



# How Did We Lose Our Fire Culture in West Texas?

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An Edwards Plateau Prescribed Burning Association burn is conducted in February during a burn ban, with permission from the county judge.

## The First Americans Brought a Fire Culture with Them

When the first humans appeared on the North American Continent, via the land bridge from Asia, the plains were stocked with large species of animals—giant buffalo, mammoth, elephant, camel, horse—which are now extinct. Armed with only spears, darts, and later, bows and arrows, the hunters probably had difficulty bringing down these huge, tough animals. A common technique was to use fire to stampede the animals over a cliff or into a ravine as well as attract them to burned areas once the immature vegetation began to grow (i.e., modern day food plots).

Eventually, for some unknown reason, all the species of larger animals disappeared. This left the country open to be occupied by smaller animals. One species of animal was the modern buffalo, or bison, which arrived on the North American continent approximately 12,000 years ago. These buffalo multiplied and spread until, at their peak, they numbered about 40 million head and occupied nearly half of North America. These large numbers of buffalo had a profound effect on the life and culture of the American Indian.

Indians observed that buffalo consumed mostly grass and preferred areas dominated

by grass. They also realized that fire was needed to maintain open prairies. Fire was an important tool to manipulate the vegetation with the purpose of improving buffalo habitat. Without fire, the alternative food source for potential forested areas was deer and squirrel meat. Numerous written accounts support the use of fire by the Indians including the following statement from an early pioneer:

*"In the spring the Indians throughout the buffalo country burned off the old grass in places where they had not used a fire drive in the previous autumn."*

## Early Anglo Texans and Fire

Two major changes occurred across Texas and much of the western United States during the period from about 1700 to 1900. Grazing by free-roaming animals (i.e., buffalo) changed to grazing by relatively free-roaming livestock and ultimately confined livestock. Concomitant with this change was the influence of early settlers on the frequency, timing, placement and extent of fires.

*"One certain indicator of the importance of prairies to early settlers in eastern Texas was their practice, observed in even the earliest years of colonization,*

*of regularly setting fire to the grasslands. This practice, perhaps inherited from the Indians, supposedly destroyed weeds and dead grass, so as to make room for the new grass. In addition, the fire removed all bushes and young trees, thereby preserving the prairie from encroachment by the forest. Indeed, it is fairly well agreed that most of the prairies in the eastern half of the United States were created by Indian clearing activity and maintained by annual firing. For the Indian, preservation of prairies meant that grazing bison would remain in the area, while for the Anglo-American, annual burning of the grasslands assured ample forage for the herds of cattle typically owned by the frontiersmen." An early settler in the area reported in 1834 "that prairies are all burnt over twice a year - in mid-summer, and about the first of winter."*

A well documented fact is that before the Civil War, over 75 percent of the Caucasian population in the southeastern United States consisted of pastoral herders of Celtic origin from England, France, and Spain, where fire had been an important part of their nomadic culture. This fire culture still remains throughout most of the Southeast today but is lacking in many other U.S. regions, including most of Texas.

It's interesting why the practice of firing the prairies didn't take hold with the early ranchers in West Texas. Since a number of these early ranchers came from East Texas or regions in the south eastern states where fire was used on a frequent basis, they certainly had the opportunity to bring a fire culture with them. They also had the opportunity to witness fire in their new home.

Quoting Walter Prescott Webb in "The Texas Rangers," page 315:

*"... the whole country from the Llano via the head of the Guadalupe and Frio to the Nueces had been burned, and there were few places where water and grass could be found together. 'I have traveled a whole day at a time without finding any grass,' according to Major John B. Jones in early Sept 1874."*

According to accounts written in the early 1880s, fire was an annual summer event in the western region of the Edwards Plateau. "As often as not the fire ran uncontrolled, destroying a million acres of grass down to the roots and wiping out the herder's plans to graze his flock through the winter."

In 1854 Olmstead commented on the suppressed growth of live oaks near Austin in "A journey through Texas," page 130:

*"The live oaks are often short, and even stunted in growth, lacking the rich vigor and full foliage of those further east. Occasionally a tree is met with which has escaped its share of injury from prairie burnings and northers, and has grown into a symmetrical and glorious beauty. But such are comparatively rare."*

Even as late as the 1920s, the lack of a fire culture was having a major effect on the Edwards Plateau landscape. In 1923, V.L. Cory became a botanist at the Texas Agricultural Experiment Station at Sonora where he met an elderly cowboy who told of driving a flock of sheep from Junction, Texas, through the area of the Experiment Station and on to Juno 50 years before (circa 1873) when the vegetation was much different. Cory reported the cowboy's description as the following:

*"... There were no fences, nor was the country timbered then, as is now the case. This valley and all the other valleys then were free from woody plants; and the entire country was a prairie of tall bunch-grass, reaching at least to ones stirrups... The only short-grass was around water holes and in depressions in the valleys."*

When asked about the abundance of juniper 50 years before, he remembered

the cowboy's reply as: *"These were few in number and confined to the headers (the gully or ravine-like beginnings of the branches of the draws, or drainage courses, on the escarpment bordering the valleys) . . . but now the tall grass has gone, trees have spread everywhere, and the valleys, once having grass only, now are occupied chiefly by weeds, thorny shrubs, and prickly pear."*

It is interesting why both the botanist and cowboy did not mention the relationship between fire and grasslands or lack of fire and increase in woody plants. It's as if fire was not considered an option; maybe a reason for this is the semi-arid rangelands of the Edwards Plateau were so different from the more humid regions further east. However, there were some in the Edwards Plateau who understood quiet well what had happened.

This scenario is accurately described by Foster, who wrote in 1917:

*"The causes which have resulted in the spread of timbered areas are traceable directly to the interference of man. Before the white man established his ranch home in these hills, the Indians burned over the country repeatedly and thus prevented any extension of forest areas. With the settlement of the country, grazing became the only important industry. Large ranches, in time, were divided into smaller ranches and farms with a consequent fencing of ranges and pastures. Overgrazing has greatly reduced the density of grass vegetation. The practice of burning has, during recent years, disappeared. The few fires which start are usually caused by carelessness, and with alternating wooded and open spaces and the close cropped grass, they burn only small areas. These conditions have operated to bring about a rapid extension of woody growth. Almost unquestionably, the spread of timbered areas received its impetus with the gradual disappearance of grassland fires."*

In general, the weather is more extreme in West Texas and this factor alone would have resulted in large intense fires, especially during drought coupled with high winds. Another factor could have been a result of how the West Texas landscape was developed for the livestock industry. For example, before the days of barbed wire fences, ranchers moved towards the western part of the state in search of grass for their livestock. They faced many obstacles such as hostile Indians, predators, adverse weather, etc. Initially the grass was free; however, eventually this caused problems too, with the advent of barbed wire. In the

early 1880s, grass was burned in retaliation for alleged grievances held against the ranchers who were fencing the range. In response, Texas passed a law (1884) making the burning of grass a felony. However, it's ironic that these laws were passed to protect grass; **actually, they had the opposite effect.**

Despite the legislation, large fires continued to sweep the western part of Texas during the early development of the livestock industry. The potential for fire was greatest during periods of dormancy or drought. An interesting story is reported by *The Crosbyton Review*, February 29, 1912:

*"A very destructive fire occurred during the month of June, 1879. The fire originated on the Z-L Ranch in Crosby County, where there was considerable shinary. Hundreds of wild hogs ranged this dwarf oak country, prolific and hardy upon the acorns that grew there. Hank Smith, the first settler in the South Plains region, described this fire and the hogs. One day a cowboy decided he would set fire to the shineries and run the hogs out. He did it all right, but is to be hoped that no one else will ever try to drive wild hogs out of a shinary country with fire. The fire got away and started on a wild rampage in a northeasterly direction. No one has ever learned for certain which way the hogs went."*

*"The fire swept the country now occupied by Crosbyton, Emma, Ralls [and] Lorenzo [counties], and spreading as it went, sped across the Blanco (Canyon) moving before a terrific wind from the southwest. At that time there was practically no cattle in the country, and few people cared where the fire went or what it did. Crossing the Blanco on it went into the Quitaque, Boggy Creek, North and South Pease River and Tule Canyon country, while before it fled and swarmed countless thousands of antelope, turkeys, hundreds of deer and a sprinkling of cattle and horses."*

*"The fire swept thousands of square miles of country to the south and southwest, north and northeast of Mount Blanco. All through the country at that time, especially along the streams, were hundreds of magnificent groves of fine timber, particularly cottonwood and hackberry. This fire killed the timber and in effect literally wiped it out."*

## West Texas Ranchers

By the early 20th Century, immigrants from Europe and pioneers from the U.S. had carved vast ranches out of the West

Texas landscape. Most of the early ranchers were of European ancestry, and they moved onto the semi-arid grasslands from higher rainfall areas. For the first time in human history, a new-culture of people were ranching in a semi-arid environment without any ancestral experience to help guide their management decisions. It took them many years, some good and some bad, to learn how to ranch in Texas. Thus, these ranchers were practicing the “art” of grazing management. The “art” implies that the ranchers observed management conditions and were able to learn from them. This knowledge has been passed from generation to generation for those families that still ranch today. For most, a fire culture was not part of that information.

Since most of the western part of the Edwards Plateau lacked surface water, the livestock industry was developed later here than in other parts of Texas. The lack of surface water also had an effect on the kind of ranching. For example, the early occupation of this part of the Plateau by ranchers was characterized by a lack of organized government or written law. In the absence of such government, the early ranchers (i.e., graziers) developed a body of unwritten rules of human action known as “the law of the range.” It meant that no rental should be paid for grazing rights. It did not mean free grass in terms of common property, so that anyone could use it at will. It meant that the grass was free to the first individual who secured his range by getting there before anyone else. This arrangement was quite different from what was practiced in the New England states, where every citizen had the right to graze livestock on their “commons.”

For most areas of Texas, grazing of livestock was the pioneer industry. Cattle were usually brought in first, followed by sheep; however, for the western areas where the range was some distance from rivers or streams, this order was reversed. This was due to the lack of surface water (sheep require much less water than cattle).

Because this section of the Plateau had no running streams, ranges along the Conchos to the north, the San Saba to the northeast, and the Llanos to the east and southeast were stocked first. When sheepmen began to crowd each other along these streams, especially during dry periods, the drier section of the Plateau were used as emergency feed.

One important change in the use of these sheep grazing lands occurred in the late 1880s with the development of windmills. The section of land on which a well was located was either leased or bought from the state. Under this arrangement, the sheep were divided into bands of about



Edwards Plateau Prescribed Burning Association burn is being conducted in Sutton County during the summer under a county burn ban, with permission by the county to burn.

1,500 each and placed under a herder. Sometimes one well was held in partnership among three or four sheepmen. This type of management led to severe deterioration of rangeland around the wells.

Around 1910, ranchers started building wolf-proof fences. This type of fence was constructed of woven wire with 6-inch mesh, 42 to 52 inches high, attached to cedar posts, with a barbed wire on the ground (sometimes one on both sides of the posts at ground level), and two or three barbed wires above the woven wire. Wolf-proof fences, windmills and water storage tanks increased the efficiency of ranching significantly. However, these technologies also allowed the early ranchers to continuously stock pastures at heavy rates. Eventually this heavy grazing pressure reduced the mid-grasses and fire-proofed the rangeland.

### Fire Culture

One obvious trait of most of these early ranchers was a lack of a fire culture. A culture is something—belief, practice, custom, etc.—that is passed from one generation to the next. With the exception of a few examples within the state, there has been very little evidence that early ranchers used fire on a routine basis. However, I found an exception to the lack of fire culture on a trip to Leaky, Texas, in the winter of 2011. The purpose of the trip was to discuss the benefits of prescribed burn associations, and, if the people at the meeting were interested, to help establish a prescribed burn association to serve the area. Approximately 30 ranchers were present at the meeting, and during the presentation

and discussion of the benefits of prescribed burn associations, two individuals seemed to have strong ideas about prescribed burning. After the meeting I made a point to visit with both individuals and received a magnum load of information on the proper use of prescribed fire. These two older gentlemen were third generation ranchers who had learned to burn from their fathers and grandfathers. I asked them how their ancestors learned how to burn, and they quickly answered, “from the Indians.”

Below are some of their comments on prescribed burning which I find extremely interesting:

1. “Controlled burning is a lot of work, but you have four times the production of grass at a cost you can afford.”
2. “Our land is less productive with our lifestyle of roads, permanent buildings, and too much TV watching.”
3. “Fire lanes (black lines) must be made in December at night, with a 5 mph wind from the east. You are anticipating heavy dew by 10 o’clock to put out the grass fire.”
4. “Seventy-five years ago I was given a burning split dry cedar root to poke at anything that would burn. It burned just like those drip pots (drip torch) you see on TV.”
5. “If you do not have a good black line, two people can move into the wind. One person lights the fire and the other, within 5 feet, puts out the side of the fire that is not wanted with back pack water sprayer or most often a metal yard rake.”
6. “The controlled fire is made only

in February from 10 a.m. to 2 p.m. with a west wind under 5 mph and humidity under 20 percent. This is always a back fire.”

7. “If all is not right, do not burn and waste your grass fuel. Generally only have zero to five days each year that are right to burn. If conditions are right today, you cannot wait for everyone. Burn!”

8. “Most of our fences have roads beside them. Driving these roads many, many times while it is raining leaves a middle that can be burned. This and gravel bars have been our easiest and best fire lanes.”

9. “Burned roads are used for back fires in front of unplanned and unwanted fires.”

10. “Because of burn bans it is difficult to burn all of the roads today and this is why we have a lot more wildfires.”

11. “In the 1950’s and 60’s ranchers with four stock sprayers did what 8 or 10 fire trucks do today with much less water.”

12. “The animals will come to your burned area. They know there are no ticks or stomach worms and there is 20-percent more protein for two years.”

Following the meeting, I also heard comments about estimating whether juniper would burn or not based on its color. I need to ask more questions about this as well as other things that were discussed.

To me it is obvious that this approach was developed before modern spray rigs, radios, and heavy equipment. Another point that I would like to investigate is that this area is known for cedar posts. So, I wonder if these fire prescriptions were not also developed to be used on areas that had recently been harvested and cleared by hand cutting cedar. Using back fires would have limited the acreage burned per day, but they may have conducted numerous days of burning as long as weather conditions held.

Anyway, it was quite an interesting meeting, and the end result was that a burn association was started. Another interesting observation was that most of the old-timers (who burned using the Indian method) did not join the burn association. They were not against the idea of a burn association but did not see the need for one. They had also never heard of the Texas Commission on Environmental Quality (TCEQ).

Not too far from Leakey another example of early use of fire was reported in Blanco County in the 1930s. This method was also directed at controlling juniper and involved a combination hand-cut/fire system. About 63,000 acres were cut and burned during 1938 alone in that single county.

The Blanco County Agent (Jenkins) reported on a spectacular grass response on 65-acres that had been hand cut in the early

summer of 1930 then accidentally burned on an August afternoon was the “great stimulus in Blanco County that started the ranchers to cutting and burning their cedar” according to an article in *The Cattleman* in 1939. The reported benefits included:

- livestock carrying capacities increased from one animal unit per 20-30 acres to one animal unit per 5-6 acres;
- springs started flowing much higher volumes, and some springs began flowing that hadn’t flowed in 45 years;
- sheep losses from “blow fly” damage decreased 300 to 400 percent;
- reduced stress on livestock, horses, and mules from “blood sucker flies” (horse flies and deer flies); and
- an abundance of bobwhite quail in areas where they had not been present for 40-50 years.

*The Cattleman* magazine article touted the Agricultural Adjustment Act program that subsidized ranchers for cutting and burning their juniper as “the best program

*the Government has ever put on and [it] means more to the country than any other move attempted.”*

## Current use of Fire

Prescribed fire has a long and beneficial history in the Edwards Plateau. Only in modern times has the use of this prescription for healthy ecosystems been ignored. Prescribed burn associations are the best way to learn more about the use of fire to manage ecosystems. They are also a great way to get involved in your community and meet your neighbors, many of whom have lived in this area for several generations. You may think that your property is too small to conduct a prescribed fire, but you might be surprised at how much such a treatment improves it and diminishes the risk of a destructive wildfire. Furthermore, research has demonstrated that there is no substitute for fire; it’s a driver that facilitates ecosystem processes, including nutrient cycling, water cycling and soil health. ◇



Hair sheep on winter pasture. Photo by Gary Cutrer.

## Wooled Feeders Lambs Strong at Producers

By Benny Cox

Producers Livestock Auction, San Angelo, Texas

**THE WOOLED** feeder lamb market is very strong, even though very few of those lambs are moving in our area. The ethnic buyers are pushing hard to fill their orders, and the market is reflecting just that.

The numbers of sheep and goats moving through the auctions have been light. This has kept down any possibility of livestock dealers building up excess inventories. The old saying, “You can’t sell out of an empty wagon,” should help the market maintain high price levels through Easter.

During the four week period up to mid January, woolled feeder lambs at 80 to 110 pounds brought from \$1.90 to \$2.15 per pound, 50 to 80 pounders \$1.90 to \$2.22.

Hair sheep lambs weighing from 70 to 90 pounds have fetched \$1.45 to \$1.85 and 40 to 70 pounders \$1.85 to \$2.64. Slaughter ewes on the fleshy side sold from \$.50 to \$.88 per pound, mostly \$.65 to \$.75, the thinner ewes bringing \$.45 to \$.65.

Kid goats weighing 50 to 60 pounds brought \$2.10 to \$2.88 per pound with 30 to 50 pounders \$1.60 to \$3.00. Slaughter nannies in good flesh sold for \$.80 to \$1.40 per pound but mostly \$.90 to \$1.10, thinner nannies \$.60 to \$.90.

Replacement nannies fetched \$1.20 to \$1.48 per pound. Slaughter billies have sold at \$1.05 to \$1.50 per pound, mostly \$1.10 to \$1.25. ◇

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