

A shifting tide

A growing number of Prairie farmers are opting to sustain, rather than drain, the landscape's small but vital wetland potholes

By: **Julia-Simone Rutgers**

Posted: 3:00 AM CDT Friday, Apr. 19, 2024

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The way it's raining over the Guilford Hereford ranch, you'd hardly know there's a drought.

"An April rain is invaluable to me, because that's what gets the grass started," Don Guilford says, slowing his truck to a crawl along the soggy gravel road cutting through his land.

Despite the day's downpour, it's been a dry couple of years for the Guilfords. Their 1,200-acre ranch, nestled in the rolling hills and winding streams of Manitoba's Pembina Valley, has faced an extreme drought, per the Canadian drought monitor, since March. The abnormally dry conditions, though, have been around since late 2022.

Guilford gestures out the truck's window toward an unassuming tangle of yellow grasses, still matted from the winter's long-gone snow. The road here is flanked by small wetlands — known as potholes — that would normally have begun to pool with water leftover from the spring melt.



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Don Guilford, a cattle farmer near Clearwater who conserves wetlands on his property, has entered into a partnership with Ducks Unlimited to preserve the potholes on his property.

“A lot of the wetlands are dried up, and we’ve got cracks in the ground,” Guilford says. “That’s never a good sign.”

Guilford and his wife, Diane, have managed a herd of cattle on this land for the last 50 years. He grew up on a parcel nearby; aside from a short stint working in Alberta’s oil industry, he’s called this region home all his life.

In that time, Guilford’s noticed the landscape change. The bushes he used to weave through on horseback from the homestead to a nearby schoolyard have been cleared. Patches of old-growth oak trees have been cut away. Many of the small sloughs that once speckled the fields have been drained.

But on the Guilford ranch, things look a little different.

“We just thought: there’s going to be a little chunk of this world that we can control, and we’re not going to allow that,” he says.

He points excitedly to stalks of thick, reddish grass lining the roadside. That’s big bluestem, he says, a native Prairie tallgrass which has just begun to re-establish on the land. Nearby, the season’s first red-winged blackbirds perch atop the cattails lining one of the farm’s larger, year-round wetlands.

It’s among about 1,000 acres of wetlands the Guilfords have recently protected.

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–Don Guilford

Through a program offered by Ducks Unlimited Canada, Guilford has joined a burgeoning movement of farmers choosing to leave the wetlands on their property intact.

In Manitoba, where the equivalent of four football fields of wetlands are lost to agricultural development every day, new programs are now emerging to curb the dramatic trend. The province has provided funding to several non-profit organizations to incentivize farmers to work with — not against — the small wetlands.

Conserving them keeps vital ecosystem services like groundwater management, wildlife habitat and carbon sequestration intact. For many producers, this can also boost their bottom line.

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Wetlands are among the most diverse ecosystems on the planet. Their agricultural benefits are far-reaching; they can provide habitat for pollinators, nutrients for crops, pest control and contaminant filtering. They store carbon — lots of carbon — and help manage water flow during droughts and floods. Healthy, well-maintained wetlands absorb phosphorus and nitrogen, helping

manage explosions of algal blooms. They're home to countless species of birds, bugs and animals, from toads and ducks to snapping turtles, beavers and muskrats.

"Even though they're small systems, they often do a huge amount of the work in watersheds to help protect our lakes and rivers," Pascal Badiou, a wetland researcher with Ducks Unlimited Canada, says in an interview.



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Pascal Badiou, a researcher with Ducks Unlimited Canada, checks out the wetlands at Oak Hammock Marsh, all that remains of the once-sprawling St. Andrews bog north of Winnipeg.

And they're everywhere. About 14 per cent of Canada is dotted with them, the Prairies even more so. Some 43 per cent of Manitoba is covered by wetlands.

Among the dozens of pastures and sloping hills in the Pembina Valley where Guilford farms, there are signs of wetlands everywhere. Tall grasses and cattails surround small silver pools that reflect dark, spring skies.

Some of those wetlands are large and permanent, meaning they hold water all year. Others are small and ephemeral, filling up in the spring but drying out under the summer heat.

All serve a vital role in managing the Prairie climate. In wet years, they hold water and minimize the impacts of flooding. In drought years like this one, they maintain groundwater baseflow and

help sustain the network of small rivers and creeks.

“They can shorten the duration of droughts, and they can help reduce the severity of hydrological droughts,” Badiou says.

One of the largest wetlands on Guilford’s farm has been zigzagged with ditches that fill with water in the spring. The waterways are ideal habitat for ducklings, the piles of grass around them are perfect for nests. Others have been outfitted with nesting boxes and fresh straw. Almost all the wetlands on his land are protected in perpetuity.

“The conservation agreement we have, in terms of ranching, doesn’t restrict us one bit,” Guilford says.



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Cows graze on Guilford's 1,200-acre Pembina Valley farm.

Instead, the wetlands form part of a suite of holistic management practices on the ranch. His cattle graze one pasture at a time, and the land is given at least two months rest in between. The grass that regrows is perfect habitat for waterfowl, rabbits, foxes and other wildlife. In turn, grazing helps encourage fast and robust growth of what Guilford calls “the good grasses.” More high-quality grass means less money spent buying hay to feed the cows, which means more profit at the end of the day.

He stoops down in the field next to the cattle’s winter grazing pasture, peeling back a layer of brown stalks he’s left intact to reveal the bright green growth underneath. When the cows calve in a couple weeks, the old and new growth will be the perfect nutrient blend for the growing young.

“Holistic management helped us become more profitable and I’m happy to say it also provided better habitat, and we’re helping the environment,” he says.

In recent decades, wetlands have been disappearing at an alarming rate.

Globally, experts estimate more than half the world’s wetlands are gone. In Canada, some 70 per cent of historic wetlands have degraded or dried up. Three-quarters of the Prairie pothole wetlands have been lost to agricultural developments and some areas — like Manitoba’s Red River Valley — have lost 90 per cent of their wetland cover.

Wetland loss across the Prairies is, in large part, a product of centuries-old policy. Manitoba passed its first Drainage Act in 1880, just 10 years after its recognition as a province. That act gave permission to drain nine massive wetlands, including the sprawling 47,000-acre St. Andrews bog north of Winnipeg. (Oak Hammock Marsh, a 250-acre wetland where Ducks Unlimited is headquartered, is all that remains of the St. Andrews bog today.)

Early settlers dug more than 300 kilometres of drainage ditches across southern Manitoba in an effort to make the land more palatable to newcomers.



The federal-provincial Swamp Lands Act of 1885 approved draining another seven to 10 million acres of southern lands to boost immigration. The newly dry land, they would find, was some of the most fertile soil in the province. Manitoba's agricultural boom followed.

"Agricultural drainage is a large contributing factor to ongoing (wetland) loss," says Ashley Rawluk, a water policy adviser for the International Institute of Sustainable Development.

Different types of farms, however, can have different relationships to wetlands. Cattle ranchers like Guilford need water to nourish grass for their livestock, so a wetland can be a valuable tool for water retention.

But many crop farmers (think big fields of canola, wheat and other grains) argue wetlands — especially the densely concentrated and very tiny Prairie potholes — are bad for their bottom line. The soggy fields don't yield good crops, and with profit margins in agriculture thinner than the stalks of wheat in the fields, producers need every bit of dry land they can get. The increasing intensity of weather events owing to climate change has made the problem harder to predict, and many farmers believe draining the wetland and getting on with cultivation is the best way forward.

"Farmers are in a tight position today: the cost of everything is up ... they've paid thousands of dollars an acre and they want to be as productive as possible and regain the cost that they've invested," Rawluk says.

But those same wetlands are key to helping manage floodwaters, filter agricultural runoff and mitigate droughts. The more they disappear, the harder the impacts of climate change will be felt on the farmland — and everywhere else.

"We have some of the best farmland across Canada here in Manitoba, so I think we can be very thoughtful about where it makes the most sense to be doing conservation and restoration of wetlands."

—Ashley Rawluk

"There still is a little bit of an attitude that wetlands are an inconvenience and should be drained," Rawluk says. "But in the same breath, we're seeing recurring drought and even a kind of

Goldilocks situation where one minute we have too much water, the next we have a drought and then it rains really heavily and we have too much again.”

“We have some of the best farmland across Canada here in Manitoba, so I think we can be very thoughtful about where it makes the most sense to be doing conservation and restoration of wetlands,” she says.

Out in the arid southwest corner of Manitoba, Gregg Fotheringham’s family has managed a sprawling grain and seed farm for four generations.

“It’s poorly drained; rocks, trees, potholes and (a) thin black layer (of soil),” Fotheringham says of the land.

The family has lived on the home quarter for close to 80 years, and while Fotheringham believes in climate change, “no doubt,” he questions whether it’s impacting his nook of the province.

He’s been on the land long enough to see weather come and go: the 1980s were dry, the ’90s were damp. The spring of 1999, hardly anyone in the area planted a crop, he says, because it was all too wet. There were floods in 2011 and 2013.

“The southwest corner, we’ve been an area of extremes for as long as I can remember,” he says. “We’re just at the whim of Mother Nature all the time.”



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Conserving agricultural wetlands has helped re-establish species of native Prairie tallgrass.

Meanwhile, farming practices on the Fotheringham farm have undoubtedly changed.

Fotheringham's father adopted zero-till farming in the 1980s to reduce soil erosion and improve water retention in the fields. The family land is dotted with Prairie potholes, which they've opted not to fill or drain for decades.

"To tell you the truth ... (the potholes) have never been a benefit to the farm," he says.

Close to 10 per cent of his cropland is bogged down by potholes every year. Some can be seeded when the weather turns warm in the summer, but that doesn't happen every year. Most of the time, Fotheringham has to make do with steering his seeders and combines around the depressions, which cuts into efficiency.

Despite the inconvenience, after the 2013 flood the Fotheringhams decided to sign up for one of Ducks Unlimited's flagship programs. They worked with the organization to map out the land, tallying the acres the family had avoided farming year over year due to a buildup of standing water. Together, they agreed to set some of those wetlands aside under a conservation easement; Ducks Unlimited paid a lump sum for the conserved acres and the Fotheringhams agreed not to drain or fill the potholes in perpetuity.

“We can still farm that land if we so wish, if conditions are correct. We just can’t drain or fill,” he says. “It’s pretty easygoing, really.”

For Fotheringham, a lifetime on the land was enough to know that many of the areas they planned to set aside were never going to be reliably productive.

“We’re still going around potholes that my grandfather would’ve went around,” he says, laughing.

It would have taken a “monumental” amount of work to drain those potholes, he explains, but the program offered a way to leave the land alone while still making a bit of money. The added bonus that they could still seed those patches in drier conditions made the program a win-win.

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But many crop farmers can be afraid the easements will decrease the value of their land by sacrificing potentially productive acres, Fotheringham explains.

He says the Ducks Unlimited program was the first to actually compensate farmers for the ecosystem services they provide by tending the natural landscape.

“You’re going to follow the carrot on the stick rather than get beat by the stick,” he says. “It doesn’t have to be a lot of money, but to adopt the things that a lot of producers have adopted recently to enhance their operations, they’ve done it on their own dollar.”

Over the last five years, Manitoba has ramped up efforts to protect wetlands.

The Sustainable Watersheds Act, passed in 2018, codified the province’s “no net loss of wetland benefits” policy by designating permanent and semi-permanent wetlands for protection and increasing the penalties for illegal drainage. Farmers can get a permit to drain smaller, ephemeral wetlands — where water levels fluctuate with the weather — within a couple weeks of application.

Seasonal wetlands can be drained, but only if farmers mitigate the acres lost either by paying for them or restoring wetlands elsewhere.



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Bulrushes thrive on a section of wetland on Guilford's farmland.

Policy experts like Rawluk believe those regulations are well-intentioned, “but I don’t think we really have the teeth to enforce when things aren’t being done properly,” she says.

Under increased pressure to “feed the world,” Rawluk says, producers can have a hard time justifying wetland conservation and restoration.

Badiou, with Ducks Unlimited, echoes that concern, adding the province lacks the resources to monitor for illegal drainage.

“It’s pretty common in dry years where the fields that were probably historically wetlands that have been hard to access become easier to access and incorporate into cropland,” he says.

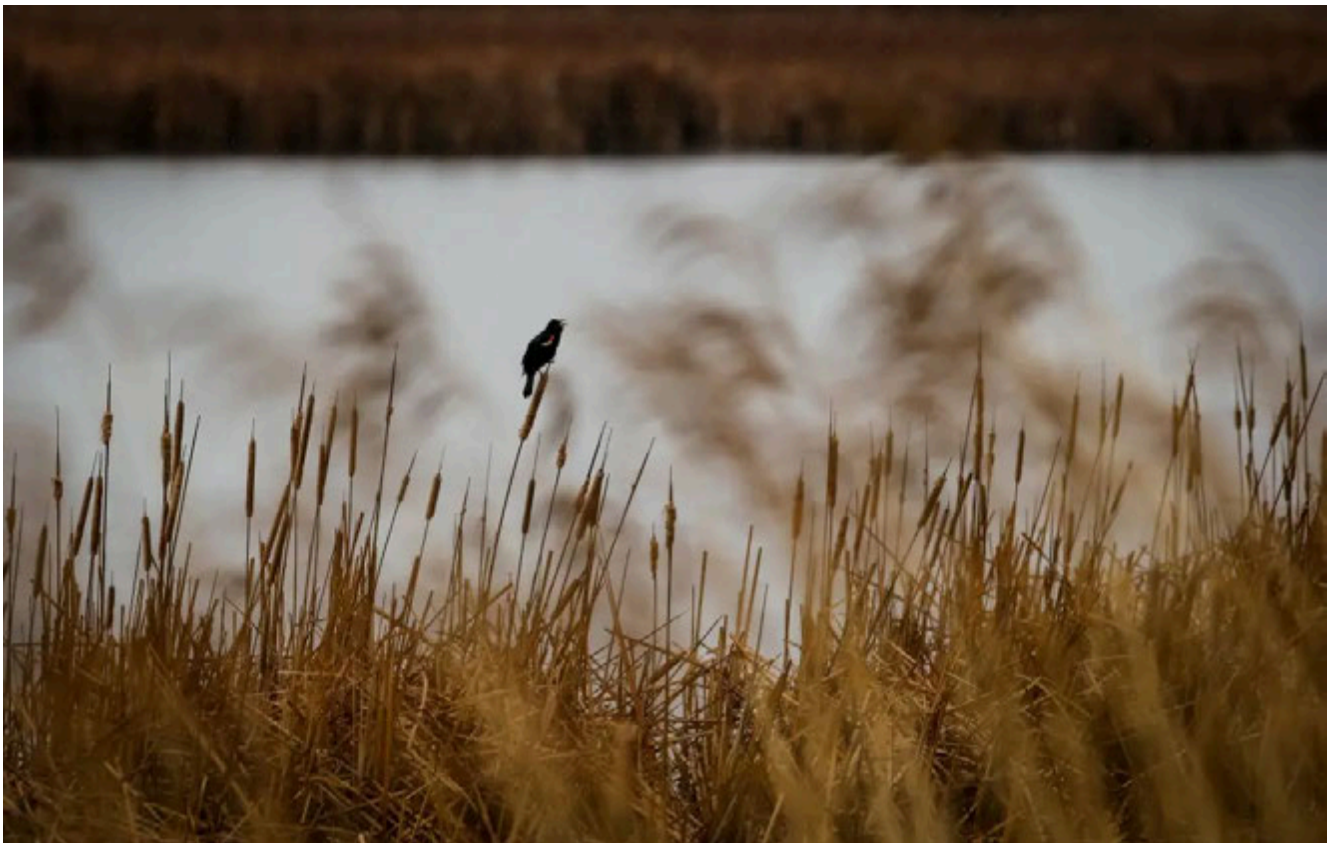
Manitoba’s largest farm-policy organization interviewed farmers in spring 2020 about protecting ecological goods and services — a term for the societal benefits from natural ecosystems — on their farms.

“Farming is a business, so farmers are interested in production value and profitability,” Keystone Agricultural Producers wrote in a report. “Advancing (ecological goods and services) initiatives can present challenges since farmers may view parts of an ecosystem ... as areas of potential development rather than conservation.”

Convincing farmers to take on these conservation projects, the research found, came down to government incentives.

In recent years, Manitoba has obliged.

Building on the conservation easement programs started by Ducks Unlimited and the Manitoba Habitat Conservancy — a non-profit with a similar focus on conserving habitat in agricultural lands — the province invested \$204 million between 2018 and 2020. This created three long-term conservation trusts aimed at preserving and restoring watersheds.



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A red-winged blackbird perches on a bulrush on Don Guilford's farm. Maintaining wetlands also protects habitat for wildlife.

“We’re incentivizing the retention of those small yet really important wetlands,” Stephen Carlyle, executive director of the Manitoba Habitat Conservancy, says in an interview.

“I think it’s important to be rewarding the producers for what they’re doing by keeping these wetlands.”

All told, the conservation trusts have awarded more than \$50 million since their inception, much of which has gone toward wetland protection. The conservancy maintains 120,000 acres of conserved wetland through the trusts and its own long-standing conservation agreement programs. This past year, the trust funds were oversubscribed.

Rawluk says she's buoyed by the success of Manitoba's conservation efforts thus far.

"But we see greater loss than we do conservation or restoration, so I think that speaks volumes that maybe we haven't found the right balance of what's required to change the trajectory," she adds.

As the sun starts to fade behind the dense grey cloud over Guilford's ranch, he gets a little heartfelt about that tricky relationship farmers have with conservation.

He knows the value of his land dropped when he agreed to a permanent easement on the wetlands. Land prices for crop farmers are on the rise as they race to meet the need for food; with all the protected wetlands, his land will likely never be useful for cropping and wouldn't pull in premium rates.

Regardless, he says: "We didn't do it for the money."

"I did it for philosophical-type reasons," he continues. "I mean, duh, we need photosynthesis to produce oxygen to breathe and I'd like to have some."

Despite the loss of wetlands and grasslands he's noticed over the years, he can sense a tide shifting in the agriculture sector.



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Don Guilford has joined a burgeoning movement of Manitoba farmers choosing to leave the wetlands on their property intact.

He's already noticed farmers growing cover crops to protect the soil, restoring cultivated earth by planting deep-rooting vegetables like turnips and planting the kind of crops that trap nutrients in the soil rather than letting them run into the waterways.

Out on the grain farm in Reston, Fotheringham has noticed something similar. He's worked with his local watershed district for years, helping encourage conservation and practices like zero-till farming.

"Farmers are the greatest at looking after the land," Fotheringham says. "Some do it different than others, and you know, we still have to produce to make a profit."

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Julia-Simone Rutgers is a climate reporter with a focus on environmental issues in Manitoba. Her position is part of a three-year partnership between the Free Press and The Narwhal, funded by the Winnipeg Foundation.



Julia-Simone Rutgers

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Julia-Simone Rutgers is the Manitoba environment reporter for the *Free Press* and *The Narwhal*. She joined the *Free Press* in 2020, after completing a journalism degree at the University of King's College in Halifax, and took on the environment beat in 2022. [Read more about Julia-Simone.](#)

Julia-Simone's role is part of a partnership with *The Narwhal*, funded by the Winnipeg Foundation. Every piece of reporting Julia-Simone produces is reviewed by an editing team before it is posted online or published in print — part of the *Free Press's* tradition, since 1872, of producing reliable independent journalism. Read more about [Free Press's history and mandate](#), and [learn how our newsroom operates](#).