

Against all odds: The remarkable ecosystem revival of the Collins Ranch

For nearly 120 years, four generations of ranchers at the Collins Ranch have raised cattle on the sandy, dry prairie of Eastern Colorado.



They faced the natural struggles of any ranching operation – fluctuation in prices, drought, wildfires, and the unpredictability of animals, nature, and the land.

The sand sage, short grass environment of the 32,000 acres where the family settled in 1907 is exceptionally fragile.

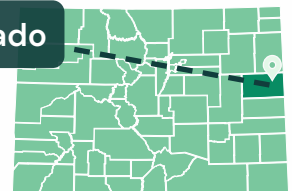
Grasses struggle to take root in the sandy soil. An unyielding drought has kept annual rainfall below the expected 13 inches for the majority of the last 30 years. The ground stays frozen, on average, six months a year.

Despite the unlikely odds, the grasses, animals, and ecosystem at the Collins Ranch thrives.

Toby Johnson and his wife, Amy, took over the ranch in 1994 after Toby's father passed away. Graduating from the Texas Christian University's Ranch Management Program in 1994, Toby was able to take the lessons he learned there and implement changes on Collins Ranch. Building off his father's legacy of improvements to the ranch, Toby was able to continue to transform the land's ecology and soil health.

Background

Kit Carson , Colorado



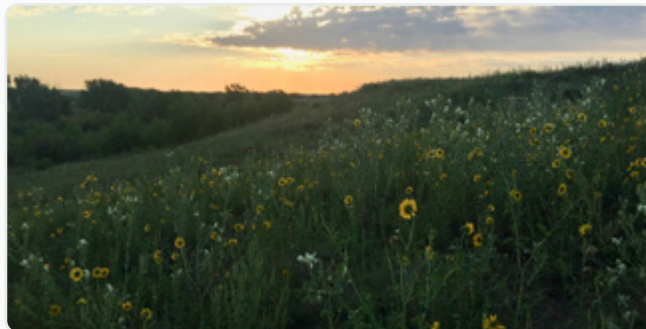
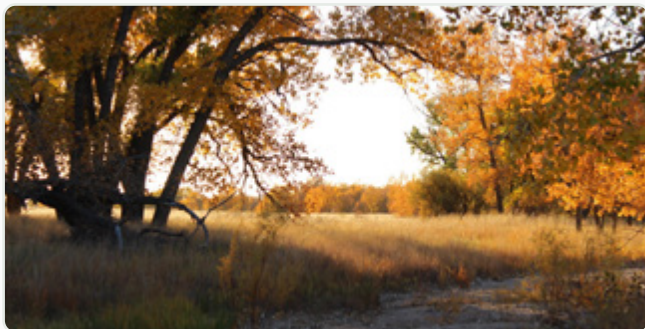
32,000 Acres

900

Bred Females



Cow-Calf Operation



Although it's often an uphill battle, with setbacks including drought and a significant wildfire, their work has paid off. They see it in the return of dung beetles, white tail and mule deer, more bird species, and big bluestem grass, which grows in greater abundance than it has for years.

It was obvious to Toby's brother, Don, who hadn't visited the ranch in years, when he glanced out the living room window.



My brother said, 'I've never seen grass on that creek bank and now the whole thing is covered. It's not something I can always see, but when someone else points it out, I think, we really have made some good progress.'

Toby Johnson

The window overlooks a tall creek bank. What used to be just a sandy hill is now covered in grass.

"My brother said, 'I've never seen grass on that creek bank and now the whole thing is covered,' Toby said. "It's not something I can always see, but when someone else points it out, I think, we really have made some good progress."

Offsetting capital costs with carbon credits

The dedication to their ranch's regeneration comes with capital costs that include additional expenses for fencing and water infrastructure, including more pipelines and additional water sources. One way they offset these additional costs is through selling carbon credits with Grassroots Carbon.

When ranchers implement practices such as longer pasture rest periods and grazing with greater herd density, the soil stores additional carbon due to the deep-rooted grasses that draw down carbon dioxide from the atmosphere.



Grassroots Carbon's program works with ranchers to take a baseline measurement of the amount of carbon stored in their soil. The company then uses scientific models to estimate how much carbon will increase based on soil type, climate, and ranching practices, and uses that information to generate a carbon credit.

This program, though intriguing, initially was met with skepticism from the Johnsons.

"There are so many variables in agriculture, like fire or drought. We're trying to do the right thing, but we needed to know our risks," Toby said.

Despite these concerns, the potential benefits of selling carbon credits gradually began to appeal to the Johnsons. After spending considerable time reviewing the contract, they reached a point where, as Toby put it, "There was no downside, and there could only be potential upside." They also spoke with other ranchers, who had already embarked on this journey.

"I think we do inherently believe what we are doing is good for the land and good for the animals and good for the climate. This is a way to quantify it," Amy said. "It makes sense to sell carbon credits because if you're grazing right, doing the right thing for your land, you might as well get rewarded for it. Then this can enable you to keep improving how you do things, and it also helps to support our ranch in years with lower cattle prices or less rainfall where we have to reduce our herd."



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Amy Johnson

Implementing generative practices

Before



After



A dedication to regeneration

Just before Toby Johnson (4th generation rancher) and his wife, Amy, took over the ranch in 1994, he went through the ranch management program at Texas Christian University. Since then, he implemented changes, building on the legacy of his dad's management, that would lead to a transformation in the land's ecology and health.



Pasture Size

When Toby took over management, the ranch primarily rotated between summer and winter pastures. They've transitioned from 30 pastures, to a network of over 88 pastures, each averaging around 400 acres. The shift from seasonal pastures to a rotational grazing system has become a cornerstone of their success, ensuring each pasture receives a minimum of 100 days rest and grazing periods average under 6 days.



Herd Size

They consolidated herds, each herd grazing from 22 to 26 pastures. This safeguards against overgrazing, and allows for greater rest periods, and it also optimizes cattle nutrition and accelerates range improvement. Grazing intensity is carefully monitored, with an average of 30 acres allocated per animal each year, with more acres per animal in drought years (the result of destocking). This flexible approach adapts to accommodate drier years, showcasing a commitment to adaptive land management.



Water sources

The ranch partnered with the NRCS EQIP program to install 23 miles of underground pipelines. This extensive network ensures a reliable distribution of water tanks throughout the ranch, benefiting both livestock and wildlife. Over the last two decades, the ranch has replaced or installed over 50 water sources, with bird ramps thoughtfully placed at all water tanks. In a proactive measure to conserve meadows and riparian zones, water sources have been strategically positioned uphill from creeks and meadows.

