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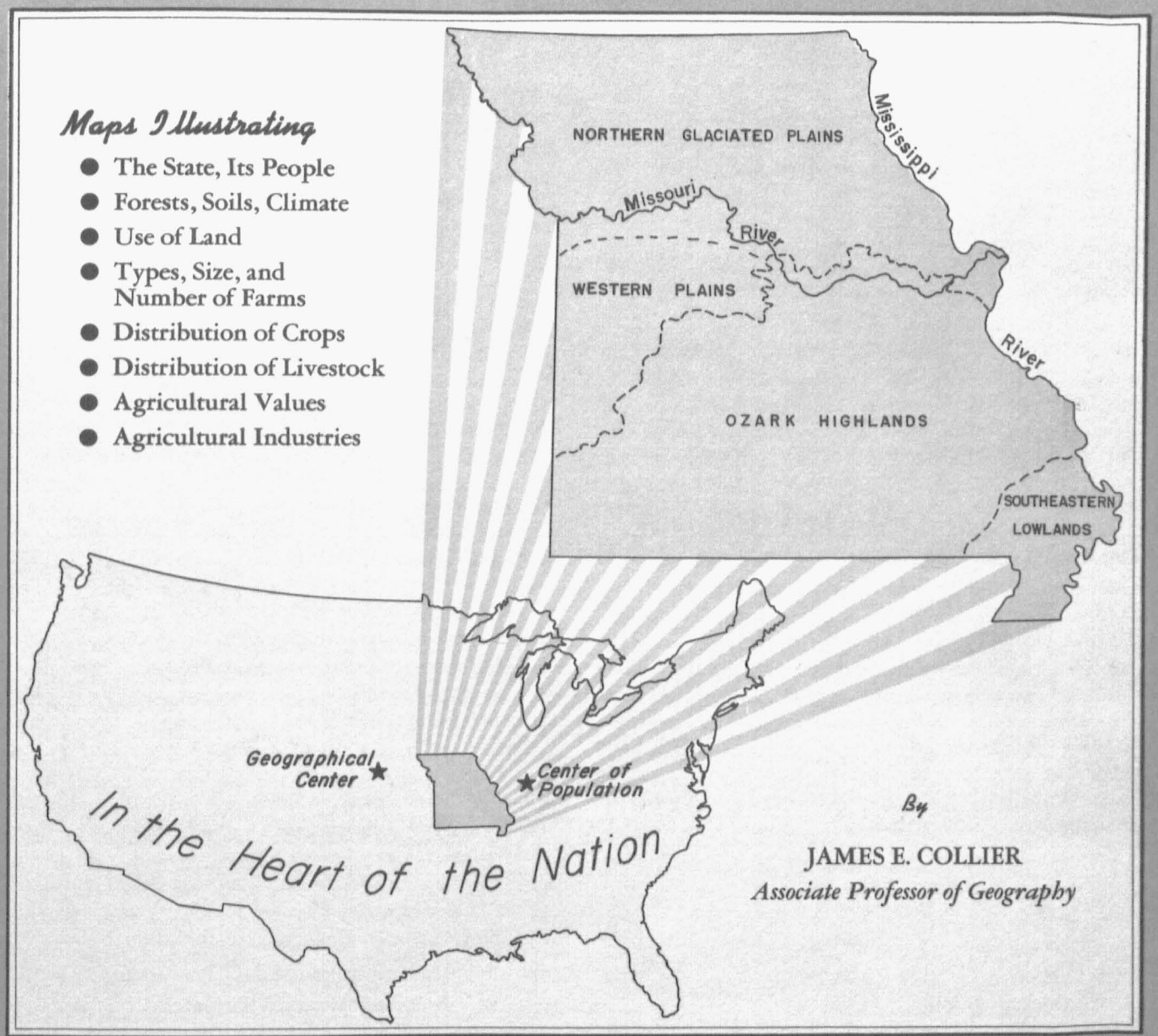
Agricultural

ATLAS OF MISSOURI



By

JAMES E. COLLIER

Associate Professor of Geography

UNIVERSITY OF MISSOURI COLLEGE OF AGRICULTURE

AGRICULTURAL EXPERIMENT STATION

J.H. LONGWELL, Director

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Due to the cost of reproducing this four-color Atlas, it has been necessary to establish the price of $1.00 per copy. Address orders to—Agricultural Editors Office, College of Agriculture, University of Missouri, Columbia.

FOREWORD

This Agricultural Atlas of Missouri pictures in maps the agricultural resources of the State and their utilization at the present time. An attempt was made to illustrate, cartographically, the major characteristics of agriculture and its differences over the State. The Atlas brings together for convenient reference several previously published maps that relate to the physical and economic bases of agricultural development, and some that summarize agricultural features, such as types of farming. It also maps much of the statistical data contained in the 1950 Census of Agriculture.

The Atlas is intended to serve as a reference handbook illustrating the distributions of agriculture, and to supplement other bulletins treating specific subjects in greater detail. It is hoped that both laymen and experts will find it of interest and value, and that the citizens of Missouri may become better informed through it regarding the agricultural patterns of their State.

Detailed Information Available

Brief descriptions and interpretations accompany the maps. Much additional information can be obtained from other publications of the Agricultural Experiment Station of the University of Missouri.

The physical characteristics of the land are shown in maps of its relief, geology, and mineral and water resources. Distribution of the inhabitants of the State is illustrated and cities and towns are mapped and indexed. The patterns of highways, railroads, and airlines appear in other maps.

Major soil areas, certain soil characteristics, and a measure of the gross productivity of the land are all mapped, as are the seasonal distributions of temperature, frost, and rainfall. The regional pattern of land use and of some of its component elements are illustrated, along with the size, number, and types of farm.

The patterns of distribution of the leading crops and livestock are shown in a series of dot maps, as well as several measures of agricultural values, productivity, and farm income. Finally, some of the major industries utilizing agricultural products as raw materials for manufacturing are located, and their distribution and relative importance indicated by symbols.

Contributors

Several agencies and individuals have contributed to the completion of this Atlas. The deans of the College of Agriculture and directors of the Agricultural Experiment Station originally approved the project and arranged for the author to devote the necessary time. The Department of Agricultural Economics approved the project as part of its research program in land use in Missouri and provided materials necessary for preparation of the original drawings.

Students in the author's cartography classes drew some of the maps, identifying them with their initials. Mr. Wayne L. Decker, associate professor of climatology, College of Agriculture, compiled U. S. Weather Bureau data and provided sketches from which the maps of temperature, frost, and precipitation were drawn. The data for the final series of six maps showing certain agricultural industries were obtained from the files of the Missouri Division of Resources and Development.

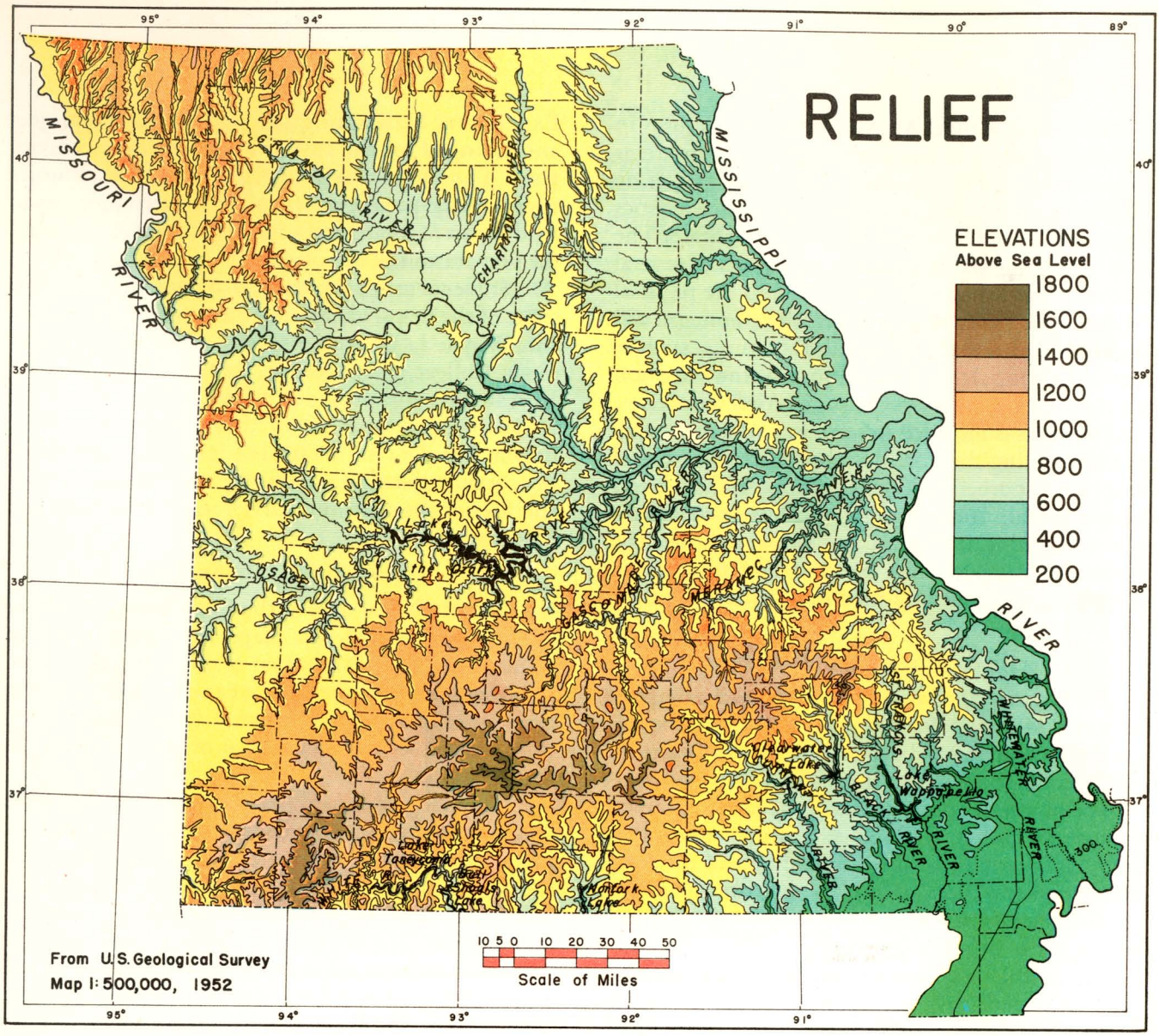
Cartographic Techniques

The statistical data of the Census of Agriculture on which many of the maps are based apply to county units. The distribution of the appropriate number of dots within the map area of each county was determined in part by known differences. An additional principle utilized was that of gradual change in densities.

The size of dot used in the dot distribution maps was chosen primarily for its visual qualities. Dots are placed to show the distribution and relative density of the particular phenomenon being mapped. Each dot is somewhat larger than the actual area of the phenomena mapped. The dot used to show the land in farms at 10,000 acres per dot, for example, would, at the scale of the map, cover more than 10,000 acres. Moreover, dots of the same size are used elsewhere for a different value, such as 500 acres of land in corn. A given series of dot maps uses the same value, however, so that desirable comparisons may be made. In most cases, the number of dots cannot be counted to determine the actual numerical value for each county. The purpose, rather, is to show distribution and density patterns.

Where colors are used to indicate per cent, dollars, or other value, the color of a particular county places it within the range of values which each color represents. Although the value for the individual county can be determined within these limits, the primary purpose of such maps is to illustrate the variations over the State, and only relative values for the different counties.

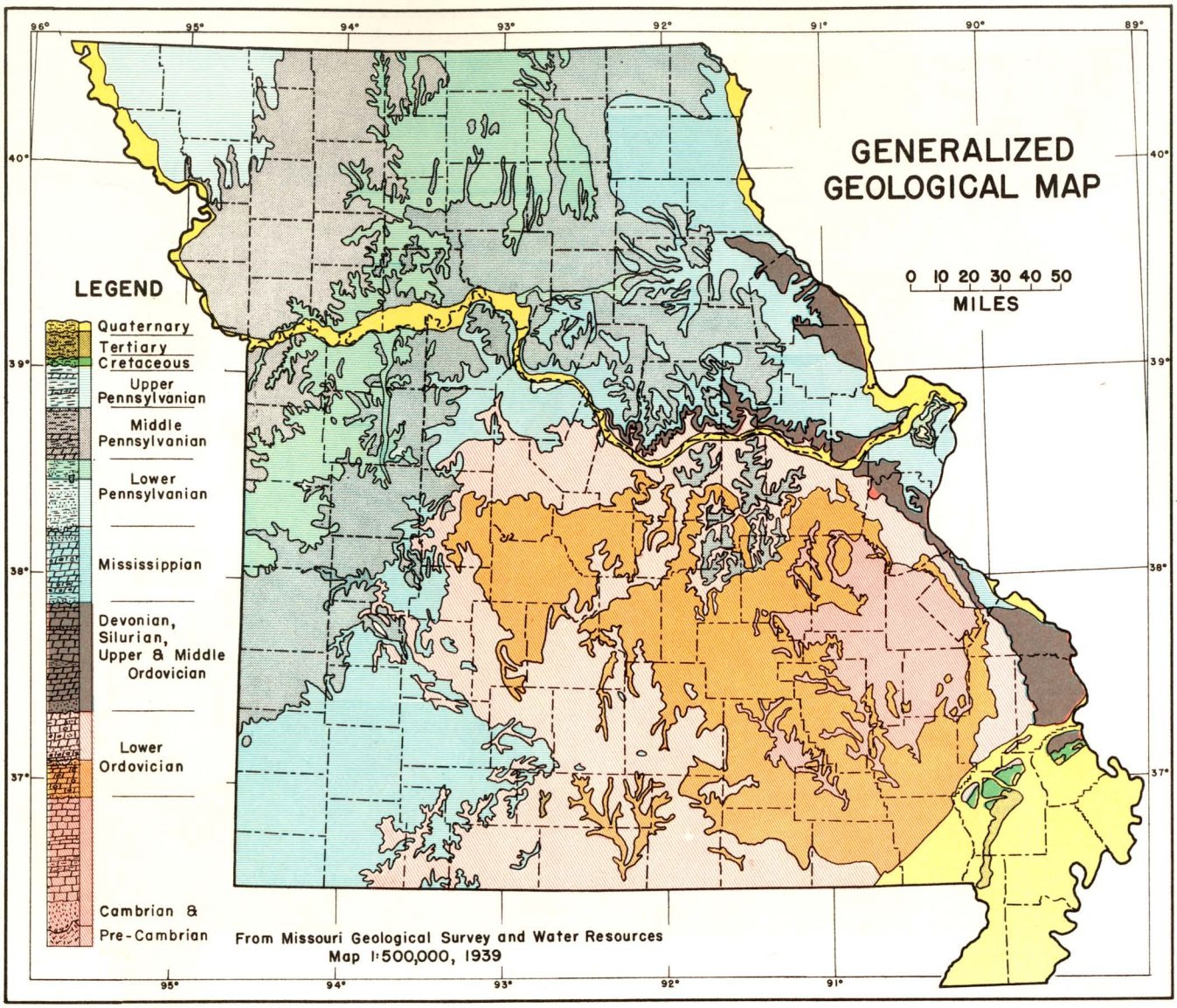
James E. Collier
Associate Professor of Geography



RELIEF

The land of Missouri ranges in elevation from 250 feet above sea level near the Mississippi River in the southeast to its highest point of 1,772 feet on Taum Sauk Mountain in central Iron County. This latter elevation is the highest of several igneous rock masses in the St. Francois Mountain area. Several other knobs, many of them conical in shape and standing conspicuously above the surrounding basins, exceed 1,500 and even 1,600 feet. The largest area of high elevation is not in this most rugged part of the State, however, but in southeastern Webster County, where the broad rolling upland exceeds 1,600 feet and where elevations above 1,700 feet are not uncommon. The broad drainage divide extending westward from the St. Francois Knob country to the southwestern corner of the State generally exceeds 1,200 feet in altitude. Northwestern Missouri has extensive areas above 1,000 feet and some exceed 1,200 feet. These altitudes decrease eastward to 700 feet near the Mississippi River. Across the central counties, elevations range from 800 feet in the east to about 900 feet in the west.

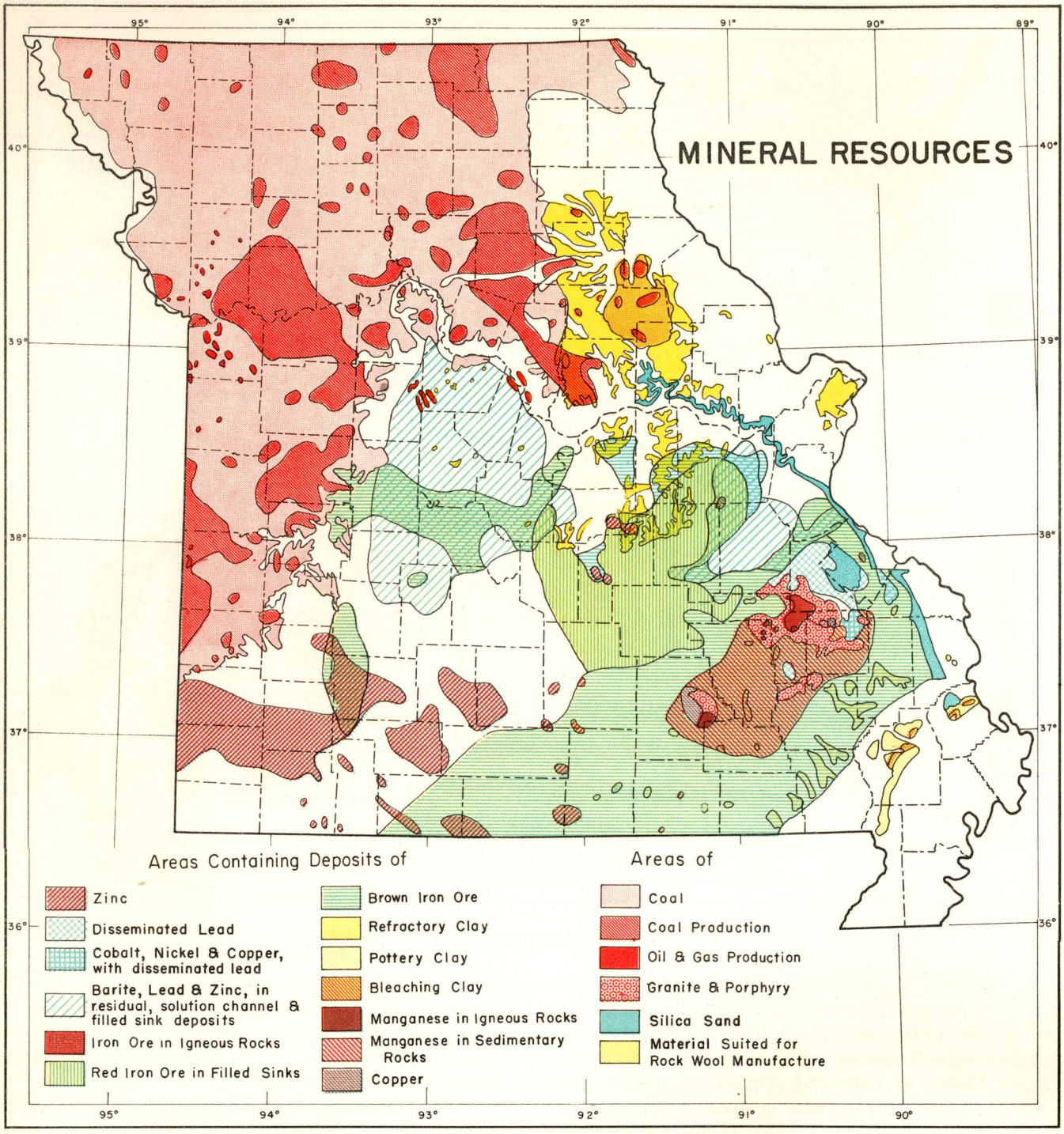
The surface of Missouri is largely a product of stream erosion of a former upland into a variety of types of hilly land. The most rugged areas border the larger streams, particularly the White, Osage, Gasconade, Black, Missouri, and Mississippi rivers. Where valleys are deep and closely spaced, only the accordant ridge-tops remain and some of these have been reduced in height. On drainage divides, remote from major streams, are broad, rolling, upland remnants. Nearly flat tabelands occur on some of the divides in northern Missouri. Between trunk streams and broad divides are mazes of hills—some high and steep, others broad and low.



GENERALIZED GEOLOGIC MAP

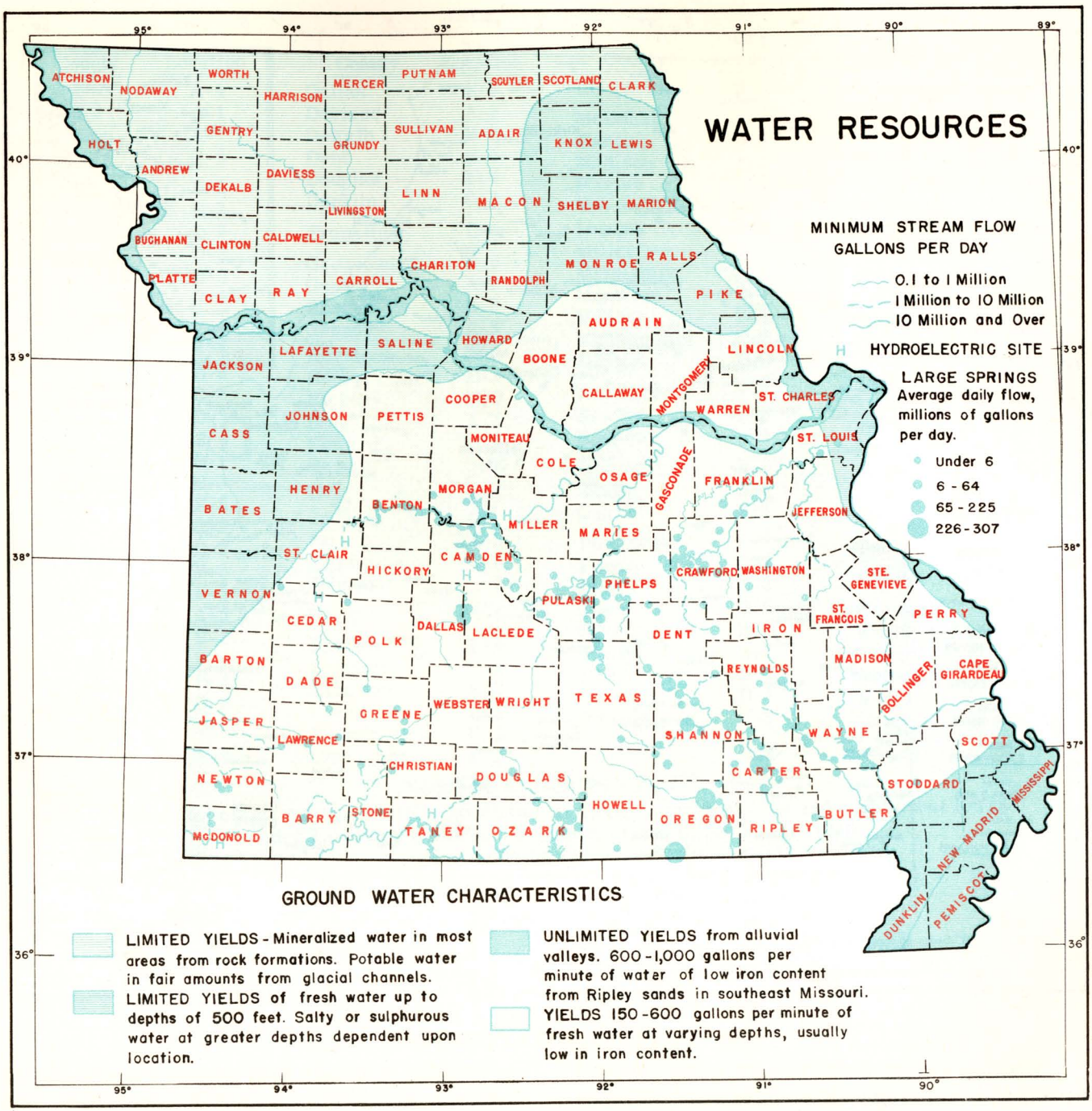
The geological formations of Missouri vary widely in age and lithology. The oldest rocks are the 600 million-year-old, pre-Cambrian granite and porphyry which outcrop at the structural center of the Ozark Dome in Iron and adjacent counties. The youngest are the Quaternary sediments deposited in the southeastern lowland, perhaps 50 million years ago, the glacial till which was left in the northern half of the State by melting glaciers 70 to 80 thousand years ago, and the alluvium which is still being deposited on the river floodplains. Between these extremes are represented vast periods of geological time. The pre-Cambrian porphyry originated as lava flows into which the granite was later intruded. A long period of erosion followed; hundreds of feet of rock were eroded from the hills, and valleys several hundred feet deep were formed before Cambrian seas covered the area and deposited sediments on the igneous rocks. Part or all of the State was inundated by successive invading seas during the several periods which followed and hundreds of feet of sediments were deposited. Part or, in places, all of these were removed during later periods of erosion.

The lithologic character of the rocks of Missouri varies from fine clays to coarse conglomerates, from soft shales to hard granite. Where each crops out at the surface it has its distinctive topographic and soil expression and lends detail to the terrain. Several of the limestone and dolomite formations of the Ozark Highland contain nodules, masses, and beds of chert. These vary in weathering characteristics, but are more resistant to weathering and erosion than the host strata. They therefore tend to accumulate on the surface and in the soil and subsoil. They form a resistant, residual mantle, veneering and protecting relatively unweathered bedrock.



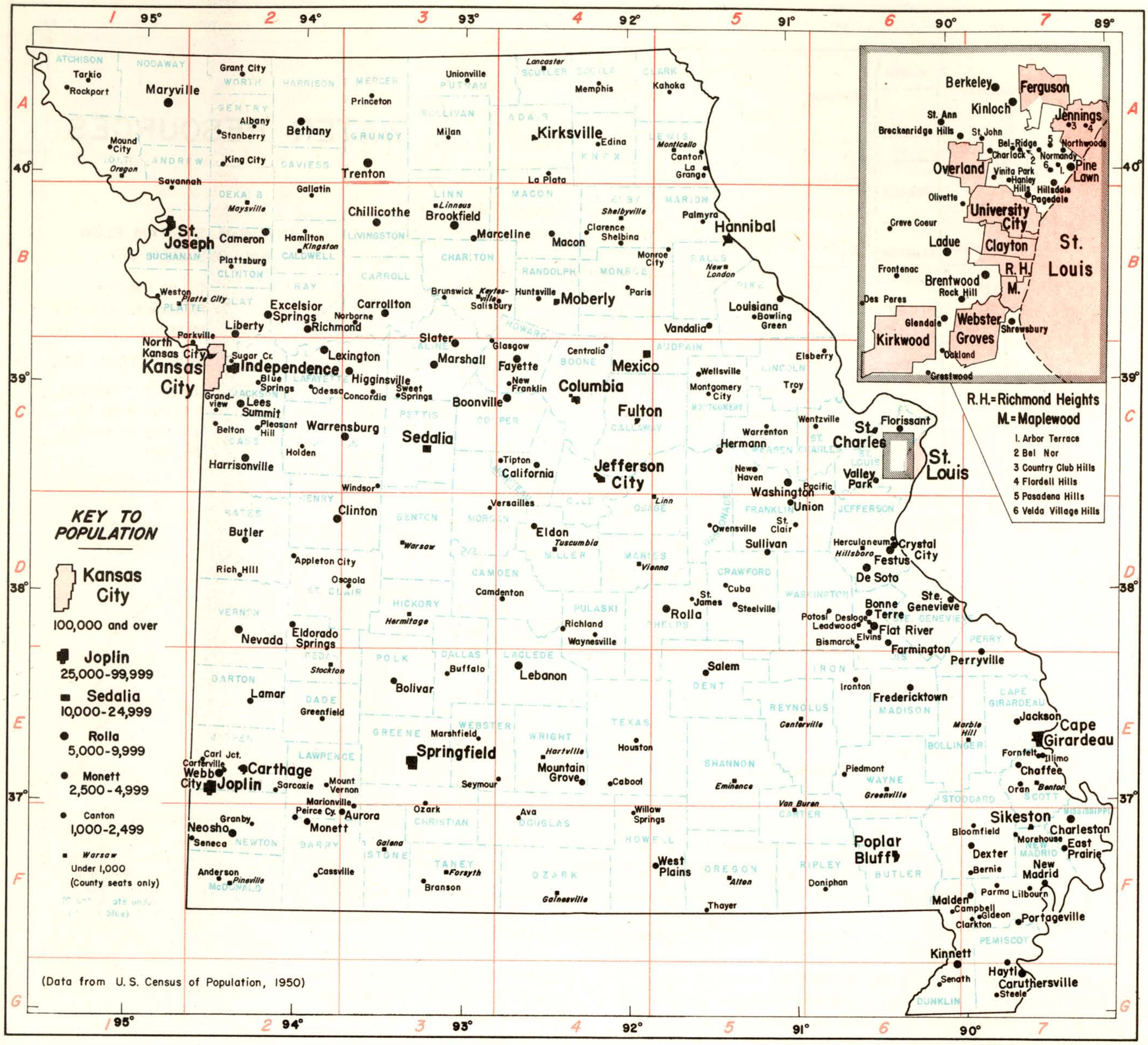
MINERAL RESOURCES

The mineral resources of Missouri are extensive and varied. With an output worth $113,191,000 in 1950, Missouri ranked 23rd among the states. Her position is enhanced by the variety of minerals and the relative stability of mining and mineral industries. The leading minerals produced in 1950 were lead, $36,349,000; stone, $23,855,00; cement, $22,751,000: coal, $12,369,000; sand and gravel, $5,268,000; clays, $4,329,000; zinc, $2,326,000; barite, $1,924,000; and copper, $1,240,000. Other minerals of importance are silver, natural gas, native asphalt, and tripoli. In general, the metallic minerals, including lead, zinc, barite, copper, and silver, are mined in the Ozarks, and the non-metallic minerals, including coal, cement materails, and most of the stone and clay, are produced in other parts of the State. Most sand and gravel is dredged from Ozark streams. Silica sand is mined from St. Peter sandstone on the northeast Ozark border.



WATER RESOURCES

Water is one of the important natural resources of Missouri. Most of the time there is an abundance of surface water for domestic and industrial use. Approximately 11,500 miles of permanently flowing streams supply the needs of over half the people of the State. There are more than 1,000 miles of navigable streams in or bordering the State. More than 150,000 kilowatts of hydroelectric generating capacity have been developed and perhaps an equal amount is potentially available. The streams and reservoirs also have considerable recreational value. The Ozark region has more than 1,000 springs, 159 of them very large, and 98 having a daily flow of more than a million gallons each. Groundwater varies widely in depth, quantity, and quality. The supply is abundant at shallow depths in some areas, particularly in the alluvial valleys. It is adequate, but at somewhat greater depths, in most of the glaciated area. In some sections it becomes mineralized in the underlying bedrock. In the Ozarks, adequate supplies for farm and household uses can be obtained at moderate depths, and greater quantities are available at depths of 1,000 feet or more.



CITIES AND TOWNS

Missouri's cities and towns are its agricultural markets and farm supply centers. There are 108 urban centers—incorporated cities with 2,500 or more inhabitants—and 129 other towns with a population of 1,000 or more. The urban centers contain 61.5 per cent of the population of the State, and only 22 per cent live on farms. The four largest cities, St. Louis, Kansas City, St. Joseph, and Springfield, together contained 48 per cent of the total population of Missouri in 1950 and 77 per cent of its urban inhabitants.

Trade centers of various sizes are distributed throughout the State. Although the distance from farm to nearest town varies considerably, averaging 6 miles, 82 per cent of Missouri's farms are within 10 miles of a market town and one-half are less than five miles from one.

Most of the cities and towns of the State are not only market centers for their surrounding area, buying livestock, grain, fruits, vegetables, and other farm products, but they also process these products for resale to both rural and urban consumers. Meats, poultry, eggs, butter, cheese, ice cream, milk, fruits, vegetables, flour —these are but a few of the many food products processed or manufactured in the cities and towns of Missouri from the products of its farms.

The towns and cities are retail and wholesale distribution centers, supplying farmers with machinery, tools, fuels, seeds, fertilizers, containers, insecticides, and other materials required in modern farming. They are centers for service and repair, and the recreational, cultural, and religious centers on which much of rural life focuses. In short, the city or town is an integral part of the agricultural community without which it could not function effectively.

INDEX OF COUNTIES

County	Grid Location
Adair	A-4
Andrew	A-1
Atchison	A-1
Audrain	C-5
Barry	F-2
Barton	E-2
Bates	D-2
Benton	D-3
Bollinger	E-6
Boone	C-4
Buchanan	B-1
Butler	F-6
Caldwell	B-2
Callaway	C-4
Camden	D-3
Cape Girardeau	E-7
Carroll	B-3
Carter	F-5
Cass	C-2
Cedar	D-2
Chariton	B-3
Christian	F-3
Clark	A-5
Clay	B-2
Clinton	B-2
Cole	D-4
Cooper	C-3
Crawford	D-5
Dade	E-2
Dallas	E-3
Daviess	A-2
DeKalb	B-2
Dent	E-5
Douglas	F-4
Dunklin	G-6
Franklin	D-5
Gasconade	D-5
Gentry	A-2
Greene	E-3
Grundy	A-3
Harrison	A-2
Henry	D-2
Hickory	D-3
Holt	A-1
Howard	B-4
Howell	F-4
Iron	E-6
Jackson	C-2
Jasper	E-2
Jefferson	D-6
Johnson	C-2
Knox	A-4
Laclede	E-4
Lafayette	C-2
Lawrence	E-2
Lewis	A-5
Lincoln	C-5
Linn	B-3
Livingston	B-3
McDonald	F-2
Macon	B-4
Madison	E-6
Maries	D-4
Marion	B-5
Mercer	A-3
Miller	D-4
Mississippi	F-7
Moniteau	C-4
Monroe	B-4
Montgomery	C-5
Morgan	D-3
New Madrid	F-7
Newton	F-2
Nodaway	A-1
Oregon	F-5
Osage	D-4
Ozark	F-4
Pemiscot	F-7
Perry	D-7
Pettis	C-3
Phelps	D-5
Pike	B-5
Platte	B-1
Polk	E-3
Pulaski	D-4
Putnam	A-3
Ralls	B-5
Randolph	B-4
Ray	B-2
Reynolds	E-5
Ripley	F-6
St. Charles	C-6
St. Clair	D-2
St. Francois	D-6
St. Louis	C-6
Ste. Genevieve	D-6
Saline	C-3
Schuyler	A-4
Scotland	A-4
Scott	E-7
Shannon	E-5
Shelby	B-4
Stoddard	F-7
Stone	F-3
Sullivan	A-3
Taney	F-3
Texas	E-4
Vernon	D-2
Warren	C-5
Washington	D-6
Wayne	E-6
Webster	E-3
Worth	A-2
Wright	E-4

INDEX OF CITIES AND TOWNS

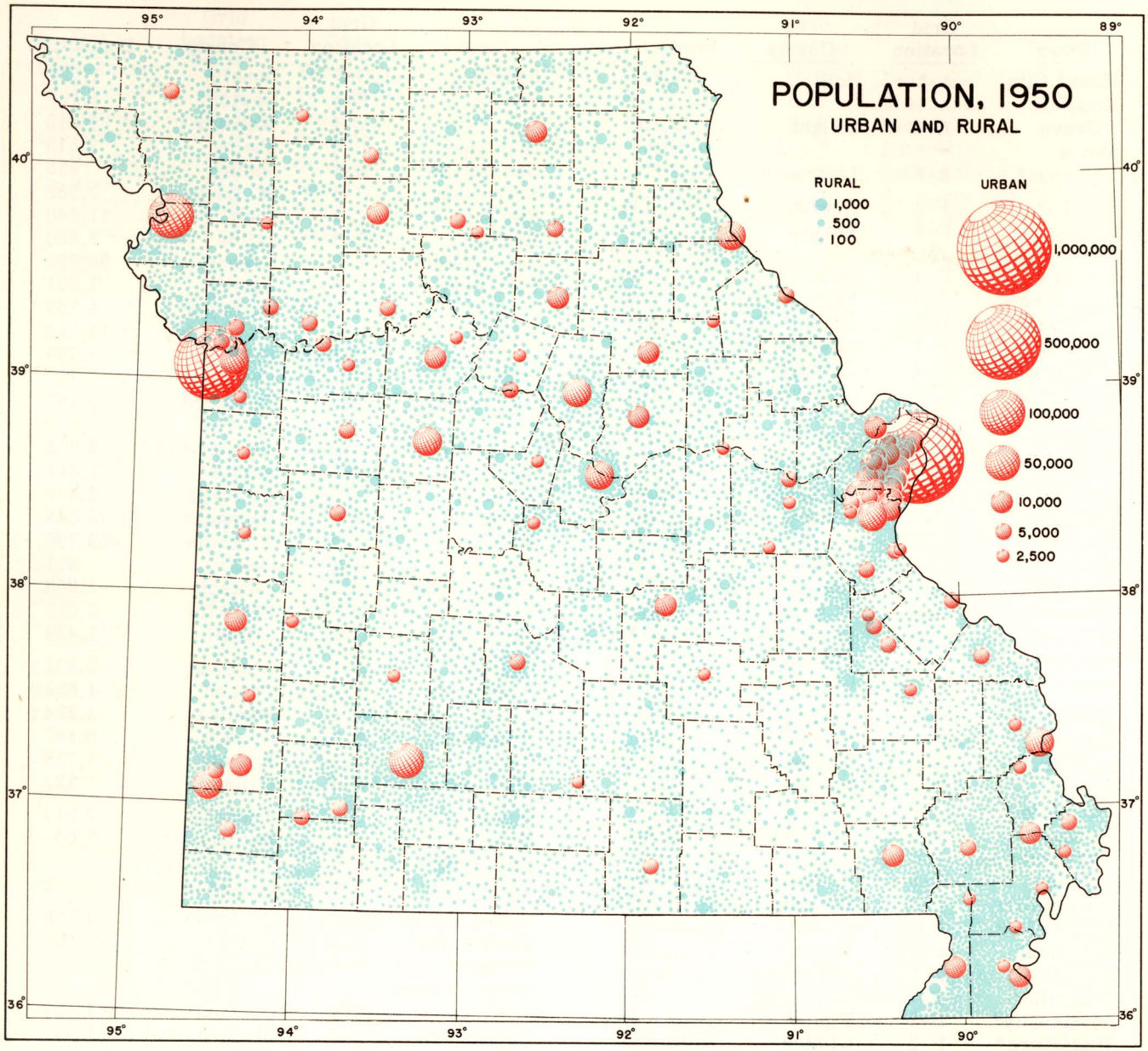
Includes all cities and towns with a population of 1,000 or more in 1950 and county seat towns under 1,000 in population. Population from U. S. Census, 1950.

Town	Grid Location	County	Population
Albany*	A-2	Gentry	1,850
Alton*	F-5	Oregon	571
Anderson	F-2	McDonald	1,073
Appleton City	D-2	St. Clair	1,150
Arbor Terrace	C-6	St. Louis	1,150
Aurora	F-3	Lawrence	4,153
Ava*	F-4	Douglas	1,611
Bel-Nor	C-6	St. Louis	1,290
Bel-Ridge	C-6	St. Louis	1,116
Belton	C-2	Cass	1,233
Benton*	E-7	Scott	546
Berkeley	C-6	St. Louis	5,268
Bernie	F-7	Stoddard	1,308
Bethany*	A-2	Harrison	2,714
Bismarck	D-6	St. Francois	1,244
Bloomfield*	F-7	Stoddard	1,382
Blue Springs	C-2	Jackson	1,068
Bolivar*	E-3	Polk	3,482
Bonne Terre	D-6	St. Francois	3,533
Boonville*	C-4	Cooper	6,686
Bowling Green*	B-5	Pike	2,396
Branson	F-3	Taney	1,314
Breckenridge Hills	C-6	St. Louis	4,063
Brentwood	C-6	St. Louis	7,504
Brookfield	B-3	Linn	5,810
Brunswick	B-3	Chariton	1,653
Buffalo*	E-3	Dallas	1,213
Butler*	D-2	Bates	3,333
Cabool	E-4	Texas	1,245
California*	C-4	Moniteau	2,627
Camdenton*	D-4	Camden	1,142
Cameron	B-2	Clinton	3,570
Campbell	F-6	Dunklin	1,931
Canton	A-5	Lewis	2,490
Cape Girardeau	E-7	Cape Girardeau	21,578
Carl Junction	E-2	Jasper	1,006
Carrollton*	B-3	Carroll	4,380
Carterville	E-2	Jasper	1,552
Carthage*	E-2	Jasper	11,188
Caruthersville*	G-7	Pemiscot	8,614
Cassville*	F-2	Barry	1,441
Centerville*	E-5	Reynolds	250**
Centralia	C-4	Boone	2,460
Chaffee	E-7	Scott	3,134
Charlack	C-6	St. Louis	1,528

*Denotes County Seat. **Estimated.

Town	Grid Location	County	Population
Charleston*	F-7	Mississippi	5,501
Chillicothe*	B-3	Livingston	8,694
Clarence	B-4	Shelby	1,123
Clarkton	F-7	Dunklin	1,004
Clayton*	C-6	St. Louis	16,035
Clinton*	D-2	Henry	6,075
Columbia*	C-4	Boone	31,974
Concordia	C-3	Lafayette	1,218
Country Club Hills	C-6	St. Louis	1,731
Crestwood	C-6	St. Louis	1,645
Creve Coeur	C-6	St. Louis	2,040
Crystal City	D-6	Jefferson	3,499
Cuba	D-5	Crawford	1,301
Desloge	D-6	St. Francois	1,957
DeSoto	D-6	Jefferson	5,357
Des Peres	C-6	St. Louis	1,172
Dexter	F-7	Stoddard	4,624
Doniphan*	F-6	Ripley	1,611
East Prairie	F-7	Mississippi	3,033
Edina*	A-4	Knox	1,607
Elvins	D-6	St. Francois	1,977
Eldon	D-4	Miller	2,766
Eldorado Springs	D-2	Cedar	2,618
Elsberry	C-6	Lincoln	1,565
Eminence*	E-5	Shannon	527
Excelsior Springs	B-2	Clay	5,888
Farmington*	D-6	St. Francois	4,490
Fayette*	C-4	Howard	3,144
Ferguson	C-6	St. Louis	11,573
Festus	D-6	Jefferson	5,199
Flat River	D-6	St. Francois	5,308
Flordell Hills	C-6	St. Louis	1,214
Florissant	C-6	St. Louis	3,737
Fornfelt	E-7	Scott	1,539
Forsyth*	F-3	Taney	354
Frederick-town*	E-6	Madison	3,696
Frontenac	C-6	St. Louis	1,099
Fulton*	C-4	Callaway	10,052
Gainesville*	F-4	Ozark	309
Galena*	F-3	Stone	439
Gallatin*	B-2	Daviess	1,634
Gideon	F-7	New Madrid	1,754
Glasgow	C-4	Howard	1,440
Glendale	C-6	St. Louis	4,930
Granby	F-2	Newton	1,670
Grandview	C-2	Jackson	1,556
Grant City*	A-2	Worth	1,184
Greenfield*	E-2	Dade	1,213
Greenville*	E-6	Wayne	270
Hamilton	B-2	Caldwell	1,728
Hanley Hills	C-6	St. Louis	2,219
Hannibal	B-5	Marion	20,444
Harrison-ville*	C-2	Cass	2,530
Hartville*	E-4	Wright	526
Hayti	G-7	Pemiscot	3,302
Herculaneum	D-6	Jefferson	1,603
Hermann*	C-5	Gasconade	2,523
Hermitage*	D-3	Hickory	204
Higginsville	C-3	Lafayette	3,428
Hillsboro*	D-6	Jefferson	390
Hillsdale	C-6	St. Louis	2,902
Holden	C-2	Johnson	1,765
Houston*	E-4	Texas	1,277
Huntsville*	B-4	Randolph	1,520
Illmo	E-7	Scott	1,247
Independence*	C-2	Jackson	36,963
Ironton*	E-6	Iron	1,148
Jackson*	E-7	Cape Girardeau	3,707
Jefferson City*	C-4	Cole	25,099
Jennings	C-6	St. Louis	15,282
Joplin	E-2	Jasper	38,711
Kahoka*	A-5	Clark	1,847
Kansas City	C-2	Jackson	456,622
Kennett*	F-6	Dunklin	8,685
Keytesville*	B-3	Chariton	733
King City	A-2	Gentry	1,031
Kingston*	B-2	Caldwell	338
Kinlock	C-6	St. Louis	5,957
Kirksville*	A-4	Adair	11,110
Kirkwood	C-6	St. Louis	18,640
Ladue	C-6	St. Louis	5,386
LaGrange	A-5	Lewis	1,106
Lamar*	E-2	Barton	3,233
Lancaster*	A-4	Schuyler	856
LaPlata	A-4	Macon	1,331
Leadwood	D-6	St. Francois	1,479
Lebanon*	E-4	Laclede	6,808
Lees Summit	C-2	Jackson	2,554
Lexington*	C-2	Lafayette	5,074
Liberty*	B-2	Clay	4,709
Lilbourn	F-7	New Madrid	1,361
Linn*	D-5	Osage	758
Linneus*	B-3	Linn	513
Louisiana	B-5	Pike	4,389
Macon*	B-4	Macon	4,152
Malden	F-7	Dunklin	3,396
Maplewood	C-6	St. Louis	13,416
Marble Hill*	E-7	Bollinger	454
Marceline	B-3	Linn	3,172
Marionville	F-3	Lawrence	1,167
Marshall*	C-3	Saline	8,850
Marshfield*	E-3	Webster	1,925
Maryville*	A-1	Nodaway	6,834
Maysville*	B-2	DeKalb	973
Memphis*	A-4	Scotland	2,035
Mexico*	C-4	Audrain	11,623
Milan*	A-3	Sullivan	1,972
Moberly	B-4	Randolph	13,115
Monett	F-2	Barry	4,771
Monroe City	B-5	Monroe	2,093
Montgomery City*	C-5	Montgomery	1,679
Monticello*	A-5	Lewis	154
Morehouse	F-7	New Madrid	1,635

Town	Grid Location	County	Population
Mound City	A-1	Holt	1,412
Mountain Grove	E-4	Wright	3,106
Mount Vernon*	E-2	Lawrence	2,057
Neosho*	F-2	Newton	5,790
Nevada*	D-2	Vernon	8,009
New Franklin	C-4	Howard	1,060
New Haven	C-5	Franklin	1,009
New London*	B-5	Ralls	858
New Madrid*	F-7	New Madrid	2,726
Norborne	B-3	Carroll	1,114
Normandy	C-6	St. Louis	2,306
North Kansas City	C-2	Clay	3,886
Northwoods	C-6	St. Louis	1,602
Oakland	C-6	St. Louis	1,041
Odessa	C-2	Lafayette	1,969
Olivette	C-6	St. Louis	1,761
Oran	E-7	Scott	1,156
Oregon*	A-1	Holt	870
Osceola*	D-3	St. Clair	1,082
Overland	C-6	St. Louis	11,566
Owensville	D-5	Gasconade	1,946
Ozark*	E-3	Christian	1,087
Pacific	C-6	Franklin	1,985
Pagedale	C-6	St. Louis	3,866
Palmyra*	B-5	Marion	2,295
Paris*	B-4	Monroe	1,407
Parkville	C-2	Platte	1,186
Parma	F-7	New Madrid	1,163
Pasadena Hills	C-6	St. Louis	1,102
Peirce City	F-2	Lawrence	1,156
Perryville*	D-7	Perry	4,591
Piedmont	E-6	Wayne	1,548
Pine Lawn	C-6	St. Louis	6,425
Pineville*	F-2	McDonald	464
Platte City*	B-1	Platte	742
Plattsburg*	B-2	Clinton	1,655
Pleasant Hill	C-2	Cass	2,200
Poplar Bluff*	F-6	Butler	15,064
Portageville	F-7	New Madrid	2,662
Potosi*	D-6	Washington	2,359
Princeton*	A-3	Mercer	1,506
Rich Hill	D-2	Bates	1,820
Rock Hill	C-6	St. Louis	3,847
Richland	D-4	Pulaski	1,133
Richmond*	B-2	Ray	4,299
Richmond Heights	C-6	St. Louis	15,045
Rockport*	A-1	Atchison	1,511
Rolla*	D-5	Phelps	9,354
Salem*	E-5	Dent	3,611
Salisbury	B-3	Chariton	1,676
Sarcoxie	E-2	Jasper	1,042
Savannah*	B-1	Andrew	2,332
Sedalia*	C-3	Pettis	20,354
Senath	G-6	Dunklin	1,528
Seneca	F-2	Newton	1,195
Seymour	E-4	Webster	1,015
Shelbina	B-4	Shelby	2,113
Shelbyville*	B-4	Shelby	635
Shrewsbury	C-6	St. Louis	3,382
Sikeston	F-7	Scott	11,640
Slater	C-3	Saline	2,836
Springfield*	E-3	Greene	66,731
Stanberry	A-2	Gentry	1,651
St. Ann	C-6	St. Louis	4,557
St. Charles*	C-6	St. Charles	14,314
St. Clair	D-5	Franklin	1,779
Steele	G-7	Pemiscot	2,360
Steelville*	D-5	Crawford	1,157
Ste. Genevieve*	D-6	Ste. Genevieve	3,992
St. James	D-5	Phelps	1,811
St. John	C-6	St. Louis	2,499
St. Joseph*	B-1	Buchanan	78,588
St. Louis	C-6	St. Louis	856,796
Stockton*	E-2	Cedar	811
Sugar Creek	C-2	Jackson	1,858
Sullivan	D-5	Franklin	3,019
Sweet Springs	C-3	Saline	1,439
Tarkio	A-1	Atchison	2,221
Thayer	F-5	Oregon	1,639
Tipton	C-4	Moniteau	1,234
Trenton*	A-3	Grundy	6,157
Troy*	C-5	Lincoln	1,738
Tuscumbia*	D-4	Miller	221
Union*	D-5	Franklin	2,917
Unionville*	A-3	Putnam	2,050
University City	C-6	St. Louis	39,892
Valley Park	C-6	St. Louis	2,956
Van Buren*	F-5	Carter	708
Vandalia	B-5	Audrain	2,624
Velda Village Hills	C-6	St. Louis	1,527
Versailles*	D-3	Morgan	1,929
Vienna*	D-4	Maries	471
Vinita Park	C-6	St. Louis	1,801
Warrensburg*	C-3	Johnson	6,857
Warrenton*	C-5	Warren	1,584
Warsaw*	D-3	Benton	936
Washington	C-5	Franklin	6,850
Waynesville*	D-4	Pulaski	1,010
Webb City	E-2	Jasper	6,919
Webster Groves	C-6	St. Louis	23,390
Wellston	C-6	St. Louis	9,396
Wellsville	C-5	Montgomery	1,519
Wentzville	C-6	St. Charles	1,227
Weston	B-1	Platte	1,067
West Plains*	F-5	Howell	4,918
Willow Springs	F-4	Howell	1,914
Windsor	C-3	Henry	2,429

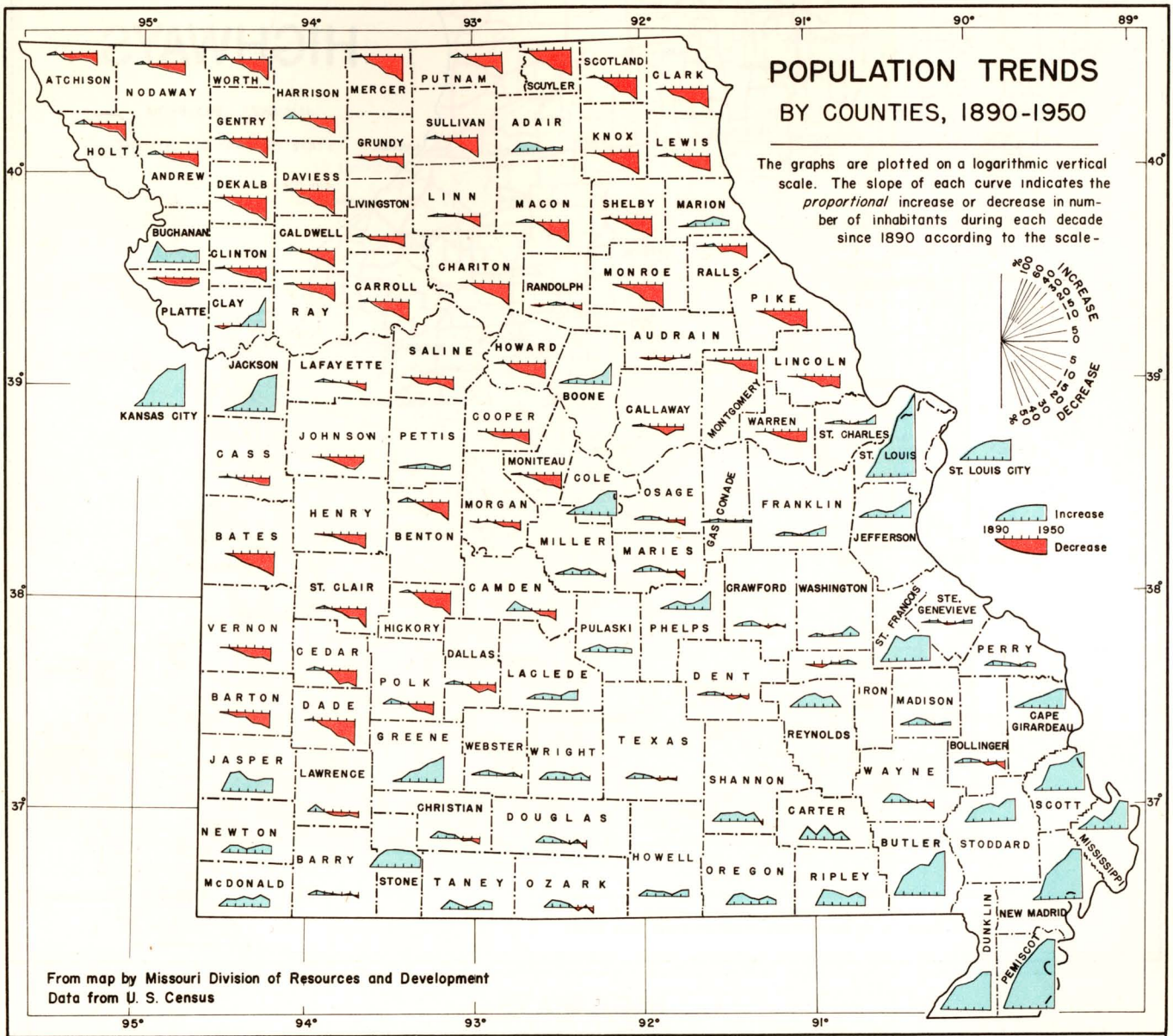


POPULATION AND POPULATION TRENDS

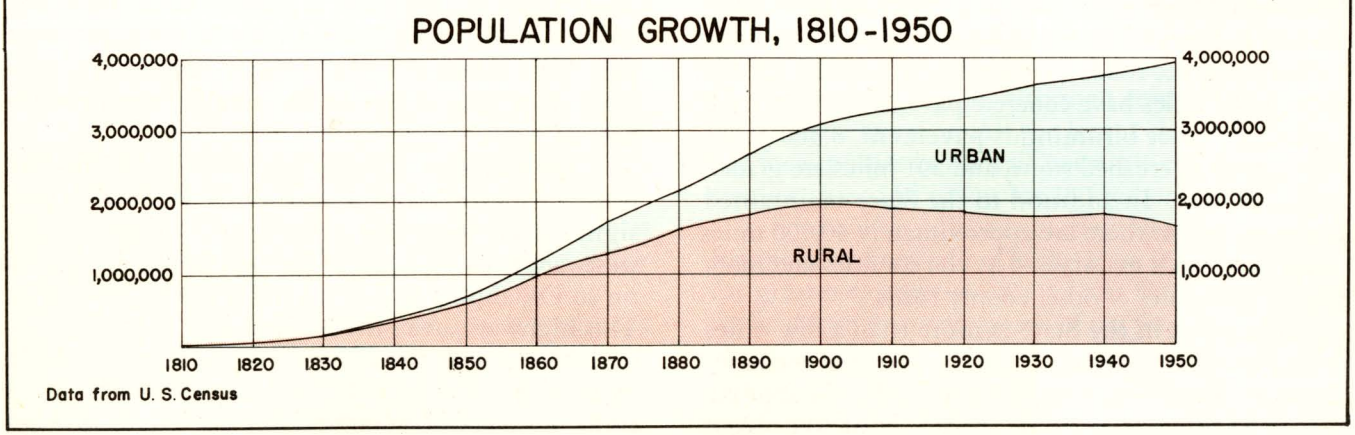
Missouri had a total population of 3,954,653 in 1950. The number increased steadily from early settlement, especially after admission to Statehood in 1821 The rate of growth has declined in recent decades, however. The rural population is about evenly distributed over the State, with a slightly lower density in the roughest areas of the Ozarks. More than three-fourths of the urban population is found in the four largest cities.

A conspicuous trend has been the great increase in urban dwellers, and the accompanying relative decline in rural population. From two small cities containing one-eighth of the State's population in 1850, the number grew to 50 cities with one-third of the inhabitants in 1900, and to 108 cities with nearly three-fifths of the population in 1950.

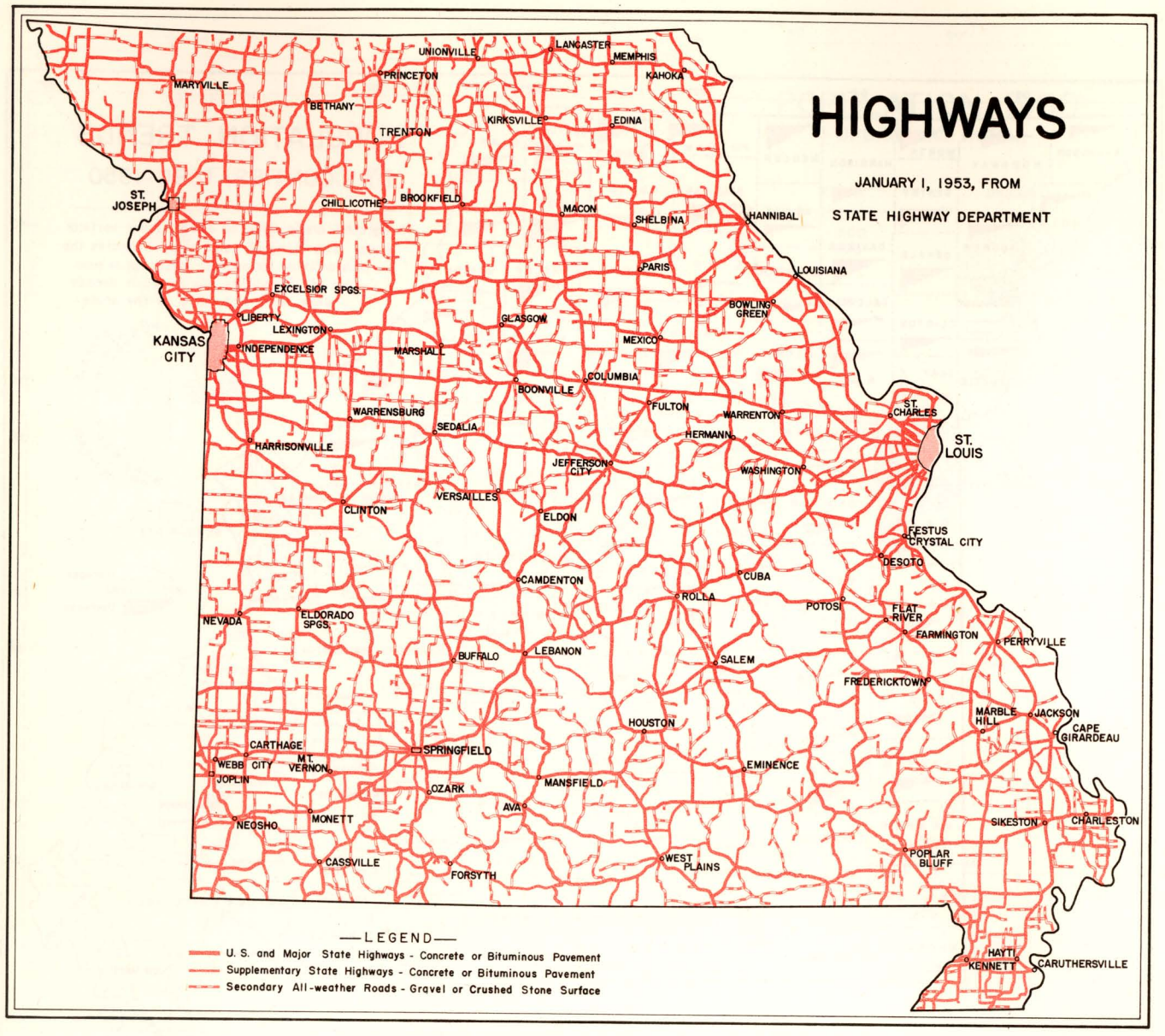
Most of the counties have experienced a decline in population in recent decades and more than one-half of them have fewer people than 60 years ago. Only counties containing cities of considerable size have shown an important upward trend in total population. In the northwestern half of the state, all counties without major cities have fewer people than in 1890. Most of the Ozark counties have maintained their numbers and a few with cities (i.e., Greene and Cape Girardeau) have increased. The six counties of the southeast are the only rural counties to show strong upward trends.



From map by Missouri Division of Resources and Development
Data from U. S. Census



Data from U. S. Census



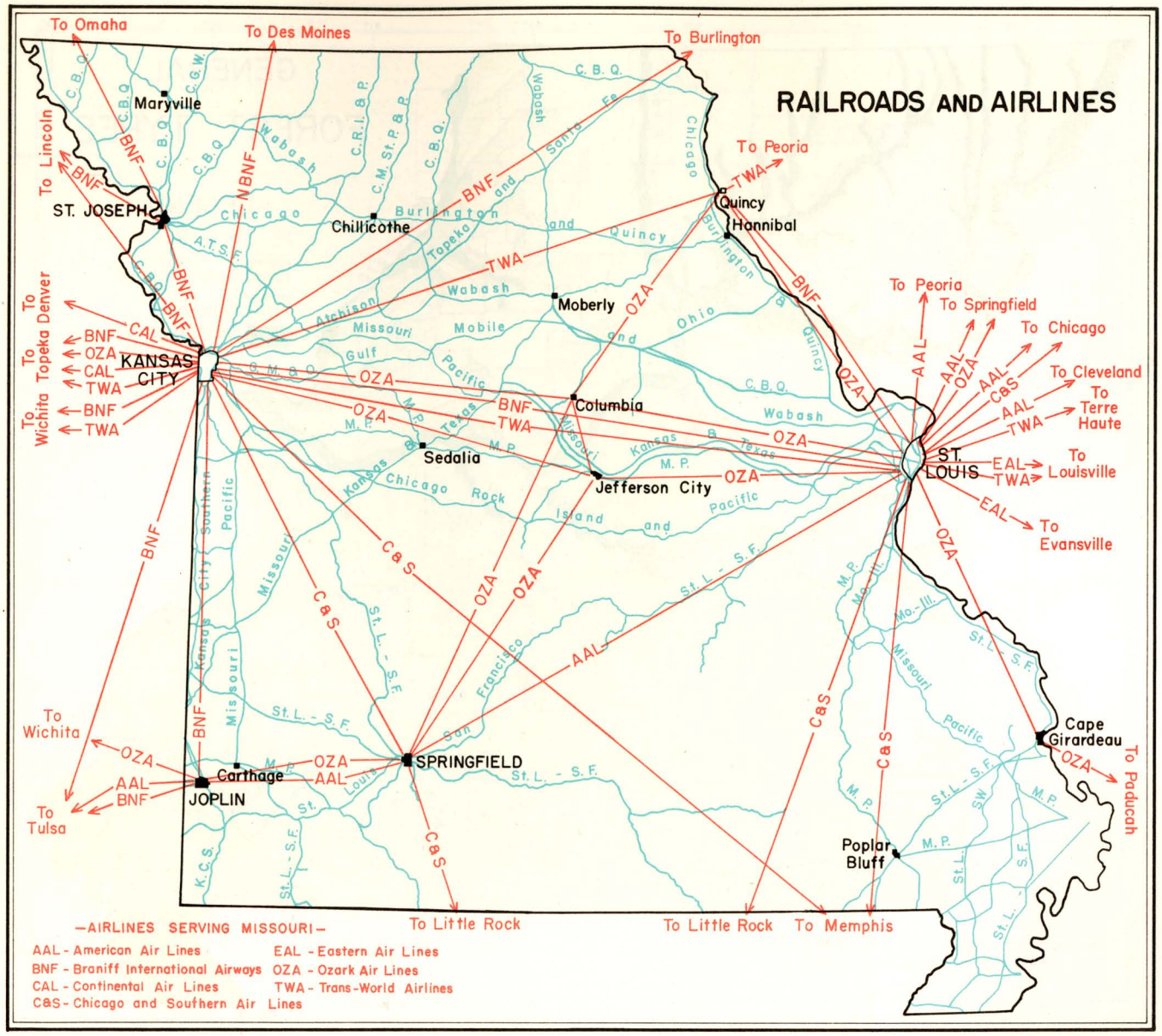
HIGHWAYS

Missouri has more than 20,000 miles of State-maintained highways, including 7,536 miles of major system routes and 11,663 miles of supplementary or farm-to-market roads (December 31, 1952). Of the total, 3,264 miles have concrete pavement, 7,976 have asphalt or other bituminous pavement, 8,300 miles have gravel or crushed stone, and 291 miles are graded and oiled dirt. In addition to the State-maintained highway system there are approximately 40,000 miles of surfaced roads maintained by the counties and more than 43,000 miles of other county roads.

No point in the State is more than a few miles from a modern highway. About one-sixth of the farmsteads are located on hard-surfaced roads, and approximately 50 per cent on gravel roads. About 30 per cent are on dirt roads, according to the 1950 Census.

The network of highways is most dense and coverage is best in the vicinity of major cities and in areas where cities and towns are most numerous. The distance between good roads is greatest in the hilly areas of the Ozark region, particularly in the east central part. This distance is not of major importance, however. Few people live in the area between the improved roads.

The direction of major highways across the State is north-south and east-west. Only U. S. 66 departs significantly from this pattern, as it extends southwestward from St. Louis to Springfield and Joplin, and on to Oklahoma and other states of the Southwest. This highway carries the heaviest flow of traffic of any in the State, with the average daily number of vehicles exceeding 5,000. U. S. 40 carries the second heaviest traffic with about 3,000 vehicles per day. U. S. highways 36, 24, 50, and 60 are the other major east-west interstate highways, while highways 71, 65, 63 and 61 are major north-south arteries of travel.



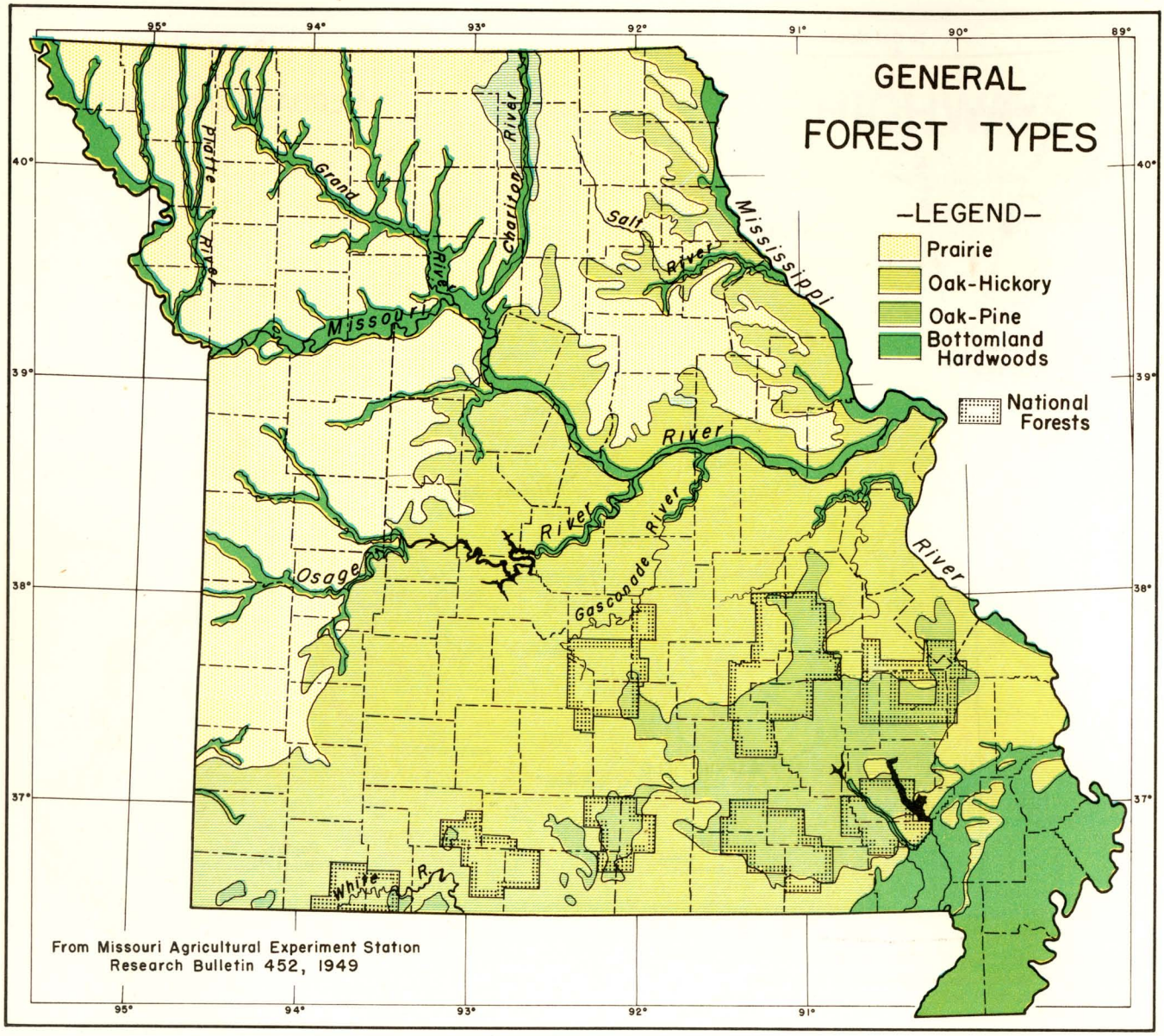
RAILROADS AND AIRLINES

The larger cities of Missouri are served by seven major airlines operating scheduled service over approximately 1,600 miles of air routes. The two largest, St. Louis and Kansas City, are major terminals on a nation-wide system of airlines, while smaller cities are served by regional connecting or feeder lines. Approximately 80 companies provide charter air service from public airports. More than 90 cities and towns in the State have public airports, and there are many private landing fields.

Missouri has 8,117 miles of major railroads (December 31, 1951). The 15 major roads have 3,127 additional miles of passing and switching tracks, including yards for switching and storing cars. In addition to these major roads, eight local roads have 62½ miles of track, and nine switching and terminal companies have a total of 372 miles of road in operation.

A moderately dense network of railroads covers the State except in the Ozark region. Only two lines, both following broad upland drainage divides, cross the heart of the region, although several traverse the less rugged margins. All the larger cities of the State are focal points in the rail network and most of the smaller cities and towns are located on railroads.

The major railroads carried 56 million tons of freight to or from points in the State in 1950. Probably far greater quantities crossed the State in interstate traffic. More than one-fourth of the freight originating at or destined for locations in Missouri consisted of agricultural products, including livestock and livestock products. One-third of the total consisted of mine products and one-third of manufactured goods, including processed agricultural products, farm implements and machinery, and many other commodities produced or consumed on Missouri farms.

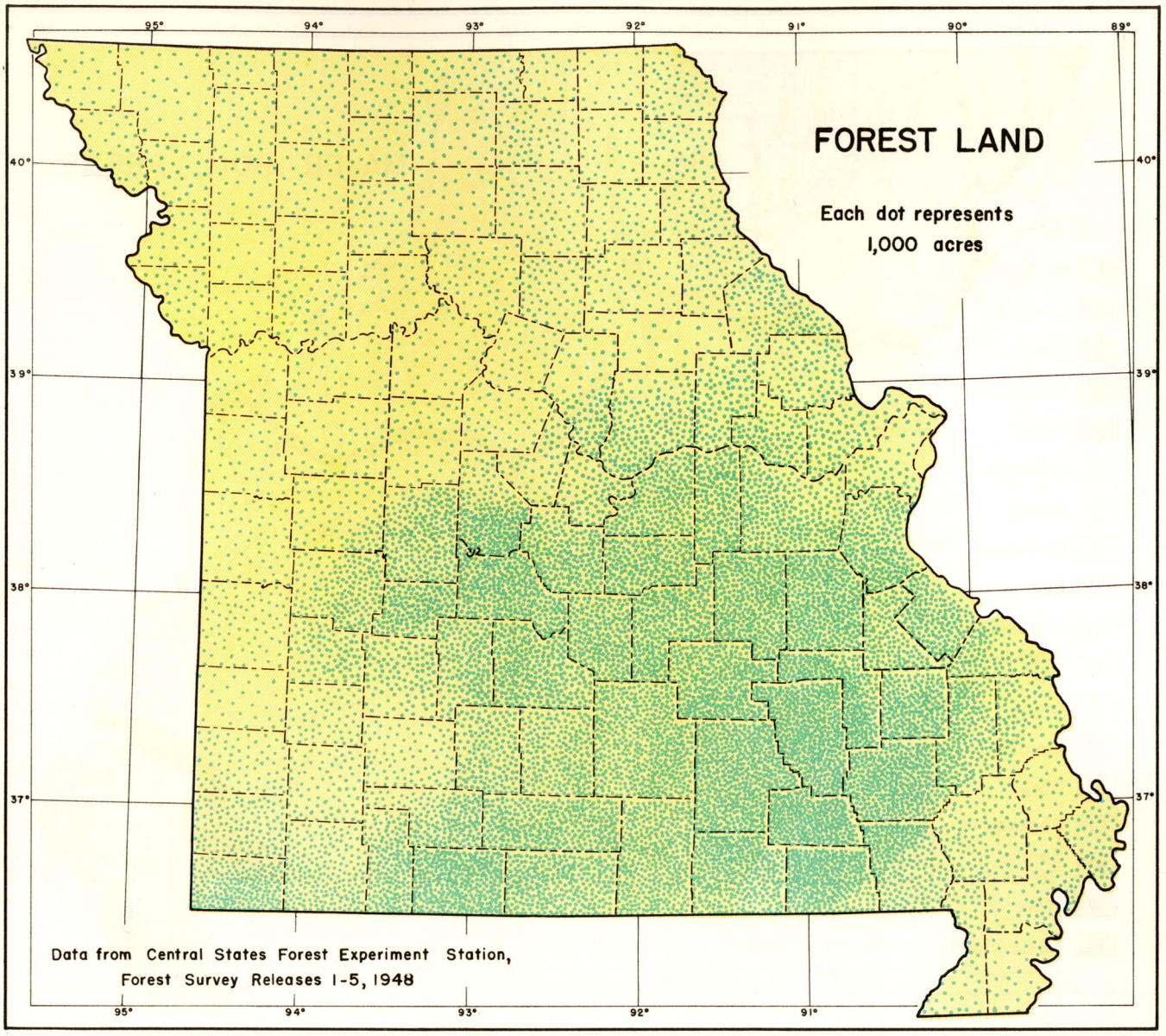


FOREST TYPES

Forests once covered more than two-thirds of Missouri. Today they occupy approximately 15 million acres, about one-third of the land area of the State and one-half the originally forested area. Although badly abused, the forests are capable of contributing greatly to the economy of the State. Because of poor stand, they now produce only 20 per cent of Missouri's demand for wood products. In other words, four-fifths of the wood used in Missouri must be imported from other parts of the country. Properly rehabilitated, the present forest land could produce virtually all of the wood needed in the State. It has been estimated that if the forests were reasonably productive, they would provide employment for approximately 100,000 workers. Missouri obviously has a tremendous asset in its forest resources which, if properly developed, would play a more vital part in the State's economy.

Two-thirds of the existing forest area is in the Ozark region. The remainder is scattered over the State in small tracts along river breaks and bottomlands, and in thousands of farm woodlots, usually on the rougher farm land. Much of the northern and western parts of the State was originally prairie land, with trees only in the valleys. Only 13 per cent of the prairie region is now forested. More than 70 per cent of the eastern Ozarks is forested. Most of the forest land is privately owned and is about evenly divided between farm and non-farm owners.

Clark and Mark Twain National Forests contain 8 per cent of the total timbered area. Oak species are dominant on more than 80 per cent of this land, and occur in mixtures with a large number of other species. The oak-hickory forest type is dominant in all regions and occurs on approximately ⅔ of the forest land. Oak-pine types account for 7%.

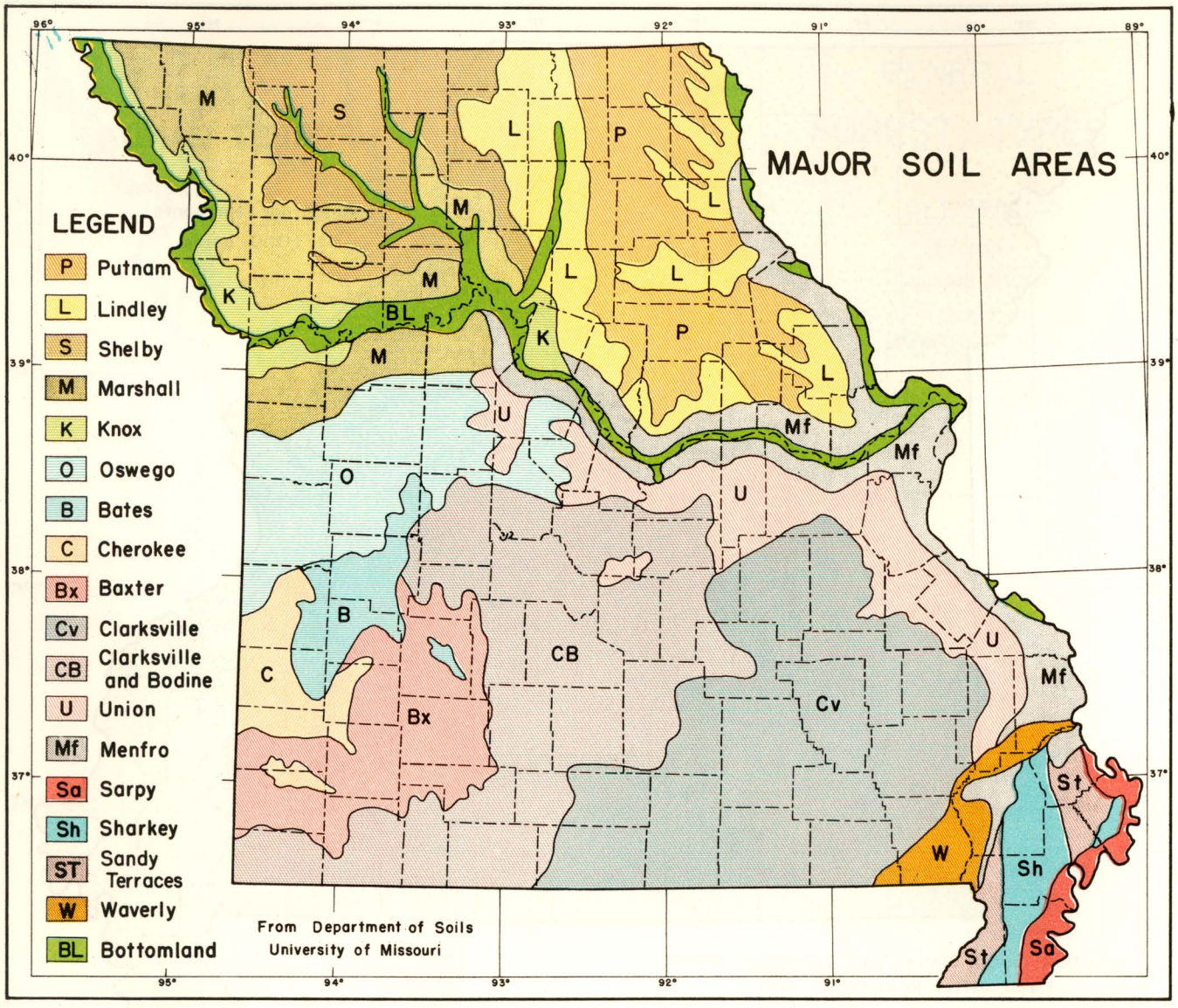


FOREST LAND

Most of the forest area of the State has been cut over and most stands are immature. Only 14 per cent supports saw-timber stands. Pole-timber stands are found on 43 per cent, seedlings and saplings on 32 per cent, and poorly stocked stands on 12 per cent. Since immature stands occupy more than 85 per cent of the forest land, the level of forest productivity attainable in the future depends largely on care and treatment.

The net volume of saw-timber growing stock is about 12 billion board feet, 790 board feet per acre. Only 5 per cent of the land supports stands of more than 3,000 board feet per acre, while 10 per cent exceeds 2,000. White oak, the most abundant species, makes up more than 20 per cent of the total net volume. The combined oak species comprise more than 63 per cent of all saw-timber growing stock. Six per cent of the total are softwoods, two-thirds of which are shortleaf pine, found primarily in the eastern Ozarks.

The net volume of annual growth on the saw-timber growing stock is approximately 670 million board feet, about 45 board feet per acre. The average net growth per acre ranges from 38 board feet in the interior Ozark region to 59 board feet in the northern and eastern Ozark border areas. The net volume of annual growth on the total growing stock, saw timber and pole timber combined, is about 186 million cubic feet, an average of about 12 cubic feet per acre. The net volume of growth is low primarily because of understocking and unfavorable soil conditions. The future level of productivity depends largely upon the care and treatment given the forests. Under good management the timbered area might ultimately produce three times the present volume of growth.



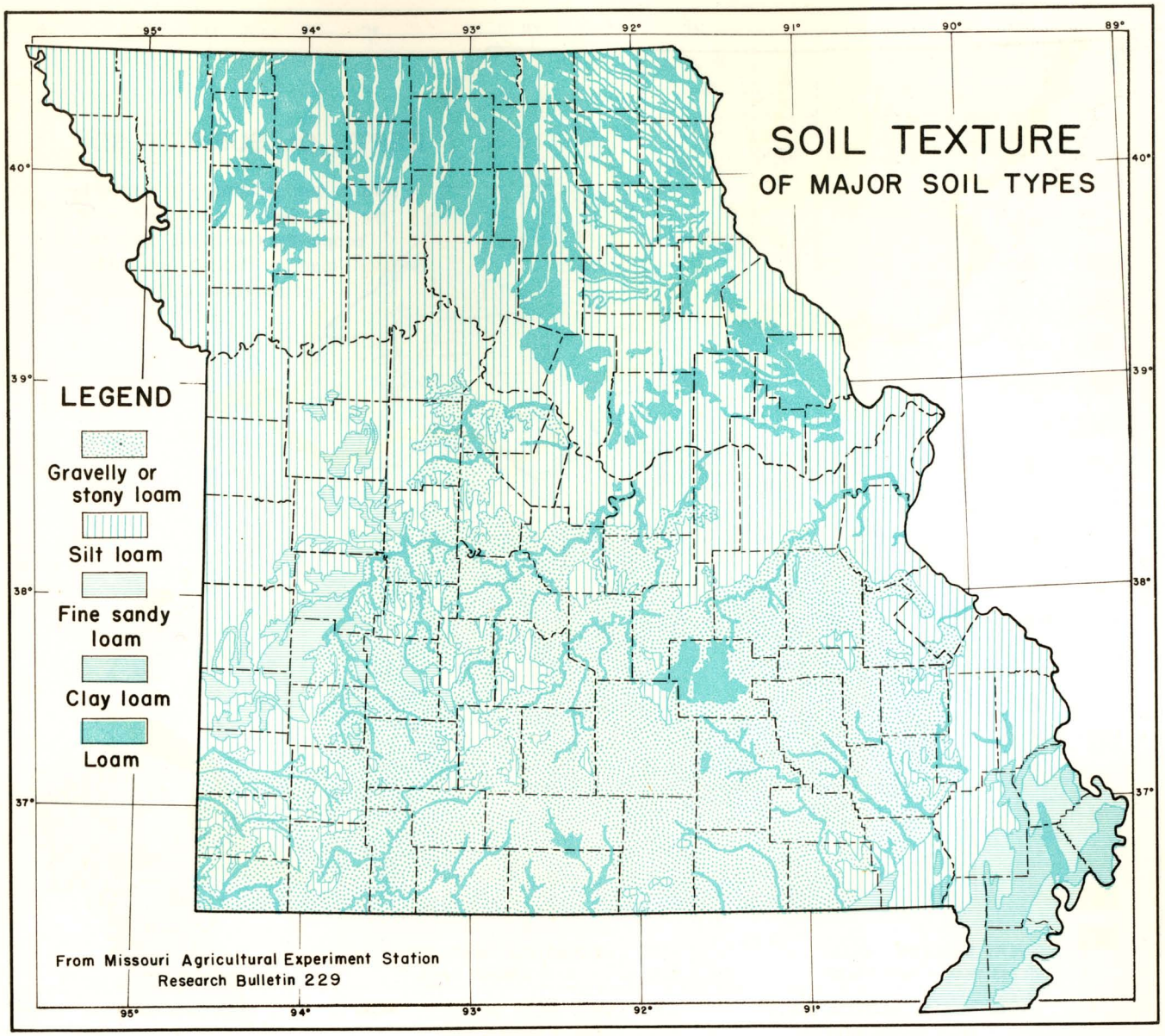
MAJOR SOIL AREAS

Missouri's soils are her most valuable resource. They are diverse in physical properties and fertility, and in management practices needed. They are derived from four major types of materials: loess, glacial till, alluvium, and bedrock. In the Ozark region bedrock is largely cherty limestone and dolomite, which tends to produce gravelly or stony soils low in fertility. The most important soil forming materials in the prairie region of southwestern Missouri are shales. The variety of soils is due in part to variations in parent materials, which range from fine sand to clay and from acid to calcareous in reaction.

Glacial till, consisting of clay with a small admixture of sand and gravel, is the important soil forming material of the northern half of the State, except where the surface is mantled with wind-deposited loess. Soils derived from glacial materials are moderately productive but they vary in their fertility.

A blanket of wind-blown dust, or loess, was spread over much of Missouri during the glacial period. Loess occurs in greatest thickness along the Missouri and Mississippi rivers, particularly in the northwestern part of the State where it attains depths of 50 to 75 feet or more. Recognized by its distinctive brown color and uniform texture, loess forms some of the most productive soils of the State. Marshall, Knox and Menfro soils are developed on relatively thick loess and other soils from thinner loess overlying till or bedrock. Bands of alluvium occupy the bottomlands of the larger streams and form another area of productive soils.

The complex pattern of soil series and types is related to various combinations of parent materials, cover of vegetation, and topographic situations.



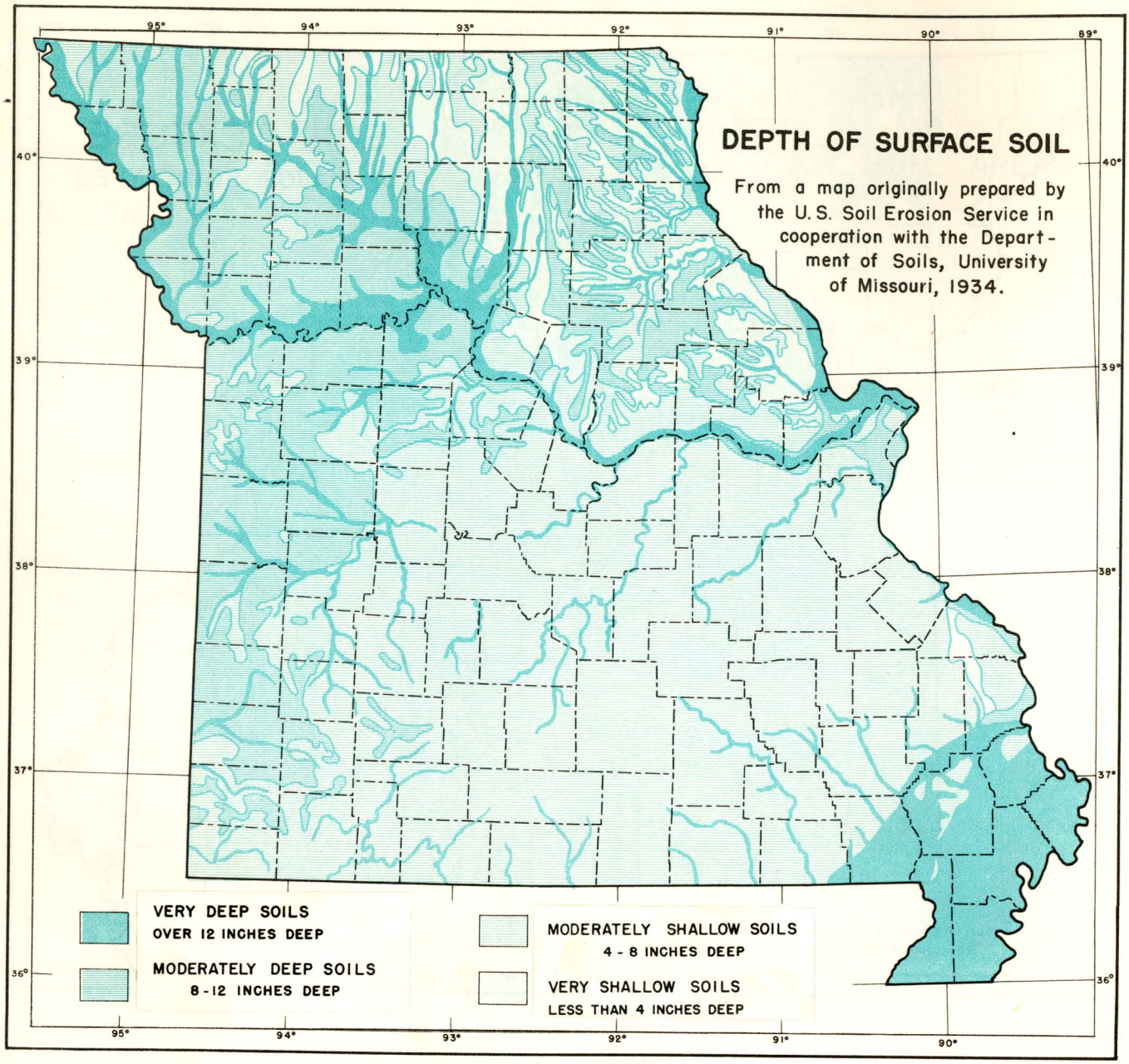
SOIL TEXTURE

Missouri's soils are relatively uniform in texture of the surface portion. Silt loam or loam textures characterize more than 90 per cent of upland soils. This predominance of medium textures is of great significance because it is the soils of this type that have the most favorable moisture-holding capacity, best tilth, and widest crop adaptations.

Wide ranges of texture from plastic clay to loose sand occur in the bottomlands. Most of the soils of the Ozark region contain chert and are gravelly or stony, but, if only the fine material is considered, the silty texture is apparent. Moderately sandy soils occur in the southwest and locally in the Ozarks.

The texture and other features of subsoils are, in general, more variable than those of the surface soils. The majority of the upland soils have a heavy or clay-like subsoil. This condition may be very important where erosion is active and may limit the range of crop adaptations. It is favorable to the retention of water in ponds, but reduces absorption and increases runoff. Clay subsoils are characteristic of the soils derived from glacial till and from shales. Stony subsoils are peculiar to most of the Ozark region.

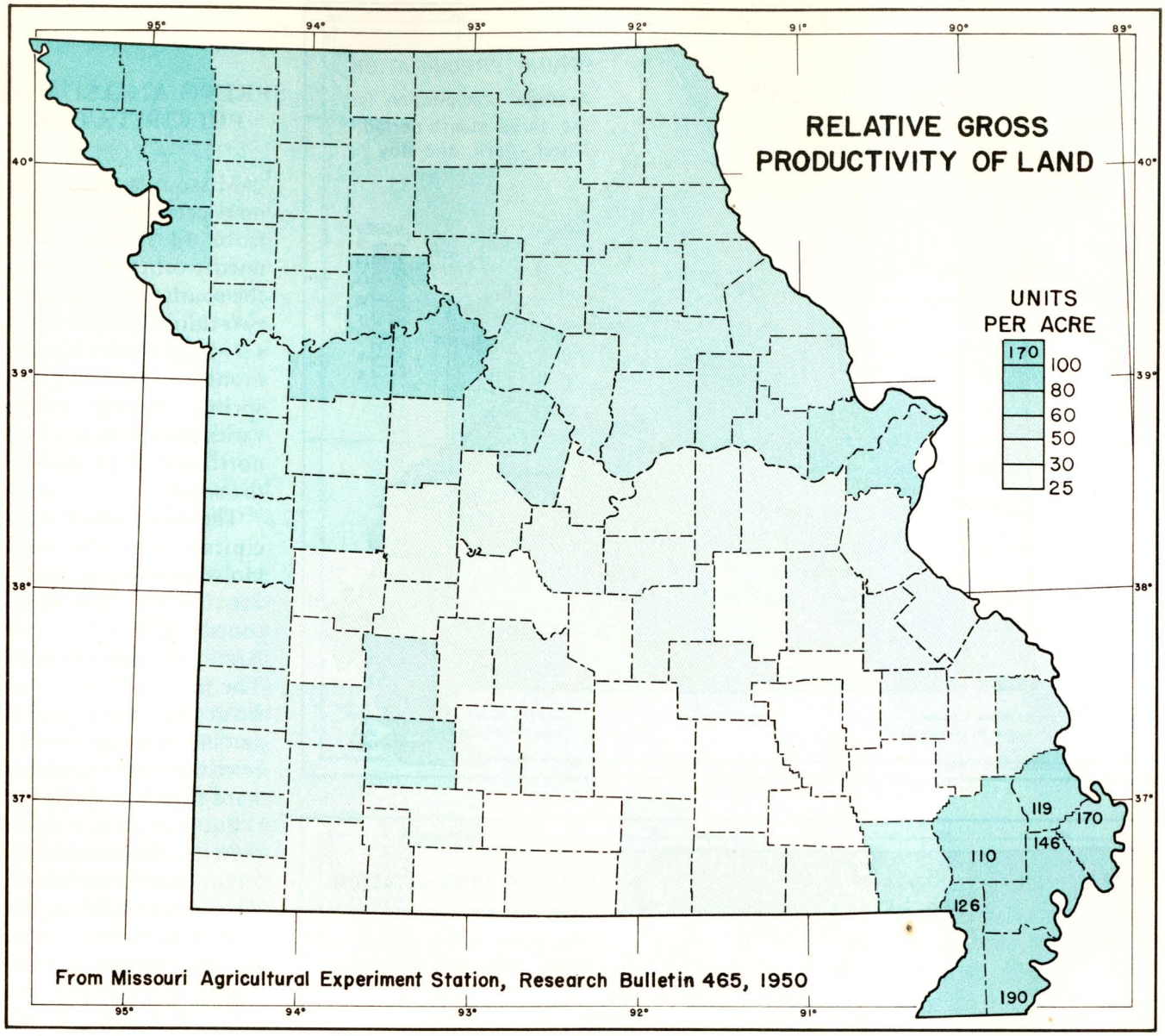
Some of the level prairies of northeastern and southwestern Missouri have distinct, dense clay subsoils about 12 inches thick at depths of 16 to 18 inches. This "claypan" rarely occurs where the slope of the land is more than 6 per cent. It retards the downward movement of water and is unfavorable to root penetration. Some of the Ozark ridgetop land has a cemented "hardpan" stratum in the lower subsoil associated with low soil fertility and poor crop growth.



DEPTH OF SURFACE SOIL

The depth of the surface or topsoil ranges from 1 to 3 feet for most alluvial or bottomland soils to 4 inches or less on some of the most severely eroded hillsides. Most of the loess-derived, dark prairie soils in the northwest are 18 inches or more in thickness. Approximately 10 inches is the normal depth throughout the northeastern, central and southwestern sections of the State. Six to 8 inches of topsoil characterize most of the soils of the Ozark region. The deepest soils are found in the Southeastern Lowland and on the bottomlands of the Missouri and Mississippi rivers. The deepest upland soils are in the northwest and west-central parts of the State, although moderately deep topsoils, from 8 to 12 inches, also occur on level uplands in the northeast and southwest. The very shallow soils of the State are the severely eroded glacial soils of the hillsides in the northeastern and north-central parts.

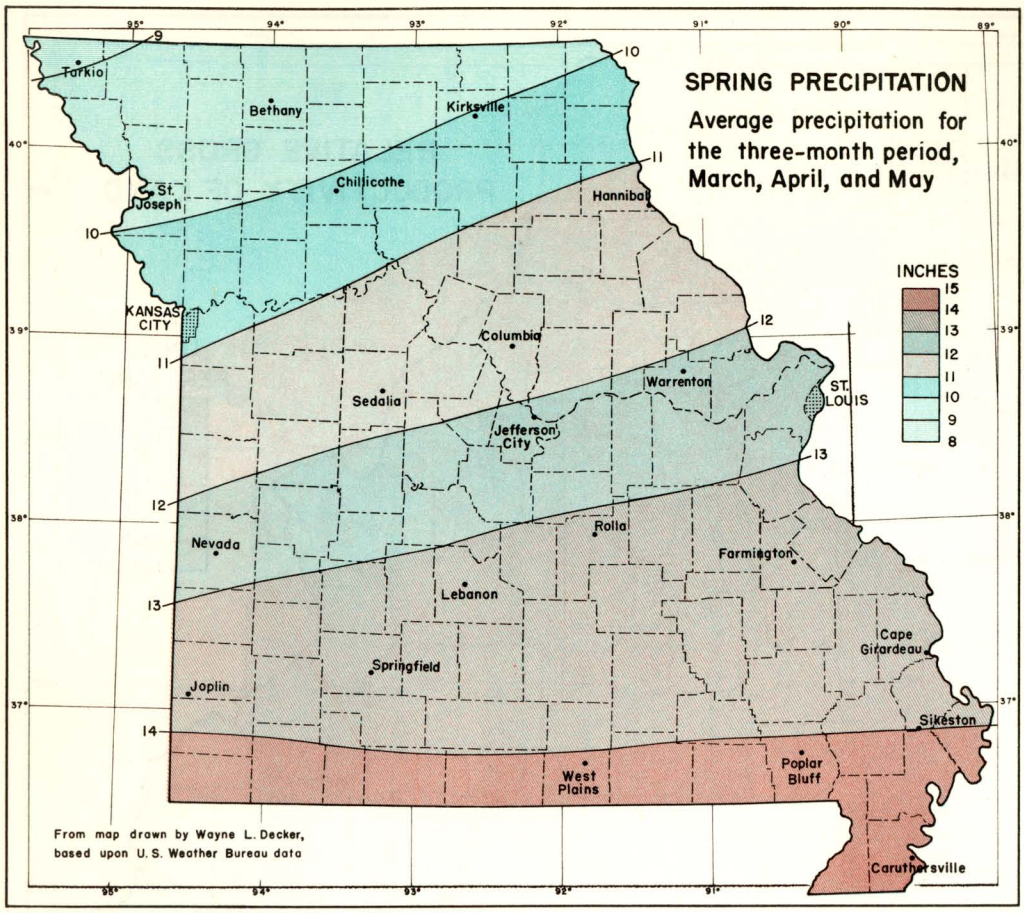
On many slopes, where soil erosion has been active, the original surface soil has been reduced in depth. The depth of soils in the valleys has been increased. The deep soils of the loess hills bordering the Missouri and Mississippi rivers are the most severely eroded of the State. The dissected land of northern Missouri includes many slopes from which much of the surface soil has been removed, and in some areas the subsoil has been exposed. The effect of erosion upon the glacial soils is more striking because of the comparatively shallow surface soils. Erosion has been least active in the southern half of the State.

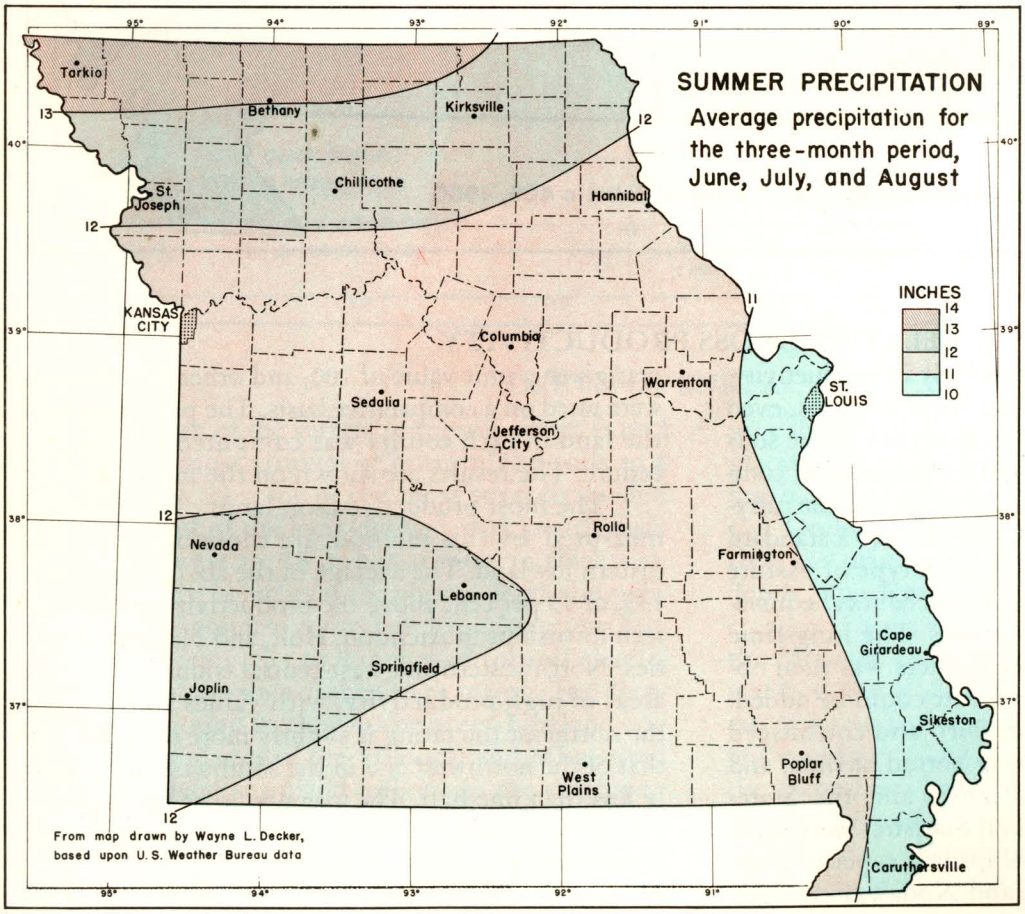


RELATIVE GROSS PRODUCTIVITY

Missouri farm land varies widely in productivity. Marked differences occur in the yield of crops, even within individual fields. The productivity of the soils of the state has been determined for purposes of comparison by converting the yield of crops and the carrying capacity of pastures in sample areas to a standard unit of measure. Each crop and each type of pasture was converted into corn and cottonseed meal equivalents on the basis of energy values. The long-time average dollar value of these products was then obtained so such items as cotton lint could be added. Reliable price quotations for corn and cottonseed meal were available over a long period of time, and yields reported by the U. S. Census and the State-Federal Division of Agricultural Statistics were used. The productivity of 14 townships in a superior cropland area in Atchison, Holt, and Nodaway counties was given a unit value of 100, and other sample areas were rated on a comparative basis. The productivity of the land in each county was computed by this procedure. The results are shown on the map.

The most productive farm lands of the State, as measured by this method, are those of the southeastern lowland. The average of the six-county area is 143, or 43 per cent above the productivity of the fourteen townships in Atchison, Holt, and Nodaway counties. Northwestern and west-central counties are other areas of high productivity, with values above 75. In the northeast the rating is slightly more than one-half that of the northwest and in the southwest it is slightly less than one-half. The average gross productivity per acre of land in the Ozark region is only one-fourth to one-third that of the northwest.





SPRING AND SUMMER PRECIPITATION

Missouri's average annual precipitation varies from 34 inches in the northwest to 50 inches in the southeast. One-half to two-thirds falls during the spring and summer months. During the spring, average rainfall varies from 9 inches in the northwest to 14 inches in the south.

The major source of precipitation is the warm, moist air from the Gulf of Mexico which comes in contact with the cold Arctic air from the north. The moist air thus comes from the south and the amount of precipitation received decreases northwestward from the source.

Summer rains exhibit a pattern of distribution different from other seasons. The amount increases from southeast to northwest, but the increase is only 2 inches instead of 5 as in spring. The total precipitation is about the same in the two seasons, but distribution over the State is more even in summer.

Most of the rain during summer comes as heavy thundershowers of short duration, while the rains of spring are lighter and of longer duration.

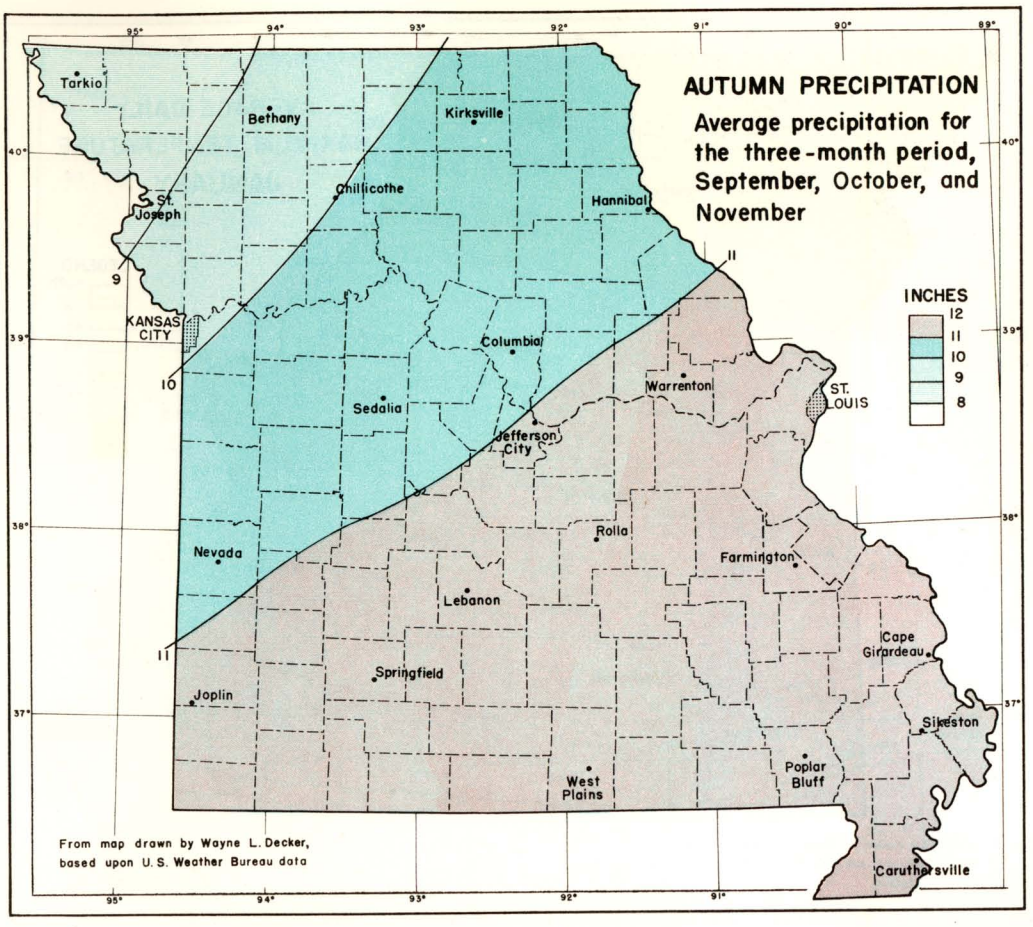
Precipitation is also more likely to vary in summer from year to year than during other seasons, since the interaction of contrasting air masses is less pronounced and the air masses may be drier.

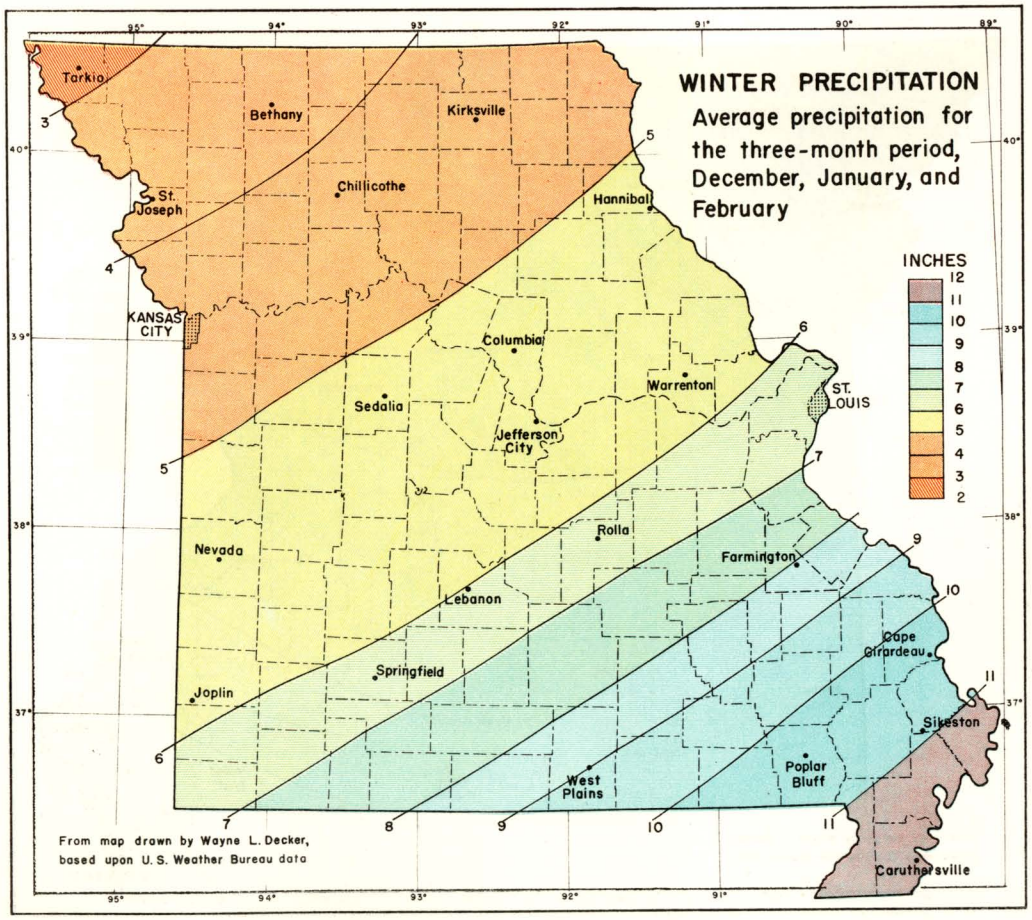
AUTUMN AND WINTER PRECIPITATION

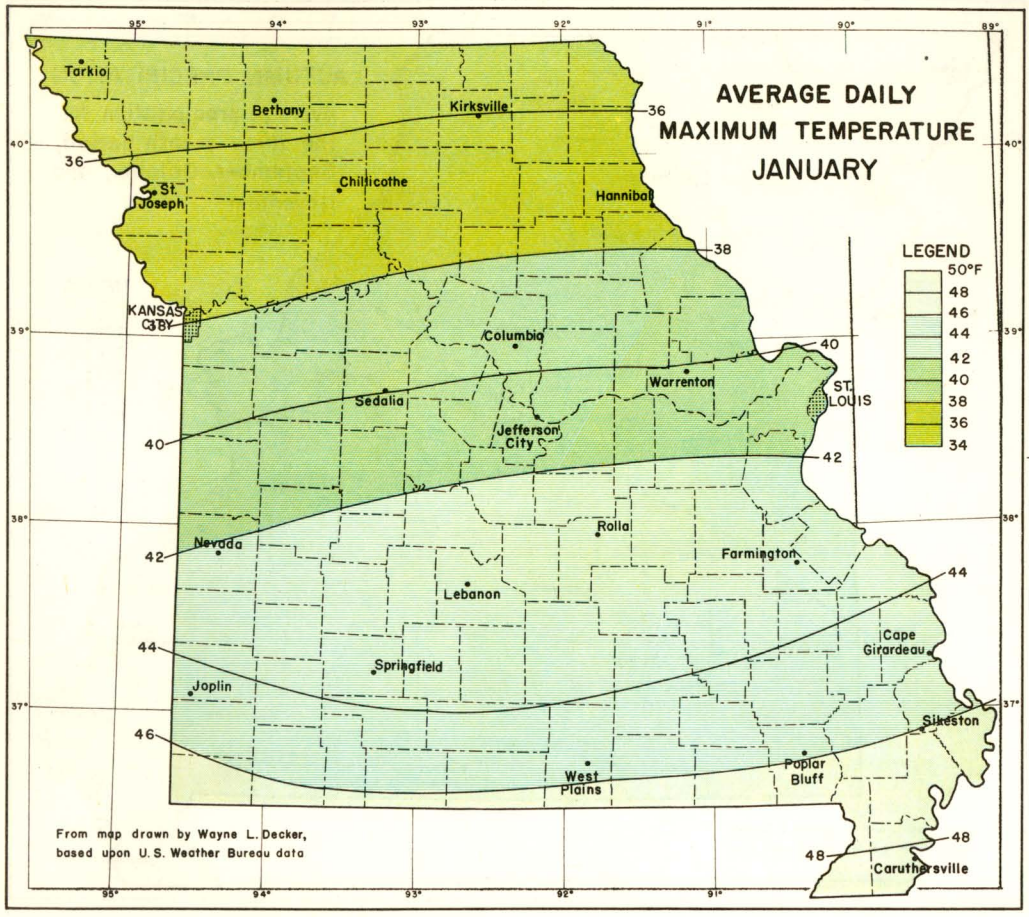
Autumn is a season of variable precipitation in Missouri, but the average ranges from 9 inches in the northwest to 11 inches in the southeastern half of the State. The nothwestward decrease indicates the return of moisture-laden winds from the south and of increasing frequency of cool air invasions from the northwest

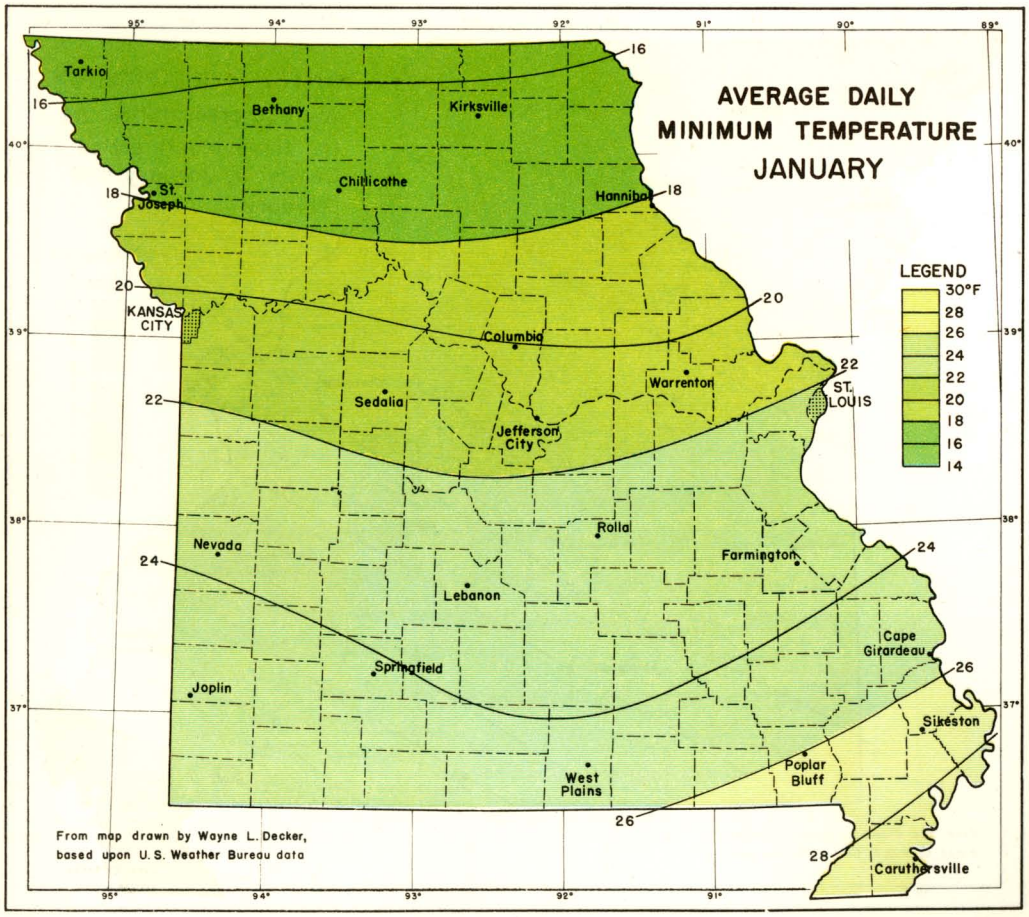
The northwestward decrease in precipitation is most pronounced during the three winter months of December, January, and February when the contrast in air mass temperatures is greatest. Under the dominance of cold, dry air masses, northwestern Missouri receives only 3 to 4 inches, while the warm Gulf air gives the southeast 10 inches or more.

The contrast in snowfall is even greater. The northern margin of the State recieves an average of 14 inches of snowfall during the three winter months, but the southeast averages less than one-half as much. This is the reverse of the distribution of total precipitation over the State in every season except summer. Moreover, much more of the total annual precipitation occurs in the form of snow in the northwest than in the southeast. This is a logical result of the higher temperatures of the southeast.









The climate of Missouri is highly variable. Average or mean conditions inadequately reveal the details. The low temperatures of January nights average 28° F. in southeast Missouri, but many nights are much colder or much warmer. The low in the north averages 16°, but many winter nights go below zero. Across central Missouri the average minimum is 20° to 22°.

The daily maximum temperature in January ranges from 48° F. in the southeast to 36° in the north, with a State average of perhaps 40°. On many winter days, however, the thermometer never gets above freezing, even in southern Missouri, while on a great many others it does not go below freezing.

On the average day in January, the temperatures in southeastern Missouri range from 28° F. at night to 48° during the day. These extremes are usually experienced during the early morning hours, four or five o'clock, and in the early afternoon. In the north, the average ranges from a low of 16° to a high of 36°.

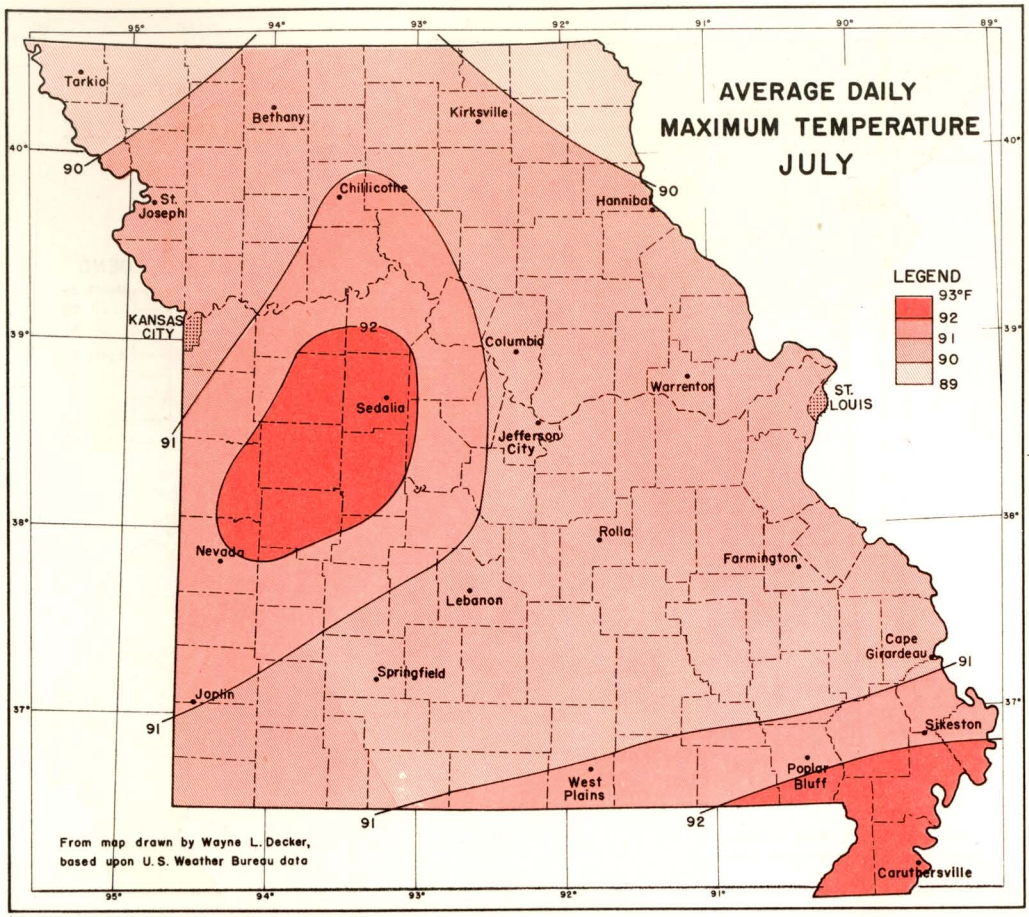
Missouri is subject to periodic invasion by cold Artic masses of air during winter which may plummet the thermometer from the mild 50's or 60's during a sunny winter afternoon to zero or below within a few hours. Persistent cold masses of air may keep the temperature below freezing for several days.

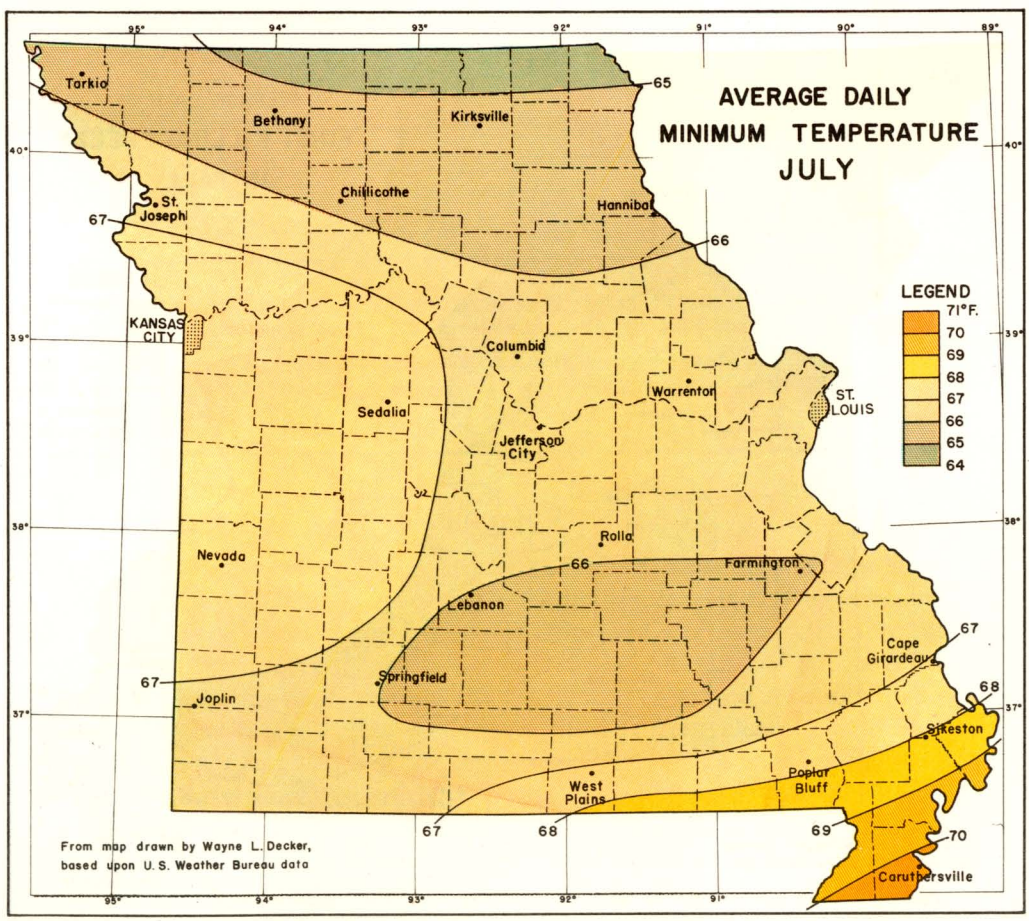
During July the average minimum temperatures are in the upper 60's in Missouri, except in the southeasternmost "Boot Heel" where they reach 70°. The coolest nights occur along the northern margin of the State where 65° is the average minimum. The central Ozarks are the coolest part of the southern half of the State. Minimum temperatures there average 66° or lower during July, and many nights are cooler.

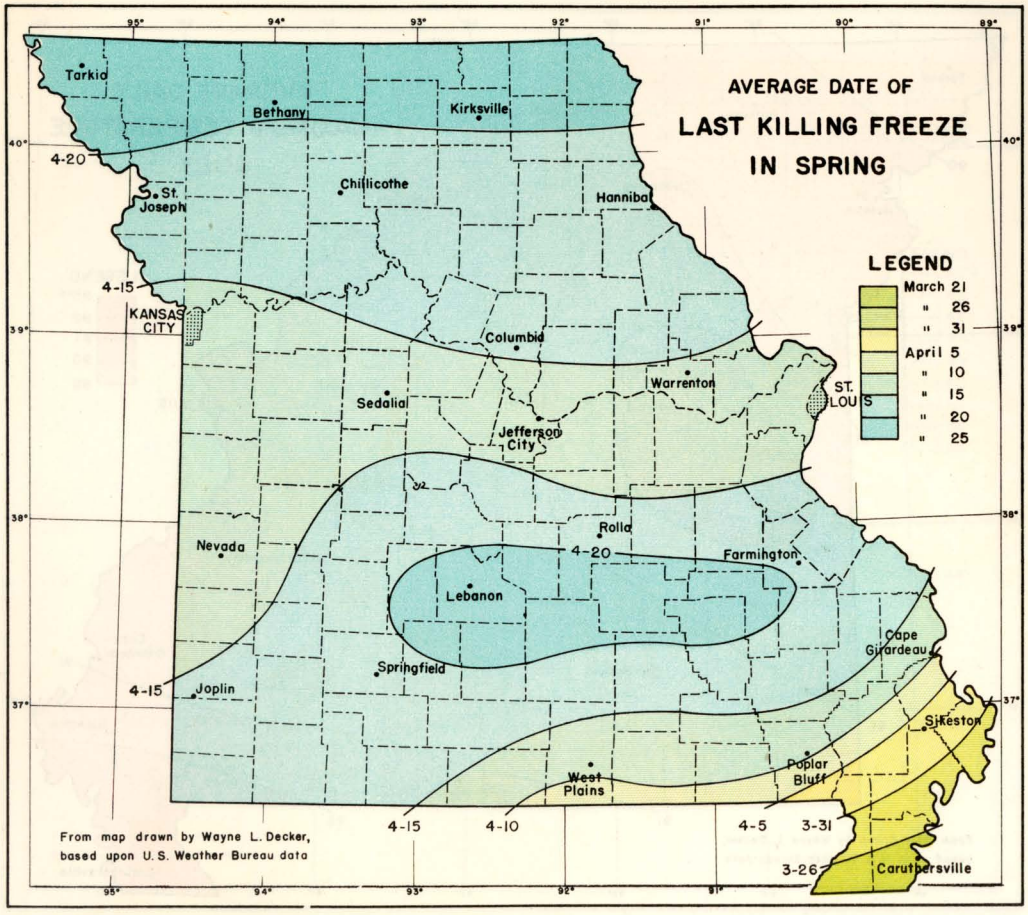
Minimum temperatures in the westcentral part of the State are as high as in the south. Early August is as hot as July in Missouri, but the monthly average is usually lower.

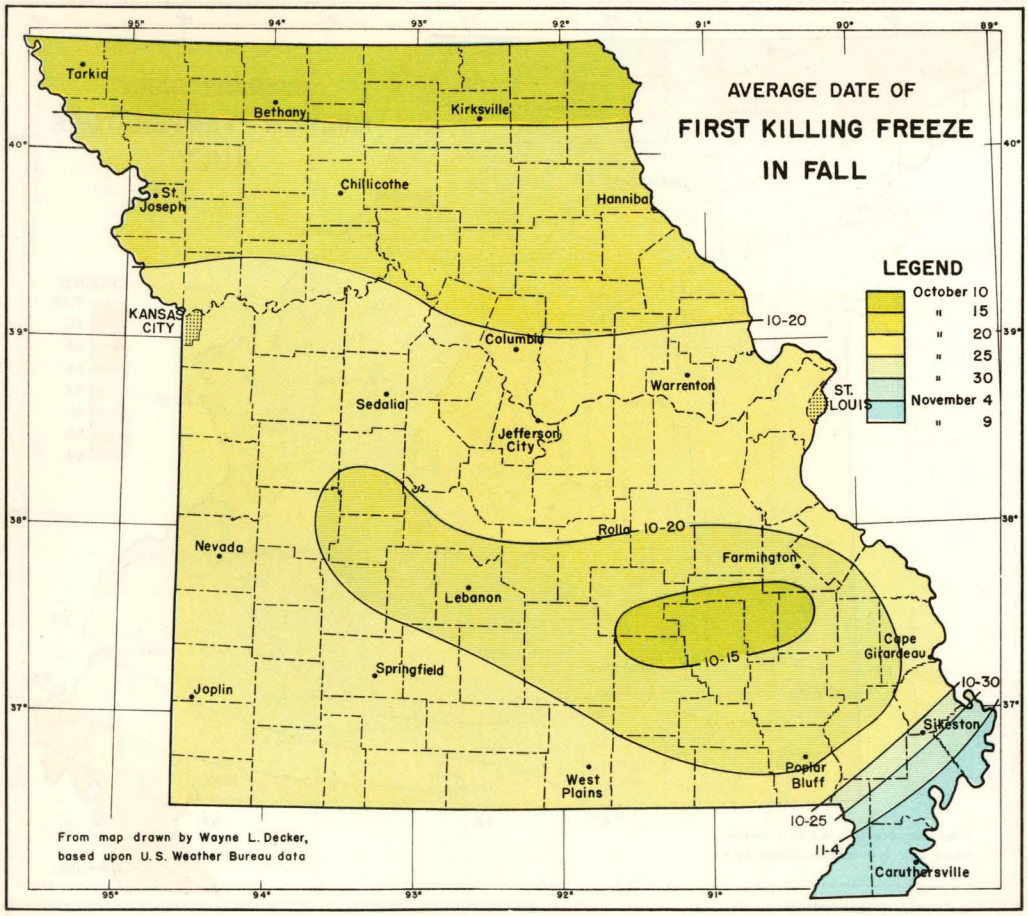
Average daily maximum temperatures exceed 90° during July over most of Missouri. There is little variation over the State. Coupled with high temperatures that make summer weather uncomfortable are periods of high relative humidity.

Temperatures during a typical July day range from approximately 66° just before sunrise to 90° or more during mid-afternoon. During the month, days with maximums of 100° or above and nights when the thermometer stays above 80° are not infrequent. Many are below the average, as well. June and even September may experience maximum temperatures exceeding 90°.









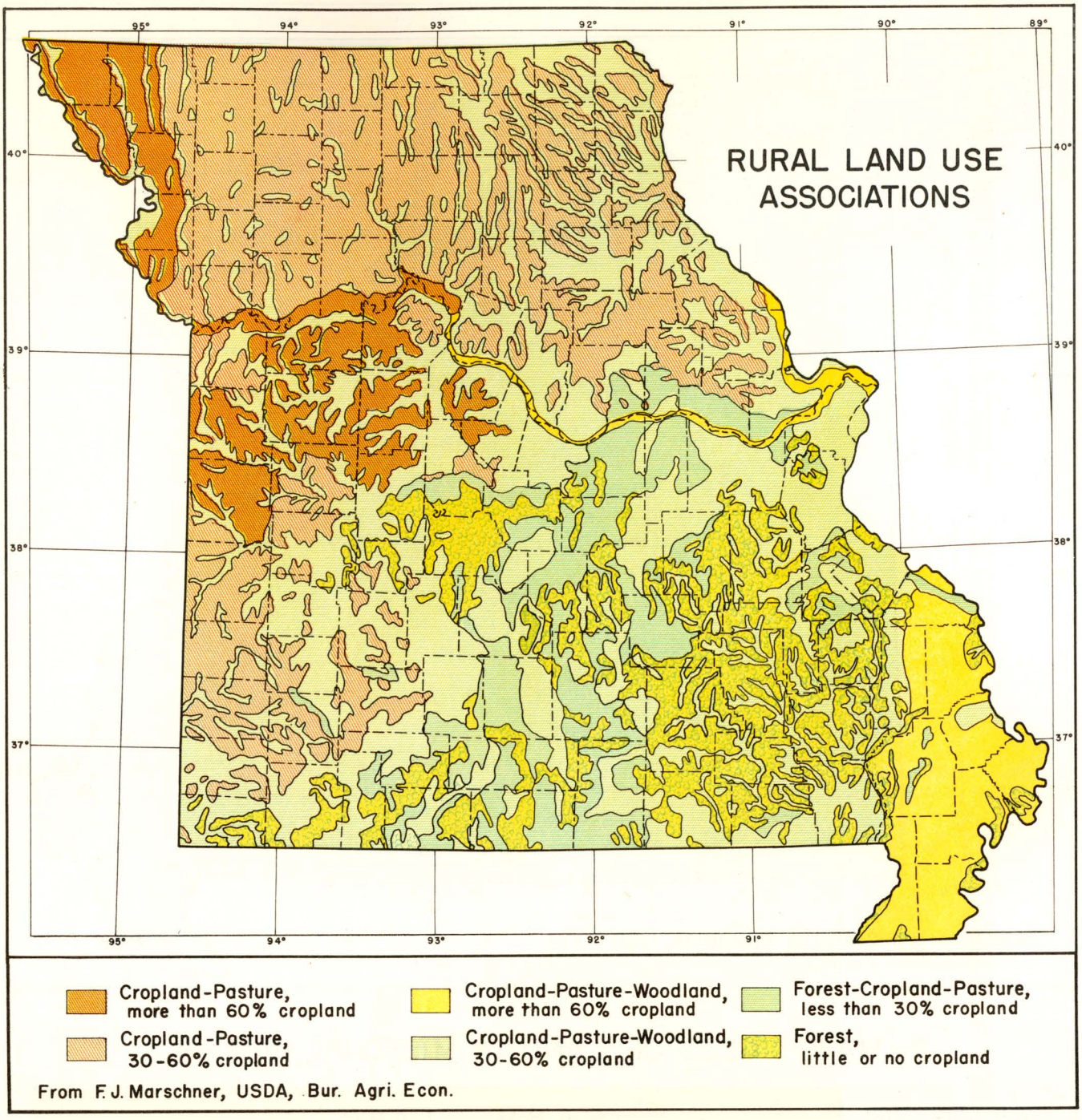
Killing freezes are one of the hazards of farming in Missouri, particularly for the horticulturalist and truck gardener. Knowledge of the dates of killing freezes at the beginning and close of the growing season—the frost-free period—may help the farmer to select his crops and to plan his spring and fall activities to avoid excessive losses from the hazard.

The average date of the last killing freeze in spring varies from March 26 in southeastern Missouri to April 26 in the north. These are the dates after which there is a 50 per cent chance of a killing freeze.

These are only approximate indications of the probability of frost damage, since damage may occur locally at higher recorded temperatures or fail to occur when freezing air temperatures are recorded.

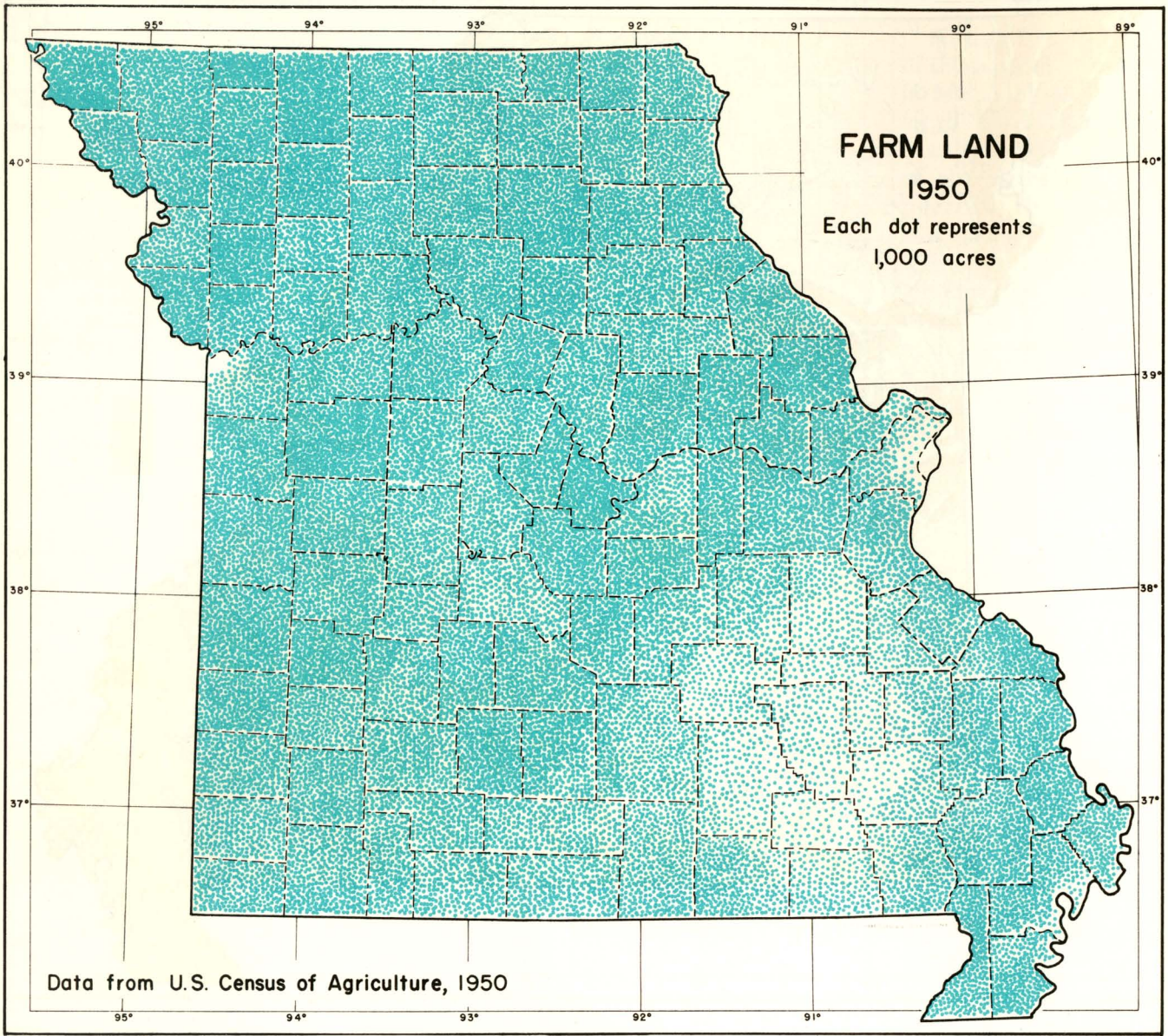
The average date of the first killing freeze in fall is October 15 in northern Missouri and the southeastern Ozark region. The date falls within the latter half of October in most other parts of the State except the southeast lowland, where the first killing freeze usually is delayed until the first week of November.

The average frost-free period in Missouri varies from 178 days in the north to 220 or more days in the southeast lowlands. In the latter section the growing season is adequate for cotton production and for early and late vegetables for the market.

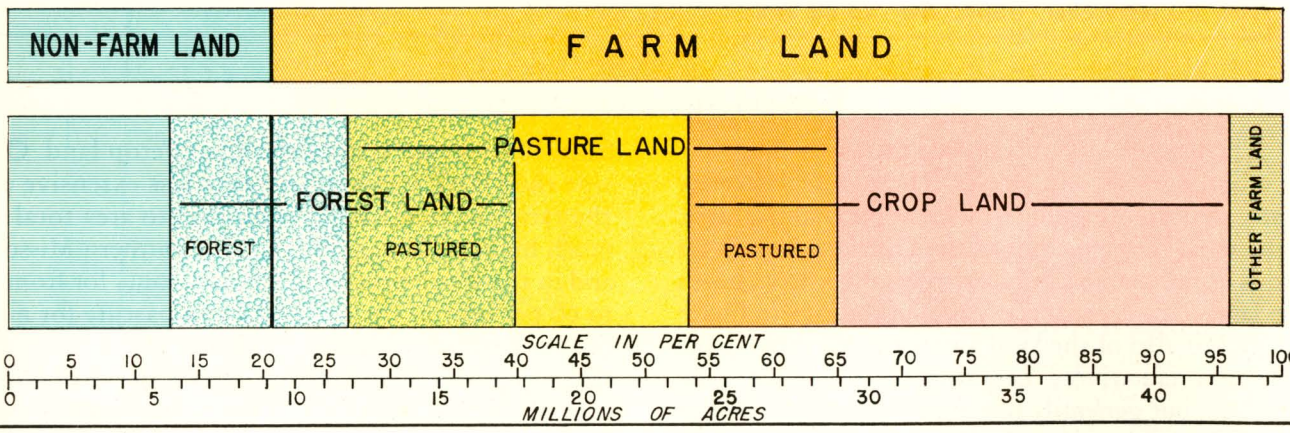


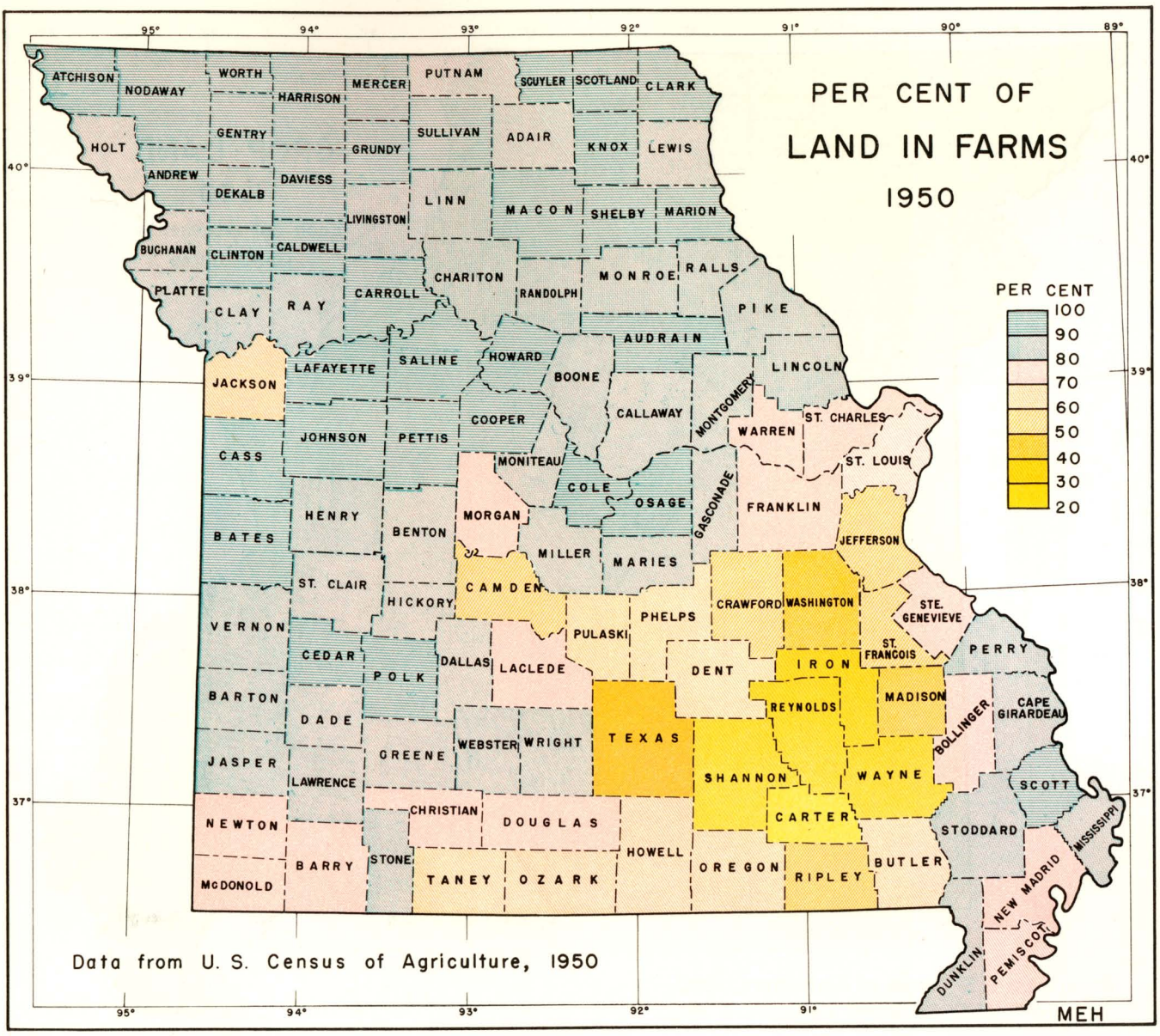
LAND USE ASSOCIATIONS

The land of Missouri is used primarily for growing crops, pasture, and forests. These three uses vary greatly in relative extent in different parts of the State. In the most hilly portions of the Ozark region, forest land is dominant and only narrow valleys have much crop land. This is particularly true of the eastern Ozark region, but also of the land along the White, Osage, and Gasconade rivers. Less rugged areas have more crop land, but generally not more than 30 per cent of the total area is under cultivation. In other sections from 30 to 60 per cent of the area is crop land. Outside the Ozark region, forests are less extensive and the ratios of crop land and pasture to area total are much higher. Throughout most of northern Missouri and in the southwest, crop land accounts for from 30 to 60 per cent of the total area and pasture for most of the remainder. Only on hillsides is the woodland area significant. Cropland occupies more than 60 per cent of the best loess soils of the northwest and west-central regions and the southeastern lowlands.



— MAJOR USES OF LAND IN MISSOURI, 1949 —





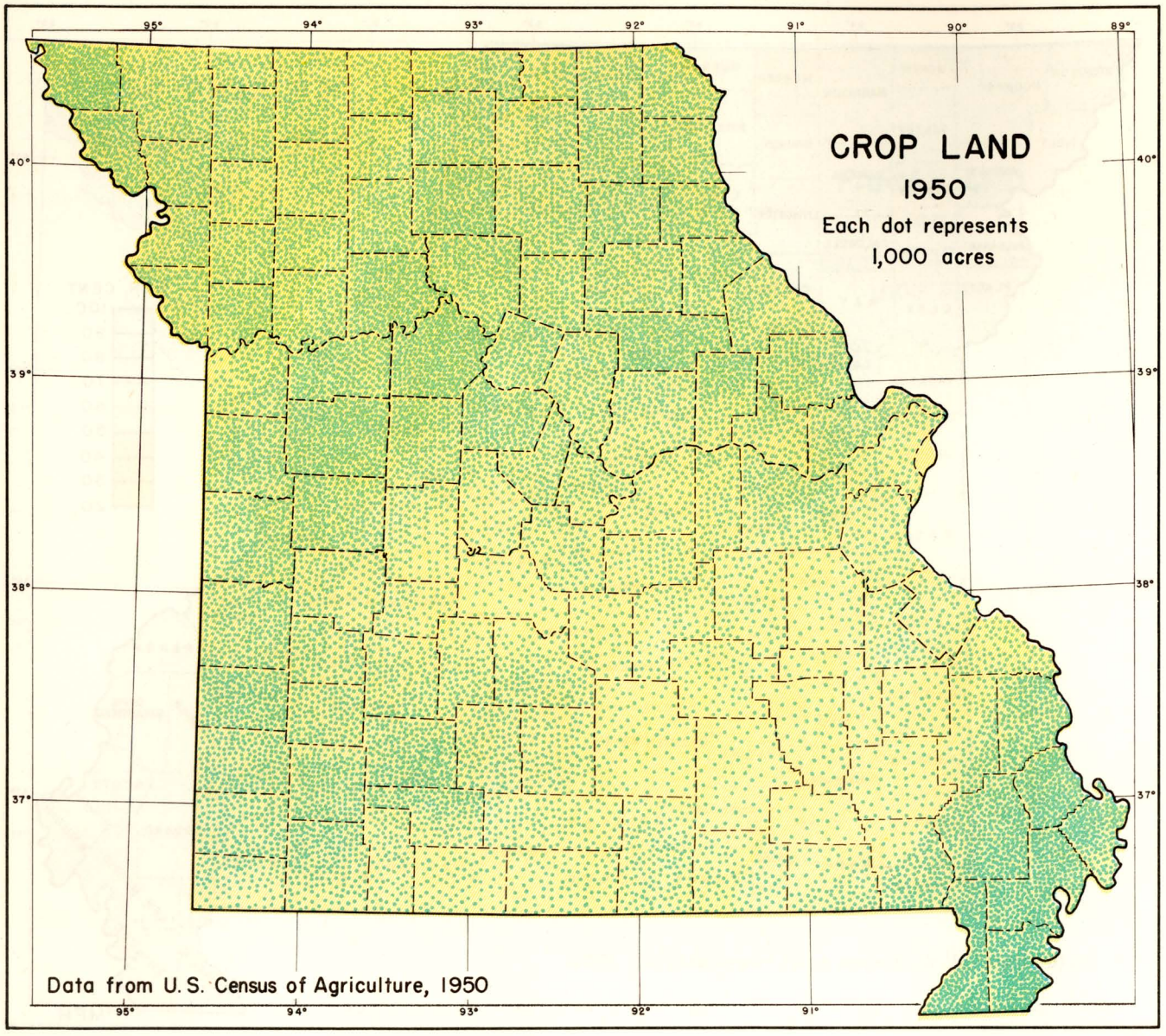
FARM LAND

Missouri has more than 35 million acres of farm land. This is nearly 80 per cent of its total area of 44,304,640 acres. More than one-half (53%) of the farm land is used for crops, although only 30 per cent is devoted to harvested crops in any one year. Nearly one-fourth of the crop land was used for pasture in 1950. More than one-third (38%) of the farm land is used for pasture, including crop land, pastured woodland, and other types of pasture, each of which shares about equally in the total pasture land. More than two-thirds of the farm woodland area is pastured.

One-fifth of the land in farms is wooded. This is more than one-half of the total forest land of the State. Most of the forest land and farm woodland is found in the Ozark region, where rugged hills and thin, stony soils leave a relatively small acreage well suited for crops. More than two-thirds of the land not in farms is forested.

The extent of the land area that is in farms varies widely over the State. The principal factors contributing to this condition are the topography and the soils. The extremes are 25 per cent in Carter County and 97 per cent in Worth County. Less than one-half the land of seven counties of the eastern Ozarks, and approximately three-fourths of other Ozark counties is in farms. In this part of the state, from one-fourth to one-half of the acreage in farms is woodland.

More than 90 per cent of the total area in the northern and west-central counties is in farms. These are the two sections of best soils. The western Ozark border and adjacent counties in the prairie region have from 80 to 90 per cent of their land in farms.

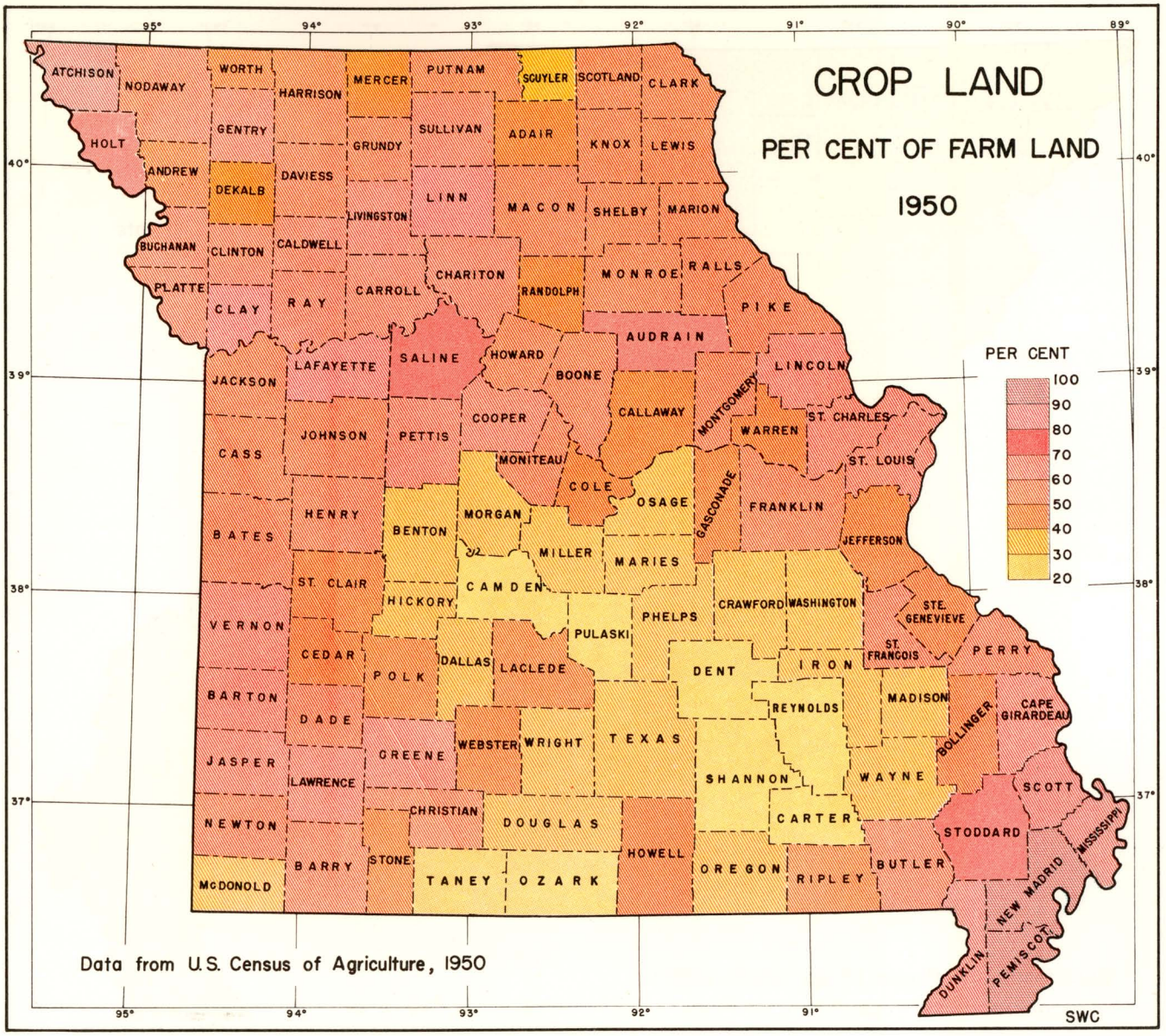


CROP LAND

There are nearly 19 million acres of crop land in Missouri. This is 42 per cent of the total area of the State and 53 per cent of the farm land. Crops were harvested from 12 million acres in 1949. Five million acres of crop land were used for pasture. The remaining 1.3 million acres of crop land were idle, in soil-improvement crops only, or experienced crop failure in the 1949 crop year.

The distribution of crop land over the State is uneven. Carter County, one of the smallest and most rugged, has only 24,000 acres of crop land. This amounts to 7 per cent of the area of that county and 29 per cent of the land in farms. The land is deeply dissected by the Current River and its tributaries. The hills are 300 to 500 feet high, have thin, stony soils, and are 90 per cent forested. Most of the crop land is found in narrow valleys and is therefore of limited extent.

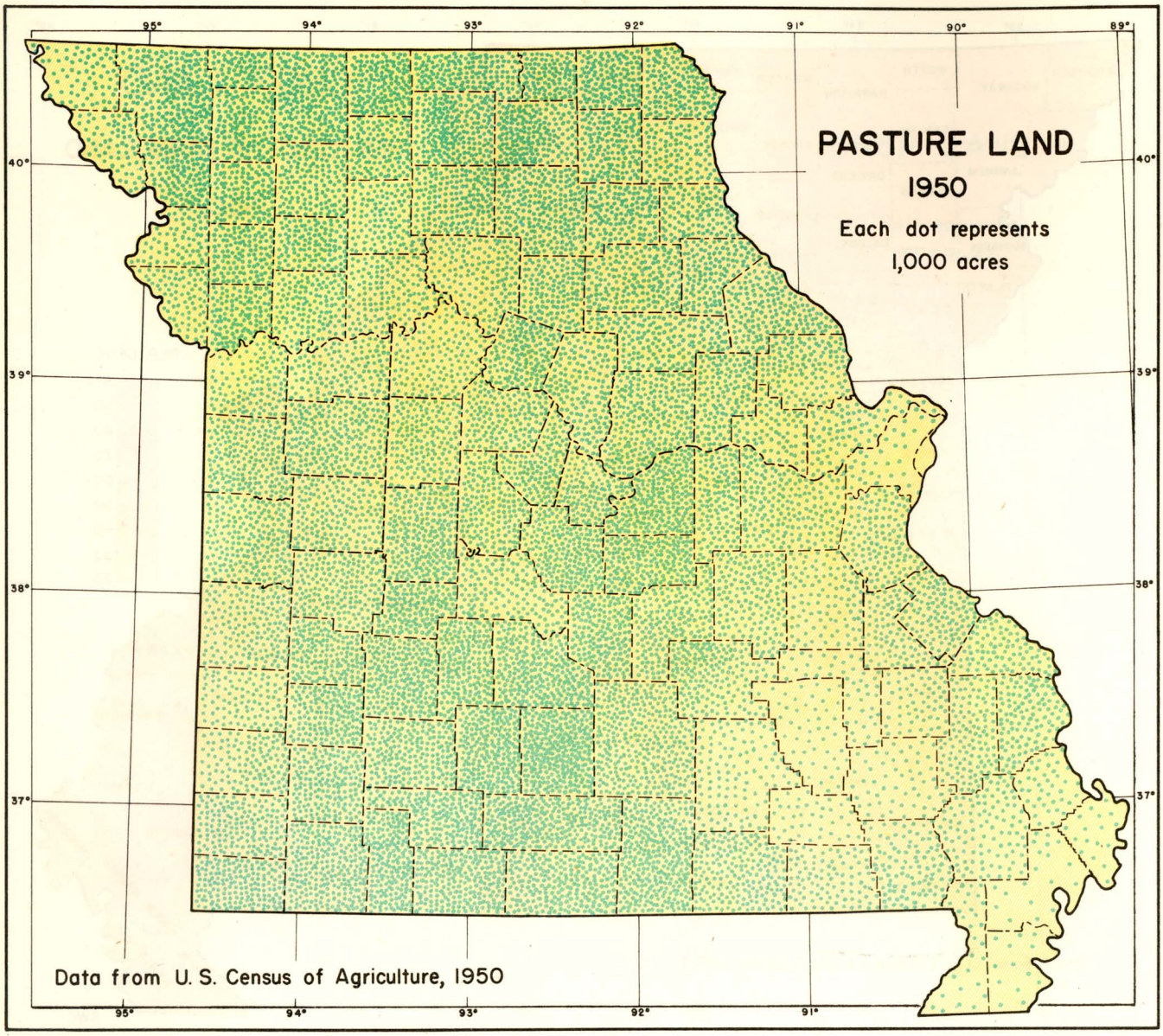
At the other extreme in extent of crop land are the two counties at opposite corners of the State-Atchison in the northwest and Pemiscot in the southeast. Although the two are very different in physical characteristics, both have a high proportion of crop land, 90 per cent of the total area of Pemiscot County



and 80 per cent of Atchison County. The latter consists largely of loess hills 200 to 300 feet high and the level alluvial lowland along the Missouri River. The deep loess soils are productive, however, even on the hillsides, and most of the land is cultivated. Atchison County is one of the most productive in the State.

Pemiscot County in the extreme southeast is also highly productive and is representative of several southeastern lowland counties. Its alluvial land contrasts in most respects with the loess hills of the northwest, but not in productivity. Emphasis on crops in the agricultural system leaves only 5 per cent of the land in pasture, the lowest in the State.

In most of the Ozark counties less than 30 per cent of the total area and 40 per cent of the land in farms is used for crops. In border counties, the proportion of cropland is higher, varying from 35 per cent to as much as 55 per cent of the total area and from 40 to 65 per cent of the land in farms. From one-half to two-thirds of the land in farms in the northern and western counties is devoted to crops. The proportion reaches 88 per cent in Lafayette County, located in the heart of the west-central loess belt bordering the Missouri River.



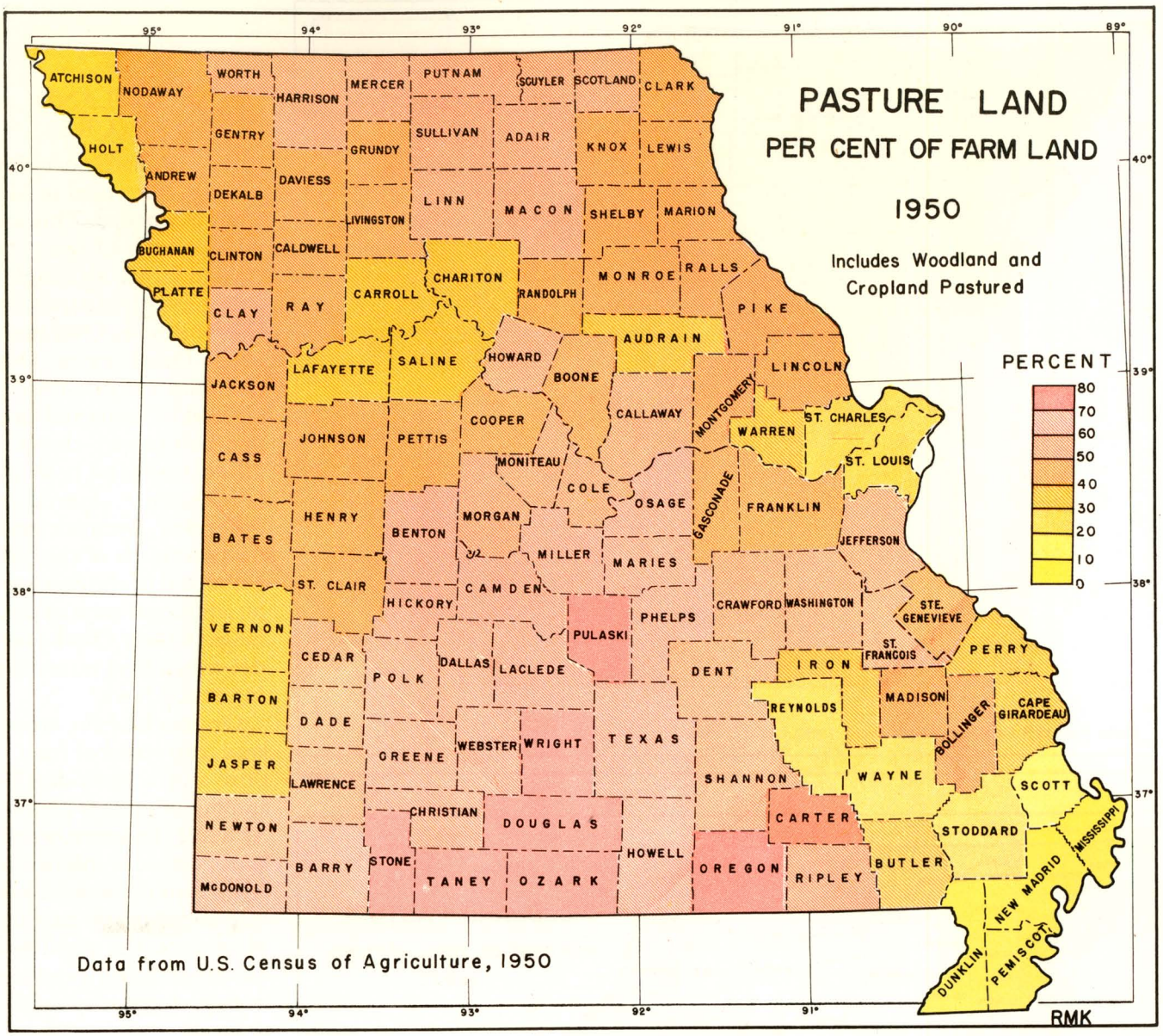
PASTURE LAND

Almost one-half (48%) of the land in Missouri farms is used for pasture. Livestock enterprises are found on most farms. The sale of animals and their products such as milk, cream, wool, and eggs accounted for 72 per cent of the total income from the sale of farm products in 1949.

The area of pasture land in the State reflects the nature of the land in farms. Most of it is too hilly, too stony, or for other reasons is unsuited for cultivation. The importance of the livestock economy in much of the Ozark region can be attributed in part to the fact that much of the land can be pastured but cannot be devoted to crop cultivation.

Only a few highly specialized farms do not have some land in pasture. Concentrations occur in the western Ozark region and in the glacial plains of northern Missouri. In the western Ozark counties one-half of the total area and as much as three-fourths of the land in farms is devoted to some type of pasture. The total number of acres is greatest in Webster and Wright counties where 58 and 63 per cent, respectively, of the total land area is grazing land.

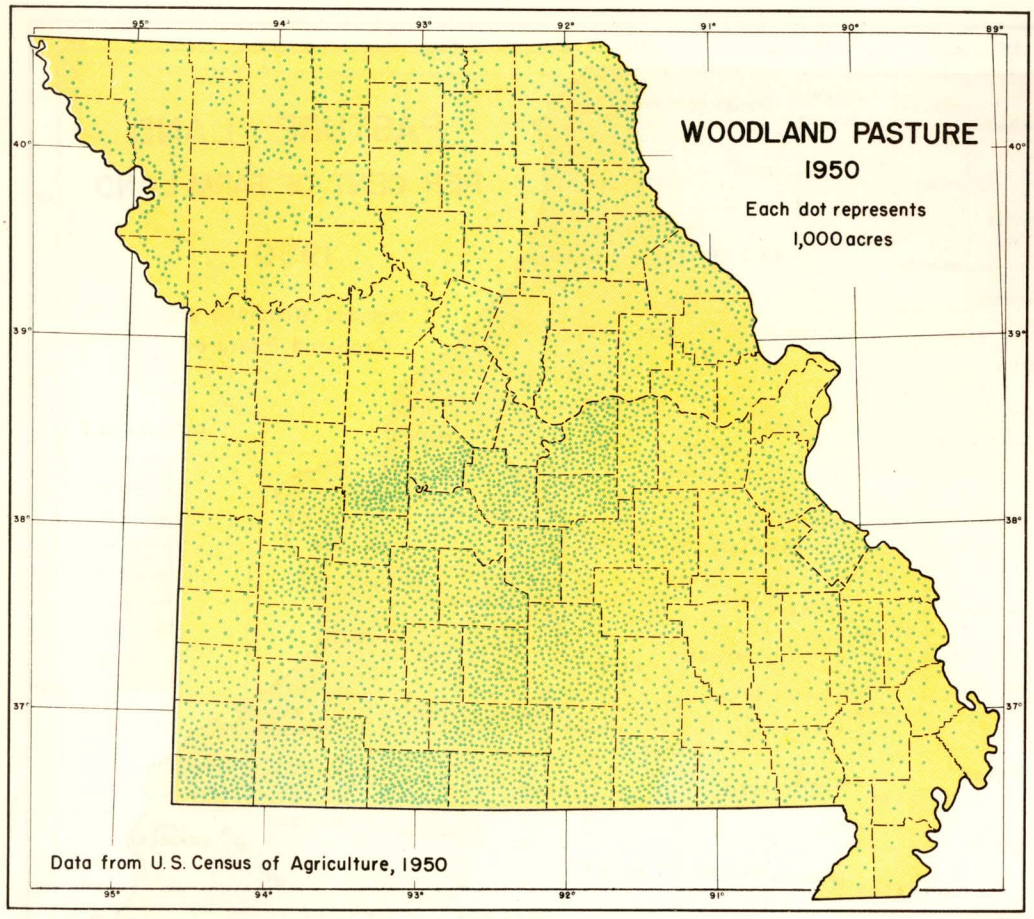
In proportion to land in farms, pasture land is most important in Stone and Taney counties, which, respectively, devote 75 per cent and 78 per cent of the farm land to pasture. A high proportion of the area is timbered and the woods are grazed. Conversely, these are the two lowest ranking counties in the ratio of crop land to total land in farms. These relationships take no account of the quality of pasture land.

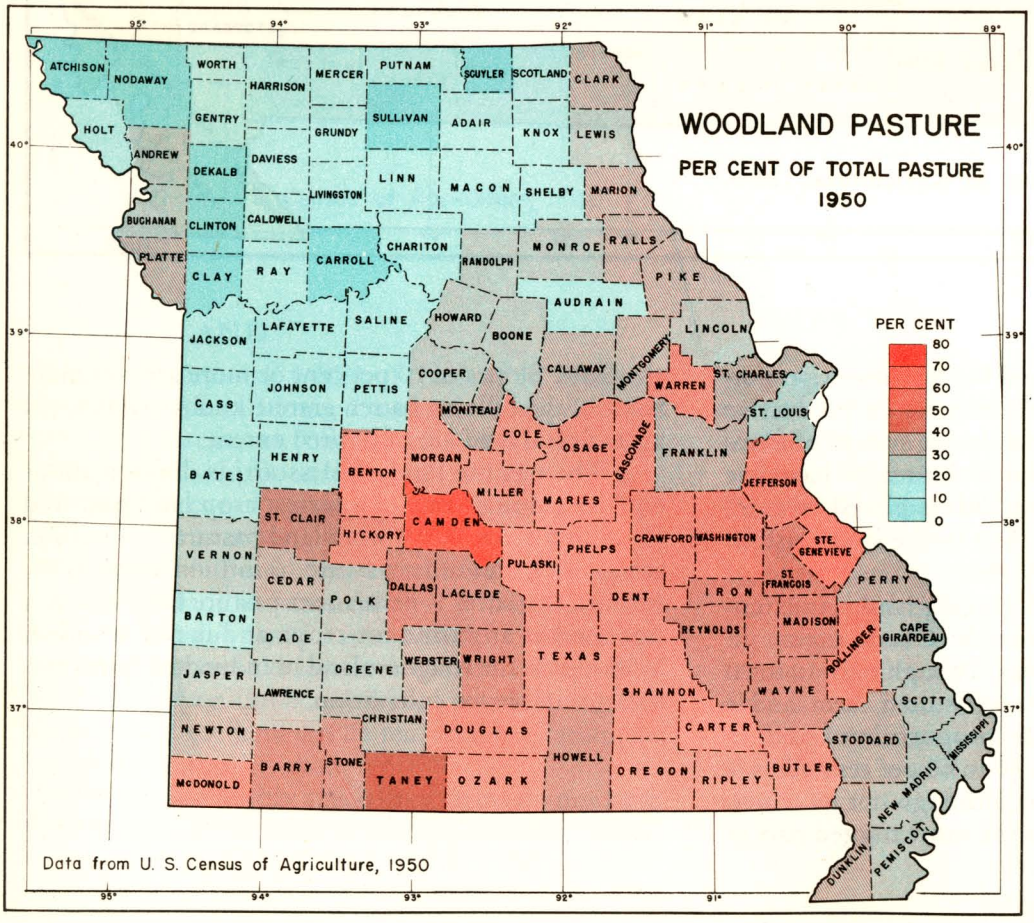


The southeastern lowland has the lowest proportion of land in pasture. The level soils are productive and cash crops are emphasized in the system of farming. The northwestern portion of this region has some ridge land where greater emphasis is placed on corn, hay, livestock, and pasture than in the southeastern cotton and soybean specialty area.

A second area in which grazing land is inextensive is the southeastern interior Ozark region in Reynolds and adjacent counties. Though only 10 to 20 per cent of the total land area is pastured, farm land is not extensive, either, and the proportion of pasture land to total land in farms is 30 to 40 per cent. This is the heart of the Ozark region, although not its center. Considering all aspects, it is the most rugged part of the State. Slopes of 20 per cent or more are common. Some of the hills are barren granite knobs. All types of agricultural land are of limited extent.

The pasture land of Missouri is divided about equally among three categories: crop land pastured (5 million acres, 30%), woodland pasture (5.8 million acres, 34%), and other pasture (6 million acres, 36%). Most of the latter is permanent pasture land which is not used at any time for crops and is not wooded. Most of it is the roughest land of individual farms and is not suitable for cultivation.





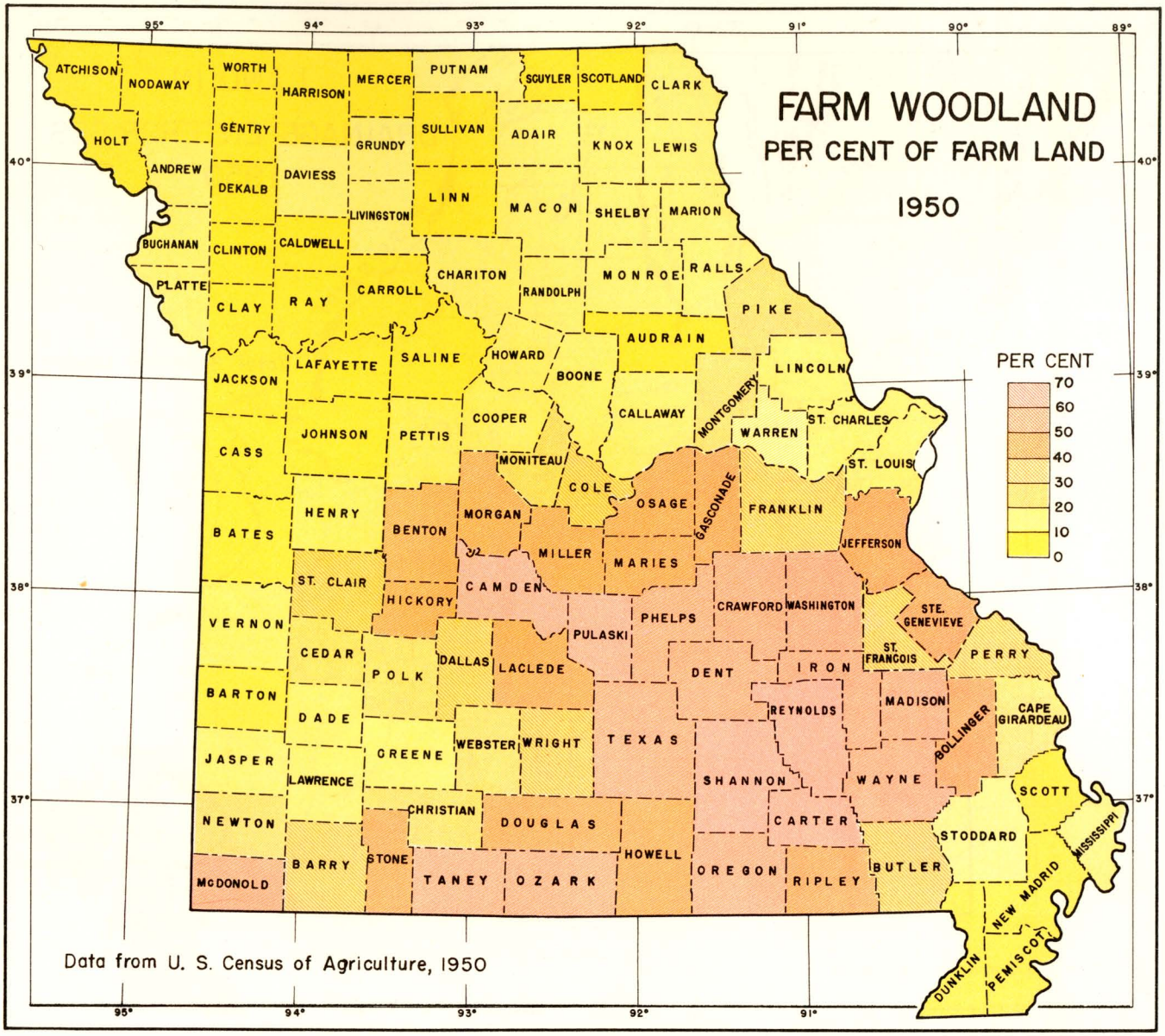
WOODLAND PASTURE

Approximately one-third of all pasture land in Missouri is wooded. This area is one-sixth of the total land in farms, although it is not evenly distributed over the State. Over much of the Ozark region, from one-fourth to one-third of all land in farms and from one-half to two-thirds of all pasture land is woodland pasture. Stated another way, livestock graze on two-thirds of the farm woodland of the State and on additional areas of open range in some Ozark counties which have no restricting stock laws.

On much of the woodland, the stand of trees is thin and a considerable amount of grass is present. As a rule, however, woodland pasture is inferior to both open permanent pasture and rotation pasture. Moreover, the yield and quality of forest products from pastured woodland is reduced.

Only 10 to 20 per cent of the pasture land of northern and western Missouri is woodland, but the damage to tree growth may be greater than in the Ozark region, since many of the woodlots are fenced and grazing is more concentrated.

In the heavily cropped southeastern lowlands approximately one-fourth of the pasture land is wooded. This is less than 5 per cent of the total land in farms.

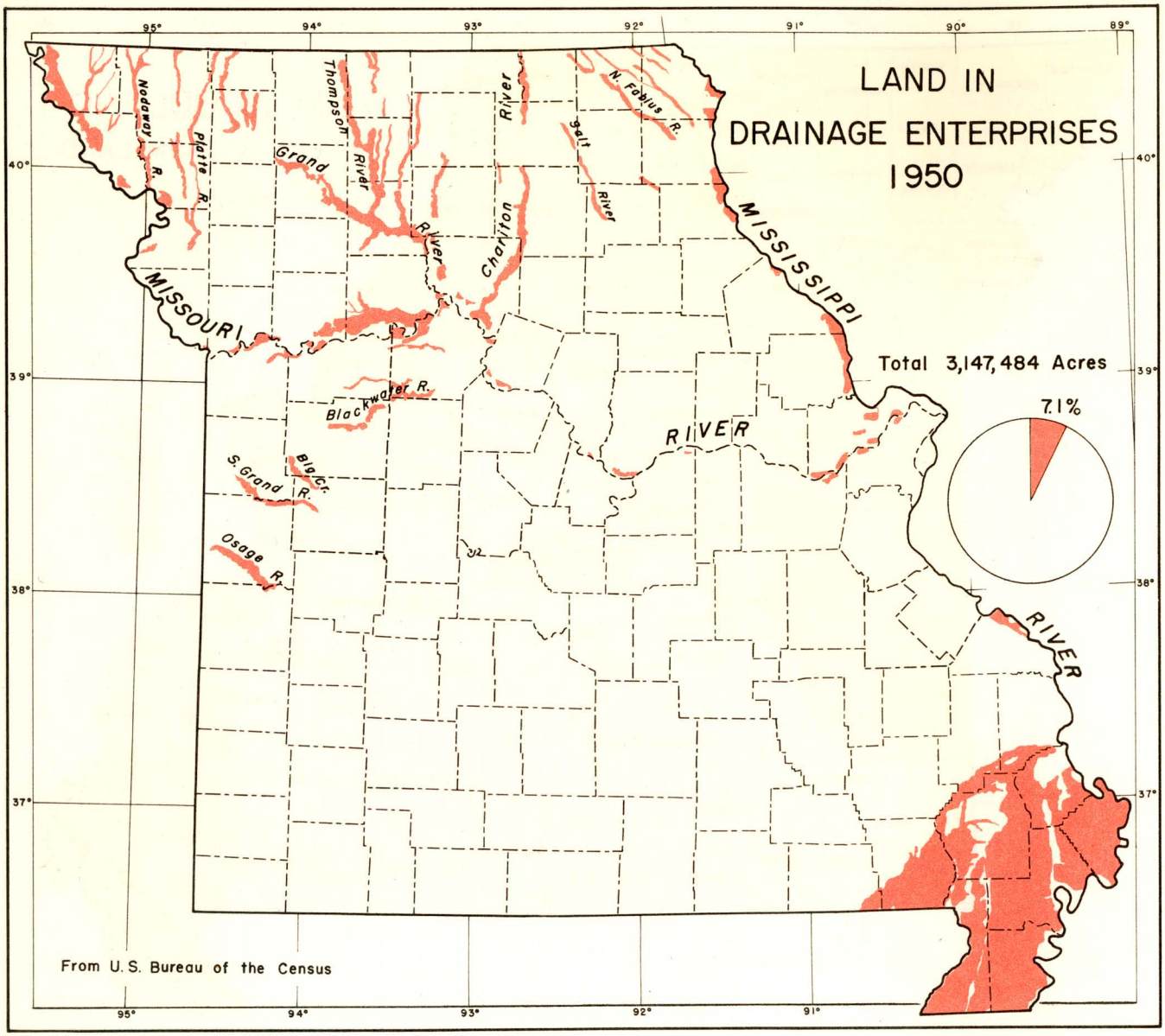


FARM WOODLAND

Missouri's 8.5 million acres of farm forests and woodlands constitute more than one-half (56%) of the total forest area. The future of the forest resource and its value to the State depends to a great extent, therefore, on the care given the woodlots and forest land on individual farms. The tree crop could be an important one on many Missouri farms, especially in the Ozark region where from one-fourth to almost two-thirds of the land in farms is forested.

Forest products valued at 2.5 million dollars were sold from farms in 1949. This income undoubtedly could be increased by better management practices. Forest products contributed only one-third of one per cent of the total cash farm income in the State, but in many Ozark counties it is of far greater significance. Farm forestry is an important outlet for farm labor during winter months as well as a source of cash income and of forest products for farm use. Much of the farm need for such products as fence posts, fuel wood, and even lumber is met by the farmer's own forest land, and additional products such as saw logs, veneer logs, cooperage stock, railroad cross ties, and mine timbers are sold.

Farm woodland is most extensive in the eastern Ozarks and in Taney and Ozark counties, where it occupies more than one-half the land in farms. These areas also have the most extensive non-farm forests. The acreage in farm woodland decreases to about one-fourth of the land in farms in the border counties of the Ozark region, and to 10 to 20 per cent in the western and northern prairie counties and in the southeastern lowland. Farm woodland is least extensive in the two areas of most fertile soils—the loess area of extreme northwest and alluvial land of southeast.

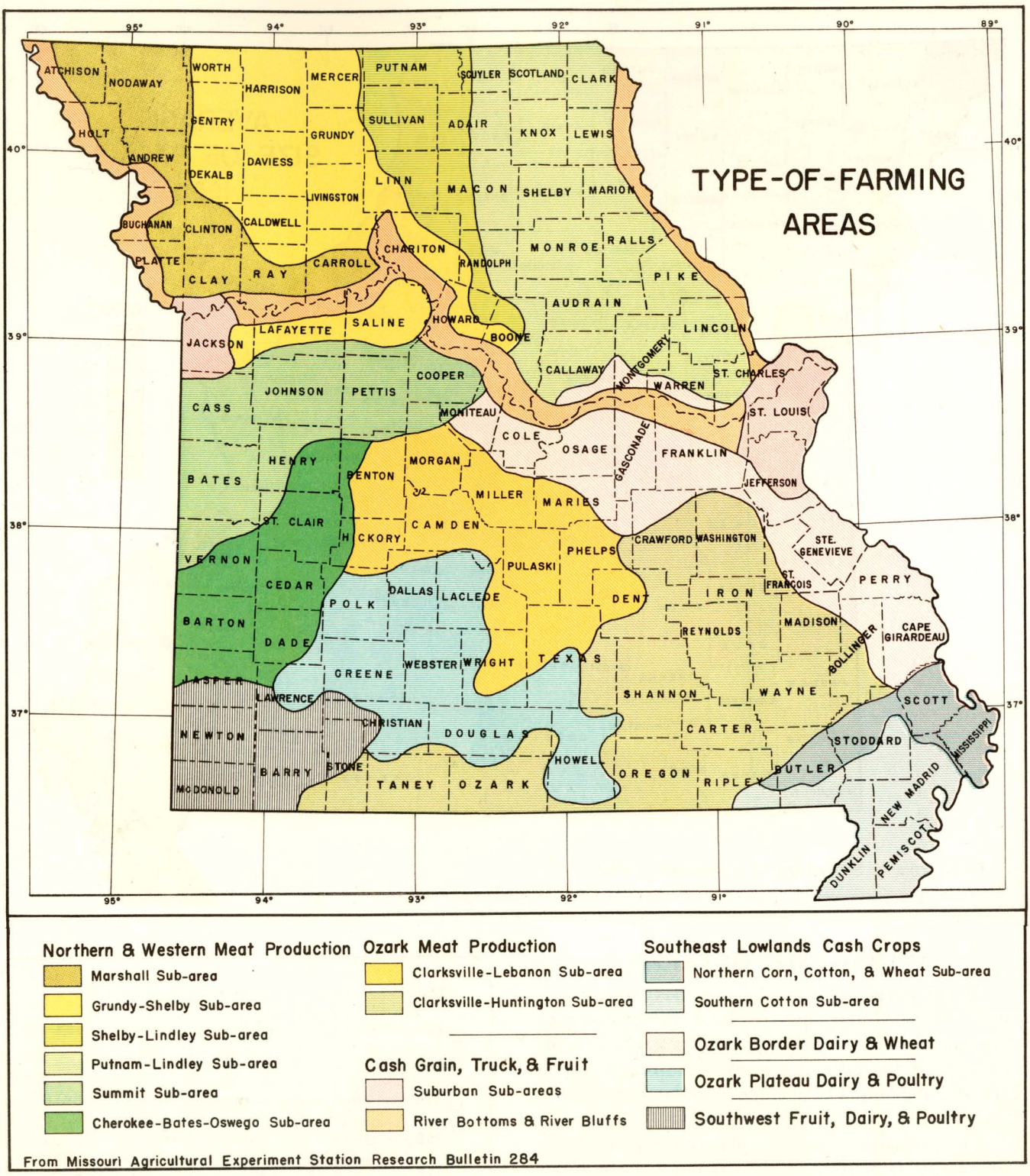


LAND IN DRAINAGE ENTERPRISES

Missouri has 3,147,484 acres of land in 318 drainage districts. These organizations include 315 districts supervised by county courts embracing 3,137,944 acres of land, two cooperative or mutual drainage systems totaling 5,290 acres, and one individually owned system of 4,250 acres. Two-thirds of this acreage is in the southeastern lowland. Drained lands include lowlands of the Mississippi River, and several of its tributaries in northeastern Missouri, the Missouri River, and the Grand, Chariton, Platte, Blackwater, and Osage Rivers. The six southeastern lowland counties have 1,654,191 acres, or 77 per cent of their total area in drainage districts.

Most of this land was drained during the first two decades of the century. Prior to 1900 there were only 23,095 acres of drained land in six districts. Between 1900 and 1920, 119 districts were organized to embrace 80 per cent (2,454,287 acres) of the land now drained. An additional half-million acres in 90 districts were drained during the 1920's. Only 23 districts have been organized since 1930. They have 122,092 acres within their boundaries. Prior to 1940, $49,050,414 had been invested in drainage systems, and $8,281,620 was spent for construction, operation, and maintenance during the decade ending in 1949.

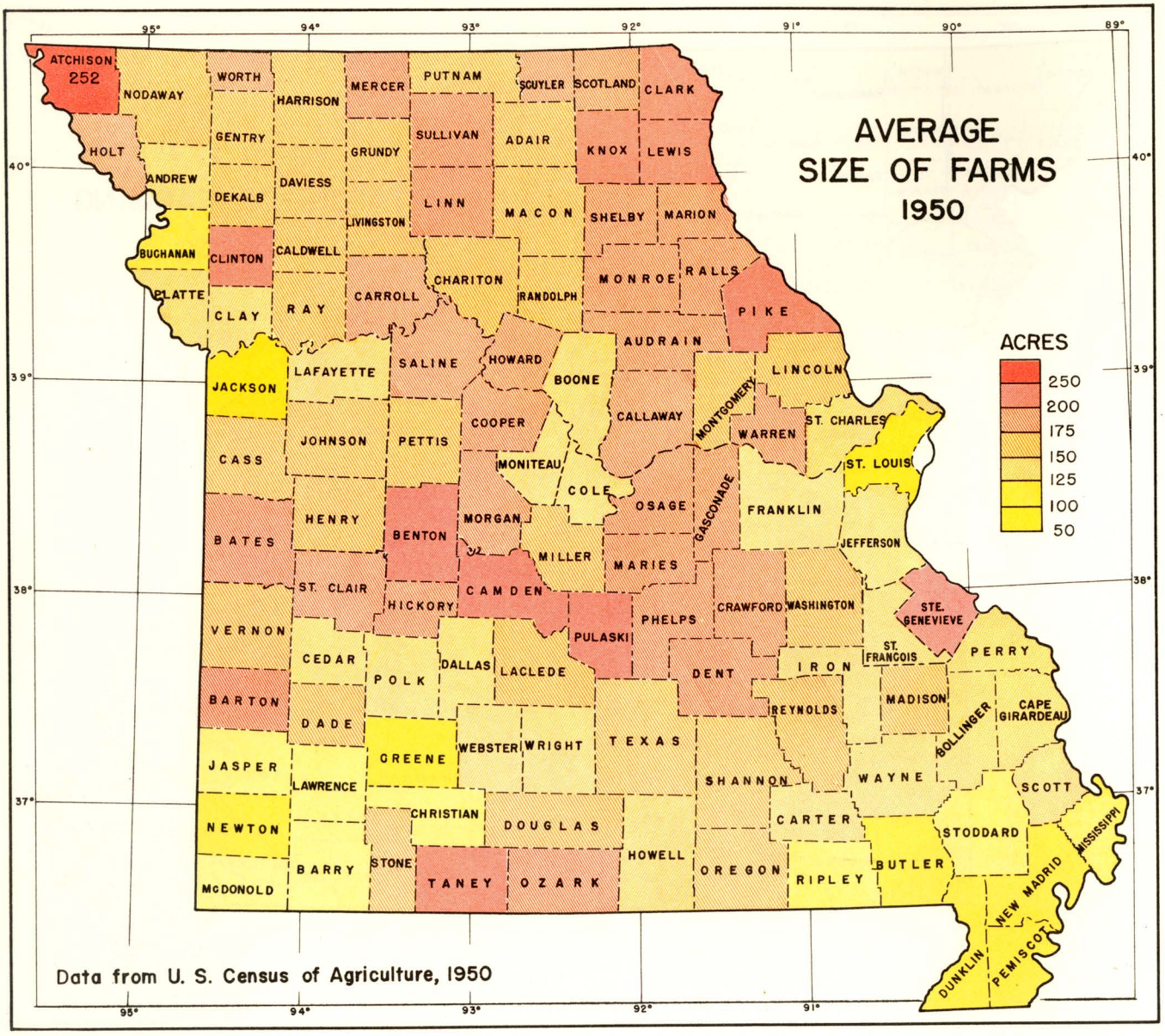
Reclamation or improvement of land is the principal purpose of 232 drainage systems, embracing 83 per cent of the area (2,613,084 acres), while 86 systems, covering 17 per cent (534,400 acres), are primarily for protection of land against overflow. Sixty per cent of the land in drainage districts is well drained and experiences little loss of crops; 26 per cent has fair drainage and suffers frequent loss; 14 per cent has poor drainage and is unfit for cultivation.



From Missouri Agricultural Experiment Station Research Bulletin 284

FARMS BY TYPE OF FARM, 1950

	No.	%
Field-crop farms	26,925	11.7
Cash-grain	13,100	5.7
Cotton	13,278	5.8
Other field-crop	547	0.2
Vegetable farms	443	0.2
Fruit-and-nut farms	620	0.3
Dairy farms	29,750	12.9
Poultry farms	6,832	3.0
Livestock farms (other than dairy and poultry)	78,223	34.0
General farms	21,058	9.1
Primarily crop	1,557	0.7
Primarily livestock	10,001	4.3
Crop and livestock	9,500	4.1
Miscellaneous and unclassified	66,194	28.8
TOTAL	230,045	100.0

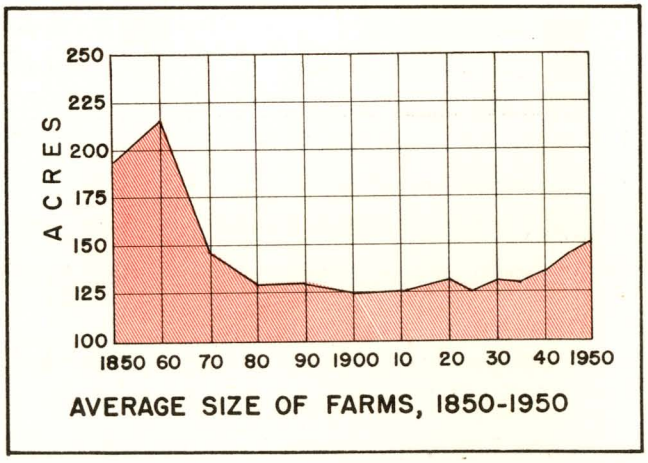


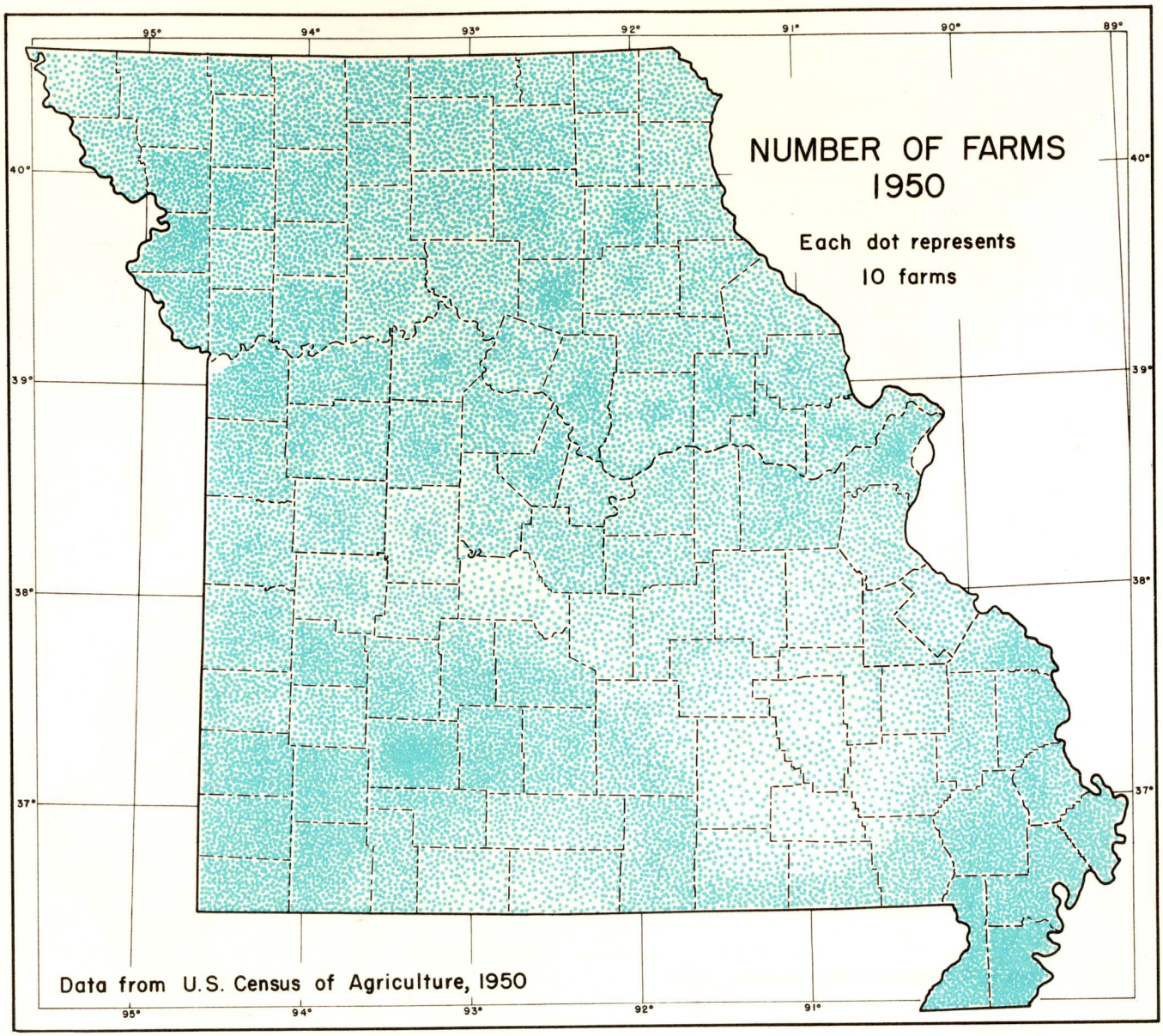
AVERAGE SIZE OF FARMS

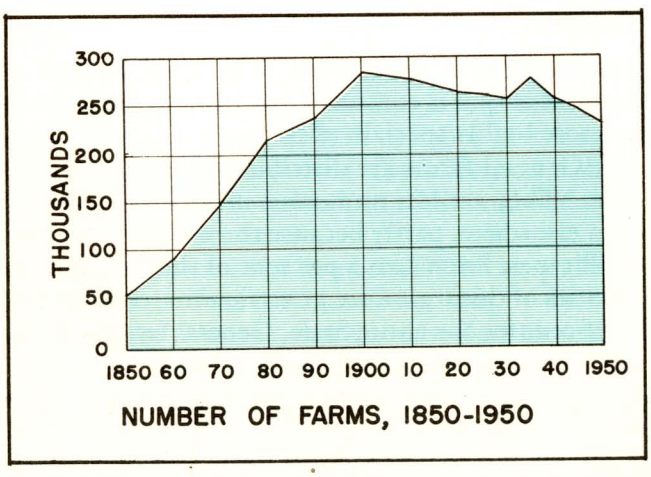
The average farm in Missouri has 153 acres of land. Of this, 81 acres are cropland, although crops were harvested from only 53 acres in 1949; 74 acres are pastured, including 22 acres of crop land and 25 acres of woodland. The average woodland per farm is 37 acres.

The average size of farms per county varies widely. Farms are large in the northern and western plains counties where the soils and topography permit the use of relatively large tractor equipment. Farms in several Ozark counties exceed the State average. Here a significant factor is not mechanization, but the rugged land with limited crop area and a high percentage of woodland and woodland pasture.

The counties with smallest farms are those which contain cities and have many small residential, part-time, truck and dairy farms, and those of the southeast lowland where intensive crops like cotton are grown.





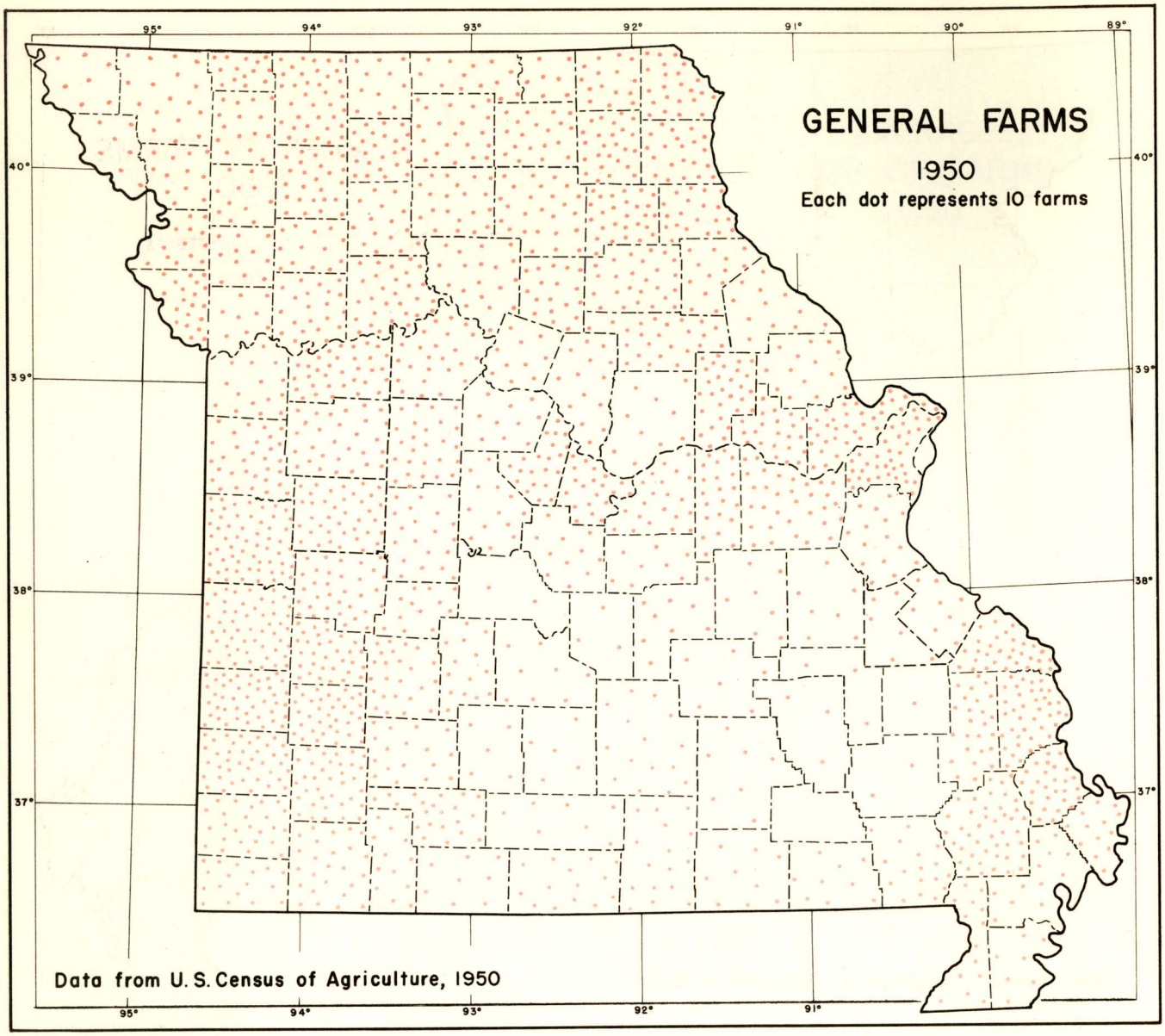


NUMBER OF FARMS

The number of farms in Missouri reached a maximum of 284,886 in 1900 and decreased to 230,045 in 1950. As the average size of farm increased after 1900, the number decreased.

Farms are most numerous where they are smallest, as in the southeastern lowland where there are many small cotton-farms, and in the vicinity of cities and towns where suburban dwellers occupy small acreages, and where truck farms, dairy farms and poultry farms are most numerous.

The number of individual farms is lowest in those counties where the operation units tend to be large, as in Atchison County and other northern Missouri counties, or where the area of land in farms is low, as in the rougher portions of the Ozark region.

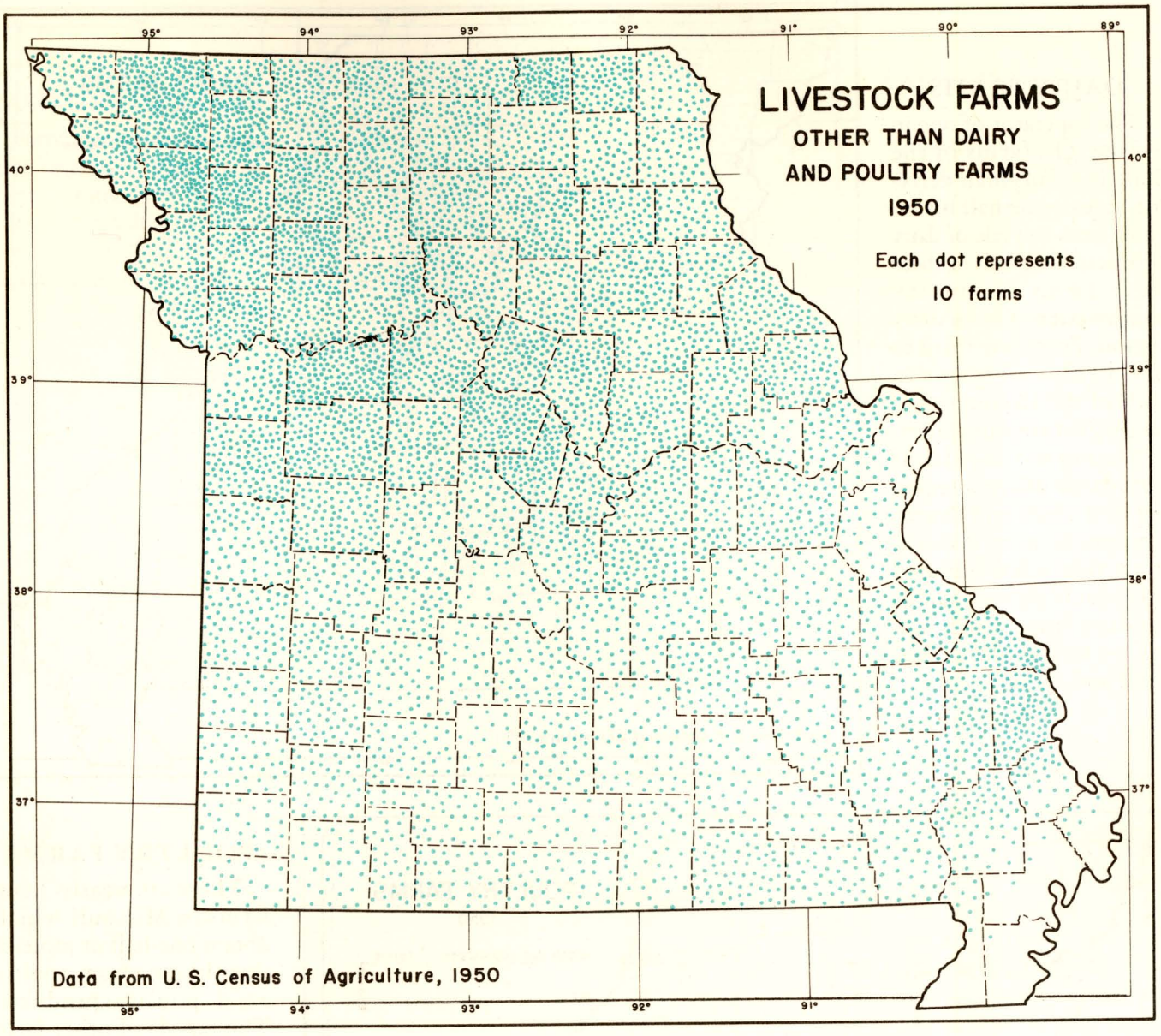


GENERAL FARMS

The Bureau of the Census classifies a farm as "general" if the value of products sold from one source, cash grain or livestock, for example, does not equal or exceed the total value of all other farm products sold. Only 21,048 farms in Missouri are general farms by this definition. The operators of 90 per cent of those given a classification secure one-half or more of their income from the sale of livestock, dairy products, field crops, or some other single source. Even the operators of general farms receive most of their income from a limited number of enterprises, and more than one-half receive a dominant part from the sale of crops or of livestock, chiefly the latter. The general farms are merely less highly specialized than those which derive a greater part of their income from a single type of product. Moreover, a greater part of the farm output is consumed by the farm family than on more highly specialized farms.

General farms are distributed throughout the State. They are less numerous in the Ozark region than elsewhere, partly because there are fewer farms of all types. From 1 to 5 per cent of the farms in the counties of this region are general farms, compared to 9 per cent for the entire State. General farms are also relatively rare in the southeast lowland.

General farms are most numerous in the west-central counties making up 15 to 22 per cent of all farms in seven counties of that area. General farms are also numerous in the northeast where they constitute from 12 to 18 per cent of the total number.



LIVESTOCK FARMS

One-third of all farms in Missouri are livestock farms on which the value of livestock sold, other than dairy and poultry, is one-half or more of the total value of all farm products sold. Cattle, hogs, and sheep are the principal enterprises. An additional one-sixth are dairy or poultry farms.

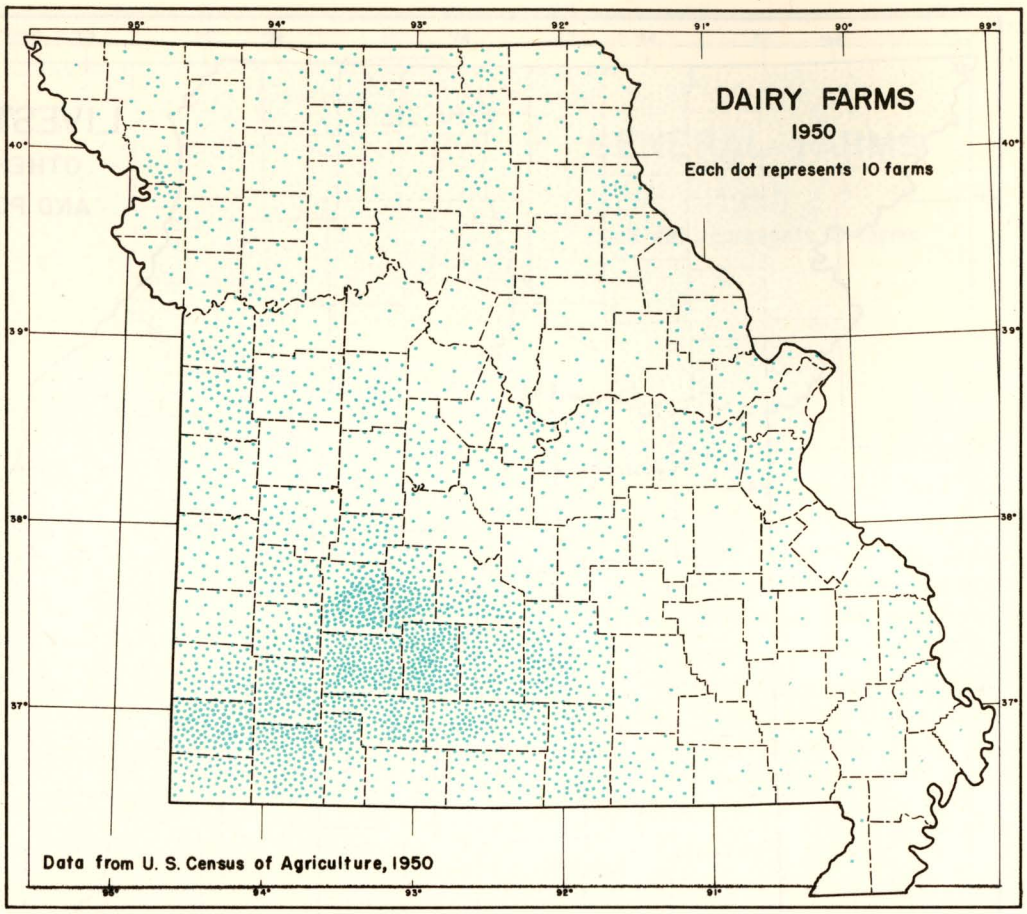
The importance of livestock in the agricultural economy of the State is indicated not only by the high proportion of livestock, dairy, and poultry farms, but also by the value of animal products relative to the value of other farm products. The total value of all farm products sold in 1949 was nearly 720 million dollars (Census value). Dairy products brought in 79 million dollars, poultry and poultry products 60 million, and other livestock and livestock products 378 million dollars. Animals and animal products thus made up nearly three-fourths (72%) of the total value.

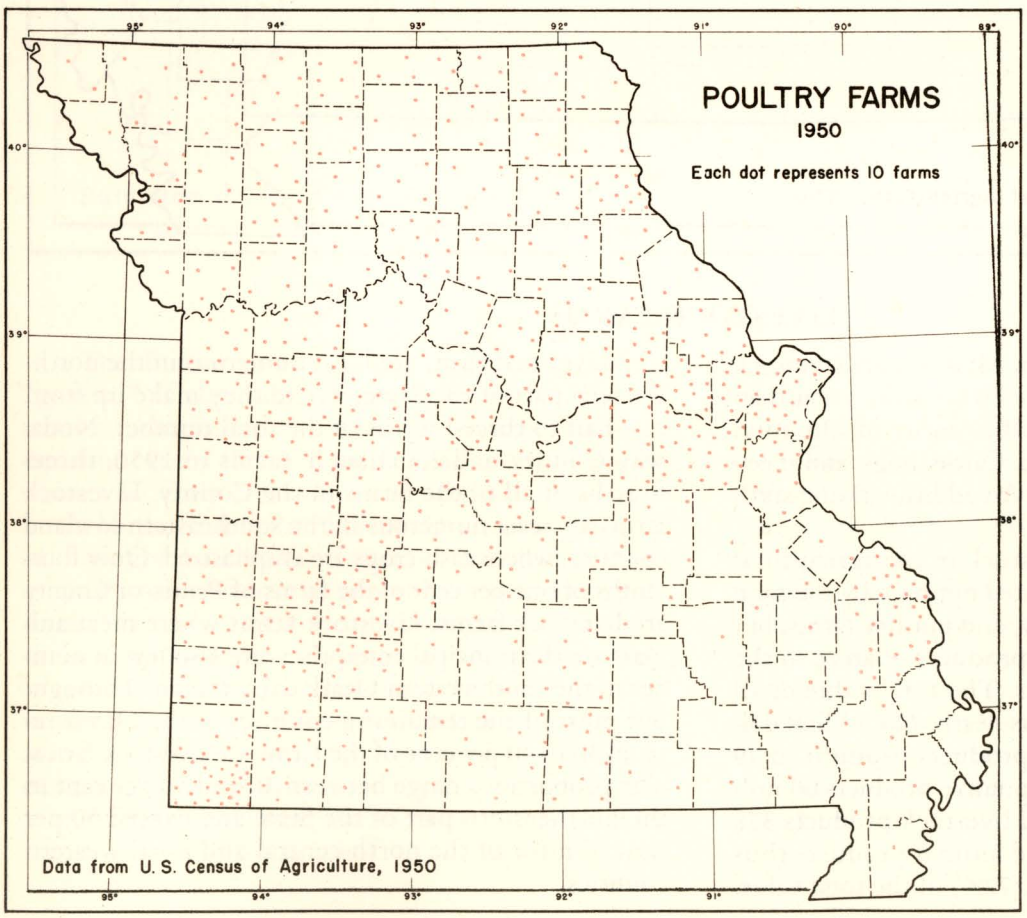
Livestock farms are most numerous in the northwestern part of the State, where they make up from one-half to three-fourths of the total number. Nodaway County had 2,351 such farms in 1950, three-fourths of all of the farms in the County. Livestock farms are least numerous in the southeastern lowland counties, where cash crops are emphasized. Only four-tenths of one per cent of the farms of Pemiscot County are livestock farms. Livestock farms where meat animals are the principal enterprises are also few in number in the southwestern Ozark dairy region. Throughout most of the remaining counties of the Ozark region, 30 to 40 per cent of the farms are livestock farms. The proportions range between 40 and 50 per cent in the northeastern part of the State and exceed 50 per cent in most of the north-central and northwestern counties.

DAIRY FARMS

The operator of one in every eight farms in the State is a dairyman deriving at least one-half his income from the sale of dairy products. One-half of these dairy farms are in the southwestern Ozark dairy region. From one-third to one-half of all farms in each of the 12 counties of this region are dairy farms.

Most of the dairy farms outside the dairying region are near cities and towns. Conversely, most towns of more than a few hundred inhabitants are focal points for dairy farms which supply the local needs for fluid milk and cream.





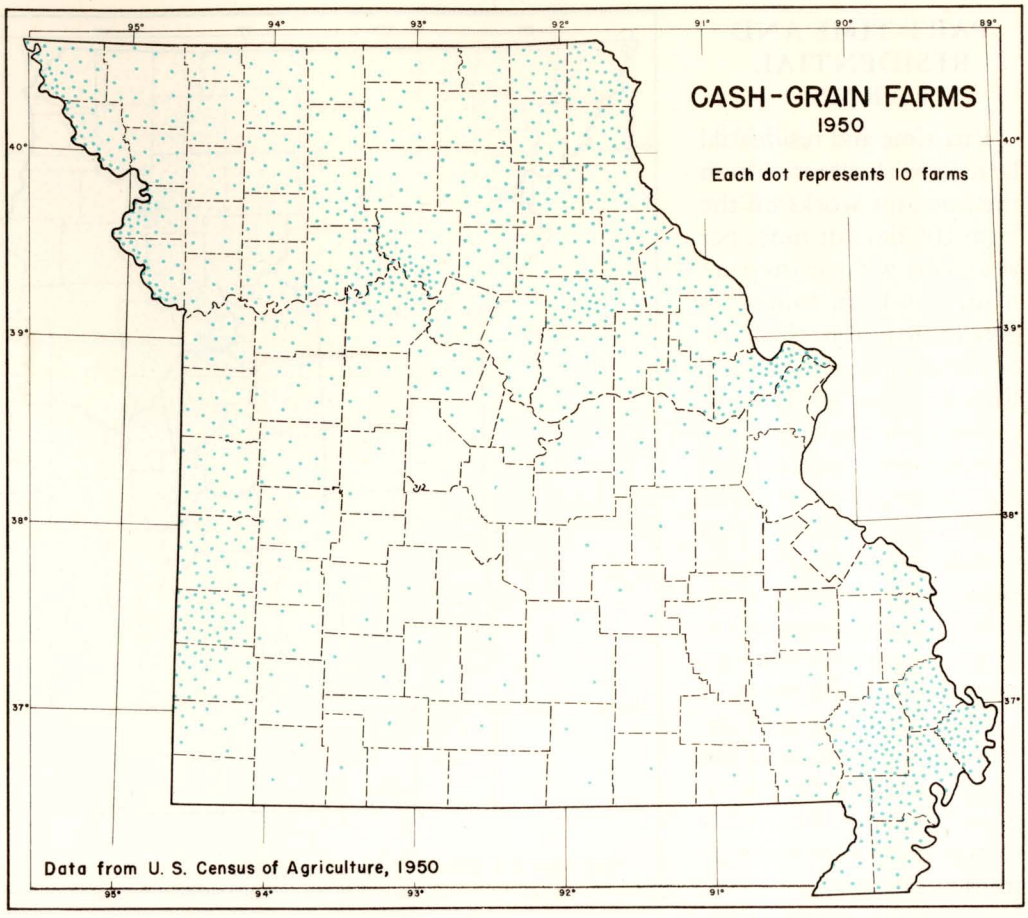
POULTRY FARMS

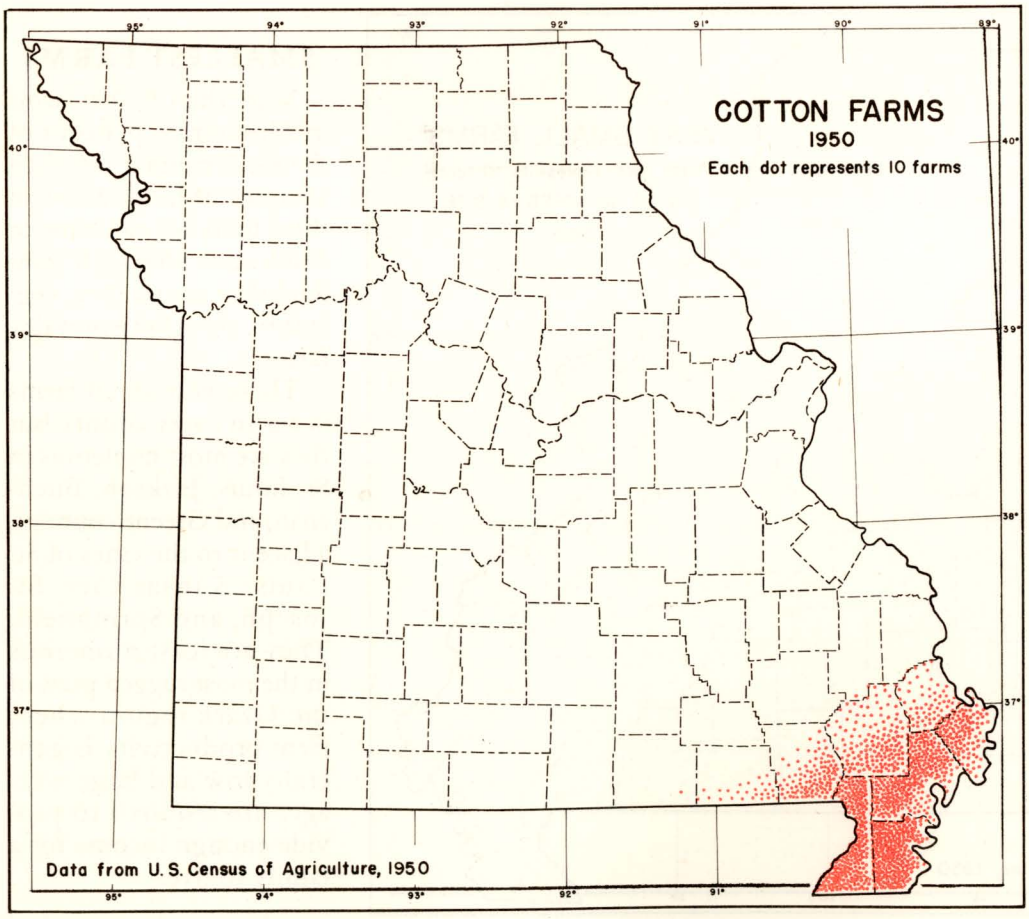
There are nearly 7,000 farms in Missouri which obtain one-half or more of their income from poultry and poultry products. Thousands of other farm families supplement their incomes by the sale of poultry and eggs. The value of poultry and their products is only 8 per cent of the total value of farm products sold, but this is 60 million dollars annually.

Poultry farms tend to be concentrated in the southwestern Ozarks, in the west-central counties near Kansas City, and west of St. Louis. McDonald County had 268 poultry farms in 1950; Franklin County was second with 234.

CASH-GRAIN FARMS

Farm operators who secure one-half or more of their income from the sale of cash grain are relatively few in Missouri. Only 13,100 farms out of 230,045 were classified as cash-grain farms in 1950. Wheat and soybeans are the grains most commonly sold. The distribution of cash-grain farms is similar to the distribution of the wheat and soybean acreage. Some corn and oats are used for the manufacture of cereals, corn meal, starch, and similar products, but most of this grain is fed to livestock.





COTTON FARMS

Cotton is a major crop on more than 13,000 farms in southeastern Missouri. This number is less than 6 per cent of the farms of the State, but from 15 to as much as 85 per cent of the farms in the southeastern counties are cotton farms.

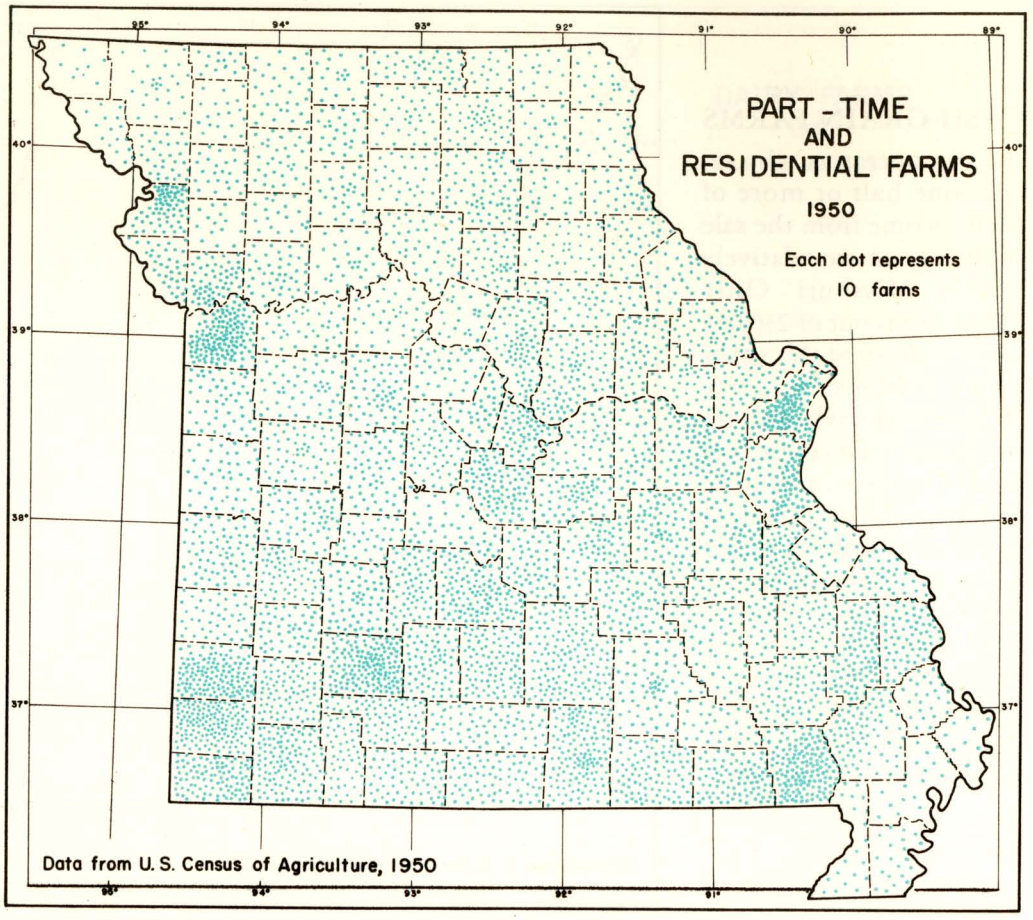
Cotton production is unique among the crops of Missouri in its limited distribution. It is grown satisfactorily only on the delta land in the southeast where the growing season is long.

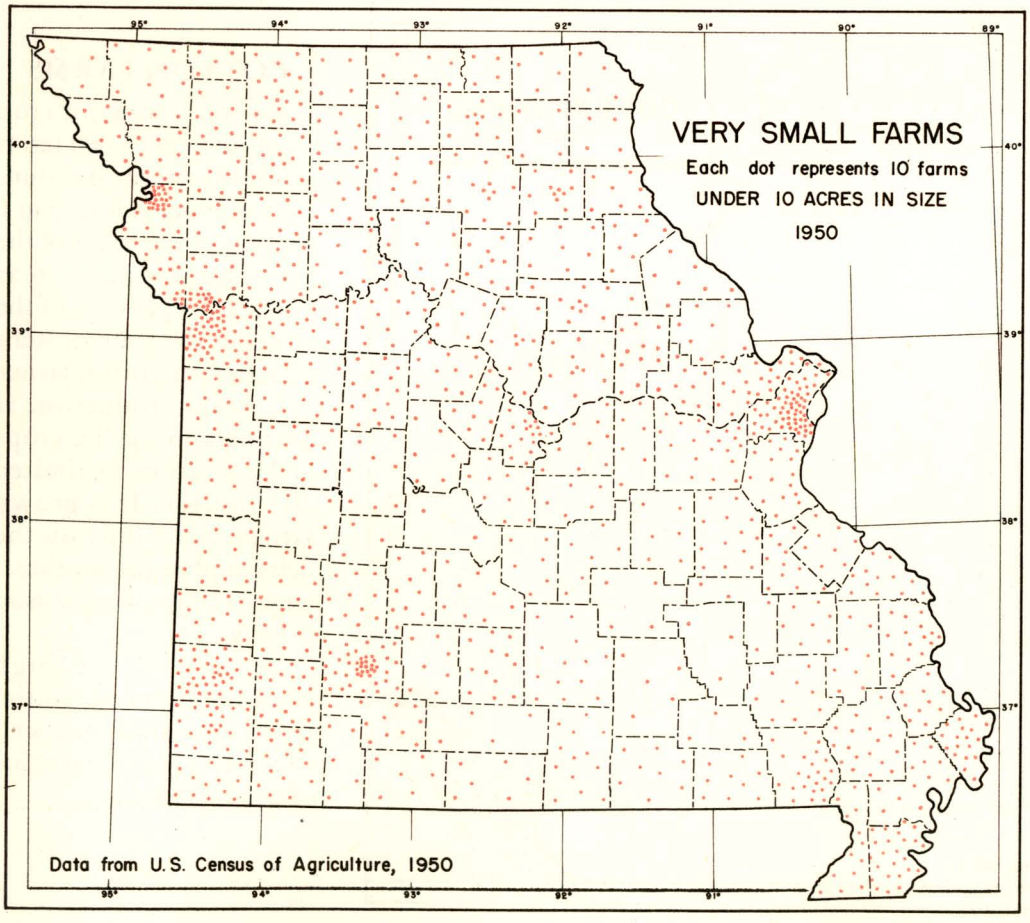
Because of the high labor requirement, cotton farms are small, but well above average in the value of products sold.

PART-TIME AND RESIDENTIAL FARMS

Part-time and residential farms are those on which the operator works off the farm 100 days or more per year and whose income from non-farm sources is greater than from the farm. Some are classed as part-time because of low income. They are widely distributed over the State, but tend to be clustered in the vicinities of cities and towns. In general, they are small and serve as residences and sources of income supplemental to non-farm employment.

More than one-half the farms in ten counties of the rugged eastern Ozark region around Reynolds County are part-time or residential units.





SMALLEST FARMS

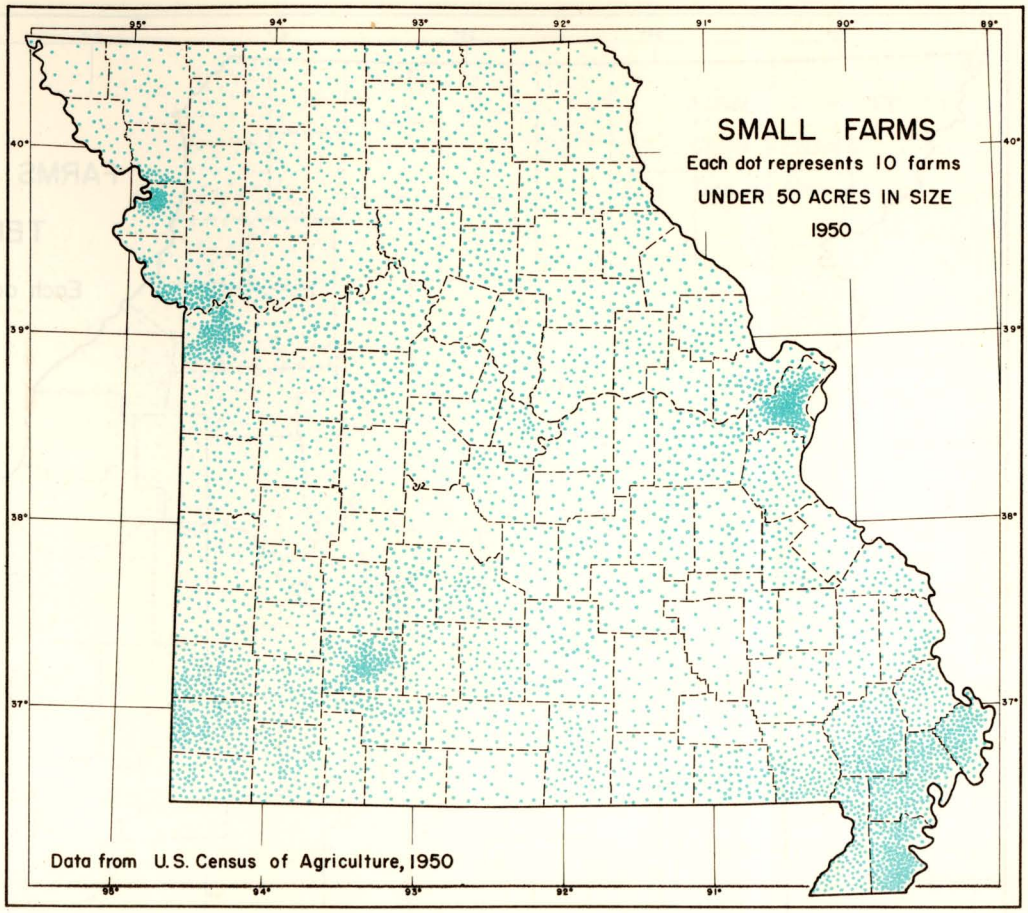
More than 13,000 farms in Missouri, 6 per cent of the total, contain less than 10 acres of land. Most of these units are part-time or residential, although some doubtless are poultry, vegetable, or other specialty farms.

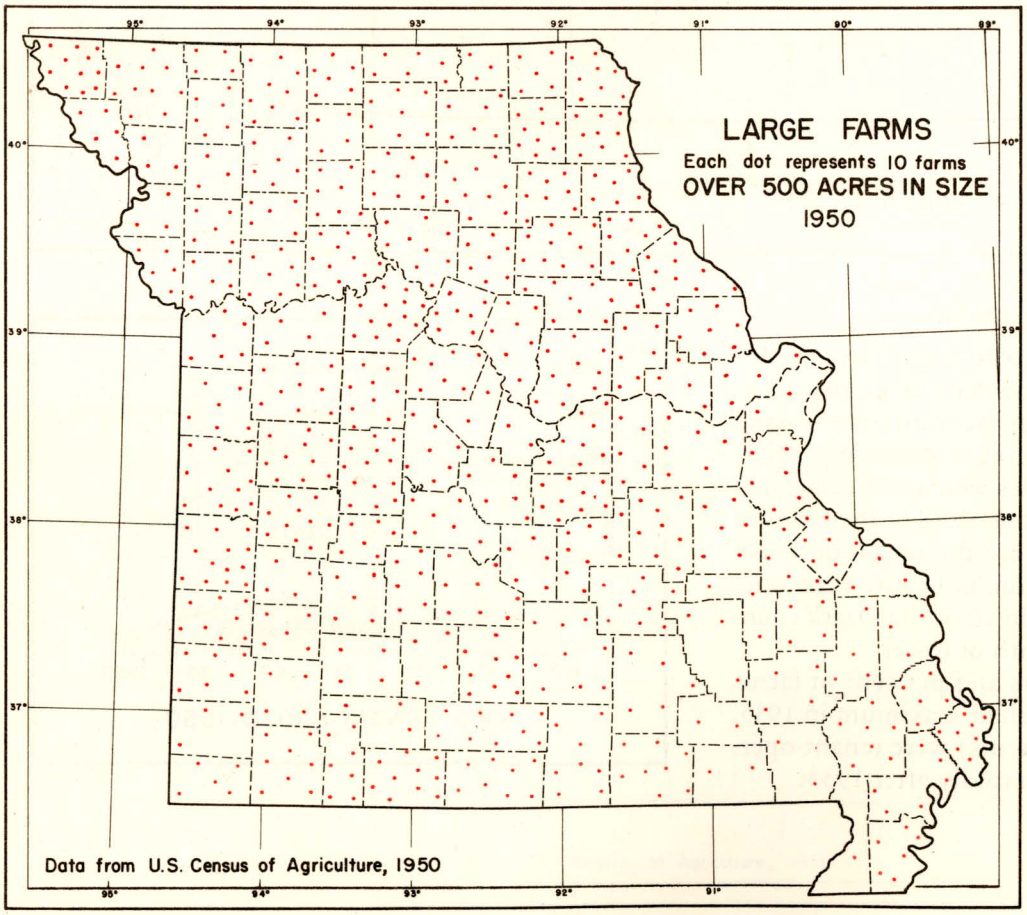
These very small farms occur in every county but they are most numerous in St. Louis, Jackson, Buchanan, and Greene counties, adjacent to the cities of St. Louis, Kansas City, St. Joseph, and Springfield. They are least numerous in the most rugged parts of the Ozark region where farm productivity is generally low and large acreages are required to provide enough income for a family to live.

SMALL FARMS

Farms up to 50 acres in size are distributed in much the same manner as those under 10 acres. There were 56,794 of these in 1950. They are four times as numerous as the "smallest" farms and make up almost one-fourth of the farms in the State.

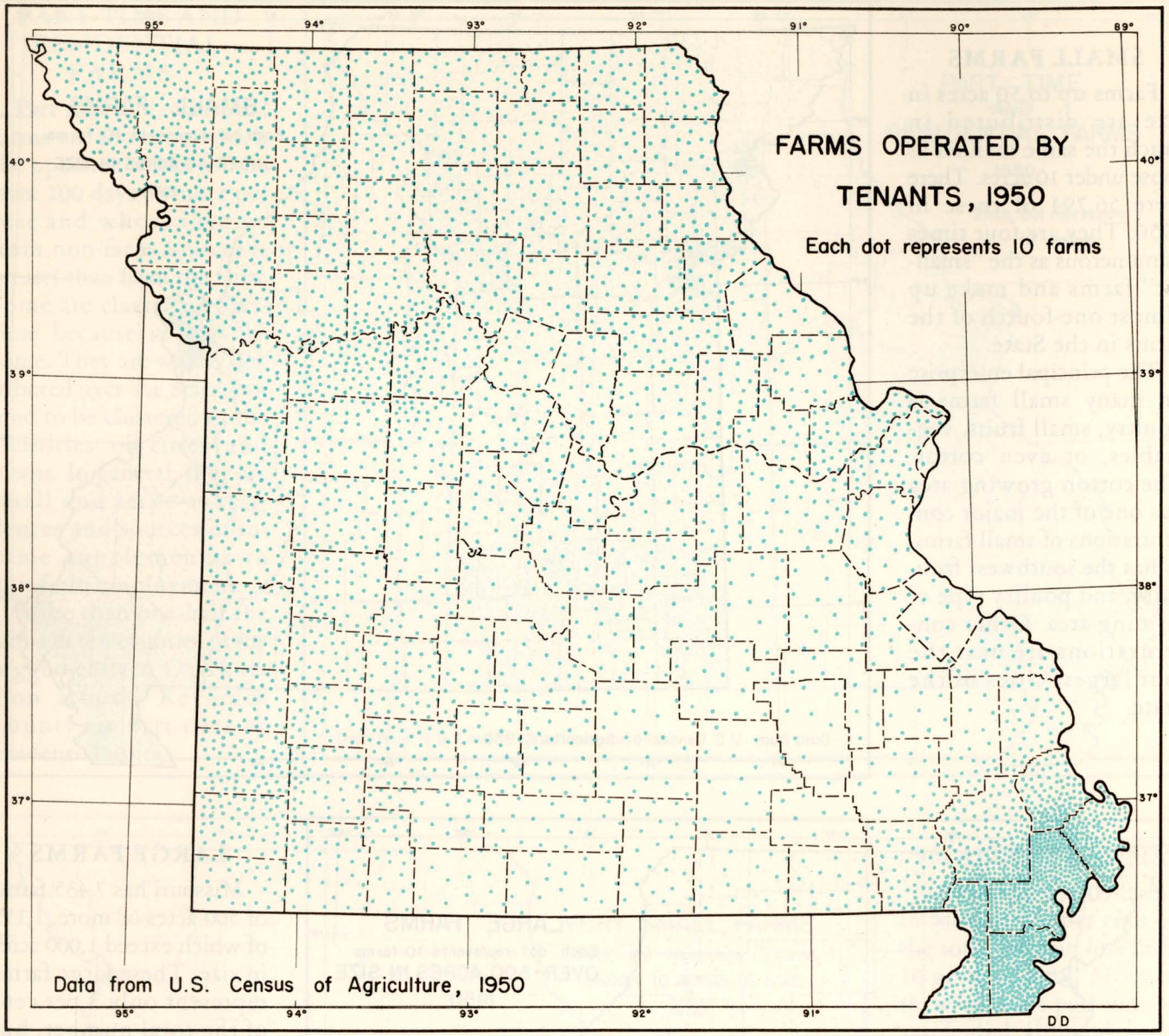
The principal enterprise on many small farms is poultry, small fruits, vegetables, or even cotton. The cotton growing area has one of the major concentrations of small farms, as has the southwest fruit, dairy, and poultry type of farming area. Other concentrations are near the four largest cities of the State.





LARGE FARMS

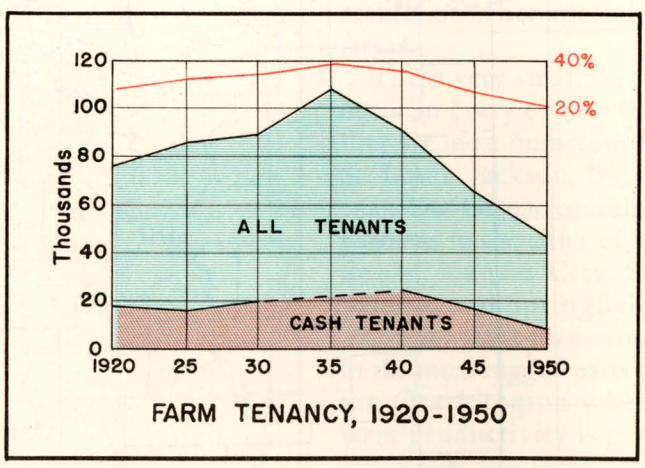
Missouri has 7,435 farms of 500 acres or more, 1,152 of which exceed 1,000 acres in size. These large farms represent only 3 per cent of the total number, but they contain 17 per cent of the land in farms. They are relatively evenly distributed over the State, although somewhat less numerous in the eastern and southwestern Ozarks and in sections adjacent to industrial centers where small part-time farms are numerous. Large operating units are not well adapted to a farm economy dominated by dairy, poultry, fruit, and vegetable enterprises, as in the southwestern Ozarks. They are well adapted to livestock farming and to extensive crops.



TENANT FARMS

In 1950, 43,389 or 20 per cent of the farms in Missouri were operated by non-owners. More than one-fourth of this number were in the southeast lowland region. Three-fourths of all farms in Mississippi, New Madrid, and Pemiscot counties were tenant-operated in 1949. From one-fourth to one-third of the farms of several northwestern counties are also tenant-operated. Throughout the Ozark region, not more than one-fifth are tenant-operated and in 16 of the Ozark counties the proportion is one-tenth or lower.

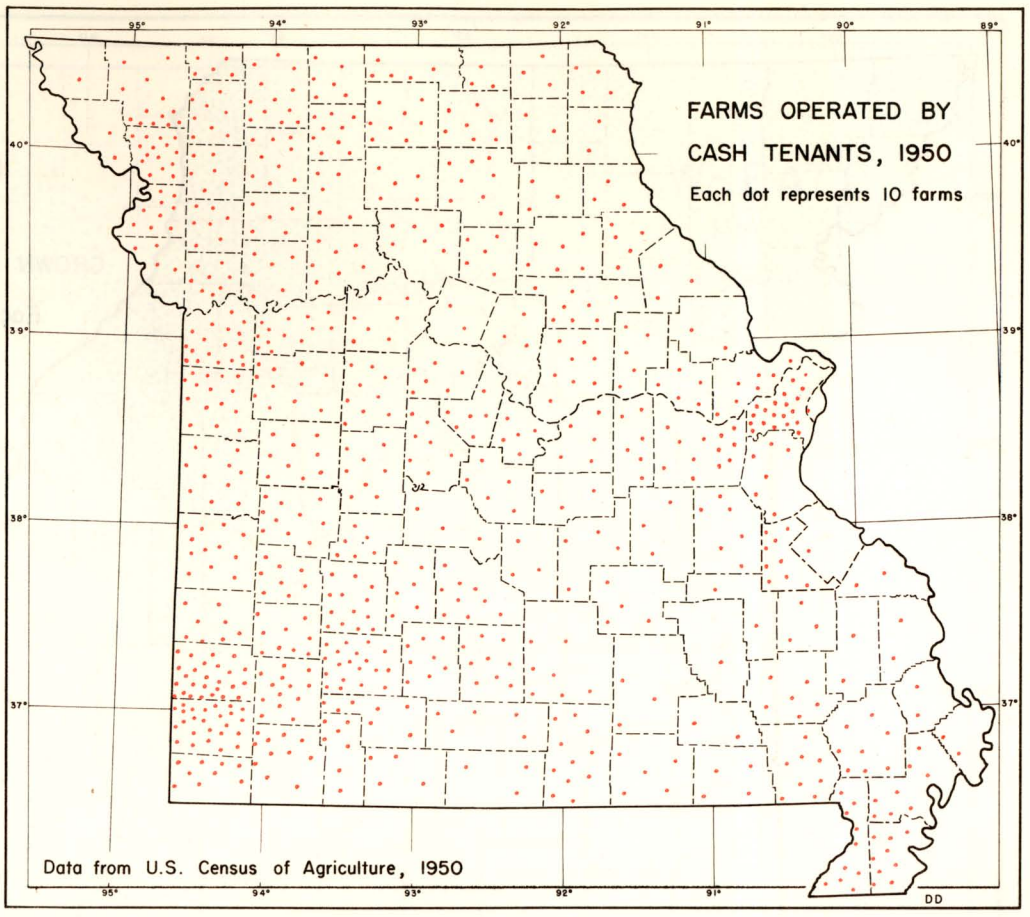
Both number of tenants and per cent of farms operated by tenants reached their maximum in 1935, when 39 per cent (108,023 farms) were tenant-operated. The number declined rapidly after 1935.



CASH TENANTS

Farm tenants who pay cash rent for the land they use occur in every county. They are more numerous in the vicinity of St. Louis, Kansas City, St. Joseph, and Springfield than in other areas.

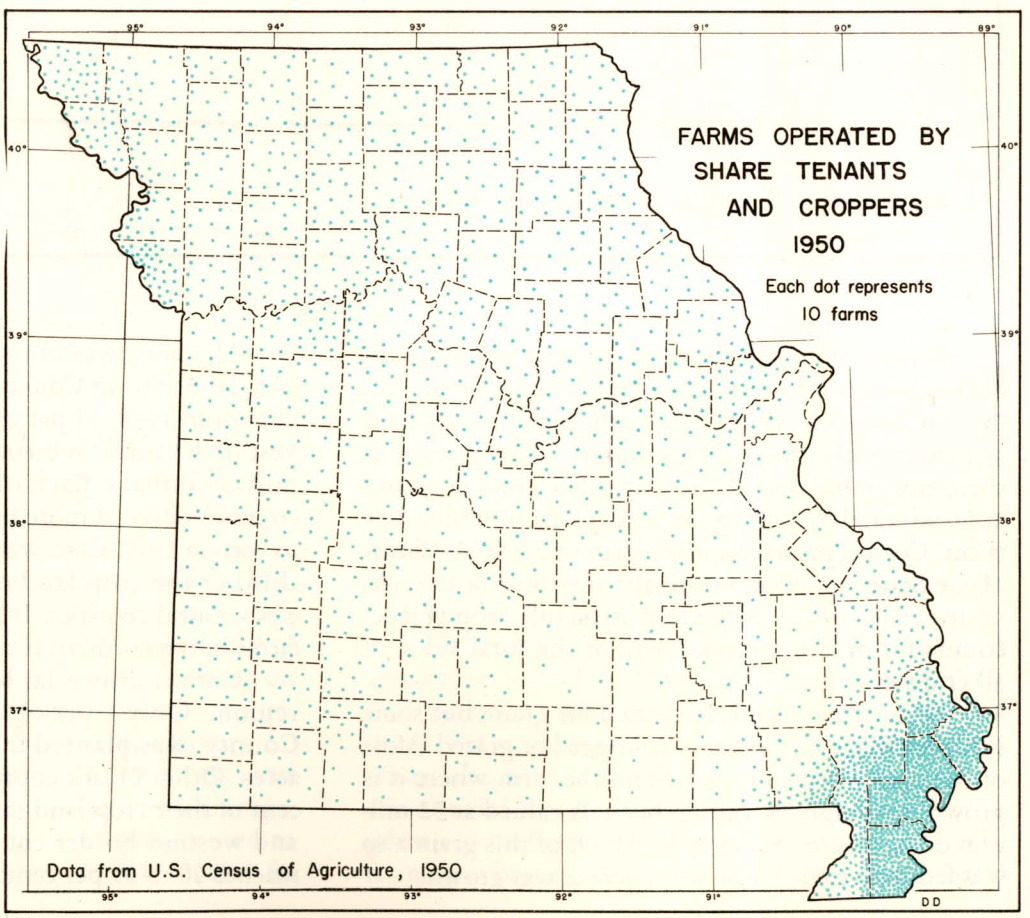
Cash tenancy is least common in areas like the Ozarks which tend toward general and subsistence farming and those in which crop land is limited. Howard and adjacent counties in the center of the State also have few cash tenants.

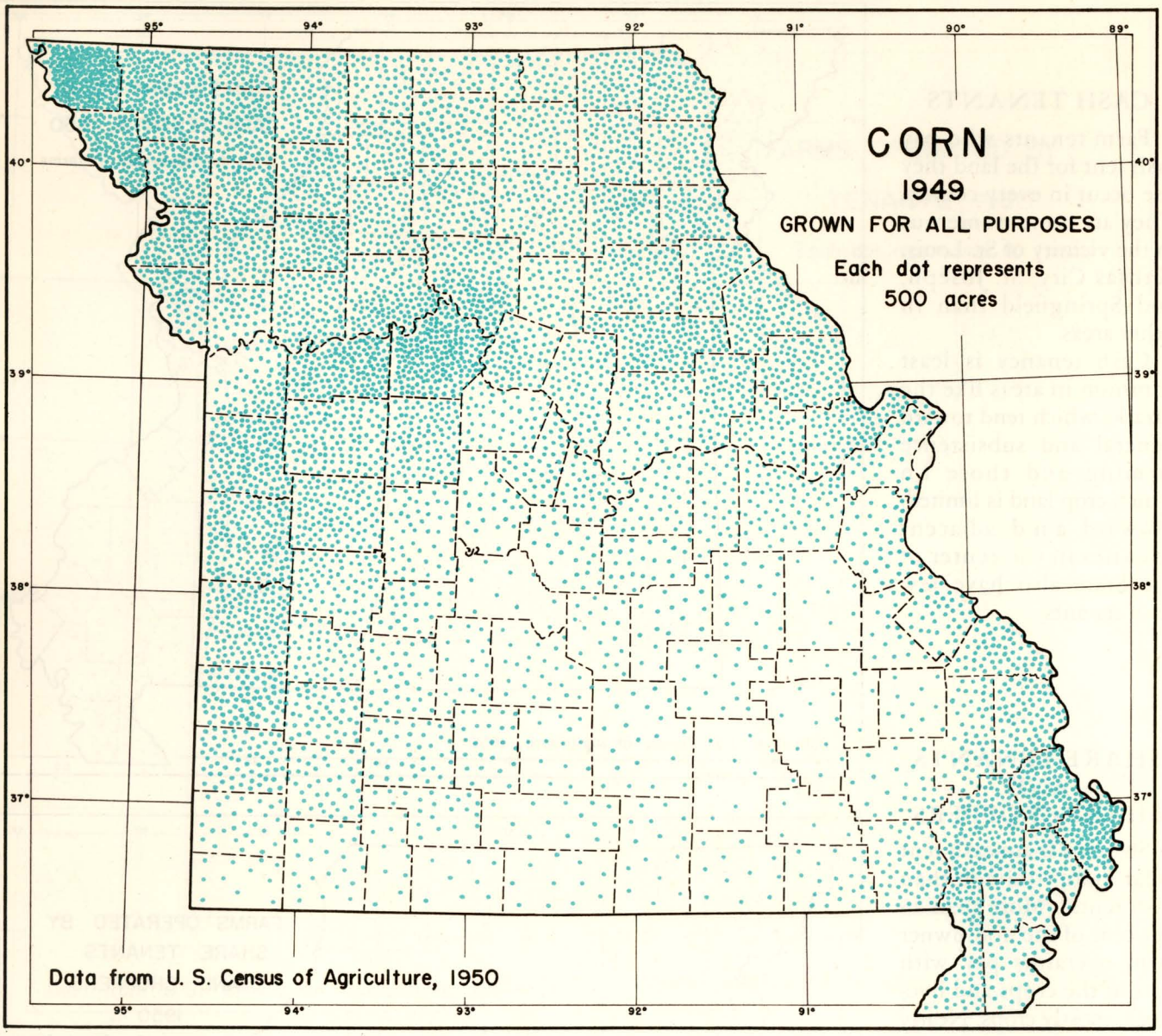


SHARE TENANTS AND SHARE CROPPERS

Share or share-cash rent is far more common than cash rental. More than 43 per cent of the non-owner farm operators pay with part of the crops and livestock, mostly crops. Nearly one-fourth pay part crop and part cash.

Both farm tenancy and share cropping are common in the southeastern lowland. Approximately one-half the farm land and two-thirds the farms are tenant operated. The area has one-fourth of all tenant farms and one-eighth of all farm land which is operated by tenants. Most of the farmers grow cotton as the main crop and pay the land owner with a part of the yield.





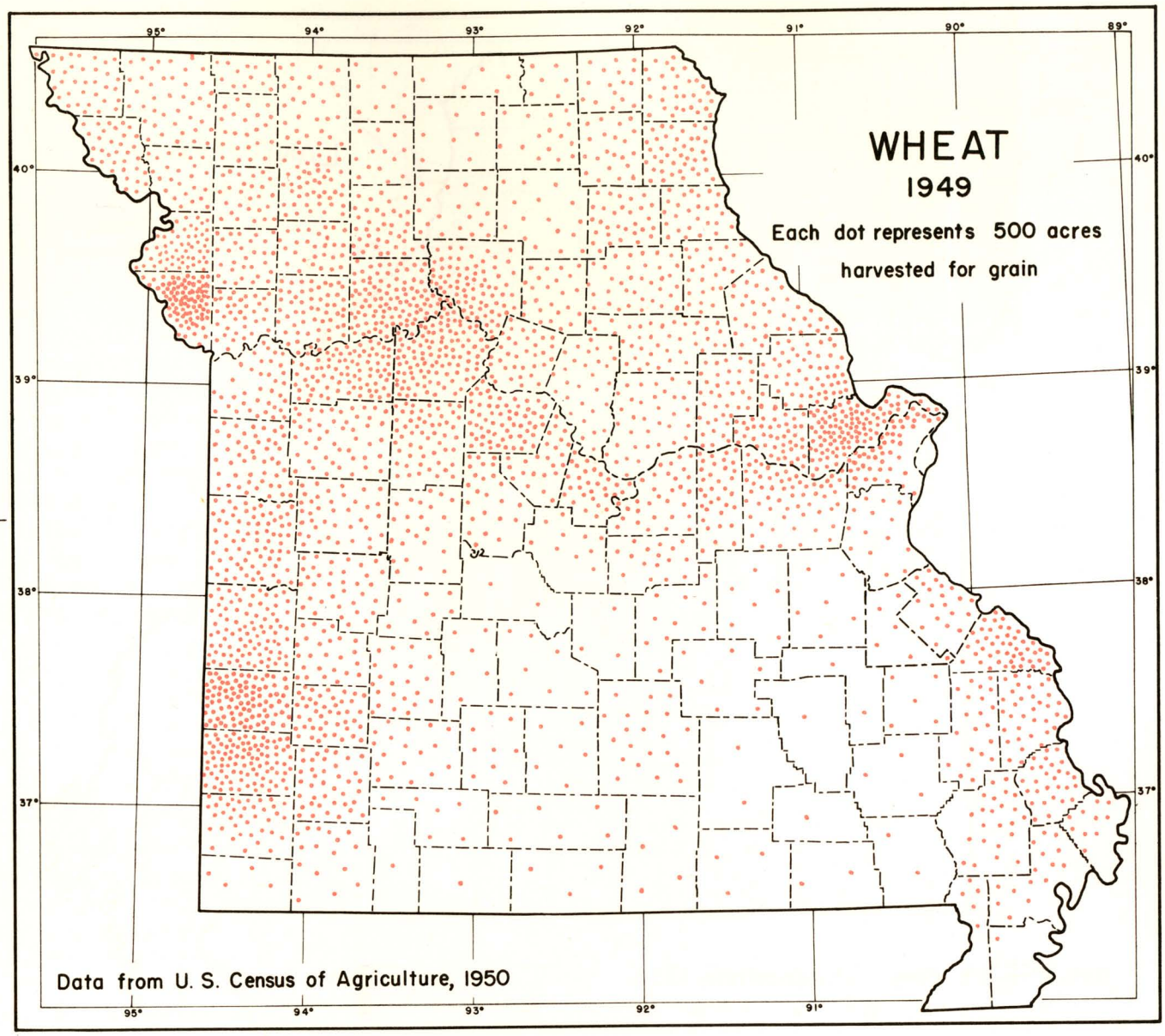
CORN

Between four and four and one-half million acres of corn are grown in Missouri each year. Average production is about 145 million bushels and is valued at approximately 188 million dollars. The acreage is three times that devoted to any other grain crop and approximately equal to the acreage from which hay is cut. Corn is grown on more than one-half the farms of the State and occupies nearly one-third of the harvested crop land. It is the leading staple crop and accounts for more than one-third of the total value of all crops grown.

Most of the corn is harvested for grain, but some is cut for silage or fodder, or is hogged or grazed. Most of the corn is fed to livestock on the farm where it is grown, although 28 million bushels valued at 32 million dollars were sold in 1949. Much of this grain also was fed to livestock, but not where it was grown.

The northwestern counties lead in corn production. In Atchison County, 124,370 acres were planted in corn in 1949, 44 per cent of all crop land. The harvest of 4.3 million bushels was valued at nearly 5.5 million dollars. Each of the six northwesternmost counties devoted more than one-third of all crop land to corn in 1949. Corn was grown on one-fourth to one-third of the crop land of most other northern and west-central counties. It is also a major crop on many farms in the northern part of the southeastern lowland.

Corn is grown far less extensively in the Ozark region. Only 1 per cent of the crop land of Carter County was planted in corn in 1949, a mere 2,496 acres. Other Ozark counties devote from 5 to 10 per cent of their crop land to corn, except in the northern and western border counties where the proportion reaches 20 to 25 per cent.



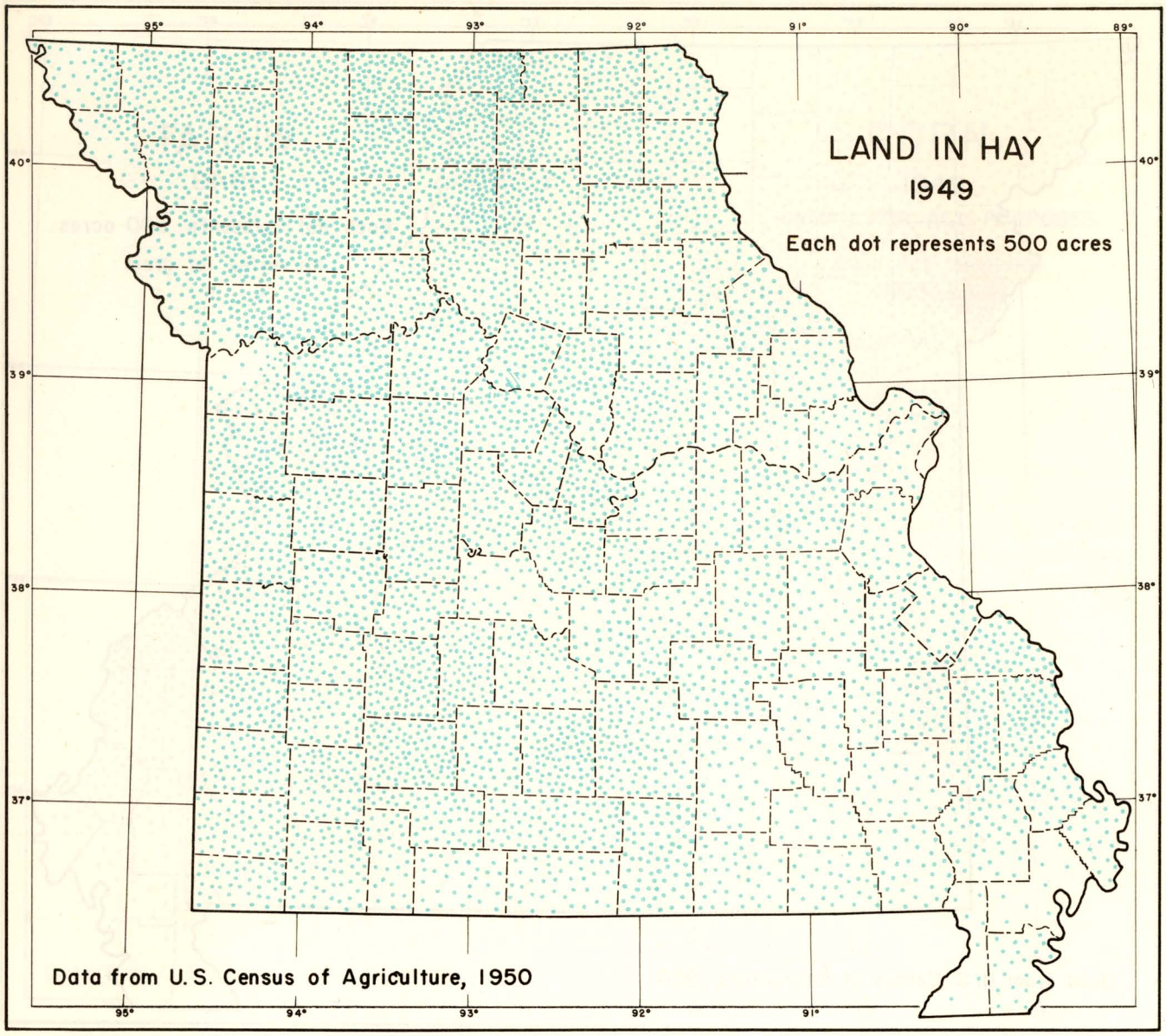
WHEAT

Wheat is the second grain crop and third, after corn and hay, in total acreage. It is grown on one-fourth of all farms and occupies one-eight of all harvested crop land. The value of the 1949 wheat crop was $46,600,000, one-tenth the value of all crops harvested and one-fourth the value of those sold. Approximately one and one-half million acres of winter wheat are grown in Missouri each year, yielding 20 to 30 million bushels. Most of the wheat is sold as a cash grain which is used in milling flour, mixing stock feed etc.

The wheat acreage tends to be concentrated on the plains of west-central and southwestern counties, and along the Missouri and Mississippi Rivers. St. Charles (48,196 acres), Vernon (43,594 acres), and Platte (42,921 acres) counties lead in wheat acreage. On the basis of proportion of crop land devoted to wheat, the leading counties are Platte (30%), St. Charles (26%), and Warren (24%).

Much wheat is grown on the alluvial plains of the Missouri and Mississippi rivers and on the deep loess of the uplands bordering them. Wheat is relatively unimportant in the systems of farming followed in the Ozark region, except along the northern and eastern borders, both of which have loess soils. Nor is wheat grown extensively in the southeastern lowland region or in the north-central counties.

The protection afforded by winter wheat against erosion on the rolling loess soil areas of the river borders makes it superior to corn as a crop for these areas. Because it requires less frequent cultivation, wheat also is a better crop on the heavy clay soils of the alluvial lowlands during many years. Wheat is grown as cash grain on these lowlands. Cash grain farming is best developed along the two major rivers.



HAY

Hay is second only to corn among the crops grown in Missouri. It occupies 28 per cent of the crop land. More than 4⅓ million tons were cut from nearly 3½ million acres in 1949. The value of the hay crop ($69,917,224) was less than corn ($165,354,826), but greater than that of any other crop.

Hay is grown throughout the State. Less land is devoted to it in the southeast lowland cash crop area and in the east-central Ozark counties than elsewhere. The north-central counties in the Chariton River hills have a notable emphasis on hay.

The importance of hay in the use of farm land reflects the importance of the livestock industry. Most of it (92%) is fed to animals on farms where it is grown. Only 368,261 tons were sold in 1949, from the total production of 4,387,378 tons.

ACREAGE, YIELD, AND VALUE OF HAY, 1949

Type	Acres	Per Cent of Land in Hay	Tons Produced	Per Cent of Total Hay Production	Value*	Per Cent of Total Value of Hay Crop
Alfalfa	340,582	10	802,574	18	$15,983,548	23
Clover and timothy	944,875	27	1,102,885	25	17,255,499	25
Lespedeza	1,670,817	49	1,968,899	45	29,511,983	42
Small grains	137,986	4	141,882	3	2,061,389	3
Wild hay	134,248	4	148,338	4	2,076,742	3
Other hay	204,615	6	222,800	5	3,028,083	4
Total	3,433,123	100	4,387,378	100	$69,917,244	100

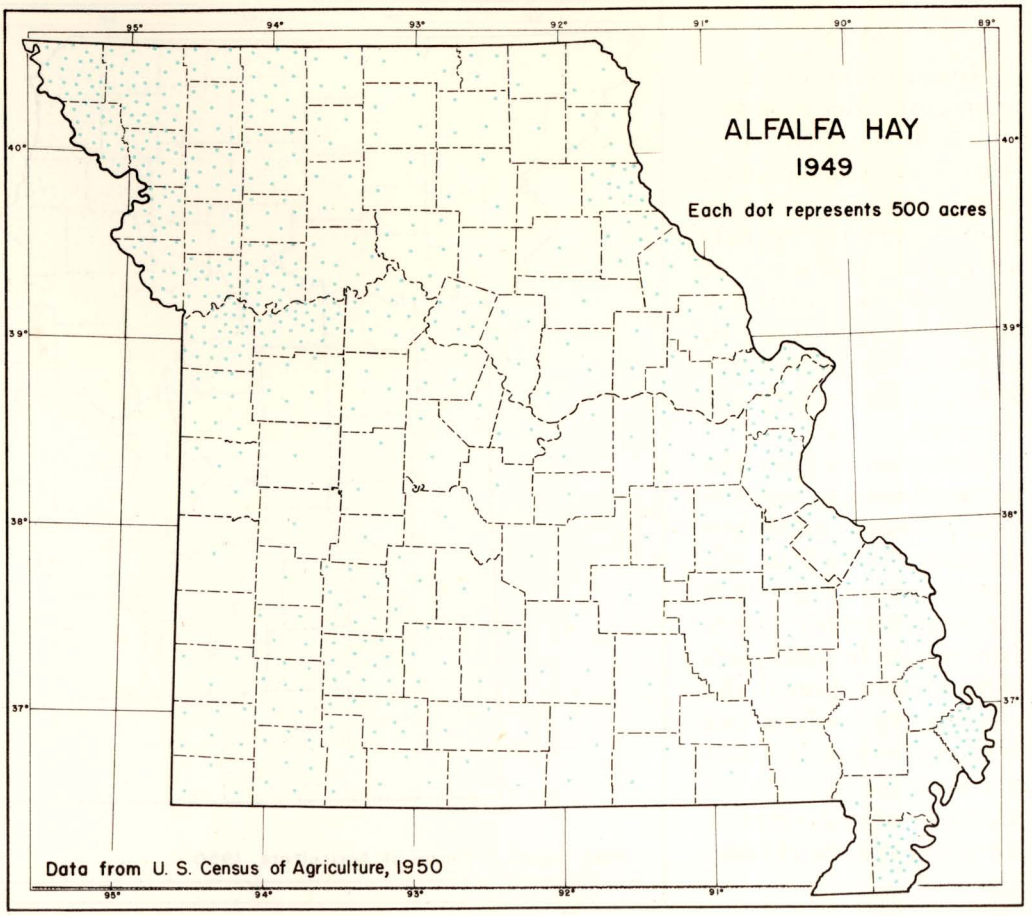
*As determined by the Bureau of the Census and including hay used on the farm as well as that sold.

ALFALFA HAY

Alfalfa is the most productive hay crop in the State. It was grown on only 10 per cent of the hay land but gave 19 per cent of the total yield by weight and 23 per cent by value in 1949.

Most of the alfalfa hay is grown on the alluvial and loess soils, which facilitate development of its long root system. Its greatest concentration is along the Missouri River from Atchison to Ray and Layfayette counties and in the Mississippi River border counties from Marion to Pemiscot.

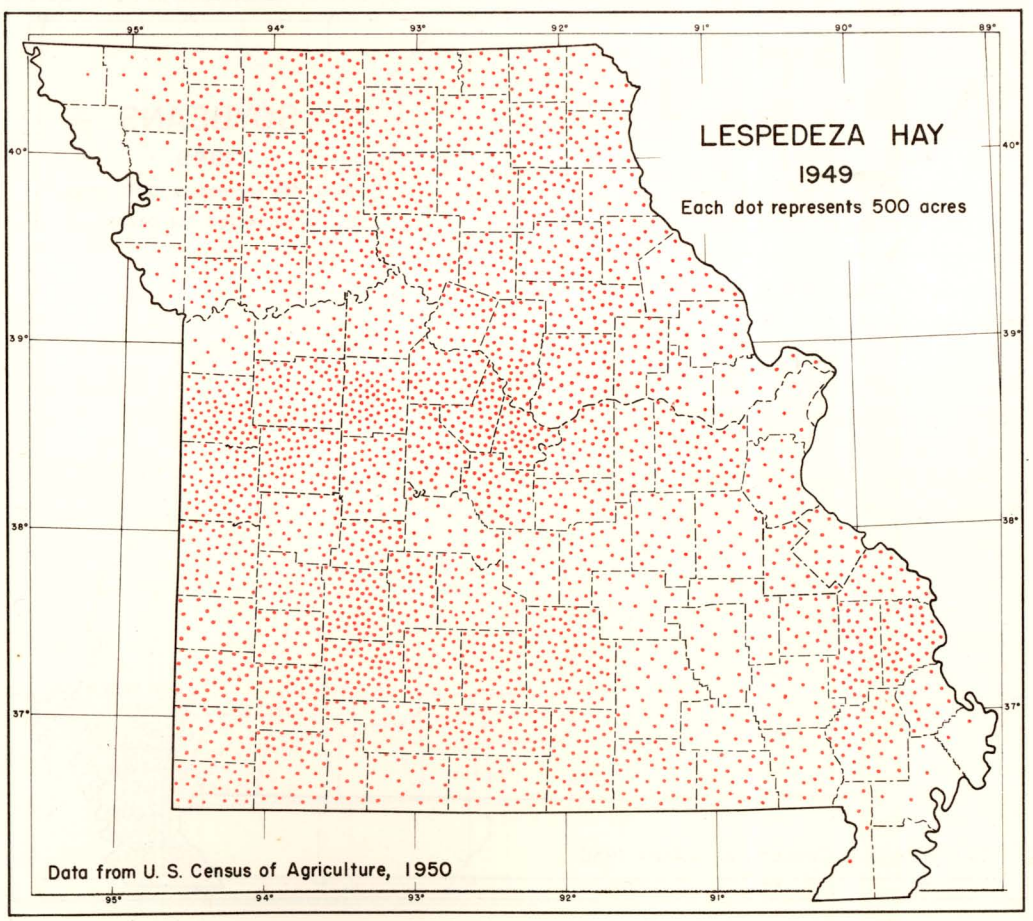
A third area of alfalfa production centers in Green and Lawarence counties in the southwest.



LESPEDEZA HAY

Lespedeza is the leading hay crop of the State, accounting for almost one-half the total acreage. From an experimental stage in 1925, it has grown in a quarter-century to the second ranking crop in the State, with 1,670,817 acres grown for hay and 308,228 acres harvested for seed in 1949.

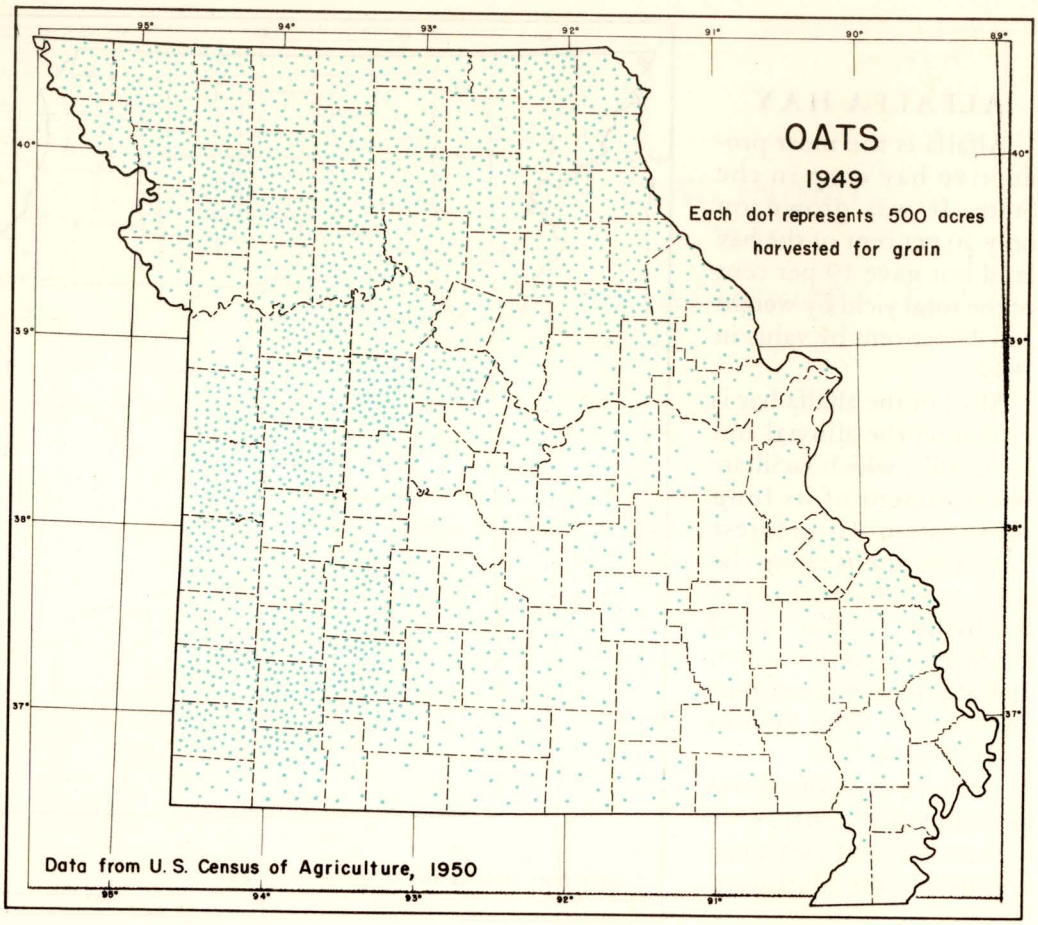
Lespedeza is a legume which is easily and cheaply established. It reseeds itself, is resistant to drought, produces forage at the season of greatest need, and is tolerant of low fertility but responsive to soil treatment. It has a variety of uses, protecting and improving the soil as well as providing pasture, hay and seed.

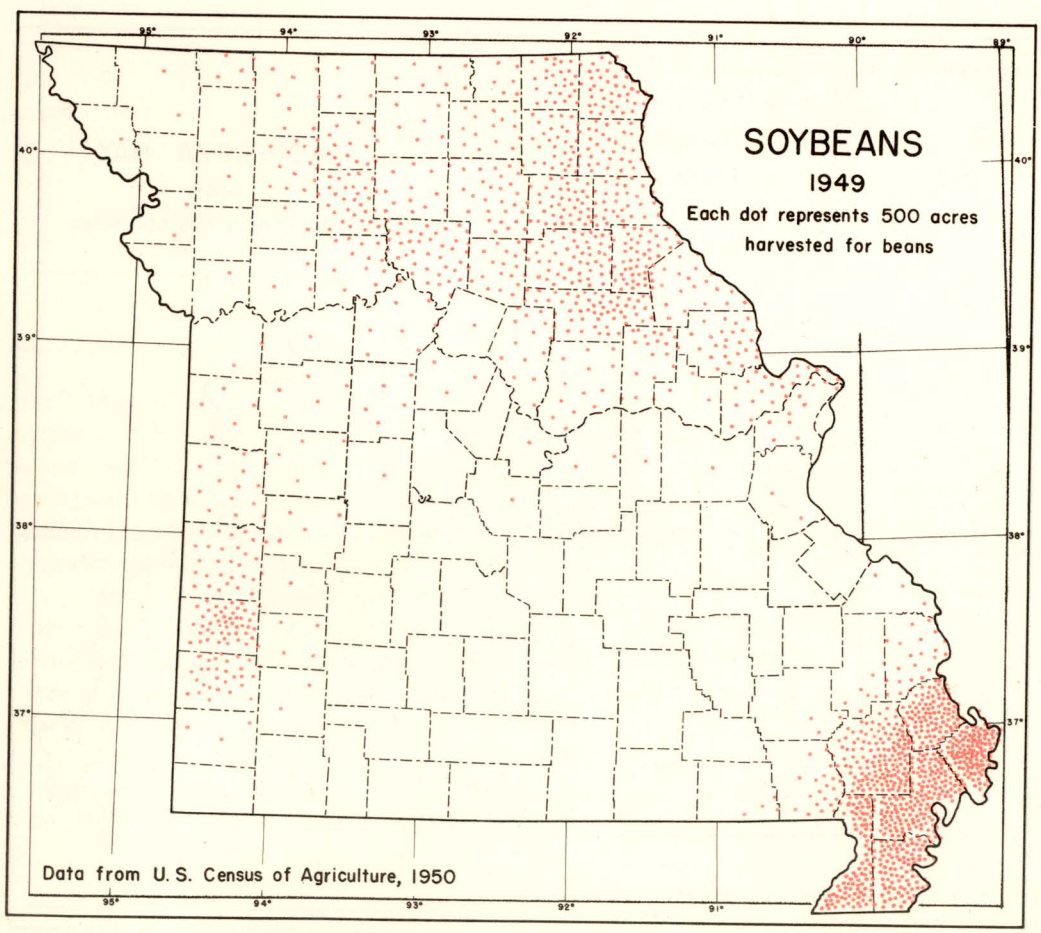


OATS

Missouri's third ranking grain crop, after corn and wheat, is oats. In some years more land is planted to oats than to wheat. In 1949, 30,223,572 bushels of oats valued at $19,412,575 were harvested from 1,334,496 acres. In addition, 156,608 acres were cut for feeding unthreshed.

More oats are grown in the northern and western meat producing areas than elsewhere in the State. Almost as many are grown in the southwestern Ozark dairy region. In other parts of the Ozark region, in the southeastern lowland, and in the vicinity of St. Louis and Kansas City, oats are relatively unimportant in prevailing systems of farming.





SOYBEANS

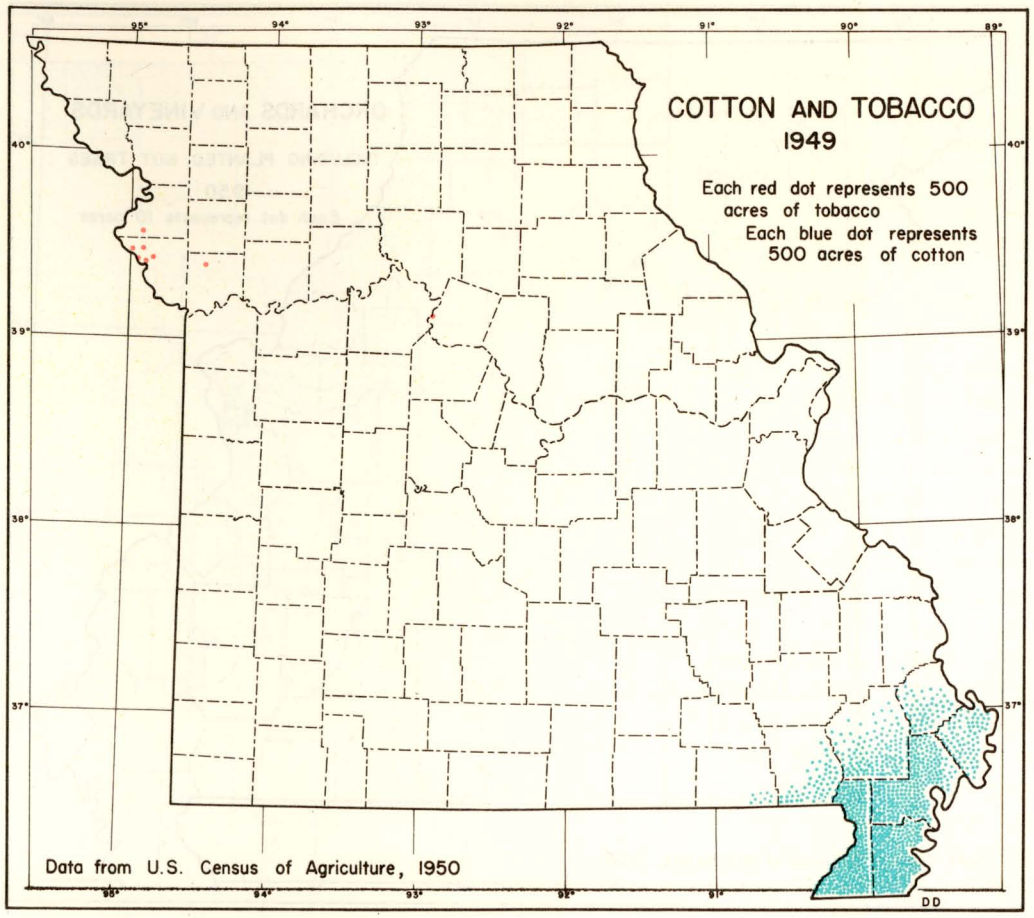
The soybean is one of Missouri's newest cash crops and one of the most valuable for a variety of purposes. The acreage increased from 277,410 in 1930 to nearly one million in 1949, or approximately 3½ times. This phenomenal growth has been accompanied by material increases in yields per acre. In 1919, 18,315 bushels of soybeans were harvested in the State. In 1949, 16,738,422 bushels were produced.

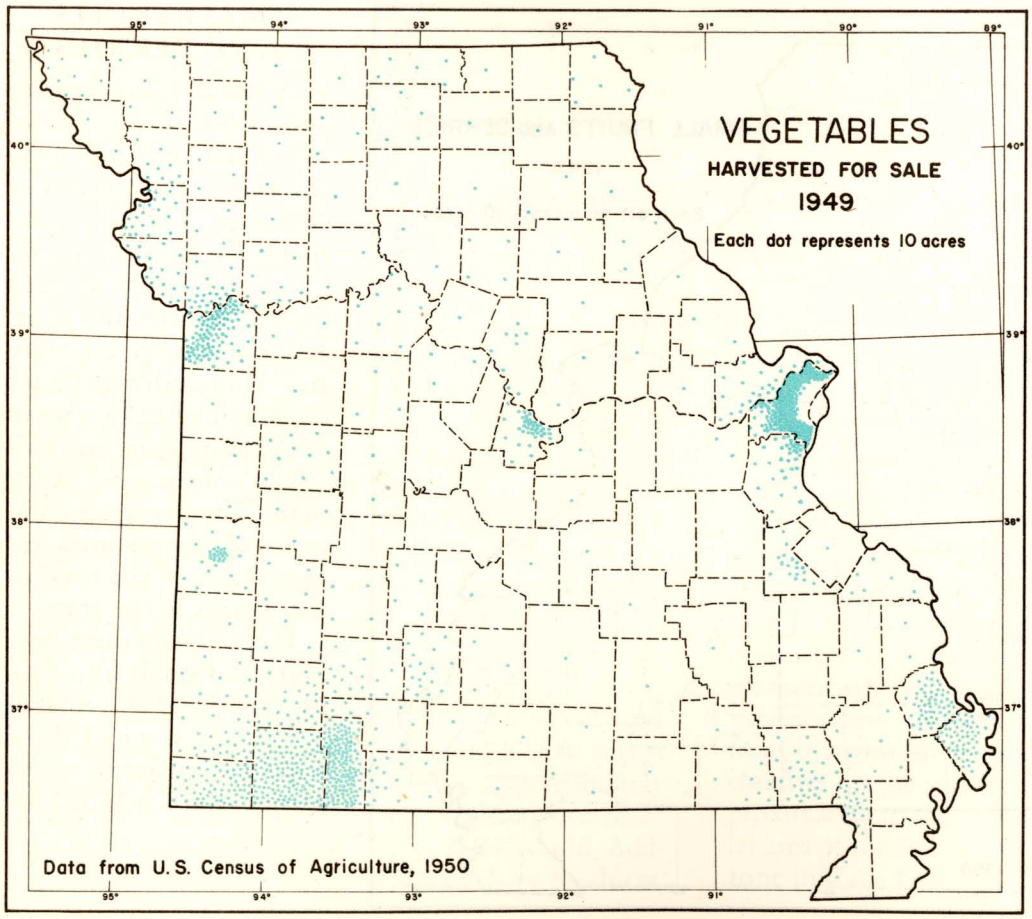
In addition to being grown for grain, soybeans can be cut for hay, hogged down or grazed, or cut for silage. Some are plowed under as a green manure crop. These uses are of minor importance, however.

COTTON AND TOBACCO

Cotton and tobacco are the most localized of all Missouri field crops. Cotton is grown only in the southeast where the climate is mildest. In 1949, 590,149 acres were harvested. This was only 5 per cent of the crop land of the State, but the yield accounted for 16 per cent of the value of all crops harvested and 36 per cent of the value of those sold.

Approximately 5,000 acres are devoted to tobacco. In 1949, 5,237,231 pounds were produced, and sold for $2,278,850. Platte County is the center of tobacco production, although small acreages of the crop are grown in several counties along the Missouri River and elsewhere.

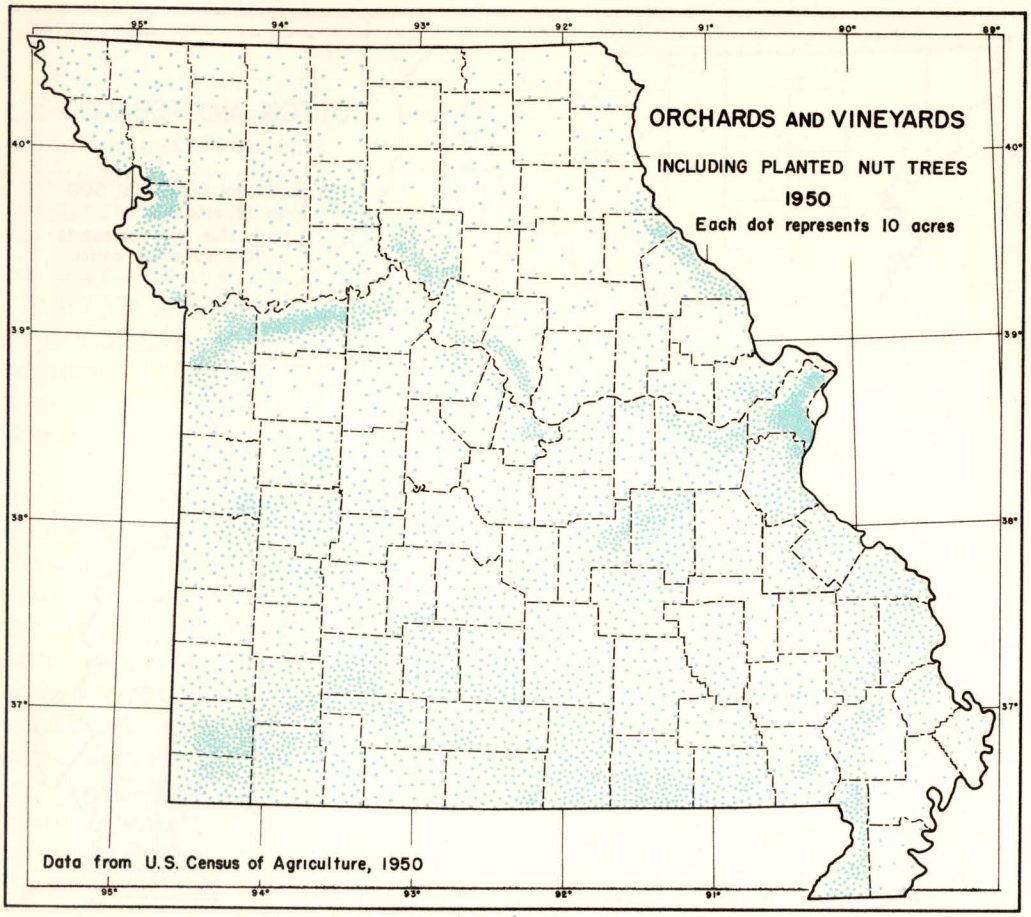




VEGETABLES

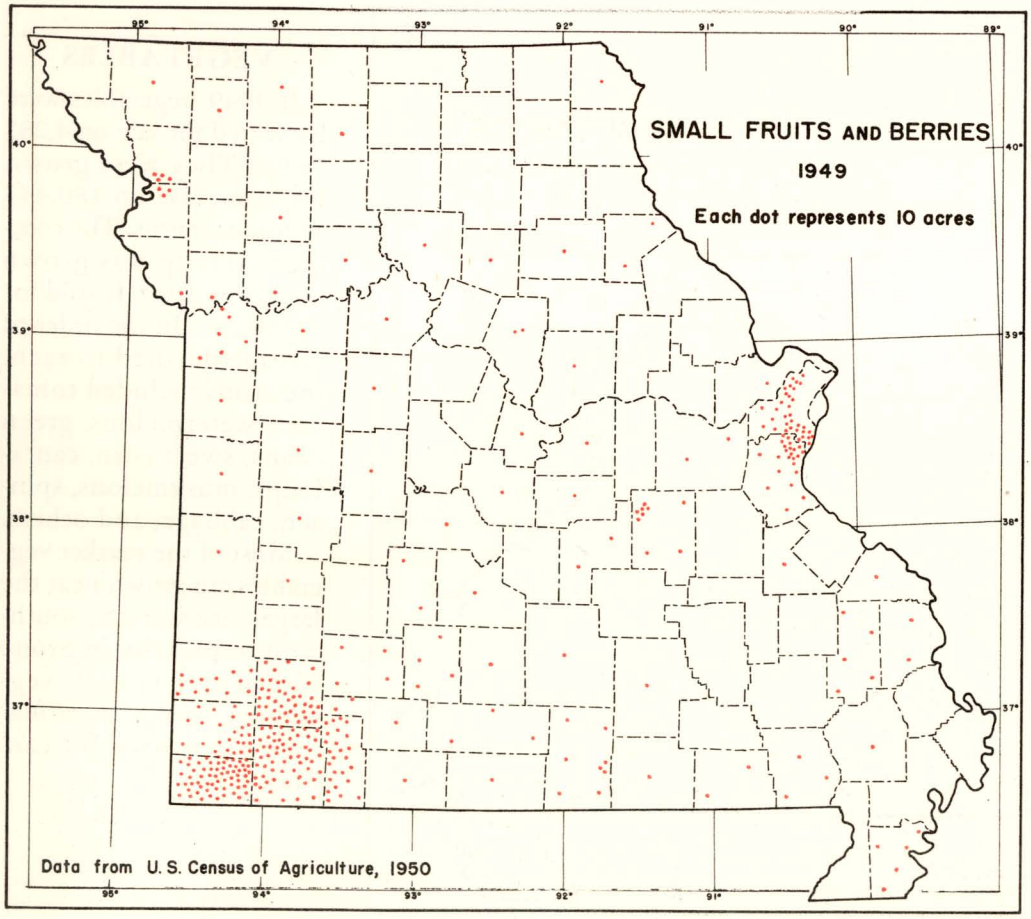
In 1949, vegetables were harvested for sale on 4,285 farms. They were grown for home use on 180,447 additional farms. The commercial crop was grown on 20,993 acres. It sold for $2,989,243. In the order of acreage devoted to each, the crops included tomatoes, watermelons, green beans, sweet corn, cantaloups, muskmelons, spinach, cabbage, and others.

Most of the market vegetables are grown near the larger cities. In the southwest, especially in Stone and Barry counties, vegetables, primarily tomatoes, are grown for canning.



ORCHARDS AND VINEYARDS

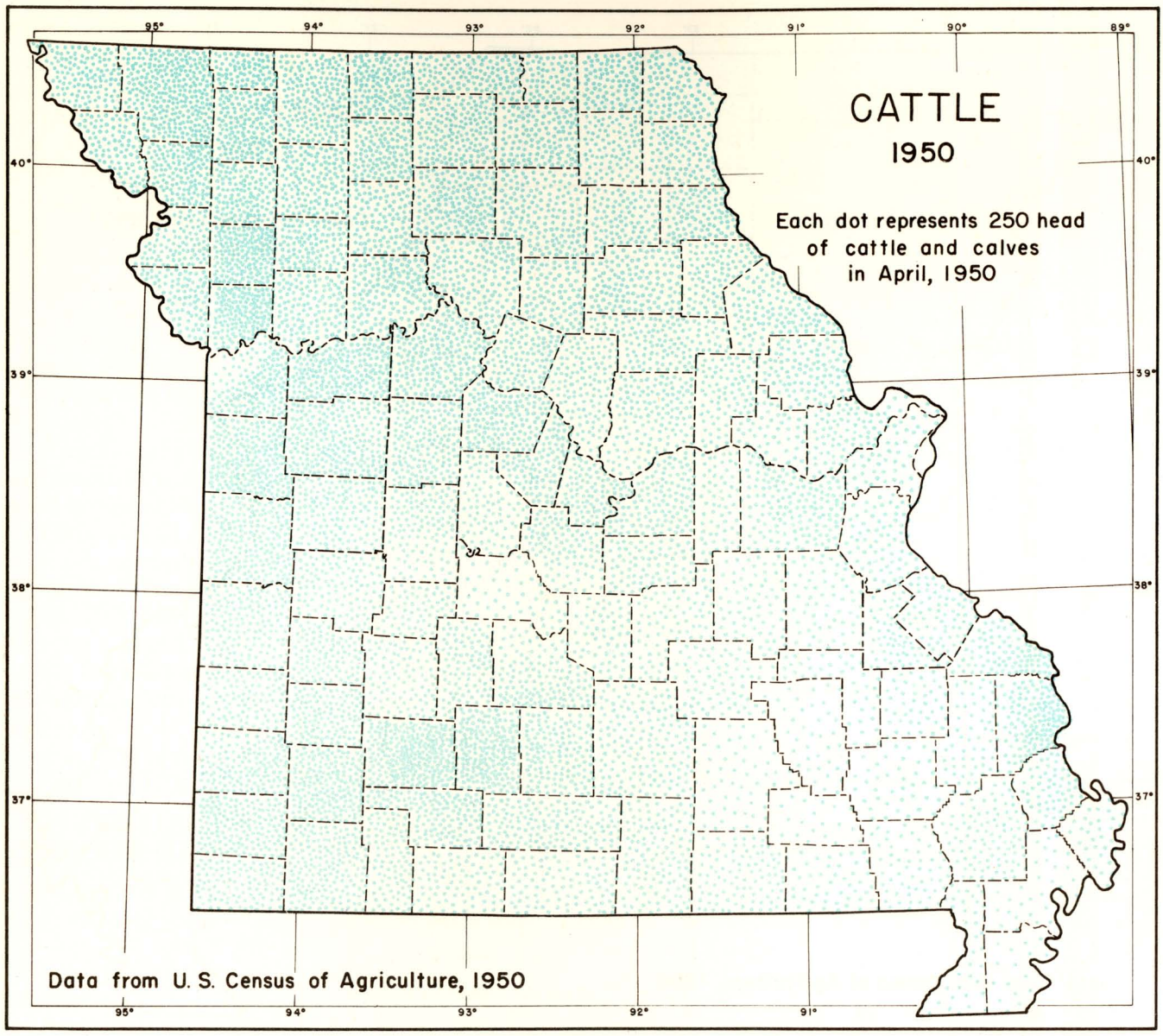
Orchards and vineyards occupied 47,698 acres of land on 101,891 farms in Missouri in 1949. Most of these crops are scattered over the State and represent small plantings for home use with limited surpluses for local markets. There are commercial orchards and vineyards serving larger and more distant markets in some of the deep loess soil areas bordering the Missouri River, particularly east of Kansas City in Jackson and Lafayette counties. St. Louis County and the Mississippi River loess hills in Pike and Ralls counties also have considerable acreages in orchards and vineyards, as does the southwest Ozark region.



SMALL FRUITS AND BERRIES

A few acres of berries and small fruits are grown for home use and local markets in each county of Missouri. They are commercially significant only in seven southwestern Ozark counties and in St. Louis and Jefferson counties. The southwest Ozark counties had 2,274 acres in 1949, more than one-half (53%)) of the total of the State. The two areas composed of nine counties had two-thirds of the total of 4,274 acres in the State.

Strawberries dominate berry and small fruit production. In 1949, a total of 3,706 acres yielded 5,028,235 quarts of strawberries valued at $1,472,800.

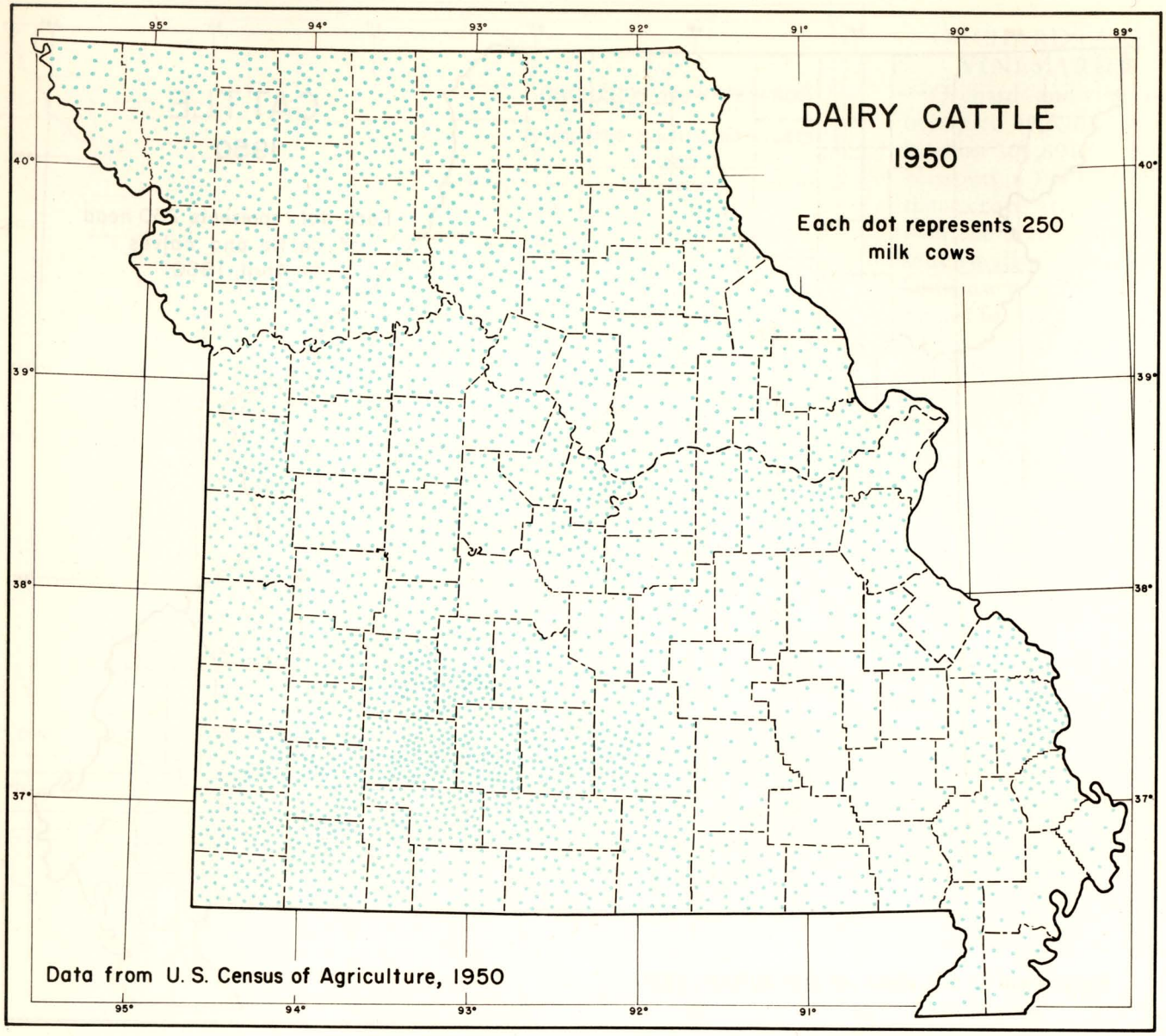


CATTLE

Livestock farms are the most numerous type in Missouri. The sale of livestock and livestock products is the leading source of farm income. Returns from the sale of cattle are greater than those from any other type of animal. A total of 3,280,623 head, including calves, were found on nearly 200,000 of the 230,045 farms in Missouri on January 1, 1950. These animals were valued at $371,750,574. Missouri ranked sixth among the states in the number of cattle on farms, being exceeded by Texas, Iowa, Nebraska, Kansas, and Minnesota.

During 1949 Missouri farmers sold 909,690 head of cattle valued at $145,840,146 and 702,860 calves valued at $50,512, 875. This amount approximately equaled the value of all crops sold, and constituted 27 per cent of the total value of farm products sold. Adding 79 million dollars for the sale of dairy products, the sale of cattle and their products accounted for more than one-third (38%) of the value of all farm products sold during 1949.

Cattle are distributed throughout the State. They are least numerous in the southeast lowland, where a cash-crop type of farming is prevalent, and in the most rugged portions of the Ozark region, where farms are least numerous and the per cent of land in farms is lowest. The heaviest concentrations of cattle are in the northwest and west-central counties, where beef cattle are numerous, and in the southwest, where dairy cattle predominate. A band of moderate density extends from the western boundary of the State through the counties on the south side of the Missouri River approximately to the center of the State. Another, smaller area of concentration is in the eastern Ozark border zone in Cape Girardeau County.

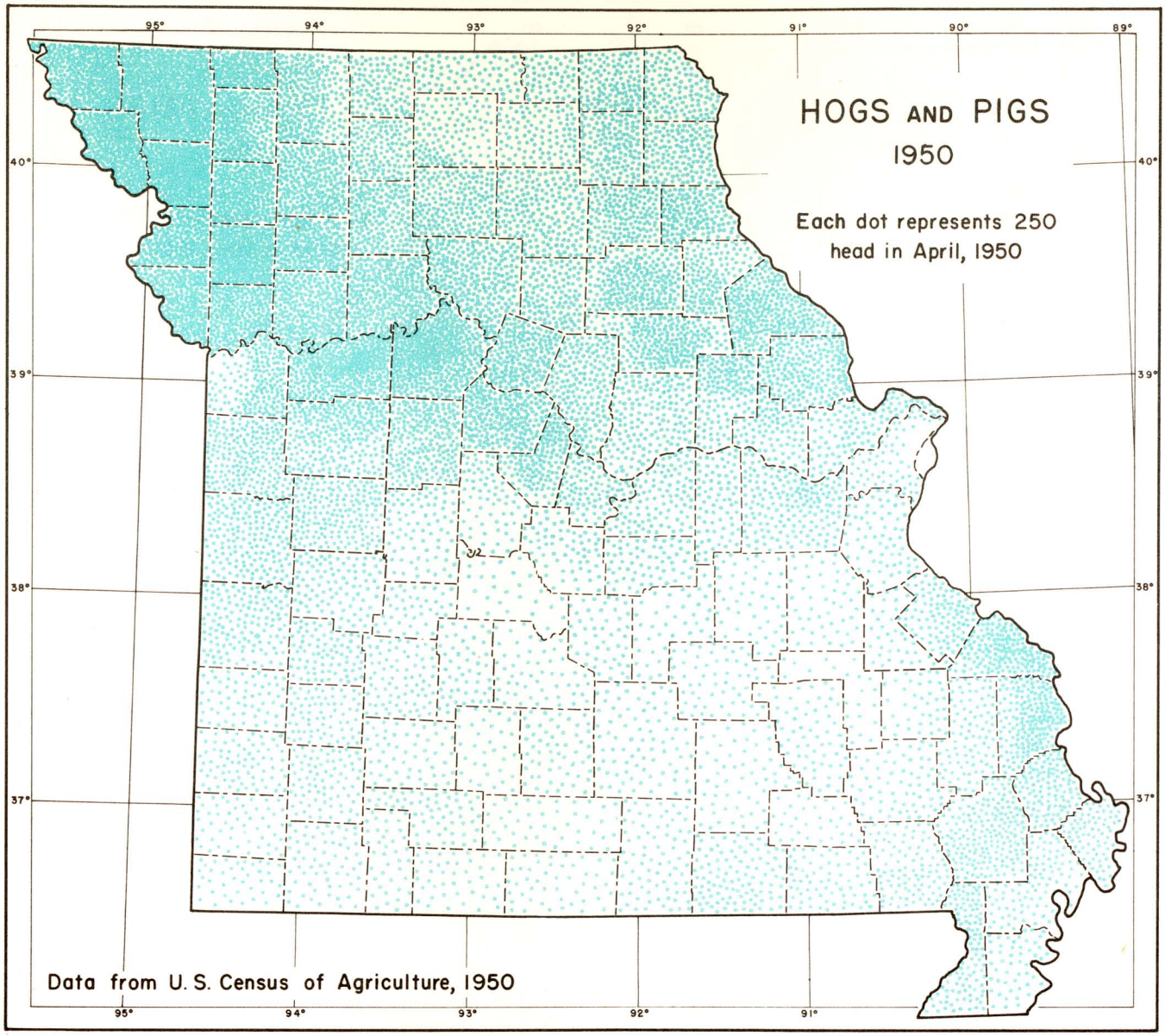


DAIRY CATTLE

One farm in eight in Missouri is classified as a dairy farm, with one-half or more of its income derived from the sale of dairy products. A few dairy cows are kept on most farms to meet the needs of the family and for limited sales of dairy products. There were 933,205 milk cows in the State in 1949. Milk, cream, and other dairy products valued at $79,246,261 were sold from 113,205 farms in 1949. This amount was 11 per cent of all farm products sold.

Dairy cattle are about evenly distributed over the northern and western plains regions. Locally, they are somewhat concentrated around the cities and towns, where there are markets for milk and cream. The highest density of dairy cattle, and of dairy farms, occurs in the southwest Ozarks, where condensaries, creameries, and cheese factories provide markets for milk and cream. One of the largest dairy plants in the world is at Springfield in the heart of the dairy region. It receives and processes nearly a million pounds of milk daily.

Dairying is not well developed in the cash crop area of the southeast, and dairy cattle are relatively few in number. This is also true of the rugged areas of the Ozark region, including the area around Reynolds County in the east, and Camden and adjacent counties in the northwest. Taney and Ozark counties also have sparce dairy cow populations. In these three areas farms are few in number, crop land is limited, and much of the grazing land is woodland pasture which is better suited to beef cattle than to dairy animals. Throughout most of the interior Ozark area beef cattle are emphasized and dairy cattle are limited in number.

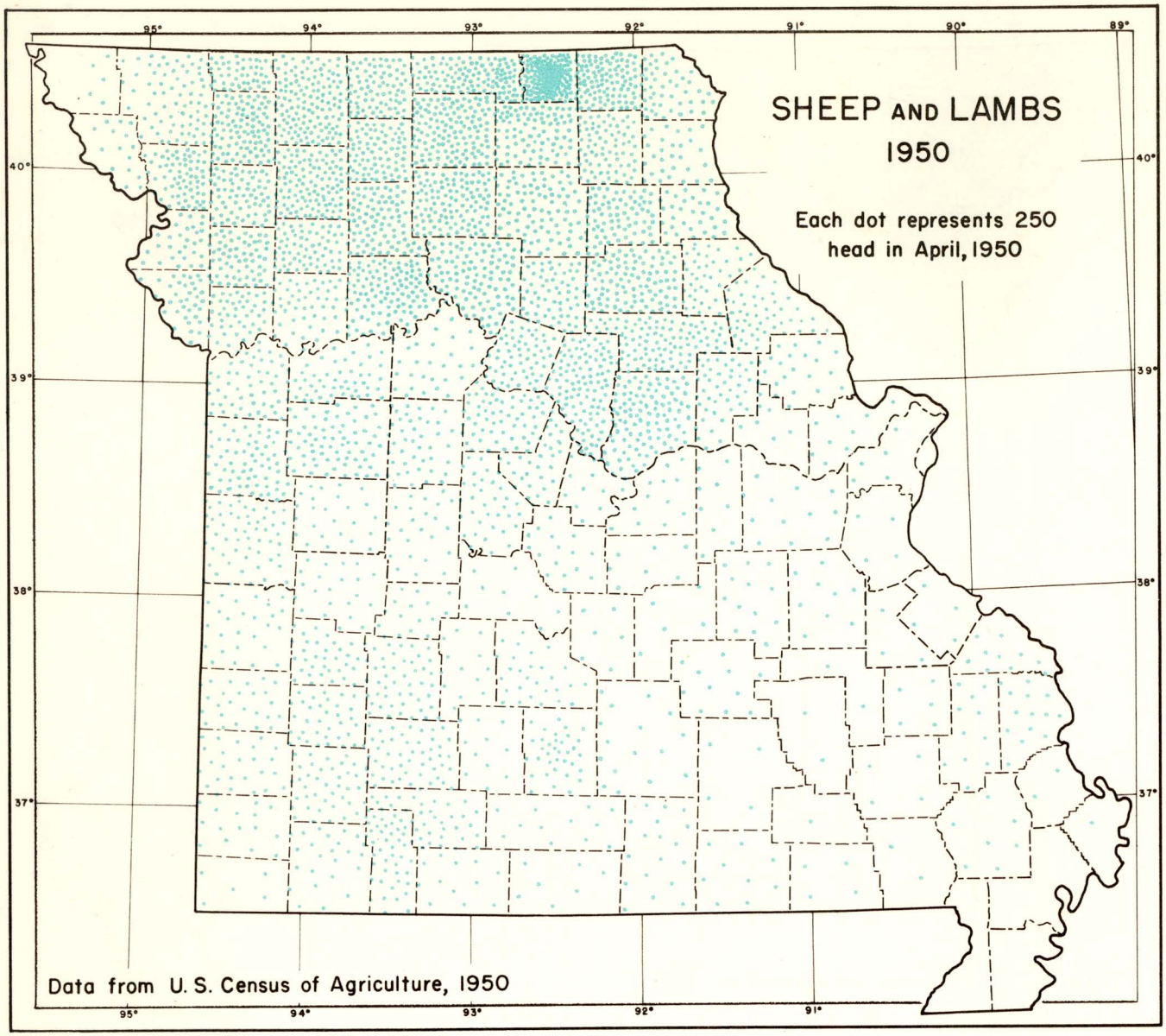


HOGS

Swine are the most numerous farm animals in the State. Missouri had 7 per cent of the number of hogs and pigs in the United States in 1950, and was surpassed only by Iowa, Illinois, and Indiana. The number of hogs exceeds the number of cattle by more than one-half million head, but their value is only one-fifth as great. Missouri farmers owned 3,911,816 hogs in April, 1950. These were valued at more than 73 million dollars. Each spring approximately seven million pigs are farrowed. During 1949, a total of 4,541,284 hogs and pigs were sold from Missouri farms, bringing $162,353,795 in farm income. This number was three times the number of cattle and calves sold. In addition, 333,713 hogs valued at more than 21 million dollars were slaughtered on farms.

The basic feed for hogs is corn. The distributions of the corn acreage and of hogs are very similar. Hogs are most numerous in the counties extending from the northwest corner to the center of the State. This is also the area of greatest corn production. Hogs are raised in somewhat lesser numbers in the northeastern counties. Corn is a leading crop here, also, but less is grown than in the northwest. A third but still smaller concentration of hogs is in the eastern Ozark border area adjacent to the Mississippi River and the southeastern lowlands, and in the northern part of the latter area. There, too, much corn is grown and fed to hogs.

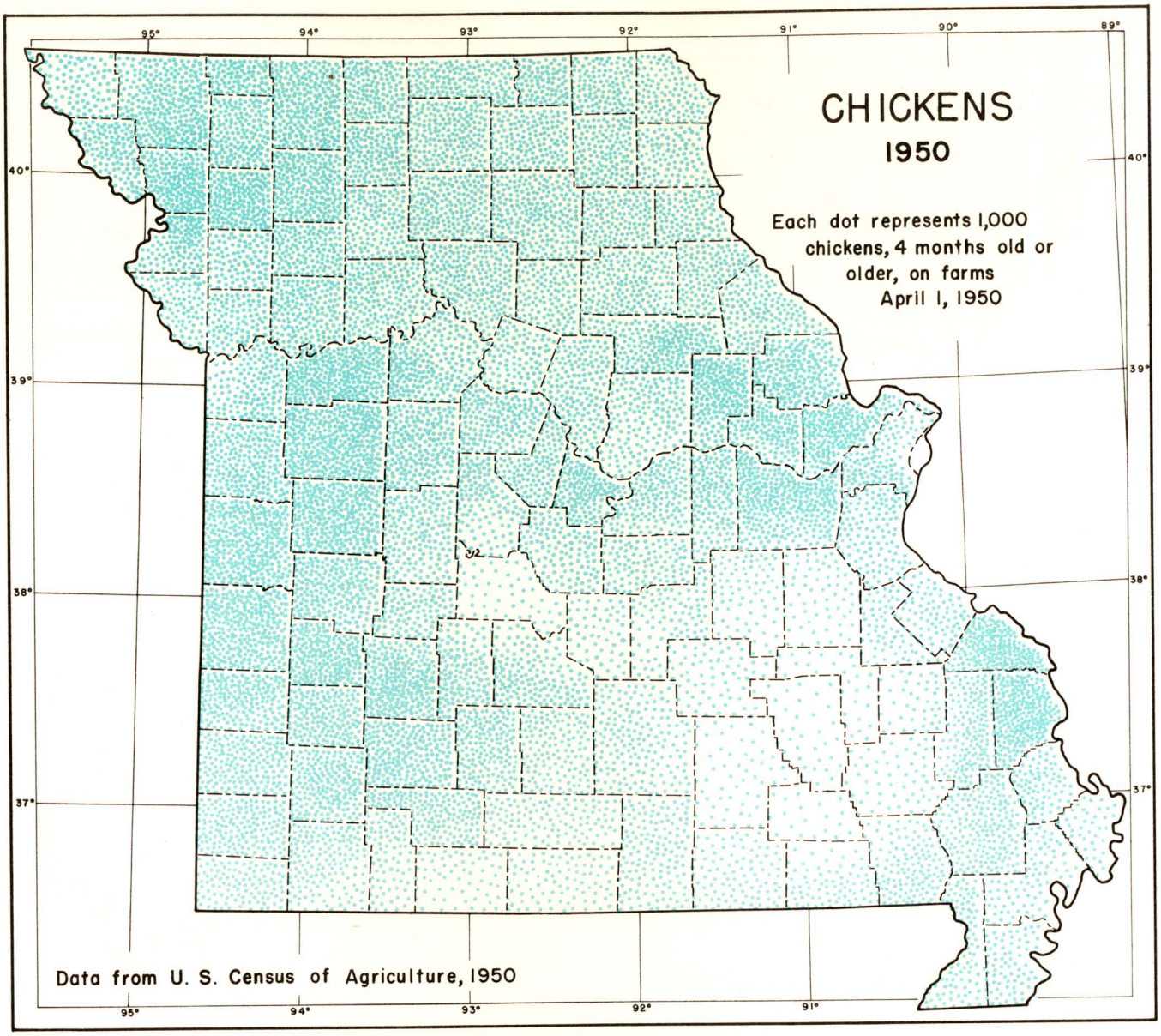
Few hogs are raised in the Ozark region, where little corn is grown and other feed grains are scarce. Most of the animals found there are kept for breeding stock. The pigs are sold to farmers in the corn belt for finishing. Cattle, therefore, receive the greater emphasis in the livestock economy, and even cattle tend to be marketed as feeder stock for finishing elsewhere.



SHEEP

Sheep are the least numerous of the major meat animals in Missouri's agricultural economy. There are approximately three times as many cattle as sheep and nearly four times as many hogs. Missouri's 1,160,109 sheep and lambs on farms in April, 1950 were the largest number in any Midwestern State, however, and only seven Western states had more. The value of sheep on Missouri farms in 1950 was $20,112,723. During 1949, a total of 824,918 sheep and lambs were sold, contributing $14,345,421 to the farm income. In addition, 5,324,557 pounds of wool were shorn, adding $2,362,594 to the agricultural income. Three thousand sheep and an equal number of lambs, together valued at $64,000, were slaughtered on farms.

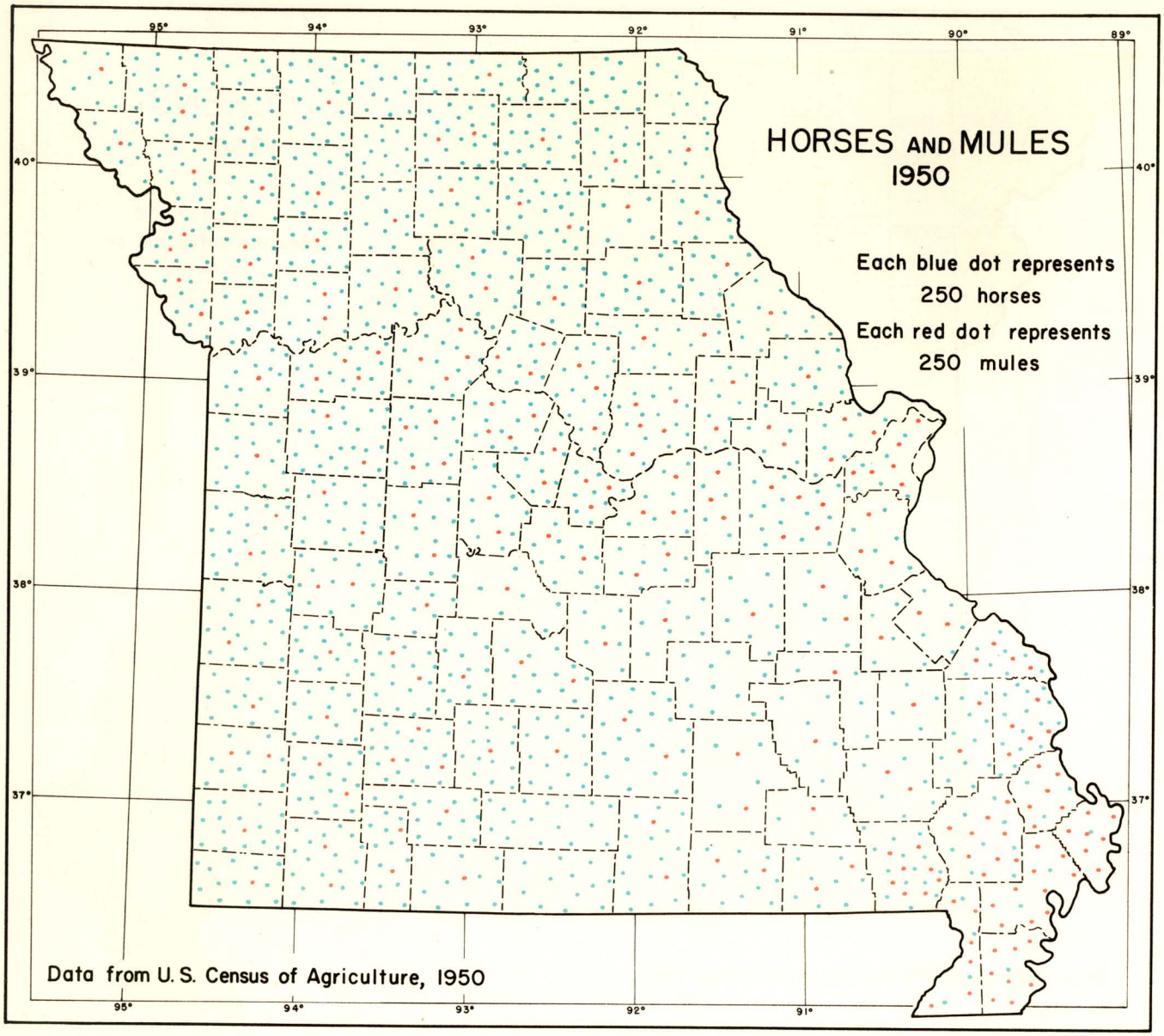
Sheep are raised in greatest numbers north of the Missouri River. Scuyler County is particularly outstanding, having more sheep than any other in the State. Some of the west-central and southwestern Ozark counties have moderately large numbers, but fewer than most northern counties. Except in the southwest, there are relatively few sheep in the Ozark region. Laclede and Wright counties have more than most other Ozark counties. These counties are on the central plateau and have more pasture land than the eastern Ozark counties. Few sheep are raised in the southeastern part of the State, especially in the delta section. Farmers in the lowland region as a whole emphasize cash crops, including cotton, to a greater degree than in most other counties. There is little place for sheep or other livestock in their systems of farming.



CHICKENS

Missouri farm poultry flocks contained 16,825,740 chickens valued at $21,455,042 in January, 1950. Chickens and other poultry contributed $60,339,952 to the income of 152,067 farm families in 1949. This amount was 9 per cent of the total value of all farm products sold in the State. Approximately 40 thousand additional families produced poultry and eggs for home use but not for sale. Income from poultry and poultry products was divided as follows: $13,963,017 from the sale of 15,367,046 chickens, $38,307,213 from the sale of 105,457,505 dozen eggs, and $8,069,722 from the sale of turkeys, ducks and geese, and their eggs. Missouri farmers raised 1,238,821 turkeys, 108,407 ducks, 67,088 geese, and 46,300 guineas in 1949. Commercial broiler producers sold 11,430,000 birds, realizing a gross income of $11,359,000.

The chicken population is concentrated in the western plains counties south and east of Kansas City, and the south-western Ozark counties from Polk and Green to the western boundary of the State. The first of these is near the Kansas City market and processing center. The southwest Ozark area has several egg processing plants which ship their products to eastern urban markets. A third area of numerous chickens is tributary to St. Joseph. It includes local markets for fresh eggs and poultry and has processing and distributing plants. The northeastern counties of the State also have several such plants but a lower density of chickens. The St. Louis area, including a half-dozen counties, evidently produces largely for the local market, since processing plants are few and small. Cape Girardeau also has a dense area of production.

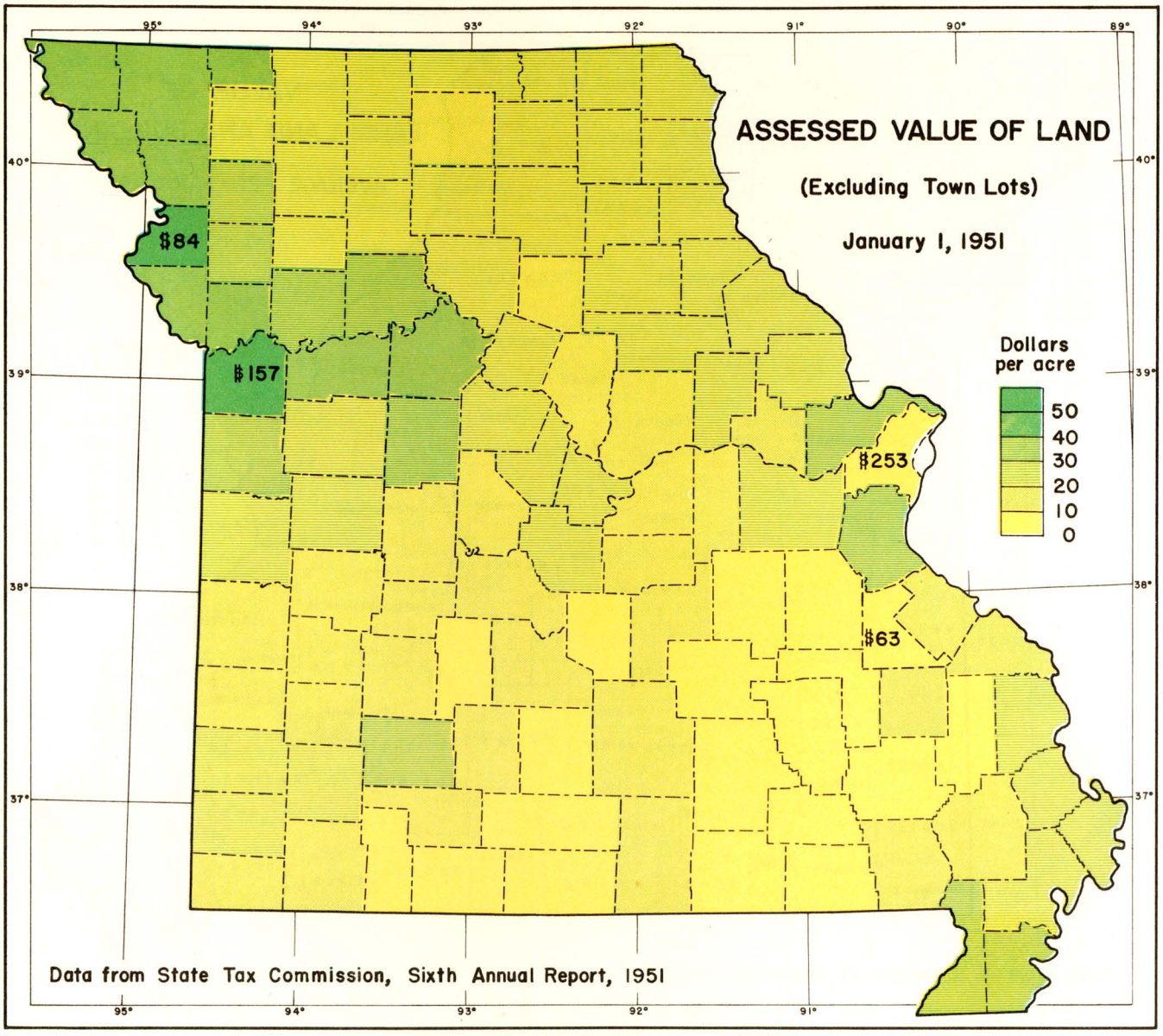


HORSES AND MULES

Horses and mules have been largely displaced by tractors, automobiles and trucks on Missouri farms. In 1920 there were 906,220 horses and 389,045 mules in the State. In 1950 there were 326,473 horses and 63,237 mules, roughly one-third as many horses and one-sixth as many mules. Many of the remaining horses are riding and show stock. During the thirty-year period the number of tractors increased nearly 16 times, from 7,889 in 1920 to 125,536 in 1950. Two tractors per farm were being used on 12,757 farms in 1950, and 3,243 farms had three or more.

Of the 230,045 farms in the State in 1950, 50,715 (22%) had no tractors, horses or mules. Most of these units probably were part-time or residential farms. Five per cent more (11,473 farms) had no tractor and only one horse or mule. These were most numerous in the Ozark region, especially in the southwestern part. An additional 67,400 farms (29%) had no tractor, but two horses and/or mules. These were widely distributed over the State, but were more numerous in the Ozark region where much hilly land makes the use of tractors less feasible than in the plains and lowland regions. The work power of one-third of the farms (78,873) thus is furnished by horses and/or mules without the aid of tractor. Almost as many farms (65,981, 28½%) had a tractor and horses and/or mules. On 34,476 farms, 15 per cent of the total number, tractors alone provided the source of power for farm work.

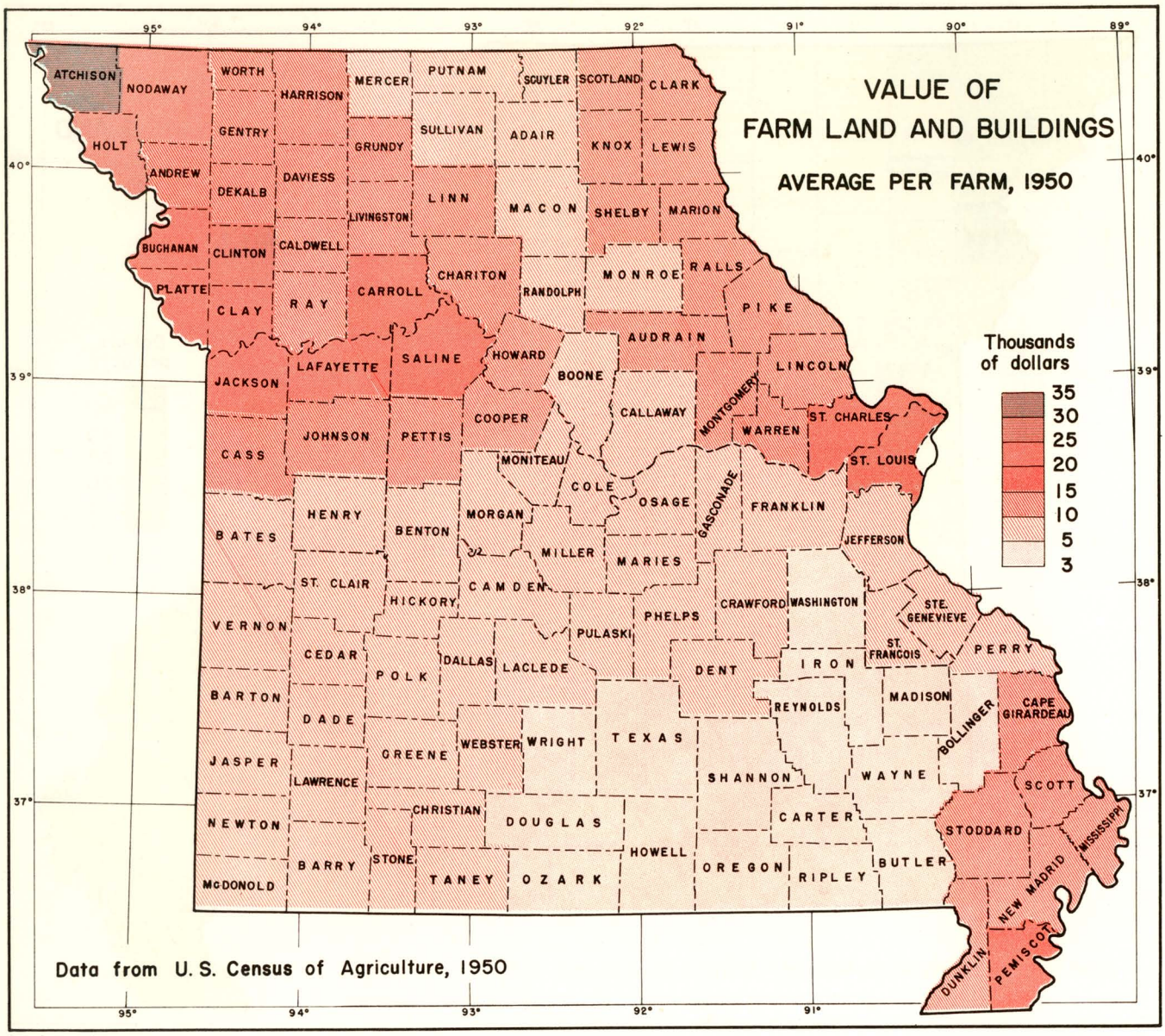
Horses are about evenly distributed over the State, except there are few in the southeastern Ozarks and in the southeastern lowlands. Mules, on the other hand, are most numerous in the southeastern cotton area and in the counties bordering the Missouri River in central and eastern parts of the State.



ASSESSED VALUE OF LAND

The assessed value of land is usually related to its productivity and agricultural value. Although the level of assessment differs within and among counties, the assessed value exhibits a distinct pattern and provides a means of comparing areas. Exclusion of town lots is presumed to leave primarily agricultural land under consideration. There is much non-farm forest land in the Ozarks, but its assessed value does not differ greatly from that of farm land in the same area, since from one-third to more than one-half of the farm land of Ozark counties is forest or woodland. Some dominantly mining land is included also, but it is a small part of the total area. Reduction of the county totals to a per-acre basis excludes tax-exempt lands and also permits comparison of counties of unequal size.

The assessed values of land are highest in areas indicated by other criteria to have high agricultural value. The highest occur in St. Louis, Jackson, and Buchanan counties, where location near cities enhances values, and in St. Francois County, where mineral resources give high value to some land. Counties having smaller cities, such as Greene County, or adjoining counties with large cities, such as St. Charles, Jefferson, and Cass, have relatively high values. Other parts of the State with high assessed value per acre are the loess soil areas bordering the Missouri River from Atchison and Nodaway counties to Saline County, and the most productive of the southeastern lowland counties. Medium values prevail over the remaining areas of the northern and western plains and in the Ozark border counties. Lowest assessed values are in the interior Ozark counties, which have limited crop land and low productivity per acre. These fall below $10 per acre. Reynolds County is the lowest, with $3.48.



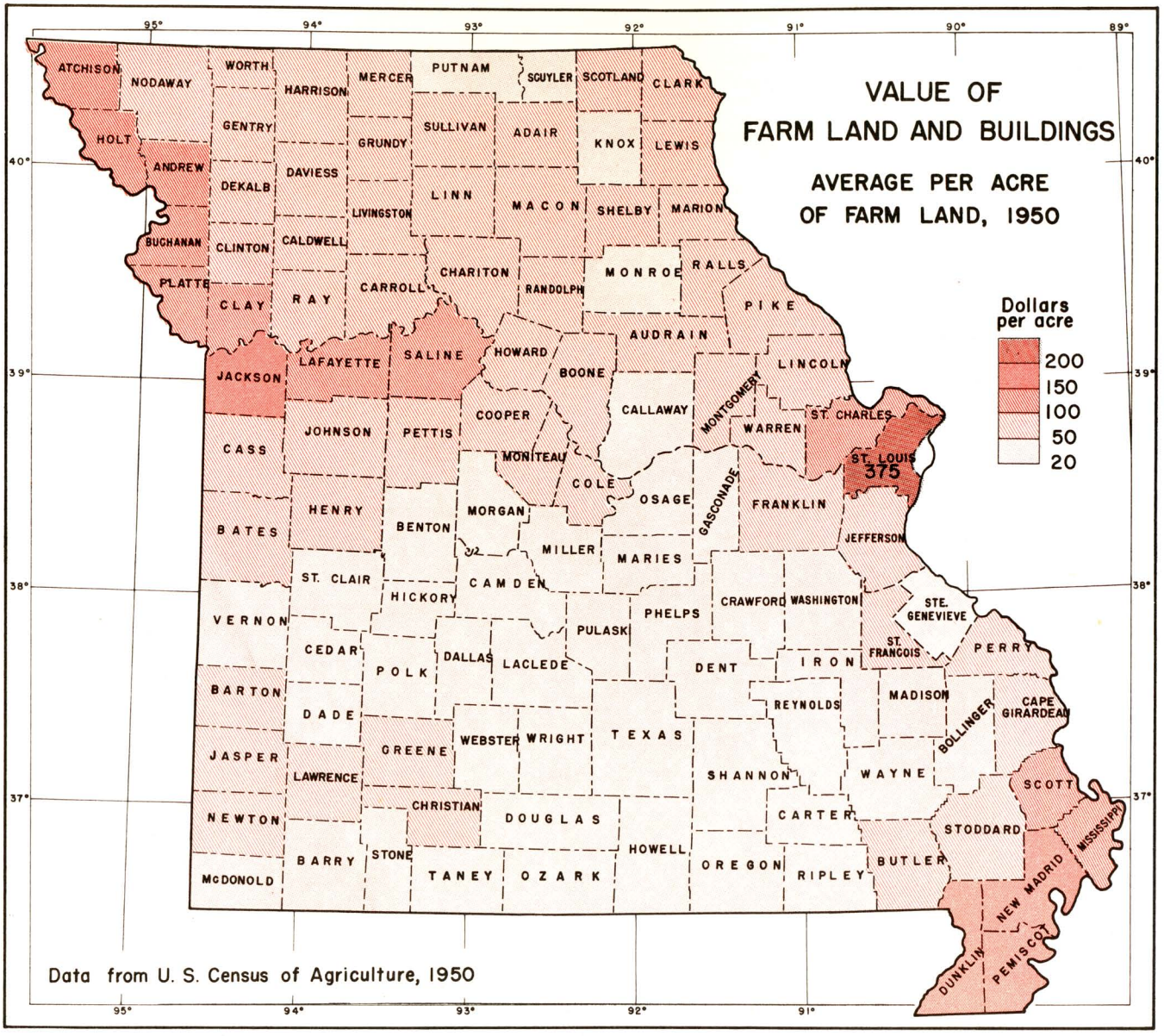
VALUE OF FARM LAND AND BUILDINGS 1950 AVERAGE PER FARM

The average value of land and buildings per farm in 1950 was $9,776. Although the values were estimates of market value determined from an 88 per cent sample, they seem adequate to indicate a comparative regional pattern of values.

The average value of land and buildings per farm ranges from $3,360 in Reynolds County to $34,622 in Atchison County. Values are highest in the belt of Knox and Marshall loess soils from Atchison to Saline counties, exceeding $15,000 per farm throughout the area. The high values in the vicinity of Kansas City and St. Joseph are included in this area. The influence of St. Louis on land values is apparent in the high values of St. Louis ($21,407) and St. Charles ($15,280) counties. Because of proximity to Springfield, farm values in Greene County exceed those of surrounding counties ($9,457 vs. $5,000 to $7,000).

Above-average values of $10,000 to $14,000 per farm occur in the counties adjacent to the deep loess soil area. The most valuable farms, by this measure, are in the northwestern quarter of the State. The area two counties wide bordering the Mississippi River above St. Louis has values between $10,000 and $14,000 per farm. A third group of counties with high values of farm land and buildings includes Cape Girardeau and the southeast lowland counties.

The average value of farm land and buildings in the southeastern Ozark counties is the lowest of the State. In 17 counties the average is between $3,000 and $5,000 per farm. Average values between $5,000 and $10,000 occur in other Ozark counties, with the border counties approaching the larger amount.

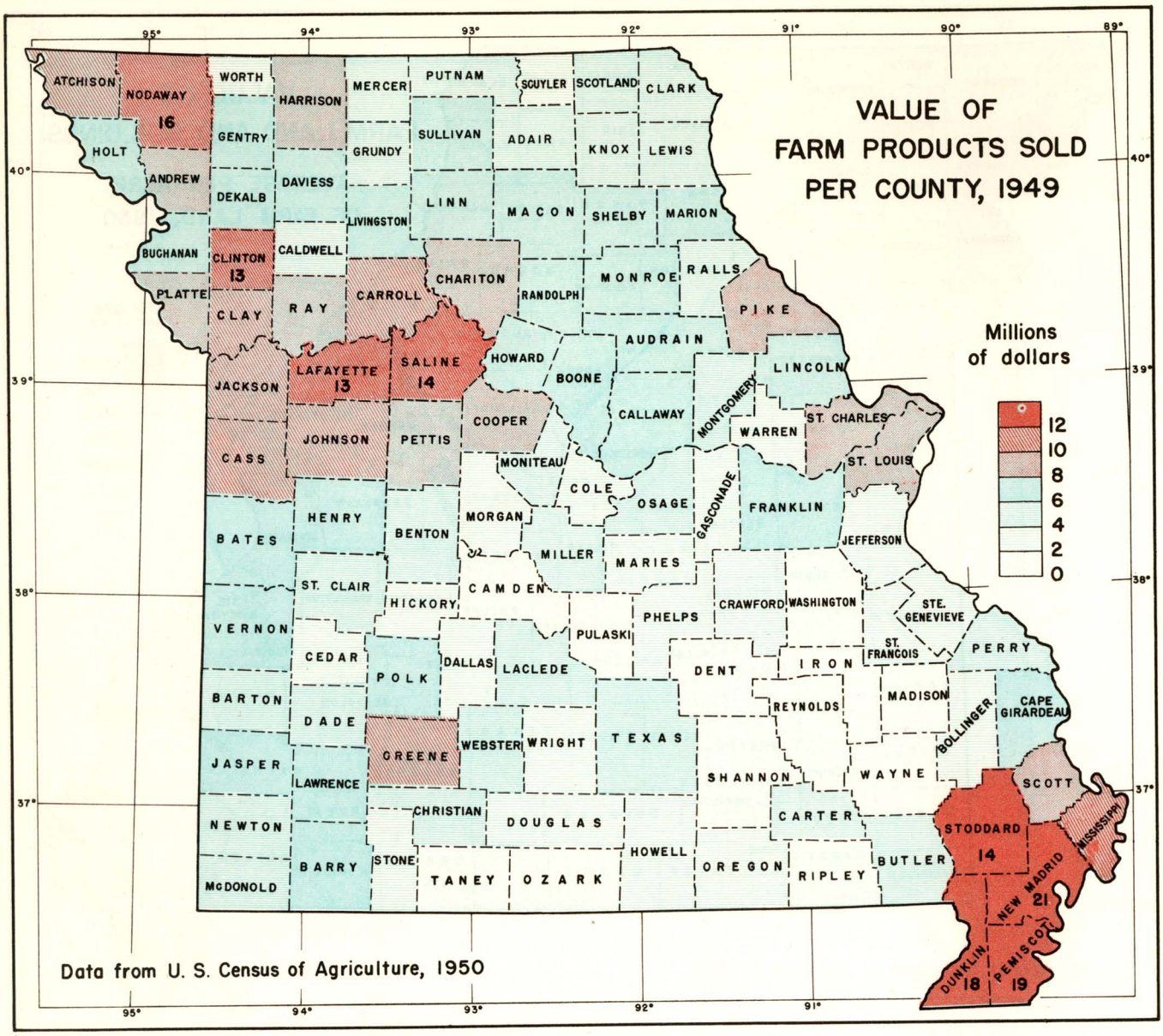


VALUE OF FARM LAND AND BUILDINGS AVERAGE PER ACRE

The value of farm land and buildings per acre of farm land reveals a pattern similar to the value per farm. The rank of counties on the two bases is almost the same, with differences only where there are significant contrasts in farm size among counties of comparable value per farm. With few exceptions, those counties with an average value of land and buildings in excess of $12,000 average above $100 per acre. Most counties which fall below $5,000 per farm have values of less than $30 per acre. The State-wide average is $64 per acre.

The highest values of land and buildings per acre are near cities, where values per farm are high and where farms are small. St. Louis County ($375) and Jackson County ($189) have the highest values per acre and the farms rank among the smallest in average size (57 and 91 acres, respectively, as compared with the State average of 153 acres). The second highest group of counties are Pemiscot, Dunklin, and New Madrid. Also high, but lower than these three, are Mississippi and Scott counties, in the southeastern lowland. The farms of this area are small—below 100 acres in the first three named—and the values per acre are high. High values of farm land and buildings per acre prevail in the northwest loess area, but they are not the highest in the State.

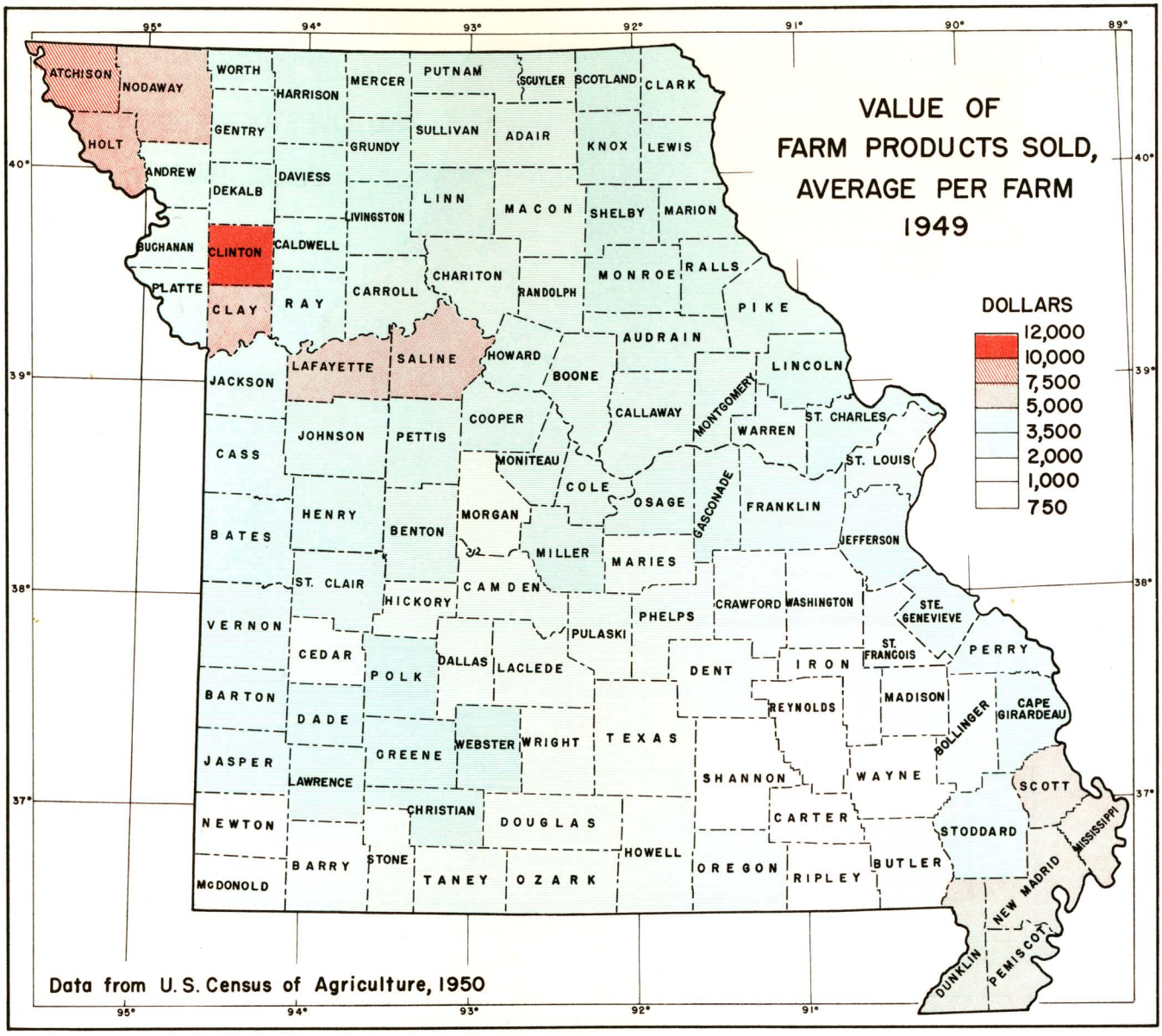
Most Ozark counties fall below the State average in value of farm land and buildings per acre. Several average less than $25 and most fall below $40. Some of the southwestern and eastern border counties reach or exceed the State average of $64 per acre.



VALUE OF FARM PRODUCTS SOLD PER COUNTY

The value of products sold from farms in Missouri during 1949, as determined by the U. S. Census of Agriculture, totaled $719,877,797. The major part of this amount, $518,004,484 or 72 per cent, was from the sale of livestock and their products. Crops provided $199,299,731 (27.7%) and forest products $2,572,582. Certain types of sales were not included in these totals. The cash receipts from farming, a more inclusive measure of farm income used by the Bureau of Agricultural Economics, was $1,007,703,000. Of this amount, $735,955,000 was received from the sale of livestock and their products, and $271,748,000 from the sale of crops. Government payments to farmers during the year were $5,493,000. In addition to the income from these sources, farm families consumed livestock and their products worth $66,206,000 and crops worth $32,151,000. The gross farm income was thus calculated to be $1,111,563,000 for the year.

The value of products sold per county (Census data) ranged from $969,456 in Reynolds County to $21,159,168 in New Madrid County. The average was approximately $6,000,000 per county. The amount exceeded $10,000,000 in five southeastern counties and in eleven other counties in the State. All of the latter were west-central or northwestern counties, except Greene in the southwestern Ozarks. All counties in the Ozark region, except a few in the outer margins, fall below the average. The Ozark region has the lowest farm income per county in the State. The value of livestock and their products exceeded the value of crops except in St. Louis County, where truck crops and cash grains predominate, and in the seven counties of the southeastern lowland, where cotton, corn and soybeans are emphasized as cash crops.



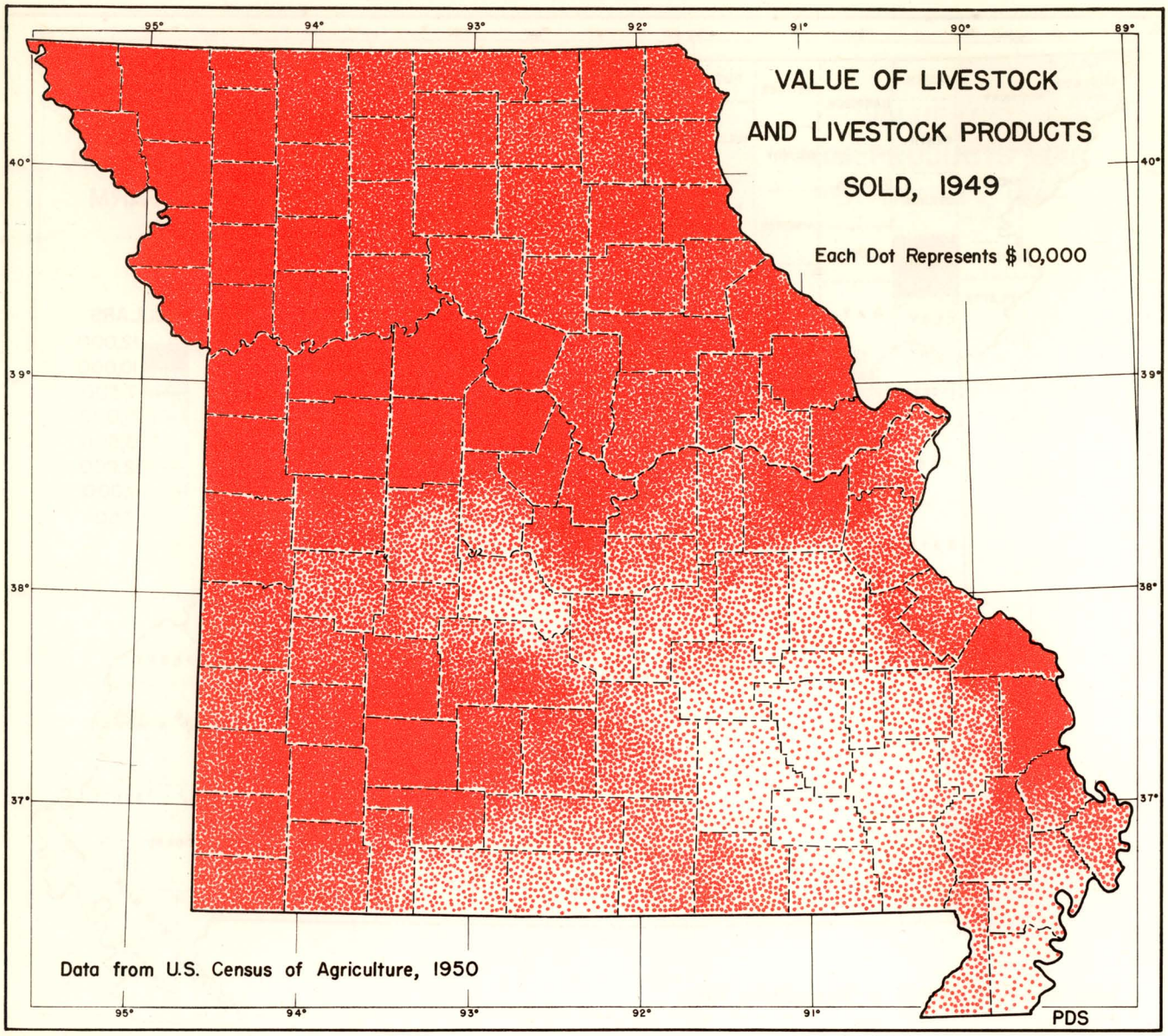
VALUE OF FARM PRODUCTS SOLD PER FARM

The average value of farm products sold per farm in 1949 was $3,129.29. This ranged for individual counties from $771 in Carter County to $10,859 in Clinton County. The pattern of distribution throughout the State is similar to that of total per county.

In general, the highest ranking counties are in the northwest loess area. Clinton and Atchison counties lead the State and exceed $7,500 per farm. Five other counties in the northwest—Clay, Lafayette, Saline, Holt, and Nodaway—average more than $5,000 per farm. All northwestern, west-central, and northeastern counties are above the State average. In fact, all counties of the northern and western plains exceed the average, except those north-central counties which lie partly within the hills bordering the Chariton River. These form a belt from Putnam and Schuyler counties southward to the Missouri River.

The southeastern lowland counties are also high in average value of farm products sold per farm. Six counties exceed the average of the State, five of them exceeding $5,000 per farm. Although county values in this area are the highest of the State, average values per farm are less than in most northwestern counties, since the farms of the lowland are smaller and more numerous per county.

No county in the Ozarks region reaches the State average in value of farm products sold per farm, except Perry County in the eastern border. Carter, Shannon, Wayne, Ripley, and Reynolds counties all average less than $1,000 per farm. In 27 other Ozark counties the average per county falls between $1,000 and $2,000 per farm. Only border counties, which are superior to interior Ozark counties in agricultural productivity, exceed $2,000 per farm and approach the State average.

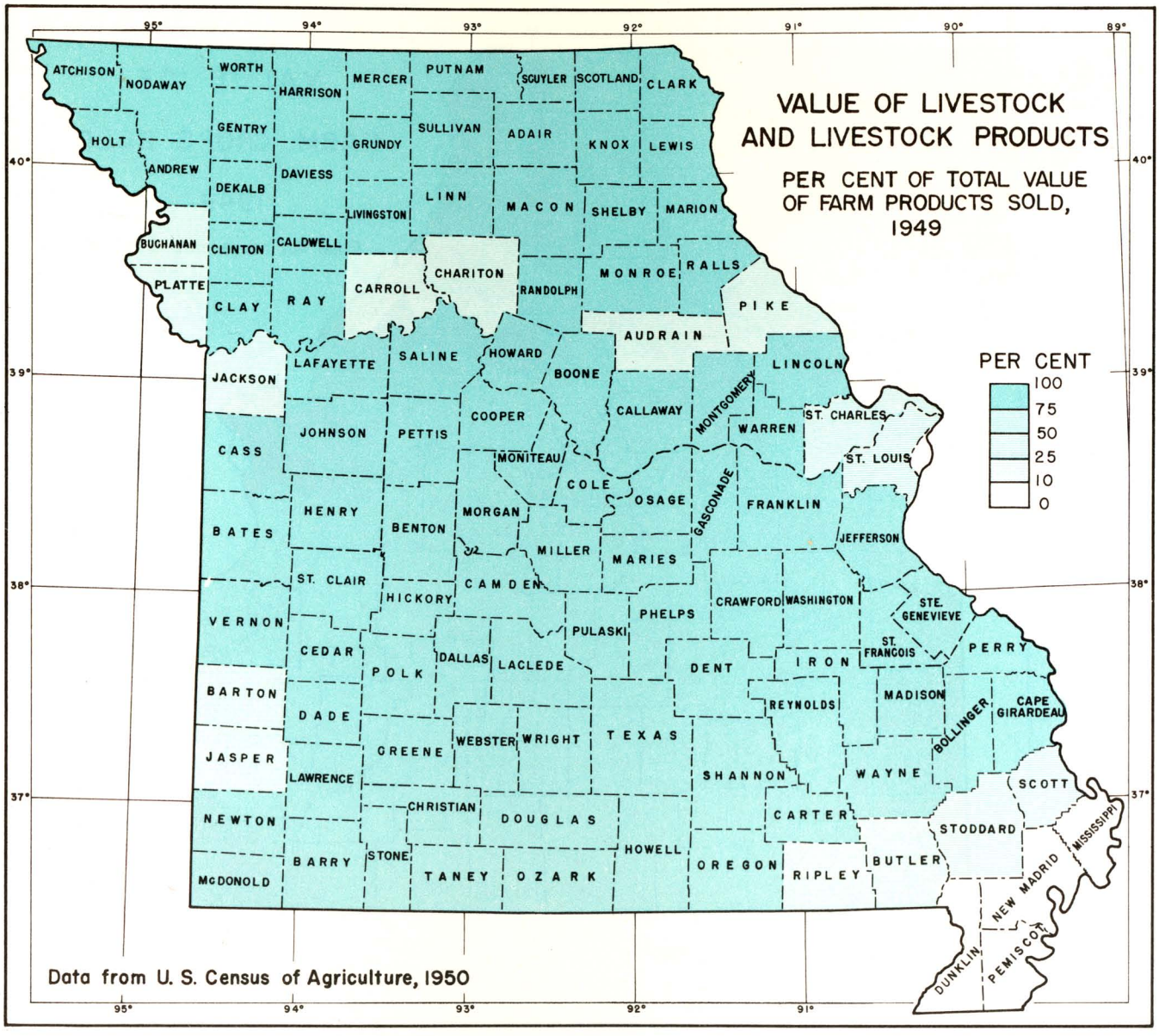


VALUE OF LIVESTOCK AND LIVESTOCK PRODUCTS SOLD

Livestock and livestock products accounted for 72 per cent by value of all farm sales in Missouri in 1949. These items contributed 518 million dollars of the total farm sales of nearly 720 million dollars. More than 79 million dollars (11%) of the total were derived from the sale of dairy products and 60 million (8%) from poultry and poultry products. The sale of cattle, hogs, and sheep, including calves, pigs, lambs, and wool, amounted to $378,419,271. This amount was 52 per cent of total sales and 71 per cent of the income from livestock, including dairy and poultry products.

Broken into smaller categories, this income from livestock was derived from the sale of 909,690 head of cattle for a total of $145,840,147; 702,860 calves for $50,512,875; 4,541,248 hogs for $162,353,795; and 824,918 sheep and lambs for $14,345,421. To these should be added 10,954 head of cattle, 40,373 calves, and 33,716 hogs which were slaughtered on farms, mostly for farm family consumption. The meat, lard, hides, and other products sold from the animals slaughtered added $655,212 to the farm income.

The value of farm livestock sold was greatest in the west-central and northwestern counties on the loess belt bordering the Missouri River. Values were high throughout the north-central and northeastern counties, but lower than in the west central and northwestern area. The southwestern Ozark area was also conspicuous in the high value of its livestock and livestock products, much of which was due to the value of its dairy and poultry products. Still another area with high returns from livestock and livestock products was the eastern Ozark border.



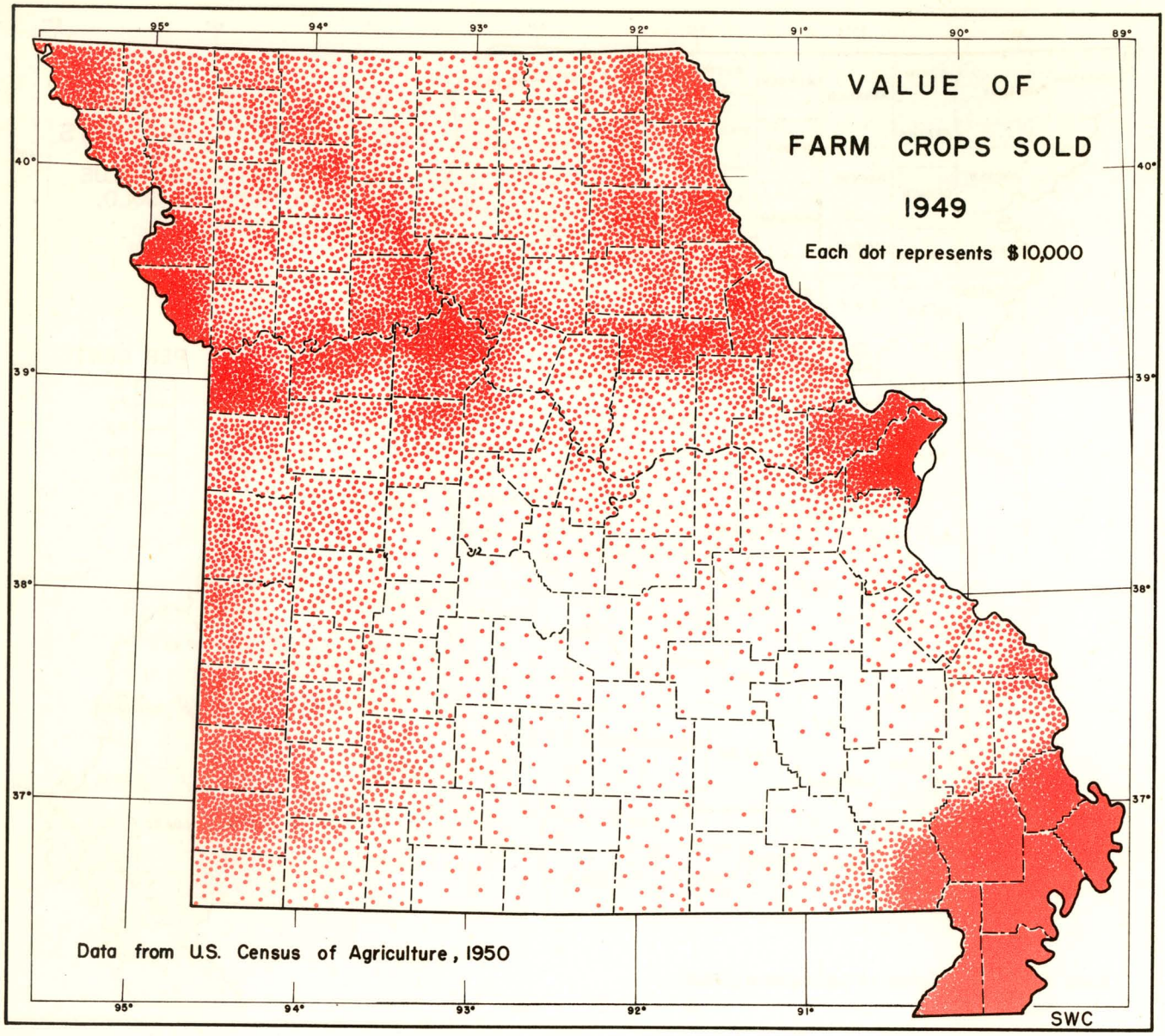
LIVESTOCK AND LIVESTOCK PRODUCTS SALES IN PER CENT OF TOTAL VALUE OF FARM PRODUCTS SOLD

Although the actual value of livestock sold from Missouri farms is lowest in the rougher sections of the Ozark region, few crops are marketed from these areas and the proportional value of livestock is the highest of the State. In 32 Ozark counties the value of livestock and their products sold, including dairy and poultry products, is more than 90 per cent of the total value of all sales, according to the 1950 Census. In most Ozark border counties the proportion is between 80 and 90 per cent. Conversely, direct contribution of crops to farm income is low, ranging from 2 to 10 per cent in all but the border counties.

Approximately one-half the value of all livestock and livestock products sold in the southwest Ozarks is income from dairying. Dairy cattle provide from one-third to as much as one-half the total farm income in 14 southwestern Missouri counties.

Both actual and proportional values of livestock and livestock products in the farm income are the lowest in the southeast, where from 3 to 25 per cent of the farm income of individual counties is derived from livestock and their products. This region comprises the southeast lowlands cash crop type of farming area. The different counties derive from 72 to 97 per cent of their farm income from the sale of cotton, soybeans, wheat, and other cash crops.

The contribution of livestock to the cash income of farms in northern and western Missouri ranges from 70 to 90 per cent of the total. It is highest in those upland counties that have little or no alluvial lowland area. Much of this land is used to produce cash crops in counties where it occurs.



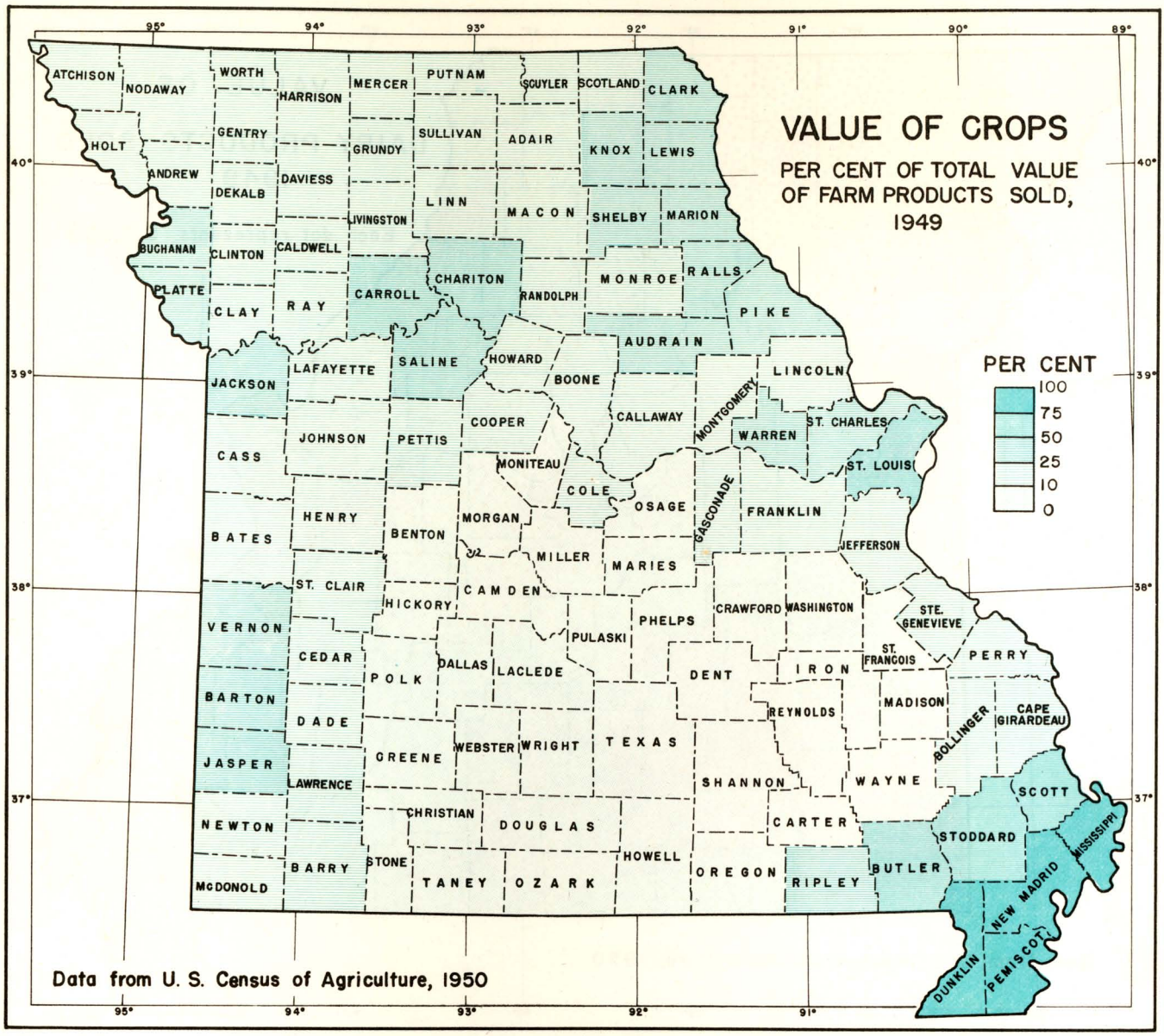
VALUE OF FARM CROPS SOLD

The leading cash-crop farming area of Missouri is the southeastern lowland. Although the State average farm income per county from the sale of field crops, vegetables, fruits, and horticultural specialties (nursery and greenhouse products) is only $1,748,000, it averages $13,960,000 per county in the lowland. In fact, this area accounted for nearly one-half the $199,299,731 total cash crop sales of the State in 1949. The total sales of crops for cash in the region exceeded 85 million dollars, approximately 65 million of which was from the sale of cotton. Soybeans, wheat, and vegetables are other leading cash crops of the area.

Other areas of cash-crop farming are the alluvial lowlands (the southeast lowlands actually being the largest such area), the vicinities of cities, and the southwestern area of Barton, Jasper, and Newton counties where wheat and soybeans are sold in somewhat geater quantities than in other counties of the southwest.

Cash grain, truck, and fruit types of farming areas border the Missouri River and the Mississippi River above St. Louis. These areas derive an above-average part of their farm income from the sale of crops. In the vicinity of St. Louis, Kansas City, and St. Joseph, truck crops and nursery and greenhouse products are major sources of income. Elsewhere, the sale of wheat, corn and soybeans largely accounts for the income from crops. An area similar to the cash grain type of farming of the Missouri-Mississippi River border is the land along the Grand River in northern Missouri. This area forms a band in which wheat and soybeans are grown as cash crops on the river lands.

Throughout the Ozark region the value of crops sold is low and a minor part of the farm income.



FARM CROPS SOLD

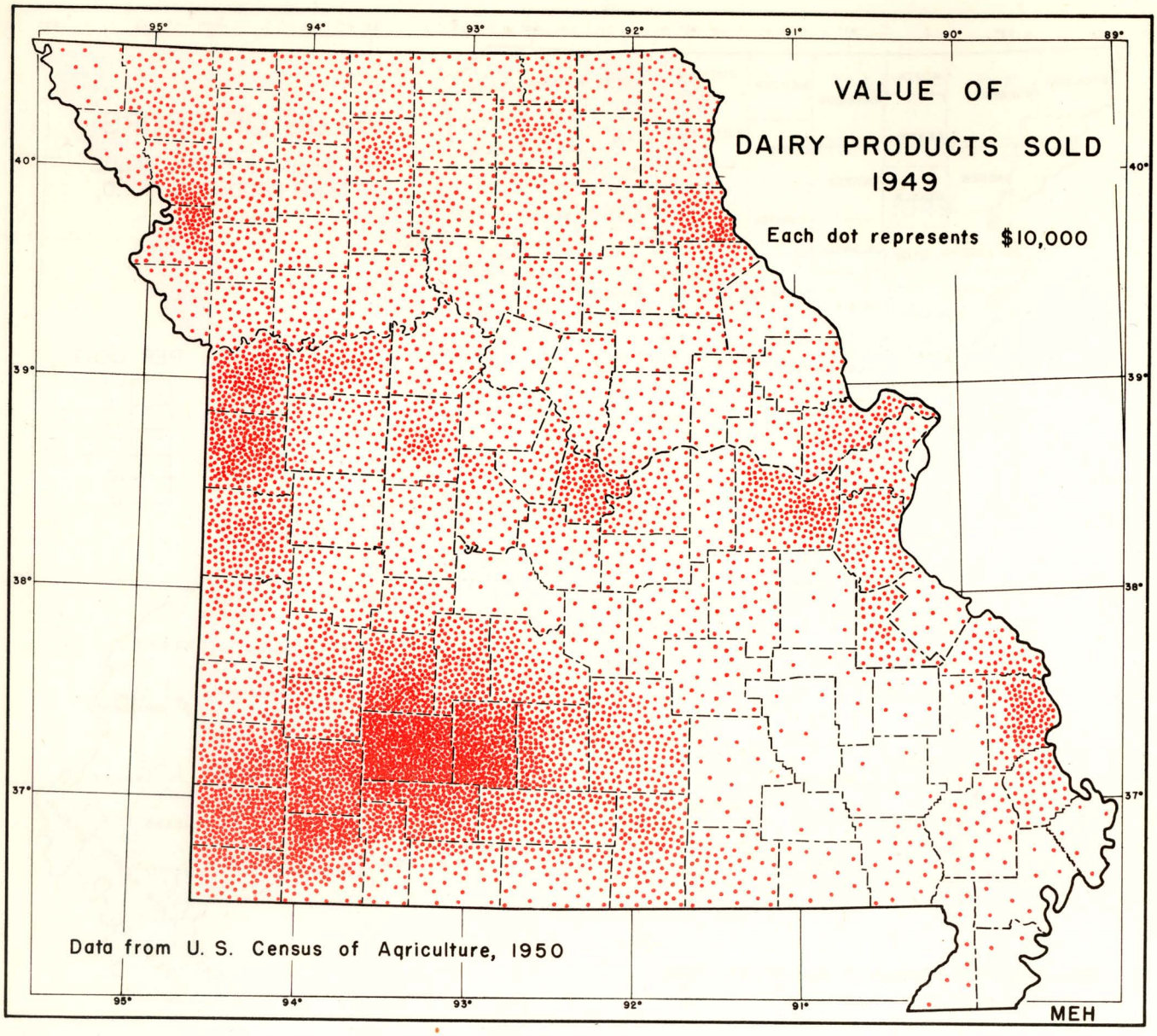
The sale of crops provides nearly 200 million dollars in cash income to Missouri farmers. This amount is only 28 per cent of the total value of farm products sold, however, and crops are a secondary source of income compared to more than 500 million dollars from livestock and livestock products.

The sale of crops provides the major part of the farm income in the southeastern lowland counties, where virtually all of the cotton crop is grown. From three-fourths to 97 per cent of the total farm income of the counties of this area is from crops and only a minor part from livestock.

In St. Louis County, 69 per cent of the farm sales are of crops, many of which are vegetables, fruits, and greenhouse and nursery products. Farm income in St. Charles and Warren counties is 34 and 25 per cent, respectively, from crops.

Farms in eight counties in the northeast obtain from 27 to 42 per cent of their cash income from the sale of crops, and less from livestock than north-central and northwestern counties. This is due in part to the greater production of soybeans and in part to the yield from orchards on the loess hills bordering the Mississippi River. Crops provide from 28 to 38 per cent of the total income from farms in Buchanan, Platte, and Jackson counties, and about the same proportions in Vernon, Barton, and Jasper counties.

Crops are least significant as a source of cash farm income in the Ozark region. In 33 counties less than 10 per cent is from crops, and in several counties only 2 or 3 per cent. This is the area in which livestock sales account for more than 90 per cent of the farm income. In the Ozark border counties, from 10 to 20 per cent is from crops and 80 to 90 from livestock.



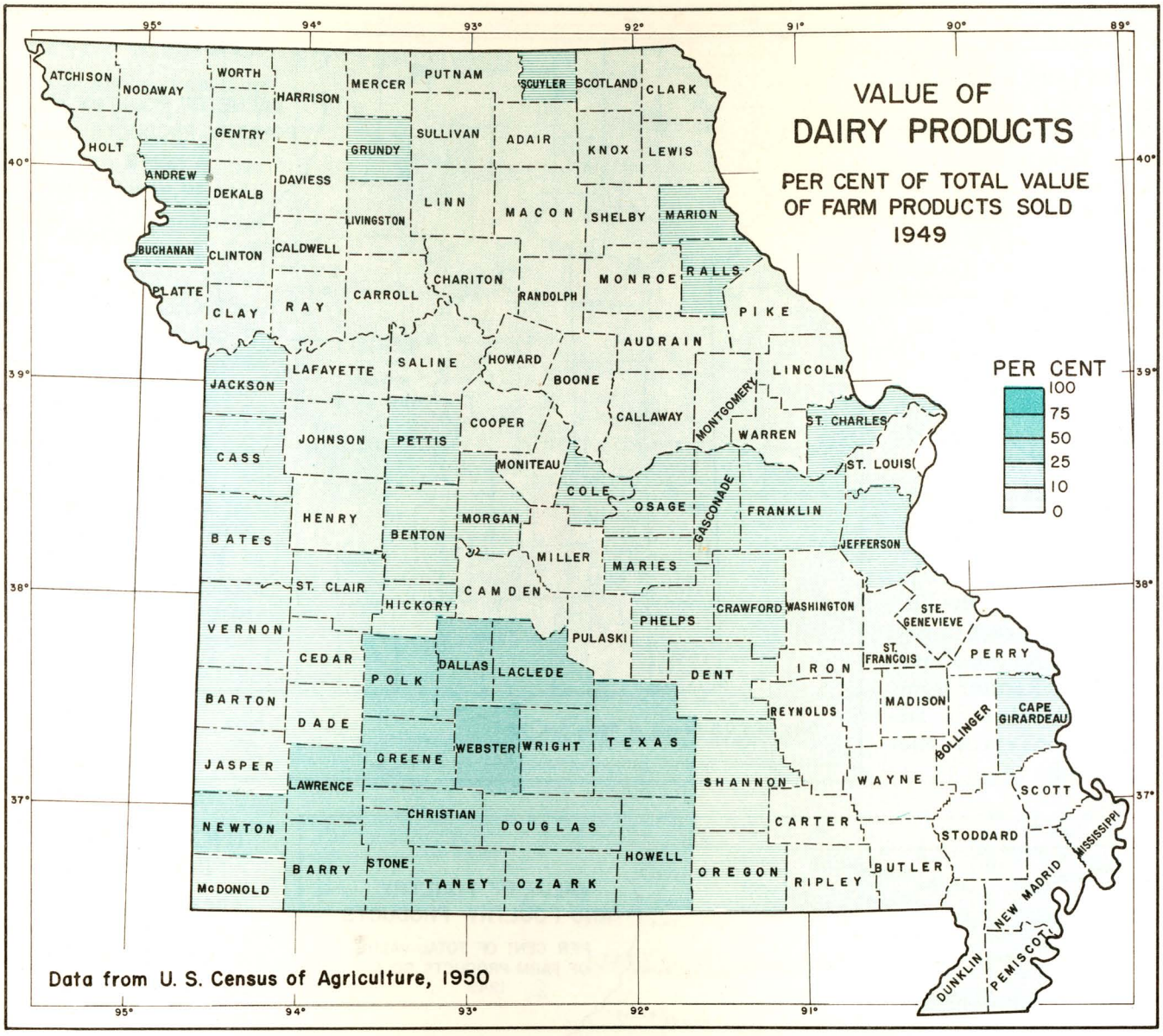
VALUE OF DAIRY PRODUCTS SOLD

The sale of dairy products brought Missouri farmers more than 79 million dollars in 1949. Although they comprise only 11 per cent of the total value of farm products sold, milk and cream make a substantial contribution to farm income, especially in the areas where dairy farming is most highly developed. Many farms obtain the major part of their income from the sale of dairy products and are classified as dairy farms. Perhaps a greater number supplement other and more important sources by the sale of dairy products. To many farmers, these sales provide a small but regular cash income throughout the year, less seasonal than the income from crops and livestock.

The southwest Ozark area is Missouri's most outstanding dairying region and the area with the largest sales of dairy products. The region includes Greene County, with Springfield as its major dairy products collection and manufacturing center. Other processing plants are distributed over the area. From one-third to more than one-half of the farms in this region are dairy farms. Dairy products account for from one-third to one-half the total farm sales.

In addition to the southwestern Ozark dairying region, dairy product sales are high near cities and large towns where the farms of the immediate area supply the demands of the local market for fresh whole milk and cream.

Many farmers outside the dairy and urban areas keep a few milk cows and sell milk or cream. Some specialize in dairying. Dairying is least important as a source of farm income in the southeastern Ozark counties and southeastern lowland area.



PER CENT OF INCOME FROM DAIRY PRODUCTS

The proportion of farm income derived from the sales of dairy products is highest in the southwestern Ozark dairy region. In Webster County it was 54 per cent of the total value of farm products sold in 1949. The average in 15 counties in the region was 39 per cent. The State average, for comparison, was 11 per cent.

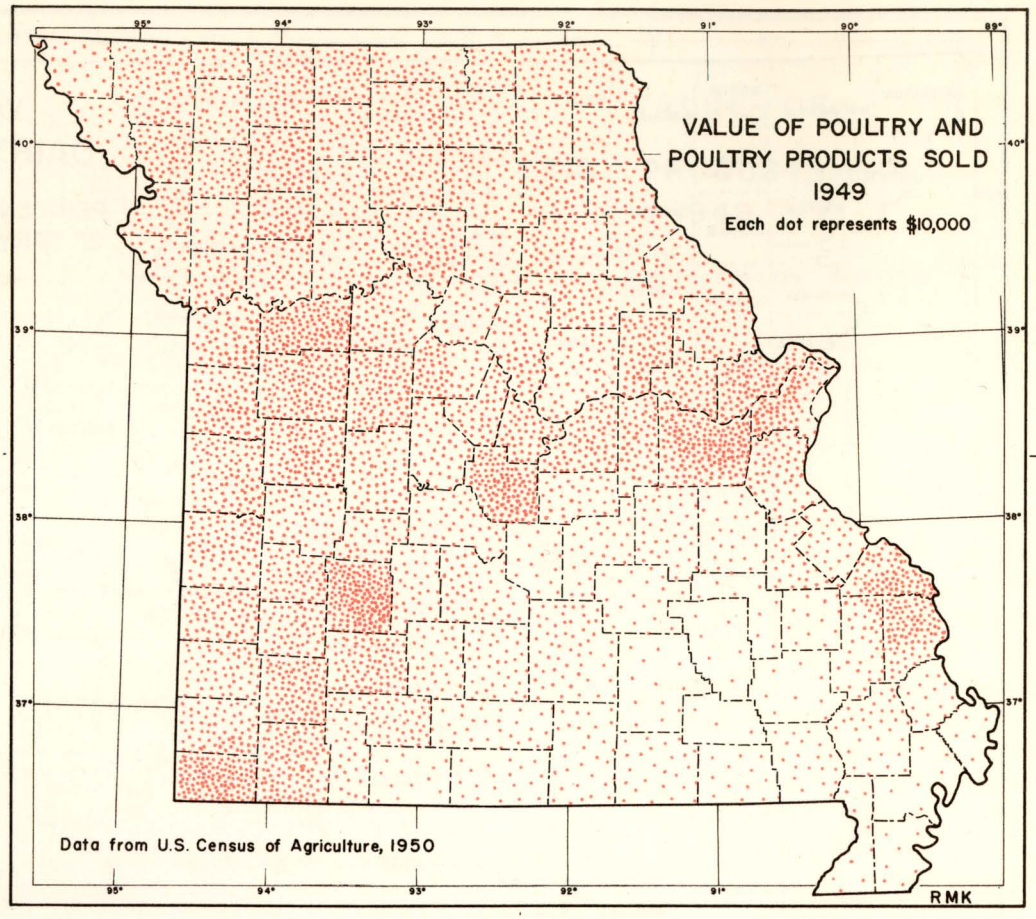
Contrasting with this emphasis on dairying are the four southeastern counties—Mississippi, New Madrid, Pemiscot, and Dunklin—where farmers derived less than one-half of one per cent of their agricultural income from the sale of dairy products. The total value of farm products sold in these four counties in 1949 was $71,098,925; the value of dairy products was only $230,604. The major source of income was cash crops, chiefly cotton, soybeans, and wheat.

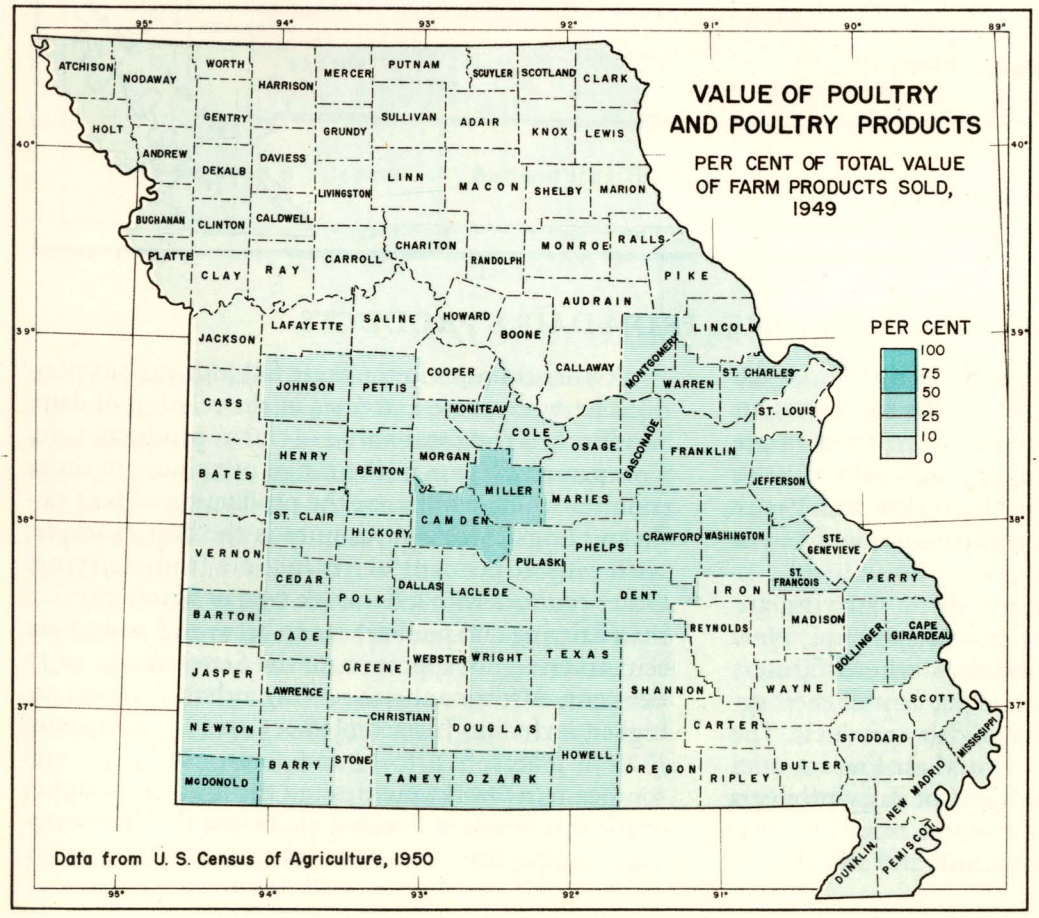
Other counties in the State fall into various positions between these extremes in the relation of dairy products to the total value of farm products sold. Comparatively low in the range of values are those counties which emphasize the production of beef cattle and hogs. Atchison County is the best example, with only 1 per cent of its income from dairying. Other counties with a livestock type of farming (other than dairying and poultry) range between 3 and 15 per cent and roughly approximate the State average of 11 per cent. A few counties serving urban markets are higher, including Jackson (16%), Cass (21%), Franklin (22%), Jefferson (28%), and Cole (24%). Several southeastern Ozark counties and the northern counties of the southeastern lowland are below the State average, ranging from 2 to 9 per cent.

VALUE OF POULTRY

Poultry and their products provided $60,339,952 of the income from the sale of farm products in 1949, or 8 per cent of the total. Only 3 per cent of all farms were classed as poultry farms but sales of poultry and eggs supplemented the cash income from other sources on many additional farms.

Sales of poultry and their products were distributed widely over the State. Areas having above-average sales included several counties near St. Louis. Cape Girardeau, Perry, Miller, Polk, McDonald, Barry, and Lawrence Counties also had returns above the average. Returns from poultry were low in all other sections except the Ozark border counties.





INCOME FROM POULTRY

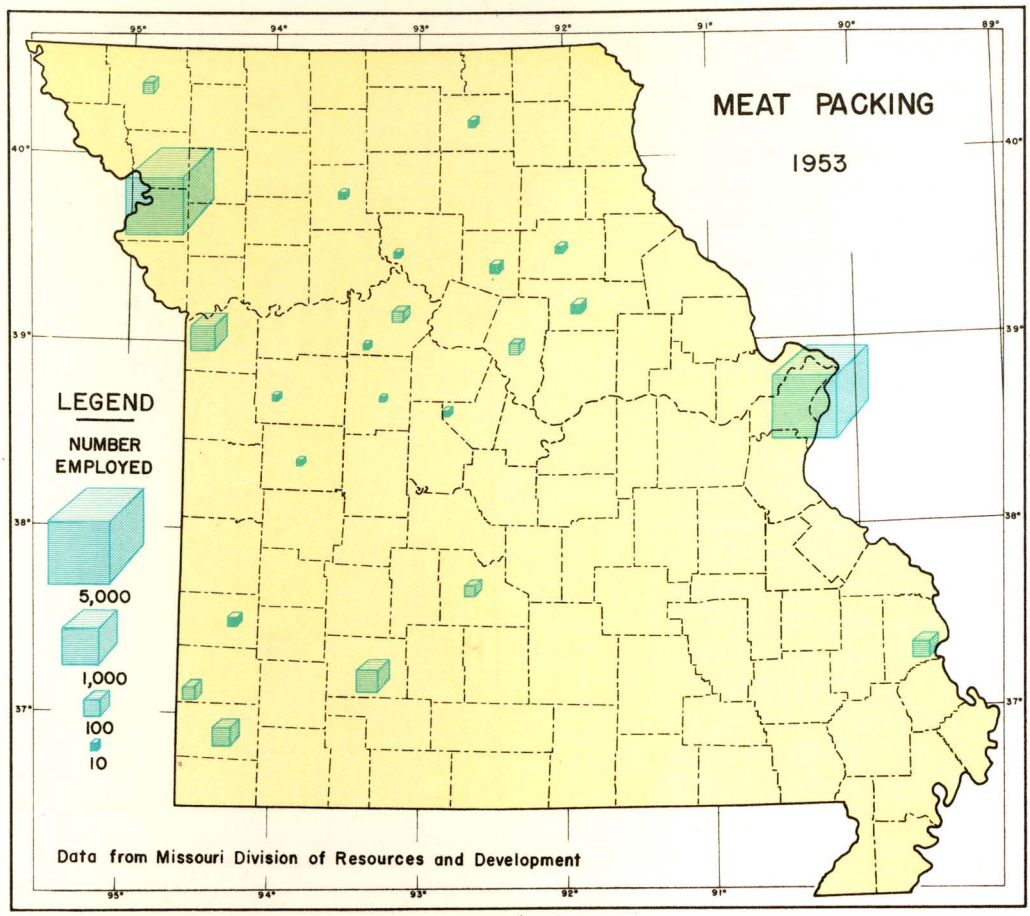
The distribution of poultry sales as a percentage of the total value of farm products sold is similar but not identical to actual values.

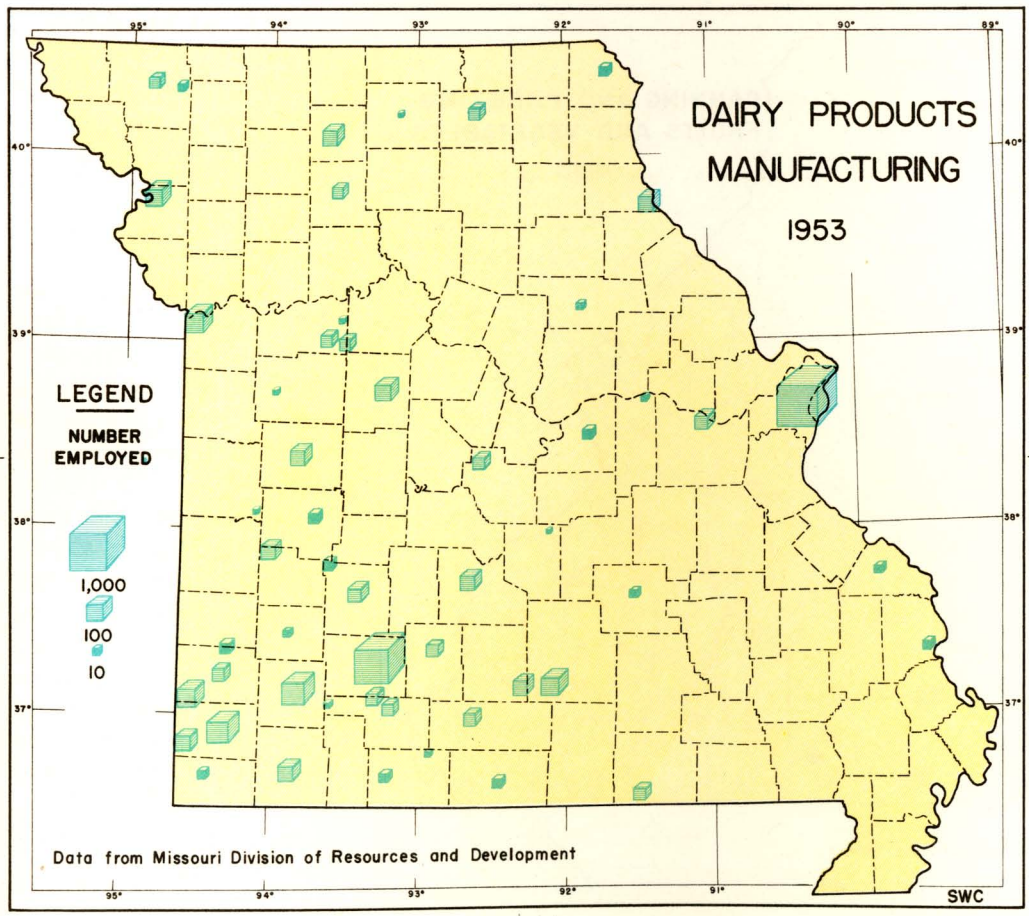
Farm income from poultry was under one per cent of total returns in the four southeasternmost counties, and less than 10 per cent in most northern Missouri counties.

Poultry and their products were important, proportionally, in the Ozark counties, although total farm sales were low. No Ozark county derived less than 5 per cent of its returns from poultry and many reach 10 or 15 per cent.

MEAT PACKING

Wholesale meat packing companies employ more workers than any of the other agricultural manufacturing industries presented in this series of six maps. More than 10,000 (42%) of the nearly 25,000 employees in the six industries are engaged in meat packing. There are 62 plants slaughtering animals for meat to be sold fresh, or to be canned, cured, or otherwise processed on the premises. They vary in size from small local industries with as few as three employees, to large, nation-wide distributors with as many as 2,500 employees. Most of the latter are in Kansas City, St. Louis, St. Joseph, and Springfield.





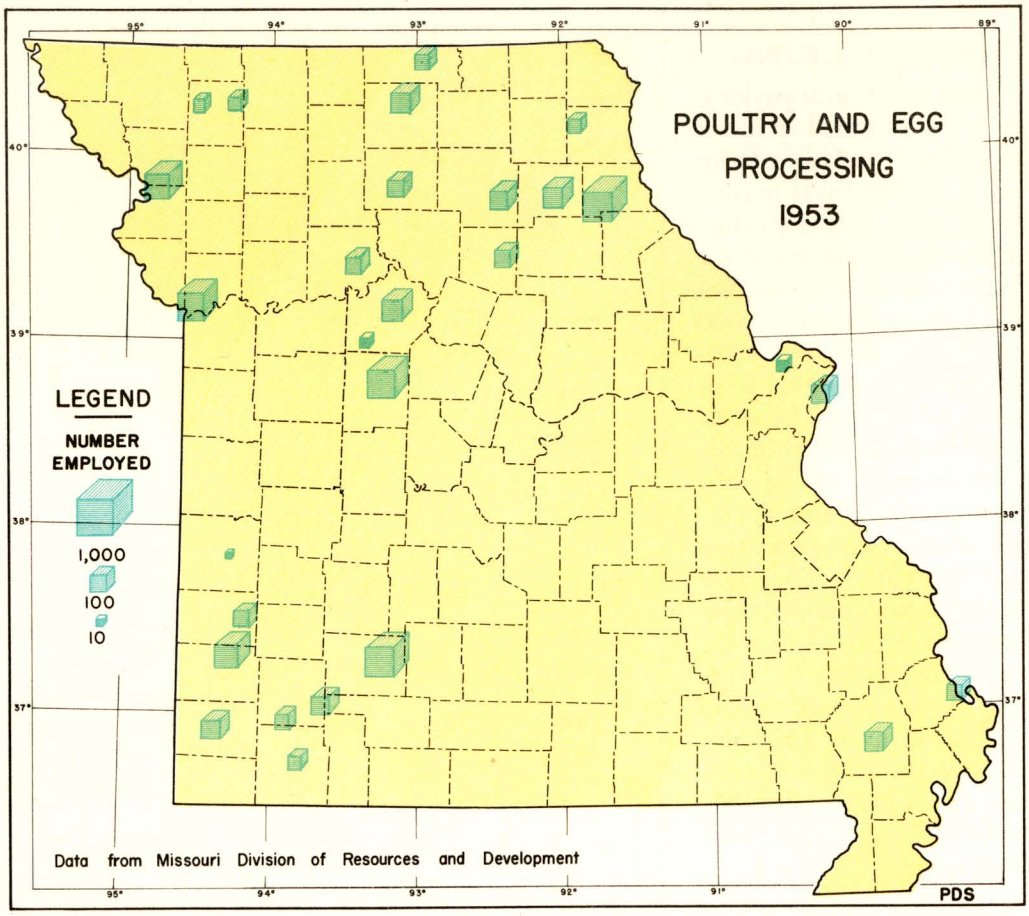
DAIRY MANUFACTURING

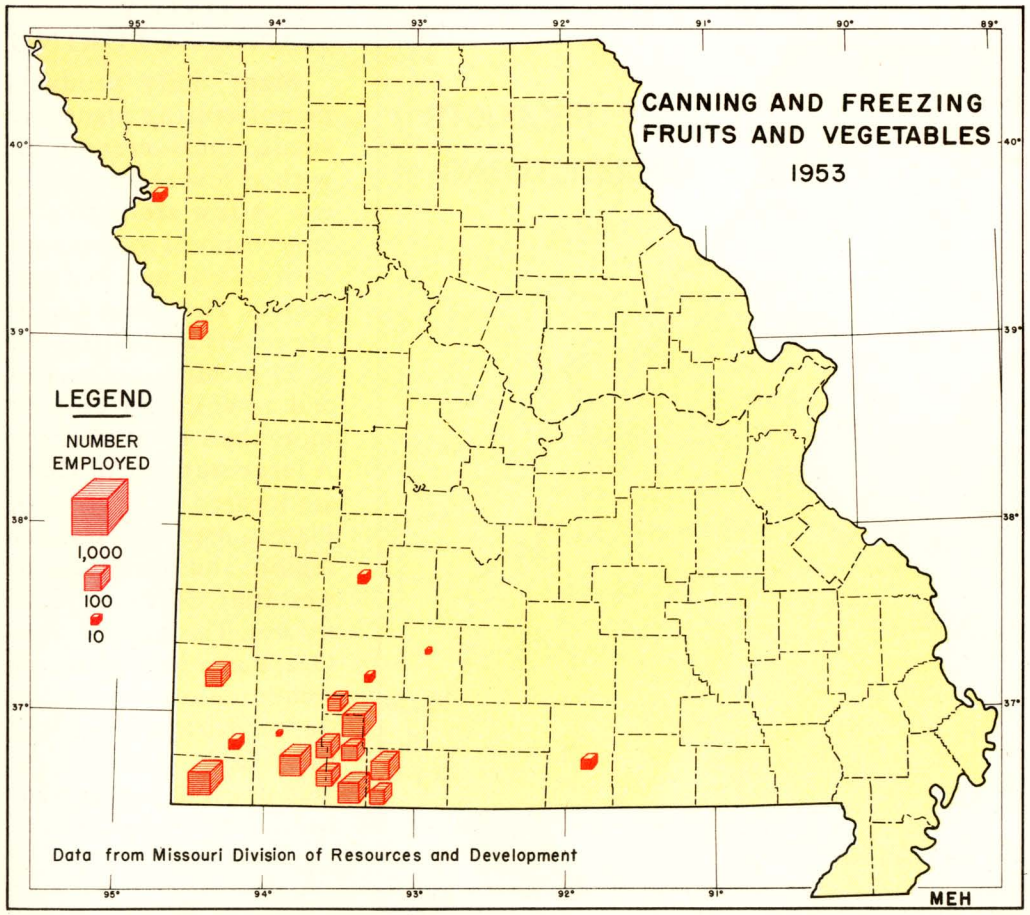
Many dairy products manufacturing plants are small, local creameries with as few as two workers. A few are plants of large, national corporations with several hundred employees. These manufacturing plants are distributed in 55 of Missouri's cities and towns, and employ more than 4,500 workers. A large number of them are located in the Ozark Plateau dairy and poultry region, and in the southwest fruit, dairy, and poultry area. This southwestern Ozark area has the major concentration of dairy cattle and dairy farms in Missouri. Dairy products provide much of the farm income.

POULTRY AND EGG PROCESSING

Poultry processing plants engage in killing, dressing, grading, and packing or canning poultry, primarily refrigerated or frozen chickens. Egg processing involves candling, cleaning, grading, and packing whole shell eggs or liquid eggs. Many of the eggs produced in Missouri are processed and distributed as liquid or frozen eggs. Large quantities also are dried and powdered.

More than 4,000 people are employed in 34 poultry processing plants in 28 cities and towns. They process more than 60 million dollars worth of poultry and eggs from approximately one-half of Missouri's farms.





CANNING AND FREEZING FRUITS AND VEGETABLES

Approximately 1,500 people are engaged in canning and freezing fruits and vegetables. They are employed in 24 establishments in 18 cities and towns, practically all of them in southwestern Missouri.

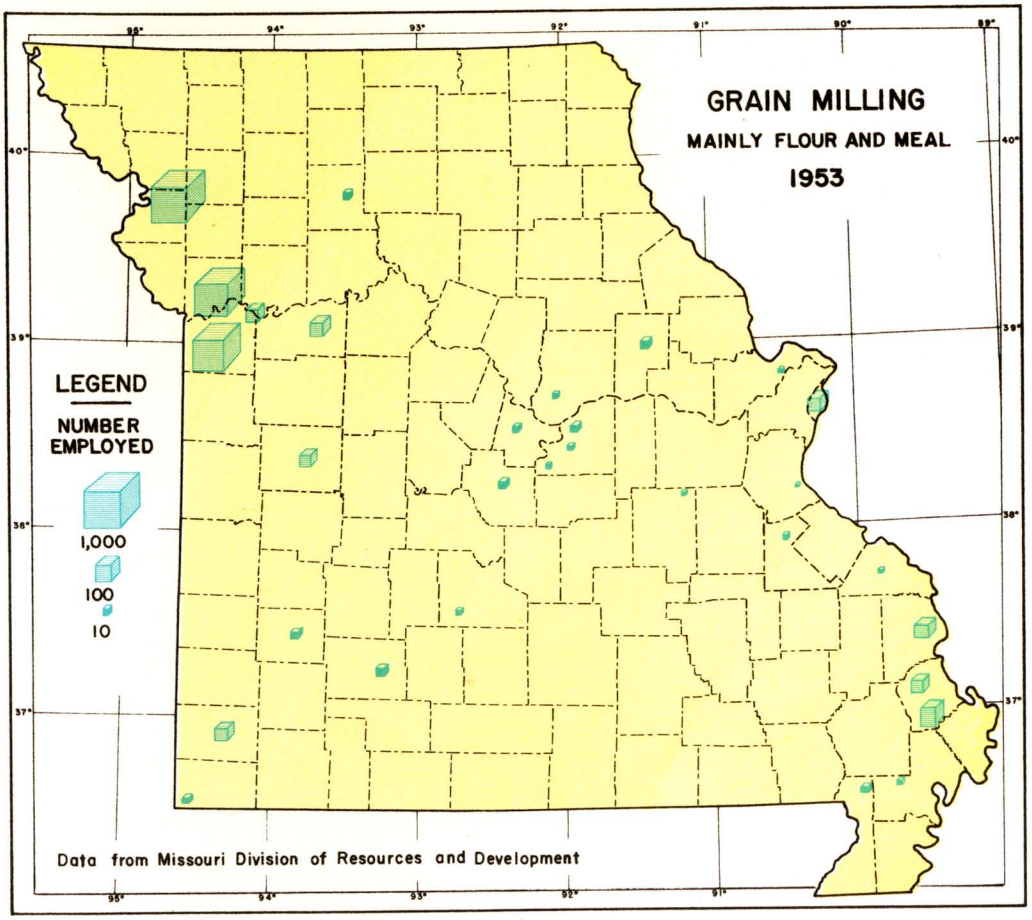
Most of the vegetables are tomatoes, although green beans and other vegetables are canned. Berries, primarily strawberries, are both canned and frozen. More than five million quarts of strawberries, valued at 1½ million dollars were produced in 1949. This amount was 94 per cent of the value of all berries, and 36 per cent of the total value of all fruits grown in the State.

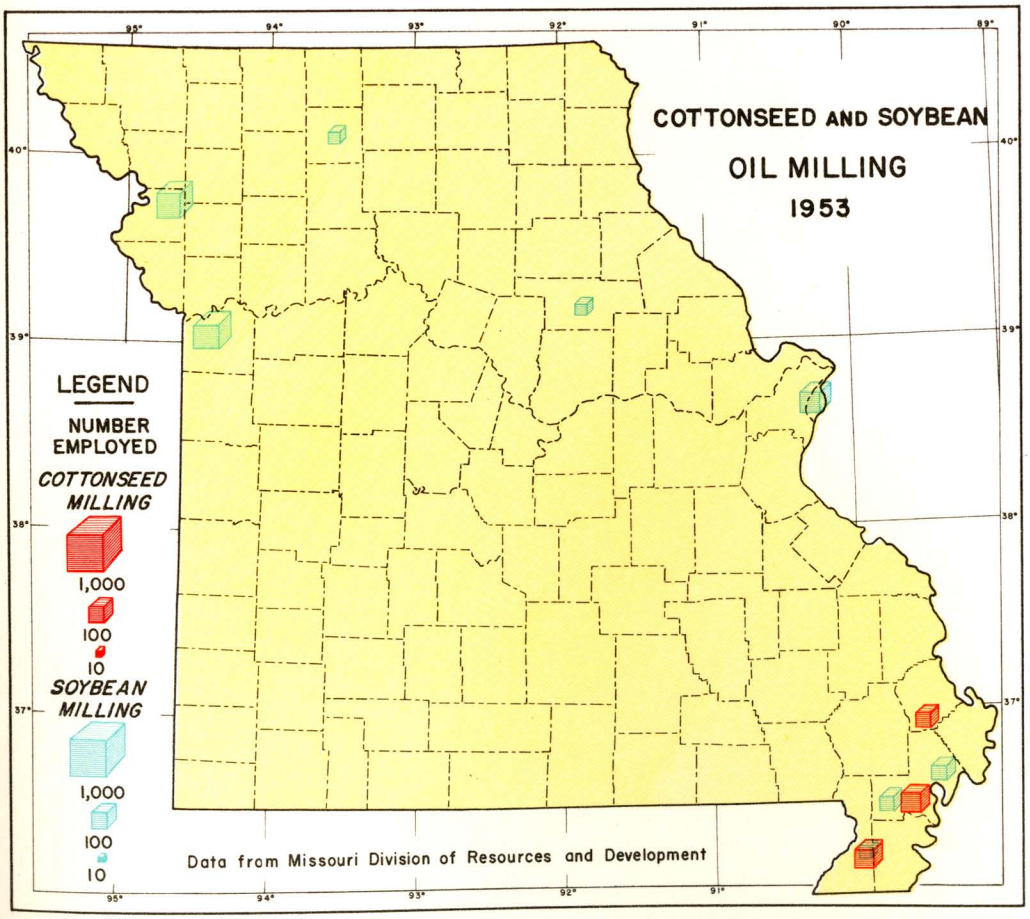
GRAIN MILLING

Grain milling establishments are primarily engaged in milling flour and meal. There are 44 grain mills in 32 cities and towns, although the bulk of the product is milled in St. Joseph and Kansas City.

Approximately 2,900 men were employed in grain mills in 1953. Most of them work in large establishments that employ 100 to 800 people. One-half of the mills are small, being operated by one to perhaps 25 persons who grind and mix products for the local market.

The distribution of grain mills is similar to the distribution of the wheat acreage.





OILSEED MILLING

Five mills in three southeast Missouri towns—Kennett, Portageville, and Sikeston—extract oil from cotton seeds, with by-product cake and meal.

Soybean oil, also yielding by-products of cake and meal, is extracted at eight plant locations in the State. Three of these are in the southeast lowland, one of the major areas of soybean production. Another area of soybean production is located in the southwest but it has no oil mills. The third soybean area, north-central and northeastern Missouri, has plants at Trenton and Mexico. Three mills are outside of areas of soybean production, at St Louis, Kansas City, and St. Joseph.

Agriculture is big business in Missouri. The last census shows more than $1 billion of the state's total annual income of $5½ billion coming from farm products. And much of the remaining income is from businesses engaged in processing and distributing these farm products.

To give you a clear overall picture of Missouri's "biggest business," the College of Agriculture at the University of Missouri called in James E. Collier, associate professor of Geography, to undertake the big assignment of producing the maps and assembling this Atlas. Data for the maps were supplied to Collier by research men in the College of Agriculture and by the Missouri Division of Resources and Development. Many statistics from the 1950 census have been incorporated.

Maps on these pages visualize for you the different land types that make up our state and the uses to which they are put. In them you will see how crops, livestock, and woodlands are distributed across the state, how the transportation and communication networks are set up, how the population is distributed, variations in climate, and many other items of importance in the business of producing agricultural products and getting them to consumers.

J. H. Longwell

Dean and Director,
College of Agriculture