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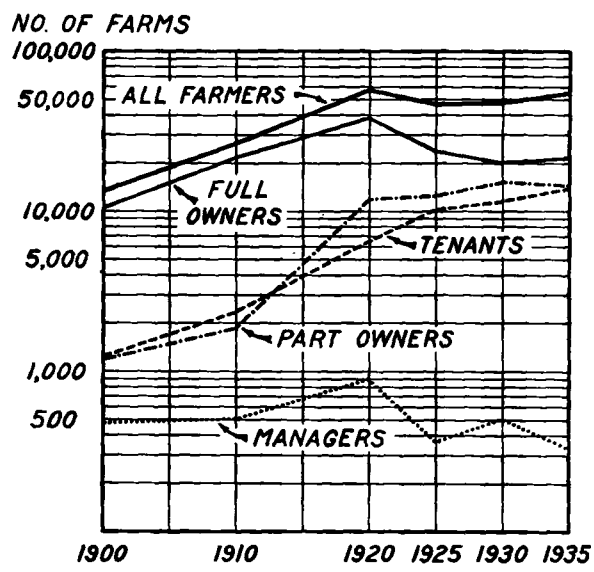
Readjusting Montana's Agriculture

IV. Land Ownership and Tenure

BY

ROLAND R. RENNE

DEPARTMENT OF AGRICULTURAL ECONOMICS



TREND OF MONTANA FARM TENURE

MONTANA STATE COLLEGE
AGRICULTURAL EXPERIMENT STATION
BOZEMAN, MONTANA

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Readjusting Montana's Agriculture

IV. Land Ownership and Tenure

Previous bulletins in this series have pointed out the far-reaching changes confronting Montana's agriculture, and have indicated that they necessitate shifts and adjustments in the use of our land and human resources if we are to prosper in the years ahead. These shifts and adjustments, if they are to be made in an orderly and efficient manner, require the cooperation and endorsement of the owners and users of the land because, in many instances, changes in the ownership or control and use of the land will be necessary to make the adjustments most complete and effective. It is essential, therefore, to have a picture of the land ownership and tenure pattern.

Both the character and the success of the adjustment program will be determined to a large extent by this ownership and tenure pattern. If the land is owned largely by those living on it in units of economic size, the readjustment program will be quite simple, and certainly quite different from that where the land is in scattered units too small for economical operation or administration, and owned by many absentee landlords living in various parts of the United States. Therefore the purpose of this publication is to show: (1) The present Montana land ownership and tenure pattern, (2) the recent changes and trends in ownership and tenure and their causes, (3) the land use problems arising from such patterns and trends, and (4) how these problems are being or may be met satisfactorily.

THE PRESENT OWNERSHIP AND TENURE PATTERN

Ownership of Montana land.—Nearly half (44 per cent), or approximately 41 million acres, of the land area of Montana is owned by public agencies (federal, state, and local governments), and is therefore not assessable for taxes to support community and local governmental services. Of the remaining 56 per cent, 14 per cent, or more than 13 million acres, is owned by corporations, and the remaining 42 per cent, or nearly 39 million acres, is owned by private individuals.¹

¹For a brief summary of the ownership of Montana land see Renne, Roland R., "Western Land Policies and Recent Ownership Trends," *Journal of Land and Public Utility Economics*, Vol. XII, No. 1, February, 1936.

The large proportion of land (nearly half) owned by public agencies is due to the setting aside of large tracts by the federal government for national forests, national parks, and Indian reservations. A total of 33 million acres, or four-fifths of the 41 million acres owned by public agencies, is owned by the federal government, more than 17 millions of this being in national forests, slightly over 1 million in national parks, more than 8 millions in Indian reservations, and about 6½ million acres in unappropriated and unreserved tracts, many of them as small as 40 acres, and scattered rather generally over the state except in irrigated areas. It is these scattered parcels, occurring in units too small for economical operation, that are overgrazed and exploited by any and all who can use them. These parcels are below average in quality,² due in part to this excessive exploitation, and in part to the fact that the best lands were usually taken up first while those that remain vacant or unpurchased are, as a rule, below average in quality.

The state of Montana owned 5,256,000 acres, or 5.7 per cent of the total land area, in 1934. When granted statehood by the Congress in 1889, the state received sections 16 and 36 of each township for the support of its schools, but in counties where national forests, Indian reservations, or national parks were located, it received land in adjoining counties instead. Consequently, some counties have propor-

²One way of comparing the average quality of Federal lands with the average of all lands is to assume certain prices for each grade of land and arrive at an average value per acre upon which to base the comparison. Montana lands have been classified into various grades based on a soil reconnaissance. These grades are as follows: Farm land: first grade, 22 or more bushels of wheat per acre; second grade, 18 to 21 bushels; third grade, 13 to 18 bushels. and fourth grade, 9 to 12 bushels. Grazing land: first grade, 18 acres or less per 1,000-pound steer for a 10-month grazing period; second grade, 19 to 27 acres; third grade, 28 to 37 acres; fourth grade, 38 to 54 acres; and fifth grade, 55 acres or more. On this basis, using the prices indicated below for the different grades of land, the value of all Federal lands (excluding National Forests, National Parks and Indian Reservations) in a sample of 12 counties (Blaine, Cascade, Custer, Golden Valley, Musselshell, Petroleum, Phillips, Sheridan, Teton, Toole, Valley, and Wheatland) averaged \$2.03 per acre compared with an average of \$2.86 per acre for all lands in these counties, or 29 per cent below average in quality. The following prices for the different grades of land were used: (1) Farming lands, first grade, \$10 per acre; second grade \$7; third grade, \$5; and fourth grade, \$3.00; (2) Grazing lands, first grade, \$3; second grade, \$2.50; third grade, \$2.00; fourth grade, \$1.50; and fifth grade, \$1.00; (3) Miscellaneous (bottom lands, swamps, mountains, and forests), \$1 per acre. These prices, with the exception of the two highest grades of farming land which were not purchased, approximate those established for lands in Montana by the Land Policy Section of the Agricultural Adjustment Administration in its Land Purchase Program.

tionately more state land than others. For example, in Daniels County state lands comprise more than a fourth of the total (28.4 per cent) and constitute a serious tax problem,³ while in others only 1 or 2 per cent is so owned.

County governments owned 2,526,000 acres of land, or 2.7 per cent of the total, in 1934. These lands have been acquired through tax deed because of continued tax delinquency. County-owned lands are concentrated largely in a belt extending from Blaine and Phillips counties south to and including the counties through which the Yellowstone River flows (see figure 1). The three counties of Phillips, Petroleum, and Musselshell, forming a belt through the center of the eastern two-thirds of the state, own more than one-fifth of the total county-owned lands while their area comprises but little more than one-twentieth of the state's total. Five-eighths of all the county-owned lands in the state are held by these counties and the eight adjacent to them (see figure 1).

The problems of maladjustments in land use and heavy tax delinquency are most serious in this belt of counties. Since there is no adequate private market for the sale of these parcels and only the better tracts and those strategically located are leased, many of them are used by any and all who can appropriate and exploit them. This further reduces their productiveness, which is below average to begin with,⁴ and makes it increasingly difficult to get them back on the tax roll or into systematic utilization by which they will be properly controlled and developed. Each parcel removed or kept off the tax rolls increases the tax burden upon the private lands remaining on the roll, thus causing a vicious circle of increased delinquency, taking of tax deeds, increased tax burdens, etc.

³State lands are not assessable for tax purposes but when the lands are sold to private individuals on contract, these lands are assessable only on that proportion represented by the equity which the individual has in the land. If the individual allows the taxes on his equity to become delinquent, the county has no means of foreclosing or forcing him to pay since title still rests with the state until the full purchase price of the land has been paid.

⁴County-owned lands, using the sample of twelve counties and prices for the various grades of land indicated in footnote 2, averaged \$2.61 per acre compared with \$2.86 for a.l. lands in these counties, or about 10 per cent below the average. County-owned farm lands are about one-fifth below average in quality, while county-owned grazing lands are about average. The poorer quality farm land is to be expected since, other things being equal, such lands go delinquent first and longest and are the first to be subject to tax deed, the channel through which county governments become owners of any considerable acreage.

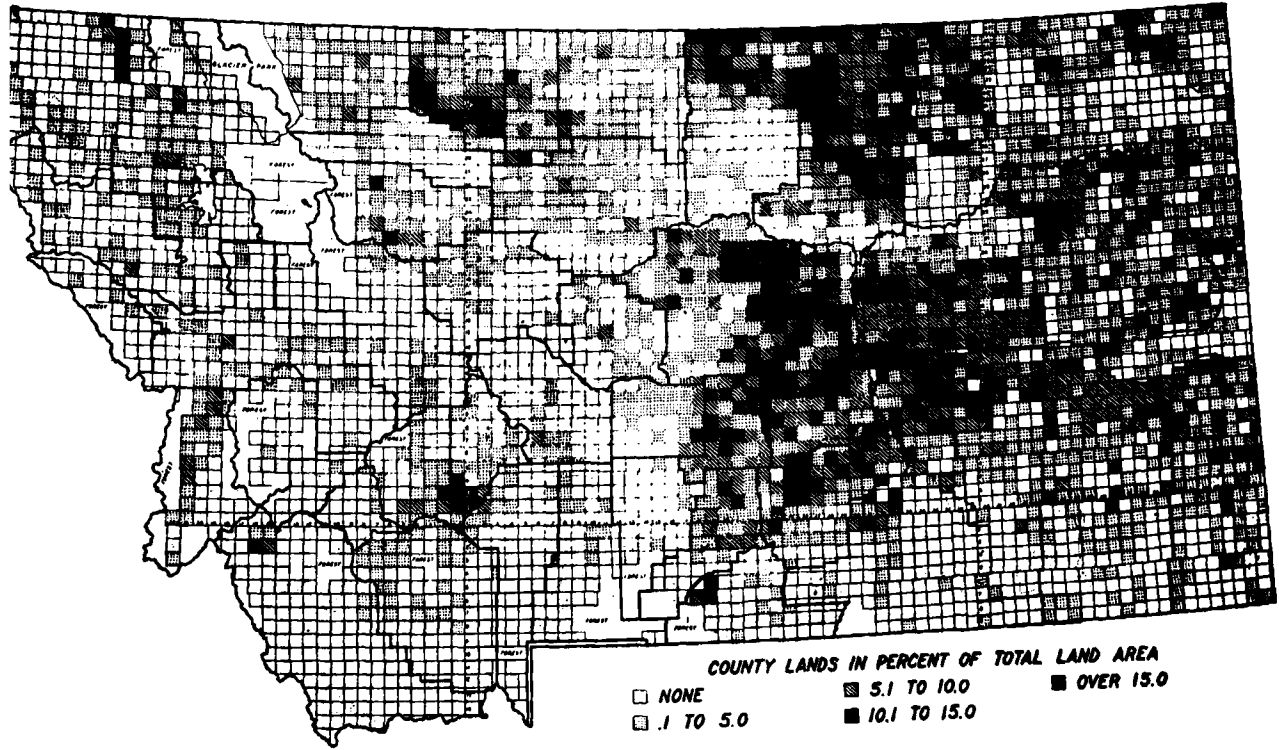


Fig. 1.—County owned lands in Montana, by legal townships, 1934

Corporate-owned lands in Montana consist of the holdings of railroads, investment and mortgage companies, commercial banks, insurance companies, federal and joint stock land banks, and miscellaneous corporations such as mining and lumber companies, livestock and sheep companies, sugar and packing companies, and dude ranches. Holdings of the Northern Pacific Railroad are the largest of any owned by corporations in the state, and the counties traversed by this railroad and adjoining counties which contain railroad grants of land, for the most part show the highest percentage of corporate holdings (see figure 2). In some counties railroad lands comprise one-fifth of the total area and the alternate sections so owned make a distinct checkerboard effect,⁵ thus complicating the problem of blocking out economical range and farming units. The 5 million acres of the original 20-million-acre grant still owned by the Northern Pacific in Montana are about 35 per cent below average in quality.⁶

A total of 2,730,000 acres, or about 3 per cent of the total land area of the state and 5.2 per cent of the total private land area (total area minus acreage owned by public agencies—federal, state, and local governments), is owned by the four lending agencies—commercial banks, insurance companies, Federal Land Bank of Spokane, and joint stock land banks.⁷ These holdings seem to be heaviest in a belt extending from the northern counties of Liberty, Hill, and Blaine, south through the middle of the state to the Wyoming line (see figure 3). This figure gives a fairly complete picture of the areas where mortgage foreclosures have been most numerous, since the holdings of these lending agencies were acquired by this route. These lands probably will be sold at the first opportunity since these

⁵In the Northern Pacific land grants odd numbered sections for 40 miles on each side of the main line were designated as railroad lands. This law, passed July 2, 1864, was amended on May 31, 1870, giving the railroad alternate sections for 10 additional miles to indemnify it for lands which had been preempted, homesteaded, reserved, or otherwise appropriated prior to the time when the railroad filed its maps locating its road. (See Donaldson, Thos., "The Public Domain," Washington, Government Printing Office, 1884, p. 806.)

⁶Railroad lands, using the sample of twelve counties and prices for the various grades of land indicated in footnote 2, averaged \$1.84 per acre compared with \$2.86 for all lands in these counties, or 35.7 per cent below the average.

⁷The holdings of land investment and mortgage companies, totaling nearly 3 million acres or 3 per cent of the land area of the state, are omitted from this grouping because many of these holdings comprise lands bought up for resale and were not obtained through foreclosure, as were the lands now owned by the above four agencies.

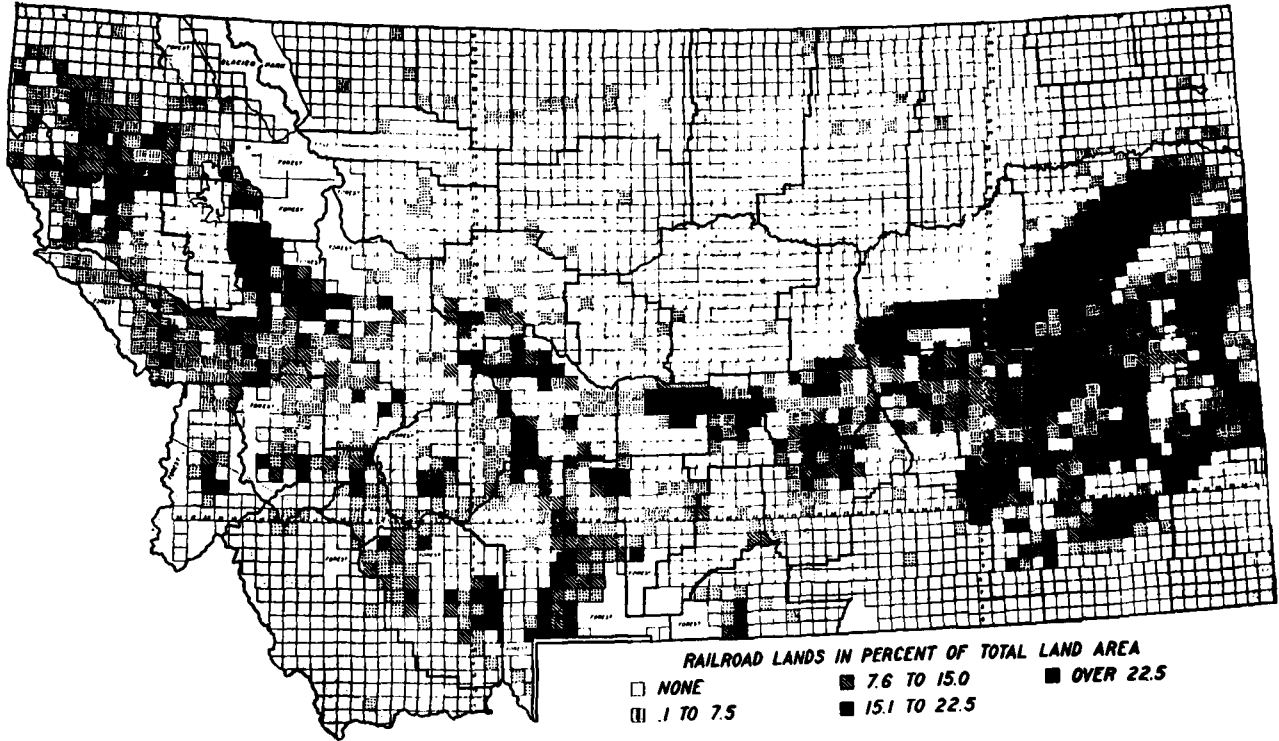


Fig. 2.—Railroad lands in Montana, by legal townships, 1934

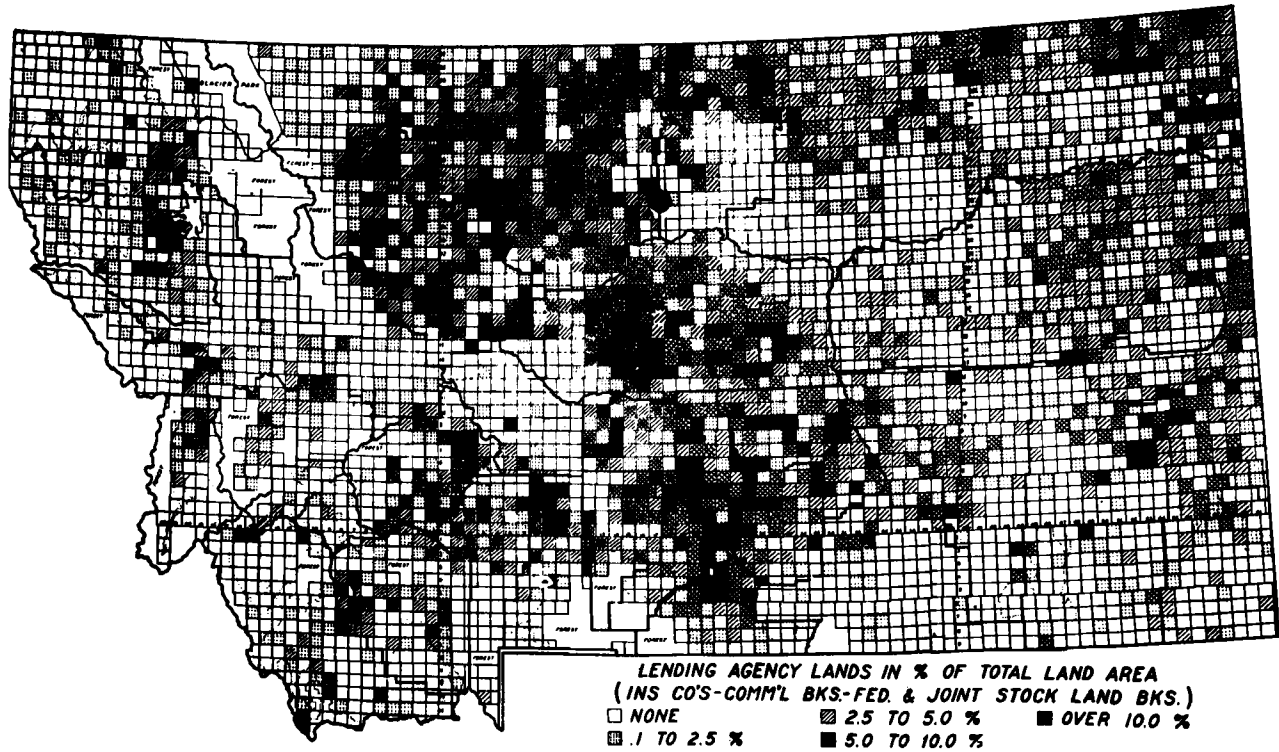


Fig. 3.—Lands owned by the four principal lending agencies in Montana, by legal townships, 1934

agencies do not wish to own and operate farms, but are interested in land merely as a loaning or investment medium. This makes for instability in leasing and using these lands and presents difficult farm management and land use problems.

Of the 38,615,000 acres, or 42 per cent of the total land area of Montana, owned by private individuals, 28,518,000 acres are owned by individuals living within the state, while the remainder is owned by individuals living in other states. Resident holdings vary from less than 7 per cent in Lincoln and Mineral counties to 56 per cent in Sheridan County, but are concentrated in the better farming sections, in irrigated valleys, and in good grazing areas with available water resources for livestock (see figure 4). Non-resident ownership is concentrated principally in the central, north-central, and extreme east-central counties (see figure 5). Speculation, abandonment, and foreclosure largely explain the non-resident ownership in these areas. Note particularly the concentration of non-resident ownership in and around the counties of Toole and Petroleum where oil fields are located. In the eastern counties many one-time residents have abandoned their land and moved to other states, but still hold title to the land. Foreclosure of mortgages held by individuals in other states also helps to account for the heavy non-resident ownership in the eastern counties, where loans by these individuals were particularly large.

Resident holdings of the best grades of farm and grazing lands are heavier than the average, while their holdings of the poorest grades are below. Apparently those who still own their lands and are farming or ranching, having weathered tax delinquency and mortgage foreclosure, are those with the better grades of land. Non-residents have a smaller proportion of their holdings in the best grades of farm land than the average of all agencies and a considerably heavier proportion of the poorest grades, but in the case of grazing lands the middle grades seem to predominate. Apparently non-residents have speculated more in the poorer grades of farming land and in the medium grades of grazing land than they have in the other grades. Low or medium-priced lands appeal more to those who are speculating in land values than do the highest priced lands.

To summarize: Less than one-third of the total land area of the state is owned by those living on or operating the land. Even when national forests, Indian reservations, and national parks are excluded,

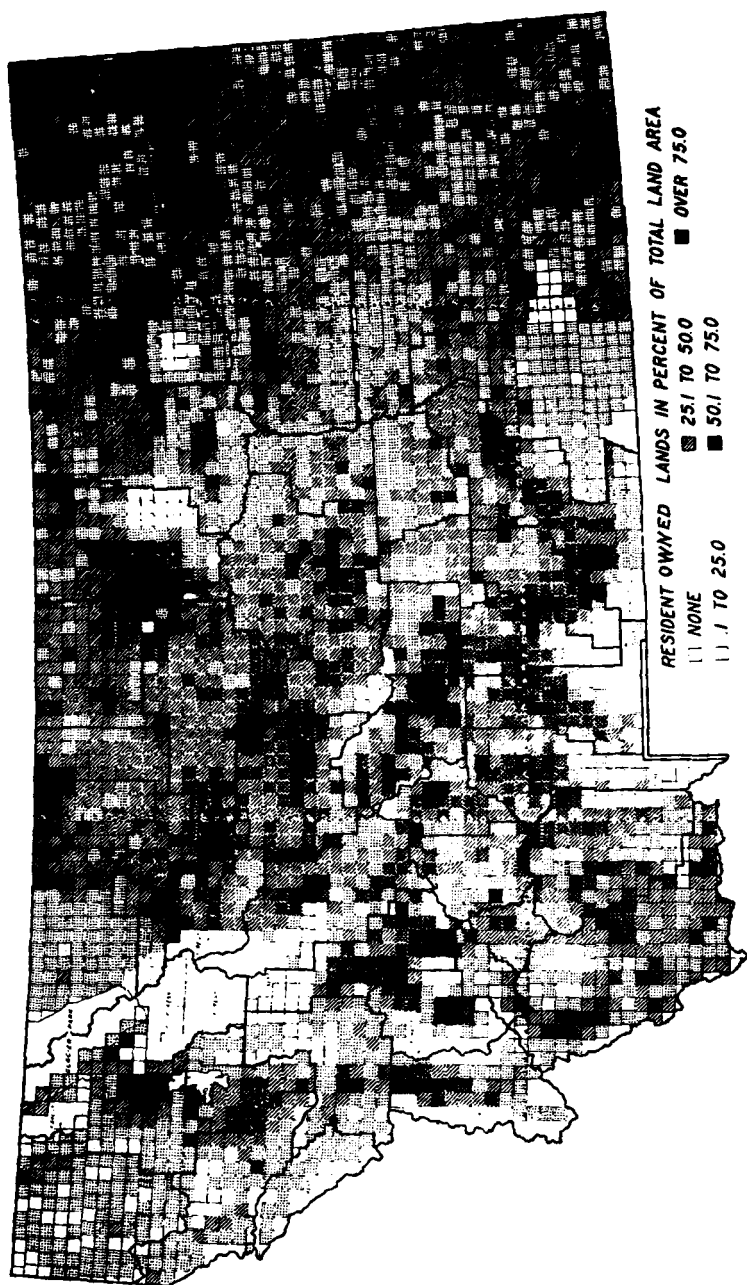


Fig. 4.—Resident owned lands in Montana, by legal townships, 1934

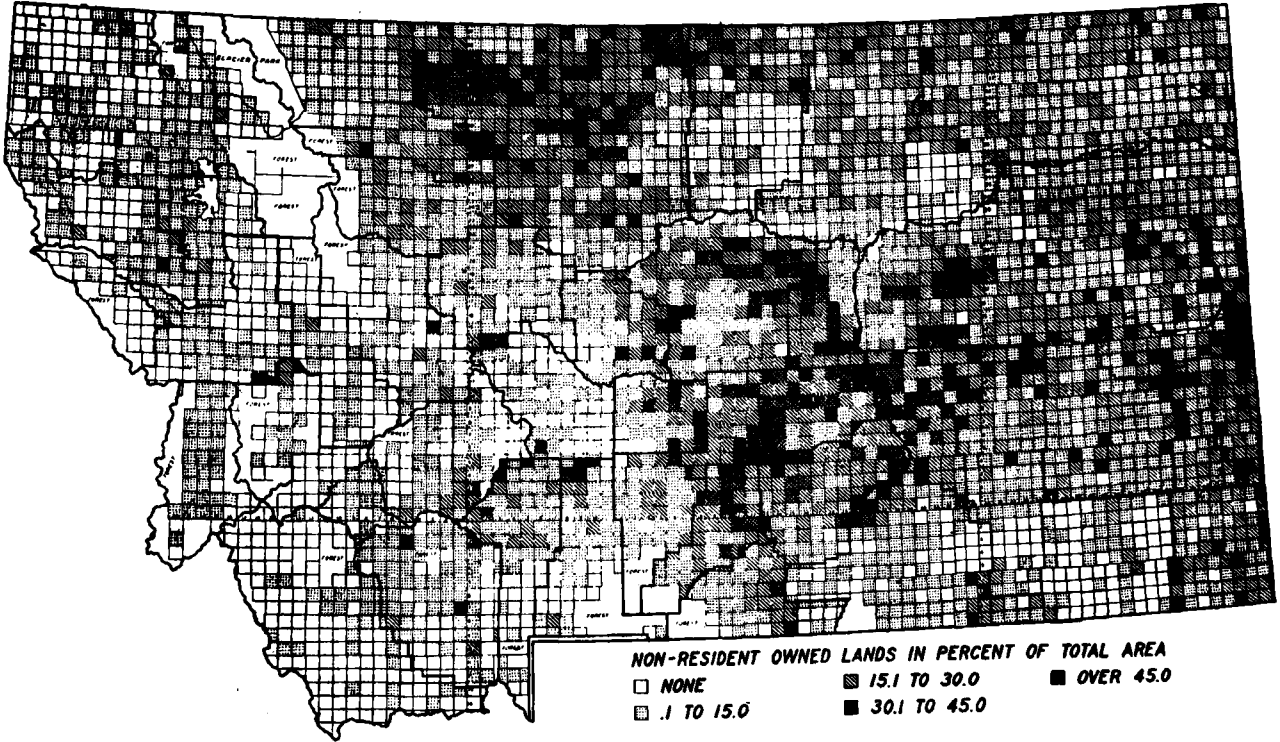


Fig. 5.—Non-resident owned lands in Montana, by legal townships, 1934

less than 45 per cent of the remaining land is owned by residents. This large proportion of absentee ownership gives rise to serious social and economic problems. This is only a part of the picture, however. These holdings are broken up into thousands of separate properties scattered over the state in shotgun fashion, which further complicates the problem of working out an effective land use program. There are only 50,564 farm units in Montana according to the 1935 census, but there are more than 182,000 different holdings or ownerships of agricultural lands in the state, indicating the extent to which Montana lands have been split up by homesteaders, investors, and speculators.

Figure 6 shows the ownership pattern of Petroleum County which is fairly typical of many areas of Montana, particularly the eastern two-thirds. The 1,071,847 acres in this county were split up into 2,838 different tracts at the beginning of 1935, or an average of 378 acres each. In Musselshell County the 1,196,640 acres are divided into 3,423 tracts, giving an average of 350 acres or a little more than a half-section each. Compare the average size of these tracts with the acreage necessary for an economical ranch unit, which is about 4,000 acres with average grades of grazing lands. Even where the land is suitable for farming, most of it is of such quality that more than 800 acres are needed under a summer-fallowing system to insure an economical operating unit. The present pattern of ownership is the result of applying the homestead plan of settlement used in the rich, humid areas of the nation to the settlement of the semi-arid and extremely varied areas of the West.

Number and size of farms.—There are 50,564 farms in Montana, according to the 1935 census, with an average of 939.6 acres each. The size varies greatly between counties, however, five counties having farms averaging less than 300 acres each, while twelve counties have farms averaging 1,500 or more acres each. Flathead, Lincoln, Mineral, Missoula, and Ravalli counties, in the northwestern part of the state, have the smallest farms, averaging 214 acres each, while Beaverhead, Custer, Meagher, Powell, Sweet Grass, and Wheatland, all predominantly livestock producing counties, average 2,169 acres each.

Amount and distribution of tenancy.—The large number of different ownership tracts noted above, compared with the number of farm units in the state, indicates that a large portion of the land in

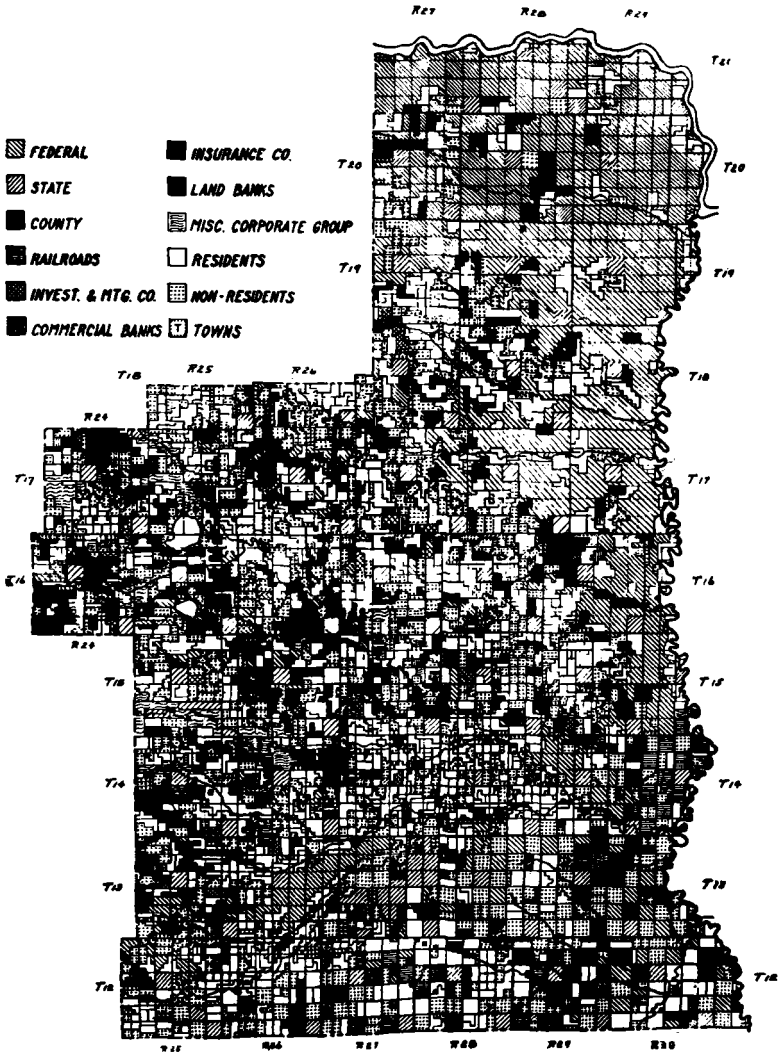


Fig. 6.—Ownership pattern of Petroleum County, by legal townships, 1935

farms is leased or rented from the owners by the farm operators. In 1935, only 21,509 farms, or 42.5 per cent of the total of 50,564, were owned wholly by those operating them, while 14,738 farms, or 29.1 per cent of the total, were operated by individuals who owned some land and rented additional acreage, and 13,985 farms, or 27.7 per cent, were operated by individuals who leased all the land they farmed. A total of 322 farms was operated by hired managers. In other words, only two-fifths of the farmers in the state own all the land they farm.

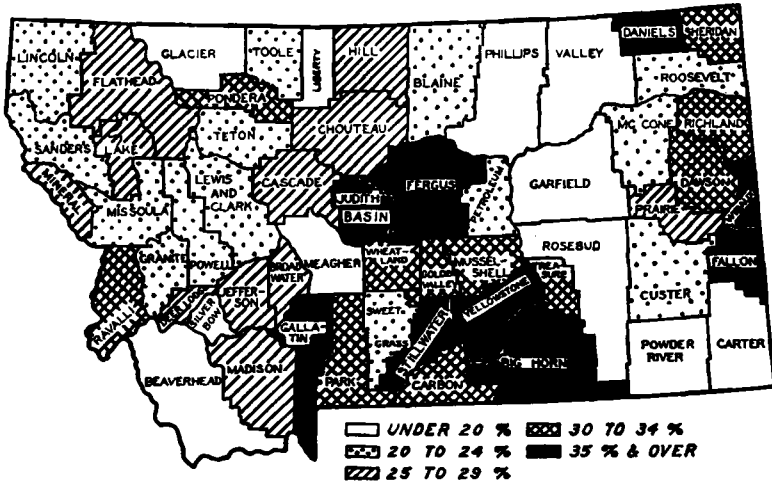


Fig. 7.—Percentage of farms operated by tenants in Montana counties, 1935. (Source of data, U. S. Dept. of Commerce, Bureau of the Census)

The percentage of tenancy is not distributed evenly over the state, being as low as 7.5 per cent in Meagher County and as high as 47.3 per cent in the neighboring county of Judith Basin. Eleven counties in the state had less than 20 per cent of tenancy in 1935, while nine had over 35 per cent (see figure 7). Note the concentration of tenancy in a small group of eastern counties in the central and south-central part of the state.

Figure 7 does not show a complete picture of tenancy, however, because 29.1 per cent of Montana farmers own some land but also rent additional land, as noted above, and are classed as part-owners. In two counties (Liberty and Toole) more than half the farmers are

in this class, and in five others (Chouteau, Golden Valley, Petroleum, Teton, and Wheatland) more than 45 per cent of the farmers are part-owners. Counties in the southeastern part of Montana (Carter, Custer, Dawson, Fallon, McCone, Powder River, and Prairie) also have a high proportion of part-owners. In expanding their acreage to secure a more economical ranch or farm unit, farmers in these counties have rented additional land from the many absentee owners.

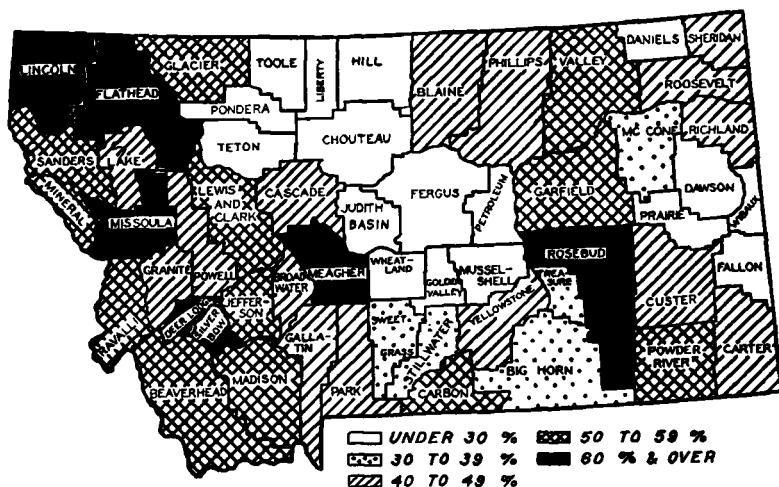


Fig. 8.—Percentage of farms operated by full owners in Montana counties, 1935. (Source of data, U. S. Dept. of Commerce, Bureau of the Census)

Figure 8 shows Montana counties according to the proportion of their farms operated by full owners. Note that seventeen counties have less than a third of their farms so operated, and only seven have as much as 60 per cent of their farms operated by full owners. This figure presents in a little different way the evidence of absentee ownership and the resulting high per centage of tenacy which was indicated in the discussion of their ownership pattern above.

TRENDS IN OWNERSHIP AND TENURE

Recent changes in ownership.—Significant changes in the ownership of Montana lands have occurred in the past ten years. These changes have been in the direction of increased absentee ownership, the holdings of individuals residing within the state having declined from 33.5 per cent of the total in 1925, to 32.7 per cent in 1930 and

to 30.8 per cent in 1934. Table 1 shows the acreages owned by each of the principal agencies in 1925, 1930, and 1934. Note the very large percentage increases in holdings of county governments and of the Federal Land Bank of Spokane.

The changes shown in table 1 have altered the proportion of the total land area of the state owned by each agency. In spite of the fact that county lands now comprise nearly 3 per cent of the total acreage compared with only six-hundredths of 1 per cent ten years ago, the total holdings of all public agencies comprised about one-half of 1 per cent less of the total area in 1934 than they did in 1925. The proportion owned by corporations increased from 12.1 per cent in 1925 to 14.3 per cent in 1934, and that owned by non-resident individuals from 10 per cent in 1925 to 10.9 per cent in 1934.

TABLE 1.—ACREAGE OWNED IN MONTANA BY PRINCIPAL AGENCIES
1925, 1930, AND 1934

Type of agency	Number of acres (in thousands)			Percentage change be- tween 1925 and 1934
	1925 ^a	1930 ^a	1934 ^b	
Public agencies				
Federal government	35,788	33,579	33,048	-7.7
State of Montana	5,307	5,361	5,257	-1.0
County governments	52	1,211	2,526	4731.2
Miscellaneous public agencies	45	62	63	42.0
Total public agencies	41,192	40,213	40,894	-0.7
Corporate groups				
Railroads	5,446	5,069	5,078	-6.8
Land investment & mortgage companies	2,361	3,072	2,869	21.5
Commercial banks	1,103	1,194	1,185	7.4
Insurance companies	407	617	740	82.1
Federal land bank	120	481	736	515.8
Joint stock land banks	39	92	69	77.5
Miscellaneous corporations	1,702	2,090	2,549	49.8
Total corporate groups	11,178	12,615	13,226	18.3
Individuals				
Residents of Montana	31,099	30,335	28,518	-8.3
Non-residents of Montana	9,267	9,573	10,098	9.0
Total individuals	40,366	39,908	38,616	-4.3
Total acreage^c	92,736	92,736	92,736	

^aEstimated from actual data secured for 23 counties by assuming the average percentage changes in ownership in these counties were representative of the percentage changes for the crop reporting districts within which they are located, and weighting the district percentages by the total acreage in the respective districts to get the estimated total acreage in the state owned by each agency.

^bActual figures secured from the assessor's platbooks in each of the 56 counties and the files of the Commissioner of State Lands and Investments.

^cDoes not include lots of less than 10 acres, railroad and other rights of way, highways, or lands within the boundaries of cities and towns or platted subdivisions.

Trends in number and size of farms.—The number of farms in Montana increased from 851 in 1870 to 57,677 in 1920, and then declined to 47,495 in 1930 (see figure on title page). By 1935 the number had increased to 50,564 farms, the six counties of Glacier, Lake, Lincoln, Mineral, Missoula, and Sanders in the northwestern corner of the state experiencing the largest increases. In these six counties the number of farms increased 37.4 per cent from 1930 to 1935, while the number decreased in fifteen counties, the decrease exceeding 10 per cent in Musselshell and Golden Valley counties. These changes represent in part the movement of some farm families from the dry-farming plains area of central Montana to the cut-over and irrigated areas in the western part of the state.

The average size of farm^a in Montana increased from 608.1 acres in 1920 to 940.3 acres in 1930, and remained practically the same (939.6 acres) in 1935. Blaine, Madison, and Sweet Grass counties showed the largest increases in average size of farms between 1930 and 1935, the size in these counties increasing by one-third. Farms increased between 20 and 30 per cent in size in Beaverhead, Golden Valley, Musselshell, and Petroleum counties in this period, but decreased by more than a third in Big Horn, Deer Lodge, and Glacier counties. A total of twelve counties showed decreases in size of farms.

Trends in tenancy.—The percentage of Montana farms operated by full tenants has increased almost continuously since 1880, being 5.3 per cent in that year compared with 27.7 per cent in 1935 (see figure 9). The percentage of tenancy in the state is still considerably below the average for the United States, which was above 42 per cent in 1935, but Montana tenancy is increasing more rapidly than that for the country as a whole, particularly since 1920 (see figure 9).

All but fifteen counties in Montana had an increase in tenancy from 1930 to 1935, and all but four (Granite, Meagher, Treasure, and Wibaux) had a net increase for the period from 1925 to 1935. Two counties, Daniels and Lincoln, had increases of more than 70 per cent in tenancy from 1930 to 1935, while in seven counties (Beaverhead, Deer Lodge, Glacier, Lincoln, Madison, Powder River, and Sanders)

^aThe United States Census defines a farm as all land which is directly farmed by one person or partnership. A "farm" may consist of a single tract of land or of a number of separate tracts, and these several tracts may be held under different tenures. Thus the size of farms may be increased by leasing as well as by purchasing or otherwise acquiring title.

tenancy practically doubled from 1925 to 1935. Six other counties had an increase of from 50 to 90 per cent during this decade.

The percentage of farms operated by part-owners (those who own some land but also rent additional acreage) has increased since 1900 at about the same rate as tenancy (see figure on title page). In that year there were only 1190 part-owners and 1230 tenants out of a total of 13,370 farmers, while in 1935 there were 14,738 part-owners and 13,985 tenants out of a total of 50,564 farmers. Thus, part-owners increased 1,139 per cent during these years and tenants 1,037 per cent, while the number of farmers increased but 278 per cent.

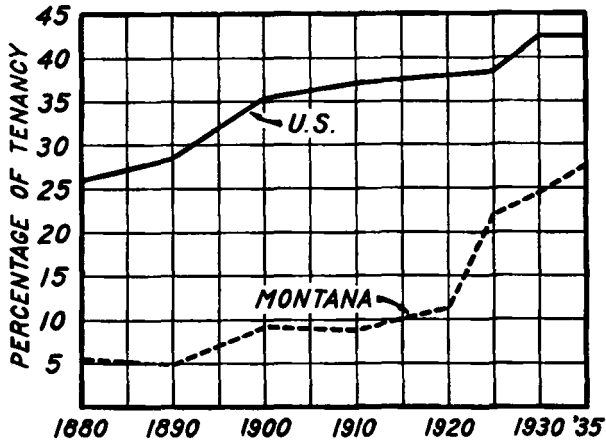


Fig. 9.—Percentage of farms operated by tenants in Montana and the United States, by census years 1880-1935. (Source of data, U. S. Dept. of Commerce, Bureau of the Census; 1935 figures are preliminary)

CAUSES OF RECENT CHANGES

The factors causing the above changes in ownership and tenure may be grouped under two main headings: (1) The more obvious or immediate causes, and (2) the more indirect or fundamental causes.

Immediate causes.—Since the largest percentage changes in ownership in the past decade occurred in the holdings of the counties, the Federal Land Bank of Spokane, and insurance companies, it is apparent that tax delinquency and mortgage foreclosure are the two principal immediate causes.

Increased county ownership is the direct result of continued tax delinquency and the consequent taking of tax deed by the county.

But it is also indirect evidence of the existence of certain fundamental maladjustments, which in relatively good times may be wholly or partially obscured. The same may be said about mortgage foreclosures, the means by which the federal land bank and insurance companies increased their holdings. While tax deeds and mortgage foreclosures have been more numerous in the drought and depression years, 1929-1933, they occurred, nevertheless, in rather large numbers prior to these years, indicating that basic maladjustments did exist.*

Fundamental causes.—The most important of these are: (1) Overspeculation in land, (2) overdevelopment of local government, and (3) improper utilization of land. The first few years of the period of heaviest settlement in Montana (1908 to 1918) were agriculturally very favorable, and heavy yields and high prices were secured. A general desire to own land prevailed. This period of settlement and speculation, accompanied as it was by the increased business activity and high prices of the war period, led to inflated land values. After the war, when price levels declined and smaller yields were secured due to adverse weather conditions and the normal declines from the large yields of the first years following breaking the sod, it was discovered that the productivity of the land was not sufficient to carry the heavy taxes, interest, and debt charges against it. Thus, tax deeds and mortgage foreclosures resulted in a few years.

The greatest maladjustment resulting from land booms and overspeculation is the large multiplication of governmental services with the resulting increased costs of local government. Roads were laid out in anticipation of an increasing population and an ultimate pattern of homes and farms similar to that in the older, more thickly populated humid areas. Schools were built, very frequently not more than 2 miles apart, and counties increased from 27 in 1909 to 54 in 1920.

This expansion was based upon a production pattern which was impossible in most areas of the state. The land was homesteaded in 160-acre units prior to 1911 when the Enlarged Homestead Act was passed, permitting the entry of 320-acre homesteads. This was increased to 640 acres by the Stock-Raising Homestead Act of 1916,

*An analysis of tax delinquency and mortgage foreclosures in the state will appear in a later bulletin of this series.

But these units are far too small for efficient use of the range¹⁰ while farm lands which produce, on the average, less than 12 bushels per acre per year under a summer-fallowing system, are uneconomical for grain farming. An analysis of the soils of twelve counties¹¹ shows that 35 per cent of the farm land in these counties is of the above type or what is called fourth grade farming land, and in Golden Valley County 83 per cent of the farm land is of this grade. In four other counties of the twelve (Custer, Musselshell, Toole, and Wheatland) more than two-thirds of the farm land falls in this category. Since a large part of the land farmed in these counties is used for wheat production, this indicates the extent of improper land utilization.

FUTURE USE AND CONTROL OF THE LAND

Significance of present pattern to existing maladjustments.—Some tenancy is, of course, both necessary and desirable as a rung in the agricultural ladder from farm hand to farm owner, but the large and increasing percentage of tenancy with its peculiar characteristics in Montana, when coupled with the recurring drought periods, is especially undesirable because it is resulting in increased economic and social instability. The splitting up of the lands into small, uneconomical units by homesteaders, investors, and speculators (see figure 6), makes it necessary for most operators, in order to approach an economic unit, to lease from numerous, usually unknown, owners, who may be scattered all over the United States. This puts the operators in an uncertain position because they have no assurance from year to year that they can maintain their entire operating units intact. Another unsatisfactory phase is that the land may be sold at any time or the rental may be raised by the competition of neighboring cattlemen who have lost part of their range and must get other lands if they are to maintain their cattle numbers. This un-

¹⁰With the soil characteristics and carrying capacity typical of much of Montana's range, a minimum of 40 acres per head of cattle is necessary. (An analysis of the grazing acreage of twelve counties—Blaine, Cascade, Custer, Golden Valley, Musselshell, Petroleum, Phillips, Sheridan, Teton, Toole, Valley, and Wheatland—showed approximately half of the land was of this grade or poorer.) An operator with a unit of 100 head, which is a very small range unit for any family entirely dependent on this enterprise, would therefore require around 4,000 acres, or more than 6 sections instead of 1, unless good supplementary feed from grain or irrigated farming were available.

¹¹The same twelve counties as those listed in footnote 10.

certainty in range control encourages severe overgrazing and misuse of our land resources.¹²

Methods of correcting present maladjustments.—The correction of present maladjustments in the use of both range and farm lands but more particularly the former, depends largely upon the grouping or blocking out of these small, uneconomical parcels into units of proper size, and placing them under such management, public or private, as is necessary to maintain and improve productivity. But how can the lands best be blocked out and controlled for maximum productivity? This may be accomplished in four principal ways: (1) Consolidation of farms by the more successful farmers taking over adjoining lands abandoned by their less successful neighbors, (2) voluntary grouping of ranchers to form cooperative grazing districts and thereby acquire effective control of a given area, (3) establishment of Taylor Grazing districts administered by the United States Department of the Interior, and (4) outright purchase of most of the numerous small, privately owned tracts by the federal government.

Recent progress in planned land use and control.—Some correction of present evils resulting from a faulty ownership and utilization pattern is taking place in Montana by all the above methods. In some areas, particularly in the dry-farming sections, consolidation of farms is an important factor in blocking out efficient operating units. In the northeastern and north-central portions of the state, covering sixteen counties with approximately two-thirds of the wheat acreage, the crop land acreage per farm increased from 167.5 in 1920 to 222.3 in 1925, and to 328.2 in 1930, or a total increase of 95.9 per cent.¹³ The consolidation of farms by this means is the natural consequence of the stern law of the survival of the fittest. It is a slow and painful process and does not represent any planned group action, but is, nevertheless, an important factor contributing to improve the ownership and tenure pattern.

Much can be done by the voluntary group action of ranchers in certain areas to establish planned use and control of the range. Where the ownership pattern is not too frequently interspersed with small, absentee-owned parcels, or with units belonging to small grain farmers, the resident ranchers can form successful cooperative graz-

¹²See Renne, Roland R. "Significance of the Ownership Pattern to Land Use Planning," *Journal of Farm Economics*, Vol. XVII, No. 3, August, 1935.

¹³See Starch, E. A., "Economic Changes in Montana's Wheat Area," *Mont. Exp. Sta. Bul.* 295, pp. 25 and 26.

READJUSTING MONTANA'S AGRICULTURE

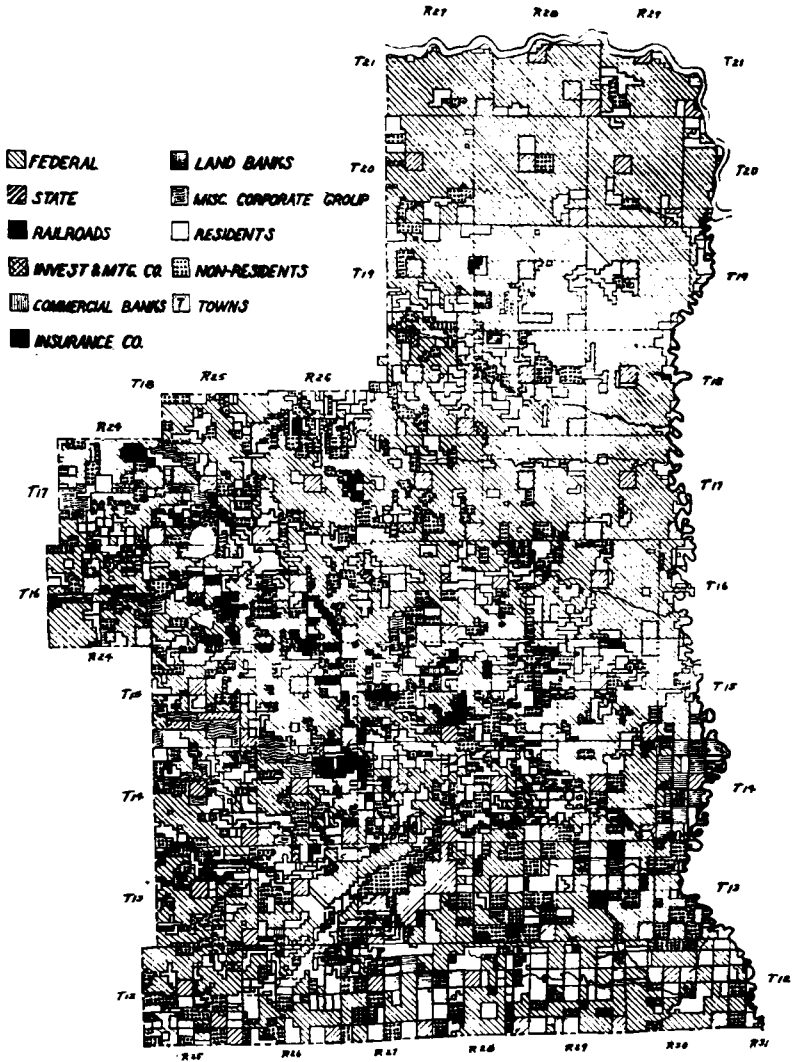


Fig. 10.—Ownership pattern of Petroleum County which will be established if federal government completes purchase on all lands optioned up to January 1, 1936.

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ing districts. The Mizpah-Pumpkin Creek district in Custer County is an example.

Five grazing districts under the Taylor Act have been tentatively organized in Montana. Considerable blocking out of rather large areas for economical administration may occur through the exchanging of privately owned land in certain areas for isolated or scattered public domain land elsewhere. However, this is possible only in areas where federal lands comprise a fairly large proportion of the total land area of the district, perhaps 20 per cent or more. In some Montana counties where adjustment problems for both farm and range lands are acute, present federal lands comprise less than 4 per cent of the total, and an exchange of land alone is not an effective means of removing the existing maladjustments.

In areas where the ownership pattern is especially badly checked with small, absentee-owned parcels, and a varied type of agriculture exists with no common interest between different private users of the land, the outright purchase of a number of the tracts is necessary to secure effective blocking out of economical units. To do this, the federal government has established three land purchase projects in the state. Figure 10 shows the new pattern of ownership which will be established in Petroleum County if the federal government completes purchase on all the lands in that county upon which it had taken options up to January 1, 1936. Contrast this new pattern, incomplete as it may be, with the old as illustrated in figure 6. Note the fewer owners and the blocking out of fairly large tracts for leasing. With the substitution of one large, permanent, non-speculative owner (the government) in place of thousands of widely scattered, absentee owners, stockmen and farmers should be able to lease adjoining lands on reasonable terms for a long period, provided they use the lands properly. The result of this simplified use and control pattern should be increased productivity of the land, and improved economic and social conditions for the resident operators.