A SUMMARY OF THE RESULTS OF EXTENSION PASTURE WORK IN OKLAHOMA

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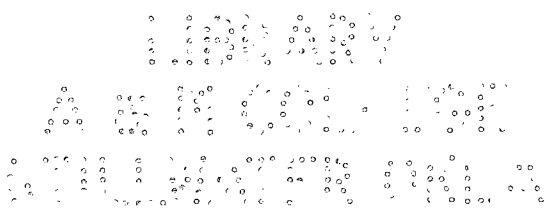

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CHAPTER 1.

THE PROBLEM

Oklahoma at one time had a luxurious growth of climax grasses covering the broad prairies and high plains of its western area and the hilly, wooded sections of the eastern part of the state. Herds of buffalo, deer, and other wild life took the grass necessary for their existence and left plenty for future years. There was no exploitation, and the accumulation of organic matter from decaying grass roots and vegetative parts provided adequate humus. Rains fell and the drops penetrated the soil. The winds blew, but no surface soil was exposed so that the soil particles could be carried into other areas and other states. The natives took their toll from the wild life to satisfy their needs for meat, and there was still an abundance.

With the coming of the white man the picture changed. The herds of buffalo gave way to range cattle. Soon the sod was broken by the settler's plow who expected to grow concentrates to supplement native vegetation in their feeding rations. The soil was rich in plant elements and seemingly inexhaustible. And, too, there were always westward horizons to which to move, if the soil began to lose its productivity, hence there was very little thought given to preservation of natural agricultural resources of the territory.

When the Oklahoma Agricultural and Mechanical College Experiment Station was established in 1893, Mr. J. C. Neal, the first director, and others of its personnel, began to direct some thought toward the conservation of our range grasses and to the cultivation of tame pasture grasses. The work of these people, and a few others who were farsighted enough to see the ultimate results of exploitation practices, was

FIGURE 1. Oklahoma at one time had an abundant growth of native grasses covering almost all of the state.

constructive. However, the results of their work only served to halt these practices in a limited way.

The Oklahoma Extension Service became a State and Federal organization in Oklahoma in 1907. A program of aid to farmers of the state embodied in its plans as early as 1929 a pasture program by appointing Mr. Sam D. Durham to the position of Extension Specialist in Pastures and Forage Crops and Dairy Equipment. Pasture conditions existing in Oklahoma at that time were such that an opportunity for constructive work in this field was open. Adverse economic conditions could be felt, and the prices of farm commodities were beginning to crumble.

The Extension's program of "live-at-home", embracing their slogan of "a cow, a sow, and hen" on each farm gave the farmers of the state one way out in providing a living for their families. Farmers and stockmen found their programs handicapped by lack of pasture grasses, depleted by over-grazing and exploitation. Mr. Durham and his co-workers in Extension work, in cooperation with the Oklahoma Agricultural and Mechanical College, attacked the problem and have been devoting their efforts in part to the improvement of pastures in the state. Undoubtedly constructive results have been accomplished.

It shall be the purpose of this dissertation to review the pasture conditions of the state from the climax vegetation state, to show how exploitation and misuse have decreased the carrying capacity of pasture land, resulting, in many instances, in wind and water erosion. The works of Mr. Durham and his co-workers in Extension work, along with the members of the Oklahoma and Mechanical College Experiment Station, in an effort to preserve and bring back pastures of the state will be studied and the results of their work that have enabled the farmers and stockmen

FIGURE 2. Former grass areas have given way to eroded fields in many sections of the state.

of the state to incorporate a broader livestock program in their farming activities will be summarized.

CHAPTER II.

HISTORICAL BACKGROUND

Any history of the cattle industry in the west must begin with Texas, since that state was the original home of ranching on a large scale in the United States, and from its vast herds were drawn most of the cattle for the first stocking of the central and northern plains.

From its earliest settlement, Texas had been a cattle country. The first Spanish settlers brought with them cattle of the Longhorn, Spanish type, that had been raised by the Moors on the plains of northern Africa and Andalusia for a thousand years. These increased rapidly under favorable range conditions, some of them eventually escaping from their owners and ranging the plains as wild cattle, unbranded and unclaimed by any one.[1]

In the early days, the chief problem which the cattle raisers had to face was that of markets. Many cattle were sold as work oxen for use in freighting upon the plains in Texas and for local consumption as beef. In 1842 driving cattle to New Orleans began and this city soon became the chief market for Texas cattle. Cattle were driven over to Shreveport and from there shipped down the Red River to New Orleans. Others were sent by sea from Galveston and other gulf ports, and a great many were sent by sea to Mobile and Cuba.

Texas cattle raisers also found a market for their cattle in Chicago and other northern markets as early as 1846. Edward Piper drove

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[1] E. E. Dale, Range Cattle Industry, p. 21. University of Oklahoma Press, 1930

a thousand head of Texas steers to Ohio where he fed and sold them.[2]

The movement of southern cattle northward brought on an epidemic of Texas fever among the native cattle along the road over which the herd passed. The inhabitants of southwestern Missouri formed armed patrols to turn back all Texas droves that might try to pass.

By 1858 the drive northward through Missouri had been checked and was not resumed to a very large extent until after the Civil War. Some of the droves passed around Missouri to the west going through the Indian Territory, Kansas, and a corner of Iowa. Before the outbreak of the Civil War the trade had lessened to a great extent because it was not profitable.

The decrease of the movement of the cattle northward caused a rapid increase of the animals in Texas during the last two or three years prior to the Civil War. This naturally caused a decrease in the price of cattle per head. In 1860 the average price of cattle in Texas was about six dollars per head, though fat beeves sometimes sold for as much as sixteen or eighteen dollars.[3]

It is impossible to state with a degree of accuracy the number of cattle in Texas at the close of the Civil War. The Department of Agriculture estimates in 1866 reported 3,111,475, an increase of nearly 12 percent since 1860.[4]

The isolation of Texas during the four years of war had a great influence on cattle prices. While other states had shown a marked

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2 Tenth Census, Bureau of the Census, Vol. III, p. 965.

3 A Six Year Resident of Texas, p. 331.

4 Monthly Reports of the United States Department of Agriculture, pp. 350-351.

decrease in their stock of cattle, Texas had shown an appreciable increase. In 1865 cattle could be bought in Texas at almost any price offered. Mature animals could be purchased at three to four dollars per head, and fat beeves at five to six dollars.[5] At the same time, the price of cattle and beef in the north and the east was high. Round steak was selling at retail in New York markets at 20 to 25 cents per pound; sirloin at 25 to 35; and rib roast at 20 to 30 cents per pound. On the livestock markets of the eastern cities, cattle were quoted at five to 10 dollars per hundred weight and sometimes even higher. In 1867 the price of three old steers and oxen in Massachusetts was given as 86 dollars; in New York as $68.57; in New Jersey as $70.58; Illinois $40.19; Kansas $36.40; Nebraska $46.82; Missouri $32.83; while in Texas it was given as $9.46.[6]

This situation could produce only one result. The soldiers released from the army of the Confederacy in 1865 returned to their homes in most cases penniless and without equipment to resume farming operations and found their ranges overflowing with fat, sleek cattle for which they had no local market. However, the cities of the north and east offered markets conducive to moving cattle to them, and it was but natural that the hardy pioneers would take advantage of the opportunities afforded by these conditions. Thus the second major northward trek of cattle began.

This northward movement of cattle had a pronounced effect on the history of range and pasture conditions in what was then the Indian

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5 Tenth Census, op. cit., p. 986.

6 Monthly Reports of the United States Department of Agriculture, 1867, pp. 108-109.

Territory, and was later to become the state of Oklahoma. There were three principal trails for the northern drives of cattle in 1884. One, the western trail, had its origin at Bandera, Texas, and led straight northward through Ft. Griffin, Texas, on to Danes' Store, near the northern edge of Texas, then slightly northwestward through Oklahoma to Dodge City, Kansas, and on to Ogalala, Nebraska.

Second, the Chisolm Trail originated at San Antonio, Texas, and traveled northward through Ft. Reno, Oklahoma, into Newton and Abeline, Kansas, where contacts were made with the Santa Fe and Kansas and Pacific Railways, respectively, for rail shipments to Kansas City.

The third major trail for the northern drive likewise originated at San Antonio, Texas, but led through Ft. Worth, Texas, and on into the north central part of Oklahoma where the trail branched, the western Shawnee Trail leading to the railroad point at Junction City, Kansas, and then by rail to Kansas City. The eastern Shawnee Trail lead through Ft. Gibson, Oklahoma, into Baxter Springs, Kansas, and then by rail to Kansas City.

Over these trails passed enormously large herds of cattle. Just how many cattle were driven the trails to Kansas each year during the period following the Civil War no one can say with any degree of accuracy.

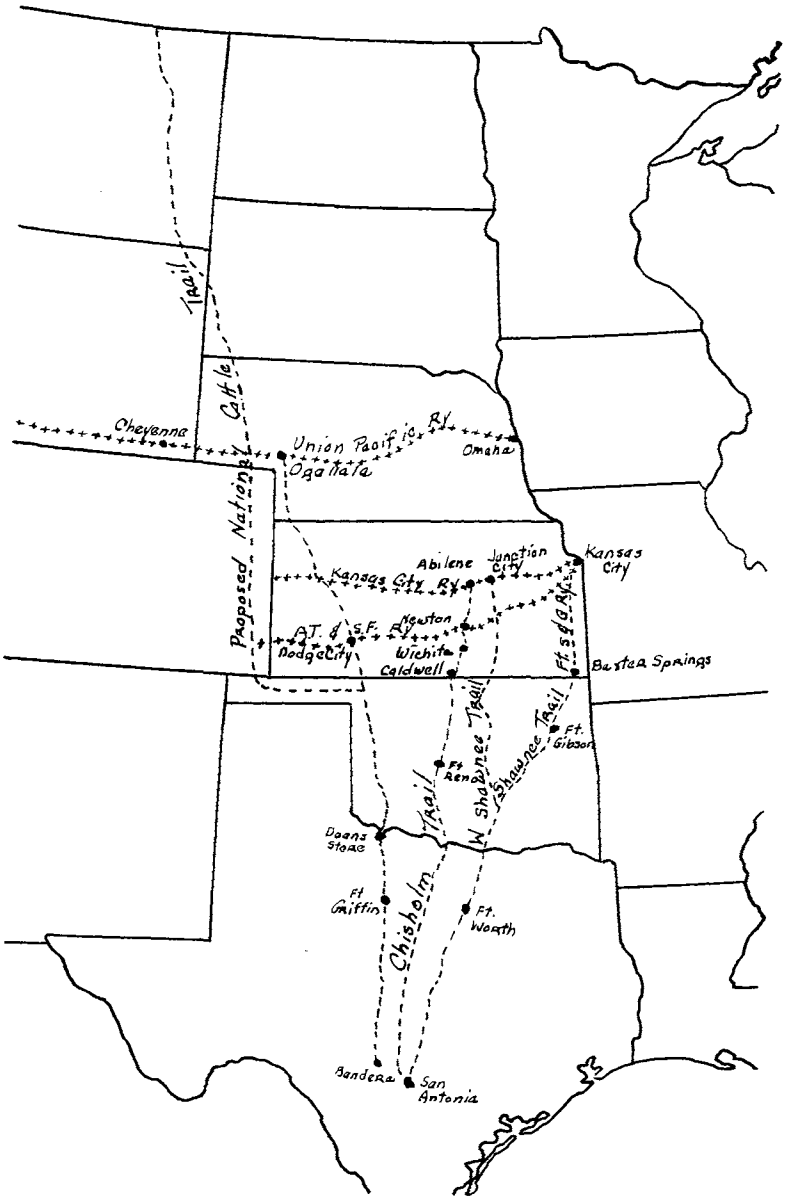

FIGURE 3. Three Principal Trails for the Northern Drive - 1866.

However, the following table made in 1885 from careful estimates may serve to give some idea of volume of the drive during the 15 years following the Civil War, or up to the time when the range cattle industry reached its height.[7]

TABLE 1. Estimated Numbers of Cattle Driven the Trails to Kansas, 1866 to 1885

Year	Estimated numbers
1866	260,000
1867	35,000
1868	75,000
1869	350,000
1870	300,000
1871	600,000
1872	350,000
1873	405,000
1874	166,000
1875	151,618
1876	321,998
1877	201,159
1878	265,646
1879	259,927
1880	394,784
1881	250,000
1882	250,000
1883	267,000
1884	300,000
1885	220,000

[7] E. E. Dale, op. cit. p. 59.

As the years went by, the larger part of the cattle driven from Texas to Kansas was sold for the purpose of stocking the northern ranges. As the buffalo were killed and the Indians were confined upon reservations, the northern plains became increasingly attractive for ranching. It was soon found that not only would cattle live the year round upon the open ranges of the western territory, but that they grew larger and fatter than they would in Texas.

As the cattle raising industry began to show increasing profits, ranchmen of Texas advanced northward and westward upon the high plains of that state and on into the present state of Oklahoma. Thus began the first real settlement of Oklahoma by ranchers and stockmen.

CHAPTER III.

THE EARLY RANGE CATTLE INDUSTRY IN INDIAN TERRITORY

To the north of Texas, between the breeding grounds of that state and the feeding grounds and the market centers of the north, lay the Indian Territory. Its area was greater than that of all New England or about equal to the combined areas of Indiana and Ohio. It was well watered, the climate mild, and had a climax vegetation of luxurious and palatable grasses. The three present Panhandle counties were covered with grama, buffalo, and wire grass, while eastward from that section grew the blue-stem bunch grasses and blue-stem sods.

At first, the settlement of the Indian Territory was forbidden, with the result that as the pioneers moved westward in the years following the Civil War and spread themselves over the eastern portion of the great plains, they were halted at the border of the Indian Territory by government decree. The Five Civilized Tribes of Indians in the Indian Territory were compelled in 1866 to cede a portion of their western lands as a home for friendly Indians. As a result, the Indian Territory became divided into two distinct parts: the eastern half occupied by the Five Civilized Tribes, and the western half made up of reservations of Western Indians, along with several large areas entirely unoccupied. This western region became the Territory of Oklahoma, after which the term "Indian Territory" was applied only to the area occupied by the Five Civilized Tribes.

Soon after the close of the Civil War a number of herds of cattle were driven to Western Indian Territory by contractors who supplied beef to the Indians. As the cattle industry of western Texas spread and range began to grow scarce, some of the men who had driven trail herds

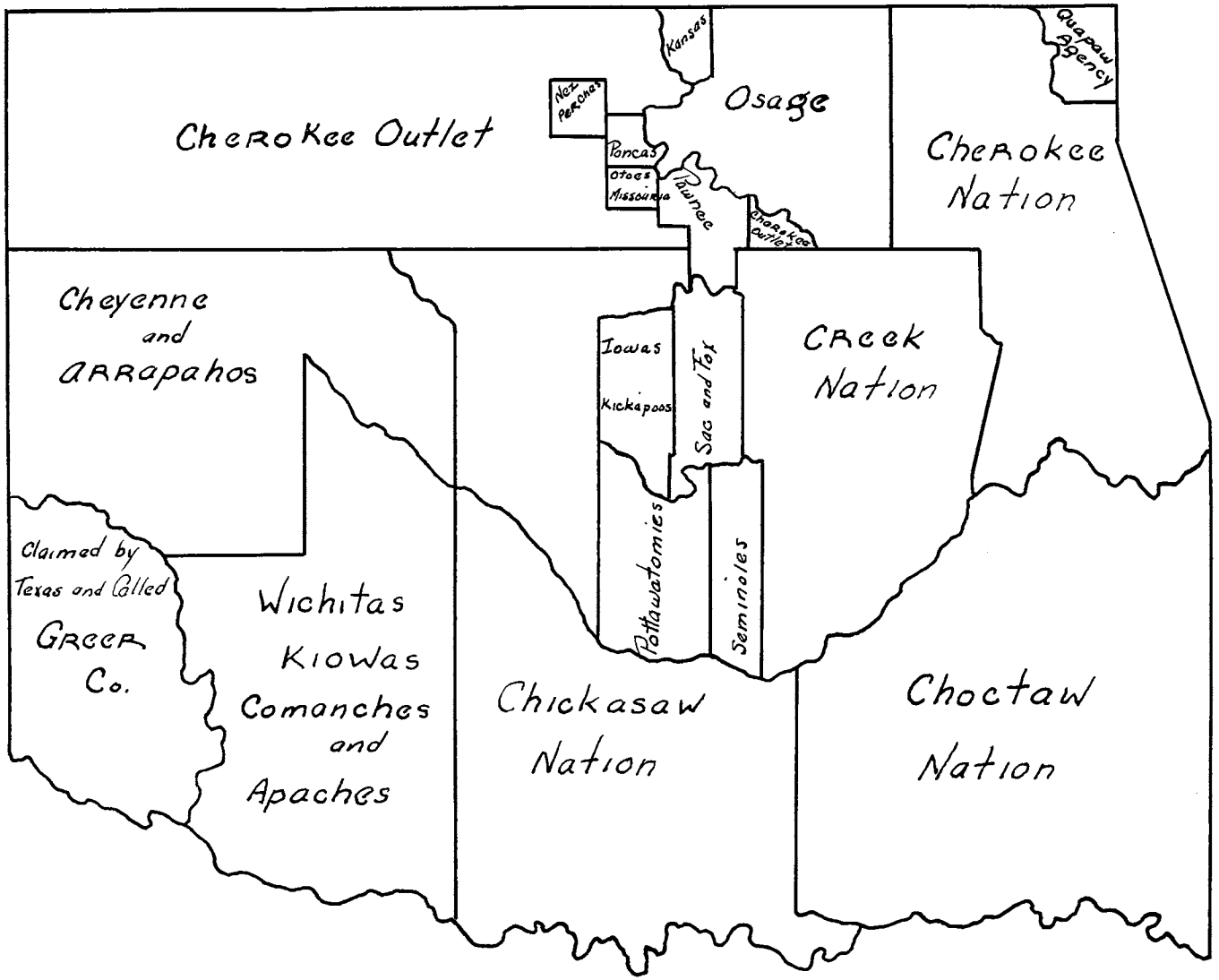

FIGURE 2. Indian Territory - 1885.

across the Indian Territory began to think of a permanent occupation of that region for grazing. Requests were made to the Department of the Interior for permission to graze herds in Greer County, the Oklahoma Lands, or upon Indian Reservations. However, they were always refused with the statement that the Department had no right to grant such permission.[1]

Occupation of these new grazing lands began, however, in spite of the orders of the Department of the Interior. Ranchmen from the ranges south of the Red River and in the Panhandle of Texas brought their cattle across the border into these areas. It was estimated that early in the year 1882 there were as many as 50,000 head of cattle grazing on the Kiowa-Comanche Reservation alone.[2] At this time the Department of Interior called on the Secretary of War for troops to remove the cattle from these areas. Removing the cattle proved to be a more difficult task than the War Department had anticipated, and it soon became apparent that some other method of handling the situation would have to be devised.

In the summer of 1882 the supply of beef issued by the government to the Indians of the Cheyenne-Arapaho Reservation was reduced to such an extent that the Indians were often hungry and became sullen and threatening in their attitude toward the government. Ranchmen were extremely eager to secure the privilege of grazing these range lands for a term of years, and in the late summer of the same year a group of cattlemen met with the Indian Agent, Mr. John D. Miles, and offered to supply a quantity of beef to satisfy the Indians' needs in exchange for

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1 E. E. Dale, op. cit., p. 138.

2 Ibid.

the consideration of being given permits to pasture cattle for a time upon the reservation. This offer was rejected, however, when referred to the Commissioner of Indian Affairs.[3] In December, 1882, a council of Cheyenne and Arapaho chiefs filed with the Agent a request to be permitted to lease a large part of their lands for grazing. This request was forwarded to the Commissioner of Indian Affairs, but without waiting for a reply from that official a second council met in early January, 1883, and authorized the Agent to lease all or any part of the land mentioned in the preceding request.[4]

Arrangements were immediately made by which seven ranchmen were to receive a total of 3,117,880 acres for a term of ten years in consideration of an annual rental of two cents per acre, payable semiannually in advance. The ranchers were allowed to fence the land and to cut timber from the Reservation for that purpose. However, this fencing and all other improvements were to become the property of the Indians when the lease expired.[5] This seems to be the first record of land being leased in the Indian Territory for grazing purposes and marks the beginning of the range cattle industry in Oklahoma.

The agreement entered into by Miles brought protests from cattlemen who were pasturing herds on this reservation and by those who wished to do so but had not been included in negotiations. The outcome of this brought the matter of grazing in the Indian Territory to an issue.

The Secretary of Interior issued a statement that it was not the

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3 E. E. Dale, op. cit., p. 139.

4 Ibid, p. 140.

5 E. E. Dale, op. cit., p. 140.

policy of that Department to recognize affirmatively any leases or agreements between the agent and the ranchmen, but that he saw no objection to allowing the Indians to grant permission to graze cattle upon their Reservations upon fair and reasonable terms, and subject to such supervision as the Department thought necessary.[6]

The policy adopted by the Secretary of the Department was confusing and conditions became in such a state that the question of grazing upon Indian Lands was referred to Congress when that body met in 1883. All requests relative to leases and grazing of Indian lands submitted to the Department of Interior were answered by the Department to the effect that the matter had been referred to Congress and it was deemed inexpedient to express any opinion which might embarrass the action of Congress in the matter. This action by the Department of the Interior was interpreted by many ranchmen as being a tacit permission to graze these lands, and large numbers of cattle were driven into various reservations.

A congressional investigation of grazing in the Indian Territory was begun in December, 1884, and in 1885 President Cleveland issued a proclamation declaring all leases on the Cheyenne-Arapaho Reservation void and ordering all persons there to remove with their cattle, horses, and other property within forty days. Two weeks later a second proclamation was issued ordering removal of all fences from the public lands and calling upon United States officials everywhere to assist in the execution of this order.[7] Some few cattle came drifting back in a year or two. However, conditions were bad until that area was opened for settlement in 1885.

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[6] E. E. Dale, op. cit., p. 140.

[7] Ibid., pp. 144-145.

Cattle were also brought to the Kiowa-Comanche Reservation in considerable numbers and a system of leasing later provided for was put into operation in that region.

In the meantime, the officials of the Cherokee Nation had decided to try to secure some revenue and began to send out officials to collect a grazing tax from men pasturing herds there. The ranchmen with herds in the Cherokee Outlet were so encouraged by the regular issuance of grazing permits by the Cherokees that they began to construct wire fences by 1882. The Department of the Interior ruled that the fencing of land was illegal and ordered the agents for the Five Civilized Tribes to notify all ranchmen who had constructed fences to remove them within 20 days. This decree was met by such a storm of protest that the Department decided to hold it in suspension for a time, pending a complete investigation of the question.

In March, 1883, the ranchmen grazing cattle on the Outlet met at Caldwell, Kansas, and formed an organization under the laws of Kansas known as "The Cherokee Strip Livestock Association," with one of its main objectives the securing from the Cherokee Nation a lease of the entire Outlet. Early in May of that year a special session of the National Council of that tribe was called to consider the matter of grazing of lands on the Outlet, and an act was eventually passed authorizing the Chief to execute a lease of the entire Outlet to the Association for a period of five years at an annual rental of $100,000.00, paid semi-annually in advance.[8]

The organization functioned rather smoothly for a time. However,

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8 Senate Ex. Doc. 17, 48th Congress, Second Session, Vol. I, pp. 151-152.

the Cherokee Strip Livestock Association, alarmed by the removal of the leases from the Cheyenne-Arapaho reservation in 1885, made an effort in 1886 to have their leases renewed for a period of five years. Later, in 1888, the Cherokee Council passed an act which was approved by the Chief giving the Association a new lease of the Outlet for five years at an annual rental of $200,000.00.[9]

In the meantime, public opinion in favor of opening the Oklahoma Lands and other portions of the Indian Territory to white settlement had been steadily growing. In January, 1889, an agreement was signed with the Creeks, and a little later with the Seminoles, by which all claim of these to the Oklahoma Lands were surrendered, and in the following April they were opened to white settlement by proclamation of the President.

Early in March, 1889, an act of Congress provided that the Cherokees should be offered $1.25 per acre for the Land of the Outlet, and that in the event of their acceptance, these lands should be opened likewise to white settlement. In the meantime, a syndicate of ranchmen had offered to purchase the entire outlet from the Cherokees at a price of $2.00 per acre, provided the latter could get the consent of the United States Government to sell. Naturally, the Cherokees refused to accept the government offer, and the Cherokee commission did not know what action to take. The outcome of the matter was that President Harrison in 1890 issued a proclamation forbidding all grazing on the lands of the Cherokee Outlet, and ordering all cattle to be removed from them by October 1, 1890. Late in 1891 the Cherokees signed an agreement with the Commission to sell

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[9] E. E. Dale, op. cit., p. 152.

FIGURE 5. Rest Period During Round-Up On Early Oklahoma Ranch *

* Reproduced from Plate in E. E. Dale's book, Range Cattle Industry.

their land in consideration of a payment of approximately $1.40 per acre. In 1893 the Cherokee Outlet, together with the reservations of the Tonkawa and Pawnee Indians were opened to white settlement.

Greer County was added to Oklahoma by the Supreme Court in 1896, and the Kiowa-Comanche and Wichita Reservation were the only considerably purely grazing areas left in Oklahoma. A leasing law had been enacted by this time and the lands of these reservations were leased to ranchers until 1901, when they too were opened for settlement.

This is the story of the early range cattle industry in Oklahoma and the transition of that area of abundant grass lands, grazed by herds of buffalo, deer, and other wild life and populated by Indians, to a country of large ranches, with the western cow hand and his life on the range.

CHAPTER IV.

SETTLEMENT OF OKLAHOMA AND THE EFFECT ON RANGE AND PASTURE

On May 2, 1890, an act was passed and signed by President Harrison which completely organized the Indian Territory and set up a complete territorial government for the Oklahoma Territory. In that act, for the first time, the Indian Territory was called by name. This statute, commonly known as the Organic Act, served as a constitution for the Oklahoma Territory for the next 17 years. The title of the act was "An act to provide a temporary government for the territory of Oklahoma to enlarge the jurisdiction of the United States court in the Indian Territory and for other purposes."

The act defined Oklahoma Territory as all the Indian Territory, the lands of the Indian tribes in the Quapaw Agency, and the unoccupied part of the Cherokee Outlet, and including the "public land strip," a rectangular area 34 miles wide and 167 miles long lying between Texas and Kansas. Whenever the interest of the Cherokees in the Outlet should be extinguished, it should be automatically added to Oklahoma, and any other lands in the Indian Territory (meaning any or all of the Five Civilized Tribed) should be added when the Indian Nation owning them indicated its assent.

The territorial government for Oklahoma consisted of a Governor, a Secretary of the Territory, who was also secretary for the legislature, and an Attorney for the United States. Three district judges who, when together, constituted a supreme court, were also among the governing officials. All of the officials were to be appointed by the President of the United States and confirmed by the senate.

A legislature of two houses was also provided; seven counties were provided for, with county seats at Guthrie, Oklahoma City, Norman, El Reno, Kingfisher, Stillwater, and Beaver. Settlers in Oklahoma and "No Man's Land" were confirmed in their homesteads, on payment of $1.25 per acre to the land office, and provisions were made for homesteading other Indian lands in the Territory when they should be opened for settlement.

President Harrison appointed Col. George W. Steele of Indiana to be the first Governor of Oklahoma Territory and set up its government under the Organic Act. The new governor arrived at Guthrie on May 22, 1890, and issued a call for the legislature to meet on August 27 of the same year. At this first meeting of the legislature, it adopted a complete code of laws taken from the statutes of neighboring states. It also located three territorial schools -- the University, which was placed at Norman; the Agricultural and Mechanical College placed at Stillwater; and the Normal school at Edmond. A system of public education providing for elementary schools and high schools was established by an act passed in December of that year.

The territory defined by the Organic Act and opened for settlement in 1889 was only a small part of the Oklahoma Territory. Most of the territory was still held by various Indian Tribes and was opened and settled in the period from 1891 to 1906. These openings have been described, in part, in chapter two of this paper. With the opening of the Kiowa-Comanche pasture reserve in 1906 all the territory covered by the Organic Act with the addition of the Cherokee Outlet had been changed from Indian Reservations to a land of homes, farms, towns, and cities.

The Oklahoma Run in 1889 has a direct bearing on any discussion of land use of the State in later years. On March 23, 1889, President

Harrison issued a proclamation declaring that the unnamed territory which he described only by its boundaries but later known as Oklahoma should be open for settlement at noon April 22, 1889.

The thirty days intervening between the President's proclamation and the date set for the strip opening saw much activity in preparation for the opening. The act provided for two land offices located at Guthrie and Kingfisher. Troops were assigned to the borders to prevent eager homeseekers from entering before the opening hour and to preserve peace during and after the opening. At the day of the opening farmers and adventurers came for land -- the first to live there and the second to sell it as soon as possible. Some came with sufficient funds to set up farming operations while others had only enough money to bring their families to the area.

The northern boundary was well patrolled and the wide stretch of the Cherokee strip made it difficult to reach the Oklahoma line from Kansas without detection. The southern border was likewise protected by the wide, sandy, and generally impassable Canadian River. Not enough troops were available, however, for an effective patrol on the eastern and western borders. And through the eastern lines, especially, large numbers of premature entrants, later to be known as "Sooners" came into the Territory before the day of entry.

On the morning of the opening fully 100,000 people were gathered on the various borders of Oklahoma.[1] Exactly at twelve o'clock the signal was given and the run started. The future farmers of Oklahoma poured into the strip and scattered all over the 2,000,000 acres of Oklahoma.

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[1] Victor E. Harlow, Oklahoma, p. 251.

When night came every quarter section of the original homestead grant had from one to several claimants on it. Men were almost uniformly good natured, though there were numerous controversies over the title of the land and, in some cases, violence and bloodshed. In most cases controversies arose between the settlers who had made the run according to regulations and policies outlined by the government and "Sooners" who had sneaked into the area before the opening day. Most of these differences were later settled by law. However, some of the claimants resorted to the frontier law of the rifle or the forty-five.

These pioneer farmers had many difficulties to overcome in establishing homes. Lack of building material and building lumber necessitated that many farmers and their families build sod houses and dugouts instead of frame buildings. The planting season was well under way when the opening run was made. However, crops were planted in the newly broken prairies and the farmers began the attempt to grow the commodities necessary for subsistence from the soil. Some were successful in their undertakings, but in many instances the Government had to furnish relief before their farming operations became self-supporting.

Legislation of 1889 made provisions that set aside sections 16 and 36 in each township of the unassigned lands for the support of public schools when they should be established. This policy was maintained in opening the various reservations, except the Osage, Ponca, and Otoe-Missouri Reservations, in which no lands were sold. This provided for over 100,000 acres of school land from the unassigned lands which was rapidly increased as other reservations were opened. To made up for the sections in the Osage, Ponca, and Otoe-Missouri lands, and for school reservations set aside in the Outlet opening, 124,000 acres as indemnity

lands were selected in the Kickapoo country and in Woodward County of the Cherokee Outlet. Other indemnity lands amounting to about 8,000 acres were substituted for school sections in the Kiowa-Comanche and Wichita surplus lands.

These school lands could not be sold by the Territory but were to be held until Statehood. The leasing of these lands to secure revenue for the support of schools and to make land available to settlers was begun by Governor Steele in accordance with an act of Congress of March 3, 1891, which authorized the Governor to lease these lands for a period of not more than three years. An act of May 4, 1894 provided that the full control of the school lands should be in a state school land board composed of the Governor, the Territorial Secretary, and Superintendent of Public Instruction.

In addition to the school lands, section 13 was set aside as an endowment for the University, Agricultural and Mechanical College, and the Territorial Normal School. Likewise section 33 was held for a fund to pay for public buildings. The amount of land held for the various funds, as shown by an audit made in 1932, was as follows: (1) common schools, (16 and 36 and indemnity) 1,414,675.48 acres; (2) sections 13 and 33, and indemnity for state educational institutions, 353,286.30 acres; (3) public building fund, 315,608.74 acres; and (4) endowment for higher education, 1,049,405.24 acres -- a total of 3,132,956.26 acres.[2]

The grazing lands of Old Oklahoma became farm lands in 1889. As various reservations were opened, agriculture replaced the great herds. The wide expanse of the native sod yielded to settlers' plows and areas

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[2] Victor E. Harlow, op. cit., p. 279.

of the blue stem and other grasses were to become waving fields of wheat and row after row of cotton, grain sorghums, and other row crops. The new lands proved to be fertile and wonderfully productive and many types of agricultural products were grown. In most cases these farmers did not give thought to the future productivity of the soil, partially because of a lack of understanding of the consequences of such farming practices, but mainly because the plant food elements in the soil seemed inexhaustible, and, too, there were always adjoining areas of virgin soil to be broken into fertile soils if the land they were farming became unproductive.

Exploitation and misuse of pasture lands and cultivated fields had their beginning in Oklahoma along about this time, ultimately resulting in the necessity of deferred grazing practices, diversified cropping practices, and other proper cultural practices necessary today for the production of commodities to maintain a decent standard of living on most Oklahoma farms. Population in the Oklahoma Territory increased rapidly. The 100,000 people, who it was estimated came into Oklahoma on April 22, 1889, shrank in number to 61,834 when the census was taken in 1890. From 1890 to 1900 population increased to 398,331, or 552.9 percent. The next seven years it had grown to 722,441, or more than tenfold in 17 years.[3]

The "Enabling Act" provided that the people of the Oklahoma Territory and Indian Territory might adopt a constitution and become the state of Oklahoma. The constitution was voted on in November, 1907, and was adopted by a vote of 180,333 to 73,069. On November 6, 1907 President Theodore Roosevelt issued his proclamation, admitting Oklahoma to the

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[3] Victor E. Harlow, op. cit., p. 279.

Union as a state. The first legislature under statehood established numerous new institutions, among which were a board of school land commissioners, and a state Board of Agriculture.

Oklahoma had an approximate land area of 44,424,960 acres in 1910; of this an approximate 68 percent, or 22,988,339 acres were in farms. Many types of agricultural products were grown, wheat in the north and northwest cotton in the south, and corn, oats, vegetables and livestock, to some extent, throughout the entire state. There was an estimated acreage of 695,176 in wild, salt, or prairie grasses at this time. These native grasses consisted of buffalo, the gramas, wire grass, drop seeds in the western part while on the eastern side of the state were blue stem sods, switch grass with a transition zone in the west central portion of the state of blue stem bunch grasses. The principal vegetation regions of Oklahoma in 1910 are located geographically in Figure 6, page 29.

From this map it can be seen that the short grasses occupied the three Panhandle counties and a transition zone, possibly county wide, extending along the western side of the state, while eastward from this area grew the tall bunch grasses and tall sod grasses.[4] Rainfall for Oklahoma was sufficient to provide growth of all species.

As agriculture becomes more established more and more acres of the virgin sod lands were broken out for cultivation of small grains and row crops. Increased population resulted in more extensive farming practices and much damage had been done to our native pastures and cultivated lands prior to and up to 1914.

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[4] H. I. Featherly, Oklahoma Agricultural and Mechanical College

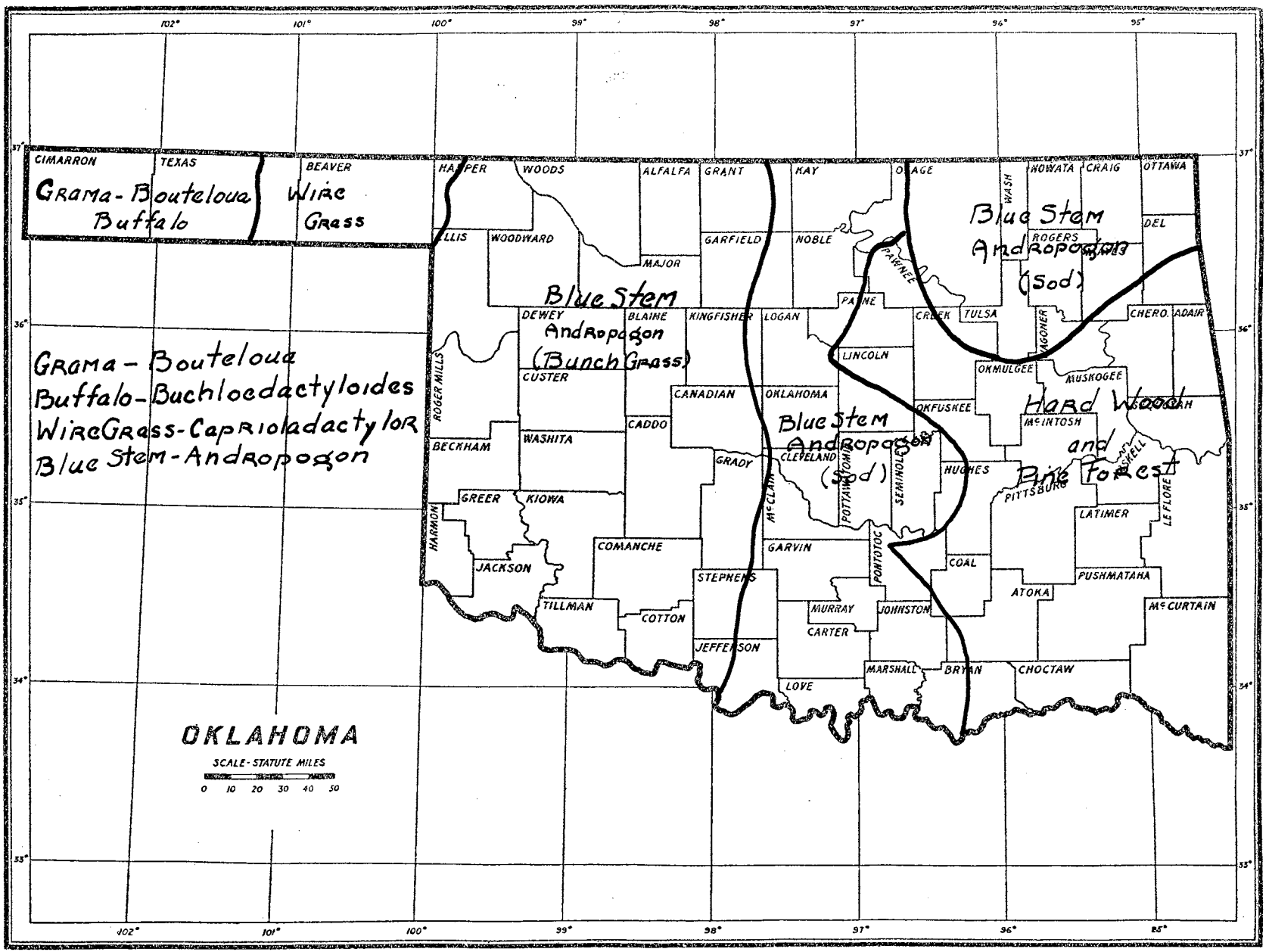

FIGURE 8. Principal Vegetation Regions in Oklahoma, 1910.

Then came World War No. 1. All Europe was plunged into a struggle which practically halted agriculture on that continent and offered broad opportunities for this country's export trade in agricultural products. The price of wheat soared and tractors ran day and night, breaking out more lands in the western sections of Oklahoma to be planted to wheat. This demand was still further accelerated by the entry of the United States into the war in 1917. It is estimated that an additional 2,000,000 acres of land were broken out in Oklahoma during the period 1914-1918.

The story of 1918 and the end of the War is of the present generation. The Allies of Democracy had won the war, but in Oklahoma the cost to the grass lands of the state had left its scar. Then came the droughts of 1934 and 1936. The seeds planted by the farmers did not receive sufficient moisture to sprout and grow. Annual average rainfall in 1934 ranged from 23.61 inches at Woodward, Oklahoma in the western section of the state to 32.94 inches at Antlers, Oklahoma in the eastern section of the state. Likewide in 1936 rainfall dropped to 18.11 inches at Woodward, Oklahoma and 31.98 inches at Antlers, Oklahoma.[5]

Acre after acre of the western area yielded to the winds sweeping in from the northwest and southwest until the Panhandle Counties once so abundantly covered with grasses were classified as a portion of the Dust Bowl of the Great Plains Area. In 1936 hundreds of acres in Texas, Beaver and Cimarron counties of Oklahoma were classified by the Soil Conservation Service as being in the Dust Bowl of the Great Plains.

The central to eastern section of Oklahoma fared somewhat better. However, over-grazing and fire, along with exploitation, have taken

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5 Weather Bureau, United States Department of Commerce, 1934-1936.

their toll in this area until wind and water erosion have resulted in some cases in almost total depletion of the grass land areas. This section of the state has been rich in oil and mineral resources. Owner operators of the farms in these areas have abandoned their farms and they have been taken over by tenants. Tenancy increased in Oklahoma and a larger percentage of this tenancy occurs in the section of the state being discussed from 43.3 percent in 1910 to 61 percent in 1935.[6] The tenant in most cases did not have the interest in the farm as did the owner and depleted and run down conditions of the farms were the natural consequences.

All this exploitation has caused a decrease in the acreage of pasture lands and likewise a decrease in carrying capacity of the areas surviving. There has been a major change in the vegetative areas during the past decade. The native blue stems, bunch and blue stem sods, which once extended to Beaver County in the Panhandle, have been pushed eastward until, at the present time, a line could be drawn from the north to the south across the state along the 37th meredian, almost the center of the state, as a western boundary of the big blue stem grasses. The same, with little variation, could be said of the little blue stems. Buffalo grass, once known in Oklahoma only in the Panhandle Counties and a transition zone possibly a county wide along the western side of the state, has pushed eastward until its boundary extends to the western edge of the big and little blue stems. Blue grama, hairy grama and other short grasses likewise have invaded the area once covered by the tall grasses.

The beginning of the third decade of the twentieth century found

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[6] 15th Census of the United States, Vol. VII - 1910.

a vastly different Oklahoma to the one admitted to the Union in 1907. Scars of wind and water erosion stood out on the hillsides; weeds and other vegetation limits the carrying capacity of the pastures and range lands. Farmers were attempting to supplement income from cash crops by small herds of dairy or beef cattle. Stockmen who attempt to run large herds of range cattle found themselves defeated in their purpose by lack of sufficient pasture grasses.

Fortunately, this dark cloud has its silver lining and the following chapters of this paper will be devoted to showing how government and state agencies have foreseen the danger of these practices undermining the foundation of American agriculture and have set in motion machines to eliminate as far as possible the harmful practices and made sincere efforts to revegetate the pastures of Oklahoma.

CHAPTER V.

FEDERAL AND STATE AGENCIES' COOPERATION IN OKLAHOMA'S AGRICULTURAL WORK

Many Federal agencies have entered into the field of aid to agriculture and ranching in Oklahoma in the past few years. Coming under the direct or indirect supervision of the United States Department of Agriculture some 15 or more agencies have devoted part or all of their efforts toward bettering agriculture in the United States and some phases of their programs have touched and affected pasture work in Oklahoma.

The Agricultural Adjustment Administration, functioning under the United States Department of Agriculture and in close coordination with the efforts of the Extension Service has affected pasture conditions in the state by payments for pasture improvement, soil and water conservation practices, and other good agronomic practices. This organization will be discussed more in detail later in this paper.

The Agricultural Marketing Service, with its Division of Inspection Service of Fruits and Vegetables; the Division of Grain Supervision; Division of Livestock, Meats, and Wool; and Division of Statistics has indirectly had an influence on pasture conditions in the state.

The Bureau of Animal Industry has likewise had an effect on the Oklahoma livestock industry through its Division of Field Inspection; Hog Cholera Control Department; Inspection and Quarantine Department; Laboratories; Division of Meat Inspection; Packers and Stockyards Division; Tuberculosis Eradication and Range Disease Elimination Division; and Division of Virus-Serum Control.

The Commodity Credit Corporation has extended credit to stockmen, ranchmen and farmers, to carry on operations at a favorable rate of

interest.

The Emergency Crop and Feed Loan office has likewise extended credit to stockmen, ranchmen, and farmers to negotiate feed and seed loans on both short time and long time basis which enabled the operators to carry livestock over for favorable markets and to follow good farm management practices.

The Farm Credit Administration, with its department of farm credit directors; The Federal Land Bank of Wichita; The Federal Intermediate-Credit Bank of Wichita; The Production Credit Corporation of Wichita; The Secretary-Treasurers of Production Credit Associations; and the Wichita Bank for Cooperatives have also extended credit for the purpose of the purchasing of agricultural lands and pasture lands and other agricultural endeavors.

The Farm Security Administration has entered the field of aid to agriculture in this state as well as others of the nation. Its Rehabilitation Division; District Supervisors; County Administrators; and Farm Department Adjustment Division have extended both farm management services and financial aid to farmers and stockmen, in most cases of the low income group, of this state.

The Soil Conservation Service has been a very active agency in combating erosion and planning agronomic work in Oklahoma. Its scope extends very definitely into range and pasture work and some very constructive work in range and pasture management has been done by this agency.

The Federal Farm Mortgage Corporation; Federal Surplus Commodities Corporation; The Forest Service; The Bureau of Plant Industry; The Rural Electrification Administration; and The Weather Bureau are Federal

departments that have likewise directly or indirectly affected pasture and range conditions in Oklahoma.

The Agricultural Extension Service has, with its central office staff of specialists, working in cooperation with the State Agricultural College and its staff of research men, and the county agents of the state, proved to be very effective in disseminating information to farmers, ranchmen and stockmen of the state. It is the educational work of this agency with which this paper will deal principally in summarizing the results of pasture work in Oklahoma.

State agencies have also played a very constructive role in developing pasture work in Oklahoma. The State Board of Agriculture, composed of the president of the board and three members, have worked in close coordination with the Federal agencies in agronomic work.

Other Federal agencies that have had some influence on pasture work in Oklahoma include The Federal Loan Agency; Federal Reserve Board; Federal Security Agency; Federal Work's Agency; Department of the Interior; Department of Justice; and corps of engineers of The War Department.

Extension work had its beginning when Dr. Seaman A. Knapp began farm demonstrative work in Texas in 1904. This plan of farmers' cooperative demonstration work was conceived by Dr. Knapp and was later put into operation by the United States Department of Agriculture as part of the campaign against the Mexican boll-weevil which was making disastrous inroads in the cotton industry of the southern states about this time.

The demonstration work in Oklahoma was begun in the late summer of 1907. In the fall of 1907, Agent W. H. Bomburge was transferred from one of the other southern states to Oklahoma and assigned to the eastern

half of the state with headquarters at Ardmore. The western half of the state was added to the northwestern Texas district which was under the supervision of W. D. Bentley with headquarters at Wichita Falls, Texas.[1]

In September, 1908, Mr. Bomnbarge resigned and Mr. Bentley was given charge of the work of the entire state. In 1912 the Oklahoma state legislature passed a bill which became a law authorizing boards of county commissioners to cooperate with the State Department of Agriculture in employment of agents in the Farmers' Cooperative Demonstration work and to appropriate not to exceed $500 per annum on their salaries. Later the $500 limit was raised and, finally, removed altogether.

In 1914, at the July meeting of the Board of Agriculture a cooperative agreement was made with the United States Department of Agriculture under which the Farmers' Cooperative Demonstration work in Oklahoma and the Extension work of the Oklahoma Agricultural and Mechanical College were united, forming the Extension Division of the Oklahoma Agricultural and Mechanical College. The state agent, W. D. Bentley, was elected its first director.

In the 36 years since its beginning in February, 1904, the Extension Demonstration Method of teaching agriculture has grown from a small group of men headed by Dr. Seaman A. Knapp, who thought out the plan and directed its early development, to a nationwide system stamped with the approval of the National Congress and the legislatures of all the states of the Union and colonies in her possession, and reaching and benefiting thousands of farm folk of America.[2]

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1 W. D. Bentley, Early History of Extension Work in Oklahoma, p.3.

2 Alfred Charles True, A History of Agricultural Extension Work of the United States, pp. 193-194.

CHAPTER VI.

SUMMARY OF PASTURE IMPROVEMENT WORK IN OKLAHOMA UP TO 1930

While the Farmers' Cooperative Demonstration work of the United States Department of Agriculture was being developed in Oklahoma between the years of 1907 and 1914, the Oklahoma Agricultural and Mechanical College was also carrying on agricultural extension activities along various lines. Circulars and material for the press was prepared and sent out and lecture work and farmers' institute work was carried on. Mobile schools of agriculture and home economics were organized and conducted at various points in the state. Boys' and girls' club work was undertaken by the college, and county demonstration farms of 40 acres each were established in many counties by the State Board of Agriculture under authority of a law passed by the legislature in 1909.[1]

It is not within the scope of this problem to discuss in detail the work done by the various governmental and state agencies in regard to pasture improvement. However, due to the fact that the Experiment Station of the College furnishes technical information to the pasture specialists of the Extension Service, it is desirable to discuss briefly some of the highlights of pasture improvement work carried on by the Oklahoma Agricultural Experiment Station during the period 1894 to date.

John Fields, director and chemist for the Experiment Station in 1899-1900, had given some thought to protection of the grass lands of the state and in his Experiment Station Report for that year suggested that native grass pastures could be strengthened by keeping down weeds

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[1] W. D. Bentley, op. cit., p. 24.

and possibly seeding some of the thin pastures to Bermuda or Kentucky blue grass.[2] In this same year J. H. Bone, associate agriculturist, made a study of native and introduced grasses found near Stillwater, giving period of growth and date of blooming.[3]

In 1902, Mr. Fields stated that heavy grazing of the native grass pastures in Oklahoma had weakened them so that they were no longer sufficient to carry the farm stock through the summer and recommended Bermuda grass as the best grass to supplement the native grass pastures.[4] In December of 1902 a bulletin on Bermuda grass was published by the station, further recommending Bermuda grass.

Again in the Report for 1903-1904, Mr. Fields discussed the progress of Bermuda as a pasture grass in Oklahoma, and in that year defined its climatic limitations in the state. Much credit for the work of introducing Bermuda grass must be given F. A. "Bermuda" Mitchell, who at an early date was a firm advocate of Bermuda for the state. Mr. Mitchell moved to Oklahoma in 1907 and purchased a farm east of Chandler. He went to Stillwater and obtained a few roots of Giant Bermuda grass from Mr. Fields and soon all the hillsides of Mr. Mitchell's farm were carpeted with luxuriant Bermuda sod. From this farm Bermuda roots were sold east, west, north, and south in Oklahoma, Arkansas, and Texas. Thousands of acres of this grass have been planted from roots grown on Mr. Mitchell's farm.[5]

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[2] Oklahoma Agricultural Experiment Station Annual Report, 1899-1900, p. 43.

[3] Ibid, p. 87.

[4] Oklahoma Agricultural Experiment Station Annual Report, 1901-1902, p. 33.

[5] Agronomy Circular Letter No. 24, H. W. Staten, Soil Conservation Service, April 28, 1937.

In the fall of 1902 work was started on pasturing wheat demonstrations to determine the effect of pasturing on production of wheat. Previous to this some few tests had been made on supplementary pastures such as alfalfa.

In 1910 an experiment was started to determine the relative value of sweet clover, sudan grass and Bermuda grass as a pasture crop for Oklahoma. Sheep were pastured on these three crops; good results were secured from pasturing the sudan grass and sweet clover, but the sheep pastured on the Bermuda grass made much less gains. This was a dry year, especially during the months of July and August, and Bermuda grass did not make a very satisfactory pasture.[6] This experiment was carried on over a period of later years.

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[6] Twenty-Sixth Annual Report, Oklahoma Agricultural Experiment Station, 1906, p. 15

CHAPTER VII.

PROGRAM AND NARRATIVE SUMMARY PLAN OF EXTENSION PASTURE WORK IN OKLAHOMA, 1930-1940

Mr. Sam B. Durham was appointed Extension Specialist in Pasture and Forage Crops and Dairy Equipment in 1930. Prior to that date Mr. Durham and three other district dairy agents had done some work in creating an interest in pasture improvement, especially in the eastern sections of the state.

The responsibilities of the Extension pasture specialist in connection with the advancement of pasture conditions in the state may be delineated briefly as "To assist farmers with local pasture problems, fitting the pasture grasses and the scale of operations to local conditions and needs; the work to be accomplished largely by demonstration, using information obtainable from the Experiment Stations and the United States Department of Agriculture on successful farm practices, and occasionally by actual field tests."[1]

The first program of work for Mr. Durham was compiled in 1930 while he was still district dairy agent of the Northeast counties. In this program of work Mr. Durham listed four major phases of the dairy project;[2]

1. Year-round pasture, both temporary and permanent.
2. Home grown feeds for the farm dairy herd.
3. A place to milk and care for cows.
4. The placing of high production bred bulls.

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[1] Statement by H. A. Sommer, Administrative Assistant and State Agent, Oklahoma Extension Service, March 1, 1941.

[2] Sam B. Durham, Program of Work for Dairy Extension Work in Oklahoma, 1930, p.2.

Only one of the phases, year-round pasture both temporary and permanent, deals directly with pasture management. In this discussion of this phase, Mr. Durham states further that, owing to the fact that the native grass pastures in many sections of the country of the northeastern part of the state amount to practically nothing, it is an obvious fact that an attempt should be made to utilize as many of the cultivated grasses as will grow in this section.[3] In making a start toward accomplishing results along this line, it was the plan to have at least ten pasture demonstrations on no less than one half acre of good land in each of the counties. The mixtures were to include seven of eight grasses and legumes. Also, in addition to this, a number of demonstrations were planned in Muskogee and Wagoner County.

In the temporary pasture work it was planned to have demonstrations on growing sweet clover in each section of the county, and to conduct campaigns through the various organizations, such as Chambers of Commerce and club organizations, to promote interest in this way.

This program was carried out by Mr. Durham as outlined by his calendar of work, by having an intensive schedule of feeding and pasture schools throughout January, February and March of that year. During the month of June, tours were conducted to view the pastures of the area and note the growth of the pasture mixtures and legumes.

It is regrettable that the Extension Service does not have in accessible files the annual report of Mr. Durham for the year of 1930 so that tangible results of this year's work could be cited. The Director's Annual Report for this year stated that extension workers conducted 1,124

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3 Sam Durham, op. cit. p. 3.

demonstrations in sweet clover with a total of 8,572 acres.[4] Also, pasture combinations on the east side of Oklahoma containing orchard grass, rye grass, red top, red and white Dutch clover gave excellent results in 1930.

No program of work or annual report for Mr. Durham is available for 1931. However, the Director's Annual Report for that year states that demonstrations in yellow hop clover, black medic, lespedeza, bur clover, white Dutch clover, dallis grass, Bermuda, orchard grass and red top as well as mixtures of some of these had revolutionized the tame pasture program. In all counties where agents were active, which was 69,[6] there were demonstrations in tame pastures. In 1,977 demonstrations comprising 13,314 acres, the farmers saw tame pasture work illustrated,[7] also that farm tours to legume demonstrations were conducted in most counties of Oklahoma. A total of 5,739 demonstrations were visited and over 40,000 acres in legume demonstrations were supervised by extension agents.

In 1932 Mr. Durham followed the general program of work as outlined in 1931. In permanent pasture work he proposed to:[9]

1. Establish acre demonstrations in all sections, fertilizing

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4 Seventeenth Annual Report of the Extension Division, 1930, p. 45.

5 Ibid, p. 8

6 Eighteenth Annual Report of the Extension Division, 1931, p. 13

7 Ibid, p. 46

8 Ibid, p. 15

9 Sam Durham, Program of Work for Extension Specialist in Pasture and Forage Crops and Dairy Work, 1932, p. 5.

those plots and sowing an abundant supply of feed in order to perfect early results;

2. Hold pasture meetings on such demonstrations at different times in the year.

3. Keep and publish exact results obtained and amount of grazing furnished on such plots and on other pastures where results have been obtained.

4. Teach value of pasture, as determined by Warren of Cornell; Jones and Brandt of Corvallis; White of Pennsylvania; Misner of New York; Gillete, Kildee, Weaver at Niowa; Frandensen of Nebraska; Wiggan of Cornell; Hutchenson and Carter of Virginia; Orr, Peter, Kasper, and Fagan of Europe; Selby of Oregon; Graber and Nelson of Wisconsin; Moore of Mississippi; and Brown and Slate of Connecticut; furnishing condensed information to county agents and encouraging them in the use of the Experiment Station Record.

5. Use pictures and slides at meetings, utilizing results obtained somewhere in the state and districts.

A plan for meeting the increasing amount of tenancy and the problems accompanying this increase in facilitating a better relationship between tenant and landowner stimulated by the following demonstrations was advanced.[10]

1. Landowner to be responsible for:

   a. Five acre tame grass pasture.

   b. A place to milk.

   c. A sanitary house.

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[10] Ibid, p. 8.

Tenant to be responsible for:

a. Manure going on the soil.

b. Building terraces.

c. Keeping up improvements.

Both to divide everything sold from the place exactly as crop is divided.

2. Sponsor growth of an acre of vetch to be turned under four consecutive years, then planted to one-half acre of corn and one-half acre of permanent pasture.

3. Landowners to sell 40 acre tracts of land to young married couples having 4-H Club experience on the ten year payment plan; land to be sold along with three good cows, 25 chickens and a tame grass pasture.

Two district dairy agents majored in dairy pasture development. This work was carried on through having farmers plant demonstration pastures according to the recommendation of the county and dairy agents. Later on in the year tours were conducted to check up on these demonstrations. Pasture meetings were held. A film strip showing typical results of the pasture demonstrations was up for use by the agents. Demonstrations were conducted by 1,087 farmers in Oklahoma containing 9,070 acres. Practically all of these demonstrations contained plants that were grown in Oklahoma to a small extent until three or four years ago. The most successful plants new to Oklahoma that were pushed included Dallis grass, Korean lespedeza, bur clover, and black medic.[11]

The year of 1933 found very little change in the program of

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[11] Nineteenth Annual Report of the Extension Division, 1932, p. 39.

Extension pasture work as outlined by Mr. Durham. Changes transpiring in the agricultural situation of the state had not been of such nature as to call for any very important readjustment of the pasture program. There was a multiplied interest in permanent pastures, caused in part by previous demonstrations along this line of work. It was proposed to further stimulate interest in pastures by adding 500 or more pasture demonstrations and continuing and perfecting the old ones at all times possible. It was hoped to accomplish results in that year that would more nearly apply to Osage County and the pastures of the northeastern section of the state than had been true in the past. A film strip on pasture improvement had been prepared and was being used over the state and a bulletin on grasses was written. Demonstrations, tours, field meetings, publications and other publicity was used in disseminating pasture information to farmers and ranchmen of the state.[12]

This work was carried on in the state by two district dairy agents. In northern Oklahoma the number of acres in lespedeza, yellow hop clover, Dallis grass, Bermuda grass and other tame pasture grasses had doubled that of previous years, and demonstrations continued to create such interest, as was evidenced by frequent pasture tours. More than 1,500 farmers were working with pasture improvement work in northern Oklahoma, while in the southern part of the state similar work was carried on with adapted grasses and legumes for that area. The dairy agent for southern Oklahoma attended 55 meetings in 16 counties, reaching 1,360 farmers through this means alone in the first half of the year with information

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12 Sam B. Durham, Program Outline for Dairy Extension Work in Oklahoma, January 1, 1933 to July 1, 1934, p. 1.

on planting pastures. Pasture demonstrations were visited and other demonstrations outlined in 26 southern Oklahoma counties.[13]

Lespedeza and Dallis grass proved very effective as tame pasture grasses in southern Oklahoma in 1933 as evidenced by the following excerpt from the Annual Report of Shawnee Brown, county agent of McCurtain County.[14]

> "One of the demonstrations was carried by Roy Brummett in the Eagle Town Community. This demonstration plot was seven acres. Fifty pounds of Dallis grass, and fifty pounds of pasture mixture were used. The plot had a very good set of Dallis grass, lespedeza, and carpet grass. Mr. Brummett states that he has been grazing this plot with more than three head of animals per acre. He is planning to seed twenty acres more in the spring."

The county agents in southern Oklahoma report for 1933 that 4,482 acres of lespedeza were sown in pasture demonstrations. They also report 7,571 in permanent pasture, making a total of 12,055 acres of lespedeza and permanent pasture sponsored by county agents in the southern part of the state. The records are given as to the acreages in pasture for 1933.[15]

By August 4, 1934, all of Oklahoma's counties were in the primary drouth relief area. The Director of Extension was named state drouth relief director, an assistant was named to have charge of much of the field work, and in each county the county agent became the county relief director. The drouth relief program included buying of drouth distressed cattle, moving feed and water to cattle and cattle to feed

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[13] Twentieth Annual Report of Extension Division, 1933, pp. 42-43.

[14] Shawnee Brown, County Agent's Annual Report, McCurtain County, 1933, p. 68

[15] Twentieth Annual Report of Extension Division, 1933, p. 43.

FIGURE 7. Pasture mixture of yellow hop, white Dutch, black medic, Dallis, red top, Korean lespedeza, and a little alfalfa on dairy farm of E. D. Gossett, near Muskogee, Oklahoma. 1934

and water with reduced railroad rates. Later on it included loans for feed and fall pastures. In these programs, involving cooperation with the Agricultural Adjustment Administration, the State Emergency Relief Association, and the Farm Credit Administration and the Extension Service about 500,000 head of cattle were purchased. A total of more than $5,000,000 was paid to cattle owners.

The development of Oklahoma pastures had been one of the important phases up to the year of 1934. However, the importance of this work had not been fully realized until the great drouth of that year brought out the value of a feed supply from permanent pastures. In order to meet the growing needs in pasture work in the state, made more acute by the drouth of this year, Mr. Sam B. Durham was transferred from the position of dairy specialist to the position of pasture specialist, to work closely with the specialist in crops and soils.

During 1934, 55 pasture meetings were held, with a total of 3,594 farmers and in addition personal calls were made on 350 farm demonstrators; seven circular letters on lespedeza, yellow hop clover, Dallis grass, Kentucky Blue grass and red top were written and 6,000 copies of these circulars were distributed and 1,200,000 pounds of Korean lespedeza and 160,000 pounds of Blue grass were distributed to 18,000 demonstrators.[16] County agents in their annual reports for 1934 reported progress in permanent pasture building which accounted for more than 200,000 acres of pasture, planted by more than 20,000 demonstrators.[17]

The year of 1935 saw an active interest in the pasture program for

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[16] Sam B. Durham, Annual Narrative Report of Pasture Work in Oklahoma, 1934, p. 31.

[17] Sam B. Durham, Program Outline for Extension Work in Pasture and Forage Crop, 1935, p. 1.

Oklahoma by farmers and stockmen of the entire state. Four reasons for such widespread interest in pastures can be pointed out. Low prices for farm commodities demanded production at low cost and livestock and dairy products are produced from permanent pastures at the lowest possible cost. Another reason was that many landowners were making it possible for tenants to live at home by providing pasture for a family cow, the work stock, and the home meat supply. Another important and stimulating factor was the fact that land taken out of production under government control measures could be planted to government pasture. That was a wise governmental provision, due to the known great need for pastures in many southern states and has done much toward pasture improvement in Oklahoma. The fourth reason and, in the mind of extension workers, one of the most important was the information disseminated by the county agents relative to the possibilities of improving pasture conditions in the state. The limited scope of this paper prohibits reproducing excerps from county agents' reports in which very favorable results of pasture demonstrations are cited.[18]

Four-H Club work with pastures in Oklahoma was beginning to receive special attention. In Tulsa County as a result of 4-H Club demonstrations constructive work toward the determining of the value of English rye grass was going forward, and in that year five adult demonstrators had over 50 acres and one had 250 acres.

The major phases of the program of work of 1935 were: 1. Contouring, mowing, and seeding worn native pastures in yellow hop clover and Korean clover; 2. Building Bermuda grass, Korean lespedeza and often

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18 Sam B. Durham, op. cit., p. 4.

Dallis grass for summer pastures for tenant farmers, and the same pastures seeded to yellow hop clover, and on good land, to rye grass for winter and spring pastures. 3. A three acre pasture adjacent to every tenant farmer's house in areas were practiced. 4. To work with large land holding companies and individuals who owned large tracts of land in developing pastures for their tenants. 5. Extend the 4-H Club pasture club work. 6. Stimulate the interest of negroes in tame pastures. 7. Publicity relative to pasture work by radio, press and other methods. 8. The use of lime and phosphates on land will be demonstrated wherever practical. 9. Planting of vetch and other winter legumes preparatory to planting permanent pastures to be encouraged. 10. Obtain comparative values of different pasture lands. 11. To arrange for seed to be available at the proper time for planting. 12. To encourage the coming of clover and grass seeds in the state.[19]

During the year great interest was aroused in the improvement of pasture situation in Oklahoma in cooperation with the Oklahoma Emergency Relief Administration. Approximately 200,000 pounds of Korean lespedeza seed were distributed to farmers in the state. This made it possible to establish thousands of demonstrations and a check showed that seed was matured and re-seeded on about 90 percent of the seeded areas. The plantings demonstrated lespedeza as a superior summer annual drouth resistant pasture plant for the eastern three-fourths of the state. Yellow hop, black medic and bur clovers did well in a great part of eastern Oklahoma in mixtures with lespedeza, Dallis grass and Bermuda grass. Dallis grass continued to grow in favor in eastern Oklahoma and

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19 Sam B. Durham, Annual Narrative Report of Pasture Work in Oklahoma, 1935, pp. 4 and 5.

FIGURE 8. Registered Shorthorns on English Rye, Dallis, Korean Lespedeza, 20 acres carried 35 Hogs, 18 Shorthorns and 21 Males (at night) most of the time from October 20 to June 30, 1935

advance further west. Bermuda grass continued to be the most important tame pasture grass. Other grasses and legumes, including rye grass, orchard grass and blue grass have proved quite successful in some sections. It was proved that there was a possibility of sowing seeds from a number of different states' tame and native grasses. Demonstrators saved 4,000 pounds of Dallis grass and 1,100 pounds of yellow hop clover seed that year. County agents reported 6,881 farmers planted legume pasture for the first time in 1935 and 174,600 pounds of seed was handled through the county exchanges.[20]

Mr. Durham's program for 1936 had few variations from programs of work of previous years. The following major phases were used as guides for improvement of pasture conditions of the state:

1. Establishment of permanent pastures on tenant farms, by working in close coordination with the landlords and landholding agencies of the state.

2. Improve and build pasture for the livestock producers by the continuation of establishing permanent pasture demonstrations, using the various pasture mixtures in such a way and in such localities as experience has shown advisable.

3. The work of establishing temporary pastures will be continued.

4. Four-H Club pasture work.

Pasture work was made a specific Extension project in Oklahoma in January, 1936 with Mr. Durham being appointed as Extension pasture specialist. His work along the line of establishing permanent pastures on tenant farms followed in a general way the work of previous years

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20 Twenty-second Annual Report of the Extension Division, 1935, pp. 37 and 38.

and constructive results were still being produced. For example, largely through Extension efforts, the Aetna Life Insurance Company set aside in that year an annual amount of $46,000 for terracing and pasture building. Similar work has been done by other companies, only on a relatively smaller scale.[21]

In improving and building pastures for the livestock producers, the most effective factor was the demonstration work. County agents in Oklahoma accounted for a total of 1,754 pasture demonstrations in 1936.[22]

The growing of both winter and summer annuals for a temporary pasture fit in so closely with the Soil Conservation program that close cooperation with officials of that agency was advisable, and that cooperation was entirely satisfactory from all standpoints. The drouth played far greater havoc with plantings of tame pastures than was the case with permanent pastures and thousands of acres of sudan grass, peas and other tame pastures and legumes were planted which never received a drop of rain before time for maturing. The Director of Extension, after seeing the havoc wrought by the drouth, was responsible for one week's being devoted to stimulating the planting of winter pastures. This effort resulted in more good than any other Extension activity. There was a 12 percent increase in winter pasture in western Oklahoma and a 28 percent increase in eastern Oklahoma.[23]

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21 Annual Narrative Report of Pasture Work, Sam B. Durham, 1936, p. 11.

22 Ibid, p. 14

23 Ibid, p. 34

FIGURE 9. On the Kershaw Aberdeen-Angus Ranch where Yellow Hop Clover and Bermuda Grass on 600 acres produce "250 pounds of meat per acre," according to the owner.

The enrollment of 4-H Club members in pasture work was continued in 1936. Pasture demonstrations and talks were made to 4-H Club groups in 34 counties and pasture material was furnished. A short course was held that year at the 4-H Club Round-Up. Native grass seed was secured for 40 Four-H Club boys who carried native grass seeding as a project.

In spite of the drouth of that year interest in pasture improvement and in pasture development was high throughout the state. In northeastern Oklahoma this was instanced by placing pasture work as a major in eight county agricultural councils and as a part of the livestock, dairy, or soil conservation programs in eight other counties. In southeastern Oklahoma pastures appear as a major part of the program in 16 of the 18 counties. In western Oklahoma experimental efforts were made with certain tame grasses, but most efforts were devoted to improvement of native pastures and use of temporary pastures.

A summary for 34 counties showed a total of 569,900 pounds of Korean lespedeza planted in 1936. Four other counties of the east and central area reported unfavorable results. Thirty-four counties reported 23,650 acres of Bermuda grass planted, with 1,200 acres in one county alone. In the state as a whole rye grass was excelling all other pasture plants for fall, winter and spring pasture. At least eight carloads of 40,000 pounds each of rye grass seed was believed to have been planted in the state. Reports also show more than 5,000 pounds of bur clover, orchard grass and red hop were planted in demonstrations with a total of more than one thousand pounds each of a number of other pasture plants used in northeastern Oklahoma. Agents' reports also showed that 377,800 pounds of vetch seed were planted in response to an effort to increase winter pasture plantings. Reports indicate that a fourth of

the vetch acreage will eventually be in permanent pasture, since vetch seemed to improve soil as a preparatory measure.[24]

The Extension Service also worked in close coordination with the Agricultural Adjustment Administration in all phases of work. Under the Agricultural Conservation program for 1936 pastures were established on 47,127 acres and 69,308 acres of pasture land was contour listed.[25]

A continuation of the major phases of the pasture program outlined in 1936 was carried on in 1937. The work with tenants and landowners progressed in a satisfactory manner. In addition to cooperation of private landowners and landholding companies, one of which was the Aetna Life Insurance Company which had used as much as $10,000 per year to buy pasture grass and clover seed for tenant farms, the Resettlement Administration asked for assistance with 60 small pasture demonstrations in one county. Their state director, a former county agent, established some of the best demonstrations the Extension Service has had in southern Oklahoma in cooperation with Mr. Durham. The assistant state director, Arthur Peterman, was a former county agent in Nowata, a northern county, and while there led all others in good pasture work.[26]

In the work of improving pastures for the livestock producer in 1937, cooperation with other Federal agencies played an important part. Fifty thousand acres of tame grass pastures were planted and paid for

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24 Twenty-third Annual Report of Extension Division, 1936, pp. 54, 55, and 56.

25 Ibid, p. 136

26 Sam B. Durham, Annual Narrative Report of Pasture Work, 1937, p. 37.

by the Soil Conservation Service during that year. Bermuda grass still held its role as an important tame pasture grass, some counties reporting 1,300 to 1,500 acres planted to Bermuda in 1937. Yellow hop clover, rye grass, Korean lespedeza, bur clover, Dallis grass and carpet grass also played an important place in pasture improvement work.[27]

Agricultural conservation had a great influence on planting of peas, mung beans, vetch, Austrian winter peas, sweet clover, lespedeza, soy beans, sudan grass and cereals. The approximate total acreage as furnished by the Agricultural Conservation, was: Sudan, 246,000 acres; vetch, sweet clover and lespedeza, 135,000 acres; other winter legumes covered an acreage of 91,600 acres.[28]

As a general rule, farmers allowed sudan and the grain sorghums to become too advanced in growth before making hay or saving silage. Woodward Station proved that 25 percent of the value of the crops could be saved by cutting them when the first heads appear. This information was disseminated through county agents, over the radio and in meetings.

In work with 4-H Clubs, early in February, 150 pounds of native grass seed was mailed out to 28 counties to be used by junior 4-H Club members in small plots, chiefly for educational purposes. The demonstrations were generally not too successful, due to dry weather. However, it was believed the time was worth while due to its bearing on burning of pastures and that it was definitely learned that the seed would germinate.

Minor phases of pasture work for 1937 consisted of fire prevention,

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27 Ibid, pp. 37-41.

28 Ibid, p. 52.

FIGURE 10. Rye grass ready to combine in Craig County. Yield more than 500 pounds of seed per acre.

seeding, unclaimed land, cooperating with state institutions and trying out new grasses.

One of the outstanding examples of the interest taken by the Oklahoma farmers in pasture was their participation in the Range Conservation program. In this program 2,152 farmers and ranchers from 47 counties improved their ranches, involving 3,712,478 acres. Deferred grazing was practiced on 556,878 acres.

Another important step in saving the pastures was a campaign against fires. It is estimated that fires were decreased 75 percent during the year. County agents' reports show that 9,435 tenant farmers had better living conditions in 1937 due to the influence of a better pasture program, this being an increase of 4,435 farmers over 1936. A total of 826 demonstrations were planned during the year to assist in the tenant pasture improvement program. It was found that the number of cowless farms decreased due to better pastures on farms. In cooperation with the Farm Security Administration, the pasture specialist assisted in the establishment of pastures on 60 farms in one county.[29]

Reports from county agents indicate that interest is growing in tame grass pastures. Each county agent in the eastern half of the state was instrumental in bringing into his county about 15,000 pounds of rye grass seed. Seed saving efforts resulted in the production of about 600,000 pounds of rye grass and 300,000 pounds of lespedeza. Formerly, rye grass was obtained from Oregon and lespedeza from Tennessee. Yellow hop clover was saved at the average rate of 120 pounds to the acre in three counties.

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[29] Twenty-fourth Annual Report of Extension Work, 1937, pp. 51-53.

A Bermuda grass demonstration in Muskogee County of 600 acres continues as one of the outstanding demonstrations in the state. Each acre produces 250 pounds of meat annually. Nine hundred pounds of "New Era Giant" bur clover were distributed to demonstrators by the pasture specialist.

Due to the cooperative nature of pasture work with other Extension and emergency programs, many additional farmers have been reached and influenced through this cooperation. Through the Farm Security Administration hundreds of tenant farmers have been influenced.

In 4-H Club pasture work, outstanding demonstrations were carried out in several counties. Fifteen small pastures have been built up in Carter County by club members in connection with their livestock projects. Other counties where special work was done in 4-H pasture projects are Adair, Pushmataha and Mayes. Pasture tours were attended by 1,162 members, 632 members made hikes to study pastures, and 990 either planted or helped plant pastures.

To say that general farm interest throughout the state in pasture work is second to no other Extension project is conservative, believes the pasture specialist. The range conservation program for the Southern Region was more effective as a result of this keen interest among farmers.[30]

The pasture program for 1938 followed the same general program as of the previous years, the major phases being permanent pastures on tenant farms, 4-H Club work as a means of disseminating information, building and improving pastures for the livestock and dairy man, and work with temporary pastures. In the work of permanent pastures on tenant farms,

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30 Ibid

arrangements were made with landowners to purchase the required amount of seed for a pasture sufficient in size to serve a work team, five cows and two hogs. Arrangements were also made with satisfactory tenants to terrace the land, plant the seed and Bermuda grass roots, and to do the labor connected with the farm pastures. In the 4-H Club pasture work, it was planned for the 4-H Club boys to plant pastures in connection with livestock projects, to provide for a pasture for a family cow if none were available, and to carry a pasture seed saving project, also a general study of pasture improvement policies.

In temporary pasture work it was planned to extend the Bermuda grass in native pasture phases of the work; also to arrange for demonstrations in an attempt to alienate wind erosion in wind eroded sections by planting Bermuda, Dallis, sericea, and possibly guar in furrows which have been run on a contour.[31]

Landowners and landholding companies continued to cooperate with the Extension pasture work in 1938. Mr. J. R. Moody of Vian, Oklahoma, a river bottom farmer, established 20 acres of pasture on land for which in the past he had refused $250 an acre. Similar instances of such wholehearted cooperation are described in the county agents' reports for that year.[32]

In the improved tame grass pastures for the livestock producers, county agents have added more than 200 demonstrators as a result of their 1938 effort.[33]

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[31] Sam B. Durham, Plan of Work for Extension Pasture Work, 1938, pp.39-50.

[32] Sam B. Durham, Annual Narrative Report of Extension Pasture Work, 1938, pp. 27-29.

[33] Ibid, p. 32.

FIGURE 11. Saving Side Oat Grama in Pawnee County.

Four-H Club pasture work and tame pasture work were carried on in a manner similar to 1937 with satisfactory results. The results of Extension pasture work in Oklahoma for 1938 are most gratifying in six field meetings requiring eight day field trips which were made with over four hundred state farmers and range men. Sixteen range tours were held and a total of more than three hundred farmers and range men were present to study the rejuvenated pastures resulting from controlled and deferred grazing. With a combine over 16,000 pounds of blue stem grass seed were saved with the assistance of the pasture specialist. There was also saved more than 30,000 pounds of grama grass seed, mostly in Logan and Pawnee Counties.

On every occasion possible, work with state editors, radio, and all publicity agencies was attempted in an endeavor to stop the burning of pastures, and as a result there were definite demonstrations in Coal County. There were but three fires of any consequence. In Pittsburg County 90 percent of 128 fires started were put under control without much damage. Twenty-eight of these fires were caused by man, but only three of these intentionally.

During the year Bermuda grass demonstrations were planted in 43 counties to the extent of 12,000 acres. Korean lespedeza to the extent of more than 20 carloads was planted during the spring of 1938, either in oats or as temporary pasture. More than 2,000,000 pounds of rye grass were planted in the fall of 1938. More than 2,000,000 pounds of seed were saved in the summer of 1938. The actual acres of rye grass in the state was over 350,000 acres and probably double that amount.

Bur clover became a major factor in pastures in Love, Carter, Marshall, Choctaw, Bryan and Atoka Counties. More than 10,000 pounds

of seed were saved during the year for distribution in this section. More than a ton of Dallis grass was planted in the southeastern counties of the state and more than 1,000 pounds of carpet grass were planted in three southeastern counties.[34]

The program of Extension pasture work for 1939 was similar to that of 1938 in most respects. There was a very satisfactory relationship existing between the Farm Security Administration, the Indian Service, Soil Conservation Service, the Agricultural Adjustment Administration, and other agencies in working toward the end of improved living conditions of tenants of the state. In the range improvement program, there were 2,212 cooperators involving 4,995,224 acres of range land. In the 4-H Club work, state 4-H Club enrollment records showed that more than 300 boys were enrolled in pasture demonstration work from 39 counties of the state. In the work of native pastures and meadows, ranges and their improvement more than 80 pasture meetings were held with an attendance of approximately 4,000 farmers.

A number of tests had been made relative to yields of pounds of meat per acre on various pasture grasses and legumes. Bermuda and yellow hop clover produced 250 pounds of meat per acre annually and native grass produced from 10 to 60 pounds.[35]

The closest cooperation with all government agencies resulted in the planting of thousands of acres of Bermuda grass in eastern Oklahoma and in all parts of western Oklahoma where it will thrive. It also

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[34] Twenty-fifth Annual Report of the Extension Service, 1938, pp. 28, 29, and 30.

[35] Sam B. Durham, Annual Narrative Report of Extension Pasture Work, 1939, pp. 17-69.

FIGURE 12. 175 acres of Bur Clover on C. E. Barnhill Ranch at Kent. The result of a small package of seed given this farmer ten years ago by the county agent. Note how the clover creeps into the bush.

resulted in demonstrations scattered throughout the state where gullies and abandoned land are being brought back to usefulness by the planting of grass and the control of water. Every effort was made to utilize an opportunity as directors of the educational part of the Soil Conservation District work so that demonstrations were established on tenant farms which will serve to provide better living conditions by making possible a home meat, milk, and poultry supply and a weekly cream check.

Effort was made toward utilizing W.P.A. labor on scattered demonstrations so selected by the county agent that they will serve the entire county as demonstrations. One of the major efforts of pasture work was to establish five acre pastures near such homes by using Works Progress Administration labor and by establishing one pasture in each community and then following this work by dairy work and poultry work. An effort was made also to apply mineral on this pasture to correct the mineral deficiency problems on the farms.

Stimulated by the relatively high prices of beef, it was generally possible and practical to show Oklahoma farmers and ranchmen not only the proper method of building native pastures even on abandoned land, but also the value of a pasture in pounds of meat or in actual cash per unit area in different sections of the state. It has been possible to decrease the burning of such pastures fully 50 percent during the past three years.

Rye grass, yellow hop clover, bur clover and black medic clover were generally used in eastern Oklahoma as winter annuals and as a part of permanent pastures, particularly in Bermuda. Seed saving of these plants was a widely distributed practice. In western Oklahoma, more efficient use of temporary pastures, like Sudan grass and the cereals,

and the timely cutting of these for silage and hay were improved fully 50 percent. Buffalo grass and the gramas, together with the bluestems, were made more efficient throughout central Oklahoma.

Seed saving with a combine of all these plants promised to become an established practice in the future and a very effective factor in the establishing of native grass on bandoned and eroded land.

The use of Korean lespedeza for summer pasture in eastern Oklahoma prior to the planting of Bermuda grass for permanent pasture was practiced on many farms.[36]

The records for the year 1940 are as of the present date, March 1, 1941, and are inadequate to present a complete summary of the work for 1940. A brief summary as given in OP-11, Highlights, 1940 of Agricultural Extension Service is as follows:[37]

> "Here we are briefly highlighting a few of these activities. In the official report for the year more details of the complete program and accomplishments are recorded.
>
> "Growers participating in the Oklahoma Cotton Improvement Program realized a substantial profit in 1940. In the 36 different counties to which it has been extended there are 98 "One Variety Association" with a combined membership of 14,861 cotton farmers. During the year 420,011 acres were planted to pure seed. Cotton ginners have done an excellent job of cooperating on the project, and the program will undoubtedly expand to more farms and communities in the cotton-producing counties of the state.
>
> "Farmers and ranchers of Oklahoma have practically twice as much silage stored in trench silos as they had a year ago, the result of a state-wide drive sponsored by the Extension Service. According to the records, there were 681 trench

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36 Ibid, pp. 17-69.

37 Highlights, 1940, Agricultural Extension Service, OP-11, Oklahoma A. and M. College.

silos constructed in 1939 and 4,849 during 1940. Seventy-five of the 77 counties reported from 10 to 300 silos built during the year.

"The Oklahoma cotton mattress program, conducted by the Extension Service in cooperation with other organizations and agencies, was extended to 36,749 farm homes in 2,597 communities. Seventy-five of the 77 counties participated. Assisting in the program were 3,031 volunteer leaders, farmers and farm women. The number of mattresses made per county ranged from a low of 24 to McCurtain County's high of 2,086.

"The 8,486 farm and range ponds built in 1940, exceeding the number of the year before by 815, by now should be providing an abundance of good stock water. Seventy-five of the 77 counties participated in 1940, compared to 63 counties in 1939. The AAA and tractor tax fund payments were used to a definite advantage by farmers and ranchers in carrying out this program of water conservation during the past two years in Oklahoma.

"As a result of the state expansion program conducted during 1940 by the farm women's clubs, 8,359 new members were added to the rolls. Of these, 2,761 belonged to the 180 new clubs organized during the year. The remainder were added to old organizations. The total membership of the 1,794 farm women's clubs in the state now stands at 33,179, the highest on record.

"Home demonstration club members assisted in some way 27,484 white women who are not members of clubs, and 3,360 Negro women, a total of 30,844. Thus the Extension live-at-home program was carried into 64,323 homes through the home demonstration program.

"Oklahoma alfalfa seed growers realized $125,000 additional revenue as a result of the alfalfa approval of origin program for 1940, a program which was developed and is sponsored by the Extension Service. More than 40 percent of the record-breaking crop of last year was marketed through the 29 county associations. From 60,265 acres, 1,091 members harvested 4,176,010 pounds of seed. The approval program supported the entire price structure of alfalfa seed more than one and a quarter cent per pound, and the retention of vital markets for Oklahoma seed is of unestimable value to the alfalfa seed growers of the state.

"Four-H Club work, an integral part of the Extension Service, was continued in all the 77 counties during 1940. The 57,324 farm boys and girls enrolled in 1,876 local clubs carried out a total of 98,538 special projects, all of these related to the best-known practices of agriculture and home economics. In addition to the staff of Extension workers there were 3,640 local 4-H Club coaches who served as volunteer

leaders in conducting this phase of the Extension program.

> "In addition to the regular 4-H Club program there is an increased need for special attention to young men and women who have passed the upper age limit for 4-H Club work, but who have not been able permanently to settle down into their life's work. They still are groping to find their way. Programs of the Extension Service are expanding in an effort to be of greater service to this group in the transition period.
>
> "County agents report a few high for Oklahoma on the number of acres terraced during 1940. The records show that 336,112 acres were terraced under the supervision of Extension agents. This figure exceeds the 1939 total by more than 80,000 acres. The practice of farming on the contour has increased likewise."

This is the story of the programs and plans of work for Extension pasture work in Oklahoma, 1930 to 1940, as work in which the Extension pasture specialist in pasture work coordinated extension pasture work with other state and Federal agencies in an effort to create better pasture conditions for the farmers and stockmen of the state.

CHAPTER VIII.

STATISTICAL SUMMARY OF RESULTS OF EXTENSION PASTURE WORK IN OKLAHOMA, 1930-1940

In addition to the annual narrative reports, the county and home demonstration agents each year submit a combined annual statistical report. The data contained in the statistical reports from the 77 counties of the state are tabulated in the statistical department of the State Office Organization. Results are entered in a combined Annual Report of County Extension Workers, a copy of which is submitted to the Washington office of Extension work as a statistical summary of the work in this state.

From these combined annual reports are taken data for the following tables which show statistically the progress of Extension Pasture work in Oklahoma during the period 1930-1940. In connection with permanent pasture work it is deemed advisable to show data relative to alfalfa; sweet clover; red, bur, and other clovers; vetch; lespedeza; soy beans; cow peas and field peas; and all other legumes and forage crops as these crops have a place in temporary and permanent pasture work.

The combined Annual Report of County Extension Workers was revised in 1934 and for that reason it is desirable to divide the reports into two groups: The period 1930-1933 inclusive, and 1934-1940 inclusive.

Tables II to VII.

For the sake of comparative study, data contained in Tables II to VII shall be considered collectively. It is generally understood that data relative to progress of any particular phase of Extension work is not dealt with in terms of specific measured acres, but in most cases the results are referred to in terms of cooperative demonstrations for,

TABLES II to VII.

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1930 to 1933

Year	Number of method demonstration meetings held	Number of adult result demonstrations completed or carried over into the next year	Number of acres included in adult result demonstrations	Number of 4-H Club boy members enrolled	Number of 4-H Club boy members completing projects	Number of acres grown by club members completing
Table II. Alfalfa						
1930	103	174	2545	70	43	367
1931	128	230	2995	73	61	368.5
1932	102	265	3917	71	45	131
1933	105	179	2149	89	40	197
Table III. Sweet Clover						
1930	288	936	8572.5	42	24	95
1931	348	613	7431.5	82	60	357.5
1932	186	420	6454	39	34	104
1933	155	356	6502	25	19	33
Table IV. Clover (Red, alsike, white)						
1930	47	49	666	3	3	12
1931	50	94	579	32	24	18 1/8
1932	48	102	589	15	13	36
1933	58	70	1110	2	1	4
Table V. Vetch						
1930	30	49	178	7	7	16
1931	69	211	422	-	-	-
1932	164	240	1078	38	38	33
1933	98	147	1766.5	-	-	-

continued

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1930 to 1933, continued

Year	Number of method demonstration meetings held	Number of adult result demonstrations completed or carried over into the next year	Number of acres included in adult result demonstrations	Number of 4-H Club boy members enrolled	Number of 4-H Club boy members completing projects	Number of acres grown by club members completing
Table VI. Lespedeza						
1930	24	40	150.5	24	17	16
1931	68	105	766.5	42	18	22 1/10
1932	263	1163	2598	6	6	14
1933	279	637	5985.5	10	8	10.5
Table VII. Pastures						
1930	202	422	7192	63	41	132
1931	417	588	9332	131	10	155
1932	493	1680	8479	253	143	227
1933	390	949	11002	82	78	247

by the work of cooperative demonstrators is the educational work of the Extension improvement along any special line best carried out. It is desirable, therefore, to measure the results of pasture improvement work in terms of result demonstrations.

It is found that in the period 1930-1933 inclusive, the number of adult result demonstrations showed an increase in tame pasture in the clovers (red, alsike and white) vetch and lespedeza. In permanent pasture work this item made a very substantial increase, advancing from 7,192 demonstrators in 1930 to 11,002 demonstrators in 1933. The result demonstrations in alfalfa and sweet clover showed a slight decrease in this period, due possibly to the major portion of the program being devoted to the other tame or supplemental pastures.

Table VIII.

During the period 1934-1940, the number of adult demonstrations conducted in alfalfa showed an increase of from 127 in 1934 to 1216 in 1940, with 333 voluntary local leaders or committeemen assisting with the program.

Table IX.

The number of adult demonstrations of sweet clover likewise advanced for the period, 1934-1940, from 131 to 927, respectively, with 196 voluntary local leaders working with the program.

Table X.

An increase of from 42 demonstrations on red bur and other clovers in 1934 to 581 similar demonstrations in 1940. This indicates the growing interest in these particular clovers for pastures for the period. Local leaders devoting part of their time to this phase of the program advanced from 9 in 1934 to 176 in 1940.

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1934 to 1940

Table VIII, Alfalfa

Items	1934	1935	1936	1937	1938	1939	1940
Days devoted to line of work by:							
4-H Club agents	-	4	-	-	-	-	-
Agricultural agents	171½	313	292	328	328	290	335
Specialists	9	10	24½	18½	26½	31	21
Number of:							
Communities in which work was conducted	213	251	473	570	643	528	569
Voluntary local leaders or committeemen aiding	128	201	326	326	426	399	333
Days of assistance rendered by voluntary leaders or committeemen	150	95½	476	427	514½	455	346
Adult result demonstrations conducted	127	138	300	396	995	1006	1216
Meetings at result demonstrations	37	219	30	95	61	35	37
Method demonstrations held	32	52	101	145	186	63	100
Other meetings held	40	50	61	48	72	84	146
News stories published	98	82	187	250	226	251	336
Different circular letters issued	39	52	170	209	110	128	122
Farm or home visits made	238	340	430	572	526	642	878
Office calls received	1612	1503	10969	6402	10554	6083	11168
4-H Club boy members enrolled	38	44	76	71	57	100	267
4-H Club boy members completing	28	25	65	53	53	84	194
Acres in projects conducted by 4-H Club members completing	79	103	110	125	216	263	436
Farmers following fertilizer recommendations	64	279	642	506	476	651	708

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1934 to 1940

Table IX, Sweet Clover

Items	1934	1935	1936	1937	1938	1939	1940
Days devoted to line of work by:							
4-H Club agents	-	6	-	-	-	-	-
Agricultural agents	111	113½	185	160½	112	67	98
Specialists	5	8	17½	10	8½	4	3
Number of:							
Communities in which work was conducted	212	235	489	736	478	379	279
Voluntary local leaders of committeemen aiding	112	196	343	226	251	190	191
Days of assistance rendered by voluntary leaders or committeemen	156	103½	327	182	200½	178	139
Adult result demonstrations conducted	131	295	537	379	456	732	927
Meetings at result demonstrations	17	61	30	43	42	36	27
Method demonstrations held	16	31	68	93	99	48	25
Other meetings held	46	31	41	35	50	28	41
News stories published	179	74	113	128	83	45	53
Different circular letters issued	25	45	46	63	29	16	27
Farm or home visits made	188	191	286	343	223	171	263
Office calls received	1352	1026	6872	2788	1944	1277	2896
4-H Club boy members enrolled	2	9	50	17	20	29	86
4-H Club boy members completing	2	9	40	14	14	19	52
Acres in projects conducted by 4-H Club members completing	2	22	57	29	40	39	74
Farmers following fertilizer recommendations	36	57	169	240	285	359	422

Table XI.

The work relative to vetch showed a very substantial increase during the years of 1936-37 and 1938. However, efforts in this line of work decreased in 1939 and 1940. This does not necessarily indicate that vetch did not prove satisfactory for the purpose for which it was intended but might indicate that the program became fairly well established by 1938 and that it was necessary to devote as much time and effort toward its continuation.

Table XII.

The lespedeza table likewise shows an emphasis of the work during 1935-36 with special emphasis being placed in 1935. The same general reasons for decline in emphasis on the work of lespedeza can be applied as was applied to vetch.

Table XIII. and XIV.

Soy beans, cowpeas and field peas showed an increase in the period under consideration. The legumes might have some bearing on the pasture work. However, the tables are indicative of the progress made in this field.

Table XV.

The number of adult demonstrations conducted show an increase of from 308 in 1934 to 1084 in 1940 with the work being carried on in 499 counties in 1940 with assistance from 166 local leaders.

Table XVI.

The permanent pasture part of the program ran fairly uniform for the seven years from 1934 through 1940 with the high peak coming in 1938 when the work was carried on in 1,625 counties of the state.

Generally speaking, the interest in pasture legumes, as evidenced

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1934 to 1940

Table X, Red, Bur, and Other Clovers

Items	1934	1935	1936	1937	1938	1939	1940
Days devoted to line of work by:							
4-H Club agents	-	-	-	-	-	-	-
Agricultural agents	12	27	72	124½	78	45	39
Specialists	5	3½	8	13½	11	3	-
Number of:							
Communities in which work was conducted	30	45	111	340	307	237	280
Voluntary local leaders of committeemen aiding	9	35	98	168	194	156	176
Days of assistance rendered by voluntary leaders or committeemen	7	10	209½	219	188	111	79
Adult result demonstrations conducted	42	85	95	217	290	134	581
Meetings at result demonstrations	17	9	16	74	40	35	27
Method demonstrations held	5	24	39	123	73	47	28
Other meetings held	1	24	31	25	23	32	10
News stories published	29	10	46	89	33	35	17
Different circular letters issued	4	17	241	62	16	18	14
Farm or home visits made	26	63	263	388	255	147	114
Office calls received	239	253	680	2809	1142	683	1519
4-H Club boy members enrolled	1	-	-	7	1	14	1
4-H Club boy members completing	-	-	-	7	1	11	1
Acres in projects conducted by 4-H Club members completing	1	-	14	9	6	14	1
Farmers following fertilizer recommendations	15	30	70	103	96	88	706

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1934 to 1940

Table XI, Vetch

Items	1934	1935	1936	1937	1938	1939	1940
Days devoted to line of work by:							
4-H Club agents	-	-	-	-	-	-	-
Agricultural agents	71	145½	419	311	172	103	78
Specialists	7	8	18½	21½	12	11	2
Number of:							
Communities in which work was conducted	155	269	1047	1111	573	404	268
Voluntary local leaders of committeemen aiding	119	231	537	595	363	221	106
Days of assistance rendered by voluntary leaders or committeemen	56	121½	736	671	316	189	84
Adult result demonstrations conducted	304	199	1672	1714	1297	554	541
Meetings at result demonstrations	27	38	146	170	94	40	31
Method demonstrations held	34	76	141	236	239	85	42
Other meetings held	9	24	128	75	65	30	21
News stories published	104	112	303	215	151	62	47
Different circular letters issued	14	46	350	133	57	34	31
Farm or home visits made	170	367	656	762	412	237	240
Office calls received	1969	2363	23436	8832	4588	2061	3413
4-H Club boy members enrolled	464	10	25	22	8	6	5
4-H Club boy members completing	-	-	14	20	6	5	2
Acres in projects conducted by 4-H Club members completing	-	-	14	53	12	16	23
Farmers following fertilizer recommendations	21	56	122	266	289	325	682

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1934 to 1940

Table XII, Lespedeza

Items	1934	1935	1936	1937	1938	1939	1940
Days devoted to line of work by:							
4-H Club agents	-	20	-	-	-	-	-
Agricultural agents	352	680½	508	257½	219	163	170
Specialists	45	69	26	22	21	18	5
Number of:							
Communities in which work was conducted	621	1410	1213	892	869	1027	659
Voluntary local leaders of committeemen aiding	398	1622	1082	467	462	497	270
Days of assistance rendered by voluntary leaders or committeemen	288	1806	767	476	521	449	190
Adult result demonstrations conducted	1119	7350	1852	1519	1132	1011	1055
Meetings at result demonstrations	76	613	111	107	79	86	47
Method demonstrations held	78	243	139	135	210	131	62
Other meetings held	50	134	175	45	52	47	48
News stories published	228	337	320	199	117	133	97
Different circular letters issued	120	335	756	67	44	45	45
Farm or home visits made	657	1551	908	833	584	467	462
Office calls received	5899	15441	16869	4786	2751	3590	6986
4-H Club boy members enrolled	475	439	52	59	60	138	41
4-H Club boy members completing	12	379	43	34	51	99	34
Acres in projects conducted by 4-H Club members completing	22	520	119	61	240	170	114
Farmers following fertilizer recommendations	70	68	115	78	164	320	1614

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1934 to 1940

Table XIII, Soybeans

Items	1934	1935	1936	1937	1938	1939	1940
Days devoted to line of work by:							
4-H Club agents	-	2	10	-	-	-	-
Agricultural agents	66½	124	226	144	116	131	81
Specialists	1	71½	16½	8	10	12	2
Number of:							
Communities in which work was conducted	184	197	465	374	379	355	327
Voluntary local leaders of committeemen aiding	149	139½	278	281	213	269	144
Days of assistance rendered by voluntary leaders or committeemen	103	108½	476	462	267	498	127
Adult result demonstrations conducted	168	76	322	293	232	396	402
Meetings at result demonstrations	9	21	56	41	27	44	19
Method demonstrations held	52	20	103	89	118	67	32
Other meetings held	35	49	121	32	27	46	38
News stories published	86	451	184	144	59	77	42
Different circular letters issued	11	21	75	63	36	37	18
Farm or home visits made	97	133	391	332	345	356	208
Office calls received	840	566	4439	2728	1796	2166	3846
4-H Club boy members enrolled	102	195	166	185	216	101	62
4-H Club boy members completing	63	70	130	109	183	77	51
Acres in projects conducted by 4-H Club members completing	85½	330½	227.75	144½	300	127	63
Farmers following fertilizer recommendations	16	5	36	87	129	109	372

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1934 to 1940

Table XIV, Cow Peas and Field Peas

Items	1934	1935	1936	1937	1938	1939	1940
Days devoted to line of work by:							
4-H Club agents	-	4	2	-	-	-	-
Agricultural agents	275	242½	502	396	254	161	120
Specialists	4½	23½	18	11½	7½	2	14
Number of:							
Communities in which work was conducted	528	558	1140	1195	1163	1053	791
Voluntary local leaders of committeemen aiding	402	376	517	590	653	576	2007
Days of assistance rendered by voluntary leaders or committeemen	289½	304	765	832	476	455	350
Adult result demonstrations conducted	1424	563	1805	2836	2946	3183	3776
Meetings at result demonstrations	36	57	62	135	42	56	48
Method demonstrations held	75	60	131	197	176	97	76
Other meetings held	71	94	180	81	95	71	57
News stories published	173	151	1812	267	172	71	115
Different circular letters issued	36	35	157	128	58	43	42
Farm or home visits made	269	574	1087	858	546	373	488
Office calls received	2068	2336	33119	11328	6785	3471	7782
4-H Club boy members enrolled	410	317	407	430	509	559	367
4-H Club boy members completing	169	246	274	315	441	410	292
Acres in projects conducted by 4-H Club members completing	287	390½	654	834	719	676	408
Farmers following fertilizer recommendations	127	3	66	148	780	939	780

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1934 to 1940

Table XV, Other Legumes

Items	1934	1935	1936	1937	1938	1939	1940
Days devoted to line of work by:							
4-H Club agents	-	3	8	-	-	-	-
Agricultural agents	134	187	263½	238½	215	170	148
Specialists	5	19½	17	21	10	15	5
Number of:							
Communities in which work was conducted	198	290	497	571	655	495	499
Voluntary local leaders of committeemen aiding	74	154	201	325	287	244	166
Days of assistance rendered by voluntary leaders or committeemen	77	132½	183½	329	295	316	189
Adult result demonstrations conducted	388	200	357	615	676	792	1084
Meetings at result demonstrations	16	8	17	63	49	31	40
Method demonstrations held	7	63	68	385	110	96	61
Other meetings held	14	124	56	46	86	60	92
News stories published	110	170	129	160	129	96	149
Different circular letters issued	43	103	61	86	67	54	41
Farm or home visits made	290	629	818	503	450	503	515
Office calls received	2369	5089	4978	7127	4407	3054	4693
4-H Club boy members enrolled	313	429	365	358	577	559	520
4-H Club boy members completing	142	318	242	262	490	343	403
Acres in projects conducted by 4-H Club members completing	554½	400	532	706	2563	977	519
Farmers following fertilizer recommendations	68	4	31	75	67	266	289

by the foregoing data has grown from year to year as the general program became more organized and went forward.

The A.A.A. program has also been conducive to pasture improvement in Oklahoma. In 1938 a range program was introduced by that agency which made cash payments to participators for carrying out certain range building practices. It is not within the scope of this paper to discuss in detail these practices nor the benefits in cash payments for compliance. However, in order to arrive at some idea of the progress of the program, the following data are offered.[1]

1938-1939 Range Program

	1938	1939
Number acres deferred grazing	66,075	745,072
Number units involved	1,307	1,099
Number acres reseeded	37,429	17,649
Number units	163	235
Number acres artificially sodded		631
Number units		38
Contour listing or furrowing or subsoiling range lands		3,398
Number units		21
Contour ridging of range land (acres)		360
Number units		9
Earthern tanks and reservoirs	733	924
Concrete or rubble masonry	5	6
Wells dug or drilled	145	193
Development or natural watering places	26	37
Conservation of range lands through elimination of destructive plants		
a. Prickly pear and cactus acres	35,698	No report available
Number units	358	193
b. Mesquite	2,071	No report available
Number units	31	38
c. Cedar	300	No report available
Number units	2	1
Fire guard construction(linear feet)	871,324	60,219

Continued

[1] Agricultural Adjustment Administration records supplied by R. M. Coombs, Junior Field Officer, A.A.A. State Office, Stillwater, 37-41

1938-1939 Range Program (Continued)

	1938	1939
Establishing permanent pastures	69	
Planting sod (acres)	9,623	9,772
Number dams or ponds constructed	951	2,547

(Data for 1940 relative to this program are not available at the date of this writing.)

A STATISTICAL SUMMARY OF THE EXTENSION SERVICE'S PASTURE DEVELOPMENT PROGRAM IN OKLAHOMA, 1934 to 1940

Table XVI, Pastures

Items	1934	1935	1936	1937	1938	1939	1940
Days devoted to line of work by:							
4-H Club agents	-	3	-	-	-	-	-
Agricultural agents	536	689½	854½	848	878	597	764
Specialists	88½	96	117	111	123	99	98
Number of:							
Communities in which work was conducted	659	1133	1342	1537	1625	1508	1390
Voluntary local leaders of committeemen aiding	416	728	1032	942	872	1214	979
Days of assistance rendered by voluntary leaders or committeemen	446	690½	1034	1002	978	1916	776
Adult result demonstrations conducted	1823	3414	1754	2301	2922	3754	2081
Meetings at result demonstrations	278	335	186	281	239	231	279
Method demonstrations held	221	390	212	381	676	371	254
Other meetings held	122	152	212	160	194	182	169
News stories published	401	410	522	595	498	312	546
Different circular letters issued	152	289	460	268	187	122	159
Farm or home visits made	886	1545	1469	2080	1821	1610	2526
Office calls received	7057	3345	14425	15734	17844	10142	21855
4-H Club boy members enrolled	585	358	39	140	233	224	157
4-H Club boy members completing	11	295	51	95	213	194	124
Acres in projects conducted by 4-H Club members completing	22½	739	125	303½	1842	1045	728
Farmers following fertilizer recommendations	200	57	151	283	1037	1100	2594

The average acre pasture requirement per animal unit in Oklahoma varies to a great extent, being influenced by annual rainfall, soil types, and type of climax vegetation. The Agricultural Adjustment Administration for Oklahoma has worked out an estimated average acre pasture requirement per animal unit in connection with the A.A.A. Range Program for the year of 1938 by crop reporting districts. These figures are based on estimates obtained by quadrant estimates rather than by actual weight tests and are, therefore, only indicative of average requirements. These data are given in Table No. XVII, Average Acre Pasture Requirements per Animal Unit.[1]

TABLE XVII, AVERAGE ACRE PASTURE REQUIREMENTS PER ANIMAL UNIT, OKLAHOMA - 1938

	ACRES PER ANIMAL UNIT		
District	Low	High	Dist. Average
District 1			
Beaver	21.6		
Cimarron			
Ellis			
Harper			
Texas		31.7	
			29.5
District 2			
Alfalfa			
Garfield			
Grant			
Kay			
Major		24.0	
Noble	7.8		15.9
Woods			
Woodward			

Continued

[1] A.A.A. Records, supplied by L. K. Combs, Junior Field Officer, A.A.A. State Office, Stillwater, Oklahoma - March 25, 1941

District	ACRES PER ANIMAL UNIT Low	High	Dist. Average
District 3			
Craig			
Delaware			
Mayes			
Nowata			
Osage			
Ottawa			
Pawnee			
Rogers		15.2	
Tulsa			
Wagoner			
Washington	6.3		
			10.7
District 4			
Beckham			
Blaine			
Custer	9.5		
Dewey			
Roger Mills		33.4	
Washita			
			21.4
District 5			
Canadian			
Cleveland			
Creek			
Grady		14.5	
Kingfisher	10.8		
Lincoln			
Logan			
McClain			
Okfuskee			
Oklahoma			
Payne			
Pottawatomie			
Seminole			
			12.6
District 6			
Adair			
Cherokee			
Haskell		24.3	
Hughes			
McIntosh			
Muskogee			
Okmulgee	6.9		
Pittsburg			
Sequoyah			
			15.6

Continued

District	ACRES PER ANIMAL UNIT Low	High	Dist. Average
District 7			
Caddo			
Comanche	13.9		
Cotton			
Greer			
Harmon		23.8	
Jackson			
Kiowa			
Tillman			
			18.8
District 8			
Atoka		29.9	
Bryan			
Carter			
Coal			
Garvin			
Jefferson			
Johnston			
Love	10.8		
Marshall			
Murray			
Pontotoc			
Stephens			
			20.3
District 9			
Choctaw	10.3		
Latimer			
LeFlore			
McCurtain			
Pushmataha		16.2	
			13.7

State Average - 17.58

CHAPTER IX.

CONCLUSION

During the Civil War Texas had shown an appreciable increase in their stock of cattle. Confederate soldiers returning home from a war they had lost found their homes and their farms in a state of depreciation and themselves without funds to finance rehabilitation. This situation could produce only one result. These hardy pioneers began driving the sleek, fat cattle to the markets in the cities in the North and East. It was only natural that in time what was then the Indian Territory should become the stopping place for pioneer ranchers who were seeking to expand their operations. Difficulties and hardships were met with and overcome by the early settlers of the Indian Territory, difficulties in obtaining favorable grants of grass land for pasture from the Federal Government and the many hardships incidental to settling new lands.

By 1907 population had increased in Oklahoma to almost 725,000. Agriculture had made inroads on the native grass areas of the state and the first scare of exploitation and misuse of lands were beginning to be seen. Further intensified farming practices accelerated erosion and misuse of cultivated areas continued. The first World War created an urgent demand for wheat, which caused hundreds of acres of the native sod in the western section of the state to be plowed up and planted to wheat. The discovery of oil and minerals in the central to eastern sections of the state has seriously affected agriculture in these sections. The once fertile homesteads were deserted by their owners who had derived royalties from mineral and oil operations and had moved to nearby towns and cities, leaving their farms to tenants, who in most

cases did not give the farms proper attention. All of this exploitation had caused a decrease in the acreage of pasture lands and likewise a decrease in the carrying capacity of the areas surviving.

Federal and State agencies as early as 1907 set in motion policies to eliminate as far as possible those harmful policies and much constructive work along this line had been done. The Extension Service in Oklahoma incorporated in its activities a pasture program in 1930 when Sam B. Durham was appointed Extension Pasture Specialist and since that date Mr. Durham has devoted his entire time and effort toward the betterment of both tame and native pastures in Oklahoma. Working with Federal and State Agencies, Mr. Durham has provoked much thought and interest along the line of bettering pasture conditions in the state. While much work is yet to be done along the line of pasture improvement in Oklahoma, results from past work are evidenced by reseeded native pastures and many acres of tame pastures over the state.

It is doubtful if large ranches will ever be practicable in Oklahoma, with the exception of possible sections in the northeast part of the state, however in a greater portion of the state there will always be the need for small pastures to carry small herds of dairy and beef cattle. It is and shall continue to be the policy of the Extension Service in Oklahoma to work with the farmers and stock-growers of the state in a united effort to better pasture conditions to fit in with the balanced type of agriculture necessary for desirable economic and social conditions in Oklahoma.

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