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Historic Agricultural Stewards of the Flint Hills

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Father and Son
Dorothea Lange, 1937
Retrieved from the Library of Congress

HISTORIC AGRICULTURAL STEWARDS OF THE FLINT HILLS

Deep, fertile prairie soils made the tallgrass region ideal for tillage agriculture, and most tallgrass prairie was converted to cropland in just a few decades as railroads and land settlement acts provided economic incentives to immigrant farmers eager to settle here.

Sadly, over 90% of the once vast tallgrass prairie ecosystem (around 170 million acres) was lost to the plow. The Flint Hills landscape is the one exception to this calamity, evading this fate due to its underlying geology that discouraged tillage. Even so, over 70% of the state's historic total of tallgrass prairie was converted to cropland, and even here in the Flint Hills nearly all bottomland prairies succumbed to the plow.

It is difficult to restore the land back to native prairie once it has been plowed and farmed for successive years. Not only are long-lived prairie plants lost, but the diversity and abundance of soil microbes associated with native prairie are lost. We are just now beginning to appreciate the role these soil microbes play in regulating the prairie. We can replant seeds of the prairie, but getting a prairie restoration to behave like native prairie is a process that can take decades or longer, and we may never be able to fully recapture its former biological diversity.

While we cannot reverse the actions of our ancestors who turned the prairie sod wrong-side-up, all is not lost. It may seem odd to talk about stewardship and the farming of our former prairies in the same breath, but the conservation community

is increasingly recognizing that while farmland may at first glance seem like an ecological wasteland, there is opportunity to advance conservation by employing more sustainable, regenerative farming practices.

Early farming methods are often reproved for being out-of-date or even abhorrent. An honest critique of past farming practices will indeed expose practices that are not aligned with conservation, such as excessive tillage, lack of erosion control and overuse of herbicides, pesticides and fertilizers. However, recounting the history of farming in the Flint Hills region will also reveal that many practices employed by early agriculturists, including Indigenous farmers, have much in common with the regenerative farming movement.

Probably the most important domesticated crop for Indigenous Peoples and early settlers in this part of the state was *Zea mays* (maize or corn). Indigenous Americans domesticated maize from teosinte, a close relative of eastern gamagrass, which is an important native grass in the Flint Hills. Cultivation of maize eventually spread throughout much of North America by Indigenous Americans. In the tallgrass prairie region, including the Flint Hills, Indigenous Americans grew maize and other crops along fertile alluvial soils that paralleled prairie-fed streams and rivers. While early

Euro-American settlers also preferred farming next to these same stream valleys, and both groups farmed in the absence of fossil fuels, the similarities largely end there.

Journal entries from the expedition of Juan de Oñate, a Spanish conquistador in search of the fabled land of Quivira, make this comparison. Oñate and his soldiers encountered in 1601 a remarkable Wichita Indian settlement at the confluence of the Arkansas and Walnut rivers near what is now Arkansas City. This “Great Settlement” — *Etzanaoa* in the language of the Wichita — was one of the largest Indigenous American settlements ever documented in North America, with as many as 20,000 inhabitants. We know from Oñate’s expedition notes that crops were grown in small plots between the many grass-thatched lodges, preventing crop depredation by deer and other mammals. The Wichita tribe and many other tribes depended on three primary crops known as the “three sisters:” maize, squash and climbing beans. Maize and beans were planted together in mounds, and squash was planted between the mounds. The stalks of maize served as a trellis for the beans, the beans provided maize with nitrogen via their root nodules, and the wide leaves of squash plants shaded the ground, suppressing weeds and helping retain soil moisture.



Plate 4 (Spray Plane) from *Corn: Farm to Table in Woodcuts*
Ian Huebert

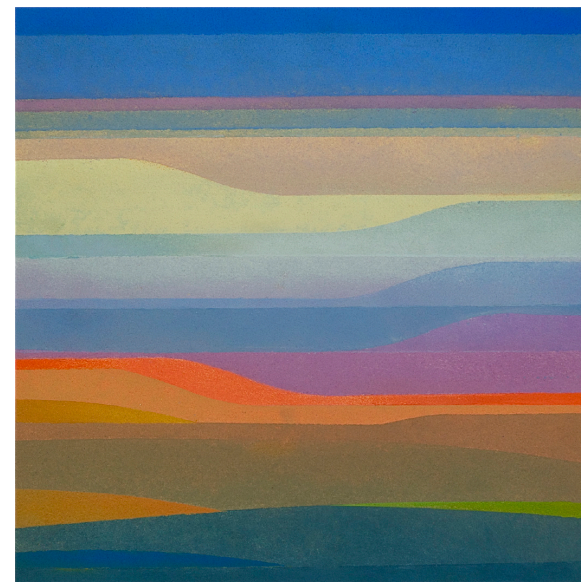
The symbiotic relationship of these crops required little or no inputs of fertilizer and certainly no herbicides or pesticides. The ephemeral nature of their grass lodges also meant that settlements tended not to persist at any one location for very long, allowing the land to be reassimilated by the prairie. Indeed, all physical evidence of Etzanoa had disappeared by the time American expansion reached this historic settlement, including the agricultural plots that once helped feed a population estimated at 20,000.

European-American settlers who supplanted Indigenous Americans in the mid-nineteenth century tended to plant larger plots, usually as a monoculture (one crop at a time). However, some of their farming methods would today be viewed as progressive. Census records from Stephen Jones's Spring Hill Farm and Stock Ranch in Chase County (now Tallgrass Prairie National Preserve) reveal a much more diverse range of crops than we typically see grown today. Of the 340 acres under cultivation at the time of the 1885 census, 225 acres were in maize (dent or field corn), 100 acres in tame grasses (Timothy, orchard grass and red clover), 30 acres in rye, 30 acres in sorghum, 25 acres in oats, 10 acres in winter wheat, and one-half acre each in potatoes and sweet potatoes. Jones's operation also maintained a five-acre fruit orchard with apple, peach, plum, cherry and pear trees, a five-acre walnut grove, a

one-acre vineyard and, finally, a one-half acre plot dedicated to raspberries and blackberries.

Besides growing a rich diversity of crops, Jones's operation relied on crop rotations and the use of livestock and green manure crops (cover crops, like clover, that were plowed under) to regenerate the soil. Early settlers also looked for ways to minimize tillage since horses and mules were the only source of farm power, which required many hours of field labor for each tillage application. One method of reducing tillage was via the "lister," an implement that combined tillage and planting into one operation. It consisted of a planter box attached to a double moldboard that, in one pass, tilled the soil, created a furrowed seedbed and planted the seed. Once corn plants reached a critical height, a ridge buster cultivator, or "Go Devil," was used to throw soil back into the furrow, smothering weeds at the base of the crop and allowing deeper establishment of roots. By 1888, three-fourths of all Kansas corn was planted with listers.

Another low-tillage implement used by early settlers was the walk-behind grain drill, an early no-till drill that seeded crops, like winter wheat, oats and clover, between standing rows of corn. In order to straddle the rows of corn, the narrow grain drill was pulled by one horse. A fine example of this implement can be viewed in the barn at Tallgrass Prairie National Preserve.



Light and Land
Bob Regier

The recent regenerative farming movement promises to refocus the management of our agricultural lands to a more sustainable and resilient model that results in erosion and fossil fuel use reductions, enhanced soil health and more compatibility with wildlife.

While it's important to look for new and better ways of accomplishing these goals, we should also seek knowledge from the people who came before us as, clearly, regenerative agriculture is not a new concept.

Brian Obermeyer is a fifth-generation Kansan from the western flank of the Flint Hills. Brian has been with The Nature Conservancy for the past 23 years. He currently oversees land protection and stewardship efforts for the organization across the state. He and his wife, Gwen, live on a small ranch in Chase County.