4.2.01

# Foothills Focus

Newsletter of the Foothills Model Forest

Winter 1996

# Making a Difference...

We have been around doing all this research for nearly four years now, but what have we accomplished?

Every organization has to sit back now and again to evaluate its progress. When we sat back, we saw a variety of existing benefits and soon to be realized benefits of our program.

Forest management involves managing PEOPLE who use the forest as well as managing the forest itself. In this light, our research findings are used by people who manage use of the forest. We have therefore, put a lot of emphasis on communicating with these people. Our efforts to reach out and make our research findings available and relevant will help our program accelerate efforts towards sustainable forest management.

The forestry planning process is very complex. It takes months of work to determine how a forest stand should be harvested and then replanted. In the past, plans for harvesting and replanting were not driven by ecology, but rather, by economy. Now, ecology plays a major role in forestry planning. Foothills Model Forest has developed computer software and other sources of information that can be used by forest companies to improve work practices in the bush, most importantly, ecologically-based planning.

Our work with wildlife is providing benefits to forest managers concerned about their impacts. The research has provided information important for maintaining several wildlife species in the area. This information is continually considered by Weldwood of Canada Ltd. in its planning processes. We also played a role in the increased practice of retaining trees in cutblocks. Some trees are left standing in many cutblocks that were traditionally clearcut, providing numerous benefits for wildlife today and tomorrow.

The forestry research is also bearing fruit. Alternative harvesting and reforestation techniques are being tested in the model forest. We will soon be able to provide recommendations on several issues related to harvesting and regenerating forests.

Our fisheries inventory is currently being used by Weldwood of Canada Ltd. to help guide decisions on how, where and when to cross a stream. The inventory is also designed to help with understanding the impacts of angler access to remote fishing holes. A

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## Tree Retention...

*Trees remaining in cutblocks provide habitat structure. Dead trees (snags) and live trees are very beneficial to woodpeckers by providing potential nest sites and food supplies.*

*cont'd from page 1...*

model being developed to help forestry companies understand their impacts on streams and rivers is getting a lot of interest from all across the province. We did an inventory of road stream crossings and identified some problem sites that are to be repaired this summers. Our fisheries and hydrology studies will help bring new knowledge to areas not well understood in the past.

We can never leave people out of the equation. Our social and economic studies on resource-dependent communities are also important in our research.

The FMF has developed a variety of other tools that are useful in forestry planning. These tools include high-tech mapping technologies, computer software, wildlife habitat models, ecological land classification and other bits of information.

The tools and information will help foresters integrate values other than just timber into their planning process. Until now this has been difficult, but the FMF has now provided what appears to be a reliable means to do so. These tools are being combined into one process called a Decision Support System (DSS) and are now being tested in the real world.

## FMF Research Projects

*Wildlife Research*

Northern goshawk habitat characterization in the Foothills Model Forest
Barred owl habitat use and distribution in the FMF
Neotropical migrant passerine abundance and distribution in boreal forest
Long-toed salamander Study
Summer habitat use by woodpeckers
Red squirrel habitat use
Pileated woodpecker study
Habitat inventory and modelling:
•Refinement and testing of the wildlife habitat supply computer program
•Refinement of the habitat yield curves
•Refinement, publication, and peer review of Habitat Suitability Index (HSI) models
•Standardized habitat sampling guidelines
•Standardized habitat database development
•Remeasurement of forest/wildlife permanent sample plots 39 years after harvesting
Winter habitat selection by elk in a boreal mixedwood ecosystem
Ecosystem disturbance and mammal distribution patterns in the Foothills Model Forest
Woodland caribou distribution and habitat selection in disturbed (cut over) and undisturbed winter range
The effects of forestry practices on lichen communities in the Foothills of west central Alberta

*Socio-Economic Research*

Overview and comparative analysis of public input mechanisms
General population survey
Socio-Cultural community case study
Socio-Economic models of recreation and economic impact studies

*Geographic Information Systems Analysis*

Blocking Model and Landscape Forecasting Model
Ecological classification of Foothills Model Forest

*Watershed and Fisheries Research*

Development of a Watershed Assessment Model
Regional hydrology study of the FMF
Sediment intrusion of stream substrates
Fishery/aquatic habitat information database
Sedimentation impacts

*Forestry Research*

Effects of forest management on genetic diversity of lodgepole pine and white spruce
Validation of basal diameter ratio competition index for pine-aspen
Silvicultural impacts of chipper residue disposal
Tree growth and stand yield impacts of basal girdling by small mammals in lodgepole pine
Adapting shelterwood practices to enhance and protect natural white spruce regeneration in deciduous/coniferous mixedwoods
Modelling soil compaction, decompaction and tree growth on Alberta forest soils following harvesting
Ecologically based pre-harvest planning
Horse grazing: impacts and strategies
Estimating the annual carbon budget of the FMF
Aspen Regrowth after release of conifers

# Model Forest Report

1. Literature review of ecological predictors of site productivity. November 1994, The Forestry Corp. 20 pages. Cost: $1.50
2. Preliminary inventory of environmentally significant areas in the Foothills Model Forest (Phase I). 1994, Sweetgrass Consultants Ltd. 115 pages. Cost: $5.00
3. Proceedings of a workshop to develop a strategic plan for a Watershed Assessment Model (WAM). March 1994. R. Rothwell, University of Alberta. 33 pages. Cost: $2.00
4. Foothills Forest Annual Report 1993/94. 29 pages. Cost: $1.50
5. Slope delineation of the Foothills Model Forest. April 1995, The Forestry Corp. 7 pages. Cost: $1.00
6. Validation of basal diameter ratio competition index for lodgepole pine-aspen (Establisment and progress report). May 1995, D.A. MacIsaac, Canadian Forest Service, Edmonton, AB 43 pages. Cost: $2.50
7. Problem analysis for the Landscape Forecasting Model (Draft). July 17, 1995, The Forestry Corp. 29 pages. Cost: $2.00
8. Habitat structure sampling manual for wildlife habitat suitability index projects (Interim report). 1995, Wayne Bessie, Foothills Model Forest. 34 pages. Cost: $2.00
9. FMF Project Compendium 1995/96 Project Year. 58 pages. Cost $2.00.

Costs for publications are associated with binding and printing. Please make cheque payable to Foothills Model Forest.

## Forestry & Pileated Woodpeckers

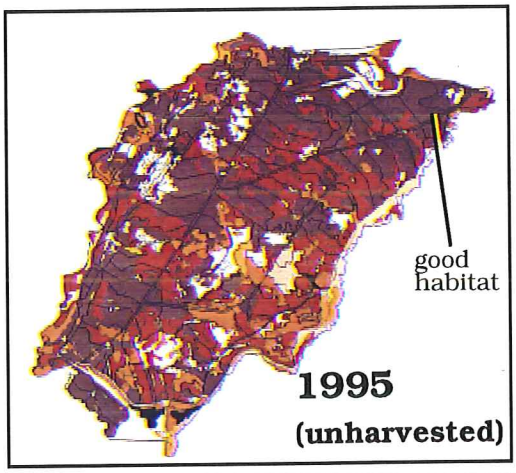
The following wildlife habitat maps show the impacts on pileated woodpecker habitat using a hypothetical forest harvesting plan. This harvest is not happening as outlined here.

The area mapped is approximately 10 $km^2$. The harvesting process follows a two-pass cutting system. The first harvest of the area occurs in 1996. Once the first cutblocks have trees growing in them and meet provincial standards, the second cut can take place. Assuming good regeneration of trees, the second cut would occur in 2012.

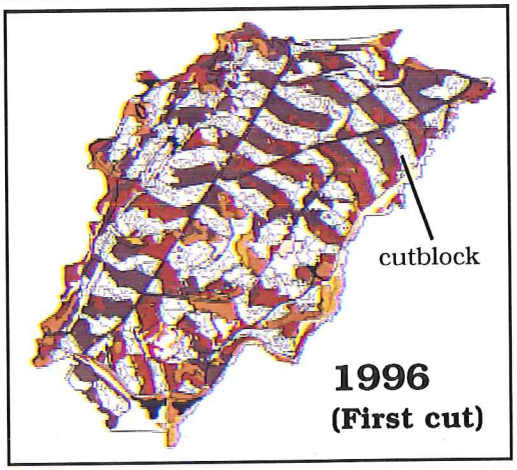
The maps illustrate the quality of pileated woodpecker habitat. The map of 1995 (pre-harvest) shows that a large portion of the area is good pileated woodpecker habitat. After the two cuts have been made, by the year 2012, very little habitat is available for the woodpeckers.

It must be noted this is a trial run of the habitat model. It must also be noted the retention of trees in cutblocks was not considered in the model.

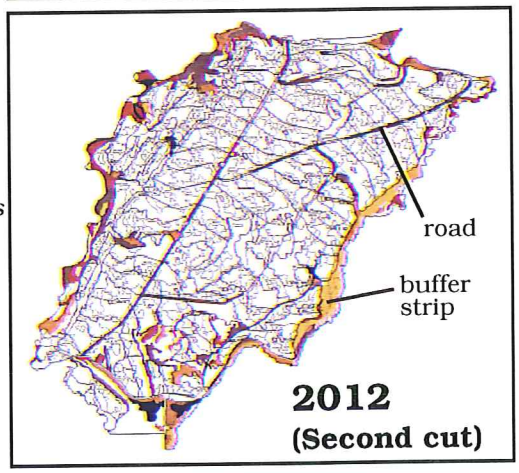
*The darker the color, the better the pileated woodpecker habitat. A lot of good pileated habitat is available previous to harvesting.*



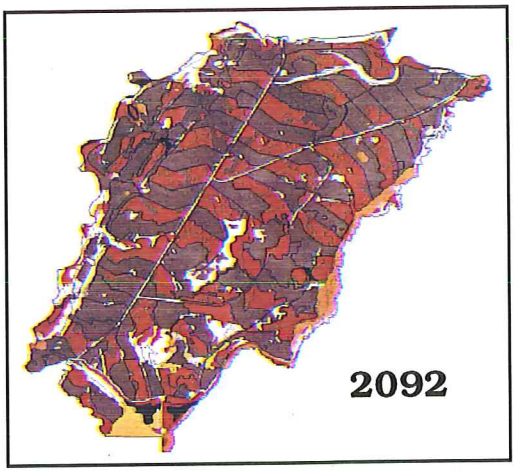

*The first cut removes plenty of pileated habitat. Remember, this hypothetical cut did not leave trees in the cutblock. If dead or alive trees were left in the cutblock, the affects would not be so drastic.*




*Very little pileated habitat remains after the second cut. Buffer strips along streams provide woodpecker habitat. However, this area is a small piece of the puzzle in the landscape. Managers plan to have good habitat available in adjacent areas.*




*Approximately 100 years later the pileated habitat is available again. The importance of good planning becomes apparent when you see the potential impacts of doing things the old way.*



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# Careful when cutting...

*The above photo shows a feller-buncher operator picking his way through the bush carefully cutting down some trees and leaving other trees. This photo was taken during the harvesting of our second shelterwood practices study site.*

A shelterwood cut leaves behind mature trees that provide "shelter" for regenerating trees. We are testing this harvesting practice in areas with the desired ecological characteristics.

# New Environmental Education Program

A new environmental education program in Hinton will begin this summer. The Cache Percotte Environmental Training Centre will be offering a variety of programs to school groups, teens and adults. Courses include snowshoeing, orienteering, canoeing, plant uses and a raft of other nature courses.
For more information on the program please call 865-8234.

# Need even more info on the Model Forest?

If information presented in our newsletter is not sufficient for your needs, consider joining one or several of our research working groups.

Working groups exist for the following areas of research; forestry practices, wildlife/ecosystem disturbance, watershed and fisheries, GIS/resource management planning tools and public involvement/socio-economics. Information received by members of the working groups include annual reports, workplans, updates on our research projects, etc.

Members receive the aforementioned information and if they choose, help with review of proposed projects and draft research reports.

Members of the groups include individuals from several major forest companies, provincial and federal government departments, other resource industries and several non-government organizations. Over 100 people currently belong to our groups. We also hope to use the working groups to help with information sharing in the Model Forest Network.

For more information on how to join our working groups, please contact Bryan Millar (phone 865-8342 or fax 865-8266).

## Upcoming Events

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|---|---|
| National Forest Week | May 5-11 |
| FMF Open House<br>Parks West Mall, Hinton | May 10 & 11 |