

MONTHLY REVIEW

Agricultural and Business Conditions

TENTH FEDERAL RESERVE DISTRICT

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FEDERAL RESERVE BANK OF KANSAS CITY

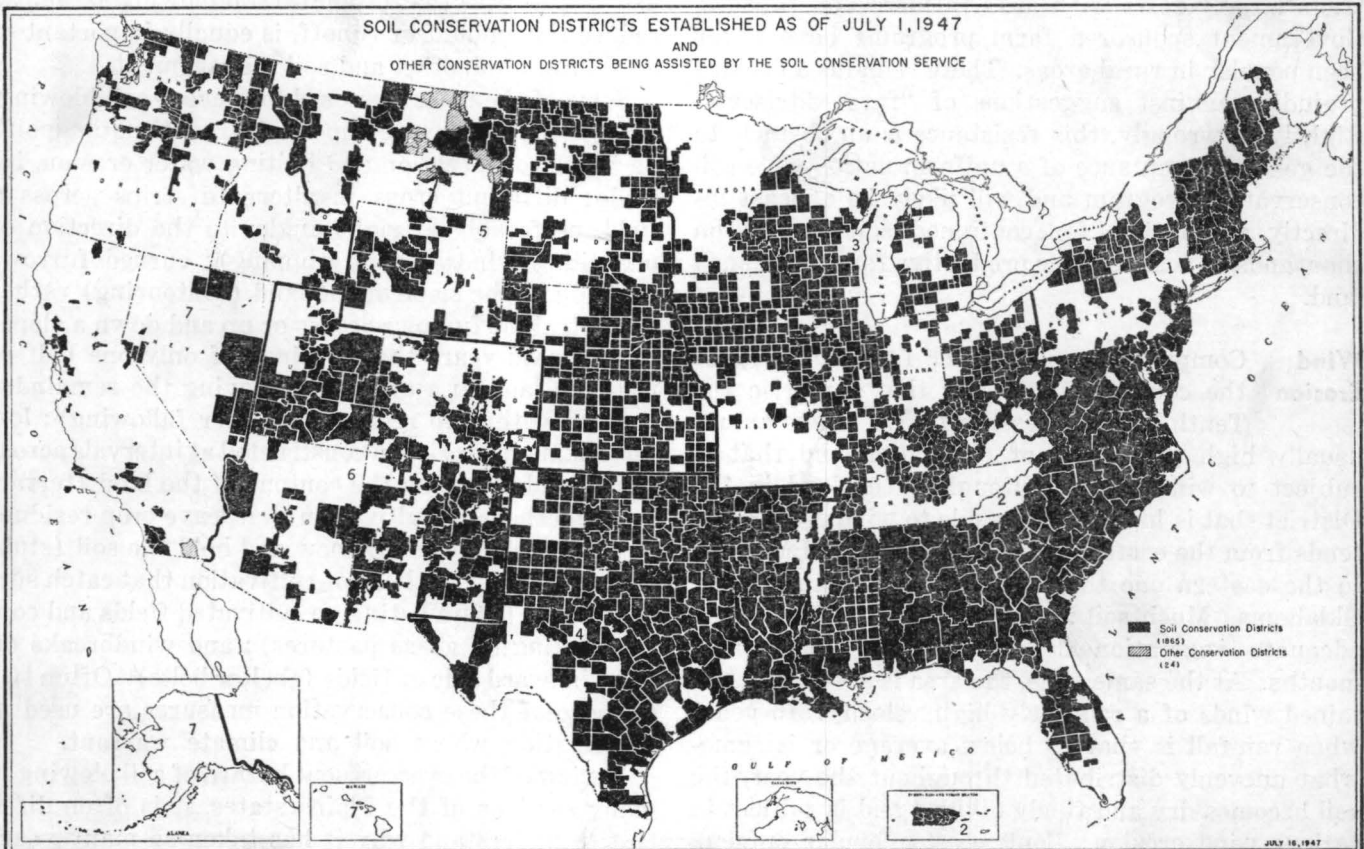
JANUARY 31, 1948

SOIL CONSERVATION

Background Soil conservation is a general term which expresses the common objective of numerous procedures used by man to protect soil from loss by wind erosion, water erosion, and careless cropping practices. The problems of how to stop soil erosion by the action of wind and water and of how to maintain soil fertility are centuries old. In this country, Washington and Jefferson reported attempts to deal with the loss of soil from their lands caused by excessive rainfall. Also, much of the history of the westward movement of the pioneers is associated with the abandonment of worn out land and a search for new and more fertile soils. Not until the settlement of most of this country's tillable land was completed in the early 1900's was there any general recognition of the

enormous soil losses that were taking place, both from the standpoint of erosion and fertility. Even though many of the more progressive farmers of earlier days employed sound measures to prevent soil erosion and fertility losses, there was no coordinated effort at conserving the country's soil resources until early in this century.

The tremendous task of securing the active assistance of every farm and ranch land owner in bringing a halt to soil loss and deterioration was assigned to the Soil Erosion Service in the Department of the Interior in 1933. The Soil Erosion Service was later renamed the Soil Conservation Service and placed in the Department of Agriculture. Since that time, this Service, with the assistance of rather uniformly



written state soil conservation laws and the cooperation of the state agricultural colleges, has encouraged and assisted farmers and ranchers in the organization of local and county groups to deal with the problem of soil erosion. In most states the local or county land areas under the jurisdiction of these organizations are designated as Soil Conservation Districts. As of July 1, 1947, about 1 billion acres of land, representing almost three fourths of the number of all farms and ranches in the nation, were included within the boundaries of organized soil conservation districts.

The number of organized conservation districts in operation on July 1, 1947, was 1,889. These are shown in the accompanying map. It should be pointed out, however, that a farm may be within the boundaries of a district and yet not be receiving the benefits of recognized soil conserving practices. Such is the case with thousands of individual farm and ranch units, since it is not compulsory that an operator be a member of the local organization or that he practice soil conservation even though his land falls within the boundaries of a district. On the other hand, many units not included in district boundaries or in any other formal conservation program are operated with sound soil conserving and soil building practices.

In this connection it is important to note that, although the operation of the Soil Conservation Districts largely rests with local farmers and ranches, Government sponsored farm programs have never been popular in rural areas. There remains a decided prejudice against suggestions of "farm advisors." Rightly or wrongly, this resistance is an obstacle to the general acceptance of a uniform nation-wide soil conservation program and will likely be at least indirectly responsible for continued soil erosion on thousands of acres of now productive farm and ranch land.

Wind Erosion Compared to most other farming areas of the country, the states that comprise the Tenth Federal Reserve District have an unusually high proportion of cultivated land that is subject to wind erosion. Roughly, the land in the District that is highly susceptible to wind erosion extends from the eastern slope of the Rocky Mountains to the eastern one third of Nebraska, Kansas, and Oklahoma. Much soil in this area is unprotected by adequate vegetation during the fall and spring months. At the same time, the area is subject to sustained winds of a relatively high velocity. In years when rainfall is sharply below average or is somewhat unevenly distributed throughout the year, the soil becomes dry and finely divided and is subject to serious wind erosion. Contrary to popular opinion, the vast wheat lands in this area are not solely re-

sponsible for the dust storms that have occurred periodically. Livestock has been a factor in soil blowing, particularly in years of short feed supplies when weeds and crop residues, including straw, sorghum stalks, and corn stalks, have been grazed close to the ground, leaving no protection to the soil during winter and spring months.

Thus, in addition to having to cope with the farming hazards of floods, water erosion, loss of soil fertility, and adverse weather, many farmers and ranchers in this area have, in many years, been compelled to deal with extended periods of soil blowing. It was, in fact, the extreme drought with the accompanying dust storms in parts of this area during the early 1930's that gave impetus to the development of effective conservation measures designed to combat soil blowing.

The means by which losses from wind erosion can be halted, or at least held to a minimum, have been established by experiment and practical use. Several measures that are used to prevent or minimize soil blowing also serve as a means of checking water runoff or water erosion, and these two objectives go hand in hand in the western two thirds of this District. This is true because soil moisture is the limiting factor in crop and forage production in that area, and thus any water conservation, which results from the use of measures that minimize soil blowing as well as reduce the amount of runoff, is equally important to good crop production and soil management.

Some of the measures used to prevent soil blowing, and which are likewise important from the standpoint of water conservation and halting water erosion, include: different crops in alternate strips across a field, preferably at right angles to the direction of prevailing winds (strip cropping); curved furrows that follow the slope of the land (contouring) rather than straight furrows across or up and down a slope; in alternate years the farming of only one half of the crop land in a unit while leaving the remainder covered with crop residue (summer fallowing); low embankments or ridges constructed at intervals across a field and following the contour of the land (terracing); methods of cultivation that leave crop residues on the surface to catch snow and hold the soil (stubble-mulching); methods of cultivation that catch surface water (basin listing on cultivated fields and contour listing on grass pastures); and windbreaks on the windward side of fields (shelter belts). Often two or more of these conservation measures are used in combination where soil and climate warrant.

In view of the ever-present hazard of soil blowing in many sections of the Plains states, it is often difficult to understand why it has taken so many years to interest actively perhaps one half of the land-

owners in the area in utilizing one or several of these soil conserving practices. The primary reason for the hesitancy in adopting them has been and is the natural human resistance to a change in the usual way of doing things. Although the extent of soil losses from erosion has been recognized for some time, it was not and still is not easy to change the farming methods and practices learned by the son from the father.

Furthermore, the costs involved in preparing and maintaining land for contour and terrace farming have sometimes been cited as being in excess of the benefits derived, even though much of the original expense may be absorbed by the Government. The cost of upkeep appears to be a discouraging factor in the use of these practices, although experiments and practical experience indicate that terrace or contour cropping can increase crop yields as much as 20 per cent. The inconvenience and actual difficulty in planting and harvesting crops with conventional farm machinery on land farmed on the contour, in strips, or terraced have in many instances discouraged the use of these types of soil and water conserving practices. Machinery is now being manufactured that will eliminate many of these difficulties, but its general use is probably several years away.

The number of acres of land in the Plains states that are currently operated under one or more measures designed to minimize soil blowing indicates that there is now appreciably less danger of extensive soil blowing than there was only 10 years ago. However, there remain large tracts of land which are operated by resident and nonresident owners in much the same manner as they were farmed in the 1920's. Landowners who do not live in the Plains states are generally not as fully appreciative of the soil blowing hazard as the owners who maintain homes and families in the area. The "suitcase farmer" is cited as being responsible for a large portion of the mishandled land that contributed to the 1934 dust bowl. Success in halting or minimizing wind erosion ultimately depends on the application of soil conserving measures to every acre of land subject to blowing, whether owned by residents or nonresidents.

Water Erosion The land area of the Tenth Federal Reserve District that is subject to the most serious soil erosion from water is largely in the eastern third of Nebraska, Kansas, and Oklahoma. Here, the annual rainfall averages 30 inches or more, and much of the cultivated land is more rolling and broken than is the case farther west. Thus, gullies and the surface erosion of soil are the principal soil problems. In addition, much of the land in the area is subject to flooding, has poor drainage, and thus requires special types of conservation treatment.

As is the case with preventing or minimizing wind erosion, experiment and practical experience have demonstrated that strip cropping, contour farming, and terracing are effective measures in protecting soil from water erosion. The measures applied, of course, depend upon the water erosion problem that exists on an individual field. Since soil moisture is generally not the principal limiting factor in crop and forage production in this area, the function of these conservation measures becomes one of slowing down the rate at which water runs off the sloping fields so that it does not carry with it any appreciable amount of surface soil or attain sufficient velocity to start new gullies or enlarge existing ones. Soil protection in this part of the District also includes the blocking of existing gullies with dams, construction of grassed waterways to carry off excess water, and construction of tile or other type soil drainage systems.

The fact that much of the land in the eastern one third of the District has lost over half of the original supply of topsoil from water erosion in the last 50 years is adequate proof of the seriousness of the erosion problem in this area. If water erosion is not brought under control, farmers in this area 50 years hence will find crop yields and livestock production at sharply reduced levels as a result of the loss of tremendous amounts of the productive surface soils. Corrective measures have been applied to thousands of acres of eroding land, but there remain millions of acres from which water is removing topsoil at the same rate as it has the last 50 years.

Care and Use of the Soil The permanent loss of approximately one third of the country's topsoil from the action of wind and water is only a part of the result of years of mishandling the nation's soil resources. The loss of soil nutrients, such as nitrogen, phosphorus, and calcium, makes up a substantial part of the total soil deterioration that has been and is occurring in the United States. In Kansas, for instance, experiments show that originally much of the soil contained more than 4,000 pounds of nitrogen and more than 100,000 pounds of organic matter per acre. Level, cultivated soils in that state have in many instances lost almost 50 pounds of nitrogen per acre yearly, with losses of organic matter calculated at as much as 1,000 pounds annually. The result has been that many such soils have lost more than one half of their original content of nitrogen and organic matter.

Generally, the stemming of current losses of soil fertility and the building up of supplies of soil nutrients involve the use of crop rotation or a sequence of different crops planted in the same ground over a series of years. The use of lime, superphosphate, ma-

nure, and other fertilizers is also required, depending upon the needs of the soil as determined by chemical analysis. Much pasture land, as well as cultivated crop land in the District, is in need of one or more of these types of treatment. The large increase in the consumption of lime and commercial fertilizers that has occurred in the United States since 1940 indicates that there now exists a much greater appreciation of the value of caring properly for the soil than in past years. During the war, fertilizers were used by many farmers who had never used them before. The resulting increase in crop yields is expected to encourage a considerably higher level of fertilizer consumption.

Higher yielding varieties of grain, successive years of favorable weather, and mechanized agriculture have tended to conceal the extent of the declining fertility and the long-time effects of losing a substantial portion of the topsoil. In addition, the active demand and thus higher prices paid since 1940 for such soil depleting crops as wheat, soy beans, and corn have encouraged many producers to secure the maximum production per acre of these crops at the expense of sound soil conserving practices, such as established crop rotations and summer fallowing.

Land-use practices have a most important influence on the control of soil fertility as well as soil losses from wind and water. Certain types of soil, by virtue of their physical make-up, are not adapted to the production of certain crops. Thus, the economical use of these soils is very restricted, and planting them to unsuitable crops serves only to increase the danger of soil blowing, soil washing, or lowering soil fertility, or all three, depending upon the area and the crop produced. After many years of painstaking study and observation, scientists know which crops are adapted to the various types of soil. However, it appears that the original high fertility of the newly turned prairie sod gave early settlers of the Plains states the illusion of permanently rich and indestructible soil. To a modified degree, the illusion still persists in spite of scientific knowledge to the contrary. Large sections of the land are still farmed under cropping systems developed over 100 years ago, with no apparent regard for the known rate of soil depletion.

Substantial progress, however, has been made in recent years toward overcoming the strong influence of tradition in current farming practices. The greatest strides in this direction have been made through more advanced education of farm children in high

schools and colleges. To a large extent, any general acceptance of sound soil conservation principles depends upon the continuation and expansion of educational efforts in that direction, both on the part of schools and colleges and by commercial organizations and Federal agencies. The accompanying table indicates that, in spite of the present extent of individual, state, and Federal programs embodying soil conservation principles, there is in the seven states, all or parts of which are included in the Tenth Federal Reserve District, a large acreage of land that does not have adequate protection from soil erosion in its several forms. It should be noted that many authorities take the view that all farm land is subject to erosion and is considered to be in need of some degree of soil conservation treatment.

STATUS OF SOIL CONSERVATION

	Total Area of State	Total Land in Farms	Farm Land in Organized Districts*	Acres Treated*	Acres Planned*
	(In thousands of acres)				
Colo.....	66,539	36,218	13,979	2,537	5,281
Kans.....	52,552	48,589	36,602	1,591	4,279
Mo.....	44,333	35,278	6,346	101	369
Nebr.....	49,059	47,753	39,367	1,768	3,866
N. Mex..	77,767	49,608	26,149	6,379	13,289
Okla.....	44,341	36,162	32,341	3,640	7,236
Wyo.....	62,404	33,117	7,617	488	1,248
Total.....	396,995	286,725	162,401	16,504	35,568

*Includes only land in Federal Soil Conservation Districts and land planned and treated in cooperation with the Soil Conservation Service.

Time is of the Essence Scientists contend that if soil erosion were allowed to continue the next 50 years at the pace it has proceeded in the last half century, this nation's capacity to feed its population would be drastically reduced. The nation's ability to furnish its inhabitants with the highest standard of living in the world depends in large part on its ability to produce economically an abundance of food and fiber from the soil. Yet, as one authority has stated, ". . . we have let erosion ruin or badly damage about 282 million acres of crop and grazing land." It is estimated that this country will have a population of 170 million by 1970 as compared with the present population of 140 million. Such an increase in population will require more, not less, land for the production of food and fiber. Thus, if the characteristically high standard of living in this country is to be maintained, it is clear that the conservation of soil resources is a matter of immediate concern and not a problem which can be dealt with at some indefinite time in the future.

BUSINESS AND AGRICULTURAL CONDITIONS

MEMBER BANK CREDIT

The outstanding change in the condition of District member banks during December was a sharp decline

in the United States Government security holdings of the reserve city banks. The decrease totaled 125 million dollars, which was equivalent to 9 per cent of

SELECTED ITEMS OF CONDITION OF TENTH DISTRICT MEMBER BANKS
(In millions of dollars)

	ALL MEMBER BANKS			RESERVE CITY BANKS			COUNTRY BANKS		
	Dec. 31	Nov. 26	Dec. 31	Dec. 31	Nov. 26	Dec. 31	Dec. 31	Nov. 26	Dec. 31
	1947	1947	1946	1947	1947	1946	1947	1947	1946
Loans and investments.....	4,261	4,363	4,070	2,278	2,389	2,224	1,983	1,974	1,846
Loans and discounts.....	1,261	1,232	1,002	762	750	616	499	482	386
U. S. Government obligations.....	2,633	2,771	2,754	1,330	1,455	1,437	1,303	1,316	1,317
Other securities.....	367	360	314	186	184	171	181	176	143
Reserve with F. R. Bank.....	866	844	764	536	514	453	330	330	311
Balances with banks in U. S.....	703	680	693	321	271	300	382	409	393
Cash items in process of collection.....	297	262	253	275	243	233	22	19	20
Gross demand deposits.....	5,227	5,219	4,912	2,915	2,896	2,728	2,312	2,323	2,184
Deposits of banks.....	940	961	976	864	881	893	76	80	83
Other demand deposits.....	4,287	4,258	3,936	2,051	2,015	1,835	2,236	2,243	2,101
Time deposits.....	671	672	650	361	362	351	310	310	299
Total deposits.....	5,898	5,891	5,562	3,276	3,258	3,079	2,622	2,633	2,483
Borrowings.....	1	25	3	*	24	3	1	1	*

*Less than \$500,000.

their holdings at the end of November. The major part of the decrease was in Treasury bonds, but certificates of indebtedness and Treasury bills also declined substantially. Holdings of Treasury notes increased. The decrease in certificates and the increase in notes can be explained to a considerable extent by the exchange of the certificates maturing December 1 for Treasury notes, and a small part of the

decrease in bonds and of the increase in notes can be explained by the exchange for notes of the bonds maturing December 15. Part of the decline in Treasury bond holdings near the end of the year probably represented sales made to establish losses for income tax purposes. The reduction in Treasury bond holdings of the city banks was especially pronounced in the week ended December 3, when the exchange of notes for bonds occurred, and in the last two weeks of the year. The decrease in the Government security holdings of the District country member banks during the month was relatively small, representing a decline of 1 per cent.

	BANK DEBITS		Change from '46	
	Dec. 1947	Year 1947	Dec. 1947	Year 1947
	(Thousand dollars)		(Per cent)	
COLORADO				
Colo. Springs.....	43,146	426,533	+8	+11
Denver.....	530,302	5,419,185	+22	+18
Gr. Junction.....	14,038	144,501	+15	+19
Greeley.....	22,914	228,106	+38	+35
Pueblo.....	41,248	430,120	+23	+25
KANSAS				
Atchison.....	10,800	168,143	-26	+36
Emporia.....	10,955	114,198	+9	+13
Hutchinson.....	43,865	490,377	+30	+26
Independence.....	7,676	79,528	+18	+15
Kansas City.....	65,453	692,598	+11	+16
Lawrence.....	11,513	111,821	+11	+11
Parsons.....	8,063	88,219	+7	+17
Pittsburg.....	12,942	125,345	+21	+19
Salina.....	36,788	466,316	+14	+35
Topeka.....	87,394	953,802	+18	+17
Wichita.....	212,827	2,351,079	+17	+18
MISSOURI				
Joplin.....	29,514	303,480	+10	+6
Kansas City.....	1,161,620	11,638,055	+25	+25
St. Joseph.....	116,969	1,131,171	+23	+39
NEBRASKA				
Fremont.....	15,866	163,016	+31	+44
Grand Island.....	20,666	236,416	+17	+16
Hastings*.....	14,963	167,054	+6	-
Lincoln.....	78,080	831,174	+11	+11
Omaha.....	531,059	5,692,885	+14	+23
NEW MEXICO				
Albuquerque.....	69,401	751,123	+6	+11
OKLAHOMA				
Bartlesville.....	90,577	785,571	+47	+29
Enid.....	44,699	489,731	+36	+37
Guthrie.....	4,021	45,347	-8	+10
Muskogee.....	31,128	263,682	+22	+16
Okla. City.....	304,435	3,202,407	+3	+15
Oklmulgee.....	8,197	74,475	+8	+17
Tulsa.....	439,039	4,471,935	+7	+28
WYOMING				
Casper.....	24,452	246,074	+41	+32
Cheyenne.....	26,223	298,926	+11	+12
District, 33 cities.....	4,155,870	42,915,339	+17	+22
U. S., 333 cities.....	118,384,000	1,125,114,000	+14	+7

*Not included in total; new reporting center beginning November, 1946.

Country bank loans expanded by 4 per cent during the month while other securities increased by 3 per cent. In the reserve city banks, loans expanded by 2 per cent and other securities by only 1 per cent. No information is available at this time as to country bank loan expansion by type of loans, but in the city banks, consumer loans and real estate loans showed the largest relative increases and accounted for four fifths of the increase in total loan volume.

Total deposit volume of District member banks showed little change during December, as it increased slightly in reserve city member banks and decreased slightly in country member banks. Borrowings of reserve city banks declined by 24 million dollars and amounted to only \$200,000 at the end of the year.

In the city banks, the fact that loans and investments combined decreased by 111 million dollars while total deposits increased by 18 million and borrowings decreased by 24 million is reflected in an increase of 105 million in reserves, cash, and bank balances. Substantial increases occurred in reserves with the Federal Reserve Bank, balances with other domestic banks, and cash items in process of collection. In the country banks, reserves, cash, and bank balances showed a net decrease of 20 million dollars, as loans and investments combined increased by 9 million dollars and total deposits declined by 11 million. Balances with other domestic banks declined by 27 million.

DEPARTMENT STORE TRADE

The dollar volume of sales at reporting department stores in this District in December showed an increase of 17 per cent over a year earlier, or almost double the rate of gain in sales for the entire year 1947 as compared with 1946. In the first half of January, 1948, sales were about 7 per cent larger than in the corresponding period of 1947. Sales increased more than is usual during December, and the seasonally adjusted index of daily average sales rose from 327 per cent of the 1935-39 average in November to 337 per cent in December. However, this was still somewhat below the record level of 346 per cent last September.

Department store inventories, despite a record Christmas trade dollarwise, declined much less than is usual during December, and the seasonally adjusted index of stocks advanced from 266 per cent of the 1935-39 average at the end of November to 298 per cent at the end of December. This was approximately the same as the very high level prevailing during the first quarter of the year, prior to extensive inventory reductions last spring and summer. The value of stocks of merchandise on hand December 31, consequently, was little changed from that of a year earlier, but outstanding orders were about 5 per cent larger.

Department store sales and stocks in leading cities:

	SALES		STOCKS
	Dec. '47 comp. to Dec. '46	12 Mos. '47 comp. to 12 Mos. '46	Dec. 31, '47 comp. to Dec. 31, '46
	(Per cent increase or decrease)		
Denver.....	+24	+12	-3
Hutchinson.....	+17	+6	+7
Topeka.....	+8	+5	+5
Wichita.....	+8	0	-4
Joplin.....	+22	+13	+17
Kansas City.....	+15	+9	+5
St. Joseph.....	+15	+9	*
Omaha.....	+16	+8	-23
Oklahoma City.....	+15	+5	+1
Tulsa.....	+16	+7	*
Other cities.....	+18	+13	+11
District.....	+17	+9	+1

*Not shown separately but included in District total.

INDUSTRIAL PRODUCTION

Meat Packing Cattle slaughter at leading District markets in December was up 9 per cent from November but was below the volume in December, 1946, when the effects of price decontrol were still pronounced. Calf slaughter in December was down 41 per cent from the previous month but was still 7 per cent above the 10-year average for December. As indicated by packers' purchases of hogs at central markets, hog slaughter in December, 1947, increased seasonally from November. Hog slaughter was 37 per cent above December, 1946, and 27 per cent above the 10-year average for the month. The slaughter of sheep and lambs in December, 1947, was

down only slightly from November but was 10 per cent below the 10-year average for December.

Some visible effects of the general shortage of live-stock feed became apparent as the slaughter statistics for 1947 were made available. In the case of hogs, where the impact of feed conditions is more immediate, a decided reduction in average market weights was recorded in 1947 as compared with 1946. At Kansas City, the average weight of butcher hogs in 1947 was 236 pounds, which is 8 pounds below the 1946 average and 19 pounds under the 1945 average. Although average weights at this market in the first eight months of 1947 were well above those in the corresponding months of 1946, average weights in the last four months of 1947 dropped sharply below those in the same months of 1946. It was evident by September that the corn crop was not large enough to provide for full feeding of hogs and other livestock.

Flour Milling Flour milling operations in the Southwest during December averaged about 91 per cent of capacity, and there was little change from this level in the first half of January. Early in the month several milling centers in the territory reported operations as low as 75 per cent of capacity but, in spite of temporary lulls in operations, most mills expected flour production in January to be about average for that month.

Shipping instructions on old orders for flour were in good volume in early January, but the number of forward sales to commercial users was small. Flour sales in the Southwest were reported to be about 60 per cent of capacity at mid-January—a substantial reduction from the flurry of selling that occurred in the first few days of the month. The Government made no substantial purchases for export until mid-January. Commercial export sales were very light, owing in part to some uncertainties that existed with respect to provisions of new regulations governing flour export licenses.

Of considerable importance to the milling industry is the recent official decision to limit tentatively the exports of wheat from the United States in the crop year 1947-1948 to 450 million bushels. This volume of wheat exports, although it is the largest amount of wheat ever exported by one country in a single year, is calculated to leave available a carry-over of 150 million bushels of wheat at the close of the crop year June 30, 1948. The 450 million bushel export limit is subject to change, however, and may be revised upward if prospects for the new crop continue favorable and if domestic consumption of old crop wheat is less than is currently expected. The three other major wheat-exporting nations—Canada, Australia, and Argentina—produced crops the past year

estimated at 341, 250, and 175 million bushels, respectively. In the order named, exports from these countries this crop year are expected to be 200, 90, and 75 million bushels.

Petroleum Production of crude petroleum in the six oil-producing states of the Tenth District was up 9 per cent for the year 1947 as compared with 1946. This increase was larger than that reported for the entire nation, which showed a gain of 7 per cent during 1947. All of the principal oil-producing states in the District contributed to the increase for the year, with percentage gains ranging from 5 per cent in Oklahoma to 32 per cent in Colorado. During 1947, daily average production in the nation reached a record high of 5,082,500 barrels, with the six oil-producing states of the District contributing 18.7 per cent of the total.

Estimated gross crude oil production, based upon reports of the Oil and Gas Journal and the Bureau of Mines:

	Dec. 1947	Year 1947	Change from '46	
	(Thousand barrels)		Dec.	Year
			(Per cent)	
Colorado.....	1,480	15,842	+25	+32
Kansas.....	8,779	105,029	+5	+8
Nebraska.....	16	220	+7	-17
New Mexico.....	3,724	40,876	+17	+11
Oklahoma.....	12,705	141,311	+15	+5
Wyoming.....	4,066	43,875	+23	+15
Six states.....	30,770	347,153	+14	+9
United States.....	164,116	1,855,110	+12	+7

The Tenth District is the site of many of the most important projects that are being conducted or planned for the development of synthetic fuels to supplement the current supply of petroleum products. Definite progress has been made at the oil shale demonstration plant at Rifle, Colorado, where research work has indicated that shale oil can be produced for about \$2.00 to \$2.50 a barrel. This oil, however, is a low grade crude, having an A. P. I. gravity rating of 21 degrees compared with 39 for Oklahoma City crude petroleum. While at the present time crude shale oil is being used satisfactorily in the heating boilers of the demonstration plant, it is important to note that a great deal of research work still must be conducted before useful synthetic liquid fuels can be produced from shale oil at competitive prices. It has been announced that a plant soon will be constructed near the Hugoton field in western Kansas for the manufacture of gasoline and related chemical products from natural gas. It is expected that this plant will cost approximately 80 million dollars and will be the first full-scale chemical plant producing gasoline on a commercial basis from source material other than petroleum. A similar, though smaller, plant where gasoline and liquified petroleum products will be produced

from natural gas is scheduled to be located in Rangely field in northwestern Colorado. Another important phase of the program for developing synthetic fuels is the research work being conducted by the United States Bureau of Mines in an attempt to find an economical and efficient method of utilizing the vast western coal beds for the production of oil. Wyoming and Colorado are the states of the Tenth District that are particularly interested in this phase of the experimental work being conducted.

Employment The number of persons employed in the nation in December was estimated at about 58 million, according to information furnished by the Bureau of the Census. This level was approximately 600,000 below that reported for November but was more than 1,600,000 above that of December, 1946. Although nonagricultural activities during December required substantially more workers than in the previous month, the gain was more than offset by the seasonal curtailment in agricultural operations. Unemployment was approximately 1,600,000 in December, practically the same level as in November but about 500,000 below that of December a year earlier.

Monthly releases of the Employment Security Division of the Kansas State Employment Service show employment trends for five areas in Kansas—Wichita, Topeka, Hutchinson, Kansas City, and Coffeyville. According to these reports, total nonagricultural employment in the Wichita area declined in November, with seasonal layoffs in the construction field and reductions in the manufacture of machinery and aircraft more than offsetting the employment gains in trade and service activities. Little change was reported from October to November in the Topeka and Hutchinson areas, while nonfarm employment in the Kansas City (Kansas) and Coffeyville areas declined because of seasonal reductions in food processing and construction.

Manufacturing employment in the Tenth District continued to increase during October, the latest month for which detailed information is available for all states. The level reached was 2 per cent above September and 8 per cent above October the previous year. October was the fifth consecutive month in which manufacturing employment has increased in the District.

AGRICULTURE

Winter Wheat States included in the Tenth District produced 575.5 million bushels of winter wheat in 1947, according to the latest estimates of the Department of Agriculture. This output was well over one half of the winter wheat crop of the entire

country, which measured slightly over 1 billion bushels. The unusually large crop of the states in the Tenth District was harvested from 30.3 million acres of land, yielding an average of 19 bushels of wheat per acre. Colorado led District states in per acre yields with 23.5 bushels, followed by Nebraska with an average of 21 bushels per acre. The average production per acre for all states in the District in the period 1936 to 1945 was 14.2 bushels, while the average number of acres harvested was about 22 million.

The estimated number of acres seeded to winter wheat in District states in the fall of 1947 was 31.9 million acres. This acreage is practically the same as that seeded in the fall of 1946. A slight reduction from last year in the number of acres seeded is indicated for Kansas and New Mexico. However, these decreases are offset by increased estimates of wheat acreage in Missouri, Colorado, and Oklahoma. Based on approximately average yields per acre and average weather, the 1948 crop of the District states was estimated on December 1, 1947, at 383 million bushels, or 34 per cent less than the 1947 crop. The sharply smaller 1948 crop estimate is due to the use of average yields per acre in calculating the prospective crop in 1948 as compared with the high actual yields per acre obtained in 1947. Seeding operations and plant development in the fall of 1947 were similar to those in the falls of 1939 and 1943, in that in both of the earlier years seeding was late and continued well into the winter. Following December 1 of 1939 and 1943, however, conditions were very favorable for winter wheat and good yields were obtained the next spring. Nevertheless, it must be emphasized that the recovery and development of the crop in these two years was an unusual occurrence and is not the rule with late seeded wheat in moisture deficient soil.

Throughout December, 1947, and continuing into January, moisture and temperature conditions were generally favorable for seeding and plant development in the areas of western Kansas and Oklahoma and in northeastern New Mexico where seeding was seriously delayed. The ice and heavy snow that covered a large section of central and northwest Kansas in mid-December and early January apparently caused little damage to late seeded wheat. In central and western Nebraska, however, some apprehension was expressed that the severe ice conditions might have caused some winter killing. The number of inquiries recently made for seed oats and barley indicated that many Nebraska wheat producers expect to have to plant spring grains on ground now planted to winter wheat. However, generally mild and open weather following mid-December allowed wheat seeding to be largely completed in Kansas and Oklahoma and encouraged further growth of wheat already seeded.

Department of Agriculture winter wheat estimates:

	Indicated 1948	Final 1947	Aver. '36-'45
(Thousand bushels)			
Colorado.....	40,530	56,494	17,333
Kansas.....	159,280	286,702	158,441
Missouri.....	30,624	24,438	25,015
Nebraska.....	61,866	89,292	49,024
New Mexico.....	2,985	9,120	2,761
Oklahoma.....	82,995	104,734	57,681
Wyoming.....	4,554	4,687	1,926
Seven states.....	382,834	575,467	312,181
United States.....	838,705	1,067,970	653,893

Livestock Farmers' reports on intentions to breed sows for farrowing this spring indicate that the spring pig crop in District states will be about 14 per cent smaller in 1948 than in 1947 and 12 per cent below the 10-year average from 1936 to 1945. Reductions in some District states are expected to be greater than for the nation as a whole, with anticipated declines of 17 per cent in Nebraska and 15 per cent in Missouri.

Department of Agriculture pig crop estimates:

	PIGS SAVED				SOWS FARROWED	
	Fall 1947	1946	Spring 1947	1946	Spring 1948*	1947
(In thousands)						
Colo.....	169	124	226	248	38	37
Kans.....	661	667	1,080	1,074	146	170
Mo.....	2,520	2,438	3,045	2,922	409	481
Nebr.....	788	740	2,864	2,823	404	487
N. Mex.....	37	29	50	65	9	9
Okl.....	561	510	558	634	90	90
Wyo.....	55	44	78	69	12	12
7 States.....	4,791	4,552	7,901	7,835	1,108	1,286
U. S.....	31,352	30,548	52,786	52,392	7,732	8,649

*Number indicated to farrow from breeding intentions reports.

The 1947 fall pig crop in District states was 5 per cent larger than the fall crop of 1946, with increases in all states except Kansas where the 1947 fall crop was about 6,000 head smaller than that in 1946. The combined 1947 spring and fall pig crops in District states and in the entire country measured 2 and 1 per cent, respectively, above the total crops of 1946. Although the 1947 pig crop of the entire country was slightly greater than that of 1946, it was still well below the very large crops of 1942 and 1943.

The number of hogs over 6 months old on farms December 1, 1947, was about 6 per cent smaller than on that date in 1946. This indicates that the number of hogs estimated to be on farms January 1 this year will likely be below the number on farms January 1, 1947. Likewise, preliminary information indicates that cattle, calf, and sheep numbers on farms January 1 this year will be under those on that date in 1947. Thus, livestock numbers are simultaneously approaching low points in their number cycles—a rather unusual occurrence.