

**Forest Resource Improvement Association of Alberta  
Forest Resource Improvement Program**

**Foothills Growth and Yield Association**

**Annual Report**

**April 1, 2007 – March 31, 2008**

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## Introduction

The Foothills Growth and Yield Association (FGYA) Business and 2007 Work Plan was finalized in April 2007 to incorporate 2006/07 actual results and directives from the Steering Committee meeting held February 14, 2007 ([See Appendix 1 Steering Committee Minutes](#)), then revised August 9, 2007 to incorporate revisions arising from a review and one-year renewal of the Historic Trials project and Letter of Agreement. It identifies 6 active projects and one proposed project that is now active:

1. Development and management of the Association (FRIAA<sup>1</sup> Project *Foothills Growth and Yield Association – Second Five-Year Program* # FOOMOD-01-03);
2. Lodgepole pine regeneration (also FRIAA Project # FOOMOD-01-03);
3. Post-harvest stand development;
4. Cooperative management of historic research trials (FRIAA Project *Measurement and Maintenance of Historic Research Trials*, # FOOMOD-01-02);
5. Regional yield estimators;
6. Enhanced management of lodgepole pine (FRIAA Project # OF-02-16);
7. Monitoring and Decision Support for Forest Management in a Mountain Pine Beetle Environment (FRIAA Project # OF-07-PO19)

Income and expenditures (where applicable), achievements and shortfalls for each project are described below for the period from April 1, 2007 projected to March 31, 2008.

### 1. Development and Management of the Association

#### 1.1. Income and Expenditures

Table 1 shows income and expenditures for Project 1 for the 2007/08 fiscal year. The budgeted amount is that shown in the business and work plan for 2007. The actual amounts are those spent to March 31, 2008 (year end).

**Table 1. Annual Income and Expenditures - Project 1**

Income / Expenditure	Budget	Actual
<b>Income</b>		
Prior year balance forward	156,392	156,392
Membership fees - FRIP (FRIAA contract)	120,000	120,000
Membership fees - non-FRIP	15,000	15,000
Total income	291,392	291,392
<b>Expenditures</b>		
Director and Field Coordinator	86,500	79,134
Research and development associate	85,560	86,278
GIS and Misc. Services	15,000	563
Office and Field Supplies	10,000	2,179
Meetings and tours	7,000	8,788
Contingency (5%)	10,203	0
Total expenses	214,263	176,943
<b>Ending Balance</b>	77,129	114,449

<sup>1</sup> Forest Resource Improvement Association of Alberta

Note in Table 1 that the under-expenditure relative to budget results primarily from lower than anticipated costs for GIS and Misc Services as well as office and field supplies. A member company provided database design and management services normally supplied by the GIS group, which should be recognized as an “in kind” contribution to the FGYA program.

Costs reported do not include the following in-kind contributions by members and collaborating agencies:

- Foothills Model Forest (FtMF) GIS, administrative and financial services;
- Data management services provided by the Sundre Forest Products technical representative for Project 2, including services previously supplied by Foothills Model Forest;
- Participation on technical, steering and project committees;
- Attendance of meetings;
- Review of minutes, reports, proposals, experimental designs and scientific papers;
- Inspection and protection of experimental sites.

## 1.2. Achievements and Shortfalls

Table 2 summarizes achievements and shortfalls in development and management of the Association relative to deliverables planned for the year.

**Table 2. Achievements and Shortfalls - Project 1**

Deliverable	Achievements / Shortfalls
<u>Planning and funding approvals</u> - 2008 draft business plan and annual work plan	- Complete
<u>Staffing</u> - Retain Program Manager - Retain Research & Development Associate	- Complete – One year contract signed - Complete – One year contract signed
<u>Meetings and tours</u> - information exchange meetings and tours, technical sessions	- Technical committee and contractor meeting held June 14 in Edson; - Field tour to Prince George July 11,12 to view impacts of Mountain Pine Beetle and the implications for Alberta. - Technical Meeting Edmonton March 6, 2008 - MPB Technical Committee Meeting Edmonton March 6, 2008 - FGYA Steering Committee Meeting Edmonton March 7, 2008 <u>See Appendix 1</u>
<u>Development and Management of Association</u> - Annual update of 5 year business plan, annual work plan - Project plans, designs, reports, publications	- Completed May 17, updated Aug 9 - See summary by project number

Deliverable	Achievements / Shortfalls
<ul style="list-style-type: none"> <li>- Maintain publicly accessible website</li> <li>- mid year and annual progress reports</li> </ul>	<ul style="list-style-type: none"> <li>- ongoing under model forest website <a href="http://www.fmf.ab.ca">www.fmf.ab.ca</a></li> <li>1. Annual Report 2006-07 (FRIAA Project #FOOMOD-01-03 May 15 2007)</li> <li>2. <u>Mid-year progress report October 2007: See Appendix 2</u></li> <li>3. Business Plan and Annual Work Plan 2007/08 Revised August 2008</li> </ul>

## 2. Lodgepole Pine Regeneration

### 2.1. Income and Expenditures

Costs of treatments and field measurements were incurred directly by the member companies, and not reported to the FGYA Director. Inputs by the FGYA Director, Field Coordinator and Research and Development Associate are accounted for under Project 1 - *Development and Management of the Association* (see Table 1). The data management services of the FtMF GIS Coordinator and the Sundre Forest Products technical representative were provided at no direct cost to the FGYA as an in-kind contribution.

### 2.2. Achievements and Shortfalls

Table 3 summarizes achievements and shortfalls in data management, analysis and reporting for the Lodgepole Pine Regeneration Project. Table 4 summarizes achievements and shortfalls in the field program of the Lodgepole Pine Regeneration Project relative to deliverables planned for the year.

#### Discussion Points, 2007/08 Annual Report

1. 108 plots were scheduled for full measurement, and done.
2. 300 plots were scheduled for status checks, and done
3. 22 plots were scheduled for weeding or assessment. Of these, four required weeding but could not be treated because of delays in receiving spray authorization
4. The Field Coordinator conducted audits on 56 plots
5. The RLP Database conversion from MSAccess to SQL was done by Bob Held of Sundre Forest Products and should provide a more stable platform for the RLP plot data.

**Table 3. Achievements and Shortfalls – Project 2 – Data Management, Analysis and Reporting**

Deliverable	Achievements / Shortfalls
<p><u>Data Management</u></p> <ul style="list-style-type: none"> <li>- complete data loading and verification of 2006 RLP data</li> <li>- Detailed Field Schedule by June 15</li> <li>- Data loaded from 2007 measures by Oct 31</li> <li>- Scheduled fieldwork</li> <li>- Audit and work verification reports by Jan 31 2008</li> <li>- Updated digital database by Dec 31, 2007 - conversion of RLP database from MSAccess to SQL (minutes of Strat Plan mtg Jan 10, 2007)</li> </ul>	<ul style="list-style-type: none"> <li>- Complete, data loaded</li> <li>- Done, discussed at field meeting June 2007</li> <li>- Done, March 2008</li> <li>- Done</li> <li>- Done, February 2008</li> <li>- Database improvements made to facilitate analysis and reporting, SQL conversion made and some quality control and error check routines still under development.</li> </ul>
<p><u>Analysis and Reporting</u></p> <ul style="list-style-type: none"> <li>- Crop Performance report and regeneration establishment model by Dec. 31 2007 to include:               <ol style="list-style-type: none"> <li>1. growth, ingress, competition and mortality</li> <li>2. preliminary analysis of observed variation linked to controlled factors in plot design</li> <li>3. exploratory analyses and strategy to develop regen model</li> </ol> </li> <li>- Climate change impact: Explore feasibility of linking growth and mortality to regional and local climate records</li> </ul>	<ul style="list-style-type: none"> <li>- Complete March 31, 2008</li> <li>- Preliminary enquiries, plus analysis of RLP data, indicate that research is warranted; but actual research was not started</li> </ul>

**Table 4. Achievements and Shortfalls – Project 2 – Field Program**

<b>1. Regenerated Lodgepole Pine Plots Measured and Audited</b>						
FMA Code	Full Measure Scheduled	Full Measure Done	Status Check Scheduled	Status Check Done	Total Done	Formal Audit
ANC	0	0	24	24	24	0
BRL	0	0	24	24	24	0
CFP	0	0	24	24	24	0
MWFP	0	0	24	24	24	0
SDA	0	0	24	24	24	0
SLS	0	0	24	24	24	0
SPI	52	52	4	4	56	24
WEYDV	0	0	24	24	24	0
WEYED	0	0	24	24	24	0
WEYGP	8	8	64	64	72	8
WWC	48	48	40	40	88	24
<b>TOTAL</b>	<b>108</b>	<b>108</b>	<b>300</b>	<b>300</b>	<b>408</b>	<b>56</b>

<b>2. RLP Plots Scheduled for Treatment and Actually Treated</b>			
	Scheduled for Weeding &/or Assessment	Treated	Comments
ANC	1	Treatment not required	2-2-2500-T, overspray? Needs to be assessed during next field season.  4-3-0-W & WT need spraying. Spraying could not take place as authorization received after spray program was completed. 4-3-444-W, treatment not required.  Plots 5-3-0-W and 5-3-1111-W require spraying. Spraying could not take place as authorization received after spray program was completed. Plots 2-1-816-W and WT, and 2-1-2500-W and WT, treatment not required.
BRL	0	0	
CFP	2	0 (see comments)	
MWFP	3	Treatment not required	
SDA	1	Treatment not required	
SLS	0	0	
SPI	0	0	
WEYDV	0	0	
WEYED	0	0	
WEYGP	9	Treatment not required	
WWC	6	0 (see comments)	
<b>TOTAL</b>	<b>22</b>	<b>0</b>	

### 3. Post-harvest Stand Development

#### 3.1. Income and Expenditures

The Research and Development Associate's time inputs were covered under Project 1 – *Development and Management of the Association*, and the FGYA was represented by Chairman Greg Behuniak.

#### 3.2. Achievements and Shortfalls

Table 5 summarizes achievements and shortfalls in Project 3 – Postharvest Stand Development relative to deliverables planned for the year.

**Table 5. Achievements and Shortfalls: Project 3**

Deliverable	Achievements / Shortfalls
Advance Three Dialogues	One meeting held April 27, 2007. Preliminary reports presented for Dialogue 1 (Technical Program Alignment – Willi Fast, Chair) and Dialogue 2 (Vision, Strategic Direction and Incentives – Jim LeLacheur, Chair). Shortfalls: Dialogue 3 (Education – John Spence, Chair) is in hiatus due to other pressing issues and challenges at the University.
<u>Publications and reports</u> - compare SI changes observed in FGYA study with other trends noted, computed with improved SI models  - Examine stand height development in CFS Trials compared to observed changes in SI in regenerated vs fire origin stands  - Model stocking density relationships and spatial effects	- Completion of scientific paper co-authored by ASRD Senior Biometrician and FGYA R&D Associate delayed pending re-development of SI models by ASRD. Instead, direct evidence of density related SI changes in managed stands is being investigated using CFS trial data (see Project 4)  - scheduled and reported under Project 4 following (preliminary analysis by March 31, 2008)  - ASRD modeling these effects through work on GYPSY program. FGYA lending assistance, analyzing and monitoring spatial stocking / density interactions of ingress in RLP trial



#### 4. Cooperative Management of Historic Research Trials

##### 4.1. Income and Expenditures

Table 6 shows income and expenditures for *Measurement and Maintenance of Historic Research Trials* (FRIAA Project # FOOMOD-01-02) during the 2007-08 fiscal year. The project covers the FGYA inputs for the overall Project 4 – *Cooperative Management of Historic Research Trials*.

**Table 6. Annual Income and Expenditures – Project 4**

<b>Income / Expenditures</b>	<b>Budget</b>	<b>Actual</b>
<b>Income</b>		
Prior year balance forward	6,989	6,989
FRIAA funding transfers	19,158	19,158
Other	1,853	1,853
Total income	28,000	28,000
<b>Expenditures</b>		
Re-measurements	11,000	13,037
Evaluation of G&Y Models	7,000	2,832
Gregg Trial Analysis	3,500	-
Contingency and signage	10,000	-
Total expenditure	28,000	15,869
<b>Ending Balance</b>	-	12,131

##### 4.2. Achievements and Shortfalls

The Project involves 3 main tasks:

1. Maintenance and protection of the field installations including signage;
2. Analysis of historic data and synthesis of results;
3. Ongoing re-measurement of trials.

Table 7 summarizes achievements and shortfalls in the Historic Research Trials Project relative to deliverables planned for the year. Some of these deliverables are by agencies other than the FGYA, but are described under the Letter of Agreement between the FGYA, CFS and Alberta Sustainable Resource Development. These are shown to provide a complete picture of activities.

This is a cooperative effort shared between the FGYA, the Canadian Fibre Centre, Canadian Forest Service (CFS) and Alberta Sustainable Resource Development (ASRD). The FGYA's main role is re-measurement, maintenance and analysis of the trials as specified and provided for under the FRIAA project: *Measurement and Maintenance of Historic Research Trials* (April 2003, FRIAA Project # FOOMOD-01-02). See Appendix 3: Letter of Agreement, Historic Research Trials, 2007.

**Table 7. Achievements and Shortfalls: Project 4**

<b>Deliverable</b>	<b>Achievements / Shortfalls</b>
Negotiate New Five Year Agreement	<ul style="list-style-type: none"> <li>- One year extension to 2002-07 Letter of Agreement.</li> <li>- New five year agreement 2008-2013 setting forward principles of collaboration (being negotiated); annual and ongoing work to be defined in separate planning documents</li> </ul>
Develop system for prioritization of measurements	Process developed (Historic Research Trial – Remeasurement Priority Evaluation 23 May 2007) and applied to develop a new 5-year measurement schedule. <u>See Appendix 3</u>
<u>Remeasurements of Trials</u> Kananaskis European Thinning K-3 (1938) and Kananaskis Economic Thinning K-58 (1950)	<ul style="list-style-type: none"> <li>- Re-measurements and maintenance completed for 2 trials – Kananaskis European Thinning K-3 (1938) and Kananaskis Economic Thinning K-58 (1950). Field checks were done, some redirect indicated. Data has been checked and will be submitted to the CFS for compilation by year end.</li> </ul>
<u>Publications and Reports</u> <ul style="list-style-type: none"> <li>- Complete a performance evaluation of Alberta and British Columbia growth-and-yield models against growth data from historical research trials (FGYA)</li> <li>- Examine stand height development in CFS Trials compared to observed changes in SI in regenerated vs fire origin stands (FGYA)</li> <li>- Fertilization and thinning of 26-year-old lodgepole pine south of Edson, 1980: 30-Year results (SRD – HRT LoA)</li> <li>- Predicting individual-tree diameter growth in thinned and nitrogen fertilized mid-rotation Lodgepole Pine. (CFS – HRT LoA)</li> <li>- Stand Density Management and Productivity of Lodgepole Pine Stands. (CFS – HRT LoA)</li> <li>- Modelling and analysis of longitudinal and multilevel historical spacing trial data. (CFS – HRT LoA)</li> <li>- Analysis of spacing effects on lodgepole pine height growth using singular value decomposition. (CFS – HRT LoA)</li> </ul>	<ul style="list-style-type: none"> <li>- Completion of project begun by CFS. Gregg River and MacKay trials were reviewed against two Growth and Yield Models used in Alberta – MGM and GYPSY, two reports submitted by contract analyst Andria Dawson. Further work is needed to evaluate the Gregg River and MacKay data against TASS as well as against the new version of GYPSY.</li> <li>- Analysis of measurements completed in 2006 for the Gregg spacing trials being conducted to compare effects of controlled density on stand development with differences previously reported between post-harvest and fire-origin stands.</li> <li>- Incomplete. SRD review of measurements suggests one more measurement required before report would be useful.</li> <li>- Manuscript drafted, internal CFS review to follow</li> <li>- Manuscript drafted, internal CFS review underway</li> <li>- Manuscript drafted, internal CFS review underway</li> <li>- Manuscript drafted, internal CFS review to follow</li> </ul>

## 5. Regional Yield Estimators

### 5.1. Income and Expenditures

No expenditures were incurred by the Association on this Project during 2006.

### 5.2. Achievements and Shortfalls

An *Interim Report on the Development of Yield Estimators for Pure Lodgepole Pine Stands in Alberta* prepared by Yuqing Yang and Shongming Huang of the Forest Management Branch, ASRD, and edited and amended with input from the FGYA Director has been posted on the FGYA website as a technical information report.

No further work is envisioned under the auspices of the FGYA (SRD will solicit support directly from FMA holders in the event it undertakes further work and requires further inputs).

## 6. Enhanced Management of Lodgepole Pine

### 6.1. Income and Expenditures

Table 8 shows budgeted and actual income and expenditures for Project 6 during the 2007/08 fiscal year.

**Table 8. Annual Income and Expenditures – Project 6**

<b>Income / Expenditures</b>	<b>Budget</b>	<b>Actual</b>
<b>Income</b>		
Prior year balance forward	34,586	34,586
FRIAA Open Funds Extension		6,300
Total income	34,586	40,886
<b>Expenditures</b>		
Sub-project 1: lodgepole pine nutrition		
Sub-project 2: pine-aspen density management Analysis	34,586	37,843
Total expenditures	34,586	37,843
<b>Balance</b>	-	3,043

## 6.2. Achievements and Shortfalls

Achievements, shortfalls and problems encountered with this project are summarized in Table 9.

**Table 9. Achievements and Shortfalls - Project 6**

<b>Deliverable</b>	<b>Achievements / Shortfalls</b>
Protect Sites by Registering	Shortfall: protection status of experimental sites not confirmed
<b>Sub-project 1: lodgepole pine nutrition</b>	
- Laboratory foliar mass and chemical analyses	- Complete
<u>Publications and Reports</u> - Trial Establishment and Technical Report  Detailed technical report at end of second and fifth year	- Enhanced Management of Lodgepole (EMLP1) Nutrition and Density Management Trial Establishment Report (FRIAA Project OF-02-16) October 2007. Includes compilation of foliar analyses results for first complete growing season following fertilization, database development and documentation  Complete (see above)
<b>Sub-project 2: pine-aspen density management</b>	
- Field sampling (carry over from 2006) - laboratory work (carry over from 2006) - compilation and analysis	- Complete  - Complete  - All data compiled into a consolidated database - Analysis of results not completed
<u>Publications and Reports</u> - Trial Establishment Report  - Scientific Paper (U of A)	- Enhanced Management of Lodgepole Pine (EMLP2) Installation Establishment Report (FRIAA Project OF-02-16) March 31 2007 - Enhanced Management of Lodgepole Pine (FRIAA Project # OF-02-16) Progress Report and Updated Work Plan Sept 30 2007 (applies to both sub-projects)  - In progress, not complete

## 7. Regeneration Management in a Mountain Pine Beetle Environment

This is a new project approved in the 2007/08 workplan, with funding support to scope out the issue and develop a proposal for a project that would provide tools and guidance for members and others faced with the challenge of managing stands and landscapes in a post-beetle environment.

Funding has been provided to the program from the Foothills Model Forest's Mountain Pine Beetle Ecology Program, as well as FRIAA Open Funds (Project #OF-07-P019).

### 7.1 Income and Expenditures Project 7

Table 10 shows budgeted and projected income and expenditures for Project 7 during the 2007/08 fiscal year. At the time of the completion of this report, no billing for this project had occurred.

**Table 10. Annual Income and Expenditures – Project 7**

Income / Expenditures	Budget	Actual
<b>Income</b>		
FRIAA Open Funds	64,200	57,780
FGYA Management/ Technical Input <sup>2</sup> (in-kind)	18,240	18,240
Model Forest MPB Program	25,500	25,500
Total income		101,520
<b>Expenditures</b>		
Baseline Assessment	58,500	
Monitoring	19,200	
Technical input/ management FGYA (in-kind)	18,240	
Administration / project management FtMF	12,000	
Total Expenditure	107,940	
<b>Balance</b>		<b>101,520</b>

### 7.2 Achievements and Shortfalls

Stage 1 of the project was to assess experience in BC and US, based in part on a tour of BC affected areas, identify susceptible stand types, develop a project design and procure funding.

Achievements, shortfalls and problems encountered with this project are summarized in Table 11.

**Table 11. Achievements and Shortfalls – Project 7**

Deliverable	Achievements / Shortfalls
<u>Assess Experience Elsewhere</u> - Tour areas impacted in B.C. - Assess experience in BC and US - Report on findings	- Tour of Mountain Pine Beetle Affected Areas in the Prince George Forest District July 11 and 12, 2007 – Draft Report and Recommendations July 28 2007  Shortfall: US experience not included
<u>Identify Susceptible Stand Types</u> - Identify types, quantitative inventory profile	- types identified, included in project proposal
<u>Develop Project Design</u>	- Done, three-year first stage proposal developed. Depending on scale of infestation and results of first three years, two more years identified as Stage Two.
<u>Secure Funding</u>	Done. Funding Secured for Phase One 2007-2010 through two successful proposals: - Monitoring and Decision Support for Forest Management in a Mountain Pine Beetle Environment (Foothills Model Forest MPB Ecology Program Proposal Sept 27 2007)  - Monitoring and Decision Support for Forest Management in a Mountain Pine Beetle Environment (FRIAA Open Funds Proposal, October 9, 2007),

<sup>2</sup> R&D Associate technical input and management role

## 8. Extension and Communication

Most deliverables for extension and communications are generally listed against the projects to which they relate, however Table 11 summarizes deliverables against the proposed activities for 2007. All programs now contained under the umbrella of the Foothills Model Forest are required to prepare communications plans, and the 5-year and annual plan prepared for the FGYA is included in Appendix 4. The cost for activities conducted under Extension and Communications are funded under Project 1 and not reported separately here.

Achievements, shortfalls and problems encountered with this project are summarized in Table 12.

**Table 12. Achievements and Shortfalls – Communications and Extension**

Deliverable	Achievements / Shortfalls
Field Tour re Regeneration Management of stands attacked by MPB	Tour conducted July 10,11 2008. Report produced and posted on model forest website.
Website Updates	Website is current with all reports including 2007
Technical Information Reports/ Papers for Projects 2,3,4,6,7	<ul style="list-style-type: none"> <li>- Project 2 report – Crop performance / regen model - pending March 31, 2008</li> <li>- Project 3 scientific paper with ASRD – delayed pending development of new SI models</li> <li>- Project 4 reports (2) – Dawson (MacKay and Gregg) submitted, Gregg Analysis pending March 31</li> <li>- Project 6 scientific paper with U of A – pending</li> <li>- Project 7 report – Done</li> </ul>
Bulletins	<ul style="list-style-type: none"> <li>Two Quicknotes</li> <li>Quicknote #8 – Project 7 MPB Initiative – Done</li> <li>Quicknote #9 – Project 2 RLP - Done</li> </ul>
Communications Plan 2007-12 and annual	Done

## **Appendix 1**

### **Minutes of Foothills Growth and Yield Association Steering Committee Feb 14 2007**

#### **In attendance**

Greg Behuniak  
Dick Dempster  
Greg Branton  
Murray Summers  
Don Podlubny  
Tim McCready  
John Huey  
Bob Held  
Richard Briand  
Daryl Price

#### **1. Review of minutes from 23 Feb 06 Meeting**

Dick reviewed minutes and action items. Minutes adopted as presented.

#### **2. Director's Report**

Dick reviewed the Directors Report and asked for question at the end of his presentation. End balance higher than expected due to changes in R&D function//staffing.

RFP issued to address management functions – intent to move Dick into R&D role with forestry consultant to assume management functions. DP to report on findings under Agenda item 4 – Staff and Assignments.

The major projects for the year were reviewed and status provided.

The Committee agreed to post material on yield estimators on the association's website.

#### Discussion:

Enhanced Management of Lodgepole pine project – pine aspen density costs double estimates? Upon review decision made based on number of factors including number of sites and increased density, there would be a field overrun – on balance the project should be at or near target.

Analysis funds moved to cover increased field costs. Analysis requirement will be absorbed into the analysis budget from Project 1. Total cost of the project will not change.

Motion accepted as presented.

#### **3. Annual Work Plan**

Dick reviewed the annual work plan

### **3.1. Project 1**

Planned– pre season meeting tech and contractors in the spring – one day meeting.  
Field tour regeneration meeting – tour MPB attacked stands in BC. Two days starting in Prince George moving to Quesnell.

Looking for feedback on timings for the tour – for BC best time first two weeks in July, but they remain flexible.

Need to schedule another meeting of the Steering Committee – combine with technical meeting?

### **3.2. Project 2**

Need detailed fieldwork schedule.

### **3.3. Project 3**

Dick to work on scientific paper on reviewing data from site index models.

#### Project 4

Review needed on trials indicated in the draft report. Data collection on spacing trials requires analysis to compare effects on density with post harvest or fire origin stands. Absorbed under FGYA 1.

#### Project 5

No change.

#### Project 6

Various catch up projects to be completed this year. Nothing new for 2007.

#### Project 7

Discussion on this topic from 10 January 07 meeting has been incorporated into the draft business plan. Looking for opportunities for the Association to contribute to concerns flowing from MPB attacked stands.

### **3.4. Funding**

Remain the same for each member – no change as per the current five-year plan. Funding for project 4 – a plan has been prepared – requires further review from the committee. Breakdown found at appendix 1.2.

Question on process for making the decision on determination for funding for the project.

There was discussion on the need for a process with FYGA, CFS, SRD to review initial agreement to confirm deliverables.



Suggestion, have the FGYA appoint a representative to meet with other partners to discuss priorities and review the agreement. Greg agreed to take on that responsibility.

Line item budget for the Association was reviewed in detail.

Daryl indicated FMF will determine Board representative for the Steering Committee.

Issue over in kind support from FMF may affect business planning. A review of the Foundation's workplan indicates they are 36 days short. Proposals are out with Oil and Gas and the Federal Government – no word back to date.

Heavy pressures currently on GIS section due to increased workload. Suggestion from FMF to have organizations to pay for GIS costs outright. Asking for 50 percent paid outright for 2007 with expectation of full payment beginning in 2008. Cost to Association estimated at \$6,000.

Pressure could be relieved should funding be made available.

Discussion on mechanics of funding to meet the funding realities.

Consideration of having project management run through the FMF – difficulty being FMF may not have the capacity to carry out the work.

Concern expressed with lack of knowledge within FMF providing support in managing database services under the new SQL server.

Dick suggests there are sufficient funds within the current work plan to incorporate the increased costs for the coming year. Further discussion on addressing funds for 2008 will be required.

Separate the question of projections outlined in table 7 - but approve the technical work plan for the year and work through the budget based on the project funding.

Murray indicated he was uncomfortable with carrying large reserve – further work needs to be done on defining expenses and requirements.

Motion:

*The Committee Accept the workplan as set out in Section 6.1 of the draft document.*

Moved John Huey; Seconded Richard Briand – Carried

#### **4. Staff and Assignments**

RFP sent out with 12 Feb 07 deadline for submission. A panel would list submission. Short list to vet and distribute to the Steering Committee.

Two responses received and were circulated to the members – there was discussion on the two proposals. Committee will take away proposals. Dick + chair will arrange conference call to make final decision.

Duties and responsibilities to be covered off under the RFP are outlined under Section 3 of the draft work plan.

Next challenge is moving to development of the research and analysis function. Association is at a point where project management can be handed off with Dick retaining research function to ensure consistency.

Suggestion on getting idea from members of the Steering Committee on level of commitment in order to determine allocation to funding the position.

Suggestion from Daryl Price FMF on fee for service based on the tasks outlined in the RFP.

There was discussion on moving away from large forestry contractors to defining need for 1x project manager and 1x technical coordinator.

Suggestion to split contract between management and field services and parcel work to both firms.

Daryl FMF, Dick and the Chair to hold conference call to better define responsibilities. Need more definition of time requirements (field and management) prior to making a final decision on awarding the contract. To be completed prior to 23 Feb 07.

## **5. Updating Business Plan**

Plan cannot be approved or amended until financial commitment confirmed.

## **6. Authorization for Project Administration and Funding**

Proposal – Project spending \$244,000 balance forward \$118,000 – required funding for 2007-08 \$124,000 – divide by members = \$15,000.

Need more certainty on re-structuring costs prior to making final commitment on funding levels for the next year.

Signing of annual dues sheet delayed until there better data on costs is available.

Three options:

Retain \$22,000

Move to \$15,000

Do nothing until further information

### Motion:

*The Steering Committee approve funding for FRIAA Project FOOMOD-01-02 Historical Research Trials for 2007 to a maximum of \$29,011 divided amongst members as per business plan. Subject to renewal of the collaborative agreement with CFS and review of scheduled work.*

Moved – Greg Branton; Seconded Greg Behuniak – Carried.

Motion:

6.1.1. *Cap membership dues at \$15,000 for 2007.*

Moved Greg Branton; Seconded John Huey – Carried

**7. Other Business**

Meeting adjourned at 1635.

**Appendix 2: Mid Year Progress Report October 2007**

Project/Activity	Approved Budget for Year	Expended to September 30	Progress to Date (September 30)
Foothills Growth and Yield Association (FGYA) Project 1: <i>Development and Management of the Association</i> - FtMF Project 235 - FRIAA Project FOOMOD-01-03	\$214,263 (FRIP and member funded)	\$61,936.16 to Sept 30, 2007	<p><i>Planning and Funding Approvals:</i> Work plan and budgets for all projects updated and approved.</p> <p><i>Staffing:</i> Director, Research and Development Associate and field coordination assistance contracted.</p> <p><i>Meetings and tours:</i> Technical committee and contractor meeting held June 14 in Edson; Field tour to Prince George July 11,12 to view impacts of Mountain Pine Beetle and the implications for Alberta.</p> <p><i>Publications:</i></p> <ol style="list-style-type: none"> <li>1. Annual Report 2006-07;</li> <li>2. Tour of Mountain Pine Beetle Affected Areas in the Prince George Forest District July 11 and 12, 2007</li> <li>3. Enhanced Management of Lodgepole (EMLP1) Nutrition and Density Management Trial Establishment Report (FRIAA Project OF-02-16)</li> <li>4. Enhanced Management of Lodgepole Pine (EMLP2) Installation Establishment Report (FRIAA Project OF-02-16)</li> <li>5. Enhanced Management of Lodgepole Pine (FRIAA Project # OF-02-16) Progress Report and Updated Work Plan</li> </ol>
FGYA Project 2: <i>Lodgepole Pine Regeneration</i>	Estimated value \$97,100 (in-kind fieldwork contribution by members) \$6,000 FtMF in-kind support data management	Estimated 90% complete = \$87,400 (in-kind)	<p><i>Planning:</i> Schedules finalized and approved for full measurements (108 plots), partial measurements (300 plots) and tending treatments (22 plots).</p> <p><i>Fieldwork:</i> Scheduled work nearing completion; verification and QC audits in progress.</p> <p><i>Analysis and reporting:</i> Early competition assessments analyzed to identify treatment requirements. Approach to modeling and analysis under review. New database developed to stabilize and expedite data input, storage and analysis</p>
FGYA Project 3: <i>Post-harvest Stand Development</i>	-	-	<p><i>Follow-up to PHSD Conference:</i> FGYA Chairman and Director participated in April 23 meeting to advance 3 Dialogues emerging from 2006 Conference. Next meeting proposed January 2008.</p>
FGYA Project 4: <i>Historic Research Trials</i> -FtMF Project 235.1	\$28,000 (FRIP and member funded)	\$13,045 contract for measurements; \$7,000 for	<p><i>Fieldwork:</i> Complete. Kananaskis trials K-3 and K-58 remeasured in September; QC incomplete.</p> <p><i>Analysis and Reporting :</i> Contract let for evaluation of growth and yield</p>

Annual Report 2007/08

Project/Activity	Approved Budget for Year	Expended to September 30	Progress to Date (September 30)
-FRIAA Project FOOMOD-01-02		analysis	models (GYPSY, MGM, TASS, TADAM, SORTIE) against data from historic research trials. This project was begun by CFS in 2006, CFS unable to continue to completion.
FGYA Project 5: <i>Regional Yield Estimators</i>	-	-	Complete, no further work planned.
FGYA Project 6: <i>Enhanced Management of Lodgepole Pine</i> - FtMF Project 235.2 - FRIAA Project OF-02-16	\$34,587 (project funded under FRIAA Open Funds Program, augmented by members)	\$37,843.87	<i>Sub-project 1 (Nutrition):</i> All trial installation work is complete and QC checked. Data has been cleaned and checked for all 30 sites; <i>Sub-project 2 (Pine-aspen Density):</i> Missing data has been remedied; laboratory stem analyses completed; Reconnaissance and selection target reduced from 30 to 18 sample stands, and completed. Field sampling in progress (installation, mensuration and QC checks completed for 8 stands). <i>Analysis and reporting:</i> Installation establishment reports written; compilation and analysis in progress.
FGYA Project 7 Monitoring and Decision Support for Forest Management in a Mountain Pine Beetle Environment	Costs of Developing proposal absorbed under Project 1		<i>Planning:</i> Field Trip to examine British Columbia issues in Prince George region; engaging collaborators to participate in project (Rene Alfaro CFS; Ellen MacDonald UofA; John Stadt/ Ken Greenway SRD); development of proposal and budget for scaled down project, with provision for a second phase dependent on the severity of the MPB infestation. Proposed budget \$25,500 – FtMF (approved) \$18,240 – In-kind FGYA \$64,200 Proposal to FRIAA Open Funds
FGYA Total 2007-08	\$276,850	\$99,780.03	In-kind support \$103,100

**Appendix 3: Letter of Agreement, Historic Research Trials 2007**

**LETTER OF AGREEMENT**

between

Natural Resources Canada, Canadian Forest Service (CFS),

Forestry Division, Alberta Sustainable Resource Development (SRD),

and

Foothills Growth and Yield Association (FGYA)

for

Cooperative Management of Historic Lodgepole Pine Research Trials

**1. Preamble**

The Canadian Forest Service (CFS) has been instrumental since 1938 in the establishment and analysis of research trials evaluating the growth response of lodgepole pine to thinning and fertilization in western Alberta. Continuation of this research supports one of the major Science and Technology priorities of the Canadian Forest Service, namely to evaluate and enhance Canada's ability to practise sustainable forest management and to develop techniques to enhance timber production.

Alberta Sustainable Resource Development (SRD) is committed to ensuring the sustainable contribution of benefits to Albertans from Alberta's forests. It has since 1960 maintained a system of permanent sample plots in lodgepole pine stands in the Foothills, Sub-Alpine and Montane natural sub-regions. In 1980 it established a trial near Edson, Alberta, to evaluate the effects and interactions of thinning and fertilization on lodgepole pine growth.

The Foothills Growth and Yield Association (FGYA) is a consortium of 9 companies holding major forest tenures in western Alberta, administered by the Foothills Model Forest. The mandate of the Association is to continually improve the assessment of lodgepole pine growth and yield in managed stands by forecasting and monitoring responses to silvicultural treatments, facilitating the scientific development and validation of yield forecasts, and promoting knowledge, shared responsibility and cost-effective cooperation.

In August 2001, representatives of the above-mentioned organizations toured the historic CFS lodgepole pine trials. They concluded that links should be forged to ensure the ongoing protection, measurement and interpretation of these trials.

A Letter of Agreement (LoA) was signed on July 1, 2002, covering terms, conditions, mutual and individual undertakings by the three organizations for the cooperative maintenance, management, analysis and reporting on 14 field trials owned by CFS (13) and SRD (1). This Letter of Agreement expired on March 31, 2007. See Attachment 1: Historic Research Trials – Progress and Performance Under First Agreement 2003-2007.

The CFS, SRD and FGYA (the Cooperators) have agreed that it is in the interests of all three parties and the forest management community generally that this LoA be updated and renewed for the 2007-08 fiscal year to allow for development of a new long-term agreement.

## 2. Purpose

The purpose of this LoA is to facilitate the collaborative arrangements necessary to provide forest managers in Alberta with the full and continued benefit of relevant long-term field trials established to assess the responses of lodgepole pine to nutrition and density management.

Table 1 lists currently identified relevant trials of the Cooperators. Installations may be added or deleted from the list by the mutual agreement of all parties. The scope of cooperative efforts will initially be limited to lodgepole pine and species growing in association with pine on the listed research trials. This does not preclude the identification of other opportunities for cooperation, and extension of joint efforts to other species and trials upon the mutual agreement of the parties.

Specific objectives of cooperation are:

1. Maintain and protect the identified trials. This includes:
  - Ensuring trials are clearly demarcated and signed for protection and demonstration purposes;
  - Provision and maintenance of appropriate land reservation status;
  - Communication of the protection status and its purpose to land managers, and creating awareness of status to land users.
2. Synthesis of results to date. The synthesis will involve:
  - Standardized analysis and presentation of trial results. The intent here is to ensure that results of the various trials are comparable, comprehensible, and useful to forest managers. Examples are: the use of common and ecologically-referenced taper equations and site index equations; reporting of merchantable volume using applicable utilization standards; referencing of sites to the provincial ecological classification; standardized thematic presentation of results on stand density management diagrams or other frameworks facilitating comparison and management interpretation.
  - Interpretation of the implications of results for forest managers. This component is crucial given the interests and priorities of the FGYA membership and SRD, and the science and technology objectives of the CFS.
  - Publication of results and interpretations. The cooperating agencies will jointly or separately prepare scientific papers and interpretive reports based on data from these installations with expediency as measurements and data allows.
3. Ongoing measurement and analysis, involving:
  - Scheduled re-measurement on a prioritized basis;
  - Timely compilation, analysis, and distribution of results;
  - Periodic update of the synthesis described under (2) above.

## 3. Data Access and Use

Data will remain the property of the trial owner (see Table 1).

Data for the 14 CFS and SRD trials will be shared among the three agencies for the purposes of:

- Cooperative syntheses of results as provided for in this Proposal, including scientific analysis and expert interpretations of the data for the benefit of forest managers;
- Assessment and validation of growth-and-yield assumptions and models;
- Singly or jointly publishing the results of research and other knowledge accrued, in a manner that recognizes and gives credit to the parties to this agreement.

**Table 1**  
**Lodgepole Pine Field Trials**

<i>Owner/ #</i>	<i>Title / Location</i>	<i>Established</i>	<i>Publication</i>
CFS / A34	Lodgepole pine pre-commercial thinning, Mackay	1954	W.D. Johnstone, 1981, NOR-X-237
CFS / A100	Spacing trials – 7 year old fire origin stand of lodgepole pine, Gregg River	1963/64	W.D. Johnstone, 1981, NOR-X-236 R.C. Yang, 1991, NOR-X-322
CFS / NOR-402	Spacing trials – 28 year old fire origin stand of lodgepole pine, Gregg River	1984	Kolabinski and Lux, unpublished establishment report
CFS / NOR-405	Thinning and fertilization of 40-year-old semi-mature lodgepole pine, McCardle Creek	1984-85	R.C. Yang, 1998, Can J For Res 28
CFS	Early development of lodgepole pine after three different mechanical thinning treatments, Swan Lake	1977	I. Bella, 1990, For Chron
CFS	Ricinus fertilization after thinning <sup>1</sup>	1975	
CFS	Fertilizing after thinning 70-year-old lodgepole pine, Clearwater	1968	I. Bella, 1978, Bi-monthly Research Note 34
CFS / NOR-008	Juvenile spacing of 25-year-old lodgepole pine, Teepee Pole Creek (North and Flat Sites Only) <sup>2</sup>	1967	W.D. Johnstone, 1981, NOR-X-244 R.C. Yang, 1986, Forest Management Note
CFS	Strip thinning of lodgepole pine, Teepee Pole Creek	1966	I.E. Bella, 1972. NOR-X-23 Information Report
CFS / K-57	Development of a 77-year-old lodgepole pine stand following heavy thinning, Kananaskis	1941	J. Quaite, 1950, Silviculture Leaflet #47
CFS / K-3	Various thinnings based on European practices, Kananaskis	1938-39	Smithers, 1961, Dept. For. Bulletin # 127
CFS / K-58	Economic possibilities of commercial thinning in an 88-year-old lodgepole pine, Kananaskis	1950	D.I. Crossley and R.S. Jewesson, 1952 (unpublished)
CFS	Commercial thinning in 85-year-old lodgepole pine, Strachan	1952	
SRD	132 fertilization and thinning plots in 26-year-old lodgepole pine, Edson	1980	S.K. Takyi, 1984 (internal Alberta Forest Service report)
SRD / CFS (A-17)	Lodgepole pine PSPs, Foothills and Subalpine subregions	Various	
FGYA	Regenerated lodgepole pine study (102 Installations 2001, 2002)	2001, 2002	W.R.Dempster, 2003. Establishment Report. Foothills Model Forest
FGYA	Enhanced Management of Lodgepole Pine Study (30 Nutrition; 18 Pine/Aspen Sites)	2005	W.R.Dempster 2003 Enhanced Management of Lodgepole Pine. Detailed Project Design April 26, 2005. Foothills Model Forest

<sup>1</sup> This trial has been compromised and will no longer be measured.

<sup>2</sup> The South replicate of this trial contains site selection flaws and significant wind damage, and will no longer be measured.



The data and results obtained will not be published, in whole, in part, or in summary form in any public document without the written consent and acknowledgement of the owner that the data has been fairly and accurately used and represented. This consent will not be unreasonably withheld.

Data will not be released to third parties, including individual members of the FGYA, without the agreement of the owner. Distribution of data to third parties, at the discretion of the owner, will be carried out under a separate data-sharing agreement between the data owner and the party requesting the data.

Syntheses of results will be published, following review by representatives of the CFS, SRD and FGYA. Periodic updates on work progress will be distributed among the three organizations.

#### 4. Anticipated Activities and Required Level of Effort

Activities and the anticipated levels of effort are outlined below under three task groupings:

1. Maintenance and protection of the field installations;
2. Synthesis of results to date and new reports;
3. Ongoing measurement and analysis.

Estimates of required effort or cost contained in this LoA represent the mutual expectation and understanding of the three parties at the time of signing, and are intended solely to provide a common basis for cooperative planning. Nothing in this LoA shall be construed as obligating the parties to expend money, or as involving any party in any contract or other obligation for the future payment of money, in excess of any funds that may be mutually agreed to for joint undertakings.

##### Task 1: Maintenance and Protection of Field Installations

Table 2 summarizes the activities and effort required for Task 1. The participation of all three parties is important for successful maintenance and protection of the trials. The role of SRD, as the land management authority, is crucial. A shared protocol will be developed whereby the trials are profiled in a publicly accessible web site, SRD field staff are well informed and actively involved in protection, and all three parties respond quickly and effectively to inquiries, encroachment risks, and trespass.

**Table 2**  
**Task 1: Maintenance and Protection of Field Installations**

Activity	Agency	Required Level of Effort
Markers and signage preparation	CFS	The listed activities are, in total, expected to require approximately 30 person days per year. Maintenance of markers and signage can be incorporated with measurement field visits.
Signage installation, maintenance	FGYA	
Notification to SRD and FGYA of plot locations and protection status	CFS	
Registration and protective notations on land records <sup>1</sup>	SRD	
Notification and communications	SRD, FGYA members	
Response and enforcement <sup>2</sup>	SRD, FGYA members	

<sup>1</sup> Assistance from the CFS and/or FG&YA may be required in the preparation of maps and GPS data required to obtain/retain reservations.

<sup>2</sup> Current penalties for PSP disturbance are light. Legislative changes to penalties have been requested.

**Task 2: Synthesis of Results to Date and New Reports**

Table 3 summarizes the effort required for planned activities (Data compilation, analysis, management interpretations, report preparation, publication and editorial support) under Task 2.

**Table 3**  
**Task 2: Synthesis of Results to Date and New Reports**

<b>Activity</b>	<b>Agency</b>	<b>Approximate Level of Effort required</b>
Performance evaluation of Alberta and British Columbia growth-and-yield models against growth data from historical research trials. Project will complete the analysis and report started by CFS. A. Dawson	FGYA	30 Days contract analyst
Comparison of results from controlled experimental spacing trials with observed differences between fire-origin and post-harvest pine stands. W. R. Dempster	FGYA	8 days FGYA senior analyst
5 Quicknotes	FGYA	5 days FGYA senior analyst
Fertilization and thinning of 26-year-old lodgepole pine south of Edson, 1980: 30-Year results	SRD	10? Days Senior Analyst
Predicting individual-tree diameter growth in thinned and nitrogen fertilized mid-rotation Lodgepole Pine. R. Yang and J.D.Stewart	CFS	25 days (scientist & technician) In Preparation
Stand Density Management and Productivity of Lodgepole Pine Stands. J Stewart and R. Yang.	CFS	10 days (scientist & technician) In Preparation
Modelling and analysis of longitudinal and multilevel historical spacing trial data. R.Yang & J.Stewart.	CFS	45 days (scientist & technician) In Preparation
Analysis of spacing effects on lodgepole pine height growth using singular value decomposition. R..Yang & J.Stewart	CFS	35 days (scientist & technician) In Preparation

**Task 3: Ongoing Measurement and Analysis**

Attachment 2 (Historic Research Trial – Remeasurement Priority Evaluation 23 May 2007) describes the process that has been used to consider the value of remeasuring individual historical research trials under this Agreement, and the priority ranking of those trials.

Table 4 reports on trials measured in the first five-year Agreement and lists those trials that will be measured (Task3) based on the evaluation process. It also lists the estimated fieldwork days to do this during the five-year period commencing July 1, 2007.

**Table 4**  
**Task 3: Fieldwork Schedule**  
**(estimate of required person days)**

Owner/ #	Title / Location	Measured 2002-2006	Planned 2007-2012		Priority
			Year	Days	
CFS / A34	Lodgepole pine pre-commercial thinning, Mackay	2003	2008	56	Medium
CFS / A100	Spacing trials – 7 year old fire origin stand of lodgepole pine, Gregg River	2006	2011	46	Medium
CFS / NOR-402	Spacing trials – 28 year old fire origin stand of lodgepole pine, Gregg River – Medium site	2004	2009	11	Medium
CFS / NOR-405	Thinning and fertilization of 40-year-old semi-mature lodgepole pine, McCardle Creek	2004	2009	36	Medium / High?
CFS	Early development of lodgepole pine after three different mechanical thinning treatments, at age 9, Swan Lake	2003	2008	8	Medium
CFS	Fertilizing after thinning 70-year-old lodgepole pine, Clearwater	2005	2010	22	Medium
CFS / K-3	Various thinnings based on European practices, Kananaskis	Deferred	2007	18	Medium
CFS / K-58	Economic possibilities of commercial thinning in an 88-year-old lodgepole pine, Kananaskis	Deferred	2007	4	Medium
SRD 7008 & 7009	Fertilization and thinning of 26-year-old lodgepole pine, Edson	2004 (SRD)	2009	75	Medium
<b>Subtotal: Medium Importance</b>				<b>276</b>	
CFS / NOR-402	Spacing trials – 28 year old fire origin stand of lodgepole pine, Gregg River – Low and High sites	2004	2009	21	Low
CFS / NOR-008	Juvenile spacing of 25-year-old lodgepole pine, Teepee Pole Creek – Flat and North replicates	2003	2008	49	Low
CFS	Strip thinning of lodgepole pine, Teepee Pole Creek	Deferred	?	30	Low
CFS / K-57	Development of a 77-year-old lodgepole pine stand following heavy thinning, Kananaskis	2006	2011	10	Low
CFS	Commercial thinning in 85-year-old lodgepole pine, Strachan	2005	2010	8	Low
<b>Subtotal: Low Importance</b>				<b>118</b>	

Trials and measurements have been grouped into two remeasurement categories: *medium importance* and *low importance*. These categories do not necessarily reflect the importance of the trials themselves, but rather the relative need for remeasurement within the term of the current Agreement. Measurements in the *medium importance* category represent the recommended minimum level of effort. Those in the *low importance* category will be undertaken subject to available resources and further review of their priority. The categories will be reviewed and may be adjusted following the initial synthesis of available data. Note that under the proposed continual evaluation process, priorities may be altered from low or medium to medium or high, especially in response to risk of damage by human activity or mountain pine beetle.

In Task 3 (ongoing measurement and analysis), data collection will follow formats and quality control standards agreed to by all three parties.

Table 5 describes the measurement, analysis and reporting proposed during the term of this Agreement, and the expected person-days required to perform the tasks described.

**Table 5**  
**Task 3: Ongoing measurement, analysis and reporting**

Activity	Agency	Approximate Level of Effort Required
Fieldwork (see Table 4)	FGYA SRD	276 person days minimum (includes only those trials and measurements rated as of medium importance) 118 person days total (includes all trials and measurements rated as of low importance)
Data verification	FGYA  CFS	15 days per year average 75 days total – 2007-2012  6 days
Data Cleaning and Storage	FtMF  CFS	5 days per year average 25 days total – 2007-2012  2 days
Compilation, analysis (FGYA R&D Associate)	FGYA	2 days per year 2007-2012
Completion of report begun by CFS in first LoA (Contract analyst)	FGYA	30 days
Writing one report and 5 Quicknotes (FGYA R&D Associate)	FGYA	13 days
Writing Reports/Manuscripts	CFS	~ 115 days
Plot protection, signage, interpretation	CFS	~ 10 days
Writing One Report	SRD	~ 10 days

Table 6 shows the estimated total personnel requirement for the period (2007-2008), summarized from Tables 2 through 5. A project management allowance of 100 days (approximately 10% of personnel inputs) has been added for technical direction, field coordination, and quality control. Financial costs for protection and maintenance are excluded, on the assumption that the activity will be absorbed under existing budgets of the three parties.

**Table 6**  
**Summary of personnel requirements 2007-2008**

<b>Item</b>	<b>Person days</b>
Research scientists, CFS	123
Technicians/assistants, CFS	10
Senior analysts SRD	10
Assistant analyst SRD	10+
Field measurement services	276-394
Data compilation services	100
FGYA R&D Associate	22
Contract Analyst FGYA	30
FGYA Operations Director	5
Protection and maintenance	150
Project management & QC	100
FGYA Field Coordinator	
<b>Total</b>	

## 5. Roles, Responsibilities and Contributions

This LoA does not obligate the parties to expend money, or involve any party in any contract or other obligation for the future payment of money. Nevertheless, it is the intent of the parties to contribute to the cooperative effort, to the best of their respective abilities, as follows:

1. The FGYA will undertake field re-measurement of CFS trials, based on a mutually agreed and prioritized schedule, as well as re-measurement of its own trials.
2. The R&D Associate of the FGYA will analyze and synthesize existing and new data into scientific papers, interpretive reports and FtMF Quicknotes.
3. The CFS will provide support for remeasurements (in the form of logistical information and existing data), content of interpretive signs for field plots, plot marking signs, data checking and some field verification, updating and maintenance of an archival database, analysis and synthesis of existing and new data into scientific papers and interpretive reports.
4. The SRD will provide in-house support for analysis and interpretation of results, and will undertake periodic re-measurements of its own trials and permanent sample plots.
5. The SRD will analyze and synthesize existing and new data from its "Takyi" research installation into a report.
6. All parties will contribute to protection and maintenance of installations including signage; and to project management, quality control, interpretation of results to forest management, and dissemination of information and results.

## 6. Administration

1. This LoA will be administered jointly by designated representatives from each of CFS, SRD, and FGYA, and other members from each of the parties, as each party deems appropriate. The representatives will be:
  - for CFS: Operations Director, Canadian Wood Fibre Centre,;
  - for SRD: Executive Director, Forest Management Branch;
  - for FGYA: Chairman of the Steering Committee.
2. These representatives will each name their representatives with regard to the day-to-day or periodic implementation of this LoA.
3. These representatives will also have the power to add other members or observers as they judge desirable, by unanimous consent of the other parties to this Agreement.

4. The representatives or their designates will meet at least annually to review the activities covered by this agreement and their costs, assess progress toward the objectives, and discuss the direction and extent of subsequent work.

## 7. General

1. Any notice which is given to any party pursuant to this LoA may be given personally or sent by mail or facsimile to:
  - For CFS: Operations Director, Canadian Wood Fibre Centre, Canadian Forestry Service, Pacific Forestry Centre, 506 West Burnside Road, Victoria, BC V8Z 1M5.
  - For SRD: Executive Director, Forest Management Branch, Alberta Sustainable Resource Development, 8<sup>th</sup> Floor 9920-108 Street, Edmonton, Alberta T5K 2M4.
  - For FGYA: Chairman, FGYA Steering Committee, Foothills Model Forest, Hinton Training Centre, P.O. Box 6330, Hinton, Alberta, T7V 1X6.
2. Any of the three parties may terminate this Agreement by giving the other parties six months notice in writing.
3. This LoA may be amended by the written agreement of the parties.
4. Nothing in this LoA in any way affects the rights of any of the three parties to make other arrangements on the same subject matter with other parties.
5. The Letter of Agreement shall take effect on July 16, 2007 and shall terminate on March 31, 2012 unless terminated earlier in accordance with Clause 7.2.

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Ken Mallet  
Director, Forest Biology  
Northern Forestry Centre  
Canadian Forest Service

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Raoul Wiart  
Operations Director  
Canadian Wood Fibre Centre  
Canadian Forest Service

\_\_\_\_\_  
Witness

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D.A. Sklar  
Executive Director  
Forest Management Branch

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Witness

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Greg Behuniak  
Chairman  
Foothills Growth and Yield Association

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Witness

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James Lelacheur  
President  
Foothills Model Forest

Attachment 1: Historic Research Trials Agreement 2007

## **Historic Research Trials - Summary of Achievements 2002-2007**

### **Purpose**

1. Maintenance and protection the identified trials. This included:
  - Demarcation and signage of trials for protection and demonstration purposes;
  - Provision and maintenance of appropriate land reservation status;
  - Communication of the protection status and its purpose to land managers, and creating awareness of status to land users.
2. Synthesis of results to date. The synthesis was to involve analysis and presentation of trial results, interpretation of implication of results for forest managers, and publication of results and interpretations.
3. Ongoing measurement and analysis, involving:
  - Scheduled re-measurement on prioritized basis;
  - Timely compilation, analysis, and distribution of results;
  - Periodic update of the synthesis described under (2) above.

### **Responsibilities**

The FGYA was responsible for:

- Demarcation and signage of the trials for protection and demonstration purposes;
- Field re-measurement of the trials, based on a schedule mutually agreed and prioritized by the CFS, SRD, and FGYA;
- Providing data from measurements in a format acceptable to CFS.

The following tasks were undertaken at each re-measurement:

- Update / provide location information and access notes, including geographical positioning and mapping of plot boundaries.
- Repair or replace failing plot demarcation.
- Ecological assessment of each treatment plot (to the plant community level).
- Mensuration: including tree measurements of diameter breast-height, height, height to live crown, crown radius, crown class, and condition.

The CFS was responsible for providing support for remeasurements (in the form of logistical information and existing data), application for DRS status<sup>1</sup> for unprotected sites, preparing the content of interpretive signs for field plots, creating and installing plot marking signs, data checking and some field verification, creation, updating and maintenance of an archival database, analysis of the data and its incorporation into scientific papers and interpretive reports. Several reports are in progress and are expected to be completed during the 2007-2012 LoA:

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<sup>1</sup> During the 2002-07 LoA the CFS applied for and received DRS status for the trial sites. Since these applications were made (and approved), policy changes for Alberta Crown reservations no longer allow DRS designation for organizations other than the provincial government, and ISP status is now the standard protection granted other agencies.

**Trials Measured and Maintained**

<i>Trials Scheduled in Proposal</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>
MacKay thinning	x				
Swan Lake thinning	x				
Teepee Pole Creek spacing	x				
McCardle fertilization & thinning		x			
Gregg spacing 1984		x			
Clearwater fertilization & thinning			x		
Ricinus fertilization after thinning			x		
Strachan thinning			x		
Gregg spacing 1963				x	
Kananaskis heavy thinning (K-57)				x	
Teepee Pole Creek strip thinning				deferred	
Kananaskis European thinning (K-3)				deferred	x
Kananaskis economic thinning (K-58)				deferred	x

**Interpretive Signage**

Interpretive signage was fabricated and installed for 4 of the most important and accessible sites to facilitate self-guided study:

- Gregg River 1964;
- Mackay;
- Swan Lake;
- Teepee Pole Creek spacing.

**Reports and Publications Completed**

- 3 Quicknotes on pre-commercial thinning, commercial thinning, and fertilization and thinning (J.D. Stewart and R. Yang).
- Barry White, Editor. 2002. *Evaluating the Opportunities for Nutrition and Density Management of Fire Origin Lodgepole Pine in Alberta: An Opinion Paper*. Alberta Research Council commissioned report to FGYA
- W.R. Dempster, R.J.T. McPherson, 2003. *Effects of Site, Competition and Density Management on Early Crop Performance and Stand Growth and Yield of Lodgepole Pine: Establishment Report*
- W. R. Dempster. 2004. *Comparison of Pre-Harvest and Post-Harvest Site Indices*. Foothills Model Forest
- W.R. Dempster and S. Huang. 2004. *Enhanced Fibre Production and Management of Lodgepole Pine*. Canadian Institute of Forestry/ Society of American Foresters AGM and Convention
- *Proceedings of the Post-harvest Stand Development Conference, January 31-February 1 2006*. Foothills Model Forest
- J.D. Stewart, T.N. Jones and R.C. Noble. 2006. *Long-term lodgepole pine silviculture trials in Alberta: history and current results* Canadian Forest Service (financial and editorial support provided by FGYA and SRD).
- Y. Yang and S. Huang with W.R. Dempster. 2006. *Interim Report on the Development of Yield Estimators for Pure Lodgepole Pine Stands in Alberta*
- Ghebremichael, -A; Nanang, -D-M; Yang, -R. 2005.. *Economic analysis of growth effects of thinning and fertilization of lodgepole pine in Alberta, Canada*. Northern Journal of Applied Forestry 22: 254-261.



**Reports and Publications Begun, Not Yet Complete**

<b>Report Working Title</b>	<b>Agency</b>	<b>Status</b>
Predicting individual-tree diameter growth in thinned and nitrogen fertilized mid-rotation Lodgepole Pine. R. Yang and J.D.Stewart	CFS	In Preparation
Stand Density Management and Productivity of Lodgepole Pine Stands. J Stewart and R. Yang.	CFS	In Preparation
Modelling and analysis of longitudinal and multilevel historical spacing trial data. R.Yang & J.Stewart.	CFS	In Preparation
Growth responses of lodgepole pine to fertilization and thinning treatments in long-term trials. J Stewart and R. Yang.	CFS	In Preparation
Predicting individual-tree diameter growth in thinned and nitrogen fertilized mid-rotation Lodgepole Pine. R. Yang and J.D.Stewart	CFS	In preparation
SDV analysis of spacing effects on lodgepole pine height growth. R..Yang & J.Stewart	CFS	In Preparation
Performance evaluation of Alberta and B.C. growth and yield models against growth data from historical research trials	CFS	Analysis partially complete

**Protection Status**

<i><b>Trials Sites</b></i>	<i><b>Protection Status</b></i>	<i><b>Expiration</b></i>
MacKay thinning	DRS 850006	indefinite
Gregg spacing 1963 high site	tbd	
Gregg spacing 1963 med site	ISP 100	31/05/2010
Gregg spacing 1963 low site	ISP 102	30/04/2010
Gregg spacing 1984 high site	ISP 92	31/05/2010
Gregg spacing 1984 med site	tbd	
Gregg spacing 1984 low site	tbd	
McCardle fertilization & thinning	DRS 692	indefinite
Strachan thinning	DRS 780090	indefinite
Clearwater fertilization & thinning	DRS 50023	indefinite
Ricinus fertilization after thinning	DRS 50021	indefinite
Swan Lake thinning	DRS 50022	indefinite
Teepee Pole Creek spacing north	DRS 50028	indefinite
Teepee Pole Creek spacing flat	DRS 50027	indefinite
Teepee Pole Creek spacing south	DRS 50029	indefinite
Teepee Pole Creek strip thinning	unknown	
Kananaskis heavy thinning (K-57)	in park	n/a
Kananaskis European thinning (K-3)	in park	n/a
Kananaskis economic thinning (K-58)	in park	n/a

Attachment 2: HRT – Remeasurement Priority Evaluation

**Historic Research Trial – Re-measurement Priority Evaluation  
June 2007**

**Purpose**

The re-measurement priority evaluation is intended to provide an objective means for considering the value of continuing to re-measure historical research trials as part of the Foothills Growth and Yield Association cooperative program with the Canadian Forestry Service and the Alberta Sustainable Resource Development.

**End Result**

A re-measurement priority and recommended action for each trial.

**Methods**

The first step is to develop responses to the decision criteria for each trial:

1. Is interpretation of trial results already significantly **compromised** by damage or disturbance? (Yes or No?)
2. Has the trial been **measured already** within the last 10 years or at least once 10 years after treatment? (Yes or No?)
3. Is the FGYA research **relevance** of further measurements High or Low?
  - Always Low if the trial has already been measured at least once since MAI culmination;
  - Otherwise:
    - High for multiple-entry thinning (MET), fertilization and thinning combined (F&T), early PCT (EPCT);
    - Low for late PCT (LPCT), strip thinning (ST), single-entry late commercial thinning (CT).
4. Is the **risk** of imminent loss or damage High or Low?

The responses are then used to navigate the re-measurement flowchart (Figure 1), arriving at a re-measurement priority of High, Medium or Low (see Appendix). The re-measurement priorities are assigned a recommended action for inclusion in renewal of the Agreement, the 5-year schedule (and the Foothills Growth and Yield Association Annual Work Plan (Table 1).

Table 1. Recommended action for re-measurement priorities.

<b>Priority</b>	<b>Recommended Action</b>
High	Include in agreement and 5-year schedule, AND if possible in annual Work Plan (if not measured within last 5 years)
Medium	Include in agreement and 5-year schedule.
Low	Include only provision in agreement for measuring in event of changed risk status.

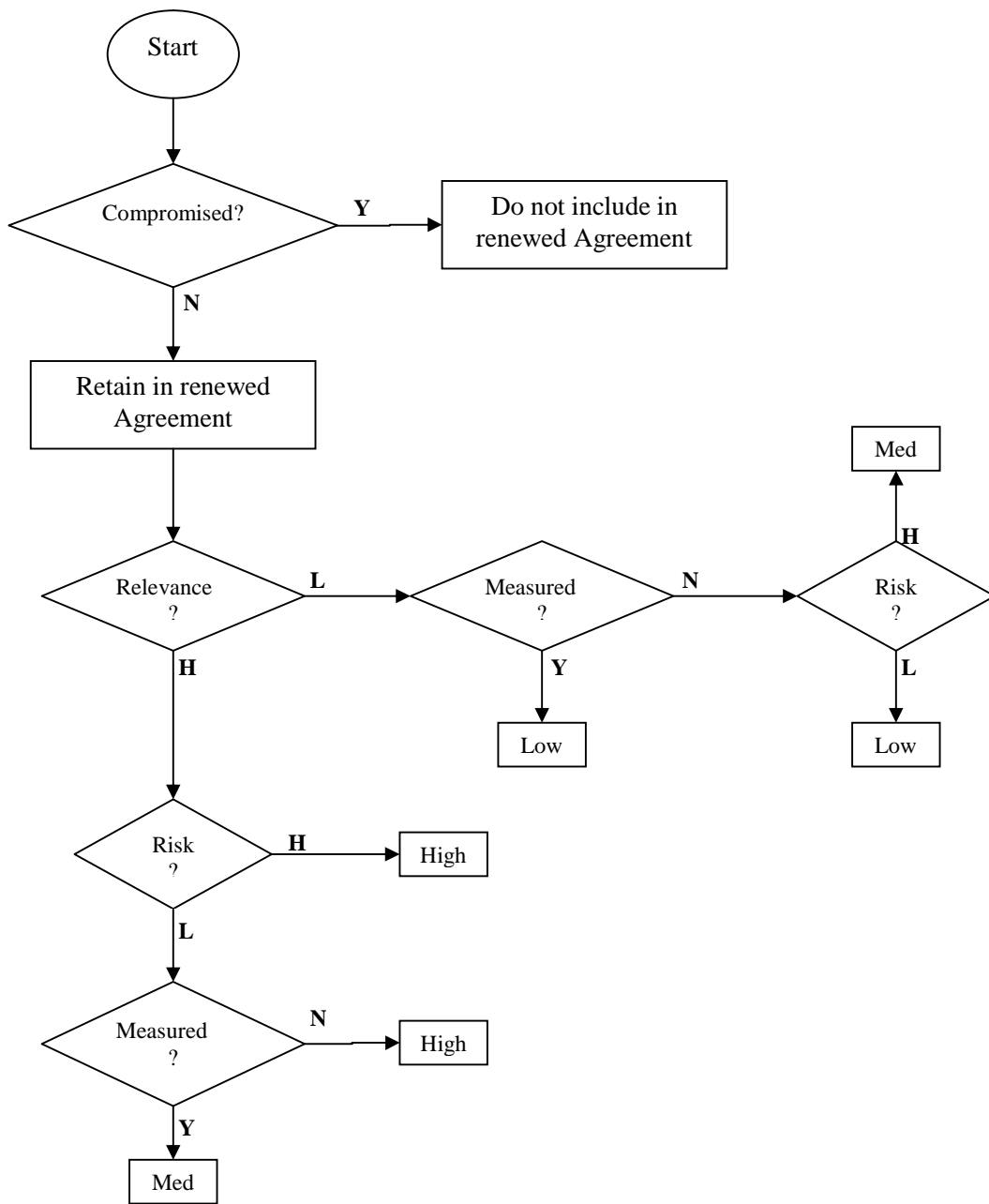


Figure 1. Historic research trial re-measurement flowchart.

**Table 2. Priority Assessment**

<i>Owner/ #</i>	<i>Title / Location</i>	<i>Establish-ment date</i>	<i>Type</i>	<i>Compro-mised?</i>	<i>Risk<sup>8</sup></i>	<i>Last measured</i>	<i>MAI culm-inated?</i>	<i>FGYA relevance</i>	<i>Priority</i>
CFS / A34	Lodgepole pine pre-commercial thinning, Mackay	1954	MET <sup>9</sup>	No	Low	2003	No	High	Medium
CFS / A100	Spacing trials – 7 year old fire origin stand of lodgepole pine, Gregg River	1963/64	EPCT	No	Low	2006	No	High	Medium
CFS / NOR-402	Spacing trials – 28 year old fire origin stand of lodgepole pine, Gregg River – Medium site	1984	LPCT	No	Low	2004	No	High <sup>10</sup>	Medium
CFS / NOR-402	Spacing trials – 28 year old fire origin stand of lodgepole pine, Gregg River – Low and High sites	1984	LPCT	No	Low	2004	No	Low	Low
CFS / NOR-405	Thinning and fertilization of 40-year-old semi-mature lodgepole pine, McCardle Creek	1984-85	F&T	No	? (Mine?)	2004	No	High	Medium
CFS	Early development of lodgepole pine after three different mechanical thinning treatments, Swan Lake	1977	EPCT	No	Low	2003	No	High	Medium
CFS	Ricinus fertilization after thinning	1975	F&T	Yes	Low	2005	No	N/A	None
CFS	Fertilizing after thinning 70-year-old lodgepole pine, Clearwater	1968	F&T	No	Low	2005	? (assume no)	High	Medium
CFS / NOR-008	Juvenile spacing of 25-year-old lodgepole pine, Teepee Pole Creek - South	1967	LPCT	Yes	Low	2003	No	N/A	None

<sup>8</sup> MPB risk assessed on basis of latest attack locations

<sup>9</sup> MET= Multiple Entry Thinning

EPCT= Early Precommercial Thinning

LPT= Late Precommercial Thinning

F&T= Fertilization and Thinning

ST= Strip Thinning

CT= Commercial Thinning

<sup>10</sup> Increased to High because the trial is directly adjacent and comparable to Gregg 63 EPCT trial

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CFS / NOR-008	Juvenile spacing of 25-year-old lodgepole pine, Teepee Pole Creek – Flat and North	1967	LPCT	No	Low	2003	No	Low	Low
CFS	Strip thinning of lodgepole pine, Teepee Pole Creek	1966	ST	No	Low	1980?	No	Low	Low
CFS / K-57	Development of a 77-year-old lodgepole pine stand following heavy thinning, Kananaskis	1941	CT	No	High (MPB)	2006	Yes	Low	Low
CFS / K-3	Various thinnings based on European practices, Kananaskis	1938-39	CT	No	High (MPB)	>10years	Yes	Low	Medium
CFS / K-58	Economic possibilities of commercial thinning in an 88-year-old lodgepole pine, Kananaskis	1950	CT	No	High (MPB)	>10 years	Yes	Low	Medium
CFS	Commercial thinning in 85-year-old lodgepole pine, Strachan	1952	CT	No	Low	2005	Yes	Low	Low
SRD	Fertilization and thinning of 26-year-old lodgepole pine, Edson	1980	F&T	No	Low	2004	No	High	Medium

Other considerations:

- Interpretive signage: Strachan, McCardell, Gregg84, Clearwater, Ricinus, Gregg63 (update), K57, K58, K3?
- Coring / destructive sampling: McCardle, Teepee Pole South, Strachan (subject of proposal re-submission in fall 2007)

**Appendix 5. FGYA Communications Plan 2007**

**Foothills Growth and Yield Association**

**Foothills Model Forest**

**2007-2012**

**Communications & Extension Strategy**

**and**

**The 2007 Communications and Extension Plan**

**Prepared by:**

Robert Udell  
Director, FGYA  
August, 2007



*Introduction:*

The Foothills Growth and Yield Association is a consortium of 9 voting members representing the major FMA pine producers in the Province as well as non-voting members representing the Province of Alberta and the Foothills Model Forest which is also the coordinating agency for the Association.

This Communications and Extension Plan describes the program of the FGYA and general CE activities that will be implemented during the period 2007-12, with specific details provided for the current year. Annual updates will describe planned activities for those years specifically.

*7.1.1. Mission of the FGYA*

The mission and mandate of the FGYA are to continually improve the assessment of lodgepole pine growth and yield in managed stands by:

1. Forecasting and monitoring responses to silvicultural treatments;
2. Facilitating the scientific development and validation of yield forecasts used by members in managing their tenures;
3. Promoting knowledge, shared responsibility and cost-effective cooperation.

The following indicators have been chosen to measure success in performing the mandate, and may be used as criteria for evaluating and prioritizing project proposals and other FGYA activities.

1. *Forecasts*: stand-level timber yield forecasts are defensible and accepted by the scientific and regulatory communities.
2. *Validation*: recognized scientific, regulatory and certification standards for validation and monitoring of sustainable forest management practices are met.
3. *Knowledge*: managers' knowledge, and their abilities to predict responses to management practices, are improved, facilitating management by objectives rather than by arbitrary prescription.
4. *Awareness*: stakeholders influencing forest management decisions understand the probable effects of management interventions on stand development.
5. *Cost effectiveness*: investments in growth and yield assessment are cost effective, and there is no unnecessary duplication of effort.
6. *Equitable participation*: participants remain committed to the program, and share costs equitably.
7. *Relevance*: work is user-driven, results-focused, and directly applicable to management and crop planning

*7.1.2. Linkages to the 2007-12 Foothills Model Forest Business Plan*

The mission, mandate and activities of the FGYA are compatible with the four goals of the Foothills Model Forest, specifically:

**FtMF Goal One:**

Build a community of diverse and active partners who are working in or are concerned about natural resource management

The FGYA is a partnership of 9 major FMA holders and government working to improve the knowledge base that will support reliable, credible and defensible yield estimates that are the foundation of forest management planning.

**FtMF Goal Two:**

Identify natural resource management issues at the landscape level that are common to our partnership, recognizing the necessity of integrated resource management

The FGYA to date has been focused on the growth and yield inputs to sustainable forest management, however the recent threat of mountain pine beetle has led to a broadening of the scope of investigations. Driven by the needs and perceptions of its industry members who manage over 2 million ha of pine stands representing a very large percentage of their AACs, the FGYA has identified Mountain Pine Beetle as a critical issue to its membership, both voting and non-voting.

**FtMF Goal Three:**

Provide science-based tools and knowledge that is understandable and available to natural resource managers, policy makers and the public

The Model Forest prides itself in delivering science that is sound and defensible, yet practitioner-driven, practical to implement and timely in its delivery. This is a marked contrast to many other research agencies and has resulted in strong support for the model forest program.

The FGYA shares the same interests in providing tools and knowledge that are directly beneficial to – and driven by the needs of – its membership, but these tools and this knowledge are of benefit to the larger community also.

For instance, it is developing an integrated DSS/research program that will represent the priorities of the pine-producing FMAs in Alberta with respect to:

- In the near term, determining priority needs for decision making in regards to salvage, stand management and maximizing medium and longer term timber supplies
- Developing a research program that addresses knowledge gaps in these needs assessments and moves quickly to fill them

**FtMF Goal Four:**

Broadly disseminate our knowledge

The Model Forest has a well-established communications program and the FGYA cooperates with the Model Forest in providing information to support that program. This includes participation in Model Forest forums and events, providing information for the newsletter and other products.

The FGYA is a research association that is associated with the Model Forest but funded by its own membership, which has specific interest in seeing that the money provided for the FGYA is dedicated to increasing the knowledge base for applied forest management including forest management planning and yield forecasting.

Linkages to the Model Forest program which have direct relevance to the FGYA are the FGYA Indicators for Knowledge and Awareness, i.e.

- *Knowledge*: managers' knowledge, and their abilities to predict responses to management practices, are improved, facilitating management by objectives rather than by arbitrary prescription
- *Awareness*: stakeholders influencing forest management decisions understand the probable effects of management interventions on stand development.

*7.1.3. FGYA Communications and Extension*

In support of the Model Forest, as well as to respond to the Indicators identified, the FGYA proposes the following Communications and Extension activities during the 2007-12 Business Plan.



**Annual Activities:**

The following discussion identifies a number of activities that will take place during the 2007-12 Business Plan period. Specific activities by year cannot be identified, because they are so dependent on the rate at which information and data are generated and the availability of technical experts to interpret them and produce reports.

1. One annual field trip or technical workshop to which member companies of the FGYA, representatives of Alberta Sustainable Resource Development, other forest industry, university and federal scientists will be invited.
2. Maintenance of the FGYA website, ensuring that products and information reports are current on it.
3. Publication of technical and information reports for a number of projects underway by the FGYA. These will also be posted on the FGYA website, which is part of the Model Forest website. Projects which will be reported on include:
  - a. Project One – Management and development of the Association
    - Technical meetings and field tours
  - b. Project Two – Lodgepole Pine Regeneration – long term trials examining the growth and yield of regenerated lodgepole pine
    - Several reports are on the website
    - More will follow as identified in annual plans as data to support them becomes available
  - c. Project Three – Comparison of preharvest and postharvest stand development
    - Proceedings of the Postharvest Stand Development Conference were published in 2006, and posted on the website. The FGYA continues to participate in the Dialogues that are working on issues identified at the conference
    - Further reports will be produced as the information to support them becomes available
  - d. Project Four – Cooperative Management of Historic Research Trials – The FGYA collaborates with the CFS and ASRD in the remeasurement (5 year cycle) of research trials in lodgepole pine dating back to the early 1940s
    - A summary of these trials was published by the CFS in 2006.
    - Two further reports are identified by the FGYA, with more to follow as more data becomes available
    - FGYA is installing interpretive signage at various trials for the benefit of practitioners as well as other visitors
  - e. Project 5 – Regional Yield Estimators
    - Work on this project is complete and is posted on the Model Forest website.
  - f. Project 6 – Enhanced Management of Lodgepole Pine – Establishment of field plots for this project was completed in 2007
    - Reports to be produced as information is collected
  - g. Project 7 – Regeneration Management in a Mountain Pine Beetle Environment
    - Development of an initial DSS to provide industry and government some guidelines to manage a MPB – infested landscape in a manner that extends salvage operations as long as possible, identifies appropriate silviculture strategies, optimizes mid- and long-term timber supply as much as possible
    - Follow up the DSS with an applied and results-driven research program that improves the information base and recommendations of the DSS.
4. Production of a minimum of 2 *Quicknotes* or equivalent bulletins per year providing non-technical summaries of project results and / or program activities.
5. Participation in Model Forest forums to inform practitioners on new developments and technologies that will help them perform their responsibilities more effectively.

7.1.4. *Specific Activities for 2007/08*

The following communications and extension activities are planned for 2007/08.

1. A field trip to the Prince George area to examine the mountain pine beetle infestation there and evaluate its implications for Alberta. This will be followed by a report and appendices detailing results and observations. Invitees will include members of the Association, SRD, university and model forest representatives (complete)
2. Updating information and reports on the Model Forest website, including the field trip report (complete)
3. Participation in the Dialogues followup to the Postharvest Stand Development Conference, chaired by the Model Forest Communications and Extension Program. The Chair of the FGYA represents the organization on the Dialogue
4. Scientific and Technical publications planned for 2007
  - a. A five-year performance report for Project 2 – Lodgepole pine regeneration - will be produced in 2007. This will include growth, ingress, competition and mortality statistics by treatment plot and growing season (or time since planting), with summaries by ecosite, treatment, FM area and growing season; a preliminary analyses to assess how much of the observed variation can be explained by controlled factors (ecosite, initial density, brushing), and; preliminary exploratory analyses and strategy to develop regeneration models.
  - b. For Project 3 – Postharvest Stand Development - A scientific paper aimed at extending and validating the previous analysis is in preparation under the direction of the ASRD Senior Biometrician, with the FGYA Research and Development Associate identified as a co-author
  - c. For Project 4 – Historical Research Trials – two reports are planned in 2007.
    - i. Subject to review by the Steering and Technical Committees of the FGYA, analysis of measurements completed in 2006 for the Gregg spacing trials will be conducted to compare effects of controlled density on stand development with differences previously reported between post-harvest and fire-origin stands. The intent is to obtain and report an improved understanding of the cause and implications of developmental differences between stands of harvest versus fire origin. Results will be reported to the membership, and a paper will be prepared by the Research and Development Associate in cooperation with the CFS if results merit publication.
    - ii. A performance evaluation of Alberta and British Columbia growth-and-yield models against growth data from historical research trials is planned. Models to be evaluated include GYPSY, MGM, TADAM and potentially TASS. The intent of this examination is to evaluate the performances of various models against actual growth as reflected in the long-term trials, in order to assess their relevance to growth and yield forecasts for Alberta conditions.
    - iii. Pending successful conclusion of a Letter of Agreement on the measurement and maintenance of these trials, interpretive signage will be installed at a number of trials.
  - d. For Project 6 – Enhanced Management of Lodgepole Pine – establishment reports for the two sub-projects will be completed by September 2007 and posted to the website. This is a collaborative project with the University of Alberta.

- e. For Project 7 – Regeneration Management in a Mountain Pine Beetle Environment – An assessment report of the BC experience and its relevance and implications to Alberta has been completed and posted to the website. Work is advancing on a proposal to build knowledge and tools for the forest industry impacted by this infestation.
5. Quicknotes: A minimum of two Quicknotes will be produced in 2007/08.
  6. Presentations: The FGYA will provide updates and presentations to the Board of the Model Forest at its annual meeting, and will participate in other forums organized by the Board as appropriate.

#### *7.1.5. Linkages to and Support From the Model Forest*

The FGYA communications and extension program supports the goals and intents of the Model Forest program, as described at the beginning of this plan. In turn, the FGYA receives communications and extension support from the Model Forest through the maintenance and upgrading of its website as part of the Model Forest Website.

Funding for all activities of the FGYA are provided by its membership, or through solicitation of outside funding for specific projects and programs. It receives communications support and some administrative support from the Model Forest at no charge to the FGYA.

**Appendix 6. Detailed Expenses 2007/08**

<b>Date</b>	<b>Vendor</b>	<b>Description</b>	<b>Amount</b>
04/11/2007	Telus Mobility	Phone	32.95
04/30/2007	Dick Dempster Consulting Ltd.	time and expenses	6,144.15
05/11/2007	Telus Mobility	cell ph	32.95
05/17/2007	IKON Office Solutions	copy	40.66
05/17/2007	IKON Office Solutions	copy paper	26.20
05/31/2007	Dick Dempster Consulting Ltd.	time and expenses	4,934.30
06/01/2007	Sharpline Imaging Products Inc.	plotter supplies	18.93
06/04/2007	Debbie Mucha	sql server course	350.30
06/04/2007	Debbie Mucha	course travel	116.70
06/07/2007	G&A Petroleum Products	cardlock	116.58
06/11/2007	Telus Mobility	Phone	32.95
06/25/2007	CAD Worx Warehouse Inc.	plotter service	35.77
06/30/2007	Dick Dempster Consulting Ltd.	time and expenses	9,547.64
07/01/2007	Timberline Natural Resource Group	time and expenses	11,184.64
07/11/2007	Telus Mobility	cell ph	32.95
07/31/2007	Dick Dempster Consulting Ltd.	time and expenses	9,047.44
07/31/2007	Timberline Natural Resource Group	time and expenses	14,208.70
08/11/2007	Telus Mobility	Phone	-15.37
08/31/2007	Dick Dempster Consulting Ltd.	time and expenses	1,107.70
08/31/2007	Timberline Natural Resource Group	time and expenses	4,940.02
09/30/2007	Dick Dempster Consulting Ltd.	time and expenses	7,351.10
09/30/2007	Timberline Natural Resource Group	time and expenses	5,554.72
10/11/2007	Dell Canada Inc.	backup software	44.62
10/26/2007	Dell Financial Services	Computer rental	248.57
10/26/2007	Dell Financial Services	Computer rental	170.17
10/31/2007	Dick Dempster Consulting Ltd.	time and expenses	9,735.36
10/31/2007	Timberline Natural Resource Group	time and expenses	5,087.53
11/01/2007	Dell Financial Services	Computer rental	35.51
11/01/2007	IKON Office Solutions	copy	124.02
11/01/2007	IKON Office Solutions	copy paper	24.54
11/08/2007	Dell Financial Services	Computer rental	24.31
11/08/2007	Dell Financial Services	Computer rental	53.30
11/30/2007	Dick Dempster Consulting Ltd.	time and expenses	3,323.10
11/30/2007	Timberline Natural Resource Group	time and expenses	10,334.66
11/30/2007	Robert Udell Contract	time and expenses	447.18
12/01/2007	Dell Financial Services	Computer rental	35.51
12/01/2007	Dell Financial Services	Computer rental	24.31
12/01/2007	Dell Financial Services	Computer rental	27.01
12/31/2007	Dick Dempster Consulting Ltd.	time and expenses	8,861.60
12/31/2007	Timberline Natural Resource Group	time and expenses	5,678.80
01/10/2008	Dell Financial Services	Computer rental	24.08
01/10/2008	Dell Financial Services	Computer rental	26.40
01/10/2008	Dell Financial Services	Computer rental	35.18
01/31/2008	Dick Dempster Consulting Ltd.	time and expenses	9,775.50
01/31/2008	Timberline Natural Resource Group	time and expenses	5,465.25
02/01/2008	Dell Financial Services	Computer rental	35.18
02/01/2008	Dell Financial Services	Computer rental	26.40
02/01/2008	Dell Financial Services	Computer rental	24.08
02/27/2008	CAD Worx Warehouse Inc.	plotter service	41.47
02/29/2008	Dick Dempster Consulting Ltd.	time and expenses	9,975.00

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02/29/2008	Timberline Natural Resource Group	time and expenses	9,576.00
03/02/2008	Dell Financial Services	Computer rental	24.08
03/02/2008	Dell Financial Services	Computer rental	35.18
03/02/2008	Dell Financial Services	Computer rental	26.40
03/07/2008	IKON Office Solutions	copy	620.93
03/07/2008	IKON Office Solutions	copy paper	99.61
03/10/2008	Coast Edmonton Plaza	meeting	4,396.34
03/18/2008	IKON Office Solutions	3 hard cover hard road	89.91
03/31/2008	Dick Dempster Consulting Ltd.	time and expenses	5,685.75
03/31/2008	Timberline Natural Resource Group	time and expenses	11,048.32
03/31/2008	Dick Dempster Consulting Ltd.	time and expenses	789.74
		Total	176,942.88