

Spring, 2002

Model Forest works to share knowledge beyond its borders

Foothills Model Forest officials are gearing up for the program's third five-year research cycle, due to begin April 1 this year.

Bob Udell, Foothills Model Forest president and board chair, said he's looking forward to five years that will see the results of world-leading research applied by industry and governments - not only within the region, but also throughout Alberta and beyond.

"The past 10 years have already seen local industry and government decision-makers adopt some of the research findings generated by Foothills Model Forest scientists," says Udell, himself a senior executive with Weldwood of Canada Ltd., Hinton Division. For instance, the regional director of the Northeast Slopes, Mike Poscente, asserts that every management plan submitted in that region in recent years has used Foothills Model Forest results to improve practice and planning.

"What is especially exciting now is the opportunity to see land managers outside our region pick up on what we're doing and put our information to use," says Udell. Foothills Model Forest knowledge about wildfire, natural disturbance and socio-economic realities are gaining attention far and wide, as evidenced by some of the stories found on the following pages.

To Udell, it's more proof of the value of the Model Forest program.

"The aim from the beginning was to generate very practical solutions to every-day problems faced by land managers in the forests of west-central Alberta," he says. "To find that other people totally removed from our land-



Public has a significant stake in forest management.

base and partnership are putting our studies to work is very gratifying."

The guiding vision for the next five years is for the Foothills Model Forest to play a key role in establishing Alberta's reputation as a world leader in sustainable forest management. That will require the organization's discoveries to be:

- Reflected in on-the-ground practice throughout Alberta and elsewhere in Canada, where applicable;
- Incorporated in forest and environmental policy and changes;
- Widely disseminated to and understood by a broad spectrum of society.

Udell says he's pleased to see these goals are already in the process of being realized. Public understanding is just as important as scientific advancement, he says, and is in fact a prerequisite for those managers who make decisions about the use of publicly-held land. Please read on to find out more about these and other Foothills Model Forest aims and accomplishments.

An article featuring the Foothills Model Forest can be found in the March, 2002, edition of the Alberta Chamber of Resources magazine

The Foothills Model Forest will host an exhibit based on its Grizzly Bear Research Project at the Jasper Yellowhead Museum and Archives this summer

Papers by Foothills Model Forest researchers will be published in a special edition of The Forestry Chronicle this fall, reaching about 3,000 foresters worldwide

DID YOU KNOW...

Chisholm fire a rare opportunity for scientists

Foothills Model Forest expertise in wild-fire is being put to use to improve fire management throughout the boreal forest.

South of Slave Lake, staff are helping analyze the behaviour and effects of 2001's devastating Chisholm fire.

The wildfire destroyed 10 homes and burned 116,000 ha of land. The forest industry lost 4.5 million cubic metres of timber and over 6,300 ha of recently-planted trees.

Researchers in Foothills Model Forest's Natural Disturbance Program have been invited to join a study team led by Alberta Sustainable Resource Development. The teamwork will maximize efficiency for both organizations, and allow for a sharing of resources and knowledge.

Dennis Quintilio, a fire consultant working with the government department, said the Foothills Model Forest team brings valuable scientific knowledge to the drive to understand the Chisholm fire.

"They are a leading force in fire pattern analysis and related research in Alberta," he said. "Alberta Sustainable Resource Development is very interested in extending their work into the boreal forest."

Quintilio said industry throughout Alberta will benefit from the two-year research project. "Re-evaluating fire intensity and severity impacts under extreme and unprecedented low fuel moisture conditions is going to be very important to industry in the forested area, given the trend to drier weather regimes," he said.

There are even broader implications to the project, he said, in that the findings the Foothills

Model Forest helps develop will likely be used to support provincial policy-making.

Joint ventures in wildfire research are nothing new to Foothills Model Forest scientists.

"We've run cooperative research programs before," says project biologist Kris McCleary. "With the Chisholm project, we'll be using program expertise provided by Jasper National Park, the Foothills Model Forest, Weldwood of Canada Ltd. Hinton Division, and Alberta Newsprint Company. It's a group research approach that allows us to share expertise."

David Andison, of Bandaloo Landscape Ecosystem Services and project manager for the Foothills Model Forest's Natural Disturbance program, is excited about the opportunities presented by the Chisholm project.

"The more fires we look at, the more data we can collect and the more confidence we can have in the results," Andison says.

"This is a great opportunity to study forest fires. A fire of this size doesn't happen very often so we need to make the most of it as a research opportunity."

Another interesting aspect of the Chisholm fire is its intense level of documentation. "They (provincial fire authorities and scientists) know what this fire was doing every minute of its



Research into wildfire is of great value to forest managers

existence," Andison says.

The Foothills Model Forest team will benefit from the project through a greater understanding of disturbance history and wildfire behaviour, especially fire behaviour as it relates to the edges of the fire. Both areas of research are key to improved forest management techniques.

Other potential areas of research include impacts of fire on riparian zones, (areas of forest near water), and unburned residual material within the fire.

"Studying what unburned patterns have been left on the landscape historically, whether naturally or otherwise, has become one of the leading tools of forest management," Andison said.

Indicators report nearing completion

The Local Level Indicators Project is in the final stages of producing an initial status report on criteria and indicators on the Foothills Model Forest landbase.

Criteria are the six broad conditions Canada and many other countries deem essential to the sustainability of forests. Indicators are the specific factors to be measured. Over time, results will indicate trends in forest condition. They also allow Canada to report in a credible, science-based fashion on how it is performing relative to its commitments to maintaining forest sustainability.

In its first report, the Foothills Model Forest will provide measurements against more than 40 indicators, covering everything from the various human uses of the landscape to the number of beaver harvested on traplines within the region.

Planners across country put research to work

The Northern East Slopes Sustainable Resource and Environmental Management Prototype Project is using Foothills Model Forest expertise in computer modeling

Foothills Model Forest researchers are entering data into a Landscape Cumulative Effects Simulator and analyzing the results. It is a modeling system that predicts outcomes under varying scenarios, such as population increases, industry growth and recreational activity.

"Results of this modeling help tell us whether we're on the right track in our planning approaches," says Northern East Slopes' Nancy Saul-Demers. And senior regional planner Judy May McDonald says the Foothills Model Forest is also making important contributions to effective consultations with stakeholders among the general public, industry and First Nations.

Researchers David Andison and Kris

McCleary, meanwhile, have generated interest from across Canada with a recently released report on riparian-zone management. Riparian zones are areas of forest alongside rivers and lakes.

"Our research was specific to the Foothills region, but riparian area management is a problem for all forest managers," McCleary says. "This is the project we've been getting the most feedback on. Companies, governments and national parks are all struggling to manage riparian zones with ecological impacts in mind."

The Foothills Model Forest's research into riparian zones was limited to the foothills region. However, research methods and findings developed for the study reach well beyond Foothills Model Forest borders. "This is pretty important research," McCleary said. "We've been getting calls about this research from practically every province in Canada."

Beyond the borders . . .

Shows and stories spread research message

Visitors from all over the world took in some lively presentations and interpretive events staged by Foothills Model Forest in 2001.

Fiona Ragan-Braun, of the Foothills Model Forest communications office, said more than 3,400 people took the time to learn, watch, listen and even sing songs in a program designed to educate people about the region's grizzly bear population. Props included a bear suit for youngsters to try out a global positioning system (GPS) radio collar and ear tag, a cast of a bear foot, skins of black and grizzly bears and an extensive slide show. At least a quarter of the shows' participants were children.

"We had participants from Australia, Japan, Switzerland, the U.S. - and we packed the place, especially in Jasper," said Ragan-Braun. The shows were held in Jasper's Whistlers Amphitheatre and the Gregg Lake campground in William A. Switzer Provincial Park. The title of the interpretive tour was "Within Growling Distance."

The program's 12 shows were held during July and August, with eight in Jasper and four in the provincial park.

Participants learned about the difference between grizzly and black bears, and researchers' techniques from drugging to snaring, taking tooth samples and temperature readings. Participants also learned about other animals with which the bears share their habitat.

Ragan-Braun said the grizzly bear is important for people to understand, because of its dominant role in many ecosystems, and because of general concern for its well-being. Some theories suggest that if grizzly bear populations are doing well, then the overall ecosystem should also function properly.

Last October Foothills Model Forest staff held a media briefing in Edmonton to update journalists on results of the Grizzly Bear Research Project. Russ Stashko of Alberta Sustainable Resource Development also attended, and spoke about the Regional



Fiona Ragan-Braun with one of the props used in summer shows

Carnivore Management Group (RCMG), an important link between researchers and land/resource managers. The Strategic Framework for Grizzly Bear Conservation in the Alberta Yellowhead System recommended formation of the RCMG, as well as the collaborative approach linking management objectives and research to action on the ground. Work that RCMG undertakes is tied to other planning projects including the Northern East Slopes Strategy - an integrated resource management project utilizing a coordinated approach to resource-based decision making.

Thousands visit bear exhibit

From July 18 to November 13, 2001, about 5,500 people attended an exhibit in Jasper about grizzly bears.

The exhibit, entitled *A Terrible Beauty*, was hosted at Jasper Yellowhead Museum and Archives. Its aim was to educate visitors about the grizzly bear and the role it plays in the surrounding areas of Jasper and Hinton.

The Foothills Model Forest partnered with Jasper National Park to present the exhibit. The Model Forest loaned the mounted grizzly that towered over visitors, as well as the radio collars and ear tags used to track the bears' movements. The exhibit highlighted the growing role science plays in the management of land and bears.

The museum exhibit was part of Jasper's participation in the "Year of the Great Bear" initiative. Several western mountain parks presented a program of special exhibits and events, with the aim of enhancing local and visitor knowledge about the bears and the roles they play as indicators of ecosystem health in the Rocky Mountain region.

Foothills Model Forest staff also helped provide interpretive presentations about their grizzly bear research in Whistler's Campground in Jasper throughout the summer.



Interactive fun at campground.

Children experience forest thrill

Last October six high school students from Edson and Hinton swapped the classroom for the beauty of the Foothills Model Forest.

The students, chosen for their interest in forest sciences, spent October 9-12 experiencing the forest and learning about the scientific research that goes on under the canopy.

Students learned how to map bears' locations using GPS, how natural and regenerated lodgepole pine stands develop, how riparian zones are managed and how the forest has been part of Alberta's history for well over a century.

Half of the students submitted letters about their experiences to a local newspaper. The other half presented slideshows to their classes, sharing their Model Forest experience.

The Foothills Model Forest has partnered with the Science Alberta Foundation in another initiative, this time to create a traveling scientific exhibit aimed at raising youngsters' enthusiasm for forest technology.

The exhibit, "What Wood You Do? Exploring Science and Technology in the Forest Industry," premiered in January and will be traveling around Alberta for the next three years.

The exhibit is highly interactive and features exhibits designed to educate and inspire.

The Model Forest fulfills one of its top priorities through involvement in an exhibit that spotlights its innovative research well beyond its borders.

For more information or to book the exhibit, call Ginette Dorais at (403) 220-0077 (ext. 233).

Beyond the borders . . .

Dollar impact of visitors is important - and quantifiable

Visitors to the Foothills Model Forest region play an important role in the local economy, recent studies show.

They come for work and recreation, so the region's reputation for economic activity and natural beauty is of great importance. Research work by Foothills Model Forest scientists now shows not only how much visitors spend in the region, but also what would happen if economic circumstances changed.

Bill White, an economist with the Canadian Forest Service, says the region has four strong sectors; "This is what makes it such a vibrant economy," he says. "It has coal, wood products, visitors and oil-gas." The annual value of the sectors (before recent mine closures) is:

- Mining - \$500 million
- Forestry - \$494 million
- Visitors - \$316 million
- Oil-gas - \$211 million

"We wanted to measure the visitor sector in the same way we would other sectors of the economy," says White. About a million people visit the region each year, to socialize, work or play. "We've tried to capture all the different types of visitors to the area and get an idea of what they spend," White says.

The data will help decision-makers such as municipal leaders in the Foothills Model Forest region, and will also serve as a guide for leaders elsewhere. "The most important thing about the study is that it puts a real number on something that people usually just guess about," White says.



Researcher Bill White

"Some think the visitor sector is really important while others disagree - but no one has had the numbers to back up either argument."

The data has been fed into a computer model that could also be of great help to decision-makers. It calculates the outcome or impact of any change in circumstance, such as a mine closure or a reduction in wood-product shipments.

High-tech program illustrates grizzly bear wanderings

When Julie Dugas of the Foothills Model Forest works with her World Construction Set, she's doing more than playing computer games.

The World Construction Set software is a visualization tool that allows her to animate grizzly bear movements in a video that also shows the animals' actual habitat. It's useful for researchers, and tremendous for public education.

"The grizzly bear research project is the only one using the World Construction Set at the moment," says Dugas, "but we hope to introduce it to many other Foothills Model Forest projects. It's very useful to be able to visualize some of the research data in such a realistic format."

Data used to generate the animated results are gathered from Geographic Information Systems (GIS) digital tracking and mapping

systems. Landscape and habitat maps are overlain on the computer, and then actual locations of the bears, provided at regular intervals by satellite and ground tracking systems, are plotted in.

Satellite information is derived from radio collars worn by some grizzly bears living in the region. The collars are eventually removed, either by biologists or by automated separation devices.

The information gleaned is valuable to land managers, because it shows how grizzly bears, and other components of the ecosystem, react to human activity such as road-building. Managers can adjust their activities accordingly, if research shows this to be necessary.

Currently the software illustrates the movement of six bears, but there is potential to focus on any number of animals in the same show.