fdi	NE	400-1200	1
Fdi	NE	1000-1800	2
Sx/Ss	SM/NST	all	3
Hw	M	600-1100	2
Sx	EK	750-1900	1
Pli	PG	1400-2000	3
Cw	SM	200-1000	3
Sx	TO	1300-2100	1
Pli	EK	1500-2000	3
Sx	TO	700-1500	2
Fdc	M	900-1200	2
Pli	EK	800-1500	2
Cw	M	700-1500	2
Lw	EK	800-1700	1
Sx	BV	500-1400	1
Bg	M	1-700	3
Fdi	QL	700-1400	2
Hw	M north	1-600	
Fdi	EK	700-1400	2
Sx	PR	650-1200	2
Fdi	PG	700-1200	2
Sx	PG	1200-1550	2
Fdi	CT	600-1400	2
Sx	NE	1-1000	2
Pli	BB/CHL	all	3
Bl	all int.	all	3
Bn	M	all	3
Aspen/birch/poplar	Interior	-	3
Alder/poplar/maple	Coast	-	3
Lw	NE	1200-1800	2
Py	S. Interior	300-1200	2

¹ Categories: 1 = advanced-generation program; 2 = 1st generation program only; 3 = pre-breeding and genecology only; 4 = no genetics program.



Evaluation and review

Review Process

All projects which meet application criteria will be reviewed by either the interior or coastal review committees. Review committees are selected by the Interior Technical Advisory Committee, and the Coastal Technical Advisory Committee of the Forest Genetics Council. The review committees will evaluate and score projects and the projects will then be ranked according to committee scores.

Evaluation criteria

Projects will be evaluated and ranked based on the following categories and weights:

Cost effectiveness	30%
Impact and value of the product produced	50%
Feasibility or chances of success	20%

In addition, reviewers will evaluate the proponent's capabilities to implement the proposed project. Descriptions of the evaluation criteria are included in the Application Guidelines (page 19).

Disbursal of funds and financial considerations

Projects will be funded in accordance with review committee rankings. Projects that fail to meet application criteria, or are not considered by review committees to be worth support, will not be considered for funding. Where available funds are inadequate to cover all worthwhile projects, committee rankings will be used to determine which projects are funded.

The Ministry of Forests and Range will administer the funds on behalf of the Forest Genetics Council for 2010/2011. All projects (including those submitted by Ministry of Forests and Range staff) are subject to the rules and regulations now in place for current Forest Genetics Council programs. Non-ministry projects will be processed using a standard contract for each project.

Performance indicators and management

The Forest Investment Account is the funding agency for the Operational Tree Improvement Program. It requires that all projects support defined provincial objectives through a clear planning process. In addition, it requires performance management to support measures of progress at both the project and provincial level.

Two levels of progress are defined and will ultimately be reported (provincial and project). For the *Operational Production* subprogram, provincial measures are tracked in species plan timelines as the amount of orchard seed produced and the average genetic worth of the seed. Project level measures are indicated in species plans as key performance indicators (KPI). KPI values are simple measures of progress for various activities, and will be used to simplify application, review and reporting (Table 3 *OTIP Eligible Activities*, see page 10).

Proposal information available on-line

The Call for Proposals and Application forms are available for download on the [Ministry of Forest and Range website](#)



2010/2011 Incremental MPB funding under OTIP

Subcategory: Incremental Seed Orchard Production Enhancements. This is designed for investment opportunities that are focussed on enhancing seed orchard production to mitigate MPB effects.

The Interior Technical Advisory Committee reviewed broad potential investment opportunities that currently either restrict or reduce production in their orchards.

The ITAC identified the following areas of opportunity that should be made available.

- Seed extraction efficiencies testing
- Mountain pine beetle infections removal
- Seed set nutrition and tree health and vegetative vigour
- Potential seed production and pollen collections in clone banks
- Crown management and architecture work
- Orchard threats and pest control.

Given the experiences at Prince George Tree Improvement Station and Kalamalka Seed Orchards the last bullet should be considered to provide funding to protect orchards from Mountain Pine Beetle attacks. Orchardists also identified areas where further study is needed to determine future activities. These areas of study are also available for funding under Technical Support. They include:

- Operational opportunities and effectiveness of pollinations in orchards
- Seed orchard maturity issues and time frames for turning orchards over.

Implementation: This current Call for Proposals will deal with normal and Incremental Proposals separately. All Incremental Proposals should be written separately and identified as incremental in the appropriate box on page one of the proposal form. This process is the best way to ensure that proposals meet priorities and are properly designed.



Submission of applications

An application form and guidelines for completing it are included with this Call for Proposals. **Please do not use old formats of this Application Form as changes have been made to the current form.**

The submission deadline is **January 12, 2010 by 4:00 P.M.** Completed proposal applications can be submitted electronically to Darrell.Wood@gov.bc.ca **or** send hardcopies (must be received by deadline) to:

Tree Improvement Branch
Ministry of Forests and Range
PO Box 9518 Stn Prov Govt
Victoria B.C. V8W 9C2

Attn: Darrell Wood

Proposals may also be sent by facsimile (250-356-8124) if followed by a printed **or** electronic form. Review of proposals will occur in February, with project approval anticipated for mid-March. Please direct questions regarding proposals applications or eligibility to Darrell Wood at 250-356-1127 or email (Darrell.Wood@gov.bc.ca).

Reporting procedures

Reporting will include financial and technical information. All reporting should be kept brief and focused on needed information only. Reports are designed to meet this program's need for accountability and information, while also providing the Forest Genetics Council with information to track progress towards goals and priorities.

Financial reporting and performance statistics

Financial reports and performance statistics (KPI's) will be required at quarterly intervals. They should be based on quarterly expenditures as laid out in the approved budget.

Technical reporting

Technical reporting will be primarily based on key performance indicators. Project leaders must complete a form, which will indicate the number of KPI achieved by project category. Any variances of greater than 10% (plus or minus) from the number of KPI indicated in the accepted application must have a brief explanation. Technical reporting is required for the periods ending September 30 and March 31 of the fiscal year. **Year-end technical (Category 350) reports will be forwarded to the ETAC for reviewing potential technical transfer possibilities.**

OTIP investments are tracked with the following work breakdown system. Species Plan Category tables entitled *OTIP Eligible Activities* use the same numbering system (see Table 3) Applications for funding must also identify projects using this system.

Table 2. Project Categories

Orchard quality and quantity boosts (320)	
321	Grafting for ramet replacement (KPI – number of ramets grafted): Grafting for the replacement of orchard mortality or for the replacement of orchard ramets with higher-gain materials.
322	Holding stock (KPI – number of ramets in holding): for ramet replacement.
323	Ramet replacement (KPI – number of ramets replaced): Planting new ramets with higher gain in an existing orchard.
324	Roguing (KPI – number of ramets rogued): Roguing existing orchard ramets to increase orchard gain.
325	Supplemental mass pollination and controlled pollination (KPI – number of ramets treated): Activities related to supplemental mass pollination or controlled crossing to increase gain or orchard production, including pollen surveys, collection, extraction, storage and testing; isolation bags and their application; application of pollen for SMP. (See Appendix 3.)
326	Induction (KPI – number of ramets induced): Hormone and other reasonable equipment costs associated with inducing crops, including root pruning, girdling or other methods used for drought stressing.
327	Orchard management/holding beds (KPI – number of ramets managed): Management activities required boosting productivity and gain; and including such activities as crown management, soil and foliar analyses, and management of holding beds containing ramets destined to replace existing orchard ramets.
Vegetative propagation (330)	
331	Donor stock production (KPI – number of donor plants for cutting production): Activities associated with the production of scion donor stock for operational rooted cutting production. Costs associated with rooting and growing cuttings are not eligible.
Pest management (340)	
341	Insect control (KPI – number of ramets treated): Activities associated with the management and control of insects that threaten seed or cutting production, or orchard health
342	Non-Insect pest control (KPI – number of ramets treated): Activities associated with the management and control of pests, other than insects, which threaten seed or cutting production, or orchard health
343	Orchard pest monitoring (KPI – number of ramets treated): Activities associated with monitoring orchard pests, which threaten seed or cutting production, or orchard health.
Technical support (350)	
Activities that will improve the direct knowledge associated with orchard management and the production of crops that are of high gain and physiological quality while meeting technical standards for diversity and adaptability	



Table 3 2010/11 OTIP Eligible Activities
Project categories eligible for OTIP support are marked with an "X"

Coastal Seed Planning Unit			210 Quality/Quantity Goals							210 Veg. Propagation					210 Pest Management			210 Tech Sup.						
#	App	SFC	Area (a)	321	322	323	324	325	326	327	321	322	323	341	342	343	351	352	353	354	355	356	357	358
				Grafting	Hold grafts	Replacement of	Regulating	SMP/CP	Inductive	Crotch ingrt.	Donors	Cuttings (action)	Propagules	Insect control	New Insect control	Monitoring	Pollen Contamination	Clonal contamination activities	Pollen handling	Induction Protocol	UPM/LE GA	Vegetative Propagation	Seed Production	Testing** at Sitka
1	Pa	M	1-700	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X			
2	Cv	M	1-600	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X			
3	Hv	M	1-600	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
4	Pa	M	1-600	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
5	Pa	MSM	1-1000	X	X	X																		
6	Pa	M	1-1000	X	X	X																		
7	Pa	M	1-1000	X	X	X																		
18	Pa	SM	400-1200	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X
24	Hv	M	600-1100	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
27	Cv	SM	300-1800																					
31	Pa	M	700-1200	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						
37	Cv	M	600-1800																					
38	Pa	M	1-700																					

** Investigate cone and seed production at the Sitka site using existing older Yc

Interior Seed Planning Unit			210 Quality/Quantity Goals							210 Veg. Propagation					210 Pest Management			210 Tech Sup.								
#	App	SFC	Area (a)	321	322	323	324	325	326	327	321	322	323	341	342	343	351	352	353	354	355	356	357	358		
				Grafting	Hold grafts	Replacement of	Regulating	SMP/CP	Inductive	Crotch ingrt.	Donors	Cuttings (action)	Propagules	Insect control	New Insect control	Monitoring	Project Descriptions									
4	Bu	NR	1300-1800	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
5	Bu	NR	1300-1800	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
7	Pa	NR	700-1600	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
12	Pa	TD	700-1600	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
13	Pa	PG	700-1200	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
15	LW	NR	700-1600	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
16	Bu	PG	600-1200	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
18	Pa	TD	1400-1900																	Collection and empty seed analysis						
17	Pa	BFV	700-1200	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
18	Pa	CP	700-1100	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
20	Pa	NR	1400-2000																	Collection and empty seed analysis						
21	Pa	NR	200-1200																	Collection and empty seed analysis						
22	Pa	NR	1000-1600	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
23	Bu	SM/NET	All																	Collection and empty seed analysis						
28	Bu	SK	750-1700				X							X	X	X				Collection and empty seed analysis						
28	Pa	PG	1200-2000																	Collection and empty seed analysis						
29	Bu	TD	1300-1900				X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
29	Pa	SK	1000-2000																	Collection and empty seed analysis						
30	Pa	TD	200-1800	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
32	Pa	TD	1000-1200	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
34	LW	SK	800-1500	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
35	Pa	BFV	500-1200	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
37	Pa	QL	700-1200																	Collection and empty seed analysis						
39	Pa	SK	700-1600	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
40	Bu	PG	600-1200	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
41	Pa	PG	700-1200																	Collection and empty seed analysis						
42	Bu	PG	1200-1800	X	X	X	X	X	X	X	X	X	X	X	X	X				Collection and empty seed analysis						
43	Pa	TD	200-1200																	Collection and empty seed analysis						
44	Bu	NR	1-1000																	Collection and empty seed analysis						
50	LW	NR	1200-1800																	Collection and empty seed analysis						
51	Pa	S, SK, All												X	X	X				Collection and empty seed analysis						

Application Form



Forest Genetics Council of British Columbia
Operational Tree Improvement Program



Application Form

Name of Applicant/Project Leader	For Official Use Only
Legal Name of Organization:	File # Project Number #
Mailing Address:	
Telephone:	
Fax:	
E-Mail Address:	Incremental MPB Project YES/NO
Financial Officer:	

Project Title:

Outline of Project (use attached outline)

Seed Planning Units			Annual SPU Seedling Need:
Species	Seed Zone	Elevation band	
Project Duration:			Project year:

Project Cost:

Total requested for FY 2010/11:

\$

FY 2013/14: \$

Overall project cost: \$

FY 2011/12: \$

FY 2014/15: \$

FY 2012/13: \$



Project Description

Please use the following headings for all project outlines.

Needs:

Describe specific seed needs or general tree improvement benefits to be achieved (e.g., increased production, genetic gain) and how this project will support Forest Genetics Council objectives.

Objectives:

Include production target, regeneration type (e.g., seedling,), projected genetic gain, and target date for completion.

Procedure:

Briefly (up to 2 pages) describe technical details of the project, including methodology and projected dates for completing specific activities.

Location:

List facilities and/or orchard sites where the project activities will take place.

Output and Deliverables:

List the specific products to be produced as a result of this investment.

Budget:

Complete the attached budget form and provide a detailed cost breakdown for the first year.

Who will benefit from this work?

Who are the direct clients?

Project Team:

List organization of project team members; including the contact name, address, and phone number for each

Signature Block:

Name (authorization for application): _____

Signature: _____

Application Guidelines



Forest Genetics Council of British Columbia
Operational Tree Improvement Program

Application Process

Only projects listed in the table entitled *OTIP Eligible Activities* (see Table 3, see page 11) will normally be considered. Applicants must complete the application form on pages 13-14 and the budget form on pages 21-22.

Grouping projects for application

Operational Production applications are designed to cover a **single seed planning unit** (i.e. SPU 17 Pli BV low elevation), but can contain more than one activity per SPU (i.e. Project #323 Roguing and Project #325 Induction). Specific instructions for completing the application form are found in *Guidelines for Completing the Application Form*. **The intent is to have only one application for all activities to be carried out in a single orchard.** Portions of applications may be accepted by review committees without rejecting entire projects.

Technical Support proposals that must cover multiple SPU's should contain one application with all pertinent information for reviewing and evaluating the proposal and a **separate sheet listing all SPU's**.

Key performance indicators

All projects must list the amount of work planned as indicated by the key performance indicator (see Table 2, page 10). For Technical Support projects not listed in the table *OTIP Eligible Activities*, KPI's must be developed. Only use the listed performance indicators for operational orchard work. For assistance in developing performance indicators, contact Darrell Wood.

Submitting applications

The application form is designed to provide project reviewers with information to judge the merits of proposed projects; to provide the Forest Genetics Council with information for ranking projects and balancing investments; and to provide Forest Investment Account with information regarding project types and distribution.

Please ensure that all completed applications are submitted on or before **January 12, 2010 by 4:00 P.M.** Please send completed electronic copies by e-mail (Darrell.Wood@gov.bc.ca). Proposals may also be sent by facsimile (250-356-8124) if followed by a printed or electronic form.

An **electronic copy** of the Call for Proposals, the Application and the *OTIP Eligible Activities* is available on request from Darrell Wood at 250-356-1127, e-mail at Darrell.Wood@gov.bc.ca or online at <http://www.for.gov.bc.ca/hti/cfp2011/cfp2011.htm>.

Evaluation criteria are listed at the end of this section. Filling in the specific sections related to the criteria will allow reviewers to give your proposal proper consideration. **Projects will be rated only on the information provided. Limitations of time may not allow for follow-up on proposals that are lacking detail.** Provide pertinent information only. Information is not limited to the space provided and please ensure that your proposal is **no longer than four written pages, plus the budget page** and essential attachments. Non-essential reference material will not be forwarded to reviewers. **In the budget, please provide a per unit cost where appropriate.**

Please Note:

Appendices B and C contain sample proposals for the Seed Production and Technical Support sub-programs. Please review these examples before preparing your proposals. These examples provide the level of information that the review committees will need to properly evaluate requests for funding. To simplify application and reporting, please use only the KPI identified for each category (see Table 2, page 10).



Guidelines for Completing the Application Form

Name of Project Leader:	Indicate the name and position of the person responsible for the project. All correspondence regarding the project will be directed to the project leader.
Legal Name of Organization: Mailing Address: Telephone/Fax: E-Mail Address:	Information for legal and communications purposes.
Financial Officer:	Name of the financial officer in your organization responsible for project accounting.
Project Title:	Please give the project a clear, succinct, descriptive title unique to the proposed project.
Outline of Project:	Briefly describe the project and its goals (one paragraph).
Seed Planning Unit (species / seed zone / elevation band):	List the Seed Planning Unit at which this proposal is directed. Normally applications are directed at only one SPU; for Technical Support projects that cover more than one SPU, list all SPU's on a separate page.
NEW* Annual SPU Seedling Need	Indicate the annual seed needs required for this Seed Planning unit as per the 2010/11 FGC Business Plan
Project Duration:	Indicate the full duration of the project.
Project Year	If this is a multi-year project indicate the current year of the project. (i.e. year 3 of 5)
Total Project Cost:	Give total estimated project cost. Include specific costs for the 2010/11 fiscal year, and subsequent years to project completion. Projects will be reviewed each year and will require a detailed budget to be drawn up for each year.
Needs:	Explain the need for your project in terms of the applicable species plan, i.e. how will your project advance the amount of genetic quality of material produced for the SPU. Where possible this should be tied to actual seeds or requests from seed users. (e.g., "Seed production from Orchard # 777 is not meeting target needs for the Prince George seed zone. About 300 000 more genetically improved plantables per year are needed for the next 5 years".)
Objectives:	State specific project objectives and how they relate to needs. (E.g. The objective is to increase seed production in Orchard # 777 for 2010/2011 by using GA 4/7 and root pruning, cone induction techniques.)
Procedure:	Provide technical details for the project and indicate projected dates of completion for various activities. This section will provide the reviewers with information on the feasibility and planning considerations for the project. It should also show the relationship of activities to expenditures. For Operational projects keep this brief. For Technical Support projects (350 level) greater detail is required. 1-2 pages maximum.
Location:	Provide the location(s) and/or specific orchard(s) where the major portion of the project will be done.
Output and Deliverables:	Specifically state what will be delivered. i.e. target production number, regeneration type (seedling, cutting), projected genetic gain, projected target date for completion and/or availability of material for reforestation. Materials must be registerable for use on Crown Lands.
Budget:	Provide a complete list all expected costs for 2010/2011 by project category. Include sub-contracts, employee costs, and equipment purchase and/or rental and material costs. Use attached budget sheet. Budget guidelines are attached in Appendix A.
Who will benefit from this work?	Aside from the people of BC and the specific organization implementing the proposal, please tie the output to specific clients where possible.
Project Team/Partners:	List all key partners who will be involved in implementing the project, and their roles. Information should include the person's name, organization, position, phone and fax numbers. Project teams should include involvement of an end user.
Signature Block:	Manager or person of authority within the organization who can authorize implementation. Provide name, title, organization, and signature.

Project Category (on Budget Page).	Provide the category(s) of work to be undertaken, (i.e. roguing, SMP, insect control). Only use project category numbers in Table 2 (i.e. 324 for roguing) Use only one category per line.
Key Performance Indicator (on Budget Page)	From the <i>OTIP Eligible Activities</i> tables, indicate the performance indicator that applies to the project category in your proposal. Where more than one SPU is targeted please indicate separate KPI's for each by using a separate line on the form. If Key Performance Indicators are not included, the proposal will not be forwarded to the review committee. Please use only the KPI's listed in Table 2. For assistance with developing KPI for Technical Support projects, contact Darrell Wood. Add additional pages if needed.
Number of KPI to be done (on Budget Page)	Show the amount of work to be done using the appropriate KPI (i.e. for category 324 roguing, show the number of ramets to be rogued).

Evaluation criteria

Evaluation of proposals is done by review committees from the Coastal and Interior Technical Advisory Committees of the Forest Genetics Council. Final ranking of proposals will be consistent with the investment priorities in Table 1 (page 5) and with work identified in Table 3 *OTIP Eligible Activities* (page 11) for each seed-planning unit for 2010/2011.

Avoiding Difficulties

Evaluation will focus on impact and value. The review committees face the task of evaluating a considerable number of proposals. Please fill in each section as fully as possible. As a result of past experiences, proponents are asked to provide the following:

- Key performance indicator by project category using only listed indicators
- Specific numbers of trees affected, treatments, grafts, etc., in the proposal
- How the project supports FGC objectives
- How the final product will be used.
- Specific activities required for implementation
- Costs by project category.
- List the Cost per Unit (i.e. cost per litre of pollen extracted).
- Indicate the priority for seed production or improved quality in this SPU.
- Where non-standard approaches are to be employed, please explain.
- For category 350 projects (technical support), please provide adequate detail to allow review committees to understand project objectives, application and methods.
- Projects must be submitted under the appropriate seed planning unit, and project category numbers.



Cost effectiveness	30%	Evaluation of the proposal in terms of the cost of producing the product on either a per unit basis or overall cost in comparison to alternatives. Where innovative approaches are being used, a description of the technique should be detailed in the <i>Procedure</i> and <i>Budget</i> sections of the application.
Impact and value of the product	50%	Evaluation of the products that will be produced, the need for the product, and the impact or value as they relate to providing greater quantities of genetic material, improving the quality or increasing the ability to produce genetic material. Details related to this area should be described in the <i>Objectives</i> and <i>Needs</i> sections of the application.
Feasibility, or chance of success	20%	Evaluation of the technical feasibility of the proposal based on current practices, knowledge and available research, and the chances for success based on the method and time frame. Details related to this area should be described in the <i>Procedure</i> section of the application.

In addition, the reviewers will evaluate the capabilities of the proponents to implement the proposal. If the capabilities of the proponents are deemed to be inadequate for meeting the stated goals and objectives then the proposal will be disqualified from further consideration.

2010/11 Budget Form



Forest Genetics Council of British Columbia
Operational Tree Improvement Program

2010/2011 Budget Table (maximum two pages)

Activities and Costs by Project Category

In the **cost breakdown** below, list the non-salary project activities to be undertaken and provide a rationale for the funding required. Contracted work should be listed under *Other*.
Note: Information in this section will be routinely and publicly released.

Applicant:

Project Title:

Project Category				Costs							
Project Category #	Category Name	Key Performance Indicator Description	# of KPI to be done	Salary**	Equipment	Travel	Materials and supplies	Other	Admin.	Total	Per KPI
	Totals by cost category			\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

NOTE: Cost per KPI is calculated excluding ADMIN costs

****Salary**

Worker Type	Loaded Hourly Rate



Total Costs by Quarter

Quarter	Costs
Quarter 1 (Apr. 1 to June 30, 2010)	
Quarter 2 (July 1 to Sept. 30, 2010)	
Quarter 3 (Oct. 1 to Dec. 31, 2010)	
Quarter 4 (Jan. 1 to Mar. 31, 2011)	
<i>Total</i>	\$0.00

Cost breakdown for non-salary costs.

Project Category #	Cost Item or Type	Purpose	Amount
Total			\$0.00

Note: that the project cost includes amounts that are dependent on the presence of the predicted crop. In the absence of such a crop, these amounts are to be returned



Forest Genetics Council of British Columbia
Operational Tree Improvement Program

Budget Guidelines

Forest Genetics Council Budget Guidelines

Section A—Salaries and benefits

The review committee(s) may reduce salary requests to conform to forest sector standards. Claim only actual, direct salaries (i.e. the amount actually paid to an employee, not charge-out rates). Salary rates must correspond to base rate only, and cannot include any bonus or pay-for-performance. Actual benefit costs of employees (e.g. Unemployment Insurance, Canada Pension Plan, medical, vacation pay to a maximum of three weeks per year, pro-rated yearly, etc.) will be considered eligible costs.

If a person working on the project is a full-time employee of the organisation, the funding requested should be calculated by dividing "actual annual salary" by "230 days" multiplied by the number of days the person worked on the project. **Please state the rates at which employees are paid.**

If the project requires hiring someone on contract, funding can be based on an hourly, daily, weekly or monthly rate. In cases where the project team hires out a contractor and or a contractual employee, charge-out fees are eligible because they are direct costs.

Applicants may apply for appropriate and reasonable costs in preparation of approved projects. This applies only where a consultant has been hired to prepare proposals or an in-house employee has been hired for the specific purpose of doing the Forest Genetics Council's work. These costs should be listed in the *Other* category.

The following categories should be used for providing salaries and benefits:

Professional

Qualifications: University, college, professional society

Technical/Trades

Qualifications: Technical school (BCIT), community college apprenticeship

Supervisory

Qualifications: University, college, job experience

Skilled

Qualifications: WCB, DMV, other BC licences or specific on-the-job experience

Semi-skilled

Qualifications: Minimal education - on-the-job training

Entry Level

Qualifications: On-the-job training



Salaries and stipends - post-secondary institutions and other public bodies

The following annual salary levels have been set for graduate students and post-doctoral fellows engaged on projects:

- \$18,300 (first two years of graduate studies)
- \$20,100 (second two years of graduate studies - PhD students only)
- \$36,000 (post-doctoral fellows)

Tuition fees are not eligible project costs.

The above amounts are based on a yearly salary (i.e. the maximum monthly salary for a PhD student is \$1,675). Full- or part-time faculty members may not receive salaries from Forest Genetics Council funds. However, the salaries of individuals hired to temporarily relieve faculty members of teaching duties, thereby allowing them time for projects, are eligible for Forest Genetics Council support. Faculty members on sabbatical for the purpose of conducting the project may receive the difference between their regular rate of pay and the sabbatical rate.

Provincial or federal government base personnel may not receive salaries or consulting fees from Forest Genetics Council funds. However, the salaries of individuals hired to temporarily relieve government personnel, or government personnel hired for the specific purpose of doing Forest Genetics Council work, are eligible for support.

Section B—Equipment

Only equipment that is directly related to performing the proposed project is eligible for funding

The acquisition of capital equipment is ineligible for funding under this program. Capital equipment needed may be leased. The value or depreciation costs of existing equipment or facilities may not be claimed. Similarly proponents may not charge lease or rental fees for equipment owned by them that are used in projects.

Specific items should be listed and you will be required to obtain quotes for items in excess of \$5,000. All expenditures in this category must be itemized separately.

Section C—Travel

Only expenses for work travel that is directly related to technical aspects of an approved project are acceptable. British Columbia provincial government rates will be considered maximal. Please visit <http://pss.gov.bc.ca/psb/travel/employee-travel-and-vehicle-rental.html> to view most current rates. Total travel charges should be itemized showing purpose, destination and costs.

This program does not fund conference travel and related expenses unless specifically planned as part of the project's extension component. For more information, contact any Canada Customs and Revenue Agency district office.



The following rates are in effect April 01, 2010:

Transportation

The most economical method of transportation should be utilized wherever possible.

Automobile	Mileage rates, all vehicles: \$0.51/km
Air	Economy class. Airfare receipts and tickets should be retained. Project personnel wishing to fly business or first class are responsible for any additional costs for upgrading.
Ferry	Receipts should be retained
Taxi	The use of taxis should be kept to a minimum. Retain receipts.

Accommodation and meals

The maximum allowable nightly rates for [accommodations](#) (before taxes) must not exceed those posted.

If you are staying in a location that does not have an approved list of accommodations, then the following maximum before-tax nightly rate can be charged:

October-April = \$65
May-September = \$70.

Please retain receipts for paid hotel accommodation. In situations where private lodging is arranged the daily maximum is \$30.

The allowable claims for meals as of March 30, 2009 are: breakfast \$11.50, lunch \$13.25, and dinner \$22.25. Receipts should be retained, in case of audit, but should not be submitted with expense reports.

Section D—Material and supplies

Material and supplies used to carry out the proposed project may include raw materials, tools, and software tools. Expenditures in this category are eligible and must be itemized.



Section E—Other expenses

Include all contract costs and all other items. List individual contracts.

Section F—Administrative costs

The Forest Genetics Council will contribute to incremental administrative costs for an approved project, to a maximum of five (5) per cent of total project costs.

Publications, reports and memberships

Subscriptions to scientific journals, books and other publications will not be considered, nor will membership fees to societies. However, costs incurred in preparing progress reports and for extension and publication of results (with acknowledgement of the Forest Genetics Council Operational Tree Improvement Program) may be included. Charges for journal reprints and large document reproduction are eligible project costs.

Personnel hiring

Forest Genetics Council will not cover the costs of advertising, travel, or other expenses associated with hiring new personnel for projects.

Entertainment

Forest Genetics Council funds will not be used for the purpose of entertainment.

Marketing

Funding will not be used for product marketing or commercialization.

Patent

Funds will not be used for costs related to obtaining a patent.

Harmonized Sales Tax (HST) (if applicable)

Only net HST costs (i.e., those costs not eligible for rebate) may be claimed as a project expense.

Receipts and records:

It is the responsibility of the project leader to keep all pertinent financial records and receipts for a period of 7 years.

*Appendix A:
Sample Application for a
Seed Production Project*



Forest Genetics Council of British Columbia
Operational Tree Improvement Program



Sample Application for a Seed Production Project

Name of Applicant/Project Leader Z. Smith, Seed Orchard Manager		For Official Use Only
Legal Name of Organization: United Interior Seed Orchards United Forestry Ltd Mailing Address: 3322 Redout Road Vernon BC V1B 2C8 Telephone: 250-266-5666 Fax: 250-566-5667 E-Mail Address: zsmith@united.bc.ca Financial Officer: A. Persona		File # Project Number # Incremental MPB Project NO
Project Title: Enhancing Effectiveness of Redout 997		
Outline of Project (use attached outline) Enhance the effectiveness of Redout Orchard 997 by: Improving orchard composition through grafting and transplanting. Improving orchard seed quantity and quality through SMP. Improving orchard productivity through pest management and other management activities.		
Seed Planning Unit (one only) SPU 13		Annual SPU Seedling Need: 2.8 million
Species	Seed Zone	
Lw	NE	
Elevation band		
Low		
Project Duration: One year		Project year: 2010/11
Project Cost:		
Total requested for FY 2010/11: \$9,600	FY 2013/14: \$	Overall project cost: \$9,600
FY 2011/12: \$	FY 2014/15: \$	
FY 2012/13: \$		

Project Details

Needs <Relate need to the priority for this Seed Planting unit.>

The Genetic Improvement Strategy Timeline for this SPU shows that total seedling production is not currently meeting estimated seedling need. There is a need for 2.8 million plantables per year to meet FGC goals for this Seed Production Unit.

Objectives <What is to be accomplished that will either meet or partially meet the Goal.>

Increase the long-term production from Orchard 997 to 2.8 million plantables per year by 2011.
Increase genetic worth of seedlots to approximately 7% by 2011.

Procedure <Describe the activities to be undertaken with particular emphasis on numbers and description of methods to be used.>

Orchard composition

Based on 6-year measurements for series 1 trees and 3-year measurements for series 2, collected fall 2001, lower breeding value clones were rogued in 2003 and higher breeding value clones were grafted to replace rogued ramets, both in a holding bed and on the rogued orchard ramets. This was funded by 2009 OTIP 399. In this proposal for 2010, grafts of high breeding value clones will be made to replace those that failed in 2007. Existing high breeding value ramets in the holding bed will be transplanted to the orchard.

Seedlot genetic worth

Pollen will be collected from high breeding value Nelson low SPU clones for use in the current year or for future years. If there is a manageable cone crop in the orchard, high breeding value pollen (stored and/or fresh) will be applied, increasing seedlot genetic worth (GW) and seed quantity. A pollen mix of the top 20 clones would have an average GW of 16. The stored pollen from 2007 has an average GW of 14. (Storage applications will be performed in consultation with Dr. U. Knowitall, Physiologist (MFR)).

Induction

Approximately one-third (396 trees) of the orchard will be stem-girdled using the double overlapping technique. This has been the most effective treatment for inducing in the past with this species. Trees will be monitored for potential damage for treatments.

Management of pests that threaten seed production or orchard health:

If the crop is light, sanitation picking may be performed. This is the most efficient method of controlling pests. Rodents feeding on tree roots will be controlled through baiting. Dr. I. M. Bugbait, Entomologist (MFR) will be consulted regarding timing and impact.



Budget Page

Activities and Costs by Project Category

Applicant **United Seed Orchards**

Project **Enhancing Effectiveness of Redout 997**

Project Category				Costs							
Project Category #	Category Name	Key performance indicator Description	# of KPI to be done	Salary	Equipment	Travel	Materials and supplies	Other	Admin.	Total	Per KPI
321	Grafting for Ramet replacement,	Number of grafts made	173	\$1,900			\$250		\$107.50	\$2,257.50	\$3.20
323	Ramet Replacement	Number of ramets replaced	99	\$800				\$2,400	\$160.00	\$3,360.00	\$32.32
325	CP/SMP	Number of ramets treated	703	\$5,500				\$250	\$287.50	\$6,037.50	\$8.18
326	Induction	Number of ramets induced	396	\$300					\$15.00	\$315.00	\$0.76
327	Orchard management/holding beds	Number of ramets maintained	1188	\$50				\$200	\$12.50	\$262.50	\$0.21
343	Pest management monitoring	Number of ramets treated	1188	\$350					\$17.50	\$367.50	\$0.29
									\$0.00	\$0.00	
									\$0.00	\$0.00	
									\$0.00	\$0.00	
									\$0.00	\$0.00	
Totals by cost category			3747	\$8,900	\$0	\$0	\$250	\$2,850	\$600.00	\$12,600.00	\$3.20

Total Costs by Quarter

Quarter	Costs
Quarter 1 (Apr. 1 to June 30, 2010)	\$11,654.00
Quarter 2 (July 1 to Sept. 30, 2010)	\$315.00
Quarter 3 (Oct. 1 to Dec. 31, 2010)	\$631.00
Quarter 4 (Jan. 1 to Mar. 31, 2011)	
Total	\$12,600.00

NOTE: Cost per KPI calculated excluding ADMIN costs



Cost breakdown for non-salary costs

Project Category #	Cost Item or Type	Purpose	Amount
321	Materials & Supplies	Grafting supplies	\$250.00
323	Other	Backhoe rental	\$2400.00
325	Other	Orchard lift rental	\$200.00
327	Other	Lab Tests	\$200.00
Total			\$3050.00

Note that the project cost includes amounts that are dependent on the presence of the predicted crop. In the absence of such a crop, these amounts are to be returned.

*Appendix B:
Sample Application for a
Technical Support Project*



Forest Genetics Council of British Columbia
Operational Tree Improvement Program



Sample Application for a Technical Support Project

Name of Applicant/Project Leader Marilyn Wilson	For Official Use Only
Legal Name of Organization: Wilson Technical Support Ltd. Mailing Address: 5900 Dumont Drive Duncan, BC V9L 1L7 Telephone: (250) 748-7530 Fax: E-Mail Address: mwilson@highlandnet.com Financial Officer: Smith Accounting Services	File # Project Number #
	Incremental MPB Project NO

Project Title:
Development of vegetative propagation techniques for western redcedar.

Outline of Project (use attached outline)

Cultural techniques for production of stock plants and rooted cuttings will be tested at a commercial nursery. Recommendations based on test results will be reported to the tree improvement and forest nursery communities through extension reports and meetings, and operational cutting crops will be produced.

**** Originally part of OTIP SPU0288****

Seed Planning Unit (one only) SPU 2			Annual SPU Seedling Need: 7.1 million
Species	Seed Zone	Elevation Band	
Cwr	M	Low	

Project Duration: 5 years	Project Year: 2
Project Cost: FY 2011/12: \$16,000	Overall project cost: \$ 61,330
Total requested for FY 2010/11: \$15,330	
FY 2012/13: \$6,000	
FY 2013/14: \$6,000	
FY 2014/15: \$18,000	

Project Detail

Needs <What is to be accomplished that will either meet or partially meet the Goal.>

The FGC goal for western redcedar is 100% planting of genetically improved material with 20% volume gain by 2011. Innovative technologies will be required to realistically meet this goal.

Elite families can be propagated by controlled crossing in seed orchards, which would eliminate selfing. The seed could then be bulked up through rooted cuttings. However, protocols for operational production of stock plants and cuttings are lacking for this species.

Specific questions include:

1. which stock plant cultural regimes will produce the most good quality cuttings;
2. how long can redcedar stock plants be kept in a juvenile state;
3. which rooted cutting cultural regimes will produce stock that is equivalent in quality to a seedling

Objectives <Describe the activities to be undertaken with particular emphasis on numbers and description of methods to be used.>

To develop protocols for operational production of elite stock plants and cuttings of Cwr

Procedure

Stock plant production and rooted cutting production are two separate but related phases of vegetative propagation. Operational trials will be conducted in both areas. Most of the work will be carried out at Carnsmor Nursery in Duncan, but a subset of the trials will be grown at the MFR Tree Improvement Branch Nursery Extension Services (NES), in Surrey.

A) Stock plant trials

Juvenile seedling stock plants

Investigation into stock plant production will focus on techniques to maximize the number of quality cuttings produced. In previous work with other coastal species, production of the stock plants was the most problematic aspect of vegetative propagation (M. Wilson, MFR Working Paper, in press). For western redcedar, elite seed for stock plants has been provided by Timberlands Ltd. One- and two-year-old stock plants exist at Carnsmor Nursery and a new crop of stock plants will be sown in January 2010.

Activities

- pot/transplant new stock plants - 1st Quarter
- grow stock plants under contrasting cultural regimes - 1st, 2nd, 3rd Quarters
 - photoperiod extension vs. ambient light
 - 100 vs. 200 ppm N liquid fertilization
 - 1-gallon pots vs. styroblock 1015's
 - one pruning (at potting) vs. regular monthly prunings
 - ages 1-, 2-, and 3-years from seed
 - having had cuttings taken from them in the first year, or not;

- evaluate number of cuttings produced per treatment and stock plant age - 4th Quarter

Serial propagation

The MFR Cowichan Lake Research Station (CLRS) has some serially propagated research stock plants, which are between 12 years of age and from up to 6 propagation cycles. The performance of the cuttings from these stock plants will provide valuable information on how long redcedar stock plant can be kept in a juvenile state.

Activities:

- utilize existing serially propagated stock plants - 4th Quarter

B) Rooted cutting trials

Cultural trials with cuttings from juvenile seedling stock plants

Activities:

- continue to grow the cuttings set in January 2010 - 1st, 2nd, and 3rd Quarters
- assess rooting and stock quality of cuttings set in January 2010, comparing results of different types of cuttings and different rooting compounds - 3rd Quarter
- lift 1000 elite cuttings for seedling-cutting field demonstration - 4th Quarter
- set 5000 new cuttings for spring plant 2011 - 4th Quarter

Cuttings from serially propagated stock plants

Activities:

- set cuttings from serially propagated stock plants, to evaluate the effect of stock plant age and number of propagation cycles on the rooting success and quality of the cutting - 4th Quarter

Location

Carnsmor Nursery, Duncan, BC

Output and Deliverables <State what is to be delivered, i.e., target production, projected genetic gain.>

1. A preliminary report to be distributed to the tree improvement and forest nursery communities.
2. Production of 1000 elite cuttings for a field demonstration.
3. Production of 800 elite stock plants.



2010/2011 Budget

Complete the attached budget form and provide a detailed cost breakdown for the first year. In **each cost category** below, list the individual project activities to be undertaken and provide a breakdown of the amount of funding required by quarter for each. Contracted work should be listed under *Other*. Note: Information in this section will be routinely and publicly released

Activities and Costs by Project Category

Applicant: **Marilyn Wilson**

Project Title: **Development of vegetative propagation techniques for western redcedar**

Project Category				Costs							
Project Category #	Category Name	Key performance indicator Description	# of KPI to be done	Salary	Equipment	Travel	Materials and supplies	Other	Admin.	Total	Per KPI
350-7	vegetative propagation technical transfer	Number of reports	1	\$9400.00		\$1000.00		\$4000.00	\$730.00	\$15330.00	\$14400.00
									\$0.00	\$0.00	
									\$0.00	\$0.00	
									\$0.00	\$0.00	
									\$0.00	\$0.00	
									\$0.00	\$0.00	
	Totals by cost category		0	\$9400.00		\$1000.00		\$4000.00	\$730.00	\$15330.00	\$14400.00

Total Costs by Quarter

Quarter	Costs
Quarter 1 (Apr. 1 to June 30, 2010)	2310.00
Quarter 2 (July 1 to Sept. 30, 2010)	4200.00
Quarter 3 (Oct. 1 to Dec. 31, 2010)	4200.00
Quarter 4 (Jan. 1 to Mar. 31, 2011)	4620.00
Total	\$15,330.00

NOTE: Cost per KPI calculated excluding ADMIN costs

Appendix C: Supplemental Mass Pollination Recommendations for Using/Funding

CTAC Sub-Committee

(Sally Aitken, Michael Stoehr, Tim Crowder, Annette Van Niejenhuis, Joe Webber)

November 5, 2001

Introduction:

The cost effectiveness and use of SMP as an OTIP fundable orchard activity became a topic of discussion in the 2001 CTAC review process. SMP is recognized as a powerful tool to enhance seed production and either protect (selfing) or improve the GW of production crops. However, it is not applicable for all species under all orchard conditions. To address these concerns, Don Lester considered interior spruce as a model species for determining the cost effectiveness of SMP. Lester used a net present value (NPV) approach to estimate the incremental cost of a cubic meter of wood obtained from SMP.

In evaluating the cost effectiveness of SMP on GW, Lester considered three levels of orchard parent numbers (25, 50 and 75) and three levels of SMP efficacy (25%, 50% and 75%). These conditions were considered under four different orchard pollen cloud conditions: 100% pollen load with no contamination, 75% pollen load with no contamination, 100% pollen load with 25% contamination (0% BV) and 100% pollen load with 25% contamination (-10% BV).

There are two main points arising from this analysis. First, the range of parent breeding values within the orchard should be greater than 10%. This assumes that pollen will be picked from the top BV parents and reapplied to either all parents or a subset of elite parents. In this scenario the difference in breeding values (BVs) between the SMP mix and the females should be greater than 10%. Second, contamination rate should be greater than 25% and the difference between the BV of orchard parents and the BV of the contaminating pollen should be greater than 10%. Under these two conditions, the results of SMP application are cost effective at the current flat rate of 25% efficacy. The conditions under which SMP is cost effective will change if efficacy values become higher (see Lester).

Based on Lester's economic analysis, the SMP sub-committee made the following recommendations for both using and funding SMP orchard activities. It is intended to apply to both CTAC and ITAC orchards and be a guide to OTIP review committees.

Supplemental Mass Pollination Recommendations for Using/Funding

Orchard Activity	Criteria	Qualifiers
1. Seed Production	• Inadequate pollen cloud	✓
	• SMP pollen source:	
	a) within orchard	
	1) stored pollen	✓
	2) current year	make case
	b) external, stored pollen	✓
	• Projected shortage of Class A Seed	✓
	• Acceptable pollen viability*	✓
2. Reduce Selfing	• High (>30%) selfing rates based on total orchard crop	✓
	• Acceptable pollen viability*	✓
3. Lift in Gain	• Open pollinated	go to decision tree
	• Closed pollinated	if cost effective
	• Acceptable pollen viability*	✓

* All pollen lots used within an SMP mix must be tested before formulation and application of the mix. Consult with the Ministry of Forests and Range, Research Branch, on acceptable viability tests and minimum response levels for each test.

SMP Decision Tree

3. Lift in Gain / Open Pollinated (OP)

