

Regenerative Agriculture

IN THE HIGH DESERT

*What one Oregon ranch learned
when regenerative agriculture met
volcanic soils, eight inches of rain,
and seven generations of ranching.*



Photo by Rob Mattson/Noble Research Institute

We've Been Regenerative

LONGER THAN WE KNEW

The June sun had already pushed temperatures toward 90 degrees when Steven Smith knelt beside one of our winter bale grazing sites. Around us, the high desert looked exactly as it should in mid-June, marked by dry sagebrush, dusty soil, and cheatgrass already curing beneath a cloudless Oregon sky.

Steven brushed aside the blanket of leftover hay and dug a small hole just two inches deep through the mulch.

"Feel this."

When we placed our fingers in the soil beneath the bale grazing residue, it felt as though we had recently received one of those life-saving early June rainstorms. Nearby, in a bare area outside the bale grazing site, the soil was hot and dry, well above the day's air temperature.

The difference wasn't irrigation. It wasn't fertilizer. It wasn't a revolutionary piece of equipment.

It was simply covered soil.

In that moment, one of regenerative agriculture's most fundamental principles became tangible. What had seemed like an abstract concept suddenly made perfect sense beneath our fingertips.

Ironically, we hadn't set out to become regenerative ranchers. Like many producers, we had probably been practicing elements of regenerative agriculture for generations, just never called it by a formal name. These practices likely developed with simple observation and experience. If you damage the resource your livelihood depends on, you're out of business.

We live in Paisley, a high desert region of South-Central Oregon. My husband's family settled here around 1872, and we continue stewarding the same land as the seventh-generation owners and managers of Withers Ranch. We work alongside members of the fifth, sixth, and eighth generations, too.

We became fascinated with the growing conversation around soil health after attending a presentation by North Dakota farmer Gabe Brown several years ago.

Brown resurrected his struggling operation by adopting soil-building practices after experiencing a series of unfortunate natural disasters. No-till farming, multi-species grazing, cover cropping, and the elimination of synthetic fertilizers became the cornerstone of his now-profitable operation. Gabe currently travels across the nation to share his regenerative journey with eager listeners.

We returned home from Brown's presentation ready to completely transform our volcanic, alkaline soils.

Then, life happened.

Our enthusiasm slowly gave way to the daily demands of running a working operation. Gabe Brown's book *Dirt to Soil* stayed on the bookshelf, and regenerative agriculture became something we'd "get to someday."

By 2021, drought across the West had intensified, forcing producers including us to rethink how resilient our operations really were. We weren't looking for trendy ideas. We were looking for practical ones.

Still, the idea was there, and that is an important first step in any paradigm shift.

Finding Noble

A DIFFERENT WAY OF THINKING

Around that same time, our beef cooperative, Country Natural Beef (CNB), launched a cooperative-wide regenerative grazing initiative called Grazewell. The program encouraged members to intentionally monitor soil health, establish baseline measurements, and implement management practices that could improve both ranch resilience and profitability.

Participating in Grazewell challenged us to think more intentionally about management and intensified our search for practical, science-based regenerative stewardship strategies that could work in the unique conditions of Oregon's high desert.

In July 2025, Country Natural Beef provided another opportunity, but this time, to attend a Noble Profitability Essentials course hosted in Pendleton, Oregon. The course is taught multiple times a year by a group known as Noble Research Institute.

Lloyd Noble established Noble Research Institute in 1945 to help ranchers and farmers remain profitable while adopting healthy grazing practices, with a heavy focus on soil health. For decades, Noble operated within a 100-mile radius of Ardmore, Oklahoma, before expanding its reach nationwide. It was apparent that Noble rarely hosted a course west of the Rocky Mountains, and we agreed the 6-hour drive to Pendleton may be a worthy investment.

Noble brought facilitators, known as Regenerative Ranching Advisors, to guide us through the 2-day intensive course, where we evaluated the profitability of a mock ranch. We used Noble's worksheet templates to pinpoint where the mock operation was falling short and where it could overcome those problems, either by smart business decisions or changes in land management.

The course wasn't all numbers. It was a challenge to shift our mindset, especially given our seven generations of knowledge and tradition, into one that is constantly observing, monitoring, and mostly willing to change. Instead of relying on the old adage "If it ain't broke, don't fix it," we started to wonder; what if you don't know it's broken?

Why do we own hundreds of thousands of dollars in depreciable equipment and hire additional labor each summer to harvest hay if grazing those same meadows might be the more profitable alternative? I pay my ranch hands \$20 an hour, provide housing and beef, and pay myself a wage, but what about the hours that never make it onto a timesheet? The early mornings sketching a new corral project, the evenings planning grazing turnouts, organizing processing days, or figuring fencing projects all have value. Those hours are labor, too.

We even found ourselves looking differently at capital purchases. How much value did that new one-ton pickup actually add to the operation? I bought it to reduce the previous year's tax burden, but was it truly a profitable business decision?

We brought materials from the event home and began evaluating our own operation with this framework. Instead of getting lost in the daily operations of the ranch again and leaving the paperwork on our desk, we had a scheduled meeting with one of our Noble facilitators in a few weeks. A follow-up virtual consultation with a Regenerative Ranching Advisor is an integral part of a Noble course, and it's included in the course fee. This was our chance to have technical expertise looking at our own ranch and our real numbers.

Oklahoma Meets

THE HIGH DESERT OF OREGON

We worked with Steven Smith, a veteran Regenerative Ranching Advisor, who's been working at Noble Research Institute for 20 years. Steven is gracious in answering all questions and providing helpful information, but he's also successful at challenging paradigms, even if they're non-traditional. Steven guided us through our included consultation, and we immediately implemented empowering financial practices, which will continue for our tenure as owners and managers.

What surprised us most, however, was that the conversation didn't stop with profitability. Just like eating healthier or exercising consistently, good practices have a way of spilling into other parts of your life, businesses, and relationships. We realized profitability wasn't the destination. It was simply one component of a regenerative and sustainable operation. Healthy land and healthy soils are the foundation.

Less than a year later, Steven brought those conversations from the computer screen to our ranch in Oregon's high desert. It was there, with one handful of cool soil beneath a layer of bale grazing residue, that regenerative agriculture transformed from an interesting concept into something we could see and feel for ourselves.

I'll admit, I had reservations about bringing a native Oklahoman to the high desert.

The average cowherd in Oklahoma is around 50 head, and the average agricultural operation encompasses roughly 300 acres. There is very little public land, annual precipitation commonly exceeds 30 inches, and producers often integrate small ruminants such as sheep and goats into their operations.

Imagine Steven's surprise when he landed in the heart of the high desert landscape: Lake County, Oregon.

Lake County spans more than 8,000 square miles, an area larger than several states. Nearly 78% of the county is public land. Fewer than 7,500 people call it home, less than one person per square mile, yet well over 75,000 head of cattle graze across the landscape. Annual precipitation averages just 8 to 10 inches, and our volcanic, alkaline soils don't offer producers many options beyond growing grass.

Agriculture looks different when ranches are measured in hundreds of thousands of acres instead of hundreds, when cattle spend months on public grazing allotments, and when every inch of rainfall matters. We aren't moving temporary fence every few days or planting diverse cover crop mixes across thousands of acres. Much of what works in the Great Plains simply isn't practical here.

Steven understood. He wasn't trying to teach us how to ranch like Oklahoma. He was teaching us how to think about our own ranch differently.

Regardless of location and ruminant number, one thing does remain constant: the six soil health principles Noble teaches. These principles are: 1. Know Your Context, 2. Cover the Soil, 3. Minimize Soil Disturbance, 4. Increase Diversity, 5. Maintain Continuous Living Plants/Roots, and 6. Integrate Livestock.

Photo by Rob Mattson/Noble Research Institute



Withers Ranch cattle grazing a U.S. Forest Service allotment, a defining characteristic of high-desert ranching.

Steven Smith, Matt Withers, Colleen Withers, and Dan Withers observing manure.



Photo by Rob Mattson/Noble Research Institute

Principles to Practice

A HIGH DESERT APPROACH

On paper, these six principles seem straightforward. The challenge isn't understanding them, but applying them within your own context. For us, that meant identifying practical changes that fit the realities of a high-desert ranch rather than trying to replicate what worked somewhere else.

As we felt the cool soil beneath the layer of leftover hay, we were witnessing Soil Health Principle #2: Cover the Soil in action. Our assumption about regenerative agriculture in this region was that while certain practices could be beneficial, our volcanic soils and limited rainfall would mean meaningful change would take a long time to appear. Instead, that simple management change demonstrated that even in the high desert, practical stewardship decisions can produce measurable results much sooner than we imagined.

The ranch tour that followed wasn't about finding everything we were doing wrong. It was about connecting what we were seeing on the ground and using those observations to continue a deeper regenerative journey.

Through our participation in the Grazewell program, we had already established baseline monitoring sites, completed Haney soil tests, and identified management actions aimed at improving the long-term health and resilience of our operation. Practices such as bale grazing, monitoring photo points, evaluating grazing management, and experimenting with new approaches were already becoming part of our management plan, but Steven's visit helped bring those efforts into focus.

We discussed additional simple but impactful changes in our land management. No, we don't have to hotwire paddocks, build portable water sources, and move our cows every 24 hours. We can cut a large pasture in half, maybe even in quadrants, and earn eight to ten additional days of grazing.

We don't have to set a goal to completely transform every inch of our worst, sodic soils, but we can start on a smaller, irrigated meadow at home, and build from there.

Observation

CHANGES EVERYTHING

Steven asked us if we had examined our cows' manure. We stared at him, perplexed, but he kneeled with a nearby stick to dissect a cow pie. At first, it seemed like an odd question ;however, that simple observation told a much bigger story.

Manure is a major indicator of a cow's nutritional balance. It should have the consistency of pancake batter or pumpkin pie, and should land flat and spread on the ground. If it's hard and somewhat stacked, she needs more protein. As he shifted the manure about, he also showed us evidence of bugs and biological activity. The sooner biologicals can break down manure in grazing sites, the sooner the soil can benefit from the nutrients.

We've walked past thousands of cow pies over the years. We just never realized how much they had to tell us.

Perhaps the greatest lesson from our time with Noble wasn't a new grazing system, a soil test, or even the bale grazing results. It was the reminder that regenerative agriculture begins with observation.

We don't need to transform our entire ranch overnight, nor do we need to replicate what works in Oklahoma or North Dakota. We simply need to understand our context, pay attention to what the land is telling us, and be willing to try small changes.

In a landscape where resiliency is paramount, those small changes can add up quickly. The future of regenerative agriculture in the high desert may not be found in dramatic transformations, but in thoughtful stewardship of the resources we already have.