

f^{oot}notes

the newsletter of the foothills research institute

PM 42123525

Milestones

New knowledge, tools, and directions for research will help the Foothills Research Institute's partners better manage the impacts of development.

- The Linear Inventory of Little Smoky Caribou Range is now available to help in restoration planning and to foster understanding of how historical seismic lines are affecting animals like caribou.



- A regional access development (RAD) plan that will help us reduce the number of access roads constructed, thereby reducing the impacts these roads have on animals and vegetation, has been completed and is awaiting provincial government approval.

"One of the unique things about the RAD planning exercise is that government and industry did this jointly," says program lead Wayne Thorp. The RAD plan will continue to evolve as knowledge evolves.

- In the Natural Disturbance Program, the study *Temporal Dynamics of Large Woody Debris in the Foothills of Alberta* produced numerous ▶



Findings from the Large Woody Debris study will eventually be used to create new tools for decision making in forest management.

Interpretive signage showcases stream crossing technology

Visitors to Hardisty Creek just south of Hinton can now learn about geotextile-reinforced soil arches, the institute's Foothills Stream Crossing Program, and what goes on within a creek, thanks to new interpretive signage.

"It highlights this new and innovative crossing technology for industry members," says Ngaio Baril, project lead. The Foothills Research Institute provides guided tours of the site for

the public, university students, and industry so they can discover the benefits of using geotextile-reinforced soil arches, which keep the integrity of the stream bottom intact.

"This demonstration site is the first crossing of its type in Alberta, but there are more being constructed now due to the industry tours we've done," says Baril.

The signs are visible from the road and are on the west side of the highway. They include information about Athabasca rainbow trout, invertebrates, sediment deposits, and turbidity.



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key findings, including the discovery that some logs have been in streams for at least 150 years. In the final report, available on the Foothills Research Institute's website, researchers also make a novel recommendation: creating buffer zones even in burned but salvaged areas.

- Another study in the Natural Disturbance Program, this one on wildfire patterns, found that, on average, more than one-third of the material in the area of a wildfire survives. "It changes the way we think about vegetation as habitat in the middle of a fire," says David Andison, program lead.

Andison is preparing several reports detailing the findings. The study also spawned a decision support tool that will allow land managers to compare the survival patterns of fires to those of harvesting or prescribed burns.

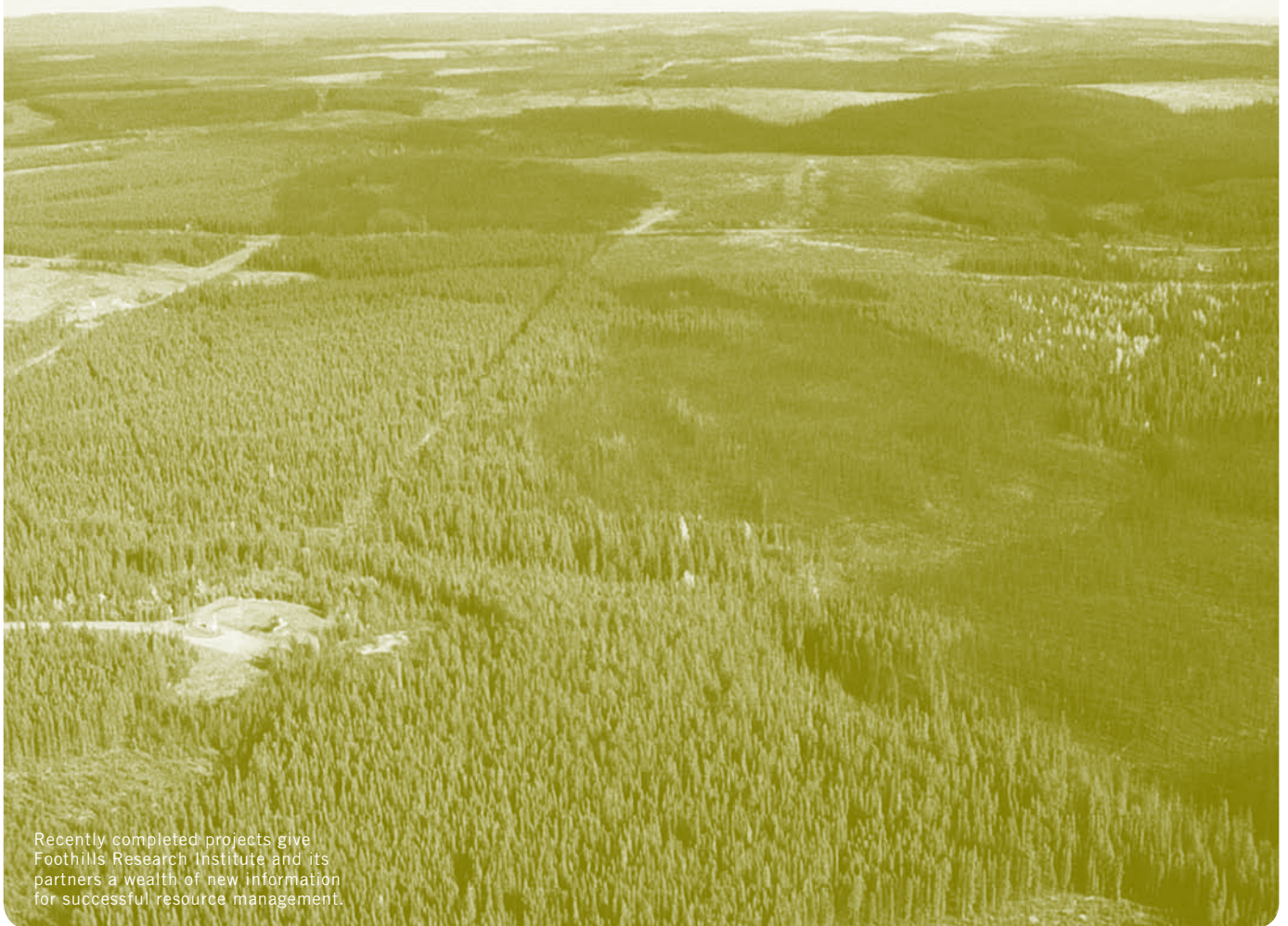
- After five years, a study funded by the Natural Sciences and Engineering Research Council and industry partners to discover relationships between environmental conditions and the health of grizzly bear populations has shown that bears are a bit like humans when it comes to health.

Man-made change, climate variables, changes in vegetation, and other environmental factors combine to impact the health of bear populations. Techniques and tools produced to measure population health that go beyond counting individuals are applicable to any species anywhere in the world.

"Future research will look at developing ways of monitoring reproductive performance that are more informative than counting cubs," says Gordon Stenhouse, program lead.

- The Foothills Growth and Yield Association (FGYA) is ready to release its 10-year report. The comprehensive report gives an overview of the membership, mission, and role of the association; highlights the knowledge gained over the last decade and the applications of that knowledge to management decision making; and discusses new and ongoing research.

"This information is important because new knowledge is challenging traditional attitudes to reforestation practices and growth and yield," says Bob Udell, operations director, FGYA. "The report will give foresters some food for thought as they go forward with their programs."



Recently completed projects give Foothills Research Institute and its partners a wealth of new information for successful resource management.

New Programs and Projects



Making connections

The new Alberta Land-use Knowledge Network will support land-use planning and decision making by moving knowledge into practice. Through the network, researchers, policy makers, practitioners, and organizations share knowledge and connect with one another to work on solutions.

“The challenges we face are not simple and are going to require a high degree of collaboration and interaction to be able to explore and find solutions,” explains Kirby Wright, program lead.

Knowledge will be shared online in a library, but the network is also bringing people together. An event on June 8 will see a number of panels discussing complicated issues.

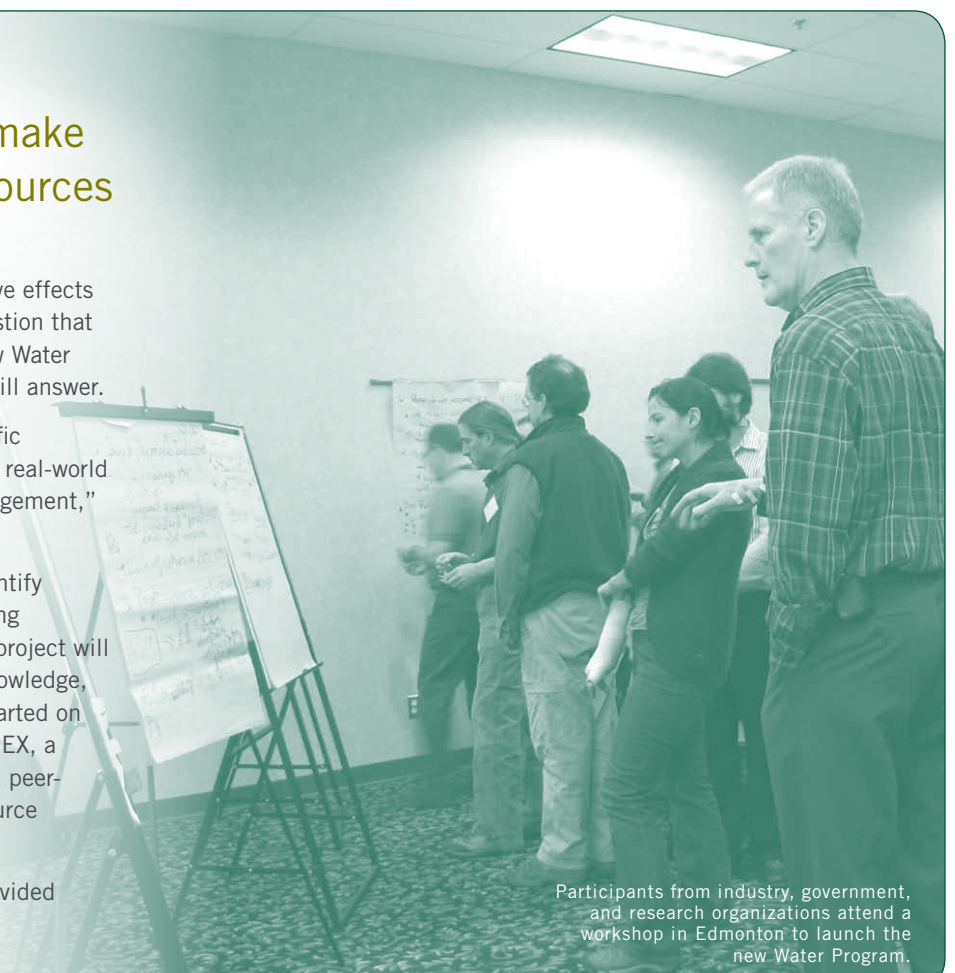
New program set to make a splash in water resources management

How can we better manage cumulative effects on water resources? That’s a key question that the Foothills Research Institute’s new Water Program, led by Dr. Axel Anderson, will answer.

“We’ll be building on existing scientific information in the province to deliver real-world examples of cumulative effects management,” says Anderson.

A workshop was held in March to identify priorities, and an activity team is being developed to plan projects. The first project will be a review of the current state of knowledge, tools, and resources. Planning has started on a collaboration agreement with FORREX, a forestry extension group, to develop a peer-reviewed publication for natural resource practitioners.

Alberta Innovates – Bio Solutions provided initial funding.



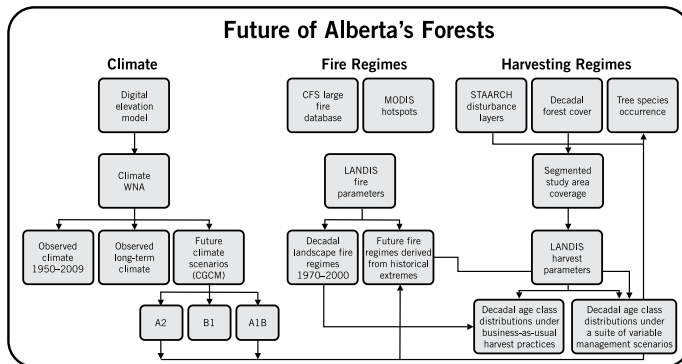
Participants from industry, government, and research organizations attend a workshop in Edmonton to launch the new Water Program.

Building on a single foundation for greater efficiency

The new Climate Project at the Foothills Research Institute is novel in that three programs—Grizzly Bear, Mountain Pine Beetle Ecology, and Water—will be conducting research using the same base data.

“There is recognition within the institute that we need to integrate a lot of the work we’re doing,” explains Gordon Stenhouse, program lead, Grizzly Bear Program. “We have agreed that all these different projects need the ability to forecast what the future forest conditions will look like, and what the future climate might be.”

A remote-sensing team led by Dr. Nicholas Coops at the University of British Columbia is expected to provide future landscape conditions and climate by December. The three programs will then use that data in their projects. The Grizzly Bear Program will examine what future temperature regimes and climate patterns might mean to bear foods on the landscape. The Water Program will examine potential impacts of climate change and vegetation dynamics on monthly and annual water budgets, and the Mountain Pine Beetle Ecology Program will examine the productivity of the beetle in novel pine forests, predicting its impacts in a warming climate.



Foothills Research Institute shares knowledge at international forum

In March, Gordon Stenhouse, program lead, Grizzly Bear Program, travelled to Spain to share what he's learned about monitoring the health of species populations with researchers from around the world.

Speaking at the International Model Forest Network – Global Forum, an event held every three years that brings members of model forests together to share knowledge and look for solutions to problems, Stenhouse explained how his research on grizzly bears can be applied to any species.

“These techniques of looking at population health and monitoring populations can be used anywhere,” says Stenhouse.

Tom Archibald, general manager for the Foothills Research Institute, attended the conference and was impressed with Stenhouse's presentation. “It has garnered a lot of recognition from other countries for Gordon and his program,” says Archibald. “That interest opens the door for us to collaborate with researchers in other parts of the world, not just in grizzly bear research but in other areas as well.”

Updates

Mountain Pine Beetle Ecology Program

Two new studies are set to begin this year. One will help decision makers choose treatment options for unharvested pine stands while the other will result in a tool for prioritizing the removal of infested lodgepole pine stands. Researchers also continue to look at groundwater hydrology, how fire-injured trees impact mountain pine beetle reproduction, and the population dynamics of the beetle in Alberta.

Need to share information results in new application

GeoConnections' FRI Mapper is almost ready for use. The application, which will be available at mapping.foothillsresearchinstitute.ca in late May, can be used by the public to explore geoadministrative boundaries, access, ecological/vegetation, hydrology, disturbance, and data from Foothills Research Institute projects and analysis.



New partnership

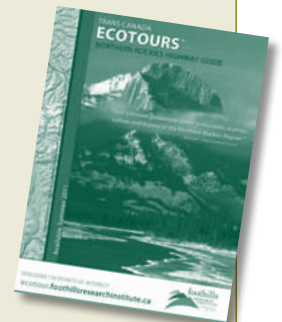
The Yellowhead Ecosystem Group (YEG) is a new partner for the Foothills Research Institute. YEG is made up of people from different jurisdictions and industries that are looking at adjacency and policy issues and, where it makes sense, identifying areas for collaboration. The institute provides administrative support, and mapping and data management support.

Foothills Stream Crossing Association

Stream crossing inspections will continue in the Grande Cache area and in the original study area. A number of remediation plans for priority watersheds have been updated and submitted. The association is also updating its data management system to improve how data is collected, stored, and accessed.

Self-guided ecotour of the Northern Rockies almost ready

Trans Canada EcoTours, a travellers' guide for the Northern Rockies tourist region, highlights a number of programs and projects of the Foothills Research Institute. It will be published in the fall.



Moving forward

The Foothills Growth and Yield Association is focusing on developing knowledge and decision support tools for improved management of lodgepole pine in Alberta, including considerations of risk and change management. In support of this, the Regenerated Lodgepole Pine project measures crop performance against the Alberta regenerations standards, the first such trial to do so in Alberta.



Forester Pat Golec of Sundance Forest Industries stands in a nine-year-old regenerated lodgepole pine FGYA measurement plot (2009).

News and Events

Successful defense

Richard McCleary, Fish and Watershed Program, has successfully defended his PhD dissertation in physical geography at the University of British Columbia. McCleary's work centred on developing a comprehensive stream-mapping procedure for the foothills. He created a model using GIS to predict which stream sections were large enough to support fish and a model that uses a new technology called LIDAR for predicting headwater channels that he then extrapolated across a large area.



Richard McCleary holds one of the many water quality samples taken during his stream research projects near Hinton.

"This project was ambitious. In the end it exceeded supporters' expectations," says McCleary. He followed the Foothills Research Institute formula in which researchers work closely with partnering organizations to solve problems in innovative ways. The project also aligns well with the province's goal to improve the information used to protect water resources.

Open house and AGM set for October 3 and 4

Knowledge management is the theme of this year's annual general meeting and open house.

"Knowledge management is becoming increasingly critical,

and as we build the Knowledge Network, it is top of mind. We think it's a very appropriate theme," says Tom Archibald, general manager, Foothills Research Institute.

During the open house, program leads will showcase the projects they've been working on over the year.

The open house takes place on October 3 and the AGM on October 4. Both events will be held in the Lister Centre, University of Alberta. For more information on these public events, visit foothillsresearchinstitute.ca.

Working together on wicked problems: Workshop

The Alberta Land-use Knowledge Network workshop Wicked Problems in Natural Resources and Land Use is designed to engage Alberta's land-use practitioners in a process of developing better knowledge about wicked problems we face today.

This free afternoon workshop is an opportunity to talk about what we know, what we don't know, and where we need to get to in order to make better decisions. Lunch will be provided.

June 8, 2011, noon to 5:00 p.m.
Lister Centre, University of Alberta
116 St. and 87 Ave.
Edmonton, AB

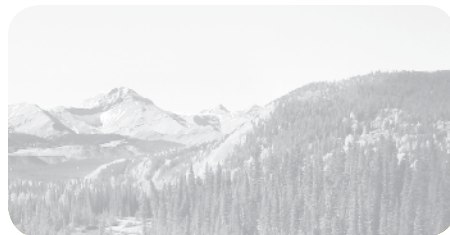
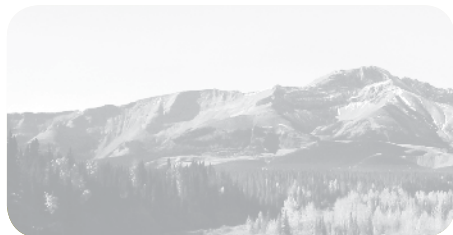
To register, contact Fran Hanington at 780.865.8330 or frhanington@foothillsri.ca.

For more information, contact Neil McAlpine at nmacalpine@foothillsri.ca or visit foothillsresearchinstitute.ca.



Return undeliverable copies to:

Box 6330
Hinton, Alberta
Canada T7V 1X6
T: 780.865.8330
F: 780.865.8331
foothillsresearchinstitute.ca



The Foothills Research Institute core landbase is located in west-central Alberta, and is based in the resource community of Hinton, some three hours west of Edmonton. It covers roughly 2.75 million hectares (27,500 square kilometres), and encompasses Jasper National Park of Canada, Willmore Wilderness Park, William A. Switzer Provincial Park, and the Forest Management Area of Hinton Wood Products, a division of West Fraser Mills Ltd. It also includes some provincial "crown forest management units" and the Hinton Training Centre's Cache Percotte Training Forest. Within its boundaries are three forest areas—boreal, montane, and subalpine—and many forest uses, including timber, petroleum, and coal extraction, tourism, and recreation.