

**Alberta Forest Biodiversity Monitoring Program  
Foothills Model Forest Annual Work Plan 2000/2001  
January 31, 2000**

**Executive Summary**

**1. Project Title**

- Alberta Forest Biodiversity Monitoring Program

**2. Project Location**

- Rocky Mountain, Foothills, Boreal Forest, and Canadian Shield Natural Regions of Alberta.

**3. Name of Organization**

- Alberta Forest Biodiversity Monitoring Program (coordinated by Foothills Model Forest)

**4. Other Organizations Involved**

- Ainsworth Lumber
- Alberta Conservation Association
- Alberta Environment (Land and Forest Service, Natural Resources Service)
- Alberta Research Council
- Alberta-Pacific Forest Industries
- Alberta Science and Research Authority
- Daishowa-Marubeni International
- FOREM Consulting
- Manning Diversified Forest Products Research Trust Fund
- Millar-Western Industries
- Natural Resources Canada, Internship Program
- Parks Canada (Wood Buffalo National Park)
- Provincial Museum of Alberta
- Universities of Alberta, Calgary, Victoria
- Weldwood of Canada Ltd.
- Weyerhaeuser Canada Ltd.

**5. Duration of Project Being Proposed**

- April 1997 – March 2000 Program Development
- April 2001 – March 2002 Communication / Fundraising, Startup
- April 2002 – Implementation

**6. Cost of Project Being Proposed (2000/01)**

- \$ 273,000
  - \$ 75,000 Foothills Model Forest
  - \$ 38,000 Alberta Research Council./ Alberta Environment (administered by AENV)
  - \$ 20,000 Alberta Conservation Association
  - \$ 140,000 Other AFBMP sponsors TBA

**7. Consent of other Organizations Involved**

- N/A

**8. Contact Person for this Proposal**

- Daniel Farr, Foothills Model Forest

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**Detailed Proposal**

**1. Prepared by**

Daniel Farr, Foothills Model Forest

**2. Introduction**

The development, testing, and evaluation of a biodiversity monitoring system for the forested natural regions of Alberta will be completed early in the year 2000. This marks the end of the development phase of this program, and efforts in fiscal year 2000/2001 are directed towards generating the funds required for implementation.

**2. Background information**

The development of this program has been guided by a Steering Committee and a Technical Committee, with coordination and secretariat support provided by the Foothills Model Forest. The current composition of these committees is listed below.

*Steering Committee*

Stan Boutin, Alberta-Pacific Forest Industries  
Jane Chisolm, Wood Buffalo National Park  
Bruce McGillivray, Provincial Museum of Alberta  
Terry Neraasen, Alberta Conservation Association  
John Pineau, Millar-Western Industries  
Chris Spytz, Weldwood of Canada Ltd.  
Harry Stelfox, Natural Resources Service  
Evelynne Wrangler, Land and Forest Service

*Coordinator*

Daniel Farr, Foothills Model Forest

*Technical Committee*

Mark Bradley, Wood Buffalo National Park  
Elizabeth Dickson, University of Calgary  
Bert Finnamore, Provincial Museum of Alberta  
Steven Franklin, University of Calgary  
Stephen Hanus, Alberta Research Council  
Michelle Hiltz, Alberta Research Council  
Phil Lee, Alberta Research Council  
Dave Prescott, Alberta Conservation Association  
Jim Schieck, Biodiversity Specialist, Natural Resources Service  
Garry Scrimgeour, Alberta Research Council  
Chris Shank, Natural Resources Service  
Brad Stelfox, FOREM Consulting  
Mike Willoughby, Land and Forest Service  
Neville Winchester, University of Victoria

A series of Technical Reports, plans, and discussion papers has been prepared and reviewed to refine the design, implementation, and communication aspects of the program. These are listed under "Deliverables".

During the next phase, efforts are focussed on communicating the strategic and operational benefits of implementing the monitoring system to selected companies, government, and non-government organizations in Alberta. The AFBMP Steering Committee has suggested that implementation be supported primarily by companies in the forestry and energy sectors that are motivated by their strategic needs for objective information on biodiversity trends. A capital fund is to be acquired over the next two years that will provide long-term stable funding of up to several million dollars annually. This draft work plan describes activities intended to secure the partners and sponsors required for implementation of this monitoring system.

**4. Objectives**

- 1) To promote the AFBMP among key decision-makers and stakeholders (including the general public).
- 2) To support efforts to secure the resources needed for implementation.

- 3) To foster internal communication within the AFBMP.
- 4) To modify the technical design of the AFBMP in response to user needs and peer review.

## 5. Potential Application of Results

A comprehensive monitoring program using a common methodology over a broad range of land uses will help government and industry meet their commitments to conservation and monitoring of biological diversity in Alberta's forests. Application of results is possible at the local, provincial, and national levels.

### Local Linkages

#### 1) *Foothills Model Forest Communication Program*

- Interaction will support AFBMP communication / fundraising efforts and FMF communication efforts regarding the value of biodiversity and the benefits of monitoring biodiversity.

#### 2) *Foothills Model Forest Criteria and Indicators Program*

- The AFBMP will permit reporting of trends through time for at least three of the indicators proposed by Dempster (1998): i) landscape composition and structure; ii) stand composition and structure; and iii) fish and wildlife population status (distribution patterns and species diversity).

#### 3) *Foothills Model Forest Fish and Aquatic Program*

- Sampling protocols and data can be shared for analysis of trends through time

#### 4) *Foothills Model Forest Natural Disturbance Program*

- The AFBMP will rely on the results of the FMF disturbance program to help interpret any landscape changes detected.

#### 5) *Forest Companies*

- For forestry companies seeking to ensure market security through certification programs, monitoring of forest biodiversity is a prerequisite (Elliot and Hackman 1996). Monitoring is an integral component of both the Canadian Standards Association and the Forest Stewardship Council certification programs.

#### 6) *Energy Companies*

- Energy companies seeking the strategic benefits of improved public perception of sustainable resource use will benefit from participation in a system for monitoring trends in biodiversity.

### Provincial Linkages

#### 1) *Alberta Environment*

- The AFBMP provides an excellent mechanism for monitoring the success of integrated resource management policies developed by the Integrated Resource Management Pilot Project
- The AFBMP will facilitate Alberta's reporting of trends through time for several of the Indicators of Sustainable Forest Management listed by the Canadian Council of Forest Ministers (1995, 1996).
- Research and Monitoring: Adaptive Management is one of seven Research Directions for Sustainable Forest Management for Multiple Benefits identified by the Alberta Forest Research Advisory Council in 1997.
- The Alberta Forest Management Science Council articulated the need for a comprehensive forest monitoring system in their 1997 Discussion Paper.

## 2) *Provincial Museum of Alberta*

- The AFBMP will contribute to, and benefit from, the museum's specimen archiving and data management capacity.

## 3) *University of Alberta Sustainable Forest Management Network Centres of Excellence*

- The SFM-NCE has proposed a research program to develop an "Index of Boreal Forest Biodiversity" which would rely heavily on data generated by the AFBMP. The Foothills Model Forest, on behalf of the AFBMP, is a co-applicant in this proposal. In addition to this specific program, numerous research projects in the SFM-NCE will continue to provide results that assist in the design and interpretation of biodiversity monitoring systems. In turn, the AFBMP will provide a wealth of much needed long-term data on biodiversity trends for analysis by researchers at universities in Alberta and elsewhere.

## National Linkages

### 1) *Canadian Biodiversity Strategy*

- "Monitoring programs are required to detect and measure changes in biodiversity, to better understand functional linkages in ecosystems, and to evaluate the success or failure of biodiversity conservation and sustainable use policies and programs." (Minister of Supply and Services Canada 1995: p. 57). The AFBMP contributes directly to this objective.

### 2) *Canada's Model Forest Network*

- Model forests have been directed to establish acceptable indicators of sustainable forest management, including measurement and monitoring systems, and reporting mechanisms that can measure performance relative to the model forests' goals and objectives. The AFBMP contributes directly to this objective.

### 3) *Canadian Council of Forest Ministers*

- The AFBMP will permit reporting of trends through time for several of the Indicators of Sustainable Forest Management listed by the Canadian Council of Forest Ministers (1995, 1996).

### 4) *National Forest Inventory*

- The AFBMP will be available as an enhancement to the new plot-based National Forest Inventory (Magnussen and Bonner 1997). Alberta's formal participation in the NFI, intended to provide national-level reporting on the status of Canada's forest resource, is currently under consideration. Initial discussions have identified linkages between the NFI and the AFBMP that would enhance both programs.

### 5) *National Parks*

- National Parks Policy (Minister of Supply and Services Canada 1994: p. 35) states: "An integrated data base will be developed... for each national park to provide, along with research and environmental monitoring, the baseline information required to protect and maintain park ecosystems... data requirements will regularly extend beyond park boundaries". The AFBMP contributes directly to this objective.

## **6. Deliverables**

### 1997/98

Schneider, R. 1997 Ecological diversity monitoring framework. Unpublished discussion paper prepared for the Biodiversity Monitoring Working Group.

AFBMP. 1998. Website. <http://www.fmf.ab.ca/bm.html>.

- Farr, D.R. (ed.). 1998. Monitoring forest biodiversity in Alberta, proceedings of a workshop held March 30-31, 1998. Foothills Model Forest.
- Lee, P. and S. Hanus. 1998. Criteria and indicators for monitoring biodiversity in Alberta's forests: Part I: Review of legislation, policies, external agreements, and programs. A progress completion report prepared for Alberta Environmental Protection by the Alberta Research Council, Vegreville, AB. 123 pp.

#### 1998/99

- Stelfox, J.B. 1998. Software for evaluating the cost-effectiveness of alternative monitoring designs. FOREM Consulting.
- AFBMP. 1999. Monitoring forest biodiversity in Alberta: Program framework. AFBMP Technical Report 3, Review Draft, March 1999.

#### 1999/00

- Farr, D.R. (ed.). 1999. Monitoring forest biodiversity in Alberta, proceedings of a workshop held April 20-21, 1999. Foothills Model Forest.
- Finnamore, A.T. 1999. Alberta Forest Biodiversity Monitoring Program arthropod pilot study report. Provincial Museum of Alberta. 13 pp.
- Scrimgeour, G. 1999. Comparison of sampling techniques to monitor stream amphibian communities in forested regions of Alberta. Alberta Research Council. 35 pp.
- AFBMP Steering Committee. 1999. AFBMP Communication plan. Unpublished internal document.
- Carlson, M. In preparation. Software for evaluating the power and cost of alternative monitoring designs. University of Alberta.
- Farr, D.R. In preparation. AFBMP Implementation plan. Foothills Model Forest.
- Hiltz, M. In preparation. Overview of data sets used to estimate initial values and variances for determining the statistical power of alternative monitoring designs. Alberta Research Council.
- Lee, P. and M. Herbut. In preparation. Ecological land class and benchmark representation for different sampling schemes. Alberta Research Council.

#### 2000/01

- AFBMP Steering Committee and Technical Committee. Series of meetings, presentations and supporting communication materials directed towards potential sponsors of the AFBMP. These activities and products are intended to result in financial commitments towards a capital fund capable of supporting the implementation of the AFBMP.

### **7. Methods**

- Promoting the AFBMP among key decision-makers and stakeholders (including the general public) will be accomplished by following the AFBMP communication plan (AFBMP Steering Committee 1999). The primary audience includes senior managers in the energy and forestry industries and civil servants in relevant provincial and federal government departments. The purpose of communicating with this audience is to obtain strategic endorsements and funding commitments.

Communication tools include:

- Personal presentations and meetings with members of the Primary Audience
- Customized letters to members of each target audience from the Steering Committee.
- Articles in relevant serial publications.
- Brochure that communicates the key messages to all target audiences.
- Program overview document that communicates the key messages in greater detail and briefly describes the proposed implementation of the program.
- Oral and poster presentations at relevant industry meetings and conferences.
- Workshops to outline program and solicit suggested modifications / enhancements.

- Maintenance of the program web site (<http://www.fmf.ab.ca/bm.html>).
- Modifying the technical design of the AFBMP in response to user needs and peer review (Objective #4) will be accomplished through ongoing participation of the Technical Committee, particularly P. Lee of the Alberta Research Council, and D. Farr, Foothills Model Forest. Major design modifications after March 2000 are not anticipated, but it is necessary to maintain a capacity for incorporating input.

## 8. Schedule

April 2000

- Completion of initial communication materials (brochure, poster), followed by ongoing production as required.

April 2000 – March 2001

- Meetings and presentations with senior managers in the energy and forestry industries in Alberta, and civil servants in relevant provincial and federal government departments

## 9. Site Information

- This work will take place throughout the province of Alberta.

## 10. Financial Information

### Overview

	<b>FMF</b>	<b>Other</b>	<b>Other (proposed)</b>
1997/98	3,987	65,768	-
1998/99	73,500*	117,383	-
1999/00	75,000*	463,995	-
2000/01	75,000*	198,000	
2001/02	75,000*	-	200,000
	<u>302,487</u>	<u>845,146</u>	<u>200,000</u>

\*Biologist salary & administrative support

### 2000/2001 Contributions

- \$ 273,000
  - \$ 75,000 Foothills Model Forest
  - \$ 38,000 Alberta Research Council / Alberta Environment (administered by AENV)
  - \$ 20,000 Alberta Conservation Association
  - \$ 140,000 Other AFBMP Sponsors TBA

## 2000/01 Cost Items

	<b>FMF</b>	<b>Other</b>
Salary		
<i>Scientific communication specialist (1 FTE salary &amp; benefits)</i>	-	60,000
<i>Program coordination, presentations, communication (D. Farr)</i>	60,000	-
Contracts		
<i>ARC technical support (via AENV agreement; P. Lee)</i>	-	38,000
<i>Other technical support</i>	-	10,000
<i>Corporate relations (contracted services)</i>	-	45,000
<i>Publication design &amp; printing (contracted services)</i>	-	20,000
Office materials & supplies	5,000	10,000
Travel	10,000	5,000
Additional in-kind support (Steering & Technical Comm.'s)	-	<i>in-kind</i>
Contingency	-	10,000
Total	75,000	198,000

## **11. References**

- AFBMP. 1999. Monitoring Forest Biodiversity in Alberta: Program Framework. AFBMP Technical Report 3, Review Draft, March 1999.
- AFBMP Steering Committee. 1999. Communication plan. Unpublished internal document.
- Alberta Forest Management Science Council. 1997. Sustainable forest management and its major elements. Sep 10, 1997 discussion paper.
- Canadian Council of Forest Ministers. 1995. Defining sustainable forest management: A Canadian approach to Criteria and Indicators. Canadian Forest Service, Ottawa, ON.
- Canadian Council of Forest Ministers. 1996. Criteria and indicators of sustainable forest management in Canada: Technical Report 1997. Canadian Forest Service, Ottawa, ON. Cat. Fo75-3/6-1997E.
- Dempster, W.R. 1998. Indicators of sustainable forest management for the Foothills Model Forest (draft). Prepared for Foothills Model Forest by Simons Reid Collins, Vancouver, BC. 29 pp.
- Elliott, C. and A. Hackman. 1996. Current issues in forest certification in Canada. World Wildlife Fund, Toronto, ON.
- Lee, P. and S. Hanus. 1998. Criteria and indicators for monitoring biodiversity in Alberta's forests: Part I: Review of legislation, policies, external agreements, and programs. A progress completion report prepared for Alberta Environmental Protection by the Alberta Research Council, Vegreville, AB. 123 pp.
- Magnussen, S. and M. Bonner. 1997. The new Canadian National Forest Inventory. CFS Internal Report, March 1997.
- Minister of Supply and Services Canada. 1994. Parks Canada guiding principles and operational policies. Cat. No. R62-275/1994E.
- Minister of Supply and Services Canada. 1995. Canadian Biodiversity Strategy: Canada's response to the Convention on Biological Diversity. Cat. No. En21-134/1995E
- Schneider, R. 1997. Ecological diversity monitoring framework (Draft). Unpublished discussion paper prepared for the Biodiversity Monitoring Working Group.

## **12. Scientific Review**

- Over 20 separate scientific reviews have been obtained for major technical materials produced to date. Some of these reviews are available on the AFBMP web site (<http://www.fmf.ab.ca/bm/reports.htm>).

## **13. Improvements to Management in Forest Ecosystems**

The following benefits of implementing the AFBMP were described in AFBMP Technical Report 3.

### Economic

- Improved security of market access for participant companies and reduced probability of consumer avoidance based on concerns over biodiversity conservation. Participation in this monitoring program would also assist companies seeking product certification based on a demonstrated commitment to the principles of adaptive management, which requires that the company acquire information on the status and trends of ecological systems being managed.
- Enhanced public confidence in Alberta's natural resource management capability would contribute to the maintenance of employment and economic activity within the natural resource sector.
- Reduced duplication of research and administration costs by providing the opportunity for a "one-window" approach to monitoring that would be more economical and efficient than current approaches. Government and industry could share the cost of implementation.

### Social

- Reduced potential for conflicts among stakeholders over resource management issues, and reduced costs associated with such conflicts, by providing transparent, equal access to scientifically rigorous data on status and trends of forest biodiversity.
- Increased confidence among Albertans that their natural resources are being managed in a sustainable fashion, which would potentially act to curb public support for a rigid regulatory framework.

### Environmental and Scientific

- Improved capability for adaptive management of natural resources by providing feedback on the status and trends of forest biodiversity in relation to resource utilization and management actions.
- Improved ability to compare trends in biodiversity across meaningful spatial and temporal scales
- Generation of a long-term data set available for review and analysis by scientists with expertise in forest ecosystems and biological diversity.
- Application of common monitoring methods across multiple jurisdictions having different land use and natural disturbance histories would provide natural resource managers with a broader context against which to interpret changes within a single jurisdiction.
- Development and enhancement of Alberta's capability for using remote sensing technology, such as Landsat, to periodically analyze and report on the pattern and composition of Alberta's forested landscapes.

### **14. Amount of Money Requested**

- See point 10. above

### **15. Proposed Payment Schedule**

- The FMF funds, which are proposed to one staff position and administrative support, would be required at a schedule of approximately \$6,250 /mo for 12 months from April 2000 to March 2001.

### **16. Subcontracted Work**

- None.

### **17. Project Management**

- Project management will be provided by Daniel Farr, Foothills Model Forest. Contracts, employment agreements, purchasing, and invoicing will be administered by the Foothills Model Forest.

### **18. Additional organizations requesting FRIP monies**

- N/A

### **19. Publication of results for general consumption**

- Most of the technical materials produced to date are available on the AFBMP web site (<http://www.fmf.ab.ca/bm.html>). Additional venues include agency reports (Alberta Research Council) and articles submitted for publication in appropriate journals.

**20. Other relevant information**

- None.