Where the Prairie Meets the Plains

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Members and visitors at the forthcoming meeting of the Kansas-Oklahoma Section of the American Society of Range Management will have an opportunity to see range management at its best.

The meeting is scheduled for early June, 1961 on the 100,000 acre Berryman ranch with special attention to the 20,000 acres operated by Francis and Gus Davison.

The Berryman spread, the largest in Oklahoma acreage-wise, is located in Ellis County. This ranch is in an area having an average annual rainfall of approximately twenty-two inches with the heaviest precipitation occurring in May. Some eighty percent of the total rainfall comes during the six-month growing season, April through October. The dominant range site is referred to by the Davisons as “sand hills.” Some range technicians call it a deep sand savannah. The deep sandy soils are of the Brownfield and Nobscot series. Due to favorable plant-soil-moisture relationships, this site supports scrubby shinnery oak (Quercus harvardi) intermixed with a variety of productive grasses, legumes, and forbs. The problem of manage-
ment is to favor the grasses and keep the shinnery oak in check.

This persistent oak, while providing some forage and livestock shelter (Figure 1) along with protection to high dunes, if allowed to increase, soon smothers out the lush summer grasses. Thus, where shinnery has taken over, the rancher is confronted with the problem of managing very low-producing range and is hard put to stay in business.

A smaller portion of the ranch, referred to as “red hills” is relatively free of brush. These shallow, loamy prairie soils are characteristic of the Woodward-Quinlan permian redbed soils of western Oklahoma. They support a mixture of tall and short grasses.

Fifty years of range management has gone into the ranch and practically every phase of management is practiced by the Davisons. The luxurious growth of the range is an indication of the efficiency of their planning and carrying out range conservation practices on the ranch where, as they term it, “the prairie meets the plains.”

The Davisons do not depend on their thinking alone in planning range management. They are close cooperators with all available agencies and experiment stations dealing with range conservation.

The area was virgin prairie when opened to white settlement in 1894. Within ten years it was occupied by farmers and ranchers, mostly on 160-acre homesteads. During this period, approximately twenty-five percent of the land was broken to the plow which proved to be a mistake due to wind and water erosion on the light soils in the arid climate.

In 1910, the Davison brothers’ father, G. E. Davison, began buying up these tracts and by 1920 had accumulated a spread of 100,000 acres lying in a horseshoe bend of the South Canadian River. He utilized the land for 2,000 registered Herefords of Hazlett breeding whose descendants form the high-quality commercial Hereford herd now owned by Francis and Gus.

“The first twenty years of this century were marked by unsuccessful farming and range depletion. The next forty years saw the reclamation of this range to a point almost as good as when the white man took over,” Gus said.

This reclamation was made possible through application of principles in range management advocated by the United States Soil Conservation Service through the Ellis County Soil Conservation District, the Extension Service of Oklahoma State University, and the Agricultural Stabilization and Conservation programs. More recently, the SCS Great Plains program and the Southern Great Plains Field Station at Woodward have given technical assistance.

The Davisons describe the grasses on the ranch as prairie and short grasses. Little bluestem (Andropogon scoparius) is listed as the predominant grass with others in order of importance in the “sand hill” section being purple lovegrass (Eragrostis spectabilis), sand paspalum (Paspalum stramineum), sand lovegrass (E. trichodes), sand bluestem (A. hallii), and sand dropseed (Sporobolus cryptandrus). There is also a scattering of sideoats (Bouteloua curtipendula) and hairy grama (B. hirsuta), Indiangrass (Sorghastrum sp.), silver bluestem (A. saccharoides), and red lovegrass (E. secundiflora).

In the red hill range country, grasses in the order of importance include sideoats, blue (B. gracilis) and hairy grama, little and sand bluestem, buffalo grass (Buchloe dactyloides), vine mesquite (Panicum obtusum), Indiangrass, common witch grass (Panicum capillare), wildrye (Elymus sp.), western wheatgrass (Agropyron smithii), little barley (Hordeum pusillum), and rescue grass (Bromus catharticus).

Found on both red hills and the sand hill country are numerous palatable forbs such as lead plant (Amorpha sp.), Illinois bundleflower (Desmanthus Illinoensis), Virginia teosinte (Tephrosia Virginiana), western ragweed (Ambrosia psilostachya), sunflower (Helianthus sp.), Russian thistle (Salsola pestifer), sessile tickclover (Desmodium sessilifolium), and slender and round lespedeza (Lespedeza virginica and L. capitata).

Figure 2. Excavations in swales of clay soil concentrate rain water in depth and minimize loss to evaporation. This is permanent stock water.
This range furnishes year-around pasture for the Davison's beef cattle production program. "We would like to emphasize that on this range cafeteria, our cattle utilize and enjoy, in addition to the grasses, a number of native legumes, forbs, brush, so called weeds and even tree leaves in their forage diet," said Francis. He added, "cattle do not live on grass alone. The other plants add variety and make pasture better and more succulent and nutritious throughout the year." Cattle are on the range twelve months of the year and depend on the range for forage during all of this time.

The brothers calendarize their grazing as follows, the rescue grass, wildrye, little barley, and western wheatgrass lead off the succulent plant grazing season in early spring. By June 1 or earlier, these plants have lost their succulence and cattle turn to the late spring, summer, and fall and winter plants as the seasons progress. The 1959-60 winter was one of the most severe in many years in the area but no hay was required for the Davison cattle. Ordinarily, they feed approximately two pounds of cottonseed meal per animal daily during the winter.

The Davisons own no farm machinery—there is not an acre of cultivated land on the 100,000-acre Berryman ranch. Stocking rate is moderate, ordinarily 20 to 30 acres per animal unit. The brothers agree that this stocking rate will protect the choice range plants.

One range management practice which they believe will give maximum utilization of the range, is a trend toward year around grazing in each pasture. This enables cattle to utilize each kind of plant in season at the best stage of growth. This means putting proper numbers of cattle in each pasture and leaving them throughout the year.

Another management practice is better distribution of grazing through cross fencing and more watering places. Sixty windmills on the range are being supplemented by numerous stock ponds. They use two types of ponds, dams across canyons and excavations to trap hillside water runoff (Figure 2). They added more than twenty watering places to the range last year.

Rodent control through protection of red-tailed and marsh hawks, the great horned owl, the golden eagle, coyotes, bobcats, badgers, and all beneficial types of snakes is also a part of range management. These creatures help to control kangaroo rats, albon rats, cotton rats, deer mice, ground squirrels and, above all, cottontail and jack rabbits, which the brothers believe to be the most important animals in the area. During 1958 and 1959, when there was a widespread rat problem, the problem did not exist on the Berryman ranch. "We figure each coyote worth $25 per year in increased beef production and we are of the opinion that the bobcat is even more valuable," Francis said. During the past forty years but few calves have been lost to coyotes, but dogs have killed several.

Range management the Davison way, includes insect control through the protection of wildlife. Species protected include all birds especially the Mississippi kite, the lesser prairie chicken, bob white quail, crow, road runner, sparrow hawk, burrowing owl, skunk (which is a beetle eater), and ornate box turtle. Mechanical insect control, which they term expensive and use only in times of extreme insurgent insect infestation, is done by spraying two ounces of aldrin per acre by airplane. The brothers estimate that rodents and insects consume as much forage as cattle on many ranges. Other insects including the horse fly, horn fly, heel fly, gnat, mosquito, louse, and tick that attack the cattle directly are held in check by spraying. The cattle are sprayed annually with organic phosphate systemic and other sprays as needed. Control of parasites tends to disperse cattle and distribute grazing.

Brush control is a very important range management practice. The Davisons remember that their father used two methods, moderate grazing and periodic supervised burning. To these practices the sons have added airplane application of chemical spray materials such as 2,4-D, 2,4,5-T and silvex.

Spraying has been found most
Effect of Herbicidal Control of Saw Palmetto On Associated Native Forage Plants In Peninsular Florida

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Native plants have been the basic livestock food since the introduction of beef cattle into Florida by Ponce de Leon in 1521 and Hernando de Soto in 1539. Approximately 10.2 million acres are used as native rangeland in peninsular Florida. Another million acres in this region have been improved by partial or total destruction of native vegetation and planted with more productive and nutrititious grasses and legumes.

Livestock producers in south-central Florida flatwoods are becoming more concerned about methods of controlling saw palmetto and associated shrubby plants. This is the result of rising value of grazeable land coupled with the increasing need for higher quality cattle feed.

Trials were started at the Range Cattle Experiment Station in August 1955 to determine: (1) response of saw palmetto to treatment with herbicides; (2) changes in species composition and density of native plants in treated areas and (3) comparison of carrying capacity per acre and productivity of beef cattle in areas with and without herbicidal control of saw palmetto and associated shrubby plants. Only the second objective will be discussed in this manuscript.

Review of Literature

The native vegetation has been grouped by Davis (1943) into four logical range types. They are as follows: (1) pine flatwoods, (2) dry prairies, (3) wet prairies and (4) vegetational types of minor importance such as oak-cabbage, palm, ham-