

## Case #4. Keeping Cattle on the Move and Carbon in the Soil

In Montana, USA, ranchers and conservationists, once unlikely allies, are teaming up to preserve grasslands, which act as a carbon dioxide sink that could support climate goals.

*By Benjamin Ryan New York Times Oct. 31, 2021*

BLAINE COUNTY, MONTANA. — The three generations of Obrecht men may not seem to fit the stereotype of conservationists.

Ranchers on a remote eastern Montana prairie near Canada, Sonny, 78, Sam, 61, and Tyrel Obrecht, 31, are ruggedly independent, politically conservative and make their living rearing cattle — those lumbering beasts that are the bête noire of carbon footprint–concerned conservationists.

But things are not always as they seem here on the Great Plains.

**The Obrechts stand at the forefront of an emerging collaboration between ranchers, conservation groups and governmental agencies that aims to protect, restore and revitalize the United States and Canada’s prairies — or what’s left of them.**



Tyrel Obrecht feeds calves hay from the back of a truck driven by his father, Sam Obrecht. Credit...Louise Johns for The New York Times

Such majestic grasslands once blanketed a quarter of North America, before homesteaders began plowing up the earth to plant those amber waves of grain. Now just a third of the native prairies survive, said Joe Fargione, science director, North America, at The Nature Conservancy.

**Yet grasslands play a vital role in storing carbon — which in the form of carbon dioxide is the main greenhouse gas linked to climate change — and thus they serve as a crucial bulwark against rising temperatures and seas. Researchers estimate that grasslands could contain as much as 30 percent of the carbon stored in the Earth’s soil. Plowing them in order to plant crops releases large amounts of that carbon into the atmosphere.**

The savannas of Africa and South America, the steppes of Eurasia and the Pampas of South America are also in crisis. Competing for attention, they are losing the battle against conversion to cropland and are threatened by unsustainable livestock grazing practices, urban sprawl, invasive species, climate change and even well-meaning efforts to plant trees.

North American ranchers, as well as women in Kenya, ecologists in Brazil and United Nations workers in Kyrgyzstan are part of a nascent global network fighting to save grasslands and to secure their place in global climate policies.

**“Grasslands are pretty much ignored in global sustainability agendas,” said Richard Bardgett, an ecologist at the University of Manchester in Britain. “Unless this changes and targets are set for their protection, restoration and sustainable management, the future of grasslands looks bleak.”**

**Promisingly, researchers, in a [2015 paper](#) in *Agriculture, Ecosystems & Environment*, estimated that improved grazing methods could sequester perhaps 300 million tons of carbon dioxide a year worldwide.**

That is where ranchers like the Obrechts come in.

Boasting 16,000 acres, the family is “land rich and cash poor,” Sam and Tyrel each said. What is often overlooked is that the land is rich in one of the most vital elements supporting life on Earth: carbon.

**The family’s secret weapon to sequester even more carbon from the atmosphere while also promoting soil health and biodiversity? Cows.**

**By adopting regenerative grazing practices — in particular, by frequently rotating concentrated herds and by resting paddocks for long intervals — they and a growing number of North American ranchers are using the cattle themselves to improve grassland health.**

“Sometimes animal agriculture is painted pretty negatively,” said Tyrel Obrecht, whose family recently began intensifying its regenerative practices and has signed on with a **World Wildlife Fund [program](#) to promote such ranching across the Northern Great Plains**. “I think ranchers are the original conservationists.”

“Sustainability — it’s not a buzzword here, it’s a way of life,” said Randy Stokke, 63, a rancher in the Western Canadian province of Saskatchewan.



Mule deer near Turner, Mont. The Obrecht family began this year to remove the bottom stretch of barbed wire on their fences, to allow ungulates like mule deer and pronghorn to move more freely on their ranch. Credit...Louise Johns for The New York Times

**These ranchers said they have found common cause with the very environmentalists whom, a generation ago, their kin often viewed as the enemy. Conversely, conservationists have learned to think like agrarian capitalists, touting the economic benefits of healthier land and its ties to more profitable ranching.**

“We have reached an inflection point when it comes to climate change, and the need to protect grasslands and all natural climate solutions has gone from important to urgent,” said Dr. Fargione.

But conservationists are losing ground in their efforts to leverage grasslands’ power as a carbon sink and as an invaluable source of [biodiversity](#).



Sonny Obrecht, 78, on his family's multigenerational ranch. Credit... Louise Johns for The New York Times

**Grasslands cover about [40 percent](#) of global terrestrial land; only about 10 percent is protected. More than 80 percent of native grasslands have been transformed into croplands or pastures.**

While these biomes support the livelihoods of hundreds of millions of people, the lands suffer from progressive [degradation](#) that compromises their capacity to sustain livestock forage, tourism and water filtration.

**The World Wildlife Fund recently [reported](#) that the intact prairie continues to shrink, with 2.6 million acres of U.S. and Canadian grasslands plowed up between 2018 and 2019.**

And now a mega-drought — one exacerbated by climate change, [experts said](#) — is [devastating the North American West](#) and threatening ranchers' livelihoods.



Tyrel Obrecht holds a bunch of green needle grass. His family's rotational grazing practices allow the roots of grasses to grow deeper and to retain more water. Credit... Louise Johns for The New York Times

"Men make plans and God laughs," said Casey Coulter, 40, who ranches 150 miles southeast of the Obrechts and is a font of aphorisms such as, "Poor land equals poor people."

The authors of a January [paper](#) in Nature Communications concluded that destruction and degradation of grasslands worldwide have already released enough greenhouse gasses — [including methane](#) from herbivorous grazing livestock — to negate the cooling effect of sparsely grazed and natural grasslands' carbon sinks.

"We're not going to make our climate targets if we keep plowing up the grasslands," said Martha Kauffman, who oversees the World Wildlife Fund's Northern Great Plains program.

**A big reason grasslands can't get a break is visual. Unlike forests, grasslands store the bulk of their carbon out of sight, in deeply penetrating roots.**

Settlers and colonists, biased toward the forests that fueled the European economy, often regarded the grasslands of the New World as wastelands begging to be planted or passed over. Experts believe this [misconception persists](#).

**"We are still a long way from actually convincing policymakers that soil carbon is important,"** said Ibrahim Thiaw, executive secretary of the U.N. Convention to Combat Desertification.

Yet grassland roots are remarkably resilient and are better equipped than forests to withstand harsh droughts. And unlike forests, grasslands tend to retain the majority of their carbon in the soil following wildfires. Grasslands are also largely superior at springing back to life after the [massive conflagrations](#) that climate change — and [bad fire-suppression policy](#) — have [wrought worldwide](#).

**Grassland ecologists have cautioned against the egregiously counterproductive practice of blanketing grasslands with trees that [may end up dying](#) in droughts or fires, emitting carbon and destroying [biodiversity](#) twice over.**

Invasive tree encroachment even [contributed](#) to the 2018 [Day Zero](#) water crisis in Cape Town, South Africa. Trees creeping across the metropolis’s watershed were sucking up desperately needed groundwater.

In the United States, the proposed [North American Grasslands Conservation Act](#) would, its supporters argue, establish a cohesive national strategy to protect and restore these biomes.

Most people think about energy and forests when referring to the climate crisis, said Senator Ron Wyden, Democrat of Oregon and a top backer of the legislation. “But if we’re going to overcome this code-red emergency, we also need to look across all sectors and industries. And grasslands have just as critical a role to play.”

One possible solution: Send in the cows.



The Obrecht family's ranch, known as the Louie Petrie Ranch, was homesteaded in 1901 by George Petrie. Credit... Louise Johns for The New York Times

**The key, experts said, is to strike a delicate balance between grazing and resting the land.**

**“We’re trying to make the livestock mimic what the bison did not so long ago,” said Mr. Coulter. “There are regenerative systems that absolutely need large ruminants to cycle nutrients into the land.”**

**In regenerative grazing, ranchers typically concentrate their herds into small paddocks. This pressures the cows to consume a wide variety of grasses, so no single plant species become predominant.**

The ranchers move the cows frequently — near daily in the case of a Montana rancher, Bill Milton, 72, who uses portable electric fencing to shift his herd, as do the Obrechts and Mr. Coulter. The animals leave behind strewn and trampled grass particles, plus lots of cow pies for good measure. This all fortifies soil health and provides ground cover that helps keep the earth cooler and improves precipitation absorption.

Crucially, the ranchers give each paddock ample time, sometimes more than a year, to recover and produce new growth — a process that [sequesters carbon](#).

“The big question is what kind of impact these practices will have on climate change,” said Mr. Milton.

Timothy Searchinger, a senior research scholar of environmental science and policy at Princeton University, said he was skeptical that improved grazing could sequester enough carbon to substantially affect the climate. “However,” he said, “grazing improvements have great potential to boost output per acre, which is vital to avoid clearing more forests and savannas.”

**To allow greater flexibility in moving herds, ranchers like the Obrechts are engaging in cost-sharing programs with conservation groups and government agencies to construct infrastructure that pumps groundwater to troughs in far-flung pastures.**



Four generations of the Obrecht family who live on their ranch near Turner, Mont. Credit...Louise Johns for The New York Times

The family is also considering a cost share for GPS-programmable electric collars that create virtual fencing to keep the livestock from stepping out of bounds.

Half a world away, the ecological and economic principles that propel these ranchers similarly guide Kenyan conservation groups working to reform the grazing practices of the pastoralist herders who trek the African savanna.

Murray Roberts, a Kenyan-born rangeland management specialist, and Elizabeth Meyerhoff-Roberts, a social anthropologist with comprehensive knowledge of the local people, run the nonprofit Rehabilitation of Arid Environments Trust in Baringo County in Kenya. They work with families, mostly women, to reseed native grasses on their home plots. The families profit by harvesting the grass to sell as hay, along with the seeds, providing them with the financial flexibility to raise smaller herds to prevent overgrazing.

The trust also partners with pastoralists to coordinate herd rotations across communal grazing lands.

In the Cerrado grasslands of Brazil, Giselda Durigan, an ecologist at the Instituto de Pesquisas Ambientais in São Paulo, is battling encroachment by pine trees that are not native to the area. This encroachment has devastated local plant and animal species while lowering the water table. Her team is also experimenting with the eradication of undesirable plants, hay transfer and grass transplantation and reseedling, along with [controlled burns](#).



Nicolas Tremblay and Oliver Mundy of the U.N.'s International Fund for Agricultural Development work with pastoralists in Kyrgyzstan to improve the governance of heavily degraded grasslands.

Back in Montana, Tyrel Obrecht touts the benefits of regenerative ranching. "The only way to take carbon from the air is to promote plant growth," he said. "And the best way to promote growth is to graze it and provide rest. That is very, very beneficial to an entire ecosystem."

A version of this article appears in print on Nov. 1, 2021, Section B, Page 6 of the New York edition with the headline: *Ranchers Join Fight To Curb Warming.*

## **Case Questions**

**Module 4 argues that there is an ongoing movement from "corporate social responsibility" to "sustainability" and now to "creating shared value."**

**1. Create a supporting argument for each of the following assertions:**

**a. (1.5) that the Obrechts are still at the "corporate social responsibility" stage but has moved no further .**

**b. (1.5) that the Obrechts have moved to the "sustainability" stage **including incorporating "triple bottom line" thinking**, and has moved no further, i.e., is not yet at the "creating shared value" stage.**

**c. (1) that the Obrechts have now reached the "creating shared value" stage in its development (**meaning it is creating "shared value" for all of its potential stakeholders.****

**NOTE: You will need to refer to the definitions for each of these stages in the module to make your judgments.**