

From Brush to Grass to Dollars—Brushland Conversion in Arkansas

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My grandfather began grazing cattle on the bluestem grasses on the Charleston Prairie in the middle of the 19th century. At that time the native grasses received scant attention due to the excess of forage. All the rangeland had plenty of grass with no brush or weeds. Farmers traveled several miles and bought native grass hay in our area for one dollar a wagonload.

The Brush Problem

Many times my ambitious father would take me out over our 4,000 acres and point out to me pastures of bluestem that had never been grazed by livestock. Often the grasses would reach up to my shoulder while on horseback. While riding through the pastures my father would often stop and point out areas of brush and tell me that a few years ago these jungles of low-grade trees were fine bluestem meadows. Why was this sea of grass being invaded by brush and weeds? My father did not know the answer.

Many early settlers believed that burning was the answer to controlling the brush invasion. With the exception of a few pastures, improvements such as fences seemed to have little value. Most energetic farmers had far too many cattle for the productivity of the land.

By 1910 our range began to look like an undulating sea of green forests alternating with small prairies which appeared like clearings when viewed from the hills. We noted that many of the species of grasses that played such a vital role in the settlement of Franklin County were no longer present. Our pioneers were definitely more hardy than the native grasses, as evidenced by the invasion of brush. Nature's proudest native grasses

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were leaving us, but many farmers believed that there still was ample forage for the livestock.

Early Attempts at Brush Control

The rainfall in our area is over 42 inches a year and once the brush got started it spread very rapidly. We knew that the number of cattle were in danger unless we could develop some safeguards against the brush. The sandstone slopes in the mountain pastures were becoming covered with a scrubby growth of post oak, blackjack oak, winged elm and hickory. We didn't quite know how to go about reducing the number of cattle.

Our first attention was devoted to killing the brush. We fought a

losing battle with the double-bitted axe as our weapon. On some areas the mowing machine helped control the brush, but a large part of our pastures was too rough and rocky for the mowing machine. We could not see a successful ending to our battle. In 1943, my son, Paul, said at the end of a hot July day after fighting the brush that "anything that will kill a sprout will kill a man, for sure!" So we bought a bulldozer and started a new attack on the sprouts. This method seemed good in the beginning. On land suitable for cultivation, our new method was good. With proper land improvement practices our cropland produces now as much as it ever did. Our bulldozer attack did not prove as successful on the other land as it did on the cropland since the cropland could be mowed.

Conservation and Improvement

In January, 1946, the farmers of the Franklin County Soil Conservation District elected me as a member of the Board of Supervisors. This was a new experience for me. One of the statements that was made at my first Board meeting was, "For the Land's Sake, Keep It Covered." I told the other members of the Board that I was doing a good job of keeping the land covered with brush. This was the beginning of the improvement



Clyde Hiatt with one of his herd bulls on summer range. The herd improvement has kept pace with the range improvement on his ranch.



Brush control with aerial spraying of 2,4,5-T. (Left) One of several 20-acre plots in test of chemicals; prior to spraying with 3 pounds per acre of 2,4,5-T, in May, 1955. (Right) One year after spraying; an excellent kill of brush and increase in grass.

program on my ranch. Mr. J. O. Murphy, the Soil Conservation Service technician, told us about proper land use and the importance of good soil and water conservation practices. In a few days we started a program of land improvement. An agreement was signed with the Franklin County Soil Conservation District. Our cropland was classified by Soil Scientists of the Soil Conservation Service.

Shortly, Mr. Murphy began working with my two sons, Paul and Bill, and a complete conservation plan was prepared for our ranch. Paul took a great deal of interest in the management of native forage and grasses and began reading and studying material on the subject.

Our conservation ranching has been going at a fast pace due to my son's interest. We saw quickly that good range management was resulting in better grass production. We noticed that some of the range soils had different capacities than others and the correct treatment should be in line with the potential of the soil for grass production. Mr. Murphy expressed these different potentials in terms of natural range sites. We separated our 2,900 acres of rangeland into four range sites. Fencing became a "must" in our native grass management program, no longer playing the single role of a boundary marker. Development of watering facilities was completed by

the construction of ponds, developing all the springs, and construction of windmill pumps. Today, the watering systems are located to have available water in every 160 acres of rangeland.

By paying attention to proper use of range grasses and proper stocking, most of our native grasses have improved and maintained ample forage even during the recent severe droughts. Good native grass management helped stop the invasion of brush. Due to rough terrain and rocks, much of the 2,900 acres of range could not be mowed after the bulldozer removed the brush. Too, the topsoil in certain areas was shallow and, with much disturbance, we had little topsoil left.

Killing Brush With Chemicals

Since 1952 our farm has been the scene of a big battle with the brush, a testing ground for chemicals. Soil Conservation Service technicians and chemical company scientists established ten 20-acre trial plots using various chemicals, dosages and concentrations. The results that have come from the trial plots are just about as important to many farmers as the invention of the plow.

The best results were obtained with the airplane when the application was done from mid-May to late June. Ten flight swaths of 26.4 feet each were flown between permanent flags. Men on the ground carrying flags on bamboo

poles step off 26.4 feet for each swath after each pass of the plane. It is not always possible in heavy growth for the pilot to follow the men on the ground. He can, however, quite accurately follow his swath course by calculating from the permanent flags. A kill from 75 to 100 percent has been made on my farm. The materials, chemicals, and oil for airplane spraying cost me about \$3.50 an acre and the operator charges \$3.50 for applying them. This is the cheapest and fastest way to kill brush. The chemicals that proved best for killing brush in this area are 2,4,5-T or 2,4,5-T propionic acid, applied at the rate of two pounds of acid per acre.

Once free of the brush, the same native grasses that were crowded out by the invasion of the brush come back. The recovery by native grasses is usually very rapid. Our best native grasses are big bluestem, little bluestem, Indian-grass, and switchgrasses, wildrye, Carolina joint tail, and panicums.

Management Following Brush Control

Following the killing of the brush, the management of the grass is most important. Our range is stocked so that not more than 50 percent of the year's growth of grass is eaten. We place our mineral and salt boxes to spread out the cattle to get even grazing. Bonemeal and lime are our best minerals. There is no secret to de-

veloping good native grass range—just kill the brush, and practice a little deferred grazing so the grasses can get healthier and produce seed. In all instances, we watch closely what we call the “Big Four”—big bluestem, little bluestem, Indiangrass and switchgrass. We try to maintain these grasses in good and excellent condition. Quite often this means that the number of livestock has to be reduced. We now have 182 mother cows and 20 yearling heifers. The cattle graze on the 2,900-acre mountain pasture and we use the 1,100-acre prairie for native grass hay and small grain. The calves are sold on the farm to operators in Kansas, Missouri and Iowa. The cattle are put on the mountain pasture about April 15 and stay until January when they are put back on the prairie pasture for work-

ing. Our calves have brought top prices for the past seven years. Over the past ten years the improvement in our cattle has kept pace with our range improvement. This has been brought about by purchasing tested bulls and through natural selection.

With the brush gone, we again have large areas that look like a sea of grass. It is customary to judge some things from the amount of money that they cost and what they bring. Our experience has certainly been one from brush to grass to dollars. With proper management and ability to recognize the characteristics and capacities of range soils and grasses, the grasses will continue to produce forage. Acquaintance with the grasses, soils and their properties is advantageous to everyone. We need to know and understand why

and how grass grows and develops.

Prospects for the Future

There have been cattle in Franklin County for more than one century but only within the past 20 years have they assumed a role of prominence in the farming operations. The most important factors causing this increase in cattle have been the planned establishment of large areas of improved pasture and efficient utilization of native grasses. All the drama of the range grasses is not in the past—much of it is in the present. We can push ahead with improvement of native grasses only just so far as we obey the natural laws. To ignore the natural laws in a native grass operation results in failures, loss of time and brush invasion. Brush and weeds tell grazing secrets.