



# CONNECTED BY CHANGE

**Tribes confront mounting climate threats**

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**CLIMATE CHANGE** is real and happening now. Its impacts, from extreme drought to increasingly frequent and severe weather events, are challenging tribes in Montana and western North Dakota to adapt to forces outside of their control.

A 2022 report by the Intergovernmental Panel on Climate Change warned that without immediate global action, humans will miss a rapidly closing "window of opportunity to secure a livable and sustainable future for all." The report also recognized that any climate plan would need to use both scientific and Indigenous forms of knowledge. Settler colonialism displaced American Indigenous communities from nearly 99% of their historical land base, often forcing them to areas that are more vulnerable to the effects of climate change.

Indigenous communities across Montana and North Dakota are connected by their growing exposure to the impacts wrought by climate change, and each community is engaging with these impacts according to its own history, geography and culture.

Students in the 2022 Native News Honors Project traveled to eight reservations to learn more about how each tribe is experiencing climate change and to explore how tribes are responding.

On Rocky Boy's, Annishinabe Ne-I-Yah-Wahk members rush to save a

unique species of sweetgrass that's disappearing as drought parches their wetlands. The Blackfeet Nation hopes to preserve their snowpack from increasingly strong winds by building snow fences from woven willows or wood. Drought on the northern plains has tested the will of ranchers on Fort Belknap and made community members grateful for a nearly completed water supply system on Fort Peck.

For the first time, Native News covered the Fort Berthold reservation in western North Dakota, where the Nueta, Hidatsa and Sahnish tribes weigh the costs and benefits of welcoming fracking for the last 14 years and imagine a new way forward. The Tsis tsis'tas experience more and larger wildfires in their future, as drought creates favorable conditions for smoldering coal flames to ignite on the Northern Cheyenne reservation. Even west of the divide, warmer and drier conditions have upended the Séliš-Qlispé people's cultural calendar on the Flathead reservation.

As the effects of climate change worsen, each of these tribes is engaging with the hard work necessary to guarantee our collective future.

Sincerely,

*Montana Native News  
Honors Project Staff*

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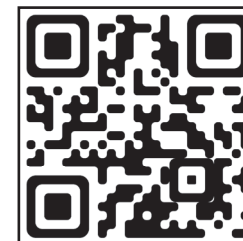
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# A S L O W B U R N

## Smoldering coal seams threaten the Tsis tsis'tas

STORY BY **CLARISE LARSON**

PHOTOS BY **VAN FISHER**

**T**HE SMOKE steadily billowed from the ground ahead of Keene Bends, who walked toward the large gash ripped into the side of a hill. He walked to its edge but took a step back after looking down into the blackened cracks oozing smoke.

“Don’t get too close,” Bends said, still eyeing one of the cracks, squinting to see how deep it went beyond the dozen feet visible. “You can feel it in your boots.” Indeed, the heat seeped through boot soles like warm sand on bare toes. It was a comfort against the cold chill of spring, but the smell of the sulfur brought reality back.

“This has been burning long before me, and I’m

sure it will burn long after I leave,” Bends said.

The small section of the valley on which the coal seam has burned for years is a part of the thousands of acres Bends ranches on. The land is just starting to show signs of life after a wildfire last August turned it into a landscape of blackened earth.

It’s the first time Bends has come close enough to look down the seams he wished weren’t there. He was curious, but there was caution in the way he stepped. The land that has been eroded by the tennis-court-sized seam is unstable. Surrounding it are smaller cracks full of heat too hot to hold your hand over it for more than a few seconds.

Coal, like the seam residing on the land Bends

ranches, is no anomaly on the Northern Cheyenne Indian Reservation. In fact, coal is abundant — but as climate change exacerbates wildfire conditions, the coal begins to ignite, and in turn, begins a growing cycle of wildfires threatening the reservation.

“It’s a reality of being from the Northern Cheyenne reservation — fire is just something you live with here,” Bends said.

Coal is romanticized in American history. It has become an economic powerhouse and established one of the country’s most iconic working class jobs. Coal is by far the most abundant energy source in the country. It provides 23.4% of the nation’s electricity

and more than 500,000 jobs, according to the Society for Mining, Metallurgy & Exploration.

The bountiful coal just beneath the topsoil and at times breaking through the surface is scattered across southeast Montana, and ignites easily. But once lit, coal seams can burn for decades, and in turn, can ignite the land around them with even a simple gust of wind and enough fuel.

“They could burn for 10 years, they could burn for 100 years, and some might even burn for 1,000 years,” said Ed Heffern, a retired geologist with the U.S. Bureau of Land Management.

Climate change is causing a dramatic increase in both the number and intensity of wildfires across the





West. The Northern Cheyenne reservation recorded 74 wildfires in 2021, according to the Bureau of Indian Affairs. Right now, there are approximately 239 coal seams actively burning on the reservation. Most seams are nearly impossible to put out or to predict when they may ignite into a wildfire.

A burning coal seam ignited the largest wildfire in Montana in the past four years, the Richard Spring fire in 2021. The wildfire burned more than 170,000 acres of land along the Tongue River and to the edges of Lame Deer last August — including more than 22,000 acres of Bends' ranchland.

Fear of wildfire is customary to the people who reside across the reservation, but fear — or even acknowledgment — of coal seams is almost nonexistent.

Many people are unaware of these seemingly mundane cracks in the earth and the damage they can cause. There are little to no mitigation efforts available to remove or stop coal seam from igniting wildfires, due to the lack of understanding of the issue, and the lack of funding available.

Bends, an enrolled member of the Northern Cheyenne tribe, leases around 27,000 acres of land each year from the Northern Cheyenne reservation and uses it to ranch cattle just northeast of Lame Deer. The Richard Spring fire burned about 80% of that land. Fire crews stopped it before it entered Lame Deer, but it still managed to burn large portions of the reservation and forced the town into an emergency evacuation.



Bends isn't new to wildfire. His family has been ranching on the reservation for generations. Ranching is a part of who he is. He is accustomed to wildfires — he remembers spending summers of his youth protecting his family's ranch from wildfire.

But things are changing.

Wildfires are igniting easier and more frequently than ever because of climate change. Increased drought is drying out vegetation making for prime wildfire fuel. Even though Bends' land is beginning to heal, trails of blackened vegetation and dead trees still linger.

"It's been burning for I don't even know how long. It comes all the way down this valley," he said, pointing to the Garfield Peak mountains and the valley line

that breaks through the rolling hills. "It's just following the fuel."

For Bends, his dread of the coal seam on the land he ranches is apparent. A dug-out fire break line surrounds the smoking coal seam — a necessary precaution to prevent the fire from spreading if it ignites. But, there is no guarantee.

Once a wildfire burns on land where coal resides beneath it, the coal is lit. As long as the seam has oxygen, it will continue to burn. And as long as it's burning, it can ignite the land around it and start a new wildfire birthed from previous coal-burning fires.

Bends has spent years driving past the coal seam. He's watched it grow over the years spanning across the valley. He's watched it steadily spit out smoke in



**FAR LEFT:** Keene Bends reaches to feel the heat emanating from an active coal seam on the land he leases. Coal seams have a unique smell and burn so hot that they can be felt through work boots.

**TOP LEFT:** Trucks pass a coal seam that was actively burning less than six months ago. Extinguishing coal seams requires lots of resources. Northern Cheyenne fire crews poured more than 4,000 gallons of water on the seam before it was finally extinguished.

**TOP RIGHT:** Northern Cheyenne firefighters east of Lame Deer work to contain the 2021 Richard Spring fire which burned 171,130 acres. (courtesy photo)

**LEFT:** Northern Cheyenne rancher Keene Bends examines a burning coal seam on his land near Ashland. Bends leases land from the Northern Cheyenne tribe to graze his cattle. The 2021 Richard Spring fire, which was caused by a burning coal seam, scorched 22,000 of his 27,000 acres.

the dead of winter, the snow around it melted away from the heat.

"A dead giveaway of a coal seam fire is you'll notice the smell before you even see it," Bends said of the dirty, burnt aroma it exudes. The charred smell of it is a reminder that the land isn't safe.

"There have always been coal seams here on fire, but now it's really starting to chain," said Scott Studiner about the reciprocal nature of coal seams. Studiner is the Fire Management Specialist in Ashland, a town just off the reservation and where many tribal members also live.

Studiner said the danger of coal seams igniting in southwest Montana is that the frequency that they are burning is higher than ever before because of the





**ABOVE:** The town of Lame Deer is the political and social center of the reservation. In 2021, The Richard Spring fire burned within a few miles of the city center, and forced an evacuation of its residents.

**LEFT:** Smoke rises from the Colstrip Power Plant, which produces up to 1,480 Megawatts of electricity every hour.



increase in wildfires.

“As firefighters and local people, we don’t get a break,” Studiner said. Even in the middle of March, still months from typical wildfire season, Studiner said he’s waiting for the call that a coal seam has started a fire nearby.

Given the dry climate of the area, the land is no stranger to wildfires burning each year — it’s almost an expectation. As drought conditions worsen, Studiner said something needs to change to make coal seam mitigation efforts possible in southeast Montana.

Currently, Custer County Department of Emergency Services officer Cory Cheguis proposed a FEMA grant of more than \$400,000 that would benefit the reservation and southeast Montana’s efforts to mitigate coal seam igniting wildfires on the land. The

grant could be used to map the coal seams and hire personnel to manage the issue across Montana.

His proposal has not yet been granted by FEMA, and according to Cheguis, FEMA is largely unaware of this issue.

At the front entrance of the Tsis tsis’tas tribal office, a sign reads “Out of defeat and exile they led us back to Montana and won our Cheyenne homeland that we will keep forever.”

Tribal members hold their traditional teachings in high regard in their decision making, Bends said. Many traditional members of the tribe still hold the words of the prophet Sweet Medicine above the pressures of poverty and unemployment.

“Stand and protect your land and your people,” Sweet Medicine said to the Cheyenne people. And for





Morice Little, left, and Fire Chief Randy Elliott chat before taking a side-by-side into the wilderness to examine a coal seam. Side-by-side off road vehicles are used on the Northern Cheyenne reservation to reach remote areas.

now, his words remain true. Though there is a divide across the tribe on whether or not to mine the coal, the coal on the reservation remains currently untouched by developers.

It is estimated that the reservation sits on 23 billion tons of coal, according to a BIA Administrative Report on the Status of Mineral Resource Information for the Northern Cheyenne Indian Reservation. It's one of the densest coal deposits in the U.S. Coal can be seen breaking the surface of the hills surrounding and crumbling down the hillside of Highway 212 along the stretch between Lame Deer and Ashland.

Coal started to form around 60 million years ago when the land began to rise from a shallow sea, said Heffern, who also worked for the Northern Cheyenne Research Project in the late 1970s. The reservation now resides in the heart of the Powder River Basin,

the largest coal-producing region in the U.S. It's a long stretch of coal-filled land across southeastern Montana and into northeastern Wyoming.

Coal developers line the Powder River Basin and near the reservation. Lame Deer's neighboring town, Colstrip, has boomed in population and revenue thanks to the 54-year-old Rosebud Mine. The mine ranks as one of the largest coal mines in the U.S. — and emitted 15 million metric tons of carbon dioxide in a 2019 study by ClimateWire.

But the mine could be trouble. It is estimated to run out of coal within the next three to five years. Without expansion, the plant could shut down, and with it the revenue it brings. The approximately 800 full-time jobs the mine provides could run out for the people of Colstrip and those on the reservation who travel to work at the mine.

This puts extreme pressure on tribal members to reconsider coal development. The tribe's neighboring reservation, the Crow Indian reservation, accepted coal mining on its land in 1974, and coal mining is now the reservation's main source of revenue, according to Bloomberg Law.

Yet, despite the multitude of pressures to mine, the Tsis tsis'tas tribe persists against it. But coal still burns on the reservation.

It was Randy Elliott's second day at his new job as fire protection director and fire chief on the reservation when the Richard Spring fire ignited. Elliott, an enrolled member of the Tsis tsis'tas tribe, was in charge of evacuation and protecting houses in Lame Deer.

"I mean, how do you fight the nature of the beast?" Elliott said. "You just try to be prepared."

Randy Elliott sprayed more than 4,000 gallons of water on a coal seam that cuts alongside the highway from Lame Deer to Ashland this August when it caught fire. But, even months later, he said he's confident it's still burning beneath the surface and he'll be fighting it again soon.

In early March, Elliott received a new emergency fire vehicle through CARES Act funding and other outlets like the American Rescue Plan Act and the Eastern Action for Montana funding. It is equipped with 400 gallons of water, and the tribal council agreed the truck will stay with him 24/7.

"This truck stays with me at all times. That way, I'm available to hit the field at any time because the quicker I can get there the quicker we can put the fire out," Elliott said.

But mitigation efforts need to go beyond one new



**RIGHT:** Cory Cheguis, Custer County Department of Emergency Services officer, examines a map of active coal seams on the Northern Cheyenne reservation. Cheguis used a plane equipped with thermal imaging equipment to plot the seams. He hopes that his mapping efforts will translate into more funding for coal seam fire mitigation.

**BELOW:** Grass pokes through charred soil in a valley that burned during the 2021 Richard Spring fire.



**“We used to say fire seasons, but now we’re in fire years. It’s not a season anymore. It’s a year-long event.”**

CORY CHEGUIS | CUSTER COUNTY DEPARTMENT OF EMERGENCY SERVICES OFFICER

emergency vehicle. Along with hiring Elliott as fire protection director and fire chief, the tribe also hired enrolled tribal member Angel Becker as the tribal disaster and emergency services coordinator. Becker and Elliott work together to spread awareness and develop a protocol for the people of the reservation from wildfire disasters and coal seam mitigation efforts.

“There’s a lot of people who don’t know it or understand it,” Becker said about the dangers of coal seams igniting. “We want to get the word out, we really do — because it’s devastating.”

Becker said she thinks grants are the first step toward awareness of the issue of coal seams and informing people about the dangers they bring to the reservation. For many people living in Lane Deer, Becker said most don’t even know about this issue.

“I think that they’ve heard of coal seams, probably the majority of them, but never realize that they can burn on forever and can be as huge as this building — it blows my mind,” Becker said as she sat in her dou-

ble-wide trailer office.

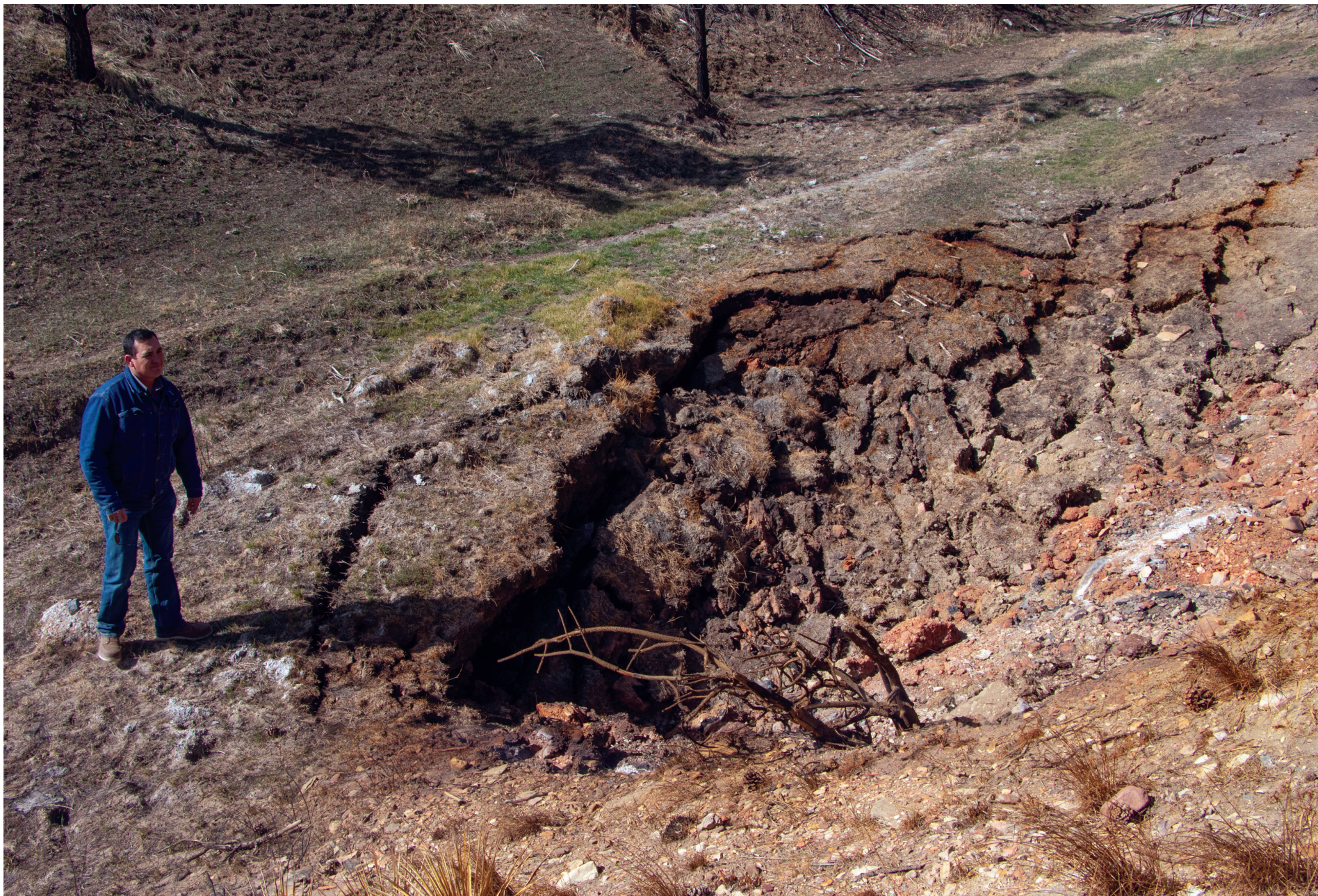
The proposed more than \$400,000 FEMA grant that targets coal seam fire mitigation efforts is still waiting for final review. Becker said the grant is a necessity to further research coal seams and begin the process of mitigation and extinguishing them — if even possible.

“Some of these coal beds are 20 to 40 feet thick,” Heffern said. Extracting the more than 200 actively burning coal seams requires a lot of labor and money that just isn’t there yet.

“We’re all stumbling through it,” Becker said. “But once we get that funding we’ll have a jumping-off point. We can establish a protocol on what we can do and start the process of fighting them.”

In late February, the Custer County department of fire services received a \$50,000 grant to map and gather data on the number of currently actively burning coal seams in the county. The flyover conducted by Cory Cheguis, Custer County Department





Cattle rancher Keene Bends examines a collapsed hillside on the land he leases from the Northern Cheyenne tribe. When coal seams burn, they destabilize the land around them and can cause large collapses.

of Emergency Services officer, used infrared cameras to identify the 239 active coal seams burning on the reservation.

Custer County and the tribe work together to fight wildfires in southeast Montana. Across four counties, there are 1,768 actively burning coal seams, according to data collected from the flyover.

"Our first fire of every year is a coal seam fire. It's the same place every year — the same coal seam every year," Cheguis said about a coal seam on Liscom Creek Road that borders the Custer National Forest. "It takes an hour and 15 minutes from the time we get paged to get down there, so you get there and it could be 500 acres already."

According to the BIA, firefighters are only aware and monitoring 59 known coal seams on the reservation. That leaves hundreds of coal seams going unwatched.

"I see the impact of fires every year," Cheguis said

at his office in Miles City. He recently got a flatscreen TV installed above his desk to better see the tiny red dots that scatter the screen. The dots represent a cluster of coal seams he identified during the flyover he conducted. The dots cover the screen like abundant freckles across the map.

"We used to say fire seasons, but now we're in fire years," Cheguis said. "It's not a season anymore. It's a year-long event."

Cheguis is hopeful that the proposed FEMA grant will make more people aware of the issue, and open the doors for more research and mitigation efforts toward coal seam. He said with climate change exacerbating wildfires across the West, wildfires are burning longer and igniting easier due to drier climates and short winters.

"On a hot summer dry day it takes nothing for the fuels to ignite from these," Cheguis said.

The approval of the FEMA grant would finally raise

awareness of coal seams and would benefit not only the Northern Cheyenne's efforts to mitigate coal seam igniting wildfires on the land but the surrounding areas too, Cheguis said. If nothing changes, southwest Montana could be in trouble.

Approximately 2% of the land in Montana has burned per decade since 1984 according to the EPA, and Montana is projected to see an approximately 95% increase in the severity of widespread drought by 2050, according to the 2015 America's Preparedness Report Card.

"In the last 10 years the [wild]fires seem to get worse every year," Cheguis said.

And Bends agrees. Driving through the land he ranches, the grass is beginning to lighten up, a welcome sight from its blackened state this past August. Burnt bases and fallen trees line the hilly landscape.

Bends said it seems like every decade another major wildfire threatens the reservation. He still re-

members the fire of '87 that hit his parents' land when was a teenager. He recalls spending long days with his parents moving cattle away from the fire creeping through the land. The memory of running through burning grass, feeling like his boots were about to melt his feet off.

Those memories are distant, but the reality is the same: fire is devastating the land. And they seem to be getting worse.

"There's a century it burned," Bends said, pointing to a line of burnt trees from the Richard Spring fire. "Which is kind of a sign that maybe things are intensifying — or changing."

For years, perhaps even decades, coal seams like on Bends' land can sit slowly burning beneath the surface. Bends does what he can to prevent the seam on the ranch from catching fire to the land around it. And for now, it's working. But Bends still worries that one day it will catch fire. And it just might.





## Assiniboine-Sioux project provides relief from water scarcity

STORY BY **TYE BROWN**

PHOTOS BY **ANTONIO IBARRA**

**S**HEET METAL clouds swept low, like a veil, over the parched rangelands north of Poplar, Montana. A strong wind followed, kicking up stinging torrents of fine dust. The air chilled. The bitter smell of the drought-stricken prairie lifted, and for a moment there was the promise of a brief spring rain.

But no rain came. The clouds—unbroken, spiteful—moved northeast across the plains, over distant ranches, fields of oil derricks, long abandoned homesteads and dry ponds crosshatched with white alkaline dirt, then dissipated into the blue distance as nondescriptly as they formed.

They passed, too, over Faith and Dun O'Connor's ranch. Faith, an enrolled member of the Assiniboine, has lived on a 3,000-acre plot 10 miles north of Poplar on the Fort Peck Indian Reservation since 1987 with her husband. In the time they've been there, drought conditions have led to a lack of snowpack and rain. United States Geological Survey measurements of research wells in the area show a downward trend in water depth since recording began in 2006.

The Fort Peck reservation, home of the Assiniboine and Sioux tribes, spans more than 2 million acres in the far northeast corner of the state. For most of its history, water accessibility has been a challenge in this region, in particular for farming, ranching and

personal use. Recently, worsening drought has made it even harder in the heavily agricultural region.

After more than two decades, a water treatment and delivery project is finally nearing completion. Within the next few years, it could provide thousands of households, ranches and farms with clean water. Residents hope this will mark the end of water insecurity that has made it difficult to live in the area.

According to the Montana Climate Office, Roosevelt and Valley Counties, which lie in the Fort Peck reservation, are in an area of extreme drought that will remain unchanged through 2022, resulting in major pasture losses and widespread water shortages.

What groundwater remains on the Missouri River

watershed, which runs just south of Poplar, is either naturally contaminated with high amounts of iron, manganate and other minerals, or is polluted by an underground oil brine plume resulting from years of drilling.

Parts of the Murphy Oil fields can be seen just across the Poplar River from the O'Connor property. White storage tanks rise out of the prairie like a taunt, a stark reminder of the environmental disaster poisoning their lifeblood.

"All of the trees here are dying, on the river all along the bottoms," Faith said. For as long as she can remember, she couldn't have houseplants. The water would wither them. Near her house, Badger Creek





**FAR LEFT:** Dun O'Connor fills a bucket of potable water as he talks to one of his granddaughters on the phone. O'Connor said his family is fortunate to have been tapped into the tribe's rural water supply system. "Groundwater is getting worse up here. It was polluted by the oil, and probably other things, too," he said.

**LEFT:** O'Connor pushes a group of bulls into a cattle chute before loading them into a pen and conducting semen checkups.

**BELOW:** Faith O'Connor checks the pressure on one of her home's water spigots. After 32 years of fighting a lack of potable water for personal use, the O'Connor household has recently been tapped into the tribe's rural water supply system.

once flowed through a marshy coulee dense with cottonwoods. Now, the trees are skeletons and the ground is desiccated.

Having lived on the reservation her entire life, Faith can't recall a time until the last few years when her family has had reliable access to potable water for their personal use. Drinking, washing dishes and clothes, and showering have all been challenging.

Then, in 2019, the O'Connors were eager to be tapped into the Assiniboine & Sioux Rural Water Supply System, which now provides their household with clear, clean water. A network of nearly 3,200 miles of pipes, the water system, processed through the Wambdi Wahachanka Water Treatment Facility near Wolf Point, delivers treated, potable water from the Missouri River to rural homeowners east and west along U.S. Highway 2, and all the way to the reservation's northern border some 40 miles away.

The rural water system is entering its 20th year of construction. Since initial funding for the project was approved by Congress in 2001, it has been built incrementally alongside the Dry Prairie Rural Water System, the project's off-reservation section servicing areas in Valley, Daniels and Sheridan Counties. After two decades, the historic water problems on the Fort Peck reservation could be solved.

Every year, the window for construction is tight. Often, the ground doesn't thaw thoroughly enough until late spring to dig the seven feet needed for piping, and recently, early cold fronts intensified by climate change have halted progress earlier in the year.

Now, the system is nearly finished. Mike Watson, head engineer of the project since its beginning, estimates the on-reservation section to be about 90% complete. If construction goes according to schedule, Watson said, every main line and branch connection should be tapped in by 2023 or 2024. According to Watson, a project of such magnitude had an estimated 20 year timeline since its inception, with a few buffer years on either side to account for speedy or halted construction.

As a child, Faith can remember her iron heavy well water running a burnt orange color before it ran dry entirely. She now has a 12-foot deep well next to her yard that has also gone dry. The handful of livestock wells on her shared rangeland 20 miles north, each between 100 and 200 feet deep, are also dry. A single gravity spring near the remains of Badger Creek was the sole source of relatively clean water on her property for years.

"My opinion on the water system, that's God's gift. And that ain't no bullshit," said Dun O'Connor. "Groundwater is getting worse up here. It was polluted by the oil, and probably other things, too. But that water system, that's God's gift."

The O'Connors are among the fortunate. A patchwork of properties near them already have the infrastructure laid under their land, but remain unconnected. North of Wolf Point, another string of rural residents are still waiting for the water. Around Lustre, Montana—an unincorporated reservation community about 35 miles north of Highway 2—decades of poor farming practices have caused unsafe levels of



**"My opinion on the water system, that's God's gift. And that ain't no bullshit."**

DUN O'CONNOR | RANCHER





**ABOVE:** Sandra White Eagle, the tribe's water treatment plant supervisor, checks the gauges of a water filtration control panel at the Wambdi Wahachanka Water Treatment Facility. White Eagle, a member of the Assiniboine & Sioux tribes, grew up near the Missouri River bottoms in Frazer. She remembers drinking contaminated groundwater from her family's well that tasted like iron.

**RIGHT:** Bill Whitehead, chairman of the Assiniboine & Sioux Rural Water Supply System, pores through statements and court documents filed on behalf of the tribe to preserve its water rights. Whitehead, 82 and a former state legislator, said the tribes have battled climate change for hundreds of years. "We don't compartmentalize our lives. Water is vital to our identity and culture," he said. "Climate change is a part of who we are, and it started with colonization."







Ashleigh Weeks, general manager of the Assiniboine & Sioux Rural Water Supply System, stands outside the tribal water supply offices in Poplar. After graduating from Montana State University in 2011 with an engineering degree, Weeks worked for the tribe's environmental protection office until 2019 before accepting her current position. As a child living five miles outside of Poplar, Weeks and her family battled groundwater contamination caused by years of oil drilling.

nitrogen to seep into a shallow aquifer, according to Deb Madison, director of the Fort Peck Tribes mineral office. Some in that area are also unconnected.

"The health effects are detrimental to babies that had nitrate laced milk formula," Madison said. High levels of nitrates in water can lead to infant methemoglobinemia, or blue baby syndrome, which causes an infant's skin to turn blue from lack of oxygen.

"People don't drink enough water," Madison said. Around the reservation, she said, "Water is just not a resource that's depended on for anything except maybe flushing your toilet and taking a quick shower."

Once the final connection is made, both the tribal system and the Dry Prairie system will service a total population of around 24,000, according to the water system office. This includes treated water running through city systems on the reservation in Poplar, Wolf Point, Brockton and other communities, as well as towns off the reservation. On the reservation, the water system will provide water to nearly the entire population of more than 10,400, save those in rural areas who choose to remain unconnected.

The rural water system is financed by both state

funding and directly from Congress, which renews the budget annually. For fiscal year 2022, the budget requested is \$3.3 million.

The U.S. Bureau of Reclamation, the federal agency which oversees water resources management, then completes annual indexing on predicted expenses before determining how much money is allotted to the tribal government. From there, the tribes bid for contractors to pick up the construction.

Ryan Newman, area manager of the Montana reclamation office, said project indexing for 2022 has been a challenge due to a recent spike in the price of construction material. "We adjust for inflation from year to year, and definitely the increase in material pricing over this last year has resulted in us having to take a deeper dive into how we go in and make those adjustments," Newman said.

"We're not stalled or delayed," he added. "But we definitely are going back through and working through the numbers."

The bureaucracy involved has led to mounting frustration for those still waiting to take advantage of the system. Noah Strauser lives just north of the

O'Connor ranch. The pipes needed to connect his house to the rural water supply were laid under his yard last year, but he's yet to receive any water.

The groundwater under Strauser's property has caused significant harm to his plumbing. In the last couple years, he said, he's had to replace his kitchen faucet half a dozen times due to corrosion. Water softeners have barely been able to mitigate the damage.

Strauser says he expects his residence to be connected by fall, but until that connection is made, he continues to buy his family's drinking water in bottles and gallon jugs. With a virtually unlimited amount of clean water so close, the financial frustrations of purchasing water and replacing pipes are amplified.

Ashleigh Weeks, project manager of the rural water system, spends her workdays at the water system office in Poplar addressing these concerns with individuals, coordinating with contractors, scheduling repair work and pressure tests along branch lines, and working with the Wambdi Wahachanka Water Treatment Facility.

"I hear about a lot of people wanting to move

home, moving back to their old farmsteads, putting in new homes because they can get good water now," Weeks said. "I think it has prevented so much economic expansion in a lot of areas because we didn't have the water."

Weeks was raised just east of Poplar, directly above the oil brine plume. Her personal memories of poor water quality growing up are shared by many from that area. "We had to haul water for drinking. We were constantly buying the smaller individual packs. And we'd drink a lot of pop," she said. "A lot of people have that story, that we grew up on pop, because that's all we had."

After graduating from Montana State University in 2011 with a degree in civil engineering, Weeks returned to Poplar and moved back into her childhood house once her father relocated to town. She worked for the tribes' environmental office until 2019, when she took her current position.

"I just wanted to use my degree to help," Weeks said. "It really feels fulfilling working for this organization, to see all the good that it does for the area."

In 2016, Weeks's residence was finally tapped into the system. She still remembers struggling with water issues as she started to raise her own family. She said her water often came out of the tap the color of rust.

"When I first moved home after college, I had a baby," Weeks said. "I tried to fill a little tiny baby tub full of water, and it was probably six inches, and you couldn't even see the bottom. It was like, I can't put my baby in this." Like Strauser, Weeks bought all of her water in town.

Construction of the rural water supply system is split into four phases. The first phase—covering the land east of the Poplar River to the reservation border, all along U.S. Highway 2 and areas around Montana Highway 250 to Lustre—are finished. The next three, covering a smaller combined area, are still under construction. The main lines are all in place, but they still need smaller branch connections to individual houses.

"It's the biggest thing we have in this area. I mean, there's nothing else of that magnitude or any type of engineering feat like that," Weeks said. "Through the plant and the entire distribution system, we're providing water to pretty much all of northeastern Montana."

The nucleus of the project is the Wambdi Wahachanka Water Treatment Facility, located about four miles north of the Missouri River intake. Weeks joked that the large brick building reminds her of a prison. It's an isolated structure flanked by barbed wired chain-link tucked beneath a patch of low hills. Travelers along the highway might find it unassuming. It almost blends into the topography. The backbone of the entire system carries out its essential day-to-day operations without pronouncement.

Through a complex network of pumps, tanks, filters and chemical injections, the plant has the capacity to treat millions of gallons of water per day depending on regional demand. In July, 2021, the plant saw a record production of 172 million gallons for one month, said plant manager Sandra White Eagle.

Rangeland fires exacerbated by worsening drought are leading to a much higher demand for water, which needs to be diverted by plant operators from residences to the hydrants used by rural volunteer firefighters.

"When the fire situation was happening last summer, we really tried to keep everybody accessible to





water, but that was kind of an issue,” White Eagle said. Managing pressure and flow through branch lines during fast moving emergencies like range fires is a challenge. “When they have a fire they’ll call us, we can make sure there’s enough pressure.”

The Wambdi Wahachanka Water Treatment Facility was dedicated in 2012. It bears the Indigenous name, Eagle Shield, of former tribal chairman Dr. Caleb Shields. The preservation of natural resources, water in particular, was a major goal of his tenure from 1991-1999. Shields died at 83 on the first day of 2022.

Bill Whitehead, chairman of the Assiniboine & Sioux Rural Water Supply System, was a friend and close associate of Shields. Whitehead, too, has spent five decades working with the state and federal governments to preserve Fort Peck’s access to water. Also a former chairman of the tribes, Whitehead used his clout to lobby Congress for initial funding for the proj-

ect. In 2019, he denounced the Keystone XL pipeline’s proposed construction beneath the confluence of the Missouri and Milk Rivers, immediately upstream of the tribal border and water intake.

“Our whole identity is the land, the water, the air. That’s part of who we are. It’s our responsibility in terms of treaty rights and seven generations,” Whitehead said, referring to the seven generations principle. The principle states that decisions made today should be done so with the goal of sustainability seven generations into the future. It’s a philosophy of generational stewardship Whitehead thinks is essential when discussing natural resources and climate change, especially as drought conditions dramatically worsen.

This year, the Fort Peck Tribes Water Resources Office updated work for its drought mitigation plan. The plan, originally written in 2005, was amended to

analyze more recent data of drought stages, indicators and impacts. It also proposes eight new drought monitoring stations across the reservation set up in conjunction with the Army Corps of Engineers, according to Arnie Bighorn, the tribes director of water rights.

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Early in the morning on the O’Connor’s ranch, Faith took a moment away from breakfast to take her pickup for a lap around her property. She wove the truck through a stand of bare cottonwoods, across the dry remnants of Badger Creek and remarked on a dead thicket of junberry bushes near her gravity spring.

“It was just two years ago. Now look at all the dead stuff,” she said. “It used to be so thick in here you couldn’t see.” Faith said in the spring, the marshy creek bottom used to reliably sink a vehicle in a foot

of mud. Now, her vehicle kicks up a trail of dust as she drives along a fresh two-track path.

Drought data for research and development purposes can’t tell the O’Connors anything they haven’t experienced directly for years. They fear that as demand for water through the rural water system continues to rise, their free commodity may eventually begin to cost them.

Returning home, Faith parked her pickup by the meter pit in her yard. It was still early in the morning. “If there’s limited resources, you’re going to have to pay,” she said. “And water’s going to be one of the most expensive things, because you have to have water.”

She poured a cup of coffee, filled a glass to water a plant on her windowsill and washed her hands. “If I have to pay for it, fine. At least I’d have it,” she said. “If push comes to shove, I’d rather have water than anything else.”





**FAR LEFT:** Faith stands next to her 1975 Ford F-150 looking out into her family's 3,000-acre drought-stricken land. After years of living on the Fort Peck reservation, Faith can't remember a time when her family had reliable access to potable water for personal use.

**ABOVE:** Faith walks through her family's ranch carrying a platter of breakfast biscuits to her husband, Don, and son, Lander, working in the corral.

**LEFT:** Faith drives past the skeletons of dead cottonwood trees along Badger Creek on her property north of Poplar.





# BANKING ON SNOW

## Niitsitapi use old tools for worsening winds

STORY BY **GRIFFEN SMITH**

PHOTOS BY **JACK CONDON**

**T**HE WIND that blows across the Blackfeet Indian Reservation is so severe it's iconic. During the winters, it tends to blow snow clearly off the land. While the mountains framed the western horizon with blue and gray ice-capped peaks, most of the frozen ground in the grasslands below was bare of snow — void of the moisture it could have absorbed later in the year.

For instance, on a late March day, the landscape across the barren sections of the land displayed a winter phenomenon. The frozen ground laid bare, brown from earth and grass.

However, snow still noticeably clung to the eastern

sides of hills and low-lying streams, in the shadows and hidden from the blowing winds. The snow followed the natural topography of the rolling plains.

As the winds, fueled in part by warming temperatures, grow stronger, tribal members are trying to emulate the natural shelters to keep the snow from blowing away.

"Water is life, and we have the best water in the world," said Wyett Wippert, a hydrology student at Blackfeet Community College. "We just need to work to keep it here."

Wippert paced the perimeter of a 10-foot-wide boulder resting on a creek bed in a field of yellow bunchgrass. As a member of the Niitsitapi tribe, he re-

called a years-long span when the field east of Browning had been dry after strong winds and early warm days ate the snow away.

Last fall, Wippert and the Blackfeet Environmental Office built two snow fences along the former wetland. The goal: test fence designs that would retain the moisture longer into the year. It seemed to work like the low-lying hills on the plains, while the rest of the ground was uncovered, the two fences built before winter accumulated a 30-foot-wide circle of snow.

Winter weather is a guarantee for roughly six months on the Blackfeet reservation, depositing roughly 80 inches of snow annually. However, its sensitive water cycles are being increasingly disrupted by

climate change. Wind speeds have been rising and a healthy snowpack has not been guaranteed, causing widespread drought and an increase in wildfires.

As spring returns to the Blackfeet Nation, Wippert and the team are looking to protect sensitive ecosystems from worsening winds and drier summers. Projects have whirled about the reservation, leading to beaver mimicry dams, student snow fence designs and buffalo reintroductions.

"We created an ecosystem here," Blackfeet Climate Change Coordinator Termaine Edmo said as she watched the water ripple from the wind. "Three years from now, this place will have green grass and wildlife."





**LEFT:** Tribal climate adaptation specialists have erected snow fences to help retain moisture in fragile wetland ecosystems on the reservation.

**ABOVE:** Wyatt Wippert, a hydrology student at Blackfeet Community College, helped build a number of model snow fences behind the college.

**TOP RIGHT:** A snow drift shelters from the wind behind a snow fence on a pasture along Highway 89 south of Browning, Montana.

**BOTTOM RIGHT:** In summer 2021, Tyrel Fenner and Browning High School students built a snow fence using willow branches gathered by community members.



**“Water is life,  
and we have the  
best water in the  
world. We just  
need to work to  
keep it here.”**

WYATT WIPPERT | HYDROLOGY STUDENT  
AT BLACKFEET COMMUNITY COLLEGE

But some on the reservation are already feeling the impacts of climate change. Residents have recently lived through out-of-season fires, drought, merciless winters and extreme wind events. With residents concerned for more hardships living off the land, the environmental office hopes snow fences could be the spark needed to retain its wetlands.

Browning and most towns along the Rocky Mountain Front are known for the wind. The Great Falls National Weather Service branch previously listed its data station on the reservation near East Glacier as Montana’s windiest location.

Tracking wind trends are limited, especially in Browning, where there is about 15 years of weather station data, according to Kyle Bocinsky, director of climate extension at the Montana Climate Office.

Despite a lack of pinpoint data, Bocinsky calculated a wind trend by using daily weather forecast maps for the past 43 years. What he found was a clear and concerning trend.

“What we see is exactly what people are reporting, that we’ve had a really measurable market increase in wind speed during many of the months of the year,” Bocinsky said.

Spurred on by the winter chinook winds, the region’s wind season happens during the winter. Wind

carved snow banks could get dozens of feet tall with ease. Some of that snow, however, gets swept off the landscape and can stay suspended long enough in the atmosphere to warm into a gas.

Sublimation, the direct transfer of a solid object to a gas, happens when snow is held in the atmosphere long enough for the sun’s heat energy to transform the particles into a gas.

“It feels like the snow is melting, but actually the snow is evaporating,” Bocinsky said. “You get snow disappearing faster. You do get more blowing snow, although I don’t know if you would have the situation of snow just going away.”

A 2009 study from Canada’s Water and Climate Im-

pacts Research Centre found high-elevation mountain ranges in western Canada lost 1-4% of its snowpack from sublimation alone.

Researchers said that number increased in open spaces, and faster winds would likely take more snow off of the ground. Bocinsky’s data found the most accelerated wind speeds happened during the transition from winter and summer, significantly increasing in September through November and January through March.

The Blackfeet reservation’s average wind speed in March increased from 14 mph in 1979 to 18 mph in 2022. November’s average speed increased from 16 mph in 1979 to 19 mph in 2022. Bocinsky attributed





Two Browning High School students work together to weave branches into a snow fence with Tyrel Fenner's guidance.

the higher winds to the growing temperature differences, known as a gradient, between the mountains and the plains.

"Temperature gradients is one of the main things that drives wind," Bocinsky said. Specifically, if there is a really hot area near a cold area, that creates wind blowing in one direction, Bocinsky said. These temperature conditions are common in mountain borders. "So people on the Front Range feel the wind pretty constantly because of that temperature gradient and that elevation gradient."

Many experts predict the extreme winds will become more common over time, according to the Trotter Institute for Sustainability in Engineering and Design at McGill University in Montreal, Canada.

Snow breaks or fences have been primarily used to control snow banks. The barriers are often placed in single file rows, facing toward the wind (Browning's wind comes from the west) or on the spine of ridgelines to moderate the height of the snow. Without it, snow can fill divots or envelope roads and rail lines.

Wind breaks in the form of fences or trees are com-

mon at remote homes across the reservation. The fences have also become valuable assets for saving water and protecting livestock.

Joe Kipp, director of the Blackfeet Nation Stockgrowers Association, recalled the unpredictability of snow each year. In 2018, an eight-foot snowstorm blanketed the reservation, forcing ranchers into a scramble to secure their livestock amid giant snowdrifts and low visibility.

Kipp, who has ranched near the Rocky Mountain Front for 40 years, hastily built snow fences to prevent his cattle from getting buried in the banks. The strong winds and whiteout conditions could wreak havoc on livestock, and make any travel hazardous.

"We were lucky, we only lost a couple calves," Kipp said. "Those who are getting into the industry now are really struggling. Some couldn't get to their cattle at all."

Other years, Kipp said the ground on the plains has been bare in late winter. The snow that does fall gets drained by rain-on-snow events and sublimation.

The Browning-based Chief Mountain Hotshots fire crew warned of the impacts from the powerful winds

that whip the primarily grassland habitat. Jovon Fisher, the Chief Mountain interim fire chief, said the winds have picked up the snow in huge gusts, making wildfires easy to ignite and spread.

"It is always windy up here, but we are having these 'wind events' of dangerous speeds that will flip over trailers and knock over power lines," Fisher said. "I know it's been a change, and it's been changing rapidly."

It is a worst-case scenario — a knocked over powerline that ignites a grass fire — that has already happened twice on the same plot of land in 2021, first in March, followed by a burn in early December.

Fisher, who also volunteers for the local fire department, picked up the phone in the middle of the night Dec. 2. A Glacier Electric Cooperative powerline fell at 3:30 a.m.; dry ground sparked immediately. The wind, measured between 80-90 mph gusts, fanned the flames.

"That's over by my cousin's land," Fisher said. "I got straight into my car, and by that point my whole team was on their way too."

But the damage had already been done. Rick Whit-

ford, a rancher whose property the fire spread into, watched as the blaze took out his hay supply and horse barn. The fire, which was over by the daytime, sparked in the same area as the March 2021 burn, scorching the same weakened grasslands.

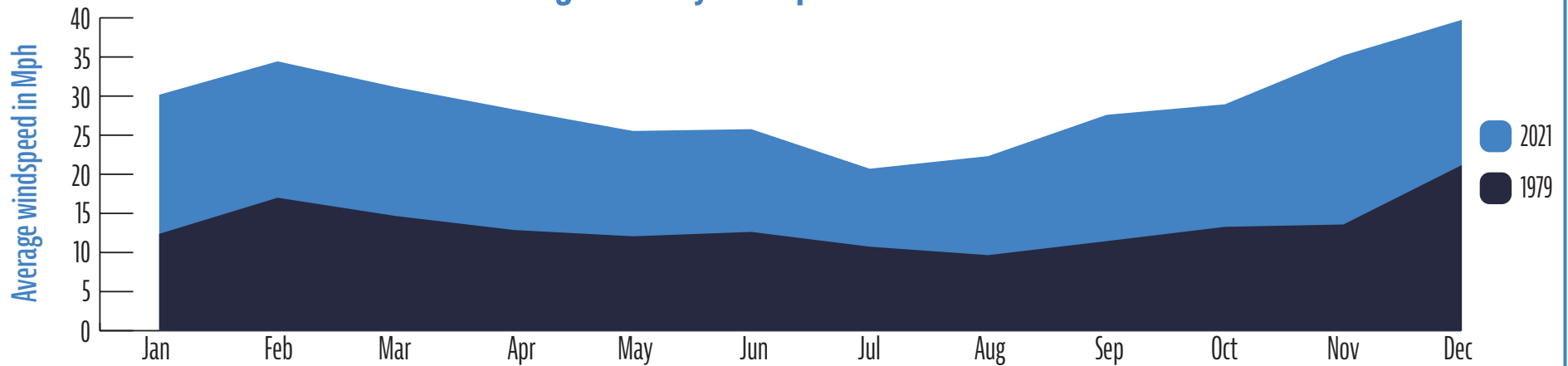
Unpredictable weather has become a centerpiece of the Blackfeet Nation's Climate Change Adaptation Plan, which was approved by the Blackfeet Business Council in 2018. The action plan details climate observations made by tribal members, and the future effects that will impact the land.

Climate change work has been in progress on the Blackfeet since 2017, according to Gerald Wagner, who has led the Blackfeet Environmental Office for 27 years. Wagner has watched environmental work expand from a few essential programs to developing more partnerships with the Environmental Protection Agency and the Center for Large Landscape Conservation.

"We have to work together, there is no one person or group that can do this," Wagner said. "We've got to all be in this together to slow it down. You know, it's



## Average monthly windspeed in 1979 and 2021



Data from the Montana Climate Office shows wind on the Blackfeet reservation has increased since 1979 as more unpredictable, dangerous wind events hit the region. Wind speeds accelerated the most during the fall and spring months, which experts say have the greatest difference in temperatures between the mountains and the plains.



**LEFT:** Tyrel Fenner, a tribal climate adaptation specialist, holds a willow branch while teaching a group of high school students how to weave branches into a snow fence. Fenner teaches climate education to high school and college students.

**ABOVE:** Blackfeet Climate Change Coordinator Termaine Edmo began her environmental career as a "Climate Warrior" with a Blackfeet internship program for tribal youth working to solve climate change problems.

already here. We ain't gonna prevent it."

Now, Wagner and his team are conducting studies on climate change's impact on human health, while leading Earth Day celebrations to engage tribal members to join the sustainability movement.

The plan also lists the possible responses by the tribe, and the significance of the land the Blackfeet have watched over for thousands of years.

"Observing weather patterns and changes in those patterns has been a part of Niitsitapiiksi, The Real or The Original People, existence since breath was first breathed into our lungs by Creator," the plan reads. "Within our homelands, we were the first climate scientists or climatologists ... the first stewards of the land and water and all that lived on the land, flew in the air, or lived in or around the water."

Despite the robust work, Wagner said the effects of

climate change are here. Wagner attested to a changing spring season. There are an increased number of warmer days in the spring dissipating the snowpack and expanding the growing season.

A majority of the department's funding relies on grants, many long-term. The office has gotten hundreds of thousands of dollars from federal agencies like the Environmental Protection Agency, but recently lost out on other grants that would have expanded their study on cultural effects from climate change.

The department, however, has embedded itself into decisions on ecosystems from other tribal departments like forestry or agriculture.

Much of the Blackfeet economy comes from farming and ranching, which uses 60% of the land on the reservation, the number one economic driver where many work to break even. The plan said the risk of los-

ing healthy grasslands is a high priority.

Edmo, the climate change coordinator, has been responding to environmental problems in a hands-on approach since 2018, when the adaptation plan was introduced.

She was the first employee hired for the climate office, and often the only climate employee when the grants don't flow in. A member of both the Niitsitapi and Shoshone-Bannock tribes, Edmo has worked to use her traditional upbringing into the ecological restoration work she leads.

"I'd like to think of my father, who is a little hesitant to mainstream climate change, but understands our traditional practices," Edmo said. "That's how we can do our outreach."

Divided up into different sections like wildlife and

water, Edmo partners with agencies across the reservation. She has so far focused on the nation's wetlands, installing beaver mimicry dams along the Willow Creek watershed to keep water in riparian areas.

Edmo also teaches the traditional way of harvesting bison, using a herd the tribe established in 2022. The day after a harvest, her arms hung sore from taking apart the bison. The next day she is in her office writing grants for potential projects.

The environmental office has taken notice of the wind problem. In fall 2021, the climate office partnered with the Blackfeet High School and Blackfeet Community College to design and build wooden snow fences. Just outside of Browning High School, there are three types of snow fence prototypes framed with two-by-four wooden planks.

Tyrel Fenner, a tribal climate adaptation special-





Snow lingers in the mountains of the Rocky Mountain Front, but the plains beneath have been stripped of snow by intensifying winds.

ist, carefully weaved willow branches into the third snow fence. Fenner picked up the trees from a family friend's property.

Recently completed, the thicket of the branches secured the windblock into place, a practice Fenner attributed to Traditional Ecological Knowledge — using tribal practices for conservation work.

"It's great because we can use materials right here in our backyard," Fenner said as a group of high school students walked over to help fill in the willow fence.

Fenner, who works for the non-profit Piikani Lodge Health Institute, has teamed up with the environmental office to offer climate change education to high schoolers and the college students.

Because the wind always blows from the west, the snow protected by the fence is always to the east. The high school students helped build and monitor the snow levels with steel posts lined up behind the fence, known as the fetch. When the students aren't around, Fenner recruits his nephews to come help him.

As Fenner worked with the high schoolers to weave

willows, he said the snow fences would be best for small wetland ecosystems.

"We call them pothole ponds, because they have no inlet or outlet," Fenner said. "Lots of them can't keep any water into the summer, and that really starts to affect the animals looking for a place to drink."

East of the tribal college, the two fences on the edge of a wetland collected enough snow to hold water in the shallow channels that criss-cross the Willow Creek watershed. The barriers were not moved over winter, and the snow naturally hydrated the section of creek.

Wippert, the student hydrologist, couldn't help but crack a smile talking about his project.

"It felt really cool to see it in action, we've been working on them for months," he said. "You can do this anywhere, bringing the water back."

Wippert, who grew up in Browning, first went to Missoula College, earning a degree in diesel mechanics. He came back to his hometown for work, but

work was tight because of the pandemic.

He eventually got a job at the Blackfeet Solid Waste Management as a garbage driver during COVID. But he knew there was something else out there for him. As an outdoorsman, Wippert said he wanted to work with the natural world around him.

He enrolled in hydrology school and found his new passion through the Native Science Field Center, which works out of the tribal college and gives informal ecological education to children in kindergarten all the way through high school.

As a fellow at the center, Wippert helps manage the snow fences and helps run programs for young people. Wippert doesn't know where he's going to go once he graduates in May, but he plans to improve water systems in Montana.

While the fences worked, there are still setbacks to having them mass-produced. The fully-wooden wind fences made by the field center cost roughly \$2,000 to build, partially from the sharp increase in wood prices. The machine plastic option ran for a few hundred

dollars cheaper, but is less durable over time. The willows are a cheap option, but require more time to weave into place.

No matter the final design, Edmo's goal is to give out the schematics to members around the reservation, on top of adding more in places the team wants to restore. Since fences become obsolete in the summer, a mobile version — allowing people to move the fence to different spots throughout the year — would be ideal, she said.

Going into the summer, the office looks to hold two environment celebrations in May to continue to make adaptations to their ecosystems when they come. Edmo said an important point in the plan is that the office can make changes as needed. She said no matter what comes next, she said the climate office, and the Niitsitapi nation, will be there.

"It is daunting work," Edmo said. "We know that there is suffering in our environment, but we are adapting, like our tribe has for thousands of years. We are here to keep going."



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TO THE  
CHALLENGE.**





# THE PRICE TO

A back-breaking business gets tougher amid

STORY BY JACOB OWENS





# PAY

## drought

PHOTOS BY KEVIN MORIARTY



**LEFT:** Joey Kill Eagle opens a gate leading to another dry section of his range unit. The winter's scant snowfall left only dried grass and dirt on the pasture.

**ABOVE:** Kill Eagle's 30-acre hay field was left barren last year after a grasshopper outbreak. Swarms of grasshoppers ravaged ranches across the Fort Belknap reservation, devastating much of the hay crop.

**IT'S A TOUGH** business decision.

Standing by on a breezy March afternoon on the Montana Hi-Line, Joey Kill Eagle loaded 33 head of his cattle into an aluminum livestock trailer. Once they are sold, his herd will be at a historic low.

It was an inevitable decision for the rancher. Years of drought had driven down water availability and sent hay prices soaring in an already tumultuous industry. Drought has become the latest issue and is driving ranchers to sell. His hand had been forced. Kill Eagle, 59, with 25 years of ranching experience, couldn't sustain his existing cattle herd.

"It's just a business decision you have to make, to do what you got to do and go in the direction that is best at the time," he said.

Kill Eagle, who is both Aaniiih and Nakoda, measures his words carefully as he talks of rebuilding the herd when things improve. He would rather remain hopeful. The year is young and the weather could improve.

But scenes like this will only become more com-

mon as drought strengthens its grip on Montana's Hi-Line, affecting areas like the Fort Belknap reservation, home to the Aaniiih and Nakoda tribes. Drought means less water. It also means more grasshoppers – a lot more. Collectively, this leads to hay shortages, compelling ranchers to thin their herds.

Ranchers throughout northcentral Montana, including those on the Fort Belknap reservation, are reporting dramatically reduced herds. Some ranchers, though generally optimistic, harbor concerns about the future of their iconic way of life.

A business model reliant on plans is finding it must constantly reshuffle them.

After a devastatingly dry 2021, ranchers on the reservation may be in for another rough year. The only guarantee for the state's ranchers is more change.

The Crascos and their century-old ranching business are caught in the crossfire, with their herd of roughly 500 cattle that would be around 1,000, had it not been for the drought.

Juanita Cole Crasco and her husband Jake Crasco



ranch in the southeastern portion of the reservation, near the Little Rockies. Their home sits on a plot of land dotted with memories of the past, including the charred wooden remains of the home Jake grew up in.

The land was allotted to the Crasco family in 1921, and Jake has only been away from it for two of his 68 years.

Last June, Juanita Cole Crasco, “Cole” being her maiden name, departed the ranch for some consulting work in Browning. That morning, her apple tree near the porch was full of pale pink blooms and little green apples were emerging from its branches.

When she returned two days later, she remembers feeling sick to her stomach at what was left of the once-beautiful apple tree.

“I was unloading stuff and I just happened to look up, and I looked at my tree and I said, ‘What in the hell?’” Juanita, a member of the Aaniiih Tribe, said.

The tree now stood stripped to its bare brown branches with a few budding green apples left hanging, naked without their blossoms. She said the brown and black plywood panels in her courtyard swarmed with green and brown grasshoppers of varying sizes.

Grasshoppers wreaked havoc across the reservation, leaving some areas relatively untouched, while wiping out much of the year’s hay crop in others. The invading swarms go “hand in hand” with drier conditions, according to Tim Vosburgh, a wildlife biologist at Fort Belknap’s Tribal Fish and Wildlife Department.

Last year, one of Kill Eagle’s hay fields was decimated by grasshoppers. Swarms chewed through the field, leaving only hay stalks that stood just a few inches high. Nothing was left to harvest.

The field was ravaged to the point that it resembled one of Kill Eagle’s successfully harvested golden hay fields along People’s Creek. Kill Eagle’s fields are flood-irrigated by the creek, as is evident by the orange outlines of willows and larger gray cottonwood skeletons that occasionally slice through the fields.

While rudimentary, his flood irrigation outlasted last summer’s drought, but dryland hay fields to the south were not so fortunate.

“I went out for the Fourth (of July) and there wasn’t any hay bales out there,” Kill Eagle said. He recalled thinking, “Man, these guys really ended up with nothing.”

Rolling yellow pastures sit below the Crasco complex. Yearlings occupy one pasture and 2-year-old heifers occupy another. Jake parks his black bale feeder truck in a third.

The cattle there are 4-to-8 years old. Soon Jake cuts a dry bale of hay loose. Typically, he’d roll it out like



**TOP:** Juanita Cole Crasco and Jake Crasco stand with their 4-year-old grandson, Koulee, in their backyard. Ranching has been a part of the Crasco family for generations, and they hope to pass down the tradition. Juanita is a member of the Aaniiih tribe, while her grandson and husband are Nakoda tribal members.

**BOTTOM:** Cattle drink from a stock tank supplied with water from Crasco’s well. Jake Crasco has had to find solutions to increased drought on the Fort Belknap reservation.





Jake Crasco prepares a round bale of hay that he will spread out to feed his cattle. Crasco purchased this bale at a significantly higher price after grasshoppers and drought decimated his hay crop last year.

carpet, but the hay is so dry that it falls loose when its binding is cut. To spread the hay out for feeding time, he boards a John Deere tractor, as 225 head of cattle eagerly approach it.

When Jake nears the end of the line of hay, he steps away from the tractor's roar to spread the remaining hay by hand, ensuring the cattle have space to munch. The hay is dry, but it's purchased from elsewhere.

The Crasco Ranch typically yields 60% of the hay needed to feed its cattle. Last year, the hay fields produced nothing.

This rise in the demand for hay coincided with a considerable price hike.

Juanita said within one season the ranch went from paying roughly \$125 per ton of hay to as much as \$400. The current herd needs about 750 tons of hay, a potential \$300,000 expense.

Kill Eagle has also seen hay prices rise to about \$300 a ton. But he has avoided buying hay at that rate by selling cattle and stretching his hay harvested last summer.

"This here's the highest it's ever jumped so much,"

he said.

And it's increasingly challenging for ranchers to locate hay in the state.

Kill Eagle has been looking to purchase more. However, he cannot find a semitrailer load of hay in Montana, so he's turned his focus to Nebraska. He was told it would cost \$5 a mile to deliver it, which would total nearly \$8,000 to reach his property.

Jay Bodner, executive vice president of the Montana Stockgrowers Association, estimated that the lack of forage last year caused a 25% reduction in the state's livestock.

He said many existing drought plans were "stressed" due to the severe lack of precipitation last year forcing ranchers to make early decisions like selling off cattle. In fiscal year 2021, about 881,000 cattle were sold statewide, a 21% increase from 2020 sales, according to data provided by the Montana Department of Livestock.

The lack of forage also impacted calf sale weights. Bodner said calves are normally weaned from their mothers around late October, but last year some were

weaned by August and sold earlier.

"So you know, instead of selling a 650-pound calf or 600-pound calf, you're selling a 300- or 350-pound calf," he said.

Bodner said most of the state's ranches are family-owned, with plans to pass them down. These ranchers have a history of dealing with drought and weather variability, he said.

"I know our Montana ranchers are extremely resilient and great stewards of the land," Bodner said in an email. "I am confident they will manage the land in the best way possible."

Kill Eagle saw himself as a rancher when he was younger. He plans to pass his operation to his 18-year-old son one day.

The Crascos also plan to keep the ranch alive with their grandkids taking the reins. These desires may seem oblivious to the region's long-term drought concerns, but Juanita is well aware.

"Bottom line, people need to start making changes for the future," she said, "because this drought not only just affects our water and our grass growing, but

it has an impact on the soil."

Kill Eagle has a range unit, trust land for grazing, of about 5,000 acres, which he shares with his uncle. It's not even the largest of the reservation's 47.

On a recent afternoon, Kill Eagle drove the range unit's dirt roads in his silver GMC truck. Looking through the cracked windshield as the truck bounced along, the land seemed to expand into the horizon.

The area opened up to a land of muted yellow grass, sagebrush and clouds, with the dark silhouettes of the Little Rockies and Bears Paw Mountains looming in the distance. After Kill Eagle passed through a prairie dog town littered with old, sun-bleached cow bones, he soon arrived at a canyon of sorts, which is home to Mud Creek.

Kill Eagle said this creek sustained his cattle herd last summer, with its occasional watering holes. However, other ranchers weren't as lucky.

The tribes spent close to \$100,000 on water hauling last summer, according to Warren Morin, the Fort Belknap Indian Community Council's land commit-





Jake Crasco stands on the back of his feeder truck while looking over his grazing cattle. As drought continues to ravage Fort Belknap, ranchers like Crasco have been forced to shrink their herds.

tee chairman that year.

However, it's unclear how much that service will be available to ranchers this summer.

Tribal president Jeffrey Stiffarm said the government was restricted from using American Rescue Plan Act funds to haul water, so money was taken from other programs, including volunteer fire. This expense prevented the government from providing feed over the winter, according to Morin.

Kill Eagle drove through the flatland and approached a reservoir near Mud Creek that had some snow melt puddled in its center. On its southwestern edge was the skeleton of a cow that had gotten caught in the mud and died in a previous dry year.

This reservoir, a scene of death and drought, has seen floods, too. In 2011, a flood washed out reservoirs meant to hold thousands of gallons of water for livestock, according to Kill Eagle.

The long-term climate pattern in this portion of

the state has changed a lot since then.

Months with high precipitation in northcentral Montana before 2000 often saw up to four inches and occasionally more. But wet months since then are struggling to reach that, according to data from the Western Regional Climate Center.

Jim Brusda, a lead meteorologist with the National Weather Service in Great Falls, said drought in the state's northcentral region is only getting worse, with many months of precipitation well below average.

Brusda said in recent years the driest months received about one-fourth to one-half inch of precipitation on average, which has little impact, especially in the summer. "We need our wet years to be five inches or six-inch rainfall (per month)," he said about the months from April to June. "Our wet years are running around two inches or three inches."

He also pointed out that in years of both El Niño, when the ocean is warmer, and La Niña, when it's

colder, there's generally below average precipitation in the region. This suggests the region needs more years when ocean temperatures remain steady.

In 2020 the National Oceanic and Atmospheric Administration cited a passage from the book "El Niño Southern Oscillation in a Changing Climate," which predicted extreme El Niño and La Niña occurrences may become more common due to climate change.

Extreme El Niño and La Niña occurrences may start happening each decade instead of every two decades in "aggressive greenhouse gas emission scenarios," according to the article posted by NOAA in 2020.

The current situation has further inflamed tensions between the Bureau of Indian Affairs and ranchers on Fort Belknap. Many ranchers pay the BIA annually for range unit leases for summer grazing.

The BIA granted the Crascos more time this year to determine if the water on the land is enough to sus-

tain their livestock.

Currently, the Crascos pay more than \$100,000 for the land they lease via range units and private leases.

Depending on the state of the land, they could either keep their range units this summer or sell more cattle and move onto smaller pastures. If their cattle return to the range units and there is insufficient water, the Crascos could be out tens of thousands of dollars and have to move their cattle.

Mark Azure, the Fort Belknap Agency BIA superintendent and former tribal president, said a soil conservationist from the regional office surveyed 10 of the units last fall and found the land was suitable for grazing.

But Morin, a council member and self-described outdoorsman, disagreed with those findings, saying some units in the reservation's western side may have to be closed.

Azure said the agency plans to examine the units





**FAR LEFT:** Skeletal remains of a cow stuck in the mud lie in a nearly dried up reservoir on Joey Kill Eagle's range unit. The reservoir was washed out in a 2011 flood and cannot hold the amount of water it once did.

**ABOVE:** Crasco stands in the doorway of the well he installed on his ranch. Approximately 13,000 feet of underground pipe provides water to seven different pastures.

**LEFT:** Jeffrey Stiffarm, president of the Fort Belknap Tribal Council, and the tribal council are searching for solutions to support ranchers during extended drought with limited financial resources.

again before the fall when the weather cooperates.

Tribal reservations are typically held in trust by the BIA but there's disagreement about the agency's role. Some ranchers assert that the BIA has a responsibility to provide land with water, while Azure insists the agency is not responsible for providing water to range unit permittees.

He is aware of all the criticism lofted at the BIA.

"I grew up with some of those guys, I know those guys," he said. "I feel for them. But you know, I can only do what I can do."

These efforts included purchasing some stock tanks for the range units, according to Azure.

He said a problem is low funding, which contributes to less staff. Years ago, the agency had a staff of roughly 40 to 45 for the reservation. Now that's down to about 21, according to Azure.

Azure said there are programs through the federal Farm Service Agency and Natural Resources Conser-

vation Service to help decrease the cost of water development. Kill Eagle is aware of these programs, but he said costs to repair the washed-out reservoirs and set up a watering system were too high.

Kill Eagle is primarily frustrated with the BIA but also with the tribal government. He said neither understands the needs of ranchers.

"They just care about themselves," he said. "All they ever worry about, they don't have any interest in this land. All they care about is paychecks and pay the rent, mow the lawn. They don't know what it's like to live out in the country."

Kill Eagle, who ran unsuccessfully for the tribal council last fall, said he ran because the council needs to better represent ranchers and farmers.

Stiffarm, who was elected to a four-year term last fall, sits behind his dark brown desk. Behind him is a painting of a bull elk in the foreground and the flowing Missouri River off in the distance with blue and

orange skies.

Stiffarm, wearing a purple golf shirt and gray vest, mostly listened as council member Morin discussed the current situation with the drought. He shifted periodically, his chin occasionally resting in his hand.

He said the BIA could assist more with water development, but also added that the local and statewide BIA officials are middlemen. The best way to get support is by lobbying for it in Washington, D.C., Stiffarm added.

Jake Crasco, a member of the Nakoda tribe, is not optimistic about the ranchers still in business if the drought continues.

"If this thing goes on another year, there'll hardly be anyone around," he said.

Jake, a soft-spoken man with a graying mustache, is always looking to improve his ranch through a systematic approach, whether it's the maze-like system

in his barn to deal with calving heifers or his summer plan to install frost-free tanks for his well. The yellowish gloves and boots he wears have been blackened over time with work.

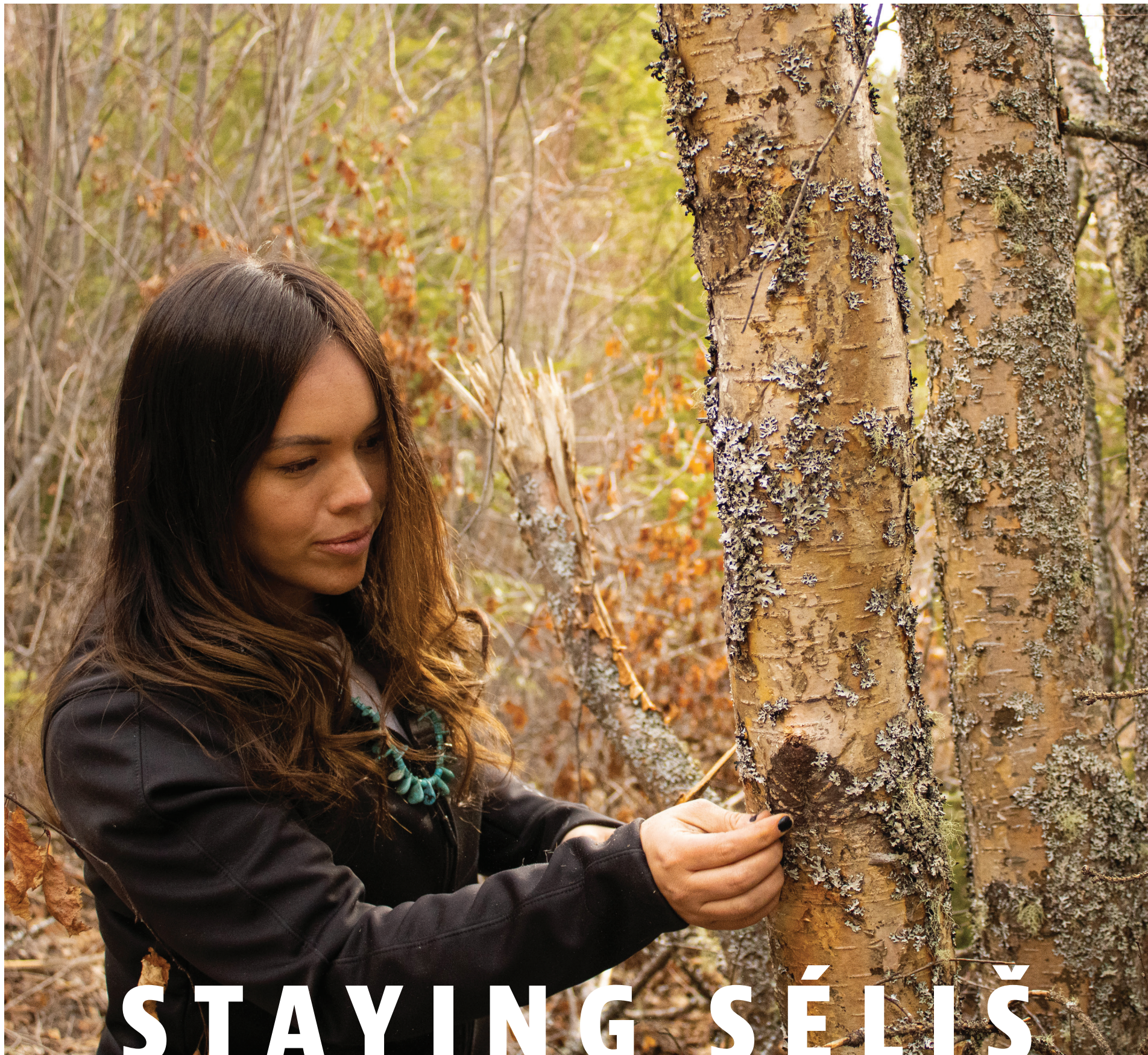
As night nears on the evening of March 20, he comes inside from the lip-chapping wind for a quick dinner of homegrown beef, carrots and potatoes, along with store-bought bread and horseradish. Dinner is set on the Crascos' green-gridded dining room table with colorful star quilts folded off to the side and a bright teal wall overlooking it all.

One of the pair's young grandsons joins them for dinner, a yellow tablet not far from him. Juanita refers to him as one of the "fifth generation ranchers."

Before long, Jake heads out into the crisp twilight to feed more cattle. He's carrying on a family tradition Juanita is determined to keep alive.

"We're not going to quit," she said. "We will not quit."





# STAYING SÉLIŠ

Protecting tribal traditions amid a changing landscape

STORY BY **SABRINA FEHRING**

PHOTOS BY **REED LINDSEY**





**LEFT:** Aspen Decker examines the thin bark of a birch tree before cutting and harvesting a large square slab. The bark is then cut and weaved into baskets, different barks create unique aesthetics and textures.

**TOP:** Decker spreads her arms while showing her class at St. Ignatius High School the traditional sign for "Sxáslqs," the Séliš word for moose. Despite the decline in Séliš speakers on the reservation, Decker hopes to revitalize the language through her teaching.

**BOTTOM:** Decker's daughter, Maninłp Xwetłcin, etches her name into the freshly skinned birch tree while harvesting bark with her family.

**T**HE STUDENTS had to hurry. During a morning in March, a thick layer of snow covered the high peaks of the Mission Mountains. There were bits and pieces of snow surrounding the grounds of St. Ignatius High School.

But most of it had melted away, so time was short. Aspen Decker, who teaches Séliš language and culture, abides closely to her tribe's culture as taught by her elders. That means the time is short to tell coyote stories, which can only be told when snow is on the ground. Due to climate change and milder winters, there are fewer days with less snow.

"They've always told us when there's no snow you can't tell coyote stories, or the snake will bite you," Decker said. "So, we have to choose whether to listen to what our elders want or keep coyote stories alive even if there is no snow."

Coyote stories are the Séliš-Qlispé way of teaching culture and traditions.

"Coyote is a trickster guy who's doing different things to help humans," Decker said. "There are morals to the story of what to do or what not to do."

Decker is one of few fluent Séliš speakers on the Flathead reservation. Teaching her students the Séliš language and culture is vital to her. In class, they started to create their own coyote stories.

"Your stories can be about any animal," she told the students.

She raised her arms wide in a U-shape, displaying

antlers.

"What's that animal? Tšeć."

The kids mimicked her, raising their hands, and repeating the Séliš word. "Tšeć. Elk".

"What do we do for moose?" she asked.

Their arms opened wider. "Sxáslqs," the kids repeated.

The oral tradition has been maintained for thousands of generations. Germaine White, who used to work for the cultural resource management and the tribes' natural resource department explained the importance of coyote stories.

"That's our history book. The stories tell us about our way of life," White said.

The Montana Climate Office is already seeing changes in snowpack. The rising temperatures cause snow to come later in the year. Predictions also show expectations of more rain instead of snow.

Climate change affects the Séliš-Qlispé in several ways. Some effects are obvious, rising temperatures are limiting the window to tell winter coyote stories; climate migration and fires put a stress on natural resources directly linked to culture. Some effects are not as obvious. Porcupines on the Flathead reservation seem to have disappeared; plants are blooming earlier, shifting traditional ecological schedules. These effects are likely to continue as the climate continues to warm.

"We're seeing a four- to five-degree Fahrenheit increase in annual average temperatures over the Flat-





Decker and her daughter, X̣ełx̣cin, pull back a sliver of bark from a cedar tree after cutting it open to harvest the sap inside.

head reservation,” said Kyle Bocinsky, the director of climate extension at the Montana Climate Office.

Seeing the climate changes and how they are entangled with traditions and culture, many tribal members are devastated. Traditions and landscapes are changing. Their elders had to go through adapting in the past. Now the Séliš-Qłispé have to adapt once more to human-caused events.

“Our ancestors went through so much historical trauma,” Decker said. “Yet we’re still here and we’re trying to perpetuate our culture and our language.”

In Séliš-Qłispé culture, many traditions are linked to the seasons. In the cultural calendar Séliš words name the months of the year indicating when certain plants bloom or when hunting begins. May, for instance, is Ṣeém, the month of the bitterroot.

Early in the spring, Decker and her family headed out to harvest cedar bark to create baskets. Decker needs the baskets for gathering plants. Although bitterroot is not supposed to be due until May, Decker already saw people posting pictures of bitterroot.

“It’s three weeks to a month ahead of time,” she said.

She has noticed drastic changes in the blooming of plants within the last decade.

“Our calendar has changed so much that we have to start documenting on our own to know when plants are going to be ready so we don’t miss them,” Decker said.

Her black GMC Yukon rumbled and shook as it drove miles up the mountains behind Arlee on a gravel road. After a while, the car stopped in the middle of the road. They had reached one of their gathering spots. Decker grabbed her ax and, followed by her two children, went into the woods. Climbing across trees and branches in her high-heeled boots, she headed towards one cedar tree.

Together, they started singing prayers while slowly pouring out tobacco. “I always make sure I give something back,” Decker said. It is what she has been told by elders, reciprocity.

After praying, Decker grabbed her ax and started separating the bark from the tree. The sound of chopping was accompanied by the sound of birds pecking, and the laughter of her three-year-old and seven-year-old sons climbing through the woods, branches cracking underneath their feet.

After a while, Decker stopped chopping. She made sure not to cut deep into the tree. If the cut is not wider than two hands the tree heals itself. But trying to get the first layer of bark off is hard. The wood is too dry.

“At this time of the year, it’s usually really wet,” she said.

She grabbed her ax again, chopping off a bit more. Sprinkles of wood were shooting off in every direction. Tiny pieces of wood landed in Decker’s hair. Still, no luck.

“We will have to come back for this tree another time,” she told her daughter.

They got back into the truck to drive to another spot. Finally, some luck with the paper birch tree. Decker managed to peel off two pieces of bark, ideal to make small birch bark baskets. That tree was also drier than normal.

“We’ve had a particularly dry winter and warm spring,” said Bocinsky, the director of climate extension. “Some of the projections would suggest that





Forestry restoration leader ShiNaasha Pete looks over whitebark pine saplings at a large greenhouse used for the tribes' restoration work. Fire, disease and invasive species threaten the whitebark pine's habitat.

those trends are likely to continue.”

With drier weather, the fire danger grows. The route to the gathering spot lead past huge piles of logged wood. To minimize the risk of wildfires the tribal forestry has thinned the forest.

“They had to take out some trees and bushes where I usually gather so I had to find new spots,” Decker said.

The threat of wildfires threatens an important native tree species: whitebark pine. “Whitebark pine is one of the first foods. The seeds were used as a protein source,” said ShiNaasha Pete, who works for the Confederated Salish and Kootenai Tribes Forestry Department.

Pete’s work focuses on the reforestation of whitebark pine. Although she is a Navajo tribal member, she grew up in the Flathead area and understands the natural and cultural importance of whitebark pine.

“The trees have been here longer than us and they

have a lot of teaching with them,” Pete said. “I know we’ve lost a lot of that cultural connection over time, but we have to keep that cultural connection with those stories and tribal teachings because we don’t know what will happen in the future.”

Highway 35, on the east shore of Flathead Lake, trails along the lake’s shore. An ocean of fir trees stretches out on the right side. Every now and then the road passes an almost empty range, filled with broken off trees and dark, black roots. Especially last summer, fires destroyed huge parts of the forests along the Mission Range.

Looking at the forests from afar, acres of shades of brown become evident among the lush green. Those are the spots where whitebark pine grows, at high elevation, closely underneath the nearby mountain peak’s snow belt. Nearly 80 acres of whitebark pine burned last year.

Apart from fires, two climate-related factors fur-

ther threaten the pines. Insects survive milder winters, including the beetles that are killing off the trees by tunneling underneath the bark and laying larvae.

Another factor is a fungus called white pine blister rust, a foreign disease originating in Asia.

“These trees have never been introduced to it in these areas and so there wasn’t a way for them to adapt,” Pete explained.

With climate change, everything is happening a lot faster. When the beetles attack a whitebark pine that has the infection of white blister rust, the tree dies more quickly.

To keep the pines alive, the tribal forestry department started a reforestation program. Studying the pines, they found a genetic resistance to the blister rust.

Two greenhouses on the reservation are designated to grow different tree seedlings, among them are whitebark pines equipped with the genetic resistance.

The large greenhouse can house up to one million seedlings.

Entering the first of two greenhouse rooms, a massive wave of humid heat hits Pete’s face. Tags on the seedling boxes show the names of the seedlings that are grown in this rainforest climate: limber and ponderosa pine.

Continuing along the aisle, the next room welcomes Pete with slightly milder temperatures. This is where the whitebark pine seedlings grow. The miniature trees are hardly bigger than a thumb. The seedlings stay in the greenhouse for two years until they are planted in the forest.

Pete’s eyes twinkle as she gazes around.

“I’m doing this for my great-great-grandkids of the future,” she said. “I hope that you know this forest is still here and that it’s still bountiful for them to have an opportunity to experience what we’re experiencing.”





Pete and her restoration team ensure the conditions of the greenhouse are optimal for the trees. Water, humidity, heat, and time are necessary for the saplings to thrive.

Wildfires not only affect native trees but also animals. Porcupines are losing their natural habitat. The animals are culturally important to the Séliš-Qlispé tribes. Their hairs and quills serve for designing ceremonial clothing, moccasins and head accessories like roaches and rosettes.

It has become increasingly harder to find porcupines in the Flathead region.

A report by the Montana Fish Wildlife & Parks Department from 2015 noted a decline in the porcupine population in western Montana. This specifically counts for higher elevations above 4,000 feet – like the Mission Mountains.

Possible reasons are wildfires and beetle epidemics caused by climate change.

Kya-Rae Arthur, a student at Salish Kootenai College, knows that porcupines have their nests in trees. Thus, wildfires affect them directly as their nests get destroyed and there is no way for them to quickly escape.

Arthur is passionate about creating designs and accessories with porcupine quills.

“It’s an important part of our self-identity,” she explained.

Prior to European contact, many tribes had quillwork societies, Arthur explained. Tribes would socialize with other tribes, gather quills together and exchange their artwork.

“It’s like a piece of you, a lot of people have designs that are associated with their families and tribes,” Arthur said. “It’s a way to identify who you are, where you come from, what you represent.”

In recent years, people had to move to alternative materials, like artificial porcupine hair for roaches and beadwork designs instead of quills. Beads were introduced to the tribes through European contact. To Arthur, it feels like a loss of culture.

“That’s why I’m a big advocate in teaching that stuff because it was the original artwork.” To keep the tradition alive, she teaches classes on quillwork.

It is also the strong connection she feels to the animal. “If you take the quills off the animals, you can’t help but build a relationship with that animal and appreciate the art you can make out of it,” she said.

When Arthur goes out to harvest porcupine quills, she takes a piece of fabric with her to throw it onto the animal. As the porcupine is startled it shoots off quills for self-protection. Once taking the fabric off the animal it runs away, “it’s great that you can harvest the

quills without harming the porcupine,” she said.

One porcupine gives enough quills to last up to a year. Arthur uses quills mostly to create earrings.

The first part of the process is to wash off dirt and natural oils and sort out the intact quills. The next step is to dye the quills in different colors.

“Then I use the quills to either flat stitch or weave designs to create quillwork,” Arthur explained.

To create a hoop earring for example, the colorful quills can be weaved around a circular base like rawhide by folding multiple short quills around the base.

It has become increasingly harder to harvest porcupine quills.

“The last time I saw a porcupine was maybe three or four years ago,” Arthur said.

She finds herself buying porcupine quills from vendors to make sure that she can keep this art alive. She does not know when she will see the next porcupine.

Besides the habitat loss through wildfires, human presence adds to the destruction. New people are moving to the Flathead area.

“Humans are settling for home and recreation,” Arthur said. “But they are also destroying the animal’s

habitat in the process of doing that and I don’t think they realize that.”

CSKT Chairman and biologist Tom McDonald knew about the decline of porcupines. He sees a direct link between loss of habitat and climate change.

The 1904 Flathead Allotment Act made it easier for non-Indigenous people to purchase land on the Flathead reservation. The number of people moving to the area has drastically increased in recent years, according to McDonald.

“We had a high influx of people moving into western Montana and the reservation just in the last three years,” he said.

Erin Leonard, an employee at Lake County Vehicle Registration, made the same observations, despite only having worked there for six months.

“The amount of people moving here from out of state is unreal,” she said.

Ashlee Terry from Century 21 Big Sky Real Estate, also agreed.

“Especially since March 2020 the market skyrocketed compared to five years ago,” Terry said.

The office does not track exact numbers but Terry has seen a huge increase of requests on the housing market.





The Flathead region is going to face an increased number of hot days and overall rising temperatures, Bocinsky explained. Still, the area is becoming a popular place to live.

"We see climate migrations happening, people moving from the southern Rockies and desert to western Montana," Bocinsky said. "I think people feel that the weather is more within human tolerance."

During the pandemic, more people shifted to working remotely. Relocating got easier.

Nevertheless, increasing numbers of people are putting stress on natural resources.

"We have people that go to their same spot to pick huckleberries and like this last year, they couldn't even go there because it was full of new people," McDonald explained.

To prevent losing natural resources and culture, the CSKT developed a regularly updated strategic plan addressing climate change effects and what measures to take over the next decades. Culture has a high priority in that plan. The major approach to achieving cultural action and goals is education.

Part of the education stepstone is the environmental-focused student-led group EAGLES that is doing

several climate mitigation projects in every middle and high school on the reservation. Projects involve recycling and school gardens.

Siarra Mattson, a senior student in Decker's class, is happy that her school participates in recycling.

She and her classmates already recognized shifts in the seasonal calendar. They worry how much it will continue to change in the future.

"I think the weather is going to throw everything off balance," Mattson said. "We as people are kind of ruining the climate. I don't know how much longer it's gonna be prosperous."

Working on their coyote stories, the students talk about what their culture means to them.

"Culture means a lot to me because it's a way to get in touch with your past and where you originate," Mattson said.

With fears for the future, there is also hope. The Séliš-Q̓lispé are determined to battle climate change and save their culture. McDonald is convinced that the people living on the reservation can help with climate mitigation.

"Big changes start local. So, if everybody does it eventually you start a movement," he said.



**TOP:** Looking east, Tribal Chairman Tom McDonald admires the view of Flathead Lake and the Mission Mountains. McDonald believes an influx of new residents to the Flathead is increasing environmental pressures on native species.

**BOTTOM:** A family takes a group selfie as the sun sets on the northern shore of Flathead Lake.





# SACRED BRAIDS

The struggle to preserve the ceremonial grass of  
the Annishinabe Ne-I-Yah-Wahk

STORY BY TYLER NIENSTEDT

PHOTOS BY LUKAS PRINOS



LEFT: Cattle graze on the Rocky Boy's Indian Reservation on a clear afternoon. Ranching and agriculture are the reservation's biggest industries. Many areas where sweetgrass historically grew are now used for ranching.

ABOVE: Braids of sweetgrass are sold for \$25 each at a Havre pawn shop, north of the Rocky Boy's reservation. Sweetgrass, used for smudging, is a spiritually significant plant for the Annishinabe Ne-I-Yah-Wahk tribe.

**A**RUST COLORED warehouse sits without fanfare, off the well-used U.S. Highway 2, at the west entrance of Havre, a small Montana town. It is a pawn shop, packed to the brim with old trinkets and neglected in terms of organization.

At the back of the shop, sitting on the glass cases that hold the more expensive items under lock and key, is a white cardboard box held together by masking tape. In it, are several 3-foot-long sweetgrass braids. Scrawling letters in black Sharpie label the box's contents at \$25 per braid.

The pawn shop, located 35 miles from the Rocky Boy's Indian Reservation, home to the Annishinabe Ne-I-Yah-Wahk people, has become a reliable, if disappointing, place where tribal members can find their sacred prayer grass.

However, these braids are different, by nearly every measure: the color is off, it's not quite green enough; the smell is different, it's not as strong; And the braids are noticeably thinner than people are used to.

"Sweetgrass is held in high regard," said Keith Gopher, a tribal member. "I mean you pray with it."

Gopher, who is also the tribe's water quality man-





Keith Gopher, the Annishinabe Ne-I-Yah-Wahk water quality manager, leans against a gate at a fenced-off sweetgrass site on the Rocky Boy's reservation. Fences can protect the sweetgrass from being trampled by cattle.

ager, compares selling sweetgrass at a pawn shop to buying holy water from a gas station.

His coworkers, also tribal members, nod in agreement.

The sweetgrass that grows on the Rocky Boy's reservation has inhabited the plains and wetlands there for centuries, and is unique to this specific area. Used in ceremonies and for personal use, the Annishinabe Ne-I-Yah-Wahk believe the smoke carries prayers to their Creator.

The long, textured braids of sweetgrass are omnipresent in tribal culture throughout the west. They are tucked away in desks, looped and hung from rearview mirrors, tacked against walls and placed on grave sites. The ends are commonly charred black from use.

Emitting a sweet vanilla scent when burned, sweetgrass can also be brewed as a tea to soothe coughs and sore throats.

In recent years, the sweetgrass on the Rocky Boy's reservation has become harder to find.

As climate change increases overall temperatures, the region, which includes the plains leading into the Bears Paw Mountains, is experiencing reduced annual snowpack. As a result, the wetlands are drying

out, which make it difficult for sweetgrass and other native species, like yarrow and buffalo berry, to grow. Meanwhile, the drier climate is welcoming various forms of invasive weeds.

According to Tara Luna, a botanist working with the tribe, "Steady declines in stem density is related to an increasing warm temperature trend and increased evapo-transpiration and competition for moisture with pasture grasses."

Sites that used to flourish with the green sweetgrass are now filled with dandelions, knapweed and cattails.

Invasive species are a national problem and cost the U.S. an estimated \$21 billion per year in eradication efforts. According to Montana's Department of Agriculture, more than 92 million acres are infested with noxious weeds in Montana alone.

To Gopher, and his team of environmental protectors, this is sounding the alarm that their prayer grass, held sacred and used for centuries, is not guaranteed in the future.

It wasn't until his mother, Patsy, a tribal elder, first noticed a change in the sweetgrass over 15 years ago that Gopher understood the gravity of what was hap-

pening.

She recounted her days picking sweetgrass in the '70s to him, describing a day-long family excursion that included a picnic of dried deer meat, ripe junberries, and a year's supply of sweetgrass packed into their wagons by the time the sun had set.

In those days, they would gather enough grass to make 200-300 thick braids, some more than 5-feet-long.

"We were finding sweet grass as long as my two arms," Thomas Limberhand, a tribal member, said, stretching his arms wide. "Now these past couple years," his face fell and voice trailed off while holding his hands just inches apart.

Today, the sweetgrass hardly compares. Even gathering enough grass for 100 braids is considered impressive.

When Gopher heard these stories, he knew he had found something that both needed protection and was worth protecting. He's spent the past decade doing just that.

Gopher drove his Chevy Silverado miles into the backcountry, relying on his feet when the large truck couldn't make the steep climbs, and for the past five years, on a knee that desperately needed to be

replaced.

The first step was to figure out why it was disappearing.

Already, the tribe, as a whole, is losing traditional ecological knowledge with each passing of an elder. Gopher is worried that if sweetgrass isn't protected, the grass and its cultural benefits will die along with the older generation.

"We're not paying attention to things that make us Native American," he said. "If you don't pay attention to sweetgrass, pay attention to your culture, your beliefs, it's going to go away."

He started his research through conversations with the elders, mapping out the old sweetgrass sites through the stories of their past.

Almost immediately, he noticed the dramatic differences they spoke of. "They were right, it was just gone," Gopher said.

So, Gopher secured funding to bring in Tara Luna, a botanist of 27 years from the Blackfeet reservation.

Since being hired by Gopher more than a decade ago, Luna has collected data and, in doing so, she has discovered a few critical differences between Rocky Boy's sweetgrass and sweetgrass found and grown elsewhere.

For instance, Rocky Boy's sweetgrass does not flower, making it entirely unique, and also particularly sought after for burning uses because of its stronger smell and ability to stay green for longer.

"The sweetgrass at Rocky Boy retains its green color after its braided, throughout the winter, for up to a year," Luna said.

Gopher said it's always been like this. "When we showed (the elders) examples of a flowering plant, they said 'That's not our sweetgrass.'"

However, in the absence of flowering, this grass must reproduce in another way. It turns out, it does so through its roots, or more specifically through rhizomes.

Rhizomes develop from axillary buds at the bottom of the plants, and grow horizontally. They are then able to produce new shoots and grow upwards. Thus, these plants are all interconnected and stemming from a single parent plant, Luna said.

These characteristics also make this species particularly vulnerable to stressors and especially sensitive in its competition with other plants for water sources.

With roots about 8-12 inches long, a stable, if not consistent, water bed is crucial to the survival of the rhizomes. A historical drought in 2017 was critical in confirming this.

The recorded precipitation throughout the spring and summer that year was the lowest ever recorded, with more than one-fifth of Montana in severe or exceptional drought.

Droughts of this intensity are 20% more likely due to anthropogenic—or human—influences.

According to a drought assessment report compiled in 2019 by several University of Colorado scientists, "human-induced warming intensified the severity of the 2017 Northern Great Plains drought."

By monitoring blade length and plant height at four different sweetgrass sites, Luna found direct correlations between annual heating trends and increasing drought that corresponded with declines in waterbed and sweetgrass levels.

In theory, if there is a year of drought, sweetgrass can go dormant for the year and, with a few years of





A braid of sweetgrass sits on Rick Morsette's council desk. Morsette lit the braid before the tribe's natural resources meeting began, filling the room with a sweet smell.

favorable precipitation to replenish the groundwater, regenerate itself. However, precipitation levels in the Bears Paw Mountains continue to show declines due to climate change. When noxious weeds come into play, regeneration is all the more difficult.

Unlike sweetgrass, noxious weeds are able to occupy a hydro-gradient. This means they can survive in very wet regions and very dry ones. They also tend to have more robust root systems.

"They take up more nutrients, more water, more space," Luna said.

And according to natural resource expert Tracy Tyner, weeds on Rocky Boy's are doing just that. "It's in everybody's yard, on the grazing land, along the

water," Tyner said.

Absorbing all of this data, Gopher and Luna have decided that the sweetgrass may need an entirely new home if it has any hope of outcompeting invasive species.

Last summer, Gopher uprooted several sweetgrass plants and transplanted them into a plot outside his office. Each day he would water the plot while drinking his morning coffee.

"I was basically just trying to see if I could do it," Gopher said.

But his mom told him: 'If you pay attention to it, it will respond.' He was pleasantly surprised. After just

a few months, "the blade was as wide as my thumb," he said.

Now, the hope is to use assisted migration, a concept spearheaded by Luna, to map out sites that are closer to headwaters on the reservation and absent of noxious weeds and then move the sweetgrass to those sites.

"If you take a portion of a rhizome and leave the rest of the plant intact, that rhizome will produce new plants and be genetically identical to the donor plant." This, according to Luna, is crucial.

The rhizomes connecting each plant contain starches, proteins and other helpful nutrients that can assist the plants when producing new shoots.

So, even when it seems as though the population is dwindling, it's possible to bring it back.

"As long as the root system remains viable, under the right conditions, the plant can regenerate," she said.

Implementing migration of course, takes money. But funding is exactly what they have been struggling with for the past few years.

Gopher and his team receive their grants from the Environmental Protection Agency.

After years of securing grants from the EPA, Gopher has a pretty good idea of what they will, and will not, fund. He said sweetgrass protection is unfortu-





nately in the latter category.

The first few years Gopher wrote sweetgrass protection directly into the wetland grant applications, hoping that something of such high importance to the tribe would be taken seriously.

However, when provided with federal wetland assessment tools, Gopher found that they failed to take into account the traditionally important plants on their lands. The result of the federal assessment meant similar ratings for plots of land that did not hold culturally significant species.

According to Gopher, “They didn’t include anything that was important to us at Chippewa Cree.”

Buffalo berries, considered a superfruit, and crushed yarrow, which is applied to wounds and burns, are examples of the many native plants that went without recognition.

With the grant money they did receive, Gopher developed a range of assessments that identified plants of medicinal and cultural value. This system gave those particular plants a higher score, and thus the wetlands they were found on, more protection.

The tribe’s former EPA program officer, Jennifer Wintersteen, said it’s because sweetgrass is not considered a “true wetland grass.” She added that much of the money Rocky Boy’s has received is for research rather than restoration.

“We were going outside of this box they wanted us to fit in, with our sweetgrass work,” Gopher said. But despite these setbacks he is steadfast in his work.

Since then, with the help of Wintersteen, Gopher has been strategic in the wording used in grant applications in order to continue to receive funding to monitor headwaters for potential sites to migrate the sweetgrass.

The past few years the tribe has picked up the funding to ensure Luna could continue to travel to Rocky Boy’s and monitor the sweetgrass specifically.

“It’s our medicine cabinet,” Councilwoman Jody LaMere referred to the land right outside the tribal headquarters. She is in full support of the sweetgrass restoration project and made that clear in a recent meeting with Daryl Wright II, the tribe’s environmental director.

“I wasn’t at the meeting but Daryl was,” Gopher said offhandedly while he explained the funding situation.

But it’s no surprise that Gopher didn’t attend this meeting. According to Daryl, he’s “a different kind of cat,” one that most definitely does not attend meetings.

Instead, he’s out of cell service, behind the wheel of his oversized Silverado, with a brand-new knee and a pack of cinnamon gum - searching for the perfect sites to relocate his tribe’s sacred prayer grass.

And once summer comes, he hopes to show the places he has found to the kids, he will teach them how to pick the sweetgrass and explain why it’s important as Annishinabe Ne-I-Yah-Wahk to do so.

“The youth. Our future,” Gopher said.



**TOP:** Aidan Morsette, left, and Isiah Westbrook play basketball in their driveway. Morsette and Westbrook are brothers living on Rocky Boy’s reservation.

**BOTTOM:** The Annishinabe Ne-I-Yah-Wahk tribe’s environmental director, Daryl Wright II, stands outside of the tribal headquarters. Wright spoke before the tribal council about the sweetgrass decline and preservation plan.





# UPHOLDING TRADITIONS

## Access to lodgepole pine jeopardizes Apsáalooke teepees

STORY BY **ROSIE FERGUSON**

PHOTOS BY **RIDLEY HUDSON**

**V**ENESSA BirdinGround and her partner, Joseph Stewart, have made a side gig from driving into the woods and looking for lodgepoles to harvest for teepees.

Last summer, they harvested nearly 20 sets, about 400 trees. When BirdinGround seeks out new poles, she looks for moisture so the bark can be stripped off the logs easily.

With a saturated inner bark, harvesters often slice the base of the tree and peel the exterior by hand in just a few elegant tugs. They also come across trees that have brittle bark that flakes off, a product of extended droughts and hot temperatures.

Drought has made the labor-intensive process of cleaning and preserving the poles more strenuous. Suitable trees for poles have also become more elusive in recent years, which Stewart attributed to a changing climate.

"In the places we were going to look to get them, they're not growing as tall and they're not as plentiful," Stewart said.

Climate change and human deforestation has been threatening the availability of quality lodgepole pines that the Apsáalooke use to practice their culture. While the tree is not threatened, the future of lodgepoles in eastern Montana is unclear.

Teepees are still used as shelters for many ceremo-

nies. The shelter belongs to many Plains tribes, who traditionally built them from lodgepole pine trees and bison hides.

On the Crow reservation, the summertime powwow and rodeo event Crow Fair is commonly nicknamed as the "Teepee Capital of the World" because it attracts thousands of families who camp in teepees. Crow Fair is also culturally significant as the start of the Apsáalooke New Year.

Adrian Bird, Jr., lead archaeological technician at the Crow Tribal Historic Preservation Office, said Crow Fair sees 1,200 teepees each year. He said the Apsáalooke have adapted to keep their teepees amid changing environmental and societal landscapes.

As the U.S. government took indigenous land, the teepee still survived as a crucial tool and expression of culture, but with some changes. Americans slaughtered millions of bison during the late 1800s, pushing the animal to near-extinction and making it impossible to secure enough hides for lodge covers. Now, canvas covers are far more common.

Oral history passed down for generations explains that the Apsáalooke homeland once encompassed the Bighorn, Pryor, Wolf and Absaroka-Beartooth mountain ranges. The three bands of Apsáalooke people had ample places to gather seasonal resources, including lodge poles.

The United States has reduced the reservation by





but some people said that the harvesting season is shifting earlier into the year, since early-season droughts and summer heat waves make the trees harder to peel.

"If I could go (harvest) in May, I'd go in May," said Noel Two Leggings, the Crow Tribe's chief of staff for the Office of the Vice Chairman.

Two Leggings' grandparents taught him to harvest his teepee poles the right way. Generations of tradition informed this way to prepare a teepee, and Two Leggings finds deep pride in following and sharing this knowledge.

"My dad tells us, 'You're Crow. If you don't practice your belief ways, how can you call yourself a Crow Indian?'" Two Leggings said.

For decades, the tribe harvested teepee poles for Crow Fair mainly in the Big-horn and Pryor mountains. Harvesters said many trees in those mountains are no longer what they look for in worthy poles.

BirdinGround said this year they will have to drive hundreds of miles farther to the Gallatin National Forest near Big Sky, Montana; or the Lewis and Clark National Forest by White Sulphur Springs. She already looked for trees in the Bighorns with little luck.

"That's quite a commute for us," BirdinGround said. But it's a necessary evil. With rising gas prices, she and Stewart will have to charge even more for the poles.

When Two Leggings recently harvested a set of poles, he drove roughly three hours to the Gallatin National Forest near Livingston. At that time, he recalled many other designated harvesting

grounds were closed from the threat of early-summer wildfires.

Higuera said a healthy frequency of wildfire can help the trees; mature lodgepole pines need fire to split their cones and release seeds. Fires also clear the forest of extra growth and other potential fuels that threaten established trees.

One risk for lodgepoles is in areas that burn frequently, the cones needed for reproduction could be completely incinerated, Higuera said. Some of these ecosystems may transition into grasslands as they get drier.

"We often end up with forests on the landscape that represent a climate from 200 years ago," Higuera said. "The closer to warmer, drier areas, the more vulnerable to climate change we are set to experience."

The cycle is sped up by wildfires, which Higuera and the National Park Service said is more frequent and larger in lodgepole stands.

Harvesters have seen this first hand. More frequent fires mean recently burned stands don't have time to regenerate before they burn again. If they burn when they're small and young, Higuera said they often do not reach viable cone-bearing maturity and can't reproduce.

"Sometimes (wildfire is) a good thing, because then there's regeneration, but we have to wait for a good 20 years for (the trees) to get to the height we need them," BirdinGround said.



**FAR LEFT:** Structures and lodgepoles from previous Crow Fairs sit on the fairgrounds in Crow Agency until the next annual fair in August.

**TOP:** Noel Two Leggings looks toward the town of Crow Agency where he can see the fairgrounds that host the Crow Fair. He looks forward to harvesting poles, but feels the permitting process disrupts his tribal traditions.

**BOTTOM:** Stacks of lodgepole pine can be found around the Crow reservation in the spring and summer seasons when harvesting takes place.

millions of acres in the past 150 years. Still, the reservation remains the state's largest and sits southeast of Billings.

The Apsáalooke tribe still has legal access to cut lodgepoles for cultural purposes from several U.S. Forest Service-designated harvest sites across the region through the 1868 Fort Laramie treaty, and passed into law by the 2008 Farm Bill. A 2019 lawsuit by a Crow tribal member further opened up more areas to harvest.

Ideally, the trees used for teepee poles need to be tall – around 20 feet or longer – for Crow-style teepees. Trees must also be roughly five inches in diameter and be exceptionally straight.

Philip Higuera, a wildfire ecologist at the University of Montana College of Forestry, said lodgepoles are not going to disappear overnight, but new trees east of the continental divide are working with drier soil that could limit growth.

But the 2021 climate assessment for the Greater Yellowstone Ecosystem showed a 25% decrease in snowfall from 1950 to 2018.

The Montana Climate Assessment predicts changes in snowpack and runoff timing will likely increase the frequency and length of drought during late summer and early fall. As of April 2022, much of Montana and the Crow reservation was locked into severe-to-extreme drought.

Forest Service roads open in the middle of June,





# OIL AND WATER

## The Nueta, Hidatsa and Sahnish balance the benefits and drawbacks of fracking

STORY BY IZAAK OPATZ

PHOTOS BY RICHARD FORBES

**M**ANDAREE, North Dakota, a small town on the Fort Berthold Indian Reservation, has a new indoor trampoline park. Across the street, there's a new arbor at the powwow grounds. Down the road, a shiny new tanker truck sits inside a trim, fresh-smelling six-bay fire station. New Town, 40 minutes north, also has a new fire station. And a new dialysis center, a new police station and a new justice center.

None of the buildings are more than 10 years old. All of them have been funded with revenues from oil and gas extraction on Fort Berthold since 2008,

and they're just the most visible examples of a burst of oil-funded investment that includes new water lines, expanded internet access and improved roads throughout the reservation.

But the economic boost of the oil boom enjoyed by the Three Affiliated Tribes on Fort Berthold — part of the Bakken oil fields thought to contain up to 7 billion barrels of oil — has come at a cost.

There have been leaking pipelines, fires and trucking accidents that spilled oil and wastewater.

"I saw it firsthand, on the spill sites," said Edmund Baker, the tribes' environmental director since 2013. "Smelling the diesel, the chemicals, seeing the death of the vegetation in areas I remember were green

growing up."

Oil revenues have put money in tribal members' pockets and paid for a backlog of much-needed social services and infrastructure improvements. Because of this, Baker worries it will be hard for his tribe to disentangle itself from the extraction industry, even as it damages the environment, contributes to climate change and threatens the health and safety of the people living on the reservation.

Sitting behind his desk on the ground floor of the tribes' new energy complex — five stories of dark glass and smooth stone — Baker gestured around his large office and said, "This building is an example of the oil."

"What we have done is capitalize on our circumstances," he said. "But there is a down side."

When Edmund Baker's mother was growing up, the Nueta, Hidatsa and Sahnish people tended sunflower orchards, corn fields and bean gardens in the fertile bottomlands along the Missouri River.

These days, the river Baker's mother remembered is gone. Instead, a 200-mile-long reservoir called Lake Sakakawea covers the homes, schools and gardens that hundreds of families were forced to abandon in 1953 when the Army Corps of Engineers built the Garrison Dam.

The rising waters pushed 80% of the tribe onto the arid benchlands above the new lake, where poor





soil, persistent wind and cold weather made survival much more difficult.

"A lot was taken from us quickly as the floodwaters rose," said Cory Spotted Bear, a member of the Three Affiliated Tribes' Tribal Business Council.

But the tribes' fortunes seemed to change in 2008 when high oil prices, new technology and policy changes made an intensive style of mining called fracking suddenly profitable on the reservation. The tribal government at the time embraced the rare opportunity to seize a measure of economic independence, or what the chairman at the time called "sovereignty by the barrel."

The decision has made the Three Affiliated Tribes, also known as MHA Nation, the country's top tribal oil producer and addressed some problems even while it created others. But some tribal members question whether the decision was really theirs to make, or if a century of theft, dislocation and forced assimilation by the federal government made it for them.

Spotted Bear asked, "Can you blame an impoverished tribe for trying to finally fix their own roads and fix their own water line and fix their own everything?"

Behind Baker's office, spring ice broke up along the shore of Lake Sakakawea. After two withering summers, it was shrinking in a drought. Baker gestured toward the lake. "This is going to drop another 10 to 15 feet again, according to the Army Corps," he said. "We've never seen this before."

In May 2021, the tribal business council passed a resolution declaring a drought emergency on the reservation. It stated that drought conditions "created a significant increase in wildfire frequency and size endangering the people, lands, livestock, and wildlife of the MHA Nation."

But the resolution makes no mention of climate change. The seven-member tribal business council

has not addressed the problem directly by drafting a climate change adaptation plan as other tribes have.

Baker said he hasn't heard the tribal business council talk much about climate change. He thinks tackling the issue is a tough sell for the tribal government while oil and gas revenues are so popular with its constituents.

"If you know that there's an end to your money train, what would you do if you're coming from poverty?" he asked. "Basically, you're going, 'We gotta extract as much as we can out of this.'"

According to Cynthia Monteau, the Three Affiliated Tribes' tax director, oil and gas mining on the reservation has generated approximately \$2 billion in tax revenue since 2008. Some of that money has been used to build new community centers and schools.

In 2014, Chairman Mark Fox established The People's Fund, an oil-and gas-funded tribal savings account that issues \$1,000 checks approximately every four months to each of the Three Affiliated Tribes' nearly 17,000 members.

In addition, tribal members who lease mineral rights on their allotted land earn a percentage of the value of the oil produced there. These royalties, usually between 15-20%, have made some allottees into millionaires.

Pete Coffey-One Feather, a retired historic preservation officer for the tribe, said he's "one of the lucky ones." He earns oil revenues from a piece of land his father owned. He knows some people who earn just \$20 per month and others who earn \$20,000 per month. He said he's somewhere in the middle, though he declined to say how much.

He said he had mixed feelings about earning royalties while he was the tribe's historic preservation officer. Coffey-One Feather was tasked with ensuring that cultural properties were not disturbed by the construction of new roads, pipelines and well pads

**FAR LEFT:** Four Bears Bridge, built in 2005, spans Lake Sakakawea, a reservoir created in 1953 against the wishes of the Three Affiliated Tribes. The new bridge, which had a \$54 million price tag, replaced a much narrower bridge and enabled oil and gas tankers to travel across the reservation.

**TOP LEFT:** Oil and gas development on the reservation has led to dramatic increases in heavy truck traffic that wears down tribal roadways, requiring continual reinvestment of oil and gas royalties.

**TOP RIGHT:** Edmund Baker, the tribes' environmental director, says his community's identity is being whittled away by oil extraction. Parts of the reservation once used as fasting places for spiritual connection were inundated by Lake Sakakawea and are now bordered by oil well pads.

**BOTTOM:** Cory Spotted Bear, vice-chairman of the Three Affiliated Tribes, hopes to show the tribes that they can use the money from oil and gas extraction to create a future powered by sustainable energy.



related to oil and gas drilling.

"But at the same time, I get oil revenues, too, so I always had a conflict within myself," Coffey-One Feather said. "I didn't know whether I was part of the problem or not."

Now, he thinks the tribe should use its money from oil taxes to invest in alternative energies. He'd like to see wind farms and solar arrays in every community on the reservation. "We should be doing stuff like that because they don't make any more oil," he said. "Wind is free, sunlight is free."

Baker, the environmental director, noted that the Three Affiliated Tribes lobbied the Biden Administration last year to not shut down the Dakota Access

Pipeline, whose construction was vehemently opposed by the Standing Rock Sioux tribe and others in 2016.

Chairman Fox argued that a shutdown of the pipeline, which would shuttle Bakken crude oil from North Dakota to Illinois, would cost the Three Affiliated Tribes \$160 million per year, threaten the environment and increase dangerous truck traffic.

"So that gives you an indication of 'where does climate change fit?'" Baker said. "When your resources have been dedicated to protecting this flow of prosperity, it just doesn't really sink in."

Baker said his people don't want to suffer like they used to. "I don't want to see my children in tattered



**RIGHT:** Walter and Lisa DeVille of Fort Berthold Protectors of Water and Earth Rights (POWER), and have traveled across the country attending conferences and visiting with politicians to raise awareness about the environmental impacts of oil and gas extraction on their reservation.

**BELOW:** Walter DeVille drives past pumpjacks near Mandaree. He and his wife, Lisa, call the drive the "toxic tour" because it shows the impacts of oil and gas extraction on the landscape.

**FAR RIGHT:** An oil well pad sits only a few thousand feet from Lake Sakakawea, a reservoir finished in 1953 against the wishes of the Three Affiliated Tribes. The reservoir dams the Missouri River and supplies the tribes' drinking water.



clothes, or go without food for a day, which is how I was raised," he said.

More than 30% of the reservation lived below the federal poverty level in 2000, according to North Dakota State University data. Today, that number is down to 19%. And compared to other tribes in the state, the Three Affiliated Tribes' median household income of more than \$54,000 tops the list.

"I can't say 100% where everybody stands," Baker said, "but I do know one thing for sure: our people have become accustomed to prosperity, become accustomed to the benefits of things we never had before."

Sitting at the front of a classroom at the Nueta Hidatsa Sahnish College in New Town a few miles away,

Dr. Kerry Hartman noted that the Three Affiliated Tribes' history can put climate change in a different light.

The effects of smallpox epidemics, forced assimilation and displacement from the bottomlands present more immediate challenges in people's lives, Hartman said. "Climate change is just too big, too long term, too far away, when you've got all this kind of stuff, recent history, recent trauma, and then very, very recent trauma going on."

The very, very recent trauma is the boom itself, which brought an increase in violence, drugs and corruption to Fort Berthold, but also polluted its air, land and water. As chair of the environmental science department at Nueta, Hidatsa and Sahnish College, Hartman has led student research testing fracking-af-

fected groundwater, researching the effect of climate change on pollinators and mapping the number and output of flares on the reservation.

But Hartman, who is not a tribal member, said he thinks the tribal business council is too invested in oil extraction to take meaningful notice of its negative impacts.

When his students have shared research with the community or tribal government that implicated fracking, he said, "There was always a lot of, 'Oh, that's terrible. We should do something about that. But we need the money, so we need the oil, so we're going to keep doing what we're doing.'"

Lisa DeVille, an environmental activist on Fort Berthold and former student of Hartman's, will admit she has seen the benefits of oil and gas extraction. She and her husband, Walter, both worked while raising five children in Mandaree. Today they live off of the oil and gas revenues that Walter earns as the partial owner of a piece of leased land.

Walter never would have signed the lease to allow drilling on his land, Lisa said, but he didn't have a choice. Only a simple majority is required of the sometimes hundreds of allottees who may share ownership of a single piece of land. In Walter's case, a majority opted to lease the land's mineral rights before anybody asked him.

The DeVilles live in a comfortable one-story home in Mandaree. Deep leather sofas with built-in cup-holders face a large flat-screen television in a living room adorned with Green Bay Packers insignia. Lisa declined to specify how much they earn from royalties each month. "It gets us by, I'll say that," she said.

Whatever the amount, it has freed her to be a full-time activist. She is frequently critical of the oil industry, but does not see earning oil money as a

contradiction.

"It's not something that I wrestle with because what we fight for are stronger regulations," Lisa said. "We want it done the right way."

In 2010, she co-founded Fort Berthold Protectors of Water and Earth Rights, or POWER, to muster opposition to what she saw as an industry out of control. Especially in the Mandaree area, which saw the bulk of new wells, the sudden boom brought a flood of heavy truck traffic, oilfield trash and a scourge of crime.

Lisa began to feel like her community was getting the short end of the stick. "Yeah, oil revenue is helping with all this stuff," she said, "but why are we not holding industry accountable for what's happening?"

She began to call her representative on the tribal business council to ask what they were doing to protect her community. She went door to door with a 75-question survey, asking her neighbors what they thought about the oil and gas industry's effect on their health, the community and the environment.

DeVille said the vast majority of her neighbors indicated that they wanted their tribal government to regulate the oil and gas industry more.

Again and again, she asked the tribal business council, "Why is it that we didn't have a plan?"

A small beaded pouch swung from Walter's rear-view mirror as his truck rumbled down a bumpy red dirt road through the benchlands above Lake Sakakawea. In the passenger seat, Lisa talked hurriedly, running through a litany of standoffs with her tribal business council. She spoke openly and passionately but had clearly given this spiel before.

Today, Lisa acts as an ambassador to scientists, journalists and nonprofits who want to look more deeply into the fracking boom on Fort Berthold. The









A flare burns natural gas at sunset near Mandaree. Members of the tribes hope to move away from fossil fuel extraction and toward sustainable energy, but their current source of funding is oil so they continue to drill despite the negative effects.

DeVilles lead what they call the 'toxic tour,' a five-hour saga in Walter's Dodge Ram around the Mandaree area's seemingly endless dirt roads, visiting spill sites and other areas impacted by fracking.

At the end of one dirt road, Walter parked the truck at the top of a small coulee that drains into the lake's Bear Den Bay. He and Lisa hiked down the steep slope, slipping on the mud and dry grass, before stopping in front of a small pond where the water was stained a deep ochre.

A broken wastewater pipeline up the hill spilled a million gallons of brine at this site in 2014. The DeVilles later brought researchers from Duke University here. The scientists found that wastewater made its way into Lake Sakakawea just a quarter mile from where an intake pipe collects drinking water.

"Nobody knew what brine was," Lisa said. She looked it up and posted what she found to Facebook. It wasn't the first time she had been forced to find out for herself the costs that came with living in an oil patch. She's disappointed that her tribal business council didn't take the time at the beginning of the

boom to fully explain the risks that came with fracking.

"They're not educating our people," Lisa said of her tribe's leaders. "The tribal council's not sitting there saying, 'Come, let me tell you what fracking's all about and what the truth is about what kind of contaminations are happening.' That's not happening."

This spring, Lisa will be on the ballot to represent North Dakota's State House District 4a, a new legislative district covering Fort Berthold. If elected, she said, she'll keep asking questions.

Outside the Mandaree community center, a stiff wind raked across the clay buttes in the distance and flipped Spotted Bear's hat across the parking lot. Flames on distant flare stacks whipped and guttered, driven nearly horizontal by the strong gusts.

He was in Mandaree to hear his colleague pitch the idea of a geothermal power plant for her community. It would be another multi-million dollar project, but one that reflected Spotted Bear's vision for Twin Buttes, "to take the finite resource - oil, gas - and rein-

vest it into the perpetual, as a cultural model."

Investing in what's left of his tribes' culture is what drew Spotted Bear into politics in the first place. After college, he started the Nu'eta Language Initiative to help save the Nu'eta language. At that time, an elder named Edwin Benson was the language's last native speaker. Spotted Bear ran for his council seat in part to secure oil and gas revenues to fund a desperate effort to record as much of the language as possible before Benson died in 2016.

He said he's spread thin just responding to the basic needs of community members who, like himself, don't earn a dime from oil and gas leasing. He noted that 40 community members in Twin Buttes were still hauling water by hand from a water pump to their houses until four years ago, when he helped connect them to the tribal water system.

"We're trying to keep our heads above water, we're trying to survive and carry on," he said. But Spotted Bear also insists on looking beyond the boom, to continue investing in a more sustainable future.

In that spirit, he's invested in energy-efficient geo-

thermal heat pumps to heat and cool Twin Buttes' new community center and store. Twin Buttes has its own bison and elk herds, keeps honeybees, a community garden and a junberry orchard, all foods he said are a "cultural match" for the Nueta people.

Next, Spotted Bear dreams of building a micro-grid for the community that can store and distribute power from wind, solar and geothermal sources. It exemplifies the kind of pivot he thinks the Three Affiliated Tribes will need to make in coming years, from relying on oil and gas extraction to harnessing sustainable energy.

"It's protecting our sovereignty, self-reliance," he said. "And it's the right thing to do."

Spotted Bear realizes that the oil and gas won't be around forever. Whether the oil boom has been a boon or a bust for the Three Affiliated Tribes depends on what they decide to do next.

"It's kind of a touchy deal where we're labeled as an oil and gas tribe," he said, "but some of us are trying to change that narrative, we're trying to go in a different direction."





# Indigenous Heritage Celebration 2022



## June 16

MISSOULA PADDLEHEADS VS  
GREAT FALLS VOYAGERS



## June 17

TALENT SHOWCASE

## June 18

5K FUN RUN & WALK

### Ogren Park at Allegiance Field

MISSOULA, MT



[www.gopaddleheads.com](http://www.gopaddleheads.com)  
[www.allnations.health](http://www.allnations.health)





# We love our Native Griz.

At the University of Montana, we are committed to the **success** of our Indigenous students. It begins with the “family education” approach in our **American Indian Student Services** office and ripples through our **inclusive and rigorous academic programs** and our extensive **student support services**. At UM, **Native Griz** earn an education that prepares them to **advocate for their communities, reach for their dreams** and **change the world**.

