BRANCHING OUT

JUNE 2023

FOREST RESOURCE IMPROVEMENT ASSOCIATION OF ALBERTA (FRIAA)

WORKING TOGETHER TO MANAGE OUR VITAL FOREST RESOURCES

Branching Out *is the newsletter of the Forest Resource Improvement Association of Alberta (FRIAA). It is published quarterly to communicate the objectives and activities of the association to members and other interested parties. The purpose of FRIAA is to enhance the forest resources of Alberta for the benefit of all Albertans. It encourages improved forest management activities over and above those required by government regulation. It is, uniquely, an organization that collaborates with academia, government, municipalities, industry, and the Government of Alberta ministry responsible for forestry. It has supported practical and applied research, on-the-ground forest improvement strategies, and innovative approaches to forest inventory and planning that helps Alberta manage its forest resource sustainably. Editorial material in this newsletter may be reproduced and disseminated with the following credit: "Courtesy of Forest Resource Improvement Association of Alberta."*

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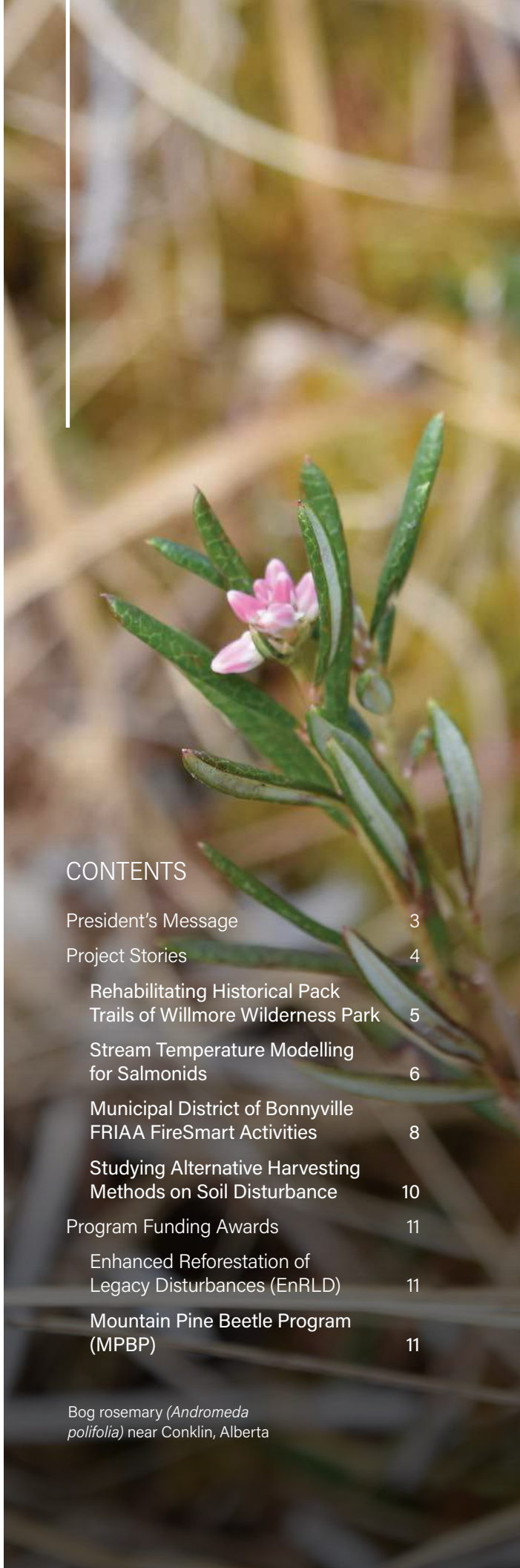
Cover photo: Saskatoon berry *(Amelanchier alnifolia)*



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Bog rosemary *(Andromeda polifolia)* near Conklin, Alberta

President's Message

Greetings on behalf of the FRIAA board of directors. As we prepare this message, there are 93 active wildfires burning over 683,000 hectares across the province with no widespread precipitation in sight. Most of us were waiting for winter to end so we could get out and enjoy the wide variety of outdoor summer activities that Alberta has to offer. Although we still expect that to happen, we will also be dealing with the impacts of these wildfires on our professional and personal lives. Our thoughts are with those who have been directly impacted and our heartfelt thanks goes to those dedicated individuals that put everything else aside to fight these fires!

In this edition of *Branching Out,* we are pleased to share a diversity of project stories, including a stream temperature modelling project for salmonids, the rehabilitation of historic pack trails, FRIAA FireSmart activities in the Municipal District of Bonnyville, and research into reducing soil disturbance during harvesting.

The Enhanced Reforestation of Legacy Disturbances and Mountain Pine Beetle programs approved several projects over the past few months and are highlighted in this edition of *Branching Out.*

Looking forward, the FRIAA Firesmart Program has opened a request for proposals and request for expressions of interest. Details can be found on the FRIAA website, with a link provided in the following pages.

We encourage members and supporting organizations to continue submitting proposals in the Forest Resource Improvement Program. We will continue to support all proponents in project delivery and achievement of outcomes.

As always, the board welcomes your feedback and invites you to connect with us via admin@friaa.ab.ca. We look forward to hearing from you.

Richard Briand
President, FRIAA

Project Stories

Maintenance crew on horseback crossing Corral Creek

Rehabilitating Historical Pack Trails of Willmore Wilderness Park

Willmore Wilderness Park is a 4,600-square-kilometre wildness area in west-central Alberta. Backpackers and horseback riders can explore over 750 km of backcountry trails covering high mountain peaks, thick forest, and ancient glaciers. Recent wildfires have obstructed trail network access with burn material on trails and the in-growth of vegetation. The Willmore Wilderness Preservation and Historical Foundation was sponsored by Canadian Forest Products Ltd. through the **Forest Resource Improvement Program (FRIP)** to restore the trail network. The foundation has focused on preserving these trail networks in Willmore Wilderness Park for 20 years now. "Annual work on these trails is necessary to keep the historic trail network open for future generations," says Bazil Leonard, foundation president.

The funding was used to organize a crew and complete maintenance on the impacted trails in the park. On horseback, the crew set off clearing the pack trail from Sulfur Gates Provincial Park to Ptarmigan Lake, a one-way distance of 56.8 km. The five-person crew included a Métis commercial trail ride outfitter, two chainsaw operators (from Victor Lake Co-op and Muskeg Co-op), a cook, and a cinematographer. "The FRIAA funding was an important contribution, allowing the foundation to hire a skilled crew," says Leonard. "The trail hands spent 31 days restoring the pack trails: clearing the burnt timbers west of Muddy Water River and upstream on Jackpine River, opening access to areas such as Ptarmigan Lake and Great Divide Trail."

During the project trip the crew rerouted the trail around washed-out sections, traversed glacier-fed rivers, and cleared sections destroyed by multiple burns. Completing this maintenance will reduce the potential for further trail widening from users cutting their own paths through the wilderness park. Reflecting upon the project, Leonard says, "It is hard work, but the effort is worth the view."

Chainsaw operator working to clear the Ptarmigan Lake Trail

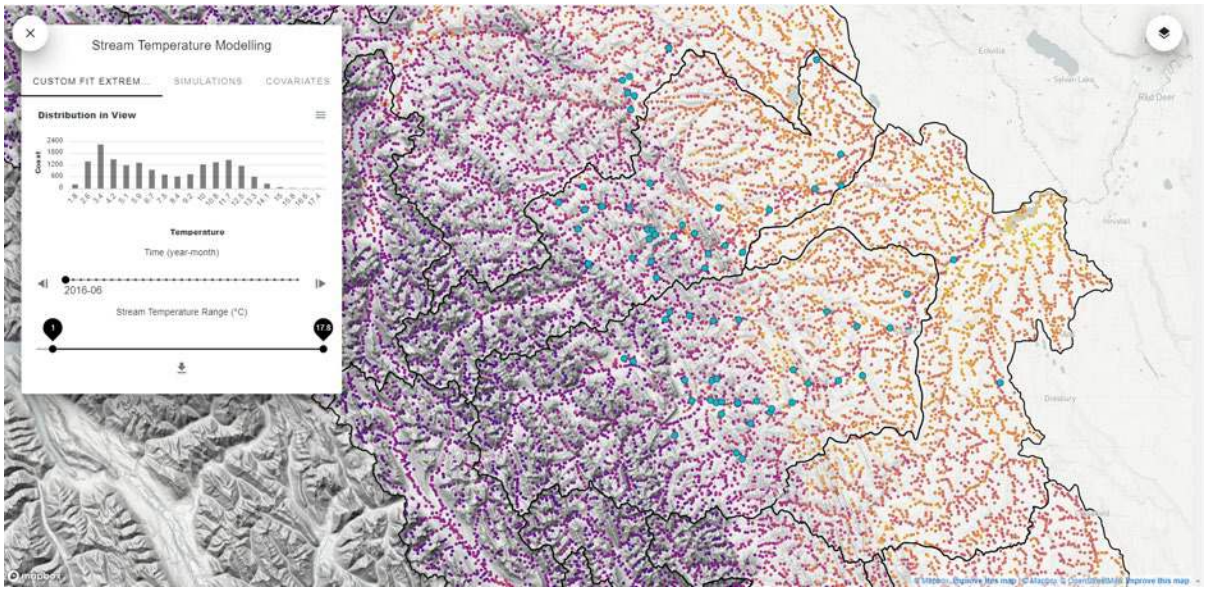
Stream temperature data collection at Wildhorse Creek, AB

Stream Temperature Modelling for Salmonids

Knowledge gaps remain about how land use practices could influence water quality and quantity of fish habitat in Alberta's foothills, which is why West Fraser Mills Ltd. (West Fraser) collaborated with MacDonald Hydrology Consultants (MacHydro) on a research project to identify and model thermal habitat for native salmonids. The project, funded by **Forest Resource Improvement Program (FRIP),** was managed by Kelsey Kure of West Fraser and Ryan MacDonald, MacHydro's senior hydrologist.

Salmonids are a family of "salmon-like fish" that include chars, freshwater whitefish, graylings, and, of course, salmon. A salmonid of particular importance to Alberta is bull trout *(Salvenlinus confluentus),* Alberta's official fish. Bull trout are currently listed as threatened under Alberta's *Wildlife Act.* Cold water salmonids in Alberta are vulnerable to changes in stream temperatures. Past studies have shown land cover and climate changes can disrupt thermal and hydrologic regimes, which have impacts on native aquatic species. Shifts in stream temperature in bull trout streams should be monitored in actively utilized landscapes.

The project team developed a spatial stream temperature model to predict water temperatures in over 20 watersheds located in the Athabasca, North Saskatchewan, and South Saskatchewan basins. The results of the project show how stream temperatures are influenced by stream morphology, climate,



Visualization of stream temperature data

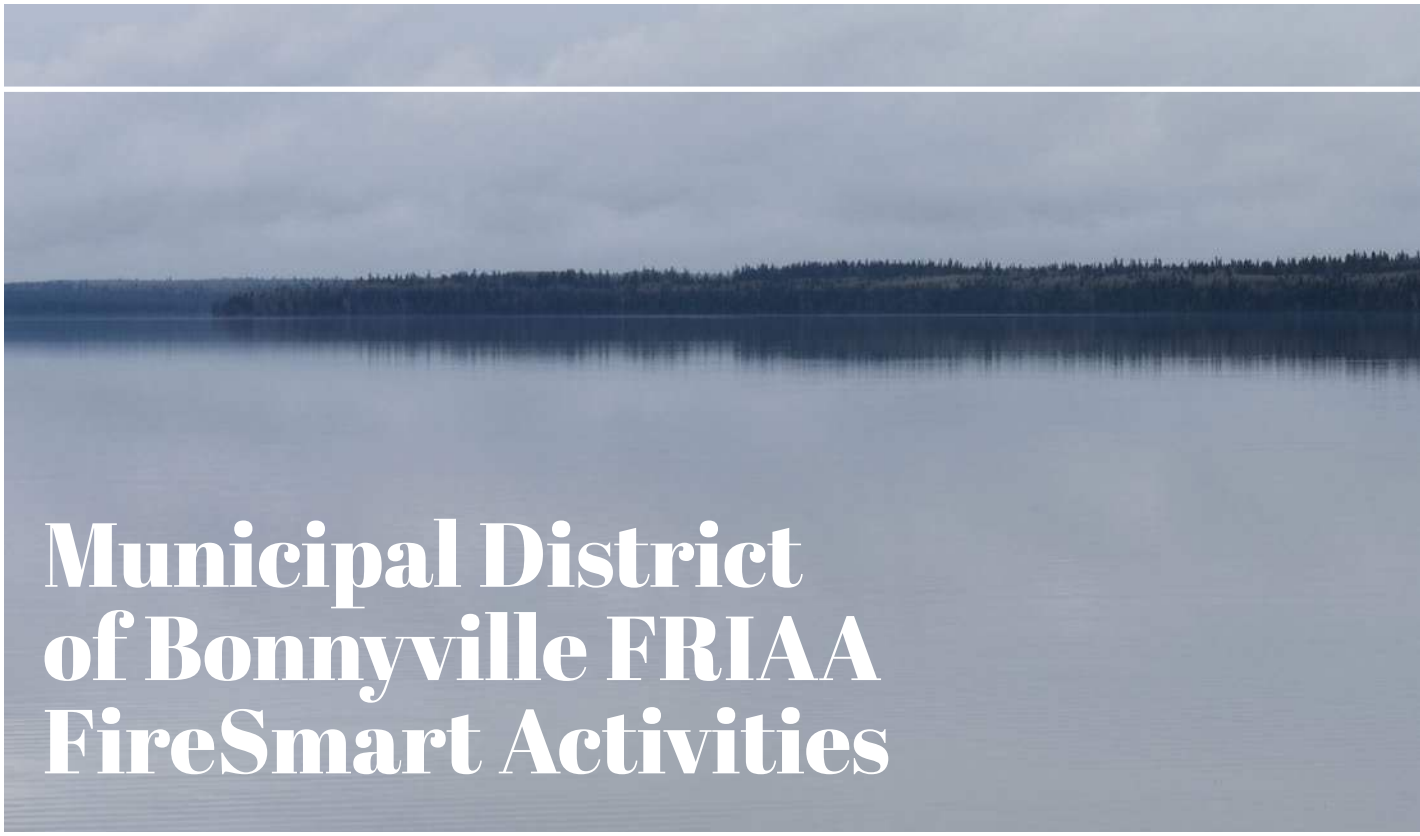
Left: Bull trout *(Salvenlinus confluentus)*; right: Tidbit temperature logger

and the landscape. A web application tool was developed to allow users to continue to populate the data set, run temperature models, and visualize results. "With the FRIAA funding we were able to expand the project and add the spatial stream network (SSN) model, which is the same model being used in the Pacific Northwest of the United States." Kure says, "We will end up having stream temperature data from the Mexican border to the Yukon border by the time we are done."

The data application is integrated into West Fraser's watershed assessment scorecard, which helps guide best forest-management practices at West Fraser in identifying risks to watershed and fish habitat.

The web application is available to interested parties, such as the Alberta Conservation Association, University of Alberta, Trout Unlimited, biologists, fisheries, and forest managers. Access is managed through a login; however, it provides a space for everyone collecting stream temperature data to upload into one central location. The most important part for Kure is "the open-source component of the project. We want resource managers of the eastern slopes to know about this. The benefit of this project is for all different user groups to visualize water temperature data."

The application tool is currently located at https://fri.machydro.ca/#/home; it was recently moved to fRI Research's website.



Municipal District of Bonnyville FRIAA FireSmart Activities

The Municipal District of Bonnyville's wildfire mitigation strategy to protect wildland-urban interface (WUI) communities and infrastructure from wildfires has been implemented using funding from the **FRIAA FireSmart Program** for the last several years. The risk assessment-based strategy involved fuel and vegetation management in several high-risk communities, including Marie Lake and Crane Lake.

"One thing with FireSmart is vegetation management," says Captain Dwayne Ethier, regional training and fire prevention officer at the Bonnyville Regional Fire Authority. "The vegetation management activities reduce the risk to communities by creating a greater opportunity for a crown fire to drop down to a ground fire. This creates fewer embers and gives more opportunities for firefighters to action the fire."

For Marie Lake, FireSmart principles were applied in selected areas since 2016, and multiple work events were held to increase hazard reduction and wildfire mitigation in the area. Vegetation modification was completed in 2017 and 2018 on the north and south edges of the community, and further fuel and vegetation management was conducted in 2021 to reduce the area's risk. A qualified professional forestry contractor prepared the treatment prescription and did quality control on the fuel modification work. Another contractor performed the required vegetation management on over 19 ha in 2021. Hand tools were used for thinning, pruning, and removal of dead material and woody debris, and debris that could be used for firewood was made available to community residents.

Similarly, Crane Lake had over 27 ha of vegetation modification completed in 2021 to increase protection on the west end of the community. Thinning, pruning, and removing dead and down

Marie Lake, AB

fuels were performed within identified areas surrounding the community. The mitigation strategy will enhance wildfire protection for WUI communities and infrastructure from wildfires in the Municipal District of Bonnyville.

FRIAA FireSmart education projects were also conducted in conjunction with the vegetation modification work in the Crane Lake area as well as throughout the municipality. "The education component of the FRIAA FireSmart program is just as if not more important than the vegetation management," continues Captain Ethier. "It gives homeowners information to take steps on their own property and reduce the risk of loss due to wildfire. This reduces the risk to firefighters and helps the crews be more effective with resourcing of equipment and labour if homeowners have already taken the steps to FireSmart their property."

Vegetation management treatment at Crane Lake

Harvest operations during study

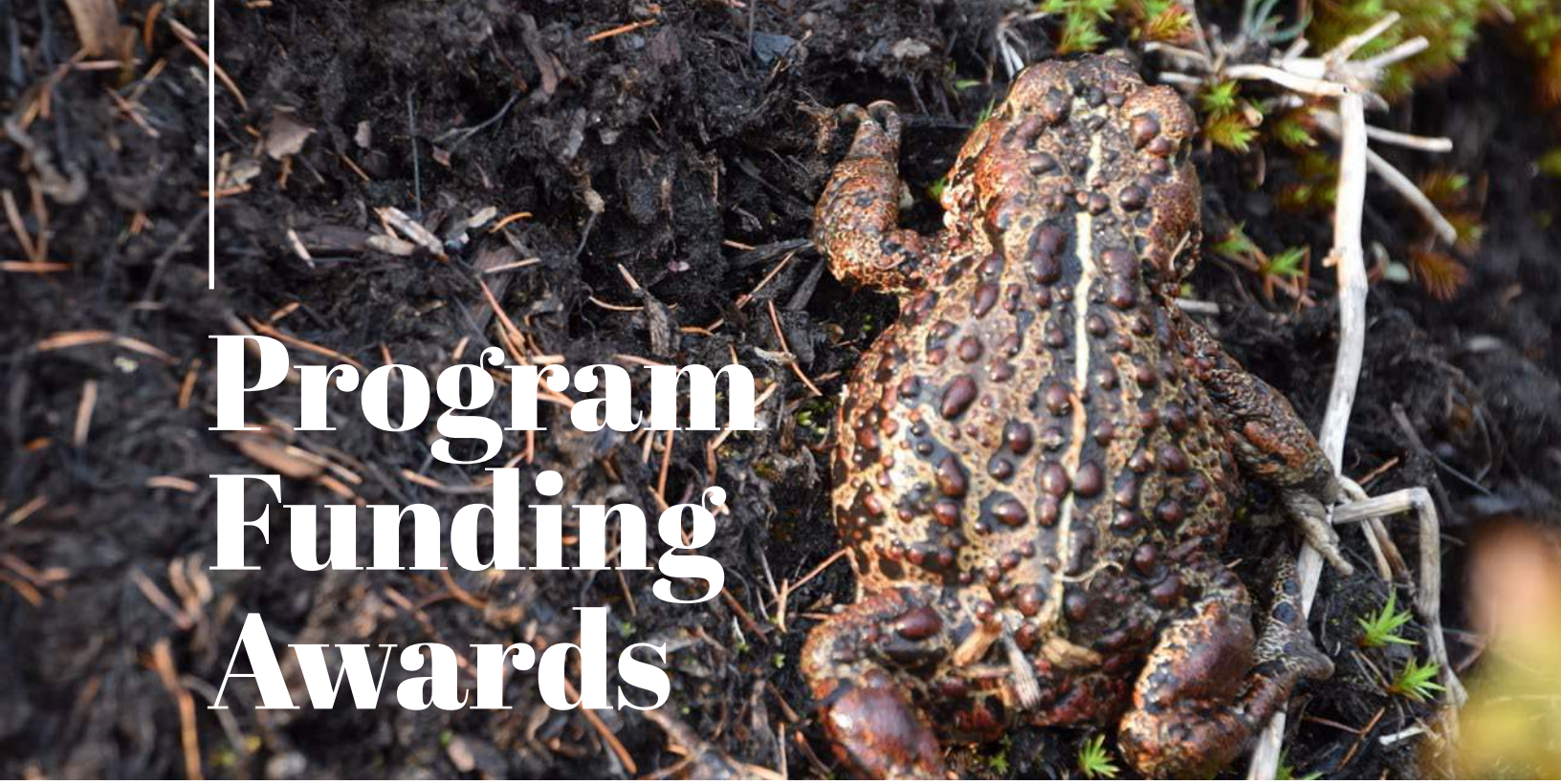
Studying Alternative Harvesting Methods on Soil Disturbance

Typically, forest operations in Alberta require frozen or dry ground for harvest machines to operate. These conditions help to avoid rutting, soil compaction, and degrading of the soil. Climate change is making winter conditions less predictable with periodic mid-winter thaws, late fall freeze-ups, and extended spring breakups. Looking to enhance our forest resources, FPInnovations designed a study, which is beyond regulatory requirements, using **Forest Resource Improvement Program (FRIP)** funds to assess the impact of harvesting methods on soils during non-ideal conditions.

Mark Kube, strategic partnerships lead at FPInnovations, while discussing the project says, "Operational strategies to reduce ground disturbance requires ground-based measurements and comparisons of the costs and productivities for soft ground and climate uncertainty."

To determine the potential benefits of alternative harvesting systems, FPInnovations divided a cut block into two compartments and tested different systems. Wet areas mapping (WAM) was used as a planning tool to identify soft ground. 'Loader assist decking' in combination with 'designated skid trails' proved useful in eliminating the need to construct spur roads. Both harvesting systems were found to reduce or eliminate ground disturbance and to conserve soils and site productivity during sensitive ground conditions.

"We can better estimate disturbance that could be caused by a harvesting system during the planning phase, impacting block sequencing, and identifying contingency options when climate uncertainty and supply chain challenges need to be addressed," says Kube. "We can optimize the placement of roads and related infrastructure to avoid wet spots, springs, and drainages during the planning phase." Overall, the study provides insights into how forest operations can adapt to climate change and minimize their impact on the environment.



Program Funding Awards

Boreal toad *(Anaxyrus boreas boreas)*

Enhanced Reforestation of Legacy Disturbances (EnRLD)

In September 2022, FRIAA issued a request for proposal (RFP) with the EnRLD program to complete site assessments in forest management units F11 and F26. FRIAA received four proposals in response, and the project was awarded to **Carson Integrated Ltd.**

Mountain Pine Beetle Program (MPBP)

In February 2023, FRIAA issued an RFP under the MPBP to solicit eligible projects with mountain pine beetle control activities for the upcoming summer season. Nine proposals were received, and all nine projects were approved. Approved projects include four for the protection of genetic trials, orchards, and research plots; four for log-yard management; and one for long-distance dispersal monitoring.

Projects were awarded to **Blue Ridge Lumber Inc., Canadian Forest Products Ltd., Foothills Forest Products Inc., Hinton Wood Products – a Division of West Fraser Mills Ltd.,** and **Sundre Forest Products Inc.**

New Funding Announcement

FRIAA is pleased to announce a new request for expressions of interest (RFEOI) (vegetation management) and RFP (non-vegetation) for the FRIAA FireSmart Program.

Funding opportunities are open to Alberta municipalities, First Nations, and Métis Settlements. The deadline for submissions is September 11, 2023. For more information on this RFEOI and RFP, please click here.



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