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SEEDS OF KNOWLEDGE

As First Nations continue along path to self-determination,
traditional Indigenous farming practices offer guidance / **F2-4**

BY JAY WHETTER



Eugene Ross harvests sage at Sioux Valley Dakota Nation. His grandmothers would spend summer and fall gathering food in preparation for winter.

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EUGENE Ross has a slow, soothing voice. His S's are sibilant and his K's sound like G's. It's the English of a Dakota speaker.

He often refers to himself in the third person. "Eugene is always busy," he says.

Ross is an elder at Wipazoka Wakpa Oyate, literally "Saskatoon river people," the Dakota name for Sioux Valley Dakota Nation. It lies at the forks of the Assiniboine and Oak Rivers, 50 kilometres west of Brandon and 100 kilometres north of the farm where I grew up. Many months and inquires later, a contact at Assiniboine Community College in Brandon pointed me to Ross. After a number of missed calls — Eugene is always busy — and several phone conversations, we made a plan to meet.

On a sunny June day, I begin the five-hour drive straight west from my home in Kenora to Sioux Valley. Entering the plains from the rugged forest landscape of the Canadian Shield feels like dropping through a hatch in the back of a wardrobe. They are completely different worlds. West of the uber-flat Red River Valley, just beyond the town of Austin, the landscape begins to undulate, like a sloppily made bed.

From there, the Prairies fold and flatten, roll and settle, in all directions, seemingly forever.

Canada has 154 million acres of farmland, according to Statistics Canada's 2021 census, and 126 million of those are in the Prairie provinces.

It's 1:45 p.m. when I pull up at the Sioux Valley band office with its stylized teepee built around the front door. At 2 p.m. sharp, a tall man in his 60s enters. He wears a button-up plaid shirt with a wide satin sash of rainbow colours sewn around the chest and arms. Ross greets me with a warm handshake and leads me back outside. I tail his white SUV along the narrow road, first pavement, then gravel, through shrubs and grasses that edge the Assiniboine River. The road turns up the grassland bank and splits into a fan of long lanes, each connecting to one of the half dozen bungalows scattered along the crest. We take the second lane and pull up to a beige house: Ross's home. He yanks on a string to open his screen door, and I follow him down eight wooden steps to a 12-foot-square room in his basement.

The only furniture is a cluttered desk and two chairs. All other space is filled with Ross's treasures. After almost stepping into a plate-sized wicker basket of roots, I tumble into the guest chair. All around me are stacks and layers of Dakota artifacts: framed photographs, clothing and beadwork. It's a Sioux Smithsonian. Ross runs me through the items in baskets on the floor: peppermint, sage, sweetgrass, dried wild plums, rat root, elk medicine flower, wild onion.

"Our Tylenol back in the day," he says, pointing to Seneca root. From a ceiling hook, Ross takes down a string of white tubers, each about the size of a big toe: wild turnips. I see on the floor around me a whole diet of starches and fruit, vitamins and antioxidants, all from the grasslands. I probably grew up around all of them and yet I don't recognize any of them.

After half an hour in the basement, Ross puts on a straw hat encircled with a wide band of maple leaves and leads me outside. He grabs a gardening fork, takes 10 steps and stops. He sticks his fork in the ground and digs up a few tiny plants nestled in the grass. The 15-centimetre plants have thin stems, white flowers and jelly-bean-sized bulbs. I don't know the plant. "Wild onion," Ross says. I give it a sniff.

It smells like ... onion.

I had bought pipe tobacco from a store in Brandon, and though I didn't tell Ross I had it, he must have noticed the pouch poking out of my shirt pocket.

"You can put some tobacco here," he tells me, pointing to the hole left after removing the onion. I take a pinch and sprinkle it on the ground. I'm not sure I'm doing it right, but Ross doesn't correct me. It feels like I've climbed a step on the mountain, paying respect for what the land provides. I am learning.

Ross knows the plants of the Prairies. He knows the history. He tells me his grandmothers, the "keepers of the lodge," spent all summer and fall gathering food in preparation for winter. "They had their own system that never failed them," he says. He is now the lodge keeper.

This knowledge of local food and medicinal plants, and the potential for them to be part of our diet, makes me think of canola. Fred and Olga Solvoniuk, who came to Saskatchewan from Poland in 1928, are believed to be the first farmers to grow rapeseed in Western Canada. They started with a handful of tiny round seeds from the *Brassica rapa* species.

Production of another oilseed relative, *Brassica napus*, now the most common species on the Prairies, began in the 1940s. In the '60s and '70s, western Canadian researchers improved both species, reducing erucic acid and glucosinolates to very low levels, which broadened the market appeal of the oil for food use and the meal (the high protein mash left over after extracting the oil) for livestock feed. In 1978, this improved crop got a new name: canola.

Western Canadian farmers now grow canola on more than 20 million acres and, according to a 2020 study prepared for the Canola Council of Canada, the canola industry contributes \$29.9 billion to the Canadian economy each year. It started with a handful of seeds.

Canola is a cool-season crop that thrives in western Canadian growing conditions. Ross knows a long list of native plants traditionally used for food and medicine that also thrive in the region. While highly unlikely that any will become the next canola, they could underpin a more diverse farming future where native plants become part of the food supply. That won't happen unless we protect the remaining grasslands and protect that knowledge. Shaun Soonias, director of Indigenous relations with Farm Credit Canada, sees tremendous potential for agriculture on First Nations, especially if we expand the definition of agriculture to include farming and foraging. First Nations have an opportunity to "monetize their knowledge of the land," Soonias says, but they can't monetize knowledge that is lost.

Ross's late grandmother told him long ago, "Changes are coming." It still has him rattled.

The people living near him "don't have any Indian things in their houses," he says. When they want wild sage, they ask him to pick it instead of learning how to do it themselves. It's been a challenge, he admits,

to get his people to identify with sacred Dakota legends and traditions. He worries the changes could be bad.

"When Eugene is gone tomorrow, what will happen to this knowledge?" he says.

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MELISSA Arcand is a soil scientist and associate professor at the University of Saskatchewan, and she grew up on a modern grain farm at

Maskēko-sākahikanihk,

or Muskeg Lake Cree Nation, north of Saskatoon. I had interviewed Arcand on previous occasions to talk about soil science.

This time, I wanted to talk to her about a conference she hosted about First Nations farming and farming at Muskeg Lake.

I arranged to meet Arcand and her parents, Mervyn and Patricia, at their farm. I set out again, driving 1,000 kilometres from Kenora to Muskeg Lake. Along the way, I listened to Rick Mercer's *Talking to Canadians* on audio book, popped in at the odd Co-op for snacks and gas and enjoyed the landscape. Saskatchewan has more farmland than any other Canadian province. This is the land of living skies, where, as the saying goes, you can watch your dog run away for three days.

After an overnight in Saskatoon, I drive north for an hour and turn onto a gravel road at the village of Marcelin. Hundreds of back roads form a grid across the Prairies, like capillaries reaching out to every farm. Some roads stop at dead ends or dwindle to mere tracks between fields, so I rely on a GPS pin from Arcand. I have criss-crossed the Prairies over my career, but if you're new to an area and have a deadline, you don't want to guess what grids will get you there. I arrive at a wooded yard and spot the log house Arcand told me to look for. I knock on the door and Arcand waves me in through the window.

She and her parents are seated around a wooden table. I take the only empty chair.

Arcand's mom, Patricia, puts on the kettle for tea and serves homemade muffins. Mervyn and Patricia are soft-spoken and warm. Patricia — Patsy to her family — speaks with quiet command. We talk about farming and family history. Mervyn and Patsy were high school sweethearts and grew up on Indigenous family farms that were "similar to neighbourhood settler farms," Patricia tells me, except for the invisible border between them.

We go outside for a tour of the Arcand property. The yard is full of trees, including poplars, spruce and Manitoba maples — the fast-growing hardy species that form a protective wind-break around farm yards across the Prairies. Patricia shows me her vast garden on the south side of the yard. She has corn, squash, sunflowers, carrots, peas, flowers and shrubs of haskap and saskatoon berries.

Patricia stands proudly beside a massive lupin with long clusters of purple flowers. Channeling Maxidiwiac, I mention that lupins, as a legume, can make their own nitrogen fertilizer and could help to feed other plants in the garden. Patricia looks around and asks what plants need a lot of nitrogen. “Corn,” I suggest. “Maybe next year I’ll plant lupins beside the corn,” she says.

Mervyn walks me out to a canola field bordering the yard and crouches down to check for flea beetles feeding on the young leaves — a natural farmer instinct. While Mervyn still drives farm machinery during the busy planting and harvest seasons, he now rents the land to his nephew Stacy Sutherland, the last grain-farming band member at Muskeg Lake.

“I can’t imagine who will take over,” Arcand says.

First Nation grain farmers are rare everywhere. In most cases, farmable land on the dozens of First Nation reserves across the plains of Manitoba, Saskatchewan and Alberta is rented out to non-Indigenous farmers who live nearby. That came up as a concern during a forum Arcand organized on Indigenous farming in Saskatchewan in 2018. In forum discussions, attendees resolved to take greater control over farming activities on their lands.

Some wanted to focus on modern large-scale commercial grain farming and ranching, others wanted to reclaim traditional practices.

“First Nations want to be determinant of their own lives,” Arcand told me.

This is gaining momentum. “There is a sense of urgency now,” Soonias at Farm Credit Canada says. “Many Indigenous communities are beginning to take a much closer look at operationalizing their lands, from breaking new ground to reducing lands leased to non-residents, first to enable food security, then towards employment and financial sovereignty.”



Melissa Arcand (centre) with parents Mervyn and Patricia, who farm at Muskeg Lake Cree Nation.

JAY WHETTER PHOTO

YOU can see Piikani First Nation from the cliff's edge at Head-Smashed-In Buffalo Jump in southern Alberta. Long ago, when Blackfoot hunters stampeded bison herds over these cliffs, the last thing the bison saw was paradise — a world of grass.

Today that great green sea, whipped by winds from a cascade of buffalo ghosts and bisected by the Old Man River, is Piikani territory.

Noreen Plain Eagle is the land manager for Piikani First Nation and its 106,000 acres. On the phone, she speaks with confidence, with the vision of an entrepreneur, powered by a conviction to do right for her people and the land. Plain Eagle, in essence, runs a diverse farm business; she is a modern-day Maxidiwac.

Food sovereignty is a priority. Piikani's reliance on outside food became acutely clear in the early days of the COVID-19 pandemic when food companies, overwhelmed by supply chain issues, could not deliver their usual supply. Piikani nearly ran out of fresh food. It was a call to action for Plain Eagle. "We don't want to be at the mercy of someone else to provide food to our community," she says. "We want food sovereignty."

The Resilience Institute, a national charity with objectives to develop knowledge and howto for climate change and sustainability, works with Piikani on food sovereignty projects. The institute arranged for immediate food deliveries to solve Piikani's COVID-caused supply issues, then took aim at permanent alternatives, working with Plain Eagle on initiatives to provide local fresh vegetables all year round. A self-contained hydroponic modular farm from Growcer, a Canadian company, will be operational later this year. Twelve-metre Growcer units arrive on site with everything needed to grow lettuce, spinach, basil and traditional plants, like wild mint. These units already dot northern and under-serviced communities across Canada to provide a regular, "hyper-local" supply of nutritious greens. Each unit requires about 30 hours of labour per week. The next phase is to build a greenhouse at the school to produce a wider variety of vegetables. "We will use it as a hands-on teaching tool for students," Plain Eagle says. "Terminology will be in the Blackfoot language."

Plain Eagle also has plans to grow corn and potatoes for the community, and to think more strategically about the nation's small bison herd. "Bison have always been part of our history," she says, "and we're learning how they can contribute to our grassland health."

Grasslands need a keystone grazer, like bison or cattle, to keep the grass in check and maintain grassland biodiversity.

The land manager, an official position on many First Nations, was created through the federal government's 2006 reserve land and environment management program. Through the program, First Nations with a trained land manager can gain greater autonomy over their land use decisions.

Plain Eagle has been the land manager at Piikani Nation since 2016. The First Nation has 13,000 acres of cropland, which is rented out to non-Indigenous farmers in the area. "Before 2016, it was a free-for-all," Plain Eagle says.

Rented land was degraded and soil erosion was rampant — which happens all too easily with the strong winds of southern Alberta. "After 2016, we took back control."

The land office now submits soil samples for lab analysis — checking on soil organic matter, for example, which is a key indicator of soil health. The office requires land renters to follow a crop rotation that maintains soil productivity. "Growing canola two years in a row on the same land is now an illegal practice," Plain Eagle says. She wants renters to alternate among various crops, including peas, wheat and barley, which can improve productivity and reduce crop diseases.

Plain Eagle embodies the answer to questions that First Nations and I have been seeking: “Can we start to re-envision agriculture from an Indigenous perspective? Can we benefit from another way to produce food?”

If you look at what’s happening at Piikani, the answer to both is yes.

The ultimate goal, Plain Eagle says, is “to do our own farming.”

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THESE days I daydream that the Sioux were still farming when my great-great-grandparents arrived in southwest Manitoba. I imagine they knew each other well.

Sarah Carter, in her book *Lost Harvests*, writes about the useful knowledge that First Nations people had: “Their highly specialized empirical knowledge of nature approached a science. They were aware of the vegetation in their environment, and they knew when and how to harvest it. They were much better informed on rainfall and frost patterns, on the availability of water, and on soil varieties than settlers from the East and overseas who were to follow.”

It is impossible to guess how things might have been different today had my daydream been true, and we don’t get a do-over. So what can I do? I can write about people who were largely written out of western history. I can help to create a vision for the next 50 years that includes and values Indigenous perspectives and experiences.

Before I leave Sioux Valley back on that day in June, Eugene Ross gets in my truck and we take a drive. Ross navigates up a narrow gravel road, rimmed with chokecherry, pin cherry and saskatoon bushes. The road ends at a hilltop, the highest point on the reserve. The grass is worn out from traffic. “Our people go to their highest peaks to be closest to the creator,” Ross says.

I think of my favourite place on the farm. I think of climbing mountains.

While Ross scans the ground for wild turnip, I look east. I see the Oak River winding through the valley like a squiggle. I see canola and wheat crops just emerging after a late spring. I see a dog three days away. I see a new approach for my farm writing career.

“Learn as much as you can about our people.

Take advantage of these times of sharing,” Ross says. “And be patient. It’s going to take time. It may take half your life.”

Jay Whetter is a Canadian farm journalist with 25 years of experience. Jay grew up on a farm near Dand, Man., and lives in Kenora. Jay is on the board of Science Writers and Communicators of Canada and is a member of the Canadian Farm Writers Federation, which he says are rich and rewarding communities of communicators.

He prefers to cook food rather than grow it, and he has huge respect for those who, on our behalf, harvest crops and animals while protecting the precious lands and seas.



Eugene Ross's basement is a trove of Dakota treasures and artifacts.

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Ross unties a willow basket full of braided wild turnips in his basement.

MIKAELA MACKENZIE / WINNIPEG FREE PRESS



Noreen Plain Eagle, land manager for Piikani First Nation, runs a diverse farm business.

LEAH HENNEL / THE NARWHAL



Eugene Ross's grandmother, Margaret Williams, taught him everything he knows about traditional teachings and practices.