

# **Foothills Growth and Yield Association**

## **Annual Report**

### **Fiscal Year 2001-02**

#### **1. Background**

Companies holding Forest Management Agreements and Timber Quotas on the Eastern Slopes have recognized for some time the potential value of a co-operative lodgepole pine growth and yield program. In response to interest by industry and government, the Foothills Model Forest facilitated collaboration among these companies to create a Foothills Growth and Yield Association for co-operative forecasting and monitoring of managed stand growth and yield.

The Foothills Model Forest appointed a part-time Director in June 1999, with the mandate to develop a growth and yield co-operative. A memorandum of agreement was developed and endorsed by 9 companies, the Land and Forest Service, and the Foothills Model Forest in December 1999, and the Association commenced to operate in April 2000. The 9 companies presently participate in the Association as voting members. The Alberta Land and Forest Division and the Foothills Model Forest participate as non-voting members, with the Model Forest acting as the coordinating agency.

The mission and mandate of the Association are 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 used by members in managing their tenures;
- Promoting knowledge, shared responsibility and cost-effective cooperation.

The Foothills Model Forest, acting as applicant on behalf of the 9 sponsoring members, submitted a proposal to the Forest Resource Improvement Association of Alberta (FRIAA) in July 2000. A contract was issued (FOOMOD-01-01 – *Foothills Growth and Yield Association*) on July 25, 2000, facilitating use of FRIP (Forest Resource Improvement Program) funds to cover membership costs and project activities. The original proposal and contract had an initial term of 2 years, and were amended effective October 11, 2001, extending the term to 5 years (April 1, 2000 to March 31, 2005).

#### **2. Income and Expenditures**

This report is for the period from April 1, 2001 to March 31, 2002. Table 1 shows budgeted and actual income and expenditures of the 2001-02 fiscal year (April 1, 2001 – March 31, 2002). The budgeted amounts are consistent with those approved by the Steering Committee in March 2001 (with a small adjustment to reflect the actual amount of funds carried forward from the previous fiscal year), and subsequently included in the revised Annual Work Plan.

**Table 1. Income and Expenses**

<b>Income / Expense</b>	<b>Budget \$</b>	<b>Actual \$</b>
<b>Income</b>		
Balance from 2000	145,962	145,962
Membership fees - FRIP (FRIAA contract)	70,000	70,000
Membership fees - FRIP (member direct)	10,000	10,000
Membership fees - non-FRIP	10,000	10,000
Total income	235,962	235,962
<b>Expenses</b>		
Director	64,800	64,800
Field Coordinator	-	-
Other contract services	45,000	40,867
Expenses (contractors & FMF staff)	19,328	18,901
Meetings and tours	7,321	8,659
Equipment & miscellaneous	12,809	558
GST	9,400	8,770
Total expenses	158,658	142,554
<b>Ending Balance</b>	<b>77,304</b>	<b>93,408</b>

There were no variances between budgeted and forecast income. The main variances between actual and forecast expenditures were:

- The “other contract services” budget was under-spent by \$4,133 because a contract with Alberta Research Council was not completed by March 31, 2002 as scheduled.
- The “meetings and tours” budget was over-spent by \$1,338 because of unscheduled expenses incurred in conducting the August field tour.
- The “equipment and miscellaneous” budget was under-spent by \$12,251 because anticipated purchase or rental of equipment was not required.

### **3. Activities**

Activities of the Director are itemized in the appended quarterly activity reports.

The main activities of the Association were:

- Establishment of the Lodgepole Pine Regeneration Project;
- Planning for the comparison of pre-harvest and post-harvest site indices;
- An expert review of forest nutrition and density management;
- Development of new project proposals;
- Dissemination of information and education of members.

Further details are provided in Section 4.

## 4. Achievements and Shortfalls

### 4.1. Lodgepole Pine Regeneration Project

Table 2 reports the establishment status of the Project as of March 31, 2002. Note that 10 installations remain to be established, and that 1 installation is lacking sponsorship.

**Table 2. Establishment Report for Regeneration Trial**

Ecosite	Group	Sponsor	Tenure	# of Installations*		Sponsor	# of Installations	
				Identified	Completed		Committed	Completed
1	1	SLS	SLS	6	6	ANC	5	5
1	2	WEY	WEY (G.Pr.)	6	6	BRL	8	2
1	3	SPI	SPI	6	6	CFP	6	6
2	1	WWC	WWC	6	6	MWF	5	5
2	2	ANC	ANC	5	5	SLS	6	6
2	2	BRL	ANC	1	1	SDA	6	6
2	3	WEY	WEY (G.Pr.)	6	6	SPI	14	14
3	1	WEY	WEY (G.Pr.)	6	6	WWC	21	18
3	2	SPI	SPI	6	6	WEY	30	30
3	3	SDA	SDA	6	6	Total	101	92
3	4	WEY	WEY (D.Va.)	6	6			
3	5	WEY	WEY (Edson)	6	6			
4	1	WWC	WWC	6	6			
4	2	WWC	WWC	6	6			
4	3	CFP	CFP	6	6			
5	1	MWF	MWF	5	5			
5	1	BRL	MWF	1	1			
5	2	BRL	BRL	6	0			
5	3	SPI	SPI	2	2			
5	3	WWC	WWC	3	0			
5	3		WWC	1	0			
Total				102	92			

\* 6 installations are required in each ecosite / group combination; total number of installations planned = 102

Auditing and verification of fieldwork was completed in October 2001. Data has been received for established installations, but data verification and editing was not completed as of March 31, 2002.

### 4.2. Comparison of Pre-harvest and Post-harvest Site Indices

This project was approved for implementation by the Steering Committee in March 2001, but was deferred to the 2002 field season because of limited contractor availability and other considerations. The Project Proposal, originally developed in 2001, was modified in February 2002 to reflect proposed data and effort-sharing policies. Requests were issued on February 4, 2002, to 12 consultants for fieldwork proposals to be received by February 28. A shortlist and recommended selection was presented to, and approved by, the Steering Committee on March 7, 2002. The Business Plan and Project Proposal contain details for acquiring existing PSP

information as well as new paired-data, and for cost and data sharing. The work is scheduled for completion in the 2002-03 fiscal year, and results will be incorporated into the yield forecasts required for the final Establishment Report of the Lodgepole Pine Regeneration Project.

#### **4.3. *Nutrition and Density Management***

The Association contracted the Alberta Research Council to provide an “expert review” identifying the knowledge gaps and feasibility of operational fertilization of lodgepole pine in Alberta. Dr. Barry White was the principle investigator, assisted by Dr. David McNabb and fellow scientists at the University of Alberta, Dr. Scott Chang and Dr. Vic Lieffers.

A draft report by Drs. White and Chang was submitted January 16, 2002, but upon review by the Director, the authors, and Drs. McNabb and Lieffers, it was decided that deficiencies in the report should be remedied before distribution to Association members. The revised report was completed on March 29, 2002. The Technical Committee will review it during the next quarter.

No detailed project proposal or experimental design has been developed. However, tentative recommendations, incorporating those of the expert reviewers and the original conceptual design (presented at the Second Steering Committee Meeting), are included in the Business Plan.

#### **4.4. *Other Project Proposals***

Two additional projects were included in the Business Plan, for implementation commencing in the 2002-03 fiscal year.

1. *Cooperative management of historic research trials.* In August 2001, representatives of the Association, the CFS, and ASRD visited historic CFS lodgepole pine trials. They concluded that these trials were invaluable resources for forecasting, monitoring and demonstrating the effects of nutrition and density management, and that links should be forged to ensure their ongoing protection, measurement and interpretation. A detailed project proposal was developed. It was approved by the Steering Committee for implementation subject to a collaborative research agreement being developed between the Association, CFS, and ASRD.
2. *Regional Yield Estimates.* As follow-up to discussion at the Second Steering Committee Meeting, the Executive Director of the ASRD Forest Management Branch submitted a request to the Association for support in the development of natural and managed stand yield curves. No detailed project proposal or design has been developed yet, but preliminary recommendations were approved and amended by the Steering Committee and included in the Business Plan.

#### **4.5. *Personnel Assignments***

Mr. Rand McPherson was assigned to the position of Field Coordinator for the contract term of April 1, 2001 – March 31, 2002. (The associated fee cost is not included in Table 1 because the Foothills Model Forest provided \$50,000 out of provincial funds to support the position.) The Steering Committee approved renewal of Mr. McPherson’s contract for the period April 1, 2002 – March 31, 2003, to be funded out of membership fees.

Dr. W. R. (Dick) Dempster provided management and technical direction of the Association. The Steering Committee approved renewal of his contract for the period April 1, 2002 – March 31, 2003.

The Foothills Model forest provided additional support by assignment of staff to Association tasks, including:

- Data base design and management, and data verification (GIS Coordinator);
- Word processing support for development of field manual;
- Contract administration;
- Financial accounting and reporting;
- Administrative and logistic arrangements for field tour;
- Internet web site development.

#### ***4.6. Dissemination of Information and Education of Members***

The Association has taken the following steps to disseminate information:

- Field tour of historic lodgepole pine research trials, organized jointly with the Foothills Model Forest, Weldwood of Canada, and the Canadian Forest Service;
- Mid-year information update meeting (held in association with field tour);
- Retention of Mr. Stan Lux to assist in preparation of background information for field tour;
- Development and distribution of the Regeneration Project field manual, including data models, measurement and treatment protocols;
- Field visits and mentoring audits held by Field Coordinator with technical representatives and contractors;
- Informal information exchanges by e-mail;
- Creation of an interim internet web site, with home page, news, publications, and contacts sections;
- Organization of Annual General Meeting (program included 6 national and 1 international expert speakers).

#### ***4.7. Work Planning and Budgeting***

The original work plan for the 2001-02 fiscal year, presented in March 2001, was updated to reflect direction of the Steering Committee. The original FRIAA proposal and contract (July 25, 2000) were updated in September 2001, extending the term to 5 years (April 1, 2000 to March 31, 2005). The presently approved proposal and contract cover only Association development and management (i.e. membership fee) and the Regeneration Project.

A Business Plan was developed to rationalize and define the Association's mission, strategies, projects, income and expenditures for the next 5 years. It includes estimated direct income and expenditures of the Association by year, plus indicative cost estimates of members' project contributions by year and project component.

Project plans were developed for site index comparison (see 4.2 above) and cooperative management of historic research trials (see 4.4 above).

## 5. Summary of Accomplishments Since Inception of the Association

Seven criteria are used by the Association to test whether it is achieving its mission and performing its mandate:

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-focussed, and directly applicable to management and crop planning.

Although the program is inherently long-term, the following accomplishments since its inception in April 2000 suggest that the Association is performing its mandate well:

- A regeneration trial for monitoring and validation of managed stand performance was designed and endorsed by scientists and regulators. Installation is 90% complete, and initial yield forecasts utilizing the best growth and yield models available to the scientific and regulatory community are scheduled for March 2003.
- Knowledge transfer was achieved through 2 conferences and 1 field tour. Members and guests perceived the events as successful and valuable.
- Improved awareness of other stakeholders has been facilitated by the development of a public website, and participation by non-members in the conferences and field tour.
- Industrial participation has been enthusiastic, equitable and supportive, with approximately \$670,000 invested to date, \$460,000 committed for 2002, and over \$1,500,000 budgeted for the period 2002-2006.
- A consensus-based business plan has been developed and approved by the members, representing unanimous agreement and support for a total of 6 user-driven results-focussed projects to be conducted during the period 2002-2006.

## Development of Lodgepole Pine Growth and Yield Association

### Quarterly Activity Report 1 – Dick Dempster Consulting Ltd.

Reporting Period	April 1 – June 30, 2001
Total reimbursable hours	142
<b>Activities</b> Fertilization research information exchange Development of technical procedures: RLP data model, measurements, competition index, and treatments Field coordination: briefing and supervision of field coordinator; response to contractor and member questions Develop terms of reference for nutrition and density management project expert review; consult with potential participants Information requests for site index change assessment Attend FMF Board meeting (Jasper)	
<b>Achievements</b> Data model and measurement procedures developed and communicated to contractors Procedures and protocols developed, and agreed with LFS, for brush control treatments Field coordinator in place and coordinating contractor operations Experts interviewed and selected for assistance with nutrition and density management scope assessment Work plan highlights and revised budget reviewed by FMF Board	
<b>Shortfalls</b> Field manual for Regenerated LP Project not completed and distributed to membership Contract arrangements not completed for expert scope assessment assistance Proposal for site index change project not completed	
<b>Tasks for next quarter</b> Supervise completion of regenerated LP Project field manual Complete updates to workplan, FRIAA proposal and contract Design and contract site-index change project Lodgepole Pine Trials Tour: technical presentation and update meeting Contract and support expert review of nutrition and density management Situational review (part of scope assessment for nutrition and density management project)	

## **Development of Lodgepole Pine Growth and Yield Association**

### **Quarterly Activity Report 2 – Dick Dempster Consulting Ltd.**

Reporting Period	July 1 – September 30, 2001
Total reimbursable hours	227
Activities	
Field manual revisions and additions	
Revisions to work plan, FRIAA proposal	
Development of SI change project proposal	
Preparation for and participation in field tour and Association meeting	
Initiation of expert review of nutrition and density management	
Situation review (questionnaire to members)	
Achievements	
Field manual for Regeneration Project and other procedures documentation distributed to members and contractors	
92 Regeneration Project installations established	
5-year plan for Association management and Regeneration Project approved by FRIAA	
Design for SI change project completed	
Association meeting and field tour concluded successfully (August 28-31)	
Expert review contracted and membership input obtained	
Shortfalls	
Annual fees overdue	
Contracting and implementation of SI change project – deferred until next year	
Establishment of 10 Regeneration Project installations deferred until next year	
Verification and auditing of Regeneration Project incomplete	
Tasks for next quarter	
Supervision of verification and auditing	
Follow-up to field tour – development of proposal for cooperative trial management	
Communications program –web site and annual meeting preparation	



## Development of Lodgepole Pine Growth and Yield Association

### Quarterly Activity Report 3 – Dick Dempster Consulting Ltd.

Reporting Period	October 1 – December 31, 2001
Total reimbursable hours	137
Activities	
<ul style="list-style-type: none"> <li>Proposal development</li> <li>Supervision and progress review of nutrition and density management contract</li> <li>Web site development</li> <li>Development and supervision of audit, work and data verification procedures</li> <li>Input to Foothills Model Forest Phase 3 proposal</li> <li>Arrangements for annual meeting commenced</li> </ul>	
Achievements	
<ul style="list-style-type: none"> <li>Proposal developed with CFS for cooperative management of research trials</li> <li>FGYA prospectus included in Foothills Model Forest Phase 3 proposal</li> </ul>	
Shortfalls	
<ul style="list-style-type: none"> <li>FRIAA payment of membership fees still outstanding</li> <li>Nutrition and density management report incomplete</li> <li>Web site not operational</li> <li>Work verification for Regeneration Project not complete</li> </ul>	
Tasks for next quarter	
<ul style="list-style-type: none"> <li>Develop cooperative trial management proposal with SRD and membership</li> <li>Request and receive proposals for SI comparison Project</li> <li>Ensure web site operational</li> <li>Ensure Regeneration Project verification reports and data loading complete</li> <li>Initial assessment of Regeneration Project information: fill-in planting and herbicide requirements</li> <li>Ensure completion of nutrition and density management contract</li> <li>Develop 5-year business and work plan</li> <li>Arrange and hold Annual General Meeting (Technical Committee, Steering Committee and Information Exchange meetings)</li> <li>Prepare preliminary annual and project reports</li> </ul>	

## Development of Lodgepole Pine Growth and Yield Association Quarterly Activity Report 4 – Dick Dempster Consulting Ltd.

Reporting Period	January 1 – March 31, 2001
Total reimbursable hours	294
Activities	
<ul style="list-style-type: none"> <li>Development of Business Plan and work program</li> <li>Development of collaborative proposals with the Canadian Forest Service (CFS) and Alberta Sustainable Resource Development (ASRD)</li> <li>Request for proposals to conduct fieldwork for Site-index Comparison Project</li> <li>Installation of web site</li> <li>Direction of Regeneration Project verification reporting and data loading</li> <li>Liaison with Alberta research Council and the University of Alberta regarding completion of the nutrition and density management expert review</li> <li>Attendance of CFS / Model Forest Network carbon budget workshop</li> <li>Preparation for and participation in the Annual General Meeting (technical session and Technical Committee and Steering Committee meetings)</li> </ul>	
Achievements	
<ul style="list-style-type: none"> <li>Cooperative trial management proposal developed</li> <li>Proposals for SI Comparison Project requested and received</li> <li>Web site operational</li> <li>Draft report completed by contractor for nutrition and density management study</li> <li>5-year business plan completed and approved (subject to identified amendments)</li> <li>Annual General Meeting held (Technical Committee, Steering Committee and Information Exchange meetings) and attended by all members and cooperating agencies</li> <li>Preliminary annual and project reports prepared and presented to Steering Committee</li> </ul>	
Shortfalls	
<ul style="list-style-type: none"> <li>Work verification for Regenerated Lodgepole Pine Project not complete</li> <li>Assessment of RLP Project fill-planting and herbicide requirements not complete</li> </ul>	
Tasks for next quarter	
<ul style="list-style-type: none"> <li>Amend business plan and prepare annual work plan</li> <li>Consolidate annual report</li> <li>Update website</li> <li>Amend and develop FRIAA proposals</li> <li>Direct work verification and field work planning for Regenerated Lodgepole Pine Project</li> <li>Begin analysis of RLP Project data</li> <li>Develop herbicide proposal for RLP Project</li> <li>Complete planning for Site Index Comparison Project</li> <li>Obtain agreement for collaboration on Historic Research Trials Project; initiate work</li> <li>Develop agreement and work plan for Regional Yield Estimator Project</li> <li>Conduct review of Nutrition and Density Management report</li> </ul>	