

MFGA AQUANTY

grasslander

— FORECASTING TOOL —



SPRING 2022

Speaking
the Water
Language

Forecasting
Tool
Showcase

Producers
Work on
Drought

Manitoba
forage
& **grassland**
Association

“Whiskey is for Drinking – Water is for Fighting”

Famous author Mark Twain’s quote seems to grow in wisdom and still resonates so loudly for farmers, conservation interests and rural communities. We all know: Water is our most valuable resource.

But what if water management decision support mechanisms were at the hands of farmers and land managers in real time so that they could anticipate extreme weather risks and be able to plan accordingly to better manage water resources. In the long-term, this same tool could be used for farm and land management planning that could help all stakeholders across the Assiniboine River Basin. And that’s exactly what the MFGA Aquanty Forecasting Tool will have the ability to do.

Built by the HydroGeosphere modelling experts at Aquanty Inc., and generously funded by AgriRisk Initiatives of Agriculture and Agri-Food Canada via the Canadian Agricultural Partnership and building off

the similarly-funded MFGA Aquanty Model that was completed in 2018 to look at the role of forages and grasslands in times of flood and drought across the Assiniboine River Basin, the MFGA Aquanty Forecasting Tool will debut publicly in the early months of 2023 via a website portal on MFGA.net.

Manitoba Forage and Grassland Association, supported by the insights of the project management and science advisory teams, will be hosting focus groups, leading presentations and taking part in stakeholder information sessions over the next year. It is our hope this special edition of the magazine helps introduce the vast potential of this impressive tool.

More information is also available on MFGA.net

Muchos Grasses,
Duncan Morrison
MFGA Executive Director



COMING TO A FIELD NEAR YOU IN 2023!



MFGA AQUANTY FORECASTING TOOL

FOR FARMERS AND LAND MANAGERS ACROSS THE ASSINIBOINE RIVER BASIN

CAN YOU IMAGINE THE POWER WITHIN YOUR FARMING DECISIONS IF, AT THE TOUCH OF YOUR HANDHELD DEVICE, YOU WERE ABLE TO:

IN THE SHORT-TERM

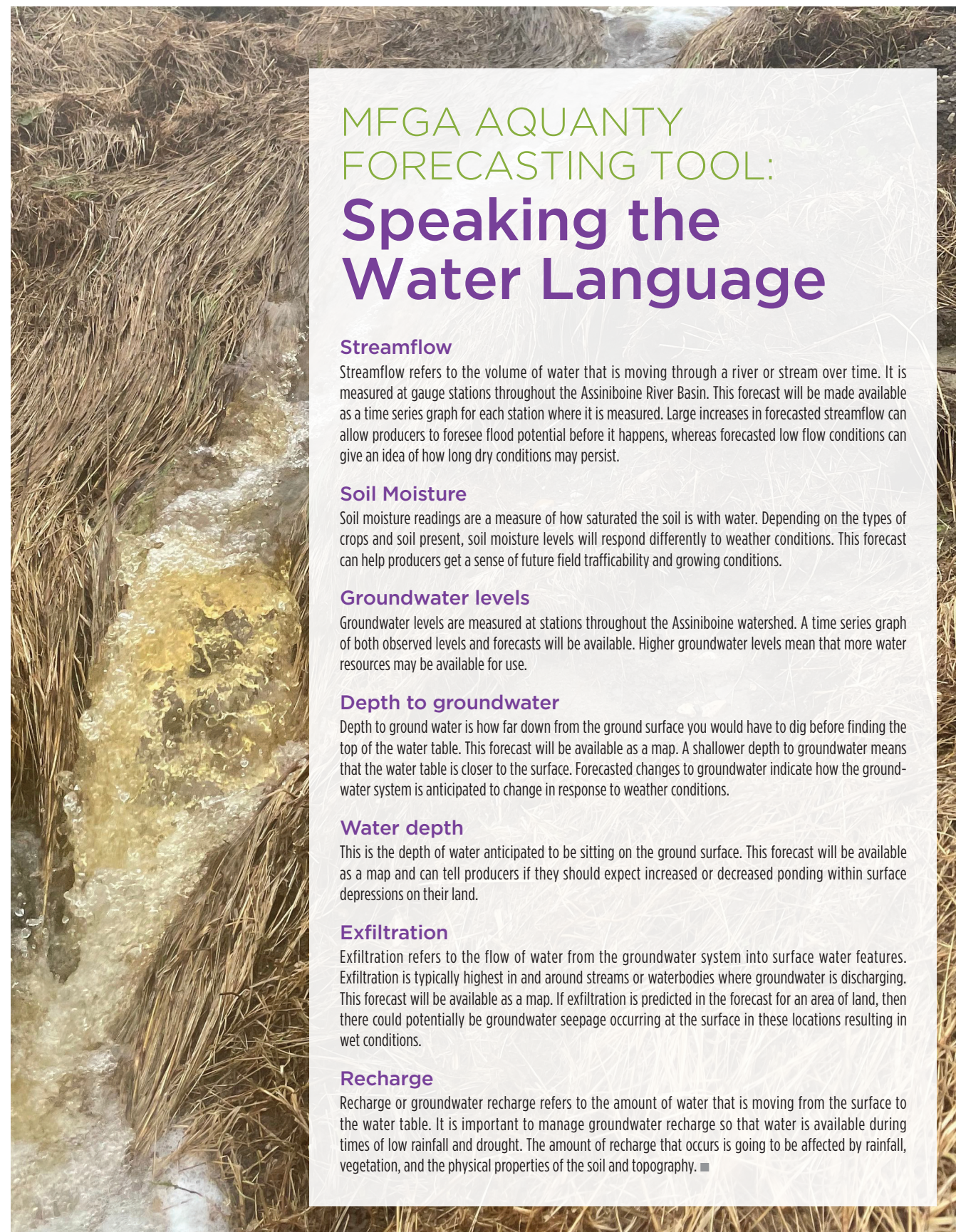
- Anticipate extreme weather risks and being able to plan accordingly to reduce losses and lower risk exposure
- Access decision support information to better manage water resources and build climate resiliency into your operations

IN THE LONG-TERM

- Improve water management across the agricultural landscape to help all stakeholders within the Assiniboine River basin, including communities downstream



MORE INFO: mfga.net



MFGA AQUANTY FORECASTING TOOL: Speaking the Water Language

Streamflow

Streamflow refers to the volume of water that is moving through a river or stream over time. It is measured at gauge stations throughout the Assiniboine River Basin. This forecast will be made available as a time series graph for each station where it is measured. Large increases in forecasted streamflow can allow producers to foresee flood potential before it happens, whereas forecasted low flow conditions can give an idea of how long dry conditions may persist.

Soil Moisture

Soil moisture readings are a measure of how saturated the soil is with water. Depending on the types of crops and soil present, soil moisture levels will respond differently to weather conditions. This forecast can help producers get a sense of future field trafficability and growing conditions.

Groundwater levels

Groundwater levels are measured at stations throughout the Assiniboine watershed. A time series graph of both observed levels and forecasts will be available. Higher groundwater levels mean that more water resources may be available for use.

Depth to groundwater

Depth to ground water is how far down from the ground surface you would have to dig before finding the top of the water table. This forecast will be available as a map. A shallower depth to groundwater means that the water table is closer to the surface. Forecasted changes to groundwater indicate how the groundwater system is anticipated to change in response to weather conditions.

Water depth

This is the depth of water anticipated to be sitting on the ground surface. This forecast will be available as a map and can tell producers if they should expect increased or decreased ponding within surface depressions on their land.

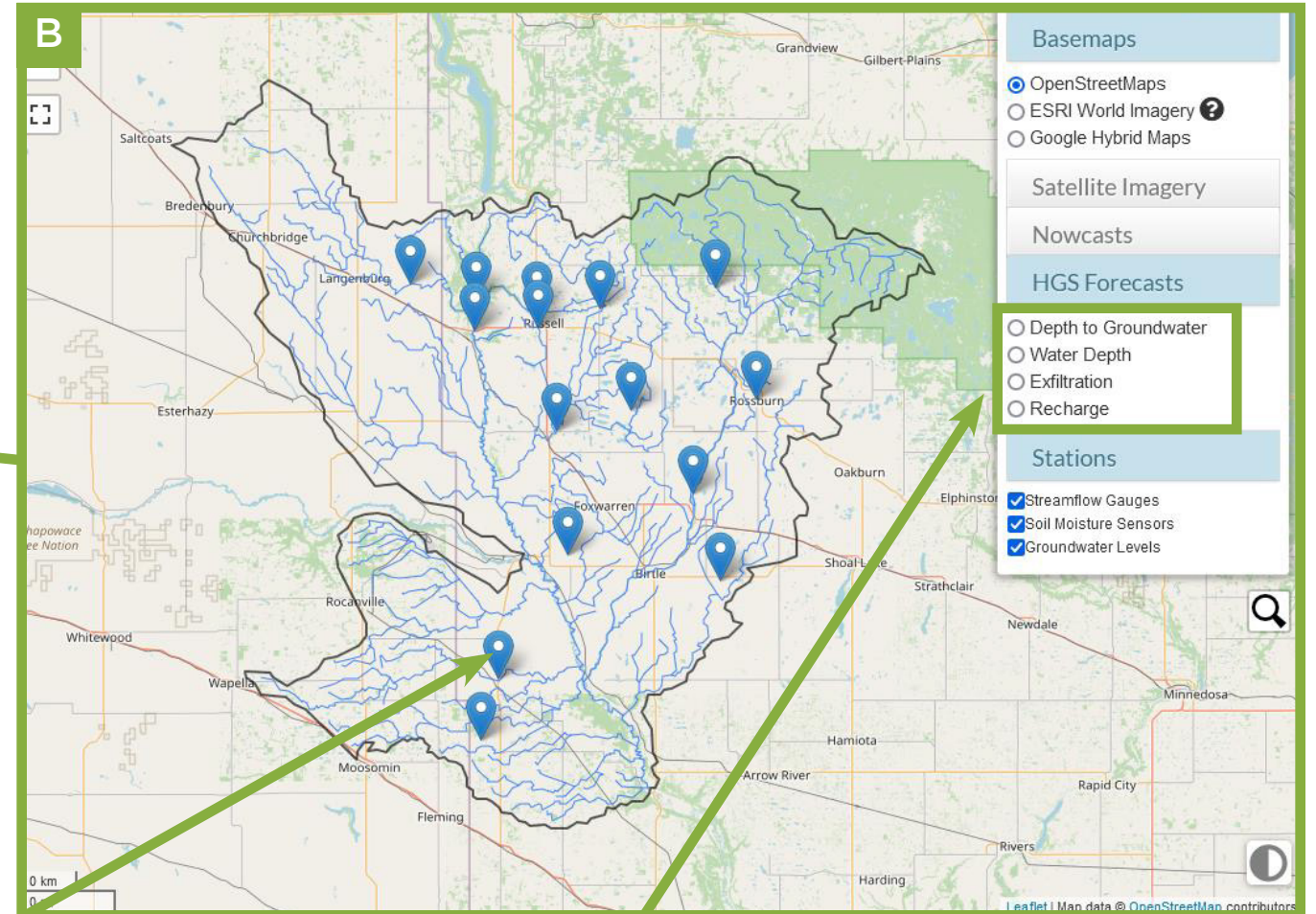
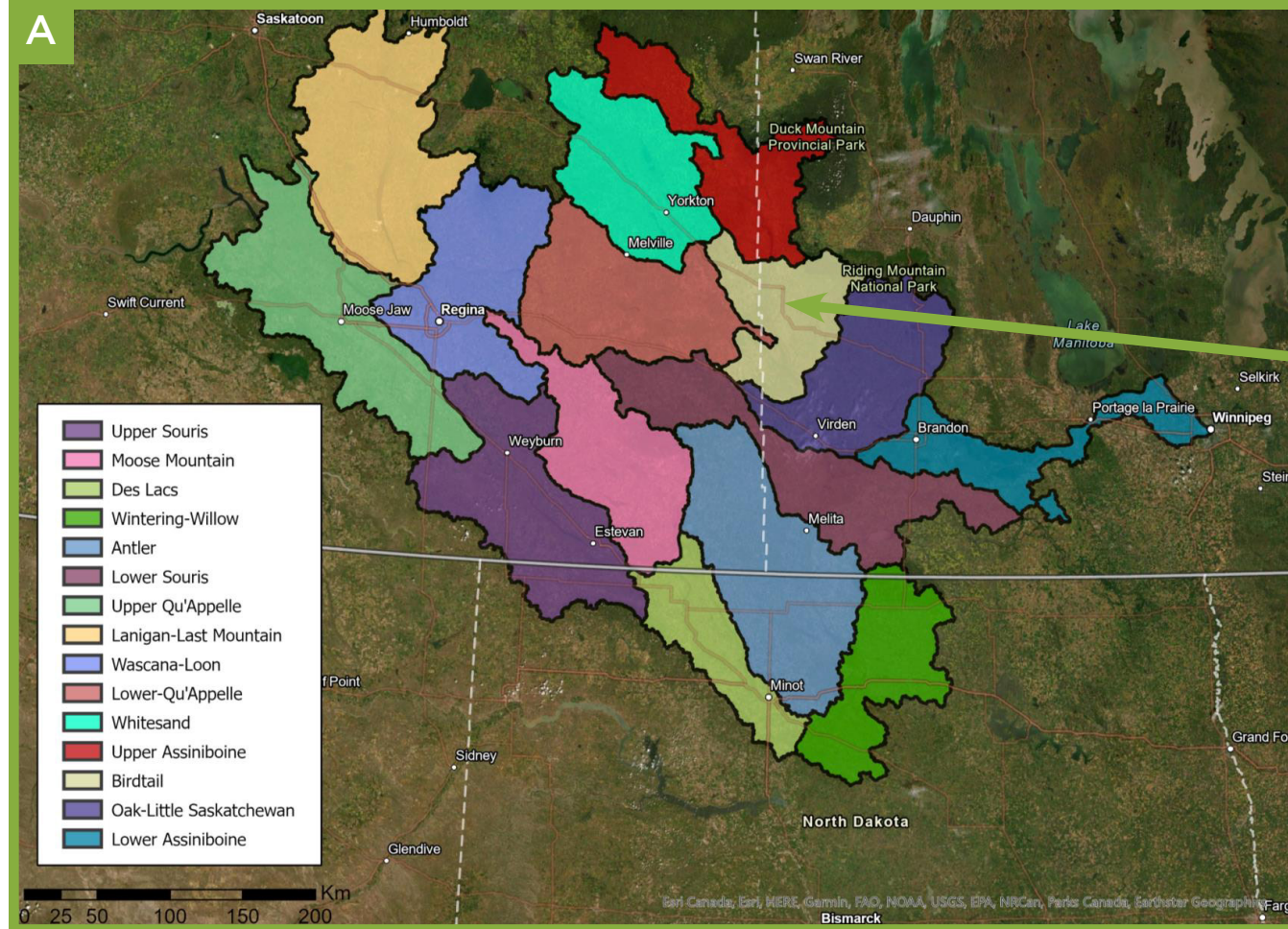
Exfiltration

Exfiltration refers to the flow of water from the groundwater system into surface water features. Exfiltration is typically highest in and around streams or waterbodies where groundwater is discharging. This forecast will be available as a map. If exfiltration is predicted in the forecast for an area of land, then there could potentially be groundwater seepage occurring at the surface in these locations resulting in wet conditions.

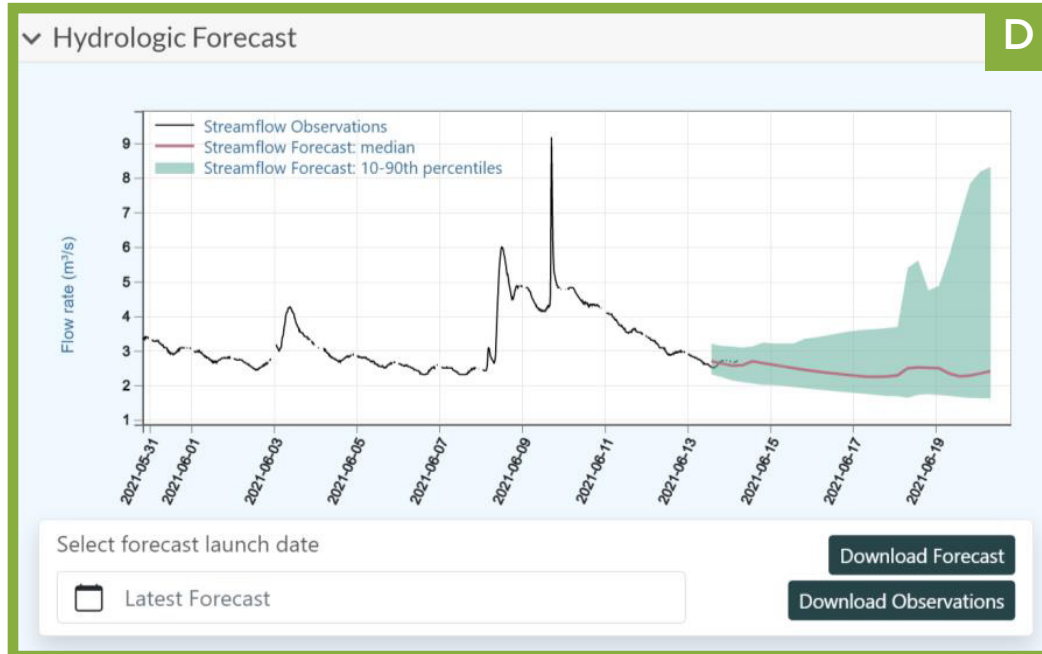
Recharge

Recharge or groundwater recharge refers to the amount of water that is moving from the surface to the water table. It is important to manage groundwater recharge so that water is available during times of low rainfall and drought. The amount of recharge that occurs is going to be affected by rainfall, vegetation, and the physical properties of the soil and topography. ■

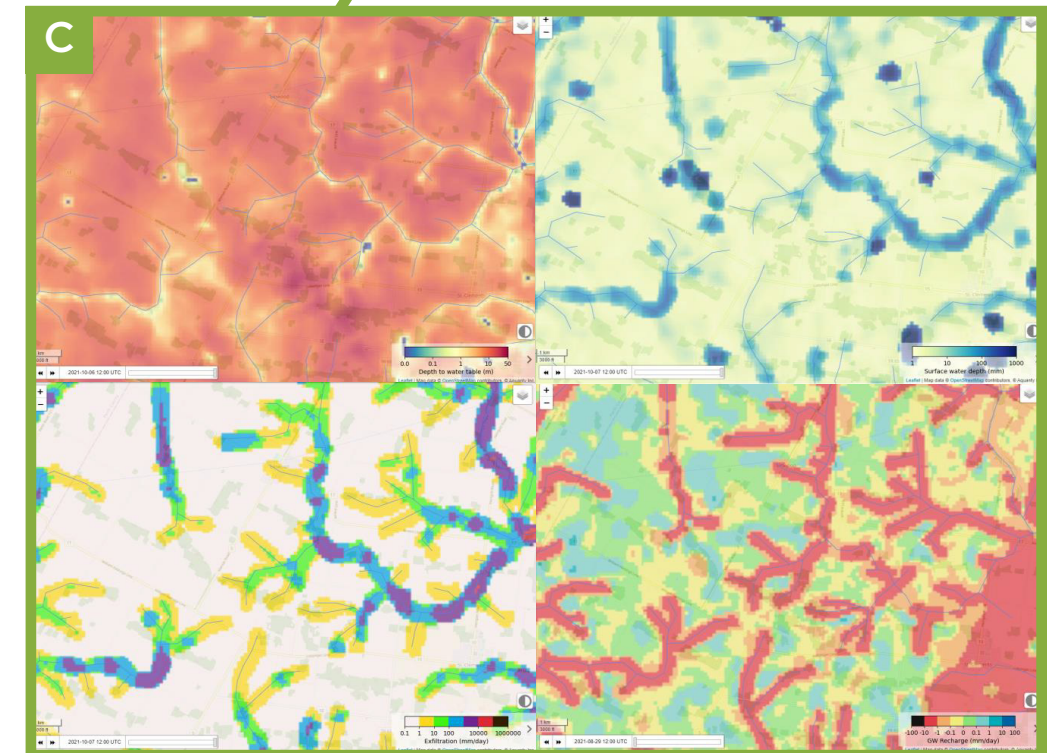
Forecasting Tool Showcase



The 15 new sub watershed models (inset A) combine climate, land surface, and sub surface data sets to produce hydrogeological models that will forecast streamflow, recharge, exfiltration and more for the entire Assiniboine basin.



In the interactive online portal (inset B) users will be able to view map layers of model outputs (inset C) across their watershed and click on gauge stations (inset D) to see local forecasts for streamflow, soil moisture, and groundwater levels.



The Summer of 2021 will be remembered in Manitoba and Saskatchewan as a drought year with major impacts across the board. However, Drought 2021 was actually the most impactful of a series of consecutive dry years across the northern Great Plains. Here is a story of collaboration around those drought efforts in Manitoba last summer, keeping in mind the MFGA Aquanty Forecasting Tool may be a valuable asset in the future on lessening the impacts of these climatic events such as drought.

Producers Form Coalition in Difficult Times

BY EVAN MATTHEWS

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After the 2021 drought left Manitoba producers struggling with a plethora of issues respective to individual operations, agricultural groups united in an unprecedented way.

With months of near-record low precipitation levels, they have the government's ear.

"The key point is collaboration. Everybody who has had issues on their farm will feel as though those issues are most important," said KAP president Bill Campbell. "But producers' issues are connected. Be it cereal or vegetable production, or livestock, we have common interests."

Responding to the drought

Several municipalities in the Interlake declared a state of agricultural disaster in July, as it became clear the region would be hit particularly hard. The lack of moisture and extreme heat were ideal conditions for grasshoppers, and those three factors culminated in a lack of forage.

"Across Manitoba, the lack of pasture and forages are the biggest issues resulting from this drought," said Campbell, noting that the Red River Valley was also devastated by drought conditions and its annual crop production.

"Sheep, bison, horses, some of the other livestock that utilizes grazeable forages, they've all been affected as well, not just the cows," he added.

Whereas grain crops can often be left in a field if impacted by external factors, livestock rely on adequate feed and water on a year-round basis. For that reason, KAP and livestock groups were at the table with government right away.

As summer went on, producers across the province faced a variety of different issues, including feed and water shortages, or a lack of crop production.

KAP general manager Brenna Mahoney says KAP brought commodity groups together, including the Manitoba Beef Producers (MBP), Manitoba Crop Alliance (MCA), Manitoba Forage and Grassland Association

(MFGA), Manitoba Canola Growers Association, Manitoba Bison Association and Manitoba Sheep Association to form a coalition.

Pam de Rocquigny, MCA chief executive officer, says the coalition's goal is to ensure producers of all kinds have their needs addressed.

Before producers made decisions about drought-damaged crops this summer, the coalition asked producers to contact Manitoba Agricultural Services Corporation (MASC) about alternative uses for crops.

With MASC's help, the coalition paired crop producers with drought-damaged crops and livestock producers who were short on feed, which eased some of the financial burden across the industry.

"Collaboration taking place between commodity groups — crop and livestock — is incredibly important. We had to acknowledge getting feed to livestock was the focus. It's important to have a strong crop and livestock sector, an agricultural industry working together and supporting each other," said de Rocquigny.

"We have commodity groups going, 'What are the issues facing our members? Where are our commonalities with other groups? Can we have a united voice?' Even within our own organization ... we are all stronger together."

Coalition commends government

Despite drought conditions withering the spirits of many, the coalition credits the former and current Minister of Manitoba Agriculture and Resource Development Blaine Pedersen and Ralph Eichler for listening and responding.

Early on, Pedersen acknowledged the importance of preventing a severe drop in cattle numbers.

MBP general manager Carson Callum says while many operations experienced inevitable culling due to lack of pasture and forage, all parties did their best to minimize its impact.

"Both levels of government worked to get funding approved as quickly as they could to try to help prevent massive culling in Manitoba," said Callum. "This year's drought was unique in that it was so widespread; it was difficult for (everyone) to secure enough feed to keep their animals. Unfortunately, some producers had to make the difficult, but responsible decision to sell a good portion of their herds because of uncertainty about their feed resources."

In July, the federal and provincial governments jointly announced the Hay Disaster Benefit, which provided an additional \$44 per tonne to insured forage producers. The funds helped offset the additional cost of replacement feed and transportation due to the severe forage shortage.

Later, in August, the federal and provincial governments invested hundreds of millions of dollars into AgriRecovery to support livestock producers. The province worked with MASC and the coalition

to ensure programs addressed challenges facing producers across the province.

Coalition members say programs for feed assistance and transportation, as well as livestock transportation, will be important to the stability and success of Manitoba's livestock sector in the years to come.

It's another step that the coalition is thankful for.

"The biggest thing that needs to be realized through this coalition and the environmental conditions going on is that the governments — both federal and provincial — listened," said Campbell. "They engaged. They had conversations. They responded with programs. Not everyone will agree it was enough, or adequate, but we must all realize they worked to help maintain the agricultural industry. They reacted."

"That's all you can ask of a government, when you have issues and concerns, that they are respectful enough to listen and do the best that they can. As an industry, we're appreciative."

"It's important to have a strong crop and livestock sector, an agricultural industry working together and supporting each other,"

— Pam de Rocquigny,
MCA chief executive officer

Moving forward

While the drought impacted producers in a profound and interconnected way, producers are learning from the situation. By forming a coalition, Campbell says commodity groups are working together to address shared issues, but the issues aren't new.

He notes producers have been saying for years that current Business Risk Management (BRM) tools like AgrilInsurance and AgriStability work for some producers, but not others. The coalition is working to bring about proactively policies and solutions for BRM shortcomings.

"The collaboration and discussions between government, agricultural groups and producers underway right now is very beneficial," said MFGA chair Larry Wegner. "These conversations have been very appreciated and effective in raising key topics around the drought and BRM tools."

"We need government to understand the impact, always. It doesn't matter if you're a livestock or crop producer, we need to have conversations about issues affecting all sectors," said de Rocquigny. "Manitoba's agriculture industry is a strong and resilient one. It only gets stronger together." ■



It's the long-term implications of the drought that concern Manitoba Forage and Grassland Association past-chair Larry Wegner.

"Whereas everything we're doing right now is reactive, in the long term, we're going to have to ... improve our pasture management, forages and then rebuild the herd," he said. "We can't rebuild the herd until we have our pastures and forages covered."

Wegner feels that the conditions that have frustrated farmers recently will be lessened by the ability of the MFGA Aquanty Forecasting Tool to help farmers make land use decisions that anticipate, assess, improve and plan to better manage water management and climate resiliency.

Manitoba Forage and Grassland Association (MFGA) has supported and provided strategic direction to the forage and livestock industry for over 30 years in Manitoba.

MFGA promotes the economic prosperity and environmental benefits of forages, grasslands, cover crops, and healthy soils to benefit our forage and grassland producers, local communities, and society. MFGA's vision is vibrant grasslands and prosperous forage crops on Manitoba's agricultural lands.

Learn More About Our MFGA Aquanty Project

Do you have a model scenario that you're curious about?

Contact us and let's get the conversation started!



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