

Alberta watershed praised for flood protection

By **Jeremy Simes**

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Ducks Unlimited Canada research scientist Pascal Badiou works on a project that analyzes water and nutrient discharge of the Camrose Creek watershed. | Ducks Unlimited Canada photo

Ducks Unlimited Canada says Camrose Creek loses less water and nutrients than other watersheds on the Prairies

A little-known watershed in Alberta is punching above its weight, according to new research, considering that it provides residents downstream with better flood protection.

The Camrose Creek watershed is said to provide \$1.2 million in flood benefits because it sees less water and nutrient loss than other watersheds on the Prairies, according to a study by Ducks Unlimited Canada.

Overall, the watershed provides \$1.8 million in societal benefits, Ducks Unlimited said. Along with flood protection, new evidence suggests the wetlands help producers mitigate extreme heat and provide more pollinators and insect predators, which can eat pests.

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“There are all these other benefits that aren’t well quantified that help producers,” said Pascal Badiou, a research scientist with Ducks Unlimited’s Institute for Wetland and Waterfowl Research.

“Understanding that fully will be helpful in more wholesomely quantifying the benefits,” he said.

To get their findings, researchers with the organization analyzed the Camrose Creek watershed from 2015-17, using devices to measure the amount of water that was being discharged.

As well, Badiou said they collected samples over that period to see if any nutrients within the water were lost.

They compared data from Camrose Creek with Smith Creek in Saskatchewan and Broughton Creek in Manitoba, ultimately finding that the Alberta watershed withheld more water and nutrients than the others.

“Camrose Creek responded differently,” Badiou said.

“We did not see a large increase in discharge of water and nutrients leaving the landscape.”

He said roughly 50 percent of the landscape in Camrose Creek was in perennial grasses, which do a good job of filtering water and nutrients.

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Most other watersheds have 70 to 80 percent of land in annual crops, he said, which mean more wetlands tend to be drained.

“The other watersheds we have worked in, there are usually twice as many wetlands that are drained or routed compared to those that are intact,” Badiou said.

“In Camrose Creek, there are more intact wetlands than ones that are drained or routed.”

He said the findings give researchers a benchmark with Camrose Creek being near the top.

Essentially, he said, it allows researchers and conservationists to figure out how to improve degraded watersheds so they achieve the same level of success as Camrose Creek.

“That points to the fact that any time you can increase perennial cover, you do a good job of reducing nutrient and water export,” he said.

“It points to that level of wetland restoration and conservation we need to aim for to make these watersheds resilient going forward.”

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He said in places where there are fewer intact wetlands, water that is moved downstream doesn't get stored and can contribute to overland flooding.

Camrose Creek, however, is approaching a critical threshold, Ducks Unlimited said in its news release. Continued loss of wetlands will affect the watershed's ability to handle extreme precipitation, which could contribute to nutrient loading in downstream rivers and lakes.

Badiou said this challenge presents an opportunity for the area because conservationists are in a good position to ensure the watershed doesn't experience further degradation.

“It allows them to determine how they can keep the wetlands that already exist while also being able to target areas for restoration,” he said.

In its news release, the organization said the study provides a compelling case that wetlands are worthy of investment because they are powerful ecosystems.

Badiou said the Alberta government has been a leader in wetland retention and restoration. The province has a program that realizes wetlands are important in addressing water quality and quantity issues, he added.

As for other provinces, Manitoba has recently updated its wetland policy. There are now heavier fines for people caught draining wetlands illegally. The province has moved to protect class three, four and five wetlands, which are seasonal, semi-permanent and permanent, respectively.

Badiou suggested Saskatchewan has more work to do to ensure wetlands are retained.

He said the province's agricultural drainage policy has resulted in a net loss of wetlands. The province is currently consulting with industry and producers on how to best mitigate drainage.

“Some jurisdictions are trying to achieve a no net-loss of wetlands, but there are still others that are not meeting that criteria,” he said.