

2009/10
ANNUAL REPORT

LEADING WAY



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IT'S AN HONOUR TO FOLLOW IN THE CAPABLE FOOTSTEPS OF PAST PRESIDENTS JIM LELACHEUR AND BOB UDELL, AND I PLEDGE TO BUILD ON THEIR SUCCESS. MY PERSONAL GOAL IS TO POSITION THIS INSTITUTE AS THE PRIME SOURCE OF RESOURCE MANAGEMENT SCIENCE AND TOOLS WITHIN OUR SPHERES OF INFLUENCE IN ALBERTA AND BEYOND.

PRESIDENT'S MESSAGE

Rick Bonar
President, Foothills Research Institute



Leading the Way

In 2009–2010 we passed the midway point in our fourth five-year business cycle. Although funding took a dip reflecting the broad recession, I'm pleased to say that our partnership remained strong and continued to produce knowledge that helps our sponsors and partners on a daily basis.

Here, for me, is one of the key reasons for our success. We base our research programs on the interests of our partners, who continue to turn to the Institute for solutions because they see value in their investments. Partner interests are translated into research questions, projects and solutions by our outstanding researchers, staff and affiliates, who find creative, efficient and effective ways to deliver results.

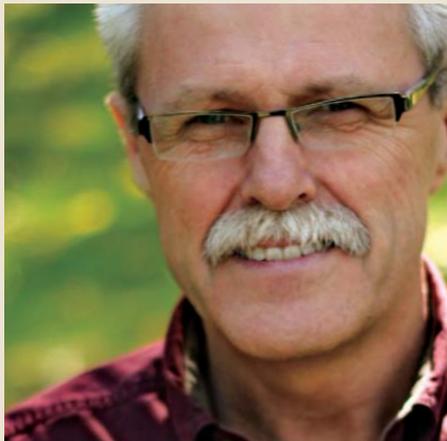
We have a great business model that yields world-recognized excellence in research and relevance to our partners, as well as operational knowledge that bolsters their bottom line. Everyone wins—managers get the answers they need, researchers see their research put into practice, and Albertans benefit from ever-improving land and resource stewardship.

I am confident that the Institute will continue to provide world-class research founded on innovation, relevance and value. We will continue existing programs that remain appropriate and seek opportunities in new research fields as needs dictate. We will be front and centre with timely research leading the way for emerging issues of the day, from mountain pine beetle impacts to regional land-use planning to water conservation.

OUR THEME FOR THIS YEAR'S ANNUAL REPORT CAME TO US AS MORE OF A QUESTION –DURING THESE TOUGH ECONOMIC TIMES, HOW CAN WE REASSURE OUR PARTNERS THAT THE INSTITUTE REMAINS A GOOD INVESTMENT FOR PROVIDING THE QUALITY KNOWLEDGE AND TOOLS THEY HAVE COME TO EXPECT OVER THE YEARS? HOW CAN WE DEMONSTRATE THAT WE WILL CONTINUE TO LEAD THE WAY?

GENERAL MANAGER'S MESSAGE

Tom Archibald
General Manager, Foothills Research Institute



This past year Foothills Research Institute continued to work with our partners in providing cutting-edge research and tools that have assisted them in leading the way in their own particular fields of interest. It wasn't an easy task for the Institute, as we have not been immune from the global recession. However, we have been looking for new opportunities and partnerships as well as listening to our partners and building a business strategy that will meet their needs.

Even with the downturn in the economy, many opportunities have surfaced that will provide an impetus in developing the Institute's next business strategy. Some of the initiatives that we feel are important to our partners include Alberta's Land-use Framework; the Canadian Boreal Forest Agreement; Environment Canada's development of a national recovery strategy for the woodland caribou and the International and Canadian Model Forest Networks' Circumboreal Initiative, to name just a few.

These initiatives and issues are prominent on the radar screens of government, industry and the public, and we will work with our partners to ensure our programs are properly aligned with them in scope and substance.

And the Institute will continue to be a safe place to exchange ideas and knowledge. The Institute will continue to listen to our partners and understand their needs, and will always be open to developing new partnerships across a diversity of organizations and interests.

From a personal perspective, I am excited about the opportunities that are presenting themselves in the areas of climate change, water and wildlife. I am also excited about the opportunities to develop new international partnerships for sharing knowledge, tools and ideas as well as testing the applicability of our research on an international scale. We are fortunate indeed to have a strong and engaged partnership, along with dedicated staff and researchers who together ensure the Foothills Research Institute will continue to lead the way, today, tomorrow and into the future.

THE PASSION “I came here 30 years ago to work in the coal mine, but what kept me here was the lifestyle. I have worked as a fly-fishing guide in Jasper National Park, and I think everyone enjoys walking along the stream, throwing a line in the water and catching a fish, or walking in the bush and enjoying the forest. Whether we’re inside the park or outside, we have to make sure we protect the environment for Albertans and visitors alike.”

ALBERTANS LIVE IN TIMES WHEN IT IS NOT ENOUGH to be good at managing natural resources.

We must be the very best at managing change.

Change is occurring in Alberta at a unique rate and intensity... though it will confront the rest of the world soon enough, and the world will look to us for leadership in how to survive and thrive in an unpredictable future.

Examples of change include rapid population growth, possibly rising to 10 million in Alberta within this century; increased human demand for space and resources on soil, forest and water; increased human-wildlife conflict; a changing climate, bringing new pests, new forest and hydrological processes; and new concerns about wildfire.

The Alberta government has introduced the Land-use Framework as a way to get a handle on how we might manage change on the physical landscape. But policy alone will not complete the equation.

We need Albertans to lead the way by bringing world-class research and knowledge to the table, and in this regard the Foothills Research Institute stands out as a pre-eminent champion of excellence. The Institute is building the body of science that will help Albertans manage change not just for the present and the future.

The second essential component is an integrated approach to problem-solving. The days are gone when one company can do something on the landscape without consultation or consideration of other people and other factors. Again, the Foothills Research Institute and its outstanding success in building partnerships and collaborations is leading the way forward for Alberta and the wider world.

Yes, change is a challenge. But this kind of research, this kind of partnership, is what will provide a steady hand in leading us toward the future we want for our children and grandchildren.

A PARTNER'S PERSPECTIVE

Robin Campbell
MLA, West Yellowhead



PARTNERS

Partnership is the lifeblood of the Foothills Research Institute.

Through our partners' contributions, our tools and knowledge are integrated into land and forest management policy, planning and practice: hence the advancement of forest and land management in Alberta. The strength of our organization would not be what it is today without our partners' commitment and we are honoured to have contributions of all shapes and sizes.

SPONSORING PARTNERS

Alberta Sustainable Resource Development, ConocoPhillips Canada, Encana Corporation, Jasper National Park of Canada, Suncor Energy Inc., Talisman Energy Inc. and West Fraser Mills Ltd. are sponsoring partners of the Foothills Research Institute.



Government of Alberta ■
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Management Partners provide financial and in-kind support to the Foothills Research Institute. They are also responsible for land, resource or forest management, and are interested in using research institute knowledge and tools in their businesses.

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PROGRAM AND PROJECT PARTNERS

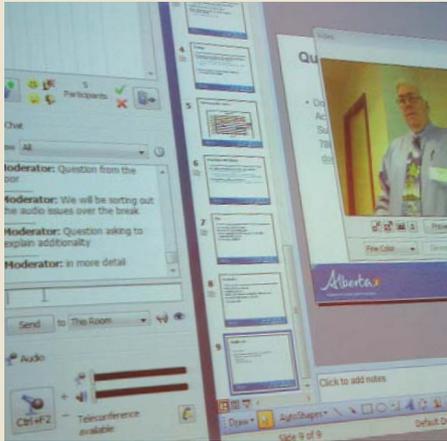
Program and Project Partners provide financial and in-kind support to specific programs or projects. These organizations believe in and support Foothills Research Institute.

Alberta Aboriginal Relations
Alberta Chamber of Resources
Alberta Conservation Association
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Alberta Forest Products Association
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Vilhemina Model Forest
West Athabasca Watershed Bioregional Society
Wildlife Habitat Canada
Wilfred Laurier University

OTHER PARTNERS

The following associations, businesses and communities support the vision and goals of the Foothills Research Institute.

Alberta Caribou Committee
Alberta Forest Genetic Resources Council
Alberta Provincial Biodiversity Monitoring Institute
Arctos Ecological Consulting
AVID Canada
Canada Centre for Remote Sensing
Canadian Institute of Forestry
Canadian Model Forest Network
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Forest History Society, Durham, NC
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Inside Education
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Jasper–Yellowhead Museum & Archives
Municipality of Jasper
Palisades Education Stewardship Centre
Sustainable Forest Management Network
Telemetry Solutions
West Central Caribou Landscape Planning Team
Woodlands Operation Learning Foundation
World Wildlife Fund Canada



New ways to reach more people

THE PAST YEAR HAS SEEN A FOCUS ON EXPANDING and optimizing the capability of the Institute's website to meet many of the organization's business and communications goals.

"The most cost-effective and efficient tool for us to get the word out is our website," says Sean Kinney, Program Lead. "The final version of the site was launched in late 2009, but we are continually looking at ways to improve and build upon that work."

He reports good feedback from peers in the community, as well as operational advances such as making the website a platform for the large and searchable mountain pine beetle research database.

Integration of communications technologies helps boost the success of individual projects. The Northern Rockies EcoTour project, for instance, will benefit from linkages to GeoConnections and other website resources. Some of the decision support tools to be housed on the website could become available as go-anywhere smartphone applications.

Kinney plans to continue streamlining the way the website works for e-commerce. Programs and partners want to offer more knowledge-transfer opportunities via live and virtual workshops, and that brings a need for easy on-line registrations and secure payment. The site's growing ability to record which pages of specific documents receive the most visits will help programmers identify knowledge areas of greatest interest to their stakeholders.

In addition to traditional and virtual workshops, the Institute is also gearing up to increase the number of podcasts and webinars that engage audiences in what researchers are doing, as well as video available on sites such as YouTube.

Equally important, says Kinney, has been behind-the-scenes work to strengthen internal communications and the ability of staff and partners to share information with each other. "People will be able to work together on large files and centrally-managed databases regardless of whether they're housed on our servers or off-site. If a partner has a dataset, I can link to that and present it for all the stakeholders involved, and do it securely."

COMMUNICATIONS AND EXTENSION PROGRAM

THE PASSION "For me, it's how people's eyes light up when they say 'Wow, I didn't realize we could do that!' in their search for new ways to communicate and connect. There's also the prospect of building a knowledge framework that will connect present and future generations of researchers. And the way communications are changing at the social level is having a direct impact on how organizations are doing business. It ties directly to our business goals—and it's exciting!"

SEAN KINNEY, LEAD,
COMMUNICATIONS AND EXTENSION PROGRAM



LAND 2

Brian Carnell



Peter J. Murphy

THE PASSION “It’s the glamour and the mystique of the log-driving era, when there were no machines, or very few of them, and ways had to be found to handle very heavy material over long distances. And it’s impressive to see the resilience of the forest, the way the camps are disappearing back into the soil and trees are growing even within the decaying walls of the bunkhouses and barns.”

PETER J. MURPHY, PROFESSOR EMERITUS, FORESTRY, UNIVERSITY OF ALBERTA

Ripples from the past

For someone who once heard that log driving on rivers never took place in Alberta, Peter Murphy has spent a lot of time uncovering exactly how that activity took place in Jasper National Park 90 years ago.

Thirteen years after creation of Jasper National Park in 1907, a succession of logging camps was established on the Whirlpool River south of Marmot Basin. Employing 200 to 300 men in the winter months, the camps produced hand-hewn railroad ties (and later sawmill-produced ties) that were floated down to the Athabasca River and on past Jasper to Henry House Flats. For some of the more distant camp locations, it was a watery trip of 50 km.

The camps were on the Columbia Trail, which was mapped by David Thompson in 1811 and used for the next 40 years by fur traders heading west to the Columbia River. Amazingly, the old trail is still evident, as are remnants of the camps’ wooden bunkhouses and other fixtures. Survey nails in trees, log boom chain and other evidence of industrial activity remain downriver.

“Surprisingly, the hardest thing to find has been photographs of the log drives,” says Murphy. “You’d think it would be quite a sight for the tourists, with thousands of ties and the log drivers passing through Jasper townsite.”

He and the study team have been successful, however, in finding survey and timber berth documents from 1919, with help from Jasper Yellowhead Museum and Archives, as well as information on the Ontario timber baron who employed contractors to operate the camps. Some archival photos of the logging cabins and the “jackladder” that pulled ties out of the river at Henry House Flats show the physical and human face of what was a booming operation for seven years. A note from 1918 records a forestry warden’s encounter with two men from Lacombe heading towards the Whirlpool on “timber business” with a Luger pistol in their possession, indicating an early interest in the area.

When published, the material will be further vindication of Murphy’s quest. “I’d learned about log driving in eastern Canada, but was told when I came to Alberta there was never any log driving here,” he says. “Now I know that until the big flood of 1915, there were log drives on virtually every stream on the Eastern Slopes, as well as across many of our lakes.”

The flood caused so many logs to be lost 95 years ago that alternative ways to process and ship timber were found. The Whirlpool drives were among the last.

Waters are uncharted no longer

There's a saying that if you want to manage it, you have to be able to measure it. And being able to measure exactly what we have for water supplies is doubly important for a substance that is so essential for all life.

A major milestone for the Fish and Watershed Program this year has been development of a system that identifies and classifies all water courses on the 10,000 sq. km. forest management area operated by Hinton Wood Products—A Division of West Fraser Mills. It's a system that promises to turn old assumptions and rules of thumb on their head.

“Ground rules that govern how we leave vegetation buffers around water and how we build roads or prevent erosion are based on a stream classification system that can be difficult to apply consistently, and furthermore previous maps don't show all the watercourses,” says Program Lead Rich McCleary.

The new predictive modeling system, under development for six years, showed 95 per cent accuracy in a small pilot trial, and will now be tested on a larger area around Hinton.

It is based on LiDAR remote sensing technology backed up by exhaustive ground-truthing. Traditional classifications based on flow and width—which are never constant for any stream—have been replaced with internationally-recognized divisions based more on the characteristics of the stream's banks and bed at any given point.

“Our partners are eagerly awaiting publication of the science and the results of this project,” says McCleary. “It will allow us to produce more useful maps for forest management and operating plans, and to predict how proposed roads and logging activities might affect water resources. We will be able to flag specific areas in a watershed, for instance, where erosion is likely to move sediment into a stream.”

The key point, says McCleary, is that the ecosystem doesn't come in just one “size,” and management tools have to be exceptionally nimble, flexible and reality-based to meet all circumstances. There's a shift to a risk-management approach in environmental stewardship, and the ability to layer the new stream classification maps on top of fish habitat and erosion models opens up new roads to success for resource managers.



THE PASSION “I have probably walked 1,000 km of small creeks in Montana, B.C. and Alberta over 17 years and I always look forward to the field work. We already know a lot about streams large enough to provide productive fish habitat, but little is known about the ones you can step across. Learning about the source areas is what I enjoy. And there's always a great place for lunch.”

RICH McCLEARY, PROGRAM LEAD,
FISH AND WATERSHED PROGRAM

How does the forest grow?

A tree grows, as everyone knows. But now the Foothills Growth and Yield Association has built the first mathematical model (proven over a decade of real-world field trials) to provide an accurate prediction of how much, and how well, the region's lodgepole pine will grow during the critical early years of the regeneration stage.

The model predicts, for a wide range of sites and reforestation treatments, whether legislated reforestation standards will be met at the critical 12 to 14-year milestone. It also provides a bridge to other models which predict later stages of growth, thereby allowing forest managers to link early reforestation successes or failures to long-term timber production objectives.

Data from another association project led to confirmation during the past year that small increases in mean annual temperature are associated with large increases of mortality in young trees. Climate change, in other words, is expected to cause average rates of mortality to double over the next 10 to 20 years.

The challenge is to develop strategies for avoiding or mitigating such mortality, so that forest landscapes are maintained during expected climate changes. Models predicting mortality from available climate data and other site conditions are being developed, along with some new operational risk assessment and mitigation techniques. The work is on the leading edge of innovative techniques for climate interpolation and mortality data analysis, and has already resulted in the discovery and quantification of important trends.

Growth and yield specialists have also been working with forest health and silviculture experts to identify interventions that will best meet timber production and landscape management objectives in forest stands attacked by the mountain pine beetle—a major threat to west-central lodgepole pine forests. The goal is to maintain and or restore forest cover so that impacts on timber production, hydrology and habitat values are kept to a minimum.

Working with the Institute's Mountain Pine Beetle Ecology Program, the association has created a decision support tool predicting stand development based on pre-attack conditions, the level of attack and silvicultural treatment options. The innovative use of existing data and models, supplementary baseline measurements and ongoing monitoring will provide managers with the best available information for dealing with an unprecedented situation, while ensuring that new information gathered as the attack progresses continually improves forecasting of outcomes.



THE PASSION “It’s a unique opportunity and a privilege to be involved in this team effort by industrial foresters, researchers and government experts all working towards the same end. Predicting and coping with how forests will grow in a changing environment is a big challenge, but it is also a big part of what will keep Alberta landscapes beautiful, productive and healthy.”

DICK DEMPSTER,
U.K.-BASED RESEARCH & DEVELOPMENT ASSOCIATE

NATURAL DISTURBANCE PROGRAM



Courtesy FP Innovations

THE PASSION “Nature is kind of my religion. It’s something that we tend to take for granted—but we are learning the hard way that it should be respected. It has to be about the ecosystem first, if we’re going to meet our other social and human needs. We have a decade or two to get this right, but the clock is ticking!”

DAVE ANDISON, PROGRAM LEAD, NATURAL DISTURBANCE PROGRAM

Process supports drive for healthy landscapes

A broad research project that looks at historical natural disturbance patterns on the landscape has given birth to a planning process with some very focused and targeted outputs.

The 14-year-old Natural Disturbance Program was developed to help government and industry understand how natural forces like fire, insects, disease, flooding, wind, and plant-eating animals have created historical patterns in the Foothills Research Institute landbase.

Program Lead Dave Andison says an understanding of natural disturbance processes at different times and scales can help researchers, resource managers and land managers better assess industrial activities in relation to natural ranges of variability. Matching human activity more closely to patterns of natural disturbance should result in a landscape that continues to yield the biological diversity that underpins every facet of life in the region. A thorough understanding of natural disturbance processes can thus provide support for ecologically-sound local, regional, and provincial forest management guidelines and policies.

Proof of the concept is seen in the Healthy Landscapes Project, which was a major focus for the program over the last year. The provincial government provided seed funding for the project two years ago, and it was put to the test in

the Upper Athabasca region.

The aim is to use natural disturbance patterns, some basic indicators of biodiversity and historical ranges of variation as a foundation for choosing land management scenarios in which the resulting patterns are close to what occurred historically. “It’s the ultimate natural disturbance planning model,” says Andison. “We are now talking about expanding it to the North Saskatchewan regional planning, which includes Edmonton.”

More important than providing solutions is the planning process’s ability to establish common ground for stakeholders to consider how the future landscape could and should look—rather than them coming to the table focused on their own demands of the landscape.

“At this large scale, there are only about 10 indicators that you pay attention to, so the output is readily available and it’s easy to explain to the public,” says Andison. “It’s easy to link the visuals with the natural range of variability, so it’s a very good educational process that can be used by planning managers.”



Putting all the pieces together

Foothills Research Institute scientists gather huge volumes of data yielded by everything from remote sensing technology to radio tracking devices to DNA analysis and plain old-fashioned field observations.

Making sense of everything is the job of the Geographic Information Systems Program, whose specialists turn bits and bytes of digital data into products that make sense of what's happening on the landscape.

In some cases the data is the foundation for products that help land managers and planners make decisions. One example is the Foothills Research Institute Regional Online Landscape Decision Support System, completed during the past year and due for release in the summer of 2010.

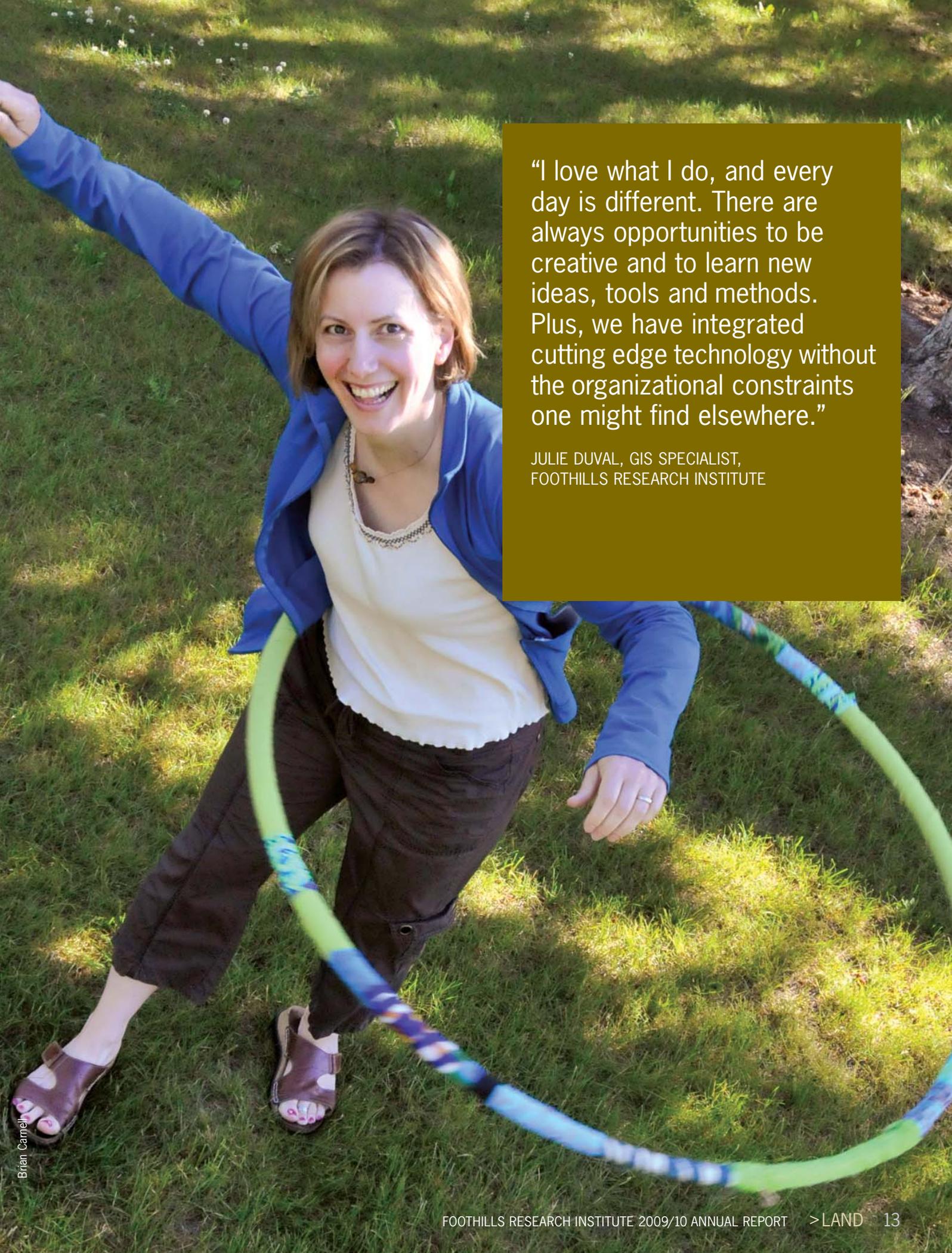
Another example is the stream crossing database. Over the past year, based on the severity of several key factors, each crossing was assigned a future inspection date ranging from one to five years from the last date of inspection. This will enable the Foothills Stream Crossing Program to help partners prioritize culvert inspections and remediation work.

Another use of GIS is the orderly archiving of important records, such as the Institute's historical database. This information bank safeguards information about historical documents, artifacts, sites, photos and audio/video records.

Data is continuously collected and added to the database.

GIS maps and other products allow researchers to understand complex spatial and temporal changes on the landscape. Work this past year, for instance, has helped analyze shifts within grizzly bear home ranges as a result of concurrent landscape change.

Another benefit of a first-rate GIS program is the improved ability of multiple partners to contribute and share crucial management information. Data ascribed to the Foothills Landscape Management Forum—central to the effort to integrate and minimize the industrial footprint on important habitat—has now been moved to a platform that streamlines the distribution and synchronization of changes made by forum staff as well as by provincial data managers and forest officers.



“I love what I do, and every day is different. There are always opportunities to be creative and to learn new ideas, tools and methods. Plus, we have integrated cutting edge technology without the organizational constraints one might find elsewhere.”

JULIE DUVAL, GIS SPECIALIST,
FOOTHILLS RESEARCH INSTITUTE

Brian Carnell

ADAPTIVE FOREST MANAGEMENT – HISTORY PROGRAM



THE PASSION “As a career forest manager in the region, and as a resident of Hinton, I have a strong interest in how the history of the area has shaped current demographics, attitudes and management approaches. I am proud to not only have visitors to this region but also the current residents—particularly the youth—see for themselves how the history of this area has shaped and influenced what we’re doing—and how we’re doing—today.”

BOB UDELL, MANAGER,
ADAPTIVE FOREST MANAGEMENT—
HISTORY PROGRAM

Northern Rockies EcoTour

Finishing touches are being completed on the Northern Rockies EcoTour guide, designed to lead the traveling public through the ecology and cultural history of west-central Alberta.

The guide, to be printed in the spring of 2011, will inform visitors about what can be seen along Highway 16 through Hinton and Valemont, along Highway 40 from the Cardinal Divide in the Wildhorse Wildland Park to Grande Cache and the Willmore Wilderness Park, and from Jasper to Lake Louise along the Icefields Parkway. Content covers ecological and topographical features, historic and cultural sites, wildlife populations and the many ways humans have interacted with the environment over the years.

The EcoTour combines new investigations by lead author Fred Pollett with 14 years of historical and ecological research by the Adaptive Forest Management—History Program team, and from the four books that have come out of that work—*Learning from the Forest*, *A Hard Road to Travel*, *Mountain Trails* and *The Resilient Forest*.

There is something to pique the interest of everyone. The Town of Hinton, for example, offers a range of attractions, including the Beaver Boardwalk, numerous trails and a bike park, Hinton Training Centre, a forestry museum and wildfire

training facility, Foothills Research Institute and the Natural Resources Interpretive Park.

Highway 40 South yields harvest and reforestation sites, mining and reclamation, wildlife, research sites for watershed and grizzly bear, and significant sites such as the Cardinal Divide and the historic Coal Branch.

Highway 40 North offers the contribution of the Iroquois to aboriginal culture of the area, the unique story of Shand Harvey, William A. Switzer Provincial Park, research sites for healthy landscapes, Willmore Wilderness Park and the challenge of sustaining the populations of the iconic woodland caribou.

The Icefields Parkway will offer insights into early explorations of the Canadian Rockies, the geology of the mountains and the impacts of climate change on the icefields and waterways of the Rockies and the implications for future water supply in Alberta.

Leading visitors into this cornucopia of things to see and do will become even easier in the future, as the team explores opportunities for EcoTour delivery using global positioning systems linked to iPhones and the iPodTouch.



LIFE 3

Treading lightly in caribou country

How to manage the human footprint in sensitive habitat areas has been a central quest for the Foothills Landscape Management Forum since 2005.

It takes a lot of research to answer the unknowns, and some regulatory finesse to provide guidance before all the answers are in, says Forum Director Wayne Thorp. The last year has seen those two streams converging in a way that makes the end goal—sufficient habitat to support self-sustaining populations of species such as woodland caribou—seem a little closer.

The Forum brings five forestry companies, 11 energy companies and one aboriginal community to the discussion. Sufficient trust has been built up over the years that for 2009–2010, Alberta’s oil and gas sector asked Thorp to be their representative on the provincial government’s Integrated Operating Guidelines task group.

This project will update operating guidelines and standards for the energy sector with a view to increased standardization and effectiveness of environmental protection and mitigation practices. “It covers every aspect of operations across the whole province, with the goal of managing towards outcomes” says Thorp.

The project will be finalized in the summer of 2010, and will be integrated with the Berland-Smoky Regional Access Plan. “Everything is related, and it all has to do with how we manage the human footprint on the landscape,” Thorp says.

Also related is an inventory of vegetation on seismic lines, due for completion in the summer of 2010. This provides the first-ever picture of how vegetation has come back on lines within the Little Smoky caribou range, and will show whether intervention is required to go in and enhance recovery rates. The data can also be used for modeling future habitat.

“The long term view is that you have to get the habitat into such a state that caribou, for instance, can be self sustaining, without the need for predator control,” says Thorp. “We are gathering the information that allows us to do some modeling as to what land managers need to do, where the pinch points are. It makes for better decision-making.”



Courtesy Canadian Association of Petroleum Producers

THE PASSION “I have a passion for the landscape because I love to hunt and fish—just ask my wife! And what excites me is that we are really pushing the envelope on integrated landscape management—nobody has done it to this extent, in terms of scale and how we project development needs in the long term.”

WAYNE THORP, DIRECTOR,
FOOTHILLS LANDSCAPE MANAGEMENT FORUM

FOOTHILLS STREAM CROSSING PROGRAM



THE PASSION “I was the kid who enjoyed jumping in puddles. I enjoy being outdoors for the field season each year, and being able to take that information back and seeing the benefits on the landscape as a result of our work. Plus—seeing the partner companies so involved and excited.”

NGAIO BARIL, PROJECT COORDINATOR,
FOOTHILLS STREAM CROSSING PROGRAM

Making it easier to go with the flow

The Foothills Stream Crossing Program continues to make it easier for water to flow and fish to swim with a comprehensive program of stream crossing inspection and remediation activities.

A watershed such as Pine Creek can have five dozen culverts and bridges for backwoods roads built by forestry and energy companies. Over time the crossings can degrade and cause sedimentation or fish-passage problems—and attract the interest of government authorities.

The region’s major forestry company and eight oil and gas companies have collaborated to conduct stream crossing inspections. Program managers have prioritized the watersheds that most need attention, and also flagged crossings within those watersheds that need urgent attention. Success so far has seen 50 crossings remediated and 100 km of fish habitat opened up for easier migration.

“It is a huge benefit to the companies,” says project coordinator Ngaio Baril. “By working with other companies in the watershed, our members can plan to fix fish barriers in a sequential order up the watershed, and sedimentation problems from the top of the watershed down. This greatly increases the efficacy of money and time spent, while encouraging dialogue between stakeholders.”

Three more watersheds have been inventoried and have remediation plans prioritized and ready to go. They are Fred Creek, Doctor Creek and Bryan Creek.

Another accomplishment last summer was installation of a new type of stream crossing that minimizes erosion and sedimentation and involves no intrusion onto the stream bed. The demonstration bridge was built on Hardisty Creek near Hinton, and the design has now been adopted by numerous stakeholders in the region.

The geotextile reinforced arch uses local fill compacted into welded wire cages and kept separate from the water by a plastic geotextile. The cages form supports for a simple arch capable of carrying a roadway.

“It is less expensive than a traditional culvert or bridge and is very strong,” says Baril. Construction of the demo project drew strong interest from members of the community, non-profit research groups, federal and provincial government agencies, the media and industry. Young people have been part of a program to plant willows at the site while learning about riparian values.

MOUNTAIN PINE BEETLE ECOLOGY PROGRAM



Courtesy Alberta Sustainable Resource Development

Getting a handle on the beetle

Growing concern over the mountain pine beetle is matched by a growing body of knowledge around ways to manage the forest after the pest has done its worst.

The Alberta government estimates that mountain pine beetles threaten the health of six million ha of Alberta forests that contain pine stands, and in 2010 beetle populations are especially virulent in the Grande Prairie region.

Researchers can now discover past work, or current knowledge gaps, by checking a new web-based compendium outlining almost 360 research projects conducted across western North America. The mountain pine beetle research compendium can be searched by researcher name, year of publication, location by region and key words.

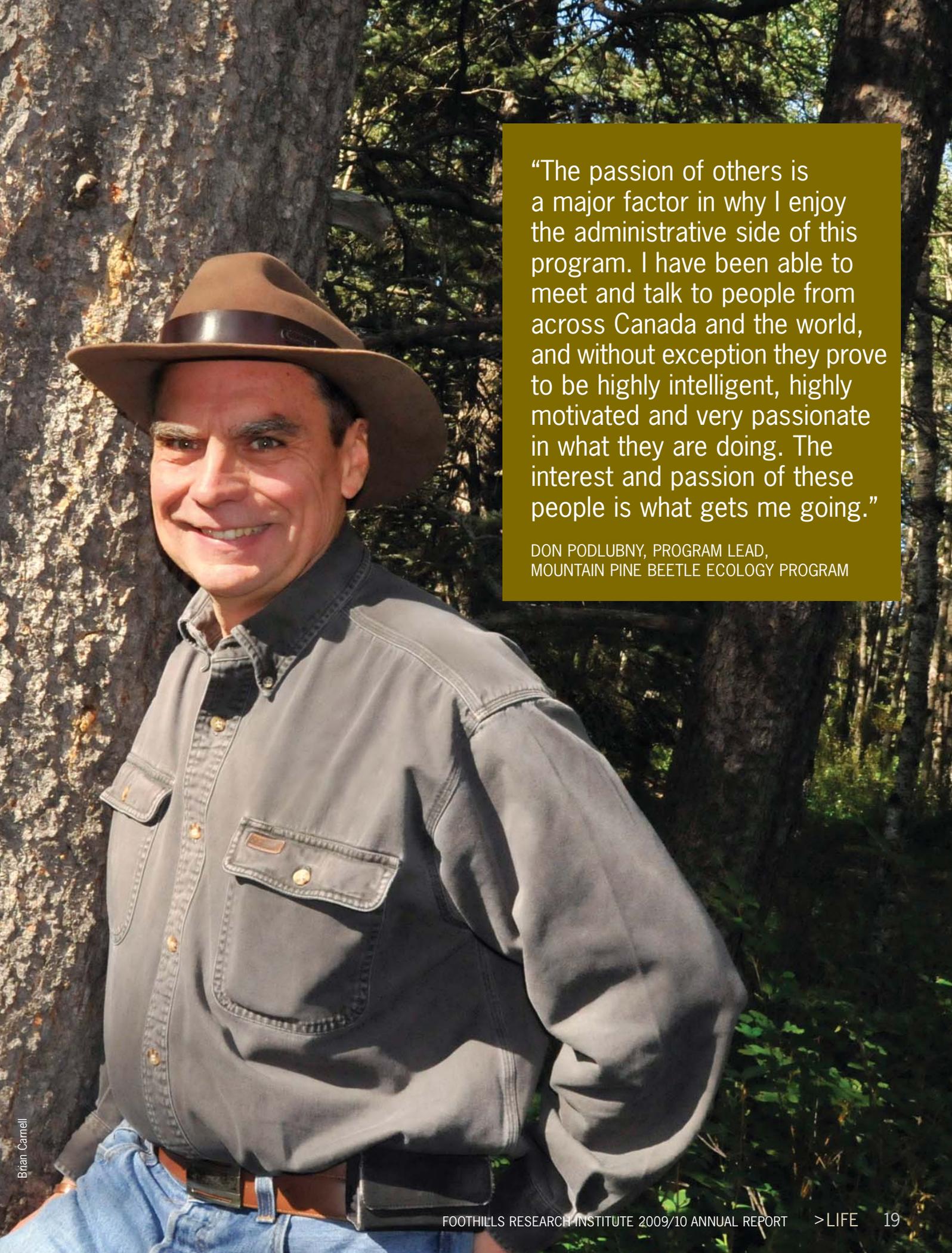
Another accomplishment in the past year has been completion of survey work to determine public and expert understanding of the mountain pine beetle threat and mitigation options, and differences that exist between the two viewpoints. Preliminary reports are now being used by program partners to ensure that a consistent and informed message is getting out not only to the general public but also to resource managers, government officials and researchers. The final report is due in late 2010.

The program has been gearing up to move from three

projects in 2009–2010 to nine in the coming year, with the goal being to establish a suite of research projects on the effects on mountain pine beetle on forests and forest ecology. First will come an understanding of what happens in a major infestation on sites where there have been no beetles previously. Next will come a toolbox of resources that will help managers in planning for the present and future.

One output that is already nearing completion is the Decision Support Tool being developed in collaboration with the Foothills Growth and Yield Association. This tool will enable resource managers to work on various infestation scenarios and project outcomes that they then can either manage or mitigate.

All projects are reviewed by, and reported on regularly to, the program activity team, plus there are requirements for workshops and stakeholder reporting via the Foothills Research Institute “Quicknotes.” These processes allow for continuous innovation through peer and stakeholder scrutiny prior to, during, and upon completion of each project.



“The passion of others is a major factor in why I enjoy the administrative side of this program. I have been able to meet and talk to people from across Canada and the world, and without exception they prove to be highly intelligent, highly motivated and very passionate in what they are doing. The interest and passion of these people is what gets me going.”

DON PODLUBNY, PROGRAM LEAD,
MOUNTAIN PINE BEETLE ECOLOGY PROGRAM

GRIZZLY BEAR PROGRAM



THE PASSION “I have worked with bears since 1981, and my goal is to contribute to the conservation and recovery of this species, whose presence symbolizes for me what Canada represents – wilderness and wild spaces. If I can leave the world better for grizzly bears and future generations, then my time on this planet will have been at least a small benefit for those who follow.”

GORD STENHOUSE, PROGRAM LEAD,
GRIZZLY BEAR PROGRAM

Brian Carnell

From mountains to molecules

A decade of research has moved grizzly bear management and conservation forward in Alberta. The Grizzly Bear Program has now completed the first ever province wide maps and models of grizzly bear habitat and bear use for their entire range.

“These are important tools, because it is essential to know where this habitat is as we conduct sustainable resource management activities while understanding the needs of grizzly bears,” says Gord Stenhouse, Program Lead.

A second major achievement was providing the Alberta government with the first science-based population estimates for grizzly bears in the province. The information was used to support a designation of the bears as a threatened species, and along with maps and models helped define the grizzly bear conservation areas adopted by the province. All this work took place at the landscape or “mountain scale” in Alberta.

At the molecular scale the research team has been able to develop and validate new techniques to assess grizzly bear health allowing greater insight into the health of individual grizzly bears along the eastern slopes. These novel and innovative procedures have great potential for the long term monitoring of recovering grizzly bears. The research team is now completing five years of intensive work on these health measures, which will explore the relationships

between bear health and environmental conditions in the province. The program now has the most complete and comprehensive set of data for any wildlife species in Alberta.

This dataset and the research team’s achievements are gathering wider attention.

A new international scientific collaboration with the Scandinavian brown bear project has begun, based largely on the scientific publications and attention that the Institute’s grizzly bear program has generated. “We have techniques, procedures and expertise that they don’t have in Scandinavia, for instance in monitoring bear health, while they have strong data on how their bear population has recovered over time,” says Stenhouse.

It’s an example of how the program is leading the way not just in internationally reviewed and accepted scientific publications, but also in developing tools that resource managers can use.

“We strive to provide sound science and useful research products that our partners can use in their operations,” says Stenhouse. “For instance, we release an annual DVD containing the newest research results, maps and models for managers to use in their daily work, whether they are planning a golf course, a mine or any such development.”

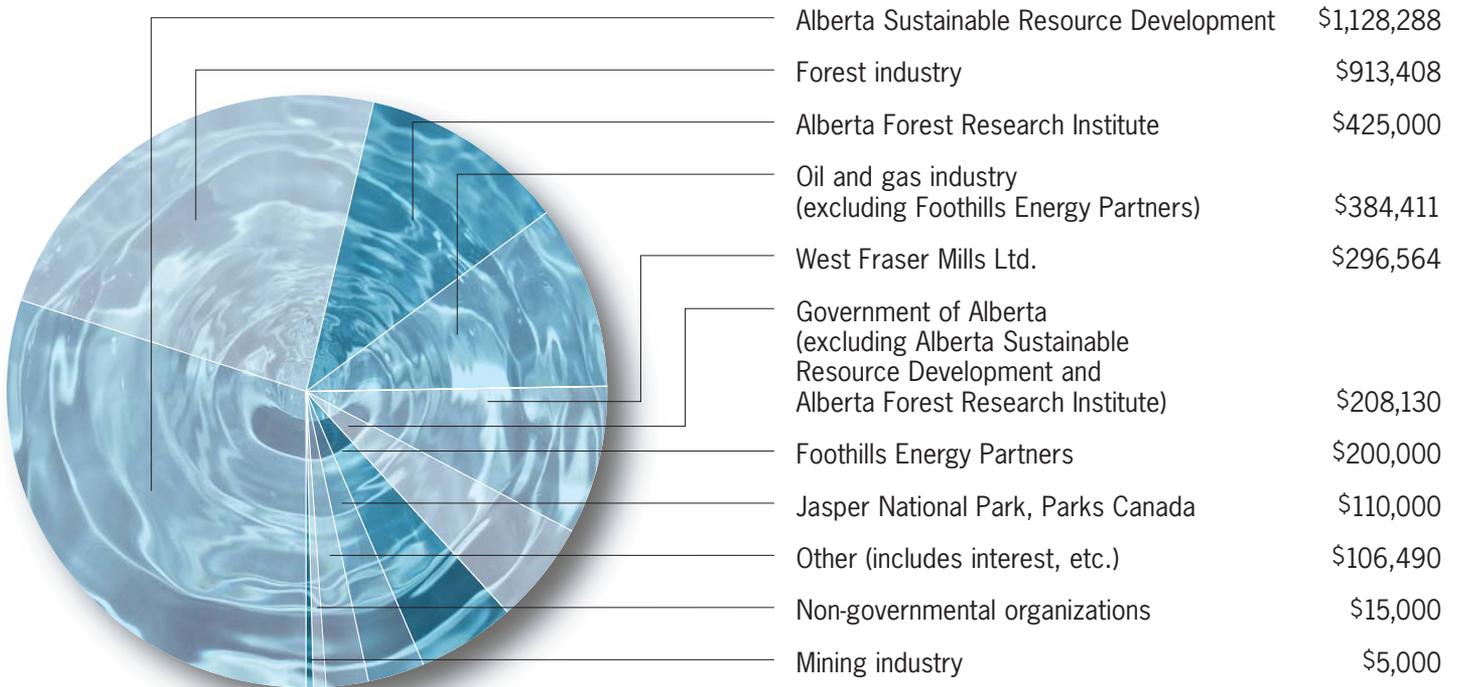


FUNDS 4

SUMMARY OF FINANCIAL STATEMENTS

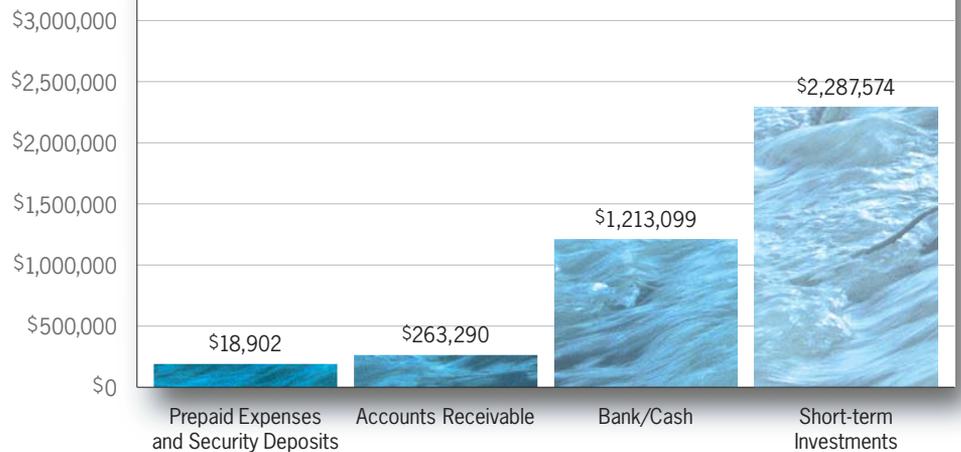
REVENUE

TOTAL = \$3,792,291 AS AT MARCH 31, 2010



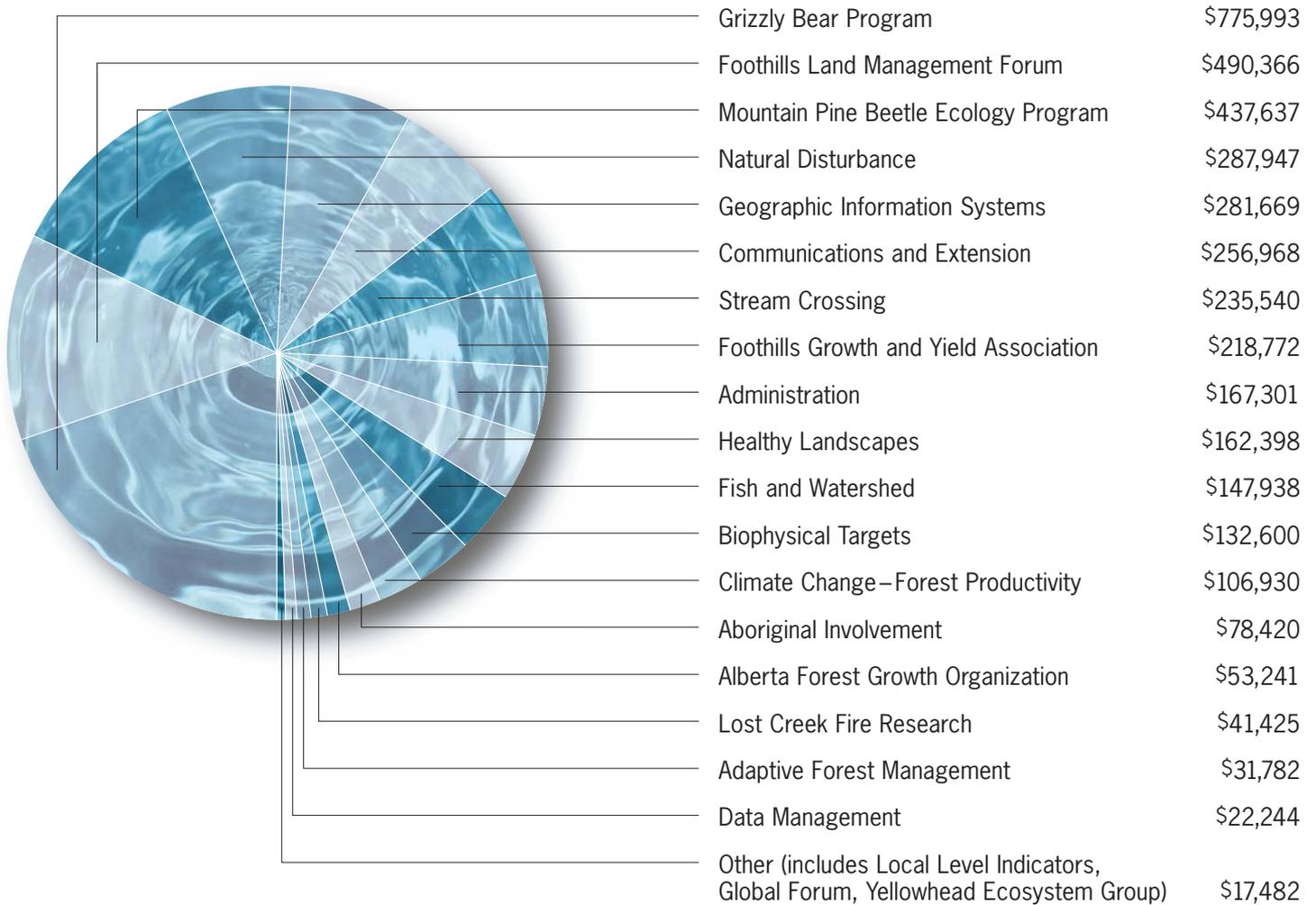
ASSETS

TOTAL = \$3,782,865
AS AT MARCH 31, 2010



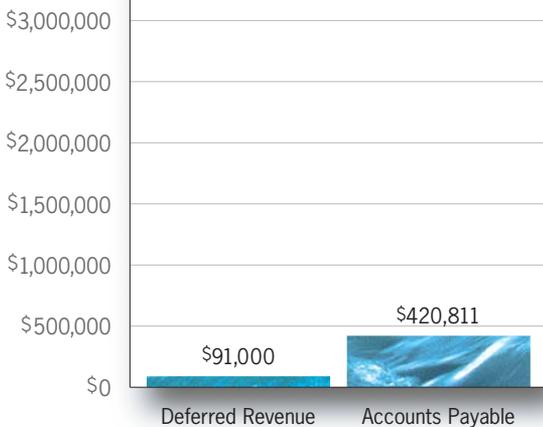
EXPENSES

TOTAL = \$3,946,653 AS AT MARCH 31, 2010



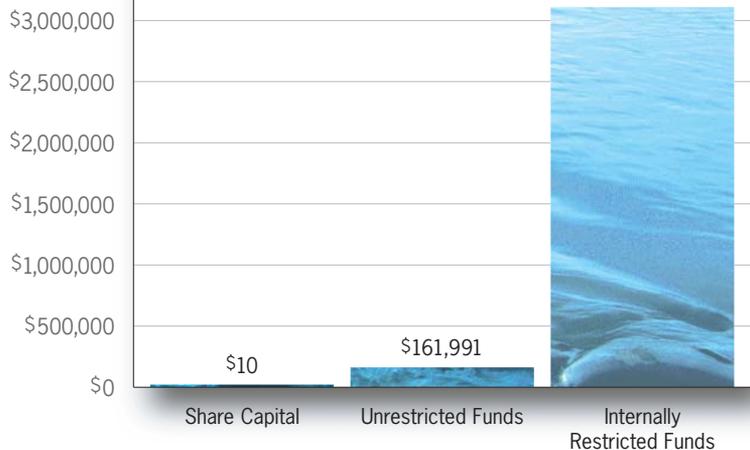
LIABILITIES

TOTAL = \$511,811
AS AT MARCH 31, 2010



FUND BALANCES

TOTAL = \$3,271,054
AS AT MARCH 31, 2010



2009/10 BOARD OF DIRECTORS AND OFFICERS



Foothills Research Institute Board of Directors. Top row, from left to right: Conway Dermott, Ron Bjorge, Jim LeLacheur, Keith McClain, Terry Fredin, John Wilmshurst, Tom Archibald (General Manager). Bottom row, from left to right: Judy Astalos (Administrative Assistant), Lorne West, Rick Bonar, Steve Otway, Kyle Clifford, John Kerkhoven, Paul Wallin, Tim Sheldan, Robert Stokes.

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Foothills Research Institute
Chief Forester, Alberta
West Fraser Mills Ltd.

Paul Wallin⁷

Treasurer
Foothills Research Institute
Woodlands Controller
Hinton Wood Products,
West Fraser Mills Ltd.

Krista Paniec⁸

Treasurer
Foothills Research Institute
Woodlands Controller
Hinton Wood Products
West Fraser Mills Ltd.

1 Resigned from the Board June 2009

2 Appointed to the Board February 2010

3 Appointed to the Board June 2009

4 Appointed to the Board June 2009

5 Resigned from the Board September 2009

6 Appointed to the Board June 2009

7 Resigned from the position December 2009

8 Appointed to the position February 2010



BRITISH COLUMBIA

ALBERTA

SASKATCHEWAN

Hinton •

Jasper •

Edmonton •

Calgary •

Foothills Research Institute is situated in west-central Alberta, with an administrative office in the resource community of Hinton, three hours west of Edmonton.



Questions? Comments on this annual report?

Please contact us at:

PO Box 6330

Hinton, Alberta, Canada T7V 1X6

PH: 780.865.8330

FX: 780.865.8331

foothillsresearchinstitute.ca