

IT AIN'T YOUR FATHER'S FARMING— NEW MIND-SETS AND NEW PRACTICES IN THE AGE OF CLIMATE CHANGE

By Susan Moran

Barreling along in my Subaru Forester, I am on Interstate 70 heading east of Denver on this crisp, sunny day in February. The late-afternoon shadows extend their tendrils across field after field of closely groomed crops. Fellow Subarus—ubiquitous sightings in the Denver/Boulder metro area—become scarcer and scarcer, replaced by dusty white Toyota trucks and flatbeds carrying farming machinery. The flat topography is punctuated only by an occasional grain elevator and farmhouse.

I reach Exit 405 at the town of Seibert and steer south, passing the gas station/coffee shop at the intersection. I rumble along for five more miles, passing a few ranch-style homes and endless swaths of groomed fields on both sides, until I turn into a gravel driveway. Two black Labs bolt to the car, greeting me with yelps and licks.

I'm met at the door by Curtis Sayles, a graying man with a boyish face who's clad in jeans and a blue work shirt. He offers me a warm smile and a firm handshake. "I bet you could use some coffee," he says as he ushers me to a long wooden dining table in a spacious room and pours me a black brew. He sits down across the table and launches into talk about life on the farm and raising three daughters with his wife, Kerry.

I'm struck by the fact that Sayles, fifty-two, is as much an entrepreneur as an ordinary farmer. Or that "ordinary" farming looks a lot less ordinary as guys like Sayles scramble to keep the farms, and the towns they reside in, afloat by diversifying their income streams. Sayles, for example, is launching wind, biomass, and other ventures, and he is organizing farmers in the community to negotiate a lucrative contract with a large wind-farm developer that's been scoping out the area. If necessity is the mother of invention, then the people who work the land might be the ones to help us figure out how to save it. Just don't go calling Sayles a tree hugger.

Sayles is among a small but growing subset of farmers and ranchers who are becoming part of the climate-change solution. Many of them are driven more by a desire to save the farm than to save the planet. Some of them are generating renewable energy in the form of cooperative wind farms or bio-fuels production. Others, like Sayles, have entered carbon-trading markets, such as the voluntary Chicago Climate Exchange, as carbon-offset providers, as they're called in industry parlance. In essence, they are reducing or sequestering carbon dioxide in the soil through practices and technologies such as conservation tillage and methane digesters—a way to capture this superpotent greenhouse gas on dairy farms. Still other farmers are planting forests or native grasslands where they had grown crops. The climate exchange, as well as other regional carbon-offset programs, are gaining appeal among farmers from Georgia to Oregon.

Warmed by coffee, we soon jump into Sayles's 1980 Ford F-150 truck and head out to survey his 5,000 acres. The wind gusts and whistles loudly through the door cracks, making it tough to carry on a conversation. Dust clouds trail us down the narrow dirt road. Sayles pulls up to stop at the border of his and his neighbor's fields. The contrast between his fields and those surrounding them is stark: one side is tidy, groomed, slick, while the other is chaotic, spiky, messy.



Farmer Curtis Sayles walks among the weed-covered and unused traditional tilling equipment on his father's farm in eastern Colorado. Courtesy of Kevin Maloney

We step down from the truck and walk a few yards onto his field. There's no dirt blowing across the ground. Sayles presses his brown, round-toed cowboy boot into the spongy soil for signs that his winter wheat is starting to peek out. New green shoots are difficult to see because the field has been covered with a helter-skelter splash of decaying sunflower stalks and corn husks. It looks like a bad hair day on a grand scale. It's whimsical and wild. For Sayles, it's just practical. He never plows his fields, on which he plants a continuous rotation of winter wheat, corn, sunflower, and millet. His method is known as no-till. In the eyes of some of his tractor-driving neighbors, it approaches heresy.

"We don't go to the coffee shop much because I don't like people snickering at me," he says, nodding toward his neighbor's field as he dips both hands into his pockets. "I think we're doing things that don't fit into their mind-set."

He was referring to the restaurant I passed just off Interstate 70 up the road, Seibert Travel Plaza. It's the only coffee shop left in this sleepy town. In fact, it's the only social hub besides High Plains High School, where Sayles keeps score and Kerry coaches for the girls' basketball team, and where most of the town's 150 residents come to cheer and trade gossip.

Despite neighbors' barbs, Sayles may have the last laugh. Traditional plowing, or tilling, helps get rid of weeds and generally makes using



Curtis Sayles and other farmers are using more environmentally sensitive techniques to raise cash crops and receive carbon credits. Courtesy of Kevin Maloney

fertilizers and pesticides easier. But unlike plowing, the no-till method shields the soil's carbon-rich humus from contact with oxygen in the atmosphere. Consequently, the humus doesn't decay as quickly.

Sayles sees how the wind blows away his neighbors' topsoil, perhaps a farmer's most precious asset. By contrast, his topsoil stays put, protected by the residue from previous harvests. The blanketing also keeps his soil moist and rich with yield-boosting organic matter called humus. And it helps prevent water erosion, which is critical in this arid region where farmers like Sayles rely on dryland farming. What's more, no-tillage lets Sayles spend less time behind the wheel of his tractor plowing and less money filling the tank with diesel fuel.

Lately he has begun to reap another reward. One day last summer, he pulled out of his mailbox a \$6,200 check from the National Farmers Union. It came on behalf of the Chicago Climate Exchange, a capitalist's approach to stemming climate change. The checks, issued to farmers and ranchers enrolled in the program, actually come from faraway utilities, manufacturers, and other corporations that are attempting to assuage their guilt as polluters by paying carbon-offset providers like Sayles to sequester carbon in soil and plants. Wealthy companies can pay their way to faster reductions in greenhouse gas emissions when they can't or don't want to make dramatic cuts on their own.



Curtis Sayles talks with his brother Scott among the mixed stubble of sunflowers, corn, and wheat on his land in eastern Colorado. Courtesy of Kevin Maloney

Sayles, who started farming in Seibert with his father in 1980 after a stint in Houston working in the oil industry, has never taken farming for granted. He always has looked for new ways to boost his yields, nourish the soil, and generate more income. So he figured, why not enroll in the Chicago exchange's carbon-credit program? "I wouldn't say I'm an environmentalist," he says. "To be candid, we're getting paid to do something we're already doing. It was a no-brainer."

To Sayles, the \$6,200 could have gone toward financing two of his daughters' weddings this year, or toward a \$30,832 John Deere no-till drill, or toward his dwindling retirement fund. To a large power company like American Electric Power, which made \$14.6 billion in revenues in 2008, that same \$6,200 might help furnish an office with a few Herman Miller chairs at \$620 each.

To the voluntary Chicago Climate Exchange and regional carbon-trading schemes that have cropped up in the country, no-till farming is one of several agricultural and land-management practices that qualify as carbon offsets. That's because soil loses most of its carbon content during plowing, which in turn releases carbon dioxide gas into the atmosphere.

Carbon offsets, or credits, produced through agricultural practices—particularly no-tillage—have been met with skepticism by some economists, scientists, politicians, and others. They argue, for instance, that some practices don't amount to additional or new net reductions in greenhouse gas emissions, and that five-year contracts don't guarantee permanent emissions reductions and should thus not be considered an emissions offset. If the carbon is eventually released back into the atmosphere, does sequestering it amount to any more than a feel-good measure?

Pieter Tans is a senior scientist at the National Oceanic and Atmospheric Administration's (NOAA) Earth System Research Laboratory in Boulder, Colorado. The lab runs several carbon dioxide measurement systems around the world, including the Mauna Loa observatory in Hawaii. Tans says there is no evidence that carbon-offset programs or markets, including the European Union's Emission Trading Scheme, have put a squiggle in the atmospheric carbon dioxide data, largely because these mechanisms are still so new and small. Further, he adds, any blip in the data would be wiped out by China's building of at least one coal-fired power plant each week.

“Looking from the atmosphere, we cannot say at the moment that they’re making a dent because the amounts we’re talking about are so small,” says Tans.

But on a smaller scale, recent NOAA studies of Iowa cropland have shown that a land-based instrument protruding into the air detected a surprisingly large amount of carbon dioxide uptake by corn and soybean plants from the atmosphere.

Tans estimates that if carbon could be reliably stored in soils for at least fifty years and then released into the atmosphere, that time delay could make a positive difference in buying time for effective climate-change policy and more advanced measuring technology to emerge. Meanwhile, he says, farming and ranching practices that sequester carbon are worthwhile because they yield positive environmental and economic benefits.

Farmers like Sayles are getting paid for continuing not to plow their croplands. Some people view it as an unworthy subsidy—paying someone to do nothing different. And it disrupts the time-tested notion that doing nothing (namely, letting nature take its course rather than taming, or grooming, it into submission) can’t be considered labor, and thus should not be valued. Nature follows its own logic; sometimes the best thing to do is leave it alone. However the scientific and accounting questions get resolved through carbon markets, it’s worth asking ourselves, who should decide who gets rewarded and who should pay, and how do we deal with the trade-offs? These questions are coming to the forefront as Congress, under the Barack Obama administration, begins shaping long-anticipated climate legislation. The most popular proposal has been a cap-and-trade system.

In any case, agriculture and other land practices will likely play a role in such a system. Globally, agriculture and ranchlands contribute at least 12 percent of greenhouse gas emissions, and roughly 8 percent of US emissions, making them a significant climate-change culprit. That amounts to less than the planet-warming emissions from the electricity and transportation sectors, for instance, but many scientists, policy makers, and economists view agriculture as a low-hanging fruit. They say that reducing a significant amount of carbon dioxide and other offending gases by sequestering carbon in soils and vegetation can be done faster and cheaper than, say, injecting carbon dioxide from coal-fired power plants into deep rock formations.

“The bottom line is there’s plenty of scope for agriculture to participate in carbon offsets,” says Keith Paustian, a soil ecologist at Colorado State

University at Fort Collins. “And wise practices bring not only greenhouse gas benefits, but other benefits, like less nutrient pollution and less soil erosion.”

One environmental trade-off of practicing no-tillage is that with some crops it requires more spraying of Roundup and other chemical weed killers in lieu of plowing before planting. But the environmental benefits outweigh the downside, says Karen Scanlon, executive director of the Conservation Technology Information Center in Lafayette, Indiana. The added crop detritus that’s left on the soil, especially with continuous no-tillage, keeps the soil in place so the chemicals don’t blow away with the soil. (Advances in technology, such as global positioning system auto-steer sprayers, have also allowed conventional and conservation-tillage farmers alike to apply herbicides and fertilizers much more precisely and efficiently than they did years ago.) The residue from no-tillage also improves water quality of the soil and provides food for wildlife, making the surrounding habitat richer, Scanlon said.

Back on his farm in Seibert, Sayles wonders how the dry, windy winter in eastern Colorado will play out. “Nobody really knows what’s going on with the climate—whether it’s global warming or what,” he says. “But I feel even better we’re doing continuous no-till because there’s always residue on the ground, no matter how strong the wind blows. I’d say we’ve got our bases covered.”

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