An Investigation of The Relationship Between Climatic Conditions and Population Changes in Western Kansas, 1885-1900

Gerald K. Aistrup
Fort Hays Kansas State College

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AN INVESTIGATION OF THE RELATIONSHIP BETWEEN CLIMATIC CONDITIONS
AND POPULATION CHANGES IN WESTERN KANSAS, 1885-1900

being

A thesis presented to the Graduate Faculty
of the Fort Hays Kansas State College in
partial fulfillment of the requirements for
the Degree of Master of Science

by

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Date July 25, 1956
Approved Raymond L. Welty
Major Professor

Ralph C. Lee
Chairman Graduate Council
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ABSTRACT

An attempt has been made in this study to determine the relationship that existed between climatic conditions and the population movements of the western third of Kansas between 1885-1900. A second purpose was to determine if all sections of this region were affected in the same manner.

The region studied was composed of the thirty-one western counties lying west of the 100th meridian West where moisture is the chief limiting factor of crop growth.

The principal source of material used in this study was taken from the biennial reports of the Kansas State Board of Agriculture. There was also a great deal of information obtained from a series of studies entitled Economic Development of Southwestern Kansas and the various publications of the Kansas State Historical Society.

The conclusion reached was that the climatic conditions which prevailed between 1885 and 1900 were instrumental in causing the population movements which occurred. The rapid population increase in the 1880's and the population decline of 1889-1891 were in part caused by favorable climatic conditions in the former period and unfavorable conditions in the latter.

For the years 1891-1892, just before the Panic of 1893, there were favorable climatic conditions and a slight increase in population for 1892 and 1893. A moderate decline in population followed the depression period reaching a low in 1898. Climatic conditions
were particularly bad in 1893 and 1894 but in the remaining years climatic conditions could be described as being near normal. These years of near normal climatic conditions were followed by a gradual rise in population after 1898.

Other factors which played a part in causing the rapid population declines of 1889-1891 and 1894-1895 were: the settlers being out of harmony with the region they came to in regard to types of crops and methods of farming; the failure of the region to live up to commercial and manufacturing expectations; and low prices for farm products. It was found that the rapid increase in population in the 1880's could not be attributed to agriculture alone as other elements associated with the boom psychology played major parts. However, the increase in population which occurred in 1892-1893 and after 1898 could be largely attributed to the good climatic conditions which persisted during the preceding two years.
CHAPTER I

INTRODUCTION

It has been held by certain authorities that the rapid decline
in population for the western third of Kansas, and particularly the
Southwest, following 1886 was caused by the failure of the region to
live up to agriculture expectations. These authorities contend that
the unfavorable climatic conditions during the first years of settle-
ment forced many of the people to leave in despair, disgust, and with
empty pockets. An attempt has been made in this study to determine
the relationship that existed between climatic conditions and the popu-
lation movements in and out of the region and to determine if all
sections of this general region can be covered by the statement ap-
ppearing in the first sentence. Other important factors related to
this population movement have been considered, but the main emphasis
was on climatic conditions and crop production during the period
1885 and 1900.

For the purpose of this paper, the western third of Kansas is
defined as that area of Kansas lying west of the 100th meridian West.
This region is composed of thirty-one counties: Cheyenne, Clark,
Decatur, Finney, Ford, Gove, Graham, Grant, Gray, Greeley, Hamilton,
Haskell, Hodgeman, Kearney, Lane, Logan, Meade, Morton, Ness, Norton,
Rawlins, Scott, Seward, Sheridan, Sherman, Stanton, Stevens, Thomas,
Trego, Wallace, and Wichita (Figure 6). The eastern boundary is
arbitrary, but conforms rather closely to a division based on rainfall
as this section is the belt of less than 21 inches of rainfall. It also conforms rather closely to some other possible divisions: temperature, altitude, relative humidity, and average number of days of sunshine.

The topography of this section, all of which falls into the area known as the Great Plains, varies from high, gently rolling plains to almost flat bottom land with occasional high bluffs along water courses. There is a gradual south-eastward slope from an elevation of near 4,130 feet above mean sea level in Wallace County to under 1,800 feet above mean sea level in the southeast corner of Clark County.

Passing from the north to south we cross six principal streams—the Republican, Solomon, Saline, Smoky Hill, Arkansas, and Cimarron. These streams, along with their 200 or more tributaries and the numerous "draws" give the country almost perfect drainage except in a few isolated localities. For the most part the soil of this region is rich and with favorable climatic conditions is adaptable to many different forms of agricultural production.

Moisture is the chief limiting factor of crop growth. The precipitation amounts diminish as we go westward but increase as we go northward resulting in the northern counties receiving more precipitation than those of the same line to the south. Although the moisture falling in one year is usually limited, the distribution of precipitation through the year is favorable to plant growth. Approximately 77 per cent of the annual amount falls in the six month growing
season—April to September.

The driest and coldest month is generally January while the wettest month is usually June and the hottest month is usually July. The precipitation pattern is very irregular. Torrential downpours of four to six inches are not uncommon; neither are the extended periods of drought in which no rain falls. Yearly moisture totals also show great differences—dry periods or wet periods will persist over a period of two to three years with resulting great variations in crop yields.

This region is noted for its days of abundant sunshine and semi-arid climate. The summers are warm while the winters are relatively cold. There is generally a good wind movement accompanied by low relative humidity. The winters are dry with very little snowfall, but this snowfall is generally accompanied with high winds and the snow piles up in drifts on the ground. Temperature, as well as moisture, is subject to pronounced changes.1

The great bulk of the statistical matter of this paper was taken from the biennial reports of the State Board of Agriculture. These reports, although having some obvious defects and misprints, do a commendable job of presenting the general picture of agriculture during the period under discussion. Another series of reports which were valuable in this study of Western Kansas were the publications

1State Board of Agriculture, Climate of Kansas (Topeka: Fred Voiland. State Printer, 1948), passim.
of the Kansas University Bureau of Business Research entitled *Economic Development in Southwestern Kansas*. These studies present a good general account of the conditions which existed in Southwestern Kansas from 1885 to 1900.

There was also a great amount of information concerning Western Kansas to be found in various volumes of *The Kansas Historical Quarterly*, which proved invaluable to the author. The volumes within the Western Collection of Forsyth Library of Fort Hays Kansas State College were combed, and much information was gathered from the general accounts and the various county histories found there. One volume, Minnie Dubbs Millbook's *Ness: Western County Kansas*, deserves particular mention as it is one of the better county histories published, both in detail and accuracy.

Newspaper accounts would have added to the value of this paper but due to various reasons the author was unable to make the trip to Topeka to gather this information. It is hoped that the information presented will give an adequate general picture despite the lack of this valuable source of information.

The period 1885 to 1900 was divided into four subperiods; (1) 1885-1888, a period of rapid growth in population; (2) 1889-1891, a period in which population decreased at a rapid rate; (3) 1892-1895, a period in which population increased quite rapidly for two years and then decreased at approximately the same rate for the next two years; and (4) 1896-1900, a period in which population remained rather stable.
Since these subperiods form convenient divisions they have been used as the subjects for the chapters which comprise the body of this study.

In all cases but one, the tables and figures are placed in the Appendix. This will inconvenience the reader somewhat, but as the tables and figures pertain to material covered in every chapter it was decided that this would be the most logical method of organization.

In a paper of this nature there are several unavoidable limitations. There will be exceptions to every general statement which appears because of the intricacies of the weather, crop production, size of region, and certain factors which are localized in nature. Although there has been no attempt to treat at length many of the sociological, psychological, and physiological problems the settlers encountered, the writer is aware that these problems did exist and they have been considered in relation to the population movement.
<table>
<thead>
<tr>
<th>County</th>
<th>Year</th>
<th>County</th>
<th>Year</th>
<th>County</th>
<th>Year</th>
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</thead>
<tbody>
<tr>
<td>Cheyenne</td>
<td>1881</td>
<td>Rawlins</td>
<td>1881</td>
<td>Decatur</td>
<td>1860</td>
</tr>
<tr>
<td>Sherman</td>
<td>1880</td>
<td>Thomas</td>
<td>1880</td>
<td>Sherman</td>
<td>1880</td>
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<tr>
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<td>1869</td>
<td>Logan</td>
<td>1868</td>
<td>Gove</td>
<td>1866</td>
</tr>
<tr>
<td>Greeley</td>
<td>1868</td>
<td>Wichita</td>
<td>1866</td>
<td>Lane</td>
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<tr>
<td>Hamilton</td>
<td>1896</td>
<td>Kearny</td>
<td>1888</td>
<td>Finney</td>
<td>1867</td>
</tr>
<tr>
<td>Stanton</td>
<td>1857</td>
<td>Grant</td>
<td>1888</td>
<td>Garfield</td>
<td>1867-92</td>
</tr>
<tr>
<td>Morton</td>
<td>1886</td>
<td>Stevens</td>
<td>1866</td>
<td>Hodgeman</td>
<td>1879</td>
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</table>

**FIGURE 6**

**MAP OF WESTERN THIRD OF KANSAS SHOWING PRINCIPAL STREAMS AND DATES OF ORGANIZATION OF COUNTIES**

a. Compiled from various maps of Kansas

b. Garfield county was organized in 1887 from the northeast corner of Finney county. Garfield county was disorganized in 1892 and the territory returned to Finney county.
CHAPTER II

THE SETTLEMENT OF WESTERN KANSAS, 1885-1888

The conditions which existed in the western third of Kansas in 1885 were very favorable for an increase in population. Rainfall had been abundant for the preceding two years, transportation facilities were available, or soon would be, land was plentiful and cheap, and agriculture products were bringing a good price.

At the beginning of 1885 there were ten organized counties in this area: Rawlins, Decatur, Norton, Sheridan, Graham, Trego, Ness, Finney, Hodgeman, and Ford. With the exception of Sheridan and Finney all of these counties were on the north or east tiers of counties. It also should be noted that all of these counties had been organized for at least four years (see map on page 6).

To the west of these organized counties lay the unorganized portion of Kansas. Various reports indicate that except for a few isolated cases of homesteaders and traders most of the population consisted of nomadic cattlemen and ranchers who had few permanent locations. The buffalo and Indian had disappeared from the region so that the only difficulties the settlers had to endure were those presented by nature. These were considerable in number and played a major part in the development of the region.

During 1885 the settlers began pouring into both the organized and unorganized counties. Jeremiah Evarts Platt, a circuit-rider, said that in two hours time he had encountered seventeen immigrant
wagons on the Kingman to Dodge City road. All of these wagons, he relates, were bound for Clark, Ford, and Hodgeman counties. He also writes that another man had told him that he had known of fifty wagons to travel over that same road in one day’s time. Another report relating to the swiftness of the settlement is that of I. W. Barryman, who, writing about the early settlement of Southwest Kansas, states that by 1884 the settler had begun to appear in Clark county, and during the next two years practically all the lands in the entire district were filed upon. H. D. Collins, an early settler of Garfield county, remembers that during the years 1885 through 1887 there was a wild rush for land and by the spring of 1888 the county was well filled with settlers.

The rapid growth of population in the period 1885 to 1888 is well illustrated by Figure 4. From a population of 36,271 in 1885, the total increased to 95,559 the following year and, in 1887, the gain was 264 per cent (up to 139,393) over the year 1885. The year 1887 represents the high point in population between 1885 and 1900: in 1888 the population showed a small loss of 676 but in the following three years the decrease was rapid. This high peak of population for


3Leola Howard Blanchard, Conquest of Southwest Kansas (Wichita: The Wichita Eagle Press, 1931), 112.
the entire area reached in 1887 was not surpassed until the latter part of the first decade of the twentieth century.

A breakdown of the population figures of the individual counties (Table VII) reveals that eleven counties reached their peak of population (1885-1900) in 1887. The remaining counties reached their peaks in 1888, with the exception of Decatur and Seward counties (peak year 1889), and Cheyenne and Sherman counties which reached their peaks in 1894. Those counties which reached their peaks of population in 1887 were mostly in the central and southern sections while those which reached their peaks in 1889 were generally in the north-central and north. The reason why the southern counties reached their peaks a year before the other sections of the region is not clear to the author but appears of little significance because the population gain or loss, except in a few isolated counties, was of minor consequence in either 1887 or 1888. One possible explanation might be that the Santa Fe Railroad, the railroad serving the southern counties, offered more liberal terms to the homesteaders seeking to establish new homes in Kansas.4

Table I on the following page gives the approximate acres of vacant land in the western third of Kansas for selected years. It can be seen that within a period of two years, 1884 to 1886, approximately one-half of the vacant land in Western Kansas went into the hands of

TABLE I

VACANT LANDS IN WESTERN THIRD OF KANSAS
1884-1892

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL ACRES IN AREA</th>
<th>PUBLIC(^b) LAND</th>
<th>RAILROAD(^c) LAND</th>
<th>SCHOOL(^d) LAND</th>
<th>TOTAL ACRES VACANT LANDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1884</td>
<td>18,201,400</td>
<td>8,926,800(^e)</td>
<td>3,077,200</td>
<td>445,700(^e)</td>
<td>12,449,700</td>
</tr>
<tr>
<td>1886</td>
<td></td>
<td>641,100</td>
<td>976,500</td>
<td>152,800</td>
<td>1,770,400</td>
</tr>
<tr>
<td>1888</td>
<td></td>
<td>718,400</td>
<td>535,500</td>
<td>215,700</td>
<td>1,469,600</td>
</tr>
<tr>
<td>1890</td>
<td></td>
<td>214,300</td>
<td>444,500</td>
<td>171,600</td>
<td>832,400</td>
</tr>
<tr>
<td>1892</td>
<td></td>
<td>634,100</td>
<td>542,200</td>
<td>420,400</td>
<td>1,596,700(^f)</td>
</tr>
</tbody>
</table>

\(^a\) The data in this table are compiled from the biennial reports of the Kansas State Board of Agriculture, the fourth through the eighth (1885-1893).

\(^b\) Public land refers to any part of the Federal domain which was open for settlement by the Homestead Act, The Timber Culture Act or by Pre-emption.

\(^c\) Land offered for sale or held by railroad companies. The Union Pacific and The Santa Fe were the only railroads offering tracts of land for sale.

\(^d\) Section 16 and 32 of every township.

\(^e\) The Garden City Land Office did not differentiate between public land and school land in the report of 1884.

\(^f\) The increase in total of vacant lands is due to the reverting of land back to its former owners either by inability to prove up on government land or failure to make payments on school lands or land bought from the railroads.
private individuals. There will be no attempt in this study to as-
certain who these private individuals were, where they came from, 
or their purpose in holding land in Western Kansas. It is certain that 
some land speculation did take place, how much is not known, but a 
majority of the land holders were bona-fide settlers. This phase 
will be discussed more fully in Chapter III.

Assuming for the present that the greater part of the settlers 
were bona fide residents we would do well to look into some of the 
reasons why this sudden influx of population in 1886, '87, and '88. 
Everett Dick, in his Sod House Frontier, lists three factors which 
played a part: (1) first in importance was probably the natural land 
hunger of the people in the eastern states who began to long to exploit 
the western domain, (2) the railroads—anxious to convert the land 
into cash before it became a tax liability and the desire to create 
carrying trade — caring little whether an emigrant bought railroad 
land or took free land because the settling of the country enhanced 
the value of the railroads land, and (3) the immigration activities 
of local governments.5

Immigration schemes of local governments were accompanied by 
the propagandizing of the local newspapers in Western Kansas which 
shouted the virtues of their particular community to the entire world 
describing it as a virtual Garden of Eden here on earth.

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It must be remembered that the greater part of Western Kansas in 1885 was still in what is considered the frontier stage of development. A frontier, according to Paul W. Zickefoose, is a region of "low population pressure" to which migrants from "high population pressure" regions tend to flow, provided the channels of migration (communication and transportation) are open. Zickefoose describes a "low pressure" region as one in which land is plentiful and labor is scarce, where new economic opportunities and the promise of higher standards of living beckon. Western Kansas certainly met these qualifications.

It is also well to keep in mind the popular belief of that day that rain followed the plow. The rain which had fallen in 1865, 1874, and 1875 had been plentiful, the crops had been abundant, and the early settlers began to believe that they had come upon an agricultural paradise. It was said that the climate had changed, the cultivation of the soil had favored the retention of moisture and thereby increased evaporation, which, in turn, promoted further precipitation. Cattlemen who scoffed at the proposition were disregarded because of their manifest interest in discouraging immigration in order to save the priceless pastures for themselves. Thus the people came to the

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7Henry F. Lason, "County Seat Controversies in Southwestern Kansas," The Kansas Historical Quarterly, II (February, 1933), 48.
region which for nearly seventy-five years had been described as the "Great American Desert" hoping to turn it into a garden of roses.

The climatic records which are available (Tables III and IV) show that 1885, '86, '87, and '88 were favorable to the growing of agricultural products. In all but 1886 the annual precipitation was over the 59 year average and the picture was further brightened by the fact that over 14 of the 18.77 inches fell in the growing season with both June and July receiving an inch more precipitation than is normal. In the other three years over 80 per cent of the moisture was received between the months of April and September.

A running three year average of precipitation discloses that for 1885, '86, '87, and '88 the figures were well above the average annual precipitation of 19.01 inches. (Figure 5) The reason for using a three year running average is that one year of drought does not necessarily mean crop failure for that particular year. The previous year might have been exceedingly wet giving the soil an abundance of subsoil moisture allowing good crops to be produced in spite of lack of moisture. The same situation would hold true in reverse order. One year might be particularly wet, but if the previous season was dry the chances of producing a crop would be exceedingly doubtful, especially in the case of wheat seeded in the fall.

The annual mean temperature record (Figure 5) reveals that in

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8 A running three year average precipitation is the average precipitation amount of three years—The year under discussion and the preceding two years. See Figure 5.
only one year, 1887, was the temperature above the fifty-nine year average of 55.7 degrees Fahrenheit and this by only one tenth of a degree. In 1885 the months of January and February were especially cold and hard on livestock. The temperature pattern for the remaining months did not deviate to any great degree from the fifty-nine year average monthly mean. January, 1886, the month of the great blizzard, had an average mean temperature of 16.9 degrees, making it 12.8 degrees colder than January's average mean temperature of 29.7 degrees. May, August, and September were several degrees hotter than normal, but the late months followed the normal pattern making a good year for agriculture production.

The winter months of 1887 were several degrees below normal and March, April, May, June and July temperatures averaged 5.5 degrees higher than normal for those months. This hot weather, coming when it did, was extremely hard on all types of crops resulting in the short crop of 1887. January and March of 1886 were several degrees colder than normal making it a hard winter for livestock. The spring and summer months were near normal in temperature but the autumn months, beginning with August, were exceptionally cool.

No discussion of climatic conditions would be complete without some mention of the velocity of the wind which so affects crop production in Western Kansas. There was only one station in the western third of Kansas which kept records of wind movements during this period, and this writer does not feel that records from only one station would
provide a representative picture. It has been this writer's experience that the hottest days in Western Kansas are generally associated with high winds. This does not hold true in all cases but is nearly infallible.⁹

A comparison between population statistics and climatic conditions between 1885 and 1888 reveals little if any correlation. Immigration was gaining momentum in 1885 when the precipitation totals for the preceding year were high and the temperatures low. In 1886 immigration figures rose rapidly while 1885 had a high precipitation total and a low mean temperature. In 1887 immigration continued at the same pace as 1886 even though the preceding year showed below average precipitation plus the blizzard which caused considerable suffering and hardship. Population fell off a small amount in 1888 even though the precipitation total was above normal for 1887. The hot summer temperatures, however, were not conducive to retaining some elements of the population in the region.

A small amount of correlation is detected between the running three year average precipitation and the population loss in 1888. The

⁹A high velocity of wind affects growing crops in two ways. A high wind is usually associated with dry air and this dry air evaporates the moisture within the plants causing them to wilt and to cease growing. A high wind also results in a considerable loss of moisture from the soil thus depriving the plants of moisture when they need it the most. Two or three days of an extremely high and dry wind will almost completely destroy a field crop, especially if the wind has been preceded by a period in which there has been a deficiency in the normal amount of moisture.
running average shows a decrease of 3.65 inches between 1885 and 1888 even though it still remained above the 19.01 inches average annual precipitation figure. This is of little significance because the small loss of 672 persons does not indicate any large scale trend although this population loss might be considered as the forerunner of the rapid decline in 1889.

The statistics gathered and compiled by the Kansas State Board of Agriculture show that the total value of all farm products rose steadily from 1885 to 1886 (Figure 2). The total number of acres in crop land showed the same steady rise as illustrated in Figure 1. The number of crop acres increased from 204,665 in 1885 to 414,312 in 1886 or an increase of approximately 100 per cent (Table II). In the same year the value of the field crops produced increased 123 per cent, or from $1,935,300 in 1885 to $4,357,300 in 1886. This increase in value was the result of the increased acreage as the yields and prices remained at the same level as they were in 1885. Field crops represented 60 per cent of the total value of all farm products in 1885 and 69 per cent of the total in 1886.

The number of crop land acres in 1887 increased 36 per cent up to 561,899 but the value of field crops increased only 14 per cent over the 1886 total and was only 60 per cent of the total value of all farm products, or $3,382,000. This decrease was due primarily to lowered yields as prices remained relatively stable. In 1888 all three
percentages rose again. The number of crop land acres increased 89 per cent up to 1,059,375, the value of field crops increased 63 per cent and was 61 per cent of the total value of farm products which was $13,211,600, an increase of 58 per cent over the 1887 total.

There was a wide variety of crops grown by the farmers during these years of settlement. Corn was planted extensively in all the counties; in 1885 it represented 38 per cent of the planted field crop acres, 51 in 1886, 61 in 1887 (a poor year for corn), and 50 in 1888 (Table V).10 There were but small amounts of either winter or spring wheat planted from 1885 to 1888: the combined wheat acreage of 72,970 in 1888 only amounted to 8 per cent of the 902,319 planted field crop acres. Other crops planted during this period included various amounts of flax, oats, barley, buckwheat, potatoes, sorghums, broom-corn, and millet.

Corn was the dominant crop in production as well as acres (Figure 3). In 1885 the average yield of thirty-one bushels per planted acre in 1886 produced 5,793,934 bushels. Corn production fell in 1887 as the yield per planted acre amounted to a little over seven bushels per planted acre: only 186,949 acres were harvested out of the 387,383 seeded acres and these acres only produced 2,779,978 bushels of corn, a drop in production of 3,014,956 bushels from 1886. Corn production in bushels increased to 8,517,542 in 1888 but this increase was due more to the increase in acres than better yields as the average

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10 The number of planted field crop acres is determined by subtracting the acres of fenced prairie grass from the total field crop acres (Table II).
yield per planted acre only increased to twelve bushels.

There is some reason to doubt the statistics presented in the Fifth Biennial Report of the Kansas State Board of Agriculture in regard to the number of cattle in the western third of Kansas for the year 1885 (Table VI). The combined total of milk cows and other cattle is listed as 109,317 head. The writer believes that this figure is not high enough. This contention is based upon the accounts which have been studied in regard to the blizzard of January, 1886. Edgar R. Thorpe, living in Kearney County at the time, states that great herds of cattle perished in the storm, one outfit losing 10,000 head.\(^{11}\) Another report states that more than fifty people and tens of thousands of cattle were frozen to death in the storm.\(^ {12}\) And other reports tell us that it was possible to walk from Larned, Kansas (in Pawnee County) to the Colorado state line on the backs of the frozen cattle which had drifted up against the Santa Fe Railroad right of way fence. If such reports have any semblance of the truth it would appear that there were a great many more cattle in western Kansas than the number listed by the report of the Board of Agriculture.

In addition the number of cattle on farms for the year 1886 (this count would have occurred in March, 1886) does not show any

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\(^ {11}\) "Sketches of Early Days in Kearney County," Kansas Historical Quarterly, VII(February, 1938), 58.

\(^ {12}\) Blanchard, Conquest of Southwest Kansas, 129.
loss in number but an actual gain of 9,358 head and an increase in value of $1,992,700. Such a gain, even when one considers the fact that a great many settlers came into the territory and undoubtedly brought cattle with them, is contradictory to such statements as found in the Annals of Kansas which state that eighty per cent of the cattle in the path of the storm were destroyed.\(^{13}\) The only conclusion this author could come to is that thousands of head of cattle were omitted from the census count of 1885 although there will be no attempt to estimate the actual number.

The number of livestock reported in Western Kansas increased at a steady rate from 1885 to 1888 (Table VI). The number of range or beef cattle decreased from a count of 92,329 in 1886 to 87,642 in 1887 but this loss was more than regained the following year when the number increased to 120,169. The number of sheep within the region showed a steady decline from a high of 157,205 head in 1885 to 56,243 head in 1888. Incidentally, the number of sheep in Western Kansas did not surpass the count of 1885 until the first decade of the twentieth century. The low year for swine was 1887 when the count was only 28,185 but during the other three years the number of swine was close to 50,000.

The total value of animals slaughtered or sold for slaughter and their increase in value was 28 per cent of the total value of farm products in 1885, 31 in 1886, 37 in 1887 and 35 in 1888. The reported

\(^{13}\) Jennie Small Owen (compiler), The Annals of Kansas, (Topeka: Kansas State Historical Society, 1955)
figures indicate that the position of livestock in the total farm picture was approximately the same in 1888 as it had been in 1885 although, as it has been mentioned, there is some reason to doubt the validity of the reported figures for 1885. This author believes that 45 per cent would be a more accurate figure in place of the 26 per cent taken from the report of the State Board of Agriculture. If such an assumption is correct we find that the importance of livestock and particularly cattle dropped drastically in 1886, but was followed by a rise in 1887 and a decrease again in 1888.

The settlers coming into the region had little trouble securing land. Government land could be had by paying a nominal filing fee and a period of residence. Of land belonging to the railroad companies many acres were available which could be bought for prices ranging from two to fifteen dollars an acre. As could be expected the early settlers got the choice locations while those who came later had to be content with poorer land or land further away from the many towns which had sprung up in the wake of settlement.

Other factors also played a part in stimulating and encouraging the boom psychology which accompanied the rapid growth of population. The extent of the boom psychology of the period can be sensed by the number of newspapers that sprang up in various towns and counties.

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14 This information is derived from the biennial reports of the Kansas State Board of Agriculture, the fourth through sixth (1885-1900).
Almost every hamlet had from one to five newspapers which made it their business to tell the world about the marvelous advantages of this particular community. These newspapers were, to a great extent, dependent upon legal publications to keep them going.¹⁵

The Kansas State Board of Agriculture became a veritable propaganda agency through publishing reports which appeared in several languages for the benefit of European homeseekers. These reports presented an attractive picture of the resources and commercial possibilities offered by the state and painted a rosy picture of the agricultural situation while glossing over the more obvious defects of a region suited only for certain types of agriculture.

The railroad companies, although they no longer had the elaborate system of immigration and colonization machinery of the 1870's, still were interested in bringing new settlers into the region. The railroad companies cared little whether the prospective immigrant bought railroad land or settled on government land because an increase in population increased the value of their land and made it easier to sell. It was also to the railroads' advantage to have settlers in the region because of the increase in freight which would naturally come about.

James C. Malin, in his scholarly treatment of the boom period in Kinsley, Kansas, a town lying six miles to the east of the eastern

border of the region under discussion, states that "Along with the small-farmer boom (in 1886) had come the railroad boom—each more or less interacting on the other, as the farmer was dependent upon rails for his market, and the new railroads upon the farmers for their traffic."16 The cattlemen who had inhabited the range before the farmer settlers had come were not as dependent on the railroad as the farmer. Cattle could walk to market whereas the farmer found it almost next to impossible to transport his products any considerable distance.

Railroad growth was phenomenal between 1885 and 1888. In 1885 there were only two railroads crossing the region from east to west: the Atchison, Topeka, and Santa Fe, following the general course of the Arkansas River in the south; and the Union Pacific Railroad passing through Trego, Gove, Logan, and Wallace counties in the north-central section. In addition the Missouri Pacific had extended a line as far west as Lenora, in Norton County, and the Burlington and Missouri River Railroad had pushed as far west as Oberlin in Decatur County.17 Cheyenne, Rawlins, Sherman, Thomas, Graham, Greeley, Wichita, Scott, Lane, Ness, Hodgeman, Seward, Meade and Clark counties had no railroads


17 "The Official Railroad Map of Kansas," Third Annual Report of the Board of Railroad Commissioners (Topeka: Kansas Publishing House, 1885), backcover. The map was prepared by Rand, McNally and Company of Chicago and copyrighted in 1885.
running through their borders although there was no location that was over seventy-five miles from a shipping point on the railroad except for the northwest corner of Cheyenne County and the southern portion of Seward County.

There were approximately 330 miles of track in 1885, 410 miles in 1886, 1,000 miles in 1887, and 1,155 in 1888. This was an increase of approximately 300 per cent in four years with the biggest increase coming in 1887. In 1887 there were only five counties—Stanton, Grant, Haskell, Morton, and Stevens—which did not have a railroad of some sort serving the county directly.

The people of Western Kansas went railroad crazy during this period according to James C. Malin. Each town and community thought it should have railroad service and as a consequence many communities fell victim to the wild schemes of irresponsible parties who projected lines into trade territory of those roads already built, primarily to get the subsidies voted by counties, townships, and towns, or to sell out to stronger roads. The plan of financing railroads were all the same; the county and township would issue bonds to be exchanged for

18 This information is compiled from the annual reports of the Board of Railroad Commissioners, the third through seventh (1885-1889). This is approximate mileage and does not include any side track, spurs, or double track.

19 Malin, "The Kinsley Boom in the Late Eighties," op. cit., 25.
stock when the road was finished and put into operation in the county. Many roads were planned and many bonds were issued before the railroad bubble burst in late 1887 when the railroads came to an agreement not to build more roads in 1887. In some counties where bonds had been issued and no lines built a considerable amount of money was lost leaving the community in dire financial straits.

In most cases a very large proportion of the mileage built between 1885 and 1888 had been built in anticipation of future growth and development rather than to meet the then present demand. So it was that the western third of Kansas had, by the end of 1888, the same railroad set-up as exists today except for a few minor changes.

Another phase of the settlement of Western Kansas was the town-building boom of that period and the speculation which occurred hand in hand with it. In many instances no towns existed and it was the hope of many settlers to have a town on his quarter. Many speculators homesteaded or bought land for just that purpose. Towns sprang up, almost overnight, and soon boasted of populations they have never attained since.


21 Blanchard, Conquest of Southwest Kansas, 180.

One such town was Hartland in Kearney County. A town company, organized in Hutchinson, bought a section of railroad land and began the work of plotting and surveying town lots. This town company then advertised in Hutchinson papers and sent special notices to every state telling of the special advantages of this particular town and then the people began to come—speculators, land seekers, business men, mechanics, laborers—arriving on every train. This story was repeated many times throughout the entire region resulting in the swelled population figures of 1887 and 1888.

The many towns which were built in the boom period depended to some extent upon continued immigration to keep them alive even at the height of the boom period. James C. Malin, commenting on this, states:

The immigrants hoped to make their fortunes, and the communities to which they came hoped for a large crop of immigrants, if of nothing else, because of the stimulation to the year's business which flowed from the importation of money even in the limited quantities possessed by these small farmers. During the frontier and drought years about the only cash which came into a frontier town was railroad taxes and wages, and the spending of homeseekers.

The entire area hoped for a large amount of immigrants in 1888 but none were forthcoming and many towns faded away.

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Another source of money to the various communities were loans and mortgages. Capital was piling up in the East and the belief that cities would spring up and land would become productive under cultivation encouraged the Easterner to invest his savings in mortgage and loan companies. It was easy for the settler to get loans by putting up his claim for security. It was also very easy for communities to sell bond issues and many towns, communities, and counties went into debt to provide for the latest improvements. The inhabitants were eager to vote bonds on themselves for every conceivable purpose—school bonds, railroad bonds, courthouse bonds, bonds to build sugar mills, bonds to aid manufacturing enterprises—with little thought as to what the consequences might be.

Henry F. Mason, in his study of the county seat controversies, states that the struggles were but a particular phase of the general town-building boom of that period. Each town had a reasonable prospect of success and it was natural that there were many vigorous contests and that the value of the prize was overestimated. Mason came to the conclusion that probably no single county seat is at a different location now than it would have been had there been no boom, no frenzy of town


building, no controversy, no bribery, and no murder. In his opinion the whole disgraceful episode was a hideous nightmare.  

It is also interesting to note that during the building of the Rock Island Railroad from Hutchinson west to Trinidad, Colorado the county seat controversies caused the railroad to change its course several times. County seat fights in Haskell and Gray counties resulted in the defeat of railroad bonds in both counties deflecting the route south through Neade County. The county seat fight in Seward County again resulted in changing the line south to Liberal where the road arrived in 1888.

James O. Malin writes that one of the peculiar features of the boom of 1887 was the neglect, almost omission of agriculture. There was no discussion of field crops, or of livestock, varieties of products, adaptation or methods of production. All the ballyhoo was railroads, town lots, and manufacturing. The farmer was only incidental but after 1888 it was different. The people who were booming Kansas began to place emphasis on the necessity of building a sound prosperity on the products of the local farms. This point is borne out by the changed


29Malin, "The Kinsley Boom of the Late Eighties," op. cit., 164.
nature of the reports of the State Board of Agriculture which began to emphasize the methods of improving Kansas agriculture rather than devoting all the space to attractive immigration literature and statistics.

A brief review of some of the factors underlying population growth reveals that although there is some relationship between the rapid population growth and the climatic conditions that prevailed, it is not as great as some writers would have us believe. There can be no doubt that the above normal years of precipitation in 1883, '84, and '85 influenced many people to migrate to Western Kansas to establish homes and to farm in this new-found agricultural paradise. By the same token it can be said that these same excellent climatic conditions also influenced migrants who were not farmers to immigrate to the area as witnessed by the great number of towns which sprang into existence. The boom was not in agriculture alone but in town-building and its many different aspects.

In the following chapter we will see that population decreased rapidly in the three years following 1888. A glance at the agricultural income for the year 1888 reveals that the failure of the country to live up to agriculture expectations was not the sole cause of this decline. The total value of all farm products increased 322 per cent over the 1885 figure of $5,152,700 while population rose 203 per cent or from 38,271 to 136,717. Transferring this 322 per cent to dollars and cents we find that the per capita income from farm products was $95.24 in 1888 and $81.86 in 1885. These figures have little
significance other than to show the fact that the agricultural picture was no worse in 1888 than it was in 1885.

Another method of looking at the agricultural picture as a whole would be to compare the income per acre of cropland (this cropland figure also includes native pasture land reserved for haying purposes) for the various years. This income was $15.31 per acre in 1885, $16.77 per acre in 1886, $14.09 per acre in 1887 (supposedly a poor crop year) and $12.47 an acre in 1888. This drop of $5.30 income per acre from 1887 to 1888 was drastic considering the smallness of the initial figure. Whether this drop had anything to do with the decline in population which occurred in 1889 will be discussed in the following chapter.
CHAPTER III
POPULATION DECLINE IN WESTERN KANSAS
1889 - 1891

The population of the western third of Kansas reached its high peak in 1887 with a population of 139,393. In 1888 there was a small decline of 676 inhabitants, but this decline was insignificant compared to the decline which occurred in 1889, '90, and again in '91 (Figure 4). The population declined from a total of 138,717 in 1888 to 121,071 in 1889, 102,109 in 1890, and 83,259 in 1891. This was a decline in population of almost 40 per cent in three years. Breaking this down we find that in 1889 the decline was 13 per cent of the 1888 total, the 1890 decline was 15 per cent of the 1889 total and the 1891 loss was 18 per cent of the 1890 total.

This loss which occurred in Western Kansas was not confined to that section alone as the rest of the state followed the same pattern of loss (Table VII). Of the entire state's population loss of 53,636 in 1889, the western third's loss of 17,646 was 33 per cent of the total. In 1890 the western third's loss of 18,962 inhabitants was 60 per cent of the entire state's loss of 31,429, and in 1891 the western third's loss of 18,850 residents was 22 per cent of the state's total loss of 84,674. At no time during this period, 1888-1891, was the western third's percentage of the entire state's population above nine per cent. It is evident that the forces operating to reduce the population
of Western Kansas were either peculiar to that section or were more drastic than those which existed in the Central and Eastern parts of the state.

The 40 per cent loss in population for the western third of Kansas was not evenly distributed among the counties of the region. The counties in the north lost from one to 33 per cent of their population, the counties in the central section lost from 11 to 72 per cent of their population and those in the southern section lost from 30 to 77 per cent of their residents. The average loss for the northern counties was 26 per cent, those of the central section lost an average of 46 per cent of their inhabitants and the loss of those counties in the south averaged 56 per cent. It is evident that the conditions stimulating population movements were more drastic in the southern section than they were in the north.

Precipitation amounts for 1888 and 1889 were near normal for the region, 20.06 inches in 1888 and 20.70 inches in 1889 (Figure 5). The spring and summer months of 1888, with the exception of June, were wetter than normal but the fall and winter months, beginning with September were exceptionally dry (Table III). The mean temperature for 1888 was two degrees cooler than normal but the main cause of this was the winter months being several degrees colder than normal. The spring and summer months' temperature varied little from the fifty-nine year average (Table IV).
The precipitation pattern of 1889 followed that of 1888. The spring and summer months were wetter than normal with the fall and winter months being dry with the exception of January and October. The temperature records for 1889 reveal that the mean temperature for the entire year was within eight-tenths of a degree of being normal. January and February were colder than is customary, but the rest of the year followed the normal pattern within one or two degrees with the exception of December which was 11.5 degrees warmer than its normal mean of thirty-two degrees.

Although the precipitation and temperature records do not give a complete picture of the climatic conditions, nor do they take into consideration conditions which were local in nature, it can be seen that 1888 and 1889 were what would be called normal years today. But to the farmer-settler of that time the years must have appeared as drought years because the greater proportion of these settlers must have migrated from the East where such rainfall amounts would have meant drought.

In 1890 the settlers experienced a drought of drastic consequence with only 13.19 inches of rainfall. Along with this drought the annual mean temperature climbed to 54.8, the hottest year occurring in this period under discussion. But conditions improved in 1891 as 26.35 inches of moisture was received and the annual mean temperature dropped to 51.9 degrees, 1.8 degrees below normal.
The total amount of planted field crop acres increased 45 per cent in 1889, fell off 38 per cent in 1890 (drought year) but increased 44 per cent in 1891 (Figure 2). This increase (Table II) was from 902,319 acres in 1888 to 1,292,902 acres in 1889. The decrease in 1890 was to 805,263 acres but an increase of 44 per cent in 1891 pushed the figure up to 1,169,976 acres. The same pattern is evident in the number of acres of prairie grass under fence although the drop in acres in 1890 was not as severe or was the increase in 1891 as pronounced.

The 717,862 acres planted to corn in 1888 was the highest amount allotted to this crop from 1885 to 1900 (Table V). In 1889 the corn acres dropped to 661,969 followed by another drop in 1890 down to 408,982 acres. In 1891 the amount was still lower, dropping to 338,002 acres. This amounts to a drop of 53 per cent in four years time. This decline in the acres planted to corn was partially restored by increased planting of both winter and spring wheat in every year from 1888 to 1891. Winter wheat acreages increased from 49,973 in 1888 to 96,891 in 1889, up to 250,106 in 1890 and to 344,408 in 1891. Spring wheat acreage increased from 22,997 in 1888 to 55,504 in 1889 and to 134,752 in 1890 but showed a slight decrease down to 128,886 acres in 1891. The total wheat acres increased from 72,970 in 1888 to 473,034 in 1891 or an increase of almost 500 per cent. In 1891 wheat replaced corn as the dominant planted crop in Western Kansas.

Figure 1 shows that a combined corn and wheat acreage line would follow the total crop acres line rather closely up to 1889 but
in that year the field crop acres increased 44 per cent while the combined wheat and corn acres only increased three per cent. The situation was partially reversed in 1890 when the total field crop acres fell off 31 per cent while the combined corn and wheat acres fell off three per cent. In this same year, 1890, the combined wheat and corn acreage of 793,640 was 98 per cent of the 805,263 planted field crop acres.

In 1888 and 1889 there was a great deal of acreage devoted to the production of sorghums in the hopes that the sorghums could be used for the production of cane sugar. Sugar cane mills were built in several localities but the operations were generally unsuccessful because the sugar content was too low to permit extraction on a profitable basis.¹ The farmer had also come to realize the value of sorghums as livestock feed so they were devoting more of their acres to its production. The close relationship between the combined corn and wheat acres of 1890 and the total planted field crop acres is misleading because undoubtedly many of the acres planted to winter wheat in the fall of 1889 were replanted to spring crops in 1890 because of the exceedingly dry fall conditions of 1889.

In 1891 the margin between the combined corn and wheat acres and the total planted crop land acres widened with the corn and wheat acres only accounting for seventy per cent of the 1,169,976 planted crop land acres. Thirty per cent of the planted crop land acres was

being planted to other crops such as rye, barley, oats, potatoes, broomcorn, and sorghums, a more natural condition than existed in 1890.

All classes of livestock, with the exception of swine in 1891 and mules and asses during the entire period (1889-1891), increased in number. Their increase in value for the individual years, however, showed a steady decline due to decreased prices. This decline was from a high of $3,283,900 in 1888 to $994,500 in 1889 to $893,800 in 1890 to $503,700 in 1891.

Financially speaking, the agriculture picture was certainly not bright even though farms, in most sections, had continued to expand in size and scope. The total value of farm products (Figure 2) decreased 15 per cent ($13,211,600 to $11,268,000) in 1889. Of this total value in 1889, 70 per cent was from field crops, 22 per cent was from the sale of livestock and their increase in value, and 7 per cent was from the sale of other products.2 Lowered prices for all types of farm products was the primary cause of this decline in value as yields, acres planted, and the number of livestock had all increased to a certain extent. This lowered price for farm products is reflected in the amount of return per acre as it fell sharply in 1889; $7.05 an acre as compared to $12.47 per acre in 1888. There were undoubtedly farmers who left Western Kansas because of the 50 per cent decline in income per acre from 1888 to 1889.

2Other products defined in Table II, footnote c.
The low amount of return per acre in 1889 and the drought conditions which existed in 1890 had a noticeable effect on agriculture in general during 1890. The total acres of field crops decreased 31 per cent, the value of field crops decreased 34 per cent, the value of livestock sold or their increase in value decreased 27 per cent, and the value of other products decreased 7 per cent resulting in an overall decrease of 31 per cent in the total value of all farm products, a decline from $11,268,000 in 1889 to $7,762,400 in 1890. The price the farmers received for their products increased to some extent and this accounts for the fact that the total value of farm products remained as high as it did because the corn crop of 1890 was almost a complete failure and the wheat crop averaged but five bushels per planted acre. However, there was no drastic drop in the total value of products per acre as the figure only dropped from $7.03 to $7.01. Better prices and decreased acreage are responsible for this slight spread of value per acre in a year when climatic conditions were responsible for low yields.

A breakdown of the total value of farm products (Table II) shows there was very little change in the comparative value of the three divisions of farm products. The field crop percentage of the total dropped from 70 to 68 per cent of the total value; the income from livestock sold and the value of their increase in value rose one point up to 24 per cent of the total value of all farm products; and the value of other products increased from 7 to 8 per cent of the total value of all farm products for 1890.
In 1891 the agriculture picture brightened considerably. Plentiful rains produced good crops in most sections. Even with slightly lower prices than 1890 the total value of all farm products increased 84 per cent, rising from $7,762,400 in 1890 to $14,294,900 in 1891. The total acres of field crops increased from 1,107,450 in 1890 to 1,535,298 in 1891. Along with increased acreage the farmers also received increased yields, the corn crop averaging twenty-eight bushels per planted acre and wheat averaging fifteen bushels per planted acre with other crops increasing accordingly. The income per acre of crop land increased from $7.01 in 1890 to $9.31 in 1891. This increase did not mean prosperity to every farmer but it certainly brightened the hopes of the hearty souls who had suffered through the drought of 1890.

The value of field crops produced accounted for 84 per cent of the total value of all farm products in 1891. The value of livestock sold and their increase in value declined to only 12 per cent of the total value of farm products. The value of other products also decreased, being 8 per cent of the total in 1890 and 4 per cent in 1892. The per capita value from the total value of farm products increased from $76.02 in 1890 to $174.09 in 1891. This increase was due to not only increased production but to a decline in population which occurred during 1891.

It has been observed that the plight of the farmers in Western Kansas could not have been too prosperous and that their dreams of farming in an agricultural paradise had been shattered by at least
one year of drought and other years in which the rainfall had not been what they had been led to expect. Conditions were not as severe in the north as they were in the south. The principal reason for this was that corn, the crop that all the farmers relied upon during the first years of settlement, was better adapted to the north than to the south because of more moisture in the north and less hot winds at tasseling time.

The population decreased 56 per cent in the south while only decreasing 26 per cent in the north. One of the factors contributing to this difference in loss would be that the settlers in the south were more out of harmony with their environment than those of the north both in regard to crops planted and methods of farming. Another possible explanation is that the counties lying to the north were not subject to as much town-booming, speculation, and other factors that go hand in hand with the two. The literature available on the period reveals that some town-booming and speculation did take place in the north but it was not on as wide a scale as that which occurred in the south.

The Seventh Biennial Report of the State Board of Agriculture describes the people who left Western Kansas in 1889 and 1890 as the boomers, speculators, mechanics, and never-do-wells who followed in the wake of the boom and that their loss was not detrimental to the region. But was this the case? It would hardly be justifiable to classify 73 per cent of the settlers of Morton County, 51 per cent of

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the settlers in Kearney County, or 33 per cent of the settlers in Sheridan County as this type of people. There was this type of people in the region and it is undoubtedly true that they were the first to leave but along with them went the honest and capable settlers who found that the region did not offer them a reasonable prospect of prosperity.

The many towns which had sprung into existence during the height of the boom faded from the scene as quickly as they came. The towns which remained were reduced in population, leaving only those tradesmen who were essential to the farmers. During the boom years the people had been careless and reckless about going into debt but after the boom stopped in 1888 one could not sell property and many people left the country leaving lands deserted and homes, farms, towns, townships, and counties saddled with mortgages, bonds, and debts. Most of the people who remained were reduced to the direst poverty. It must be remembered that in certain localities there would be exceptions to this because of different localized climatic conditions and factors associated with the natural productivity of the land. Conditions improved as one traveled to the north, but evidence indicates that there was considerable loss of farming population in these counties also.

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5 An effort was made to select a representative number of
Various reports disclose that there were people who came to Western Kansas during the boom period who had no intention of making a permanent home in the region. Their plans were to homestead 160 acres and then take advantage of the clause in the Homestead Act allowing them to commute their homestead right into a preemption right. A loan company would then advance money to the farmer to pay the government price of $1.25 an acre for his land. After the title to the land was received the balance of the loan (usually $300) was paid to the farmer. No interest was paid on the mortgage as this type of settler generally moved out of the region following the completion of the final transactions of the loan with the speculator having a tidy profit for townships within various counties of the central and north sections and to check their populations in 1888 against the 1891 population figures. Townships chosen were picked at random with only one qualification: there was not to be more than one town (and preferably none) within the township. The population of Decatur County decreased 30 per cent (11,669 to 7,833) between 1888 and 1891; the population of Ouster Township in Decatur County lost 21 per cent (228 to 184) of its population between 1888 and 1891. Thomas County lost 33 per cent (6,174 to 4,069) of its population between 1888 and 1891; Summers Township in Thomas County lost 36 per cent (568 to 356) between 1888 and 1891. Ness County's population declined 40 per cent (5,305 to 3,121) between 1888 and 1891 and Waring Township in Ness County lost 25 per cent (842 to 632) of its population between 1888 and 1891.

The same type of check in the southern counties reveals that in most cases the population loss in the rural townships coincided with the loss experienced by the entire county. Clark County lost 55 per cent (4,281 to 1,945) between 1888 and 1891; Sitka Township lost 55 per cent (275 to 125) of its population in the same period. Morton County's population declined 75 per cent (2,618 to 707) between 1888 and 1891 and the population of Morton Township in Morton County declined 72 per cent (543 to 154) between 1888 and 1891.

The above material is based on data taken from the sixth and eighth biennial reports of the Kansas State Board of Agriculture.
a half year's work. It would be difficult to determine how many people actually did this very thing but the act was not uncommon.

A factor aiding this tendency to violate the spirit of the Homestead Act was the availability of loans and mortgages. Most of the mortgages were sold to eastern parties with a considerable market abroad but when the boom collapsed, these mortgage companies failed, and many investors were lucky if they received twenty-five cents on a dollar on their investments.7

The above mentioned act was contrary to the spirit of the Federal land laws, but as George L. Anderson points out, in his scholarly treatment of the administration of the Federal land laws in Western Kansas, it was not the only way in which these laws were abused.

It may be suggested that it was not only the land laws that were unadapted to the Great Plains, but the rules and regulations with which they were surrounded—the administrative procedures as well as the laws. It may be remarked further that the tendency toward rapid turnover among early settlers was stimulated rather than checked or restrained by the operation of the federal land laws. The technical and involved rules of procedure, the invitation to contest, and the absence of any effective method of dealing with violations of the laws contributed to the atmosphere of uncertainty that surrounded western Kansas communities during their early and formative years.8


The fallacy of the federal land laws in Western Kansas reduced to one simple statement is that 160 acres of land was not sufficient acreage to maintain a prosperous farm family. It is true that an individual farmer could increase his acreage by filing "Timber Act" and "Stone and Timber" act claims but in most localities the settler could not fulfill the requirements which were necessary in the provisions of these two acts in order to gain title to the land. The farmer could only succeed by growing a cash crop and could not do this until he could equip a farm, and under ordinary circumstances the farmer could not produce enough salable products to support a family and to provide for the normal improvements and equipment. His only solution, therefore, was to go into debt to buy his equipment.

In most cases the honest farmer was not overburdened with debt but the farmers found themselves in serious difficulty because of the drought and many of them could not hold out until better times could come.9 The mortgage companies, which had loaned so freely during the boom period, were now expecting some return from their investment and many mortgages on farms were foreclosed because of the inability of the farmer to pay the interest on his debt. Although higher prices for their products would have undoubtedly helped most farmers to remain on their farms and to pay their debts, there is a serious question whether

a moderate difference in prices throughout the years would have changed
the situation.\textsuperscript{10}

The climatic conditions which existed in 1888 must be considered
in an effort to find the relationship that existed between climatic
conditions and the population loss which occurred between 1889 and 1891.
The climatic conditions in 1888 resulted in only fair crops being pro-
duced in 1888, and this year of fair crops following a year of poor
crops in 1887 was one of the deciding factors in the population decline
which began in 1889. However, as it has been stated in Chapter II, many
of the settlers who had come to the region had been led to expect manu-
facturing possibilities and they had been disappointed in this respect
as such development did not take place.

Good climatic conditions and good crop yields in 1889 apparently
were not enough of an incentive to cause the population decline to stop
in 1890 and the poor climatic conditions of 1890 contributed to some
extent to the population decline in 1891.

There is a close relation between the running three year average
precipitation (Figure 5) and the population decline as both declined
during the period. This average increased in 1891 while populations
continued to decline, but it must be remembered that, in most cases, it
would be the previous year's conditions which would cause people to
leave the region and not the conditions which existed after the March

\textsuperscript{10}James C. Malin, "The Kinsley Boom of the Late Eighties," \textit{The
Kansas Historical Quarterly}, IV (May, 1935), 175.
first census count had occurred.

The number of acres in farms was at practically the same level at the end of the period as it had been at the beginning of the period with what loss occurring confined to the southwest where the population had fallen off at such a drastic rate. The livestock industry had expanded throughout the entire period but it still remained far below farming as the principal source of income.

Conditions looked bright at the end of 1891. The harvest for the year had been good and the wet fall had encouraged the anticipation of another good crop year. It is true that prices were only fair, but the farmer hoped that with increased production they could take up the losses caused by these prices. The total value of all farm products had increased to a new high for the region; prosperity was just around the corner. Another year such as 1891 and the western third of Kansas would have been on a sound financial footing.
CHAPTER IV

THE SMALL BOOM AND THEN DECLINE

1892-1895

The population of Western Kansas reversed its decline in 1892 increasing from 85,259 inhabitants in 1891 to 86,390 in 1892, a small increase of 4 per cent (Table VII). In 1893 the rate of increase was 11 per cent over the 1892 total, increasing from 86,390 inhabitants to 95,559. The increase in population in 1892 occurred in 17 of the 31 counties. There was no definite pattern in the counties that increased in population, but increases were more prevalent in the east and north while the counties that declined in population were confined, for the greater part, to the western tier of counties and the counties in the southwest. Every county showed population increases in 1893 with the exception of four counties in the southwest—Morton, Hamilton, Kearney, and Seward counties.

This boom was short lived as population began a downward trend again in 1894. Population declined from 96,210 in 1893 to 90,248 in 1894, a loss of 6 per cent. All but five counties—Rawlins, Decatur, Cheyenne, Scott, and Finney—showed losses of various degrees. This downward trend in population was continued in 1895 with a loss of 15 percent of the population bringing the total down to 76,758. Every county within the section declined in population with the population figures of 1895 representing a 45 per cent loss from the 1887 peak total of 139,393.
The population for the state followed the same pattern as did the western third: increasing in 1892 and 1893 but decreasing in 1894 and 1895 (Table IV). The western third’s increase of 3,131 inhabitants in 1892 accounted for 36 per cent of the state’s increase of 8,609. In 1893 the western third’s increase of 9,820 residents accounted for 51 per cent of the state’s increase of 19,185. Of the decrease which occurred in 1895 the western third’s loss of 5,962 accounted for 21 per cent of the state’s loss of 28,282. But in 1895 the entire state lost only 3,594 inhabitants while the western third lost 15,450, four times greater than that lost by the state. The above statistics indicate that in 1892 and 1893 the western third of the state seemed more attractive to the immigrant than the remainder of the state but in the following year the situation was reversed. In 1895 some of the immigration must have been from the western third to the remainder of the state because the western third’s loss was greater than the entire state combined.

In Chapter III it was noted that there was a sufficient amount of moisture in 1891 which resulted in good crops. This undoubtedly was no small factor in the increase in immigration which began in 1892 and continued on into 1893. However, this 26.35 inches of moisture which fell in 1891 was no indication of the moisture which would fall in the succeeding years. The following year, 1892, was not a drought year but the 18.70 inches recorded was 7.63 inches below the preceding year’s total and .31 inches below the 59 year average (Table III and Figure 5).
The winter and spring months were wetter than normal but the remainder of the months, beginning with June, were dry with the exception of August when there was 3.30 inches recorded. The annual mean temperature for 1892 was 51.6 degrees, 2.1 degrees cooler than the normal mean (Table IV). None of the months deviated from their normal mean temperature to any great degree but the majority were one to three degrees below normal. But the fact that the annual mean temperature was 2.1 degrees cooler than normal does not exclude the possibility that there could have been a week or more of extremely hot weather or extremely cold weather sometime within the year.

The dry weather which had begun in the fall and winter months of 1892 continued on into 1893 and 1894. About the only description which will fit these two years is "severe drought". The rainfall amount in 1893 was 11.93 inches and in 1894 the total was 12.19 inches. July, August, and September of 1893 were comparatively wet, but there was very little moisture the rest of the year. The moisture which fell in those three months was beneficial to the planting of winter wheat, but the dry spring months of 1894 ruined the chances for a wheat crop in 1894. The mean annual temperature for 1893 was 52.6 degrees, 1.8 degrees below normal. The monthly records for 1893, however, disclose that there were no months in which there was any great variation from the normal means for the month.

February, June, and September were the only months of 1894 in which there was anything near the normal precipitation amounts. The
rest of the months, as in 1893, fell far below the normal precipitation amounts. The temperature records for 1894 show that the annual mean temperature was 52.9 degrees, .8 degree below normal. The winter and spring months were several degrees cooler than normal whereas the summer and fall months were nearly normal.

The drought conditions which had persisted through 1893 and 1894 were not really broken until May of 1895 when 2.89 inches of rain fell followed by an extremely wet June and July. There were 21.39 inches of moisture recorded in 1895, 2.58 inches above the 59 year average of 19.01. This moisture was not evenly distributed however. Almost 70 per cent, 14.74 inches, fell in three months—May, June, and July—and the rest of the months, with the exception of February and November, were considerably drier than their 59 year average. The mean annual temperature was 51.7 degrees, 2 degrees cooler than normal as was June and July, the months in which the largest amount of moisture was received. The year was not an ideal crop year, but it was an improvement over the drought years of 1893 and 1894.

The effect of the good crop year of 1891 can be seen by the increase in farming operations which occurred in 1892 (Tables II and IV). The number of planted field crop acres increased from 1,169,976 to 1,632,698, an increase of 40 per cent. The acres of fenced prairie grass increased from 315,322 to 347,310, and the number of the different classes of livestock, with the exception of milch cows, increased from
10 to 20 per cent. This increase in the number of livestock was accompanied by an increase in the value of livestock kept on the farms, which was set at $1,578,700 by the State Board of Agriculture.

The total value of all farm products for 1892 was $16,286,100, an increase of 14 per cent over the 1891 total of $14,294,900. Of this total, 82 per cent was from field crops, 14 per cent from livestock sold or their increase in value, and 4 per cent from other products. The above percentages were approximately the same as in 1891 so there was no significant change in the source of agriculture income. The value of the farm products per acre was $8.23, a decrease of $1.08 from 1891 but more than a dollar more than the same return was in 1889 and 1890. The per capita value of products produced was $188.52, an increase of $106.66 over the figure attained in 1885, the year when extensive settlement was just beginning. Like 1891, 1892 was a good year for agriculture.

The good crops of 1891 and 1892 encouraged the farmer of Western Kansas to increase his acreage of planted field crops 25 per cent in 1893. This figure of 2,035,132 acres was the highest total reached between 1885 and 1900, but even then, this figure was little more than 10 per cent of the total acres (18,201,400) within the area. The acres of prairie grass under fence decreased from 347,310 acres to 270,168. The number of cattle decreased 12 per cent but the other classes of livestock showed slight increases.

The value of farm products produced fell from $16,286,100 in
1892 to $6,665,900 in 1893, a drop of 59 per cent. Of this total value, 60 per cent came from field crops, 27 per cent from the sale of livestock and 4 per cent from the sale of other farm products. This is a significant change from 1892. Field crops, although they continued to be the chief component of the farmer's income, no longer completely dominated the scene. The value of the return per acre of all farm products decreased to $2.89, a drop of $6.34 from the 1893 figure. The value of farm products per capita also decreased, dropping from $188.52 to $69.28, which was approximately the same as it had been in 1886.

The year was not only a poor year for agriculture because of the drought but the farmers had to contend with a lowered price for their product as a result of the Panic of 1893, which affected the nation as a whole.

There is a close relationship between the population decline of 1894 and the decline in the number of planted field crop acres. Population declined 6 per cent and the number of field crop acres declined 5 per cent. This drop of planted field crop acres, from 2,035,132 to 1,976,460, was not accompanied by a similar decrease in the number of acres of fenced prairie grass acres which increased from 270,168 to 361,540 acres. The combined totals, listed as total field crop acres in Table II, increased one per cent up to 2,305,300 acres in 1893, which was the highest amount recorded between 1885 and 1900. The number of cattle and swine in the region decreased approximately 25 per cent but the number of sheep, horses and mules showed a slight increase.
It is clear that the drought of 1894 affected farming in much the same manner as had the drought of 1893. The value of farm products decreased 7 per cent, down to the low total of $6,194,500. Of this total, field crops accounted for 51 per cent; the sale of livestock, 36 per cent; and other products, 13 per cent. This was a continuation of the trend which had begun in 1893: farmers were relying more and more on livestock and the other products to keep them going.

The value of the return per acres of all farm products decreased from the already low figure of $2.89 in 1893 to $2.65 in 1894. The value of farm products per capita also decreased, dropping from $69.28 to $68.64. Farmers, at the end of 1894, were in dire circumstances after suffering through two straight years of drought, short crops, and low prices. It is no wonder that the region lost 15 per cent of its population the following year.

From 1891 to 1894 there were more acres of wheat planted than any other crop (Table V). But in 1895 the number of acres planted to corn increased sharply and the number of acres planted to wheat decreased, allowing corn to occupy the top position it had held up to year 1891 (Figure 5). This apparent reversal of the trend to replace corn by wheat was probably due to the dry conditions which existed in the last half of 1894 resulting in a smaller amount of winter wheat being planted. This condition existed in 1895 only as in 1896 conditions were reversed and wheat again became the dominant planted crop of the region.
The combined corn and wheat acres accounted for 64 per cent of the planted field crops in 1892, 65 in 1893, 72 in 1894, and 74 in 1895. In 1891 the counties in the south began planting less corn and spring wheat and more winter wheat while the counties in the north planted more corn than winter wheat although they also increased their winter wheat acreage as well as their corn acreage.

Another trend which became evident in 1891 is that when there was a general increase in planted field crop acres, the biggest increase was in the central and northern sections of the region, and when there was a general decrease in the amount of planted field crop acres, the biggest decrease was in the southern section of the region. By 1895 the southern section and particularly the southwest corner could hardly be classed as farming communities for their planted field crop acres was little more than it had been in 1886.

In 1892 four classes of field crops—winter wheat, spring wheat, barley, and rye—reached their peak production figure in bushels in the period between 1885 and 1900. The combined total of winter and spring wheat surpassed corn as the leading crop produced in bushels. In 1893 the production in bushels of all field crops showed a severe drop with corn being the only major crop whose production remained above the 500,000 bushel mark (Figure 3). In 1894 the winter wheat and barley production figure showed a slight increase but the remainder of the major crops decreased still further in production with corn falling below the 100,000 bushel mark for the first time during this entire
period, 1885 - 1900.

The year 1895 was a good corn year with production soaring up to 8,577,400 bushels. The production of the other major crops also increased but their combined totals in bushels did not exceed that of corn, the queen crop in all but three years between 1885 and 1900.

Although it has not been mentioned in previous chapters, there were occasional dust storms between 1885 and 1894, but in 1894 and 1895 duststorms were both frequent and severe. During these two years duststorms caused considerable suffering and losses, particularly the storm of the fifth and sixth of April, 1895, when it was estimated that the stock losses from this storm were from 25 to 50 per cent. This storm was also responsible for the death of three children near Johnson, Kansas.

The rain making delusions reached a peak in Kansas between 1890 and 1894 with three rain making companies formed in Goodland alone. These companies aroused great interest all over Western Kansas and for a time, especially during the drought period of 1893 and 1894, their services were in great demand. A great diversity of opinion existed as to whether the rain makers could produce rain but the farmers were desperate. If no rain was produced they were out nothing, and if rain

1James C. Malin, "Dust Storms, Part Three, 1886-1900," The Kansas Historical Quarterly, XIV (November 1946), 403.

was produced the benefit to the crops would surpass the amount paid to
the rainmakers.³

The period from 1892 to 1895 was one of two extremes. The year
1892 was a year when everything did well, crop production was high,
prices were fair, climatic conditions were excellent, and livestock
production was at a peak figure. Population increased during 1892 and
1893 and it is assumed that this population increase was based, to a
large extent, on the increased prosperity of farming in 1891 and 1892
for there is no record of a concerted effort of booming the town and
manufacturing as there had been in 1885-1888. There were very few new
towns established nor were there any serious county seat quarrels, nor
were there many cases of extensive land speculating. This time the
boom, if it can be called that, was based on the merits of the region
as a farming district.

In 1895 the bottom dropped out of everything. The drought,
lower prices, disappointing crops, all had their effect on the region
and population began a decline which continued into 1896. Conditions
were far worse than they had been in 1888. Those who left, and the
majority of these were farmers, left to seek economic opportunities
elsewhere as the chances of making a living farming in Western Kansas
were extremely limited. This is in contrast to the situation which
existed in 1888 when the agriculture picture was not desperate.

³Martha B. Caldwell, "Some Kansas Rain Makers," The Kansas
Historical Quarterly, VII (August, 1938), 306-324.
CHAPTER V

THE PERIOD OF STABILITY, 1896-1900

The population of the western third of Kansas showed little difference for the years between 1896 and 1900 (Figure 4). The population figure of 76,619 in 1896 was only 3,630 less than the 1900 total of 80,249. The population decline, which had begun in 1894, continued until 1898 when the count stood at 73,500, the lowest total since 1885, but in the remaining years of the period the population increased slowly each year, increasing five per cent in both 1899 and 1900. The declines in population in the years after 1895 were slight, decreasing less than one per cent in both 1896 and 1898, and four per cent in 1897.

There is a definite pattern in regard to when the individual counties reached the low point in population. The counties in the northeast corner of the region and extending down to Lane and Ness counties all reached this low point in or before 1896. The remainder of the counties with the exception of Hamilton and Finney reached this low point in 1897 and after, with five counties reaching their lowest total in the period between 1896 and 1900 (Table VII).

With the exception of four counties in the northeast and three counties in the south there is no definite pattern of steady growth or steady decline. In the four northeast counties, Decatur, Norton, Sheridan, and Graham, the population within each county increased each year after 1895. In the three counties in the south this situation was
reversed, that is, the population declined steadily in this period between 1896 and 1900. In most cases, however, the population growth or decline, in both those counties which showed definite trends and those in which there was no noticeable trend, was a small amount.

The climatic conditions which prevailed during this period, 1896-1900, were a definite improvement over those which existed during the period, 1892-1895, discussed in the last chapter. In 1896 the precipitation amount dropped below that amount received in 1895, but the 19.58 inches was above the 59 year average and, with the exception of June, there was ample moisture during the growing season. The dry fall in 1895 and the comparatively dry spring in 1896 were not too advantageous for the growing of farm crops. The annual mean temperature for 1896 was 54.6 degrees, .9 degree higher than normal. This indication of warmth was caused by mild winter months rather than a hot summer (Tables III and IV).

The year 1897 was a better than average one in regard to climatic conditions. The moisture total of 22.91 inches was almost three inches above normal while the annual mean temperature was within one degree of being normal. Approximately 70 per cent of the moisture fell in the growing season with more than normal amounts falling in April and July. October was a wet month but the following two months were dry. The monthly temperature record for 1897 discloses that none of the months varied to any great degree from the normal temperature pattern.
The year 1898, as it appears on the records, was quite similar to 1897. There was above average precipitation with 22.64 inches falling. The distribution of this moisture was very good as over 80 per cent of the total fell during the growing season. February, March, and April were dry months but this had very little effect upon the spring crops as will be discussed later in the chapter. The winter and spring months of 1898 were normal and the summer and fall months were relatively cool but the annual mean temperature was 53 degrees, only .7 degree cooler than normal. Climatically speaking, 1898, was a fairly good year for agriculture.

In both 1899 and 1900 the precipitation amounts slipped below the 59 year average of 19.01 inches. The first five months of 1899 were exceptionally dry, June and July were exceptionally wet, the next three months were dry, and November and December were wetter than normal. February, March, and July of 1899 were several degrees cooler than normal, and August was .5 degrees hotter than normal, but the rest of the months followed the regular temperature pattern. The lack of rain in the spring of 1899 resulted in the lowered crop production of that year.

The first three months of 1900 were dry but the growing season months received ample moisture. The last three months of that year were a repetition of the first quarter as very little moisture was received. The year of 1900 had mild winter temperatures and a normal
spring and summer, with the exception of the month of August when the
temperature was 3.1 degrees above normal. The last three months of
the year were milder than normal. These mild winter months and a hot
August increased the annual mean temperature 1.6 degrees above normal.
The year of 1900 was a fair one for agriculture even with the defi-
ciency of rainfall for this rainfall came at the most opportune time.

The downward trend in the number of planted field crop acres
which had begun in 1893 continued until 1897 (Figure 1). In 1896 the
planted field crop acres was 1,713,304, a drop of 5 per cent from 1895
(Table II). The number of prairie grass acres under fence increased
from 263,299 in 1895 to 295,104 in 1896. This increase in fenced
prairie grass acres was accompanied by an increase in the number of
livestock on the farms in Western Kansas, with every class showing an
increase, range cattle particularly. This increase in number of live-
stock was brought about chiefly by the farmers and ranchmen building up
their herds as the value of the animals sold for slaughter decreased
37 per cent from $1,402,200 in 1895 to $905,500 in 1896.

The total value of all farm products decreased 37 per cent in
1896, dropping from $8,410,500 in 1895 to $5,257,400 in 1896. All
three sources of this value, as listed in Table II, shared this decrease
with the value of field crops decreasing 37 per cent, the value of
livestock sold decreasing 37 per cent, and the value of other products
decreasing 51 per cent. Of this total value of all farm products,
field crops accounted for 72 per cent of the total; livestock sold,
17 per cent, and other products, 11 per cent.

The above percentages were approximately the same as they had been in 1896 so there was no significant change in the method of farming. From the point of view of total value of farm products 1896 was the poorest year for the farmer during the entire period. The $5,257,400 value of farm products was $11,028,700 less than the value of farm products produced in 1892. This is a large spread and the lowest figure represents unprofitable farming, but such a spread is not uncommon in the annals of Western Kansas agriculture, even in the days of modern farming equipment and conservation practices.

The corn yield per planted acre in 1896 was fair, twelve bushels, but the wheat yield averaged but three bushels per planted acre due to the dry fall of 1895 and the dry spring of 1896. The price of corn was only $0.18 so the farmers could realize little profit out of their fair corn crop. The 37 per cent drop in the value of farm products was caused by a combination of decreased acreages, a low price for corn, low production in wheat and other crops with the exception of corn, and a small return from livestock sales.

The acres of planted field crops decreased from 1,713,304 in 1896 to 1,481,535 in 1897. Both major crops, corn and wheat, decreased in acreage but the largest decrease was in wheat, where the total acres dropped 182,541 (Table V). The number of acres of fenced prairie grass acres increased from 295,104 in 1896 to 431,997 in 1897. This increase is in line with the increase that occurred in the number of range
cattle which increased from a total of 125,777 in 1896 to 148,332 in 1897 (Table VI).

Both corn and wheat yield averages increased in 1897. The average yield per planted acre of corn was eighteen bushels and that of wheat was ten bushels. Other field crops also produced well in 1897. This good crop year, along with a 60 per cent increase, $905,600 to $1,446,400, in the value of livestock sold accounted for the 80 per cent increase which occurred in the total value of farm products. This increase was from $5,257,400 in 1896 to $9,462,200 in 1897. The value of field crop products, $7,424,500, was 78 per cent of the total value, livestock sold accounted for 15 per cent, and other products accounted for 7 per cent of the total value of farm products.

Prices remained at practically the same level as they had in 1896 thereby resulting in the higher dollar return per acre of $4.94, an increase of $2.30 over the 1896 return of $2.64. The story of 1897 was a year of good crops and low prices, certainly an improvement over 1896 when there had been both poor crops and low prices.

The good crops of 1897 evidently acted as an encouragement for increased planting as the planted field crop acreage increased 11 per cent up to 1,641,678. There was a decrease of 28,461 in the amount of acres planted to corn, but an increase of 235,224 acres of wheat more than offset this decrease in corn. The number of acres of prairie grass acres under fence increased from 431,997 to 504,068, a new high for Western Kansas. All classes of livestock increased in number with
the largest gain in the number of range cattle which increased from 148,332 head to 238,878. There was a rapid increase in swine as well, their number increasing from 102,682 in 1897 to 155,417 in 1898. This increase in swine, however, was confined mostly to the corn producing counties in the north whose corn acreage remained relatively stable in contrast to the decrease in corn acreage for the region as a whole.

The total value of all farm products increased in 1898 as did the planted field crop acreage. This increase amounted to 14 per cent, or a rise from $9,462,200 in 1897 to $10,804,400 in 1898. The corn yield per planted acre averaged eighteen bushels, the same as 1897, but the wheat yield per planted acre decreased a bushel down to nine. The total bushels of corn produced, due to the decrease in acreage, decreased from a total of 8,488,600 in 1897 to 7,988,600 in 1898. The bushels of wheat produced increased from 5,355,800 to 6,467,100 but this was due to an increase in acreage rather than a better crop.

Of the total value of all farm products, 75 per cent was from field crop products, 19 per cent was from the sale of livestock, and 6 per cent was from the value of other products. The dollar return per acre was $5.04, $0.10 higher than in 1897. The increase in the total value of farm products for 1898 can be attributed principally to the increase in acreage rather than to higher yields or better prices as both of these factors remained at practically the same level. This year can also be characterized by saying that it was a year of good crops but low prices.
In 1899 population increased 5 per cent. The number of acres of planted crop land followed this same trend as it increased 11 per cent to a total of 1,780,366. This increase was due to increased planting of the minor crops as the number of wheat acres decreased 4,977 and the number of corn acres increased only 48,093 leaving the major part of the increase to the minor crops. The biggest percentage of the increase in acreage of minor crops was due to increased planting of the sorghum forage crops, especially in the southern counties where it had become the leading field crop in the number of acres sown. The emphasis that the inhabitants were putting on livestock is again expressed in an increase in the acres of fenced prairie grass which increased to 739,790. This trend is further indicated by the general increase in the number of livestock in Western Kansas (Table VI). As in 1897, the number of range cattle increased at a rapid rate, increasing from 238,878 in 1897 to 319,889 in 1899.

Of the total value of all farm products, $9,931,000 (this was a decrease of $873,400 from 1898), field crops consisted of 73 per cent of this total, the value of livestock sold accounted for 20 per cent of the total, and other products accounted for the remaining 7 per cent. The greater part of loss in value of all farm products can be attributed to an 11 per cent decrease in the value of field crops produced. Corn produced almost as well in 1899 as it had in 1898, averaging seventeen bushels to the planted acre, but the big loss, however, was in the yields of wheat (less than six bushels to the planted acre) and some
of the minor crops. This decrease in the total value of all farm products is evident in the dollar return per acre of field crops which for 1899 was $3.94, $1.90 lower than the 1898 return. A year of fair crops and low prices, that would be the description given to 1899.

The wheat crop harvested in 1900 averaged ten bushels per planted acre, but as there had been a decrease of 158,330 in the number of planted acres the increase in bushels harvested was only 1,749,700 more than the 1899 total. As a result of the decrease in wheat acres corn replaced wheat as the principal planted crop of the region. There were 616,182 acres of corn planted in 1900 and these acres yielded 4,201,900 bushels (seven bushel average). Due to this low yield of corn, wheat production (5,775,700 bushels) climbed above corn production for the first time since the extremely poor corn year of 1890 when the planted corn acreage averaged only one bushel per acre. The higher price for wheat (as compared to the price of corn) plus increased production of barley, oats, and rye were the dominant factors in the 12 per cent increase in the total value of all farm products.

The one per cent decrease (1,780,366 acres in 1899 to 1,766,041 acres in 1900) in the number of planted field crop acres was accompanied by a 17 per cent increase ($7,286,800 in 1899 to $8,536,300 in 1900) in value of field crops produced. Increased yields rather than better prices were responsible for this increase. The value of animals sold increased 13 per cent over the 1899 figure of $2,007,500. The $2,678,600 received from the sale of livestock represented the highest figure reached since 1886 when the total of sales and the
increase in value of livestock was $4,405,800.

The total number of livestock on the farms in Western Kansas continued to increase in 1900 as they had in every year since 1895. Range cattle, as had been the case since 1895, showed the largest gain with their number increasing from 319,889 in 1895 to 362,577. This was the highest total recorded during the period under discussion and is evidence of a trend toward a more balanced program of agriculture. The only exception to this would be the southern and southwestern counties where the emphasis was upon stock raising with very little farming taking place. This shift from farming to stock raising in the southern and southwestern counties was gradual and did not become pronounced until 1896 when from 30 to 45 per cent of the total acres of farm land in the individual counties was listed as prairie grass under fence.

The value of livestock sold in 1900 represented 22 per cent of the total value of farm products which was $11,820,500, the highest total since 1892. The value of field crops was 72 per cent of this total and the value of other products represented the remaining 6 per cent of the total value of all farm products for 1900, a year of fair crops but poor prices.

There was little population movement either in or out of Western Kansas following 1896. Climatic conditions were the cause of the poor crop year of 1896 and this poor crop year was probably the principal cause of the 4 per cent decrease of population which occurred in 1897. But after 1896 crop production improved as a result of better climatic
conditions and after 1898 population increased. This leads to the conclusion that climatic conditions were a major factor in the population movements which occurred after 1896. Another factor which could have played a part in this small population movement was the births and deaths which would have occurred in the region. The population total was small and year to year variations in the births and deaths could have accounted for part of the increase or decrease.

The period between 1896 and 1900 lacks a spectacular event to make it stand out. There were no spectacular crop years nor was there an extended period of drought. The farmer who had remained in the region was not prosperous but with hard work and patience he was able to maintain himself and his family in most cases. There had been a change in the method of farming in the entire region. The farmers of the central and north sections were farming more acres than they had in 1892 but they were placing more and more emphasis on cattle. The residents of the south and southwest had almost given up farming and were devoting their attention to stock raising.

The inhabitants of the region, and particularly the stockmen of the south made use of the unoccupied land left by the departing settlers. Some of this land had been mortgaged but as the mortgage companies could make no sale or produce any revenue off the land the companies either failed or quit paying taxes and let the land go. Gradually the

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settlers who stayed began to buy up sections and quarter-sections for as low as a dollar an acre or the back taxes due on the land.\(^2\)

The average acreage in each individual farm in 1900 was 686.6 acres, an increase of 209 per cent over the average acreage of 222.2 in 1890. The average farm in the north consisted of 401.2 acres, those in the central section averaged 597.1 acres, while those in the south averaged 1,011.8 acres.\(^3\) This increase in the size of farms could not be attributed to individual farmers craving more land just for the sake of having more land. The farmers had discovered that due to the irregularity of rainfall the only way they could beat the droughts was to have an additional amount of farm land in the hopes that the additional amount of acreage would compensate for decreased yield in bushels. The increase in average farm acreage in the south signifies that the area was becoming one of large ranches in which the emphasis was upon raising range cattle.

The Southern farmers were the hardest hit by these periods of low prices and drought, but it is not intended that the reader receive the impression that the remaining area of the region was not affected by these same causes. Willard D. Johnson, in his scientific study of the High Plains, states that there were signs of disaster throughout the entire area of the High Plains. He wrote that deserted towns, in which the only remains are cellar excavations, as well as the crumbling


\(^3\)This information is derived from the census returns of the United State's Bureau of Census, the eleventh and twelfth (1890-1910).
remains of sod house found in the country-side were to be found everywhere. The entire country, according to Johnson, was unsuitable for agriculture and the only way it could be utilized would be by stock raising.  

These signs of disaster as described by Johnson in his report were undoubtedly everywhere as the population for the entire region decreased approximately 47 per cent between the high year of 1887 and the low year which occurred in 1896. But as it has been pointed out before, this decrease was not evenly distributed. The northern counties suffered far less from this decline than did the counties to the south. There seems to be little justification to Johnson's statement in regard to the entire region being suited only for stock raising. It is true that the farmers over the entire region were placing more emphasis on cattle as a source of income, but good crops had been produced by the farmers in the central and northern sections in the two years preceding Johnson's tour (1899). Almost every farmer had become a cattleman to some degree but the main emphasis in the central and northern sections was still farming.

In 1899 the entire region, with the exception of four counties in the southwest, had begun to increase in population with the increase continuing into the twentieth century. The low point had been reached and the region began to look forward to better days.

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CHAPTER VI
CONCLUSION

From the evidence presented in this paper there can be little doubt that the climatic conditions which prevailed from 1885 on were instrumental in causing the rapid population increases in the 1880's, the population decline of 1889-1891, and the movements which occurred after 1891. It is also evident that the effects of climatic conditions upon population movements affected the southern counties more than the northern and central counties.

It is quite natural in any region where the economy is based on agriculture that this should be so. In a year when agriculture fails the entire populations suffers because there is no other source of income for the inhabitants. The entire community must tighten its belt and live on restricted income. Some people do this while other people move on to new regions where better economic possibilities exist. This is exactly what happened in Western Kansas in 1889-1891 and from 1892-1898.

The rapid population increases from 1885-1887 were caused more by a combination of several boom elements rather than good climatic conditions. Good climatic conditions in 1884, '85, and '86 had encouraged the belief that the region could be an agricultural paradise but the impelling force behind the population increase was the enthusiasm in which the boomers of the region stressed the manufacturing and commercial possibilities of the region. In 1888 the boom bubble
broke; industries failed to come, climatic conditions had returned to near normal, and crop production had failed to live up to expectations. The settlers were discouraged because of the turn of events and the more faint-hearted began to leave the country. These in turn were followed by others and by 1891 the region had lost approximately 40 per cent of its population.

Improved climatic conditions in 1891 and 1892 brought an improvement in agriculture production and this in turn was a major factor in the increase in population for 1892 and 1893 but the improved climatic conditions were short lived as a drought of major proportion occurred in 1893 and again in 1894. These years of drought plus lower prices for agriculture products played major parts in the population decline which began in 1894 and continued on through 1895. Climatic conditions improved in 1895 and 1896 and this in turn was in part responsible for the low population decline in 1896 and 1897.

The good climatic conditions existing in 1897 and 1898 resulted in better than average crops for the region. These conditions are reflected in the population changes of the region when, in 1898, the loss amounted to only one per cent, and in 1899 showing a rise of five per cent. In 1899 fair climatic conditions produced only moderate crops while the population total continued to increase in 1900.

There are doubtless many other factors which would enter into the picture but climatic conditions did play a major part in the population movements. Some of these factors would be that the settlers
were not in harmony with the region they came to both in the type of crops they tried to produce and their methods of farming. The price of farm crops also played a part in reducing population as well as the fact that the average settler had little capital with which to buy the type of necessary equipment and to tide him over in case of crop failures. Another factor worth considering is that many of the settlers found the hardships and privations of frontier life too exhausting and they migrated to a more civilized region.

There is a definite pattern as to the period of time after a change of climatic conditions resulted in population changes. One year of drought resulting in poor crops for that year meant that the population would decline the next year. Climatic conditions and crops were good in 1885 and 1886 but were poor in 1887; population decreased in 1888. Poor climatic conditions resulted in poor crops in 1893 and population decreased in 1894 after it had increased for the preceding two years.

The effects of the good crop years of 1885 and 1886 are noticeable on the rapid growth of population until 1888. Population did not increase after 1887 until 1892. That year was preceded by only one year in which climatic conditions and production had been good. The increase in population which began in 1899 was preceded by two years in which crop production had been good. It should be noted that the good crop year of 1889 failed to bring about any increase in population in 1890. This leads to the assumption that one good year of crops was
probably not incentive enough to bring about a population increase the next year.

It seems evident from the foregoing discussion that climatic conditions and the effect that they had on farm income did play a major part in the population changes that occurred in Western Kansas between 1885 and 1900. Some sections of the region were more affected than others but all were affected to some extent.


**Publications of the Government and Other Agencies**


Kansas State Board of Agriculture, Eleventh Biennial Report of the Kansas State Board of Agriculture, 1897-1898. Topeka: Kansas Department of Agriculture, 1899.


Price Patterns Through the Years That Have Had a Direct Influence Upon the Economy of Kansas Agriculture. LXVIV, Number 295. Topeka: Ferd Voiland, Jr., State Printer, 1950.

Kansas State Board of Railroad Commissioners; Third Annual Report of the Board of Railroad Commissioners, 1886. Topeka: Kansas Publishing House, 1885.


PERIODICALS


"Bypaths of Kansas History," The Kansas Historical Quarterly, X (November, 1941), 417.


"Sketches of Early Days in Kearney County," The Kansas Historical Quarterly, VII (February, 1938), 54-80.


ARTICLES IN COLLECTIONS


UNPUBLISHED MATERIALS


TABLE II

GENERAL AGRICULTURE STATISTICS FOR

THE WESTERN THIRD OF KANSAS, 1885-1900

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ACRES OF FENCED PRAIRIE GRASS</th>
<th>ACRES OF FIELD CROPS</th>
<th>TOTAL ACRES IN GRASS AND CROPS</th>
<th>VALUE OF FIELD CROPS</th>
<th>VALUE OF OTHER PRODUCTS</th>
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<tr>
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</table>

aThe data presented in this table are derived from the biennial reports of the Kansas State Board of Agriculture, the fifth through the twelfth (1885-1900).

bCounty totals rounded off to the nearest one hundred.

cOther products include such items as wool clip, dairy products, poultry products, honey, bees-wax, horticulture products, garden products, wine and wood marketed.

dFinney, Hamilton, and Seward counties did not submit reports in 1887.

eKearney County did not submit a report in 1888.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>VALUE OF INCREASE IN LIVESTOCK</th>
<th>ANIMALS SLAUGHTERED OR SOLD</th>
<th>TOTAL VALUE OF INCREASE AND SALES</th>
<th>TOTAL VALUE OF ALL FARM PRODUCTS</th>
<th>ASSESSED VALUATION</th>
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</table>

*County totals rounded off to nearest one hundred.

*Finney, Hamilton, and Seward counties did not submit reports in 1887.

*Kearney County did not submit a report in 1888.

The value of the increase in livestock was omitted from the biennial reports after 1892.
<table>
<thead>
<tr>
<th>YEAR</th>
<th>JAN.</th>
<th>MAR.</th>
<th>APR.</th>
<th>MAY</th>
<th>JUNE</th>
<th>JULY</th>
<th>AUG.</th>
<th>SEPT.</th>
<th>OCT.</th>
<th>NOV.</th>
<th>DEC.</th>
<th>ANNUAL</th>
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<td>2.17</td>
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<td>1.40</td>
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<tr>
<td>1898</td>
<td>0.30</td>
<td>0.37</td>
<td>0.62</td>
<td>0.51</td>
<td>1.69</td>
<td>3.76</td>
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<td>3.23</td>
<td>0.53</td>
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</table>

AVERAGE: 0.37 0.65 0.86 2.11 2.71 2.94 2.78 2.43 1.73 1.23 0.64 0.56 19.01

**TABLE III**

**PRECIPITATION, BY MONTHS AND YEARS, FOR THE WESTERN THIRD OF KANSAS, 1885-1900**

---


(b) A 59 year average, 1887-1945.*
### TABLE IV

**MEAN TEMPERATURE, BY MONTHS AND YEARS, FOR THE WESTERN THIRD OF KANSAS, 1885-1900**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>JAN.</th>
<th>FEB.</th>
<th>MAR.</th>
<th>APR.</th>
<th>MAY</th>
<th>JUNE</th>
<th>JULY</th>
<th>AUG.</th>
<th>SEPT.</th>
<th>OCT.</th>
<th>NOV.</th>
<th>DEC.</th>
<th>ANNUAL</th>
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</thead>
<tbody>
<tr>
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<td>42.3</td>
<td>55.7</td>
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<td>82.1</td>
<td>74.6</td>
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<td>77.5</td>
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<td>29.8</td>
<td>27.1</td>
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<tr>
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<td>51.9</td>
<td>63.6</td>
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<td>41.0</td>
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<td>55.3</td>
</tr>
</tbody>
</table>

**MEANS**

|      | 29.7 | 32.8 | 41.8 | 52.8 | 62.3 | 72.4 | 78.3 | 76.9 | 68.4  | 55.5 | 41.7 | 32.0 | 53.7   |

---

a 1885-1886: United States Department of Agriculture Weather Bureau, "Western Kansas," Climatic Summary of the United States (Washington: U.S. Government Printing Office, no date). The 1885 and 1886 figures represent those recorded at Dodge City, the only station in Western Kansas recording such data at that time. 1887-1900: Kansas State Board of Agriculture, Climate of Kansas (Topeka: Ferd Voiland, Jr., State Printer, 1918), 183.

b A 59 year average, 1887-1945.
TABLE V
ACRES AND BUSHELs OF SELECTED FIELD CROPS IN WESTERN THIRD OF KANSAS, 1885-1900a

<table>
<thead>
<tr>
<th>YEAR</th>
<th>WINTER WHEAT ACRES</th>
<th>WINTER WHEAT BUSHELS</th>
<th>SPRING WHEAT ACRES</th>
<th>SPRING WHEAT BUSHELS</th>
<th>TOTAL WHEAT ACRES</th>
<th>TOTAL WHEAT BUSHELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1885</td>
<td>18,519</td>
<td>141,127</td>
<td>13,461</td>
<td>175,699</td>
<td>31,980</td>
<td>316,826</td>
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<tr>
<td>1886</td>
<td>31,138</td>
<td>383,318</td>
<td>16,280</td>
<td>206,348</td>
<td>47,418</td>
<td>589,666</td>
</tr>
<tr>
<td>1887b</td>
<td>33,217</td>
<td>170,093</td>
<td>20,042</td>
<td>252,617</td>
<td>55,259</td>
<td>472,710</td>
</tr>
<tr>
<td>1888c</td>
<td>49,973</td>
<td>572,074</td>
<td>22,997</td>
<td>360,734</td>
<td>72,970</td>
<td>932,808</td>
</tr>
<tr>
<td>1889</td>
<td>96,891</td>
<td>1,178,325</td>
<td>55,504</td>
<td>780,941</td>
<td>152,395</td>
<td>1,959,264</td>
</tr>
<tr>
<td>1890</td>
<td>250,106</td>
<td>1,439,713</td>
<td>134,752</td>
<td>572,316</td>
<td>384,858</td>
<td>2,012,029</td>
</tr>
<tr>
<td>1891d</td>
<td>344,408</td>
<td>5,231,200</td>
<td>128,886</td>
<td>2,010,400</td>
<td>475,034</td>
<td>7,241,600</td>
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<tr>
<td>1892</td>
<td>497,329</td>
<td>7,938,200</td>
<td>281,493</td>
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<td>778,822</td>
<td>11,358,200</td>
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<tr>
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<td>719,336</td>
<td>174,000</td>
<td>185,163</td>
<td>145,224</td>
<td>904,499</td>
<td>319,224</td>
</tr>
<tr>
<td>1894</td>
<td>799,429</td>
<td>662,200</td>
<td>161,507</td>
<td>21,704</td>
<td>956,002</td>
<td>683,904</td>
</tr>
<tr>
<td>1895</td>
<td>519,505</td>
<td>1,877,800</td>
<td>105,672</td>
<td>475,200</td>
<td>625,177</td>
<td>2,353,000</td>
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<tr>
<td>1896</td>
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<td>1,702,600</td>
<td>157,485</td>
<td>565,900</td>
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<td>2,268,500</td>
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<tr>
<td>1897</td>
<td>450,222</td>
<td>4,528,600</td>
<td>109,951</td>
<td>825,200</td>
<td>560,173</td>
<td>5,355,800</td>
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<tr>
<td>1898</td>
<td>628,795</td>
<td>5,480,100</td>
<td>106,602</td>
<td>996,000</td>
<td>735,397</td>
<td>6,476,100</td>
</tr>
<tr>
<td>1899</td>
<td>546,125</td>
<td>3,199,000</td>
<td>184,295</td>
<td>827,000</td>
<td>730,420</td>
<td>4,026,000</td>
</tr>
<tr>
<td>1900</td>
<td>465,671</td>
<td>5,069,700</td>
<td>106,410</td>
<td>706,000</td>
<td>572,081</td>
<td>5,775,700</td>
</tr>
</tbody>
</table>

aThe data presented in this table are derived from the biennial reports of the Kansas State Board of Agriculture, the fifth through the twelfth (1885-1900).

bFinney, Hamilton, and Seward counties did not submit reports in 1887.

cKearney County did not submit a report in 1888.

dCounty totals rounded off to the nearest one hundred after 1891.
TABLE V (continued)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>CORN ACREs</th>
<th>CORN BUSHELS</th>
<th>RYE BUSHELS</th>
<th>BARLEY BUSHELS</th>
<th>OATs BUSHELS</th>
<th>TOTAL FIELD CROP ACRES</th>
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<tbody>
<tr>
<td>1885</td>
<td>69,316</td>
<td>2,177,008</td>
<td>244,382</td>
<td>171,008</td>
<td>379,515</td>
<td>204,665</td>
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<tr>
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<td>185,919</td>
<td>5,793,934</td>
<td>347,196</td>
<td>90,859</td>
<td>711,780</td>
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<tr>
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<td>288,819</td>
<td>64,360</td>
<td>1,075,773</td>
<td>561,899</td>
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<tr>
<td>1888</td>
<td>717,862</td>
<td>8,517,542</td>
<td>693,536</td>
<td>29,231</td>
<td>1,715,569</td>
<td>1,059,375</td>
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<tr>
<td>1889</td>
<td>661,969</td>
<td>13,202,589</td>
<td>1,213,068</td>
<td>44,116</td>
<td>1,906,182</td>
<td>1,602,557</td>
</tr>
<tr>
<td>1890</td>
<td>408,982</td>
<td>464,457</td>
<td>698,283</td>
<td>70,988</td>
<td>1,248,911</td>
<td>1,107,450</td>
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<tr>
<td>1891</td>
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<td>9,595,600</td>
<td>1,598,800</td>
<td>563,300</td>
<td>1,459,200</td>
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<tr>
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<td>1,980,008</td>
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<td>186,000</td>
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<td>2,338,000</td>
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<td>2,059,417</td>
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<td>865,900</td>
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<tr>
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<tr>
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<td>616,182</td>
<td>4,201,900</td>
<td>409,000</td>
<td>1,711,000</td>
<td>643,900</td>
<td>2,595,277</td>
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</table>

*County totals rounded off to the nearest one-hundred bushels after 1891.*
TABLE VI
LIVESTOCK IN WESTERN THIRD OF KANSAS, 1885-1900a

<table>
<thead>
<tr>
<th>YEAR</th>
<th>HORSES</th>
<th>MULES &amp; ASSES</th>
<th>MILCH COWS</th>
<th>OTHER COWS</th>
<th>SHEEP</th>
<th>SWINE</th>
<th>INCREASEb IN VALUE</th>
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</thead>
<tbody>
<tr>
<td>1885</td>
<td>16,770</td>
<td>2,120</td>
<td>17,135</td>
<td>92,182</td>
<td>137,205</td>
<td>49,903</td>
<td>$ 599,400</td>
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<td>1886</td>
<td>28,461</td>
<td>4,511</td>
<td>26,326</td>
<td>92,329</td>
<td>100,187</td>
<td>28,185</td>
<td>1,992,700</td>
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<tr>
<td>1887c</td>
<td>43,447</td>
<td>7,262</td>
<td>40,723</td>
<td>87,642</td>
<td>65,701</td>
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<td>1888d</td>
<td>62,615</td>
<td>11,751</td>
<td>60,752</td>
<td>120,169</td>
<td>56,243</td>
<td>56,451</td>
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<td>1889</td>
<td>67,465</td>
<td>9,416</td>
<td>66,937</td>
<td>140,311</td>
<td>42,645</td>
<td>68,216</td>
<td>994,500</td>
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<td>60,545</td>
<td>7,505</td>
<td>76,527</td>
<td>148,366</td>
<td>45,811</td>
<td>119,524</td>
<td>893,800</td>
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<td>57,960</td>
<td>5,993</td>
<td>65,851</td>
<td>160,880</td>
<td>50,843</td>
<td>62,640</td>
<td>503,700</td>
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<td>60,795</td>
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<td>54,780</td>
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<td>90,199</td>
<td>5,618</td>
<td>60,802</td>
<td>362,577</td>
<td>52,719</td>
<td>153,804</td>
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</tbody>
</table>

aThe data presented in this table are derived from the biennial reports of the Kansas State Board of Agriculture, the fifth through the twelfth (1885-1900).
bCounty totals rounded off to the nearest one hundred.
cFinney, Hamilton and Seward counties did not submit reports in 1887.
dKearney County did not submit a report in 1888.
eThis section of the report discontinued after 1892.
Additional footnotes to TABLE VII, page 88.

bUncorganized.

cNo figures available.

dEstimated.

eCensus taken for the purpose of organization.

fAt date of organization.

gNo return, previous year's figures.

hOrganized from part of Finney County in 1887. Garfield County disbanded in 1892 and the territory returned to Finney County.

iTerritory included in Hamilton and Finney counties.

jTerritory included as parts of Finney, Ford, and Hodgeman counties.

kTerritory included as part of Finney County.

lTerritory included as part of Seward County.

mTerritory included as part of Hamilton County.
### TABLE VII

**POPULATION BY COUNTIES, IN WESTERN THIRD OF KANSAS, 1885-1900**

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>1885</th>
<th>1886</th>
<th>1887</th>
<th>1888</th>
<th>1889</th>
<th>1890</th>
<th>1891</th>
<th>1892</th>
</tr>
</thead>
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<tr>
<td>CHEYENNE</td>
<td>204</td>
<td>2,607</td>
<td>3,214</td>
<td>4,927</td>
<td>4,499</td>
<td>4,366</td>
<td>3,786</td>
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</tr>
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<td>CLARK</td>
<td>c</td>
<td>3,336</td>
<td>5,079</td>
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<td>3,251</td>
<td>3,342</td>
<td>1,945</td>
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<td>8,657</td>
<td>8,702</td>
<td>8,385</td>
<td>6,094</td>
<td>7,850</td>
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<td>FINNEY</td>
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<td>8,084</td>
<td>5,294</td>
<td>4,300</td>
<td>3,346</td>
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<td>2,901</td>
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<td>7,778</td>
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<td>9,281</td>
<td>7,429</td>
<td>6,647</td>
<td>5,305</td>
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<td>5,227</td>
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<td>4,113</td>
<td>4,363</td>
<td>3,657</td>
<td>3,084</td>
<td>2,570</td>
<td>2,125</td>
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<td>5,893</td>
<td>5,505</td>
<td>5,538</td>
<td>5,006</td>
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<td>4,082</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>GRAY</td>
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**TOTAL** | 38,271| 95,559| 139,395| 138,717| 121,071| 102,109| 85,259| 86,390

**STATE** | 1,268,538| 1,514,578| 1,464,914| 1,338,611

**TOTALS** | 1,406,738| 1,518,552| 1,423,485| 1,347,428

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The data presented in this table are derived from the biennial reports of the Kansas State Board of Agriculture, the fifth through the twelfth (1885-1900).

NOTE: Explanatory footnotes on preceding page.
TABLE VII (continued)

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TOTAL       | 96,210 | 90,248 | 76,758 | 76,619 | 73,902 | 73,500 | 77,177 | 80,249 |

STATE 1,366,613 | 1,334,734 | 1,566,789 | 1,425,119 |

TOTALS 1,338,331 | 1,336,679 | 1,390,969 | 1,444,708 |

FEDERAL CENSUS RETURNS:

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PThis information is derived from the census returns of the United State's Bureau of Census, the tenth through thirteenth (1880-1910).
ACRES OF FIELD CROPS; PLANTED FIELD CROPS; CORN; AND WHEAT

KEY:
- Total acres of crop land
- Total acres of planted crops
- Acres planted to corn
- Acres planted to wheat (winter and spring)

1This material is taken from the data appearing in Tables II and V.
FIGURE 2
VALUE OF FARM PRODUCTS¹

KEY:
- Total value of all farm products
- Value of field crops
- Value of livestock sold for slaughter and the increase in value of livestock
- Value of other products

¹This material is taken from the data appearing in Table II.
FIGURE 3

PRODUCTION IN BUSHELS: WHEAT, CORN, OATS, BARLEY, AND RYE

KEY:
- Bushels of corn
- Bushels of wheat
- Bushels of oats
- Bushels of rye
- Bushels of barley

1 This material is taken from the data appearing in Table V.
FIGURE 4

POPULATION OF WESTERN KANSAS

KEY: 
- Yearly population totals
- Federal census

1This material is taken from data appearing in Table VII.
Figure 5
Precipitation and Temperature

Key:
- Yearly precipitation amounts
- Running three year precipitation average
- Normal precipitation, fifty-nine year average
- Annual mean temperature
- Normal mean temperature, fifty-nine year average

\(^1\) This material is taken from data appearing in Tables III and IV.