Bulletin No. 228 May, 1945

Montana's Agriculture

MONTANA AGRICULTURAL EXTENSION SERVICE

INTRODUCTION

This publication is intended to provide prospective farmers with general information about Montana agriculture. It is designed to help them decide whether or not Montana offers the opportunities they seek and is the kind of place in which they would like to live.

Soils, topography and climate, the factors which largely determine the kind of agriculture of an area, vary greatly in Montana. This being the case, persons interested in engaging in farming or ranching in Montana will want to secure more detailed information than is contained in this bulletin. Such information can be secured for any particular county or locality from county extension agents. Additional state-wide information may also be obtained from the Montana Agricultural Experiment Station and the Montana Extension Service of the Montana State College.

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General Information About
Montana's Agriculture

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LOCATION AND PHYSICAL CHARACTERISTICS

Montana is located in northwestern United States adjoining the Canadian border. The state has a land area of over 93 million acres and is the third largest in the nation. Nine counties in northwestern Montana are west of the Continental Divide with drainage to the Pacific Ocean. The remaining 47 counties are east of the Continental Divide and are in the Missouri River Basin. See figure 1.

The state is divided into three general areas. The western third of the state is a truly mountainous area with farming and stock raising possible only in the mountain valleys. The central third is a low mountain and foothill area while the eastern third is a plains section.

The altitude varies in Montana from a low of 1,800 feet to over 12,000 feet as shown in figure 2. Crop production is generally limited to areas less than 6,000 feet above sea level. About 50 percent of all of the cropland is between 2,000 and 3,000 feet and over 85 percent is below 4,200 feet elevation. Crop production at altitudes over 4,000 feet is limited to a large extent to early maturing crops and hay because of the generally cooler, shorter seasons above this elevation.

Figure 1—Drainage basins and topography of Montana.

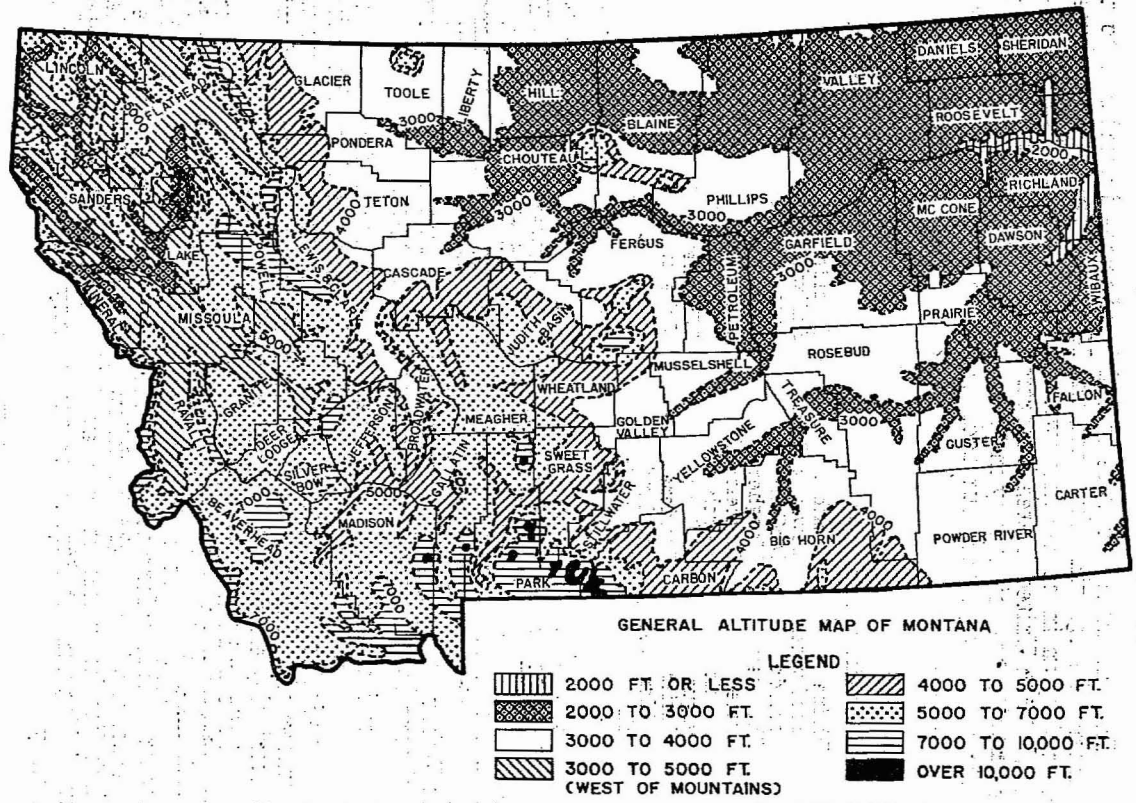

LINCOLN
GLACIER
TOOLE
LIBERTY
HILL
BLAINE
VALLEY
DANIELS
SHERIDAN
ROOSEVELT
RICHLAND
MC CONE
DAWSON
WIBAUX
PONDERA
CHOUTEAU
PHILLIPS
SANDERS
TETON
LAKE
CASCADE
FERGUS
GARFIELD
PETROLEUM
PRAIRIE
MISSOULA
JUDITH BASIN
MUSSELSHELL
ROSEBUD
WHEATLAND
FALLON
GRANITE
MEAGHER
GOLDEN VALLEY
TREASURE
GUSTER
DEER LODGE
SILVER BOW
JEFFERSON
BROADWATER
SWEET GRASS
YELLOWSTONE
CARTER
BEAVERHEAD
MADISON
GALLATIN
SWEET WATER
BIG HORN
POWDER RIVER
PARK
CARBON
GENERAL ALTITUDE MAP OF MONTANA
LEGEND
2000 FT. OR LESS
2000 TO 3000 FT.
3000 TO 4000 FT.
3000 TO 5000 FT. (WEST OF MOUNTAINS)
4000 TO 5000 FT.
5000 TO 7000 FT.
7000 TO 10,000 FT.
OVER 10,000 FT.

Figure 2.

SOILS AND LAND CLASSIFICATION

The character and type of soil is of prime importance to the farmer. Recognizing this fact, the Montana Agricultural Experiment Station in cooperation with the Bureau of Chemistry and Soils of the United States Department of Agriculture started the reconnaissance soil survey in 1921. To date 29 counties have complete soil surveys and four additional counties have hasty general soil surveys. 1/

1/ Reconnaissance Surveys:

Blaine	Judith Basin	Sheridan	Hasty General Surveys:
Broadwater	Lewis & Clark	Stillwater	Dawson
Cascade	McCone	Sweet Grass	Fallon
Chouteau	Meagher	Teton	Garfield
Custer	Musselshell	Toole	Prairie
Daniels	Petroleum	Valley	
Fergus	Phillips	Wheatland	
Glacier	Pondera	Wibaux	
Golden Valley	Richland		
Hill	Roosevelt		

Detailed soil surveys have been made in the following irrigated areas: Milk River Valley, Valier, Lower and Middle Yellowstone, Flathead and Upper Flathead, and the Gallatin Valley. In addition to the work of the Montana Agricultural Experiment Station, the Soil Conservation Service has made a detailed survey of Wibaux County, and on many individual farms located in state soil conservation and grass conservation districts.

Land classification maps have been prepared for all counties where soil surveys have been made. These maps show the different grades of land based upon such factors as texture, structure, number of soil layers and color of each soil type, correlated with historical yield data and grazing capacity information.

Soils and land classification information should be taken into consideration when looking over a general area or an individual farm with the expectation of becoming either a tenant or a farm owner. This information will assist in determining the type of operation which might be followed successfully. Soils and land classification information is available from the Montana Agricultural Experiment Station or the county extension agent in the county.

CLIMATE

The climate of Montana is characterized by marked contrasts between areas and great variability from season to season. The

PRECIPITATION (INCHES)
10 to 13
13 to 16
16 to 19
19 to 24
24 to 29
29 and over

Figure 3.

Continental Divide of the Rocky Mountains influences greatly the state's climate. To a considerable extent conditions west of the Divide are influenced by the Pacific Ocean while the area to the east is under continental influences. Consequently the western area has more even temperatures, higher precipitation, less wind and a shorter growing season than does the eastern part.

PRECIPITATION

Approximately one-half the state receives an annual precipitation of from 13 to 16 inches. The driest areas are found mainly east of the Divide. The limited precipitation is the determining factor in the kind of farming and land use in that area. See figures 3 and 5.

The data for the map shown in figure 3 were adjusted to a 35-year (1898-1932) base. It will be noted that the widest variations in precipitation occur west of the Continental Divide. Some parts of that area receive less than 10 inches while others average more than 30 inches. Perhaps of even more significance, however, is the year to year variation in precipitation. A study of the records of five eastern Montana weather stations shows that, during the 54-year period for which records were kept, there were five years with a precipitation of less than 9½ inches, 12 years with 9½ to 11 inches, 16 years with between 11 and 14 inches and 26 years above 14 inches. The same records show a range from a low of 8 inches to a high of 20 inches.

This 54-year record also shows that the "growing season" (April through August) precipitation averages 8.81 inches, with a range from a low of slightly over 4 inches in 1919 to a high of 14 inches in 1906.

TEMPERATURES AND GROWING SEASON

Temperatures of 100 degrees or higher may occur during the summer, while below zero temperatures can be expected any month from September to May. The highest average annual temperatures occur in the Yellowstone Valley and the lowest in the higher areas of the extreme southwestern part of the State. Winters are usually cold, although there often are periods when mild temperatures prevail.

Figure 4 shows the average length of frost-free period for various sections of Montana. Since most farm crops cannot be produced successfully in less than a 90-day frost-free period, this often is the factor determining the kinds and varieties of crops grown in the different areas. It will be noted from the map that only a few small areas in the western part of the state have 120

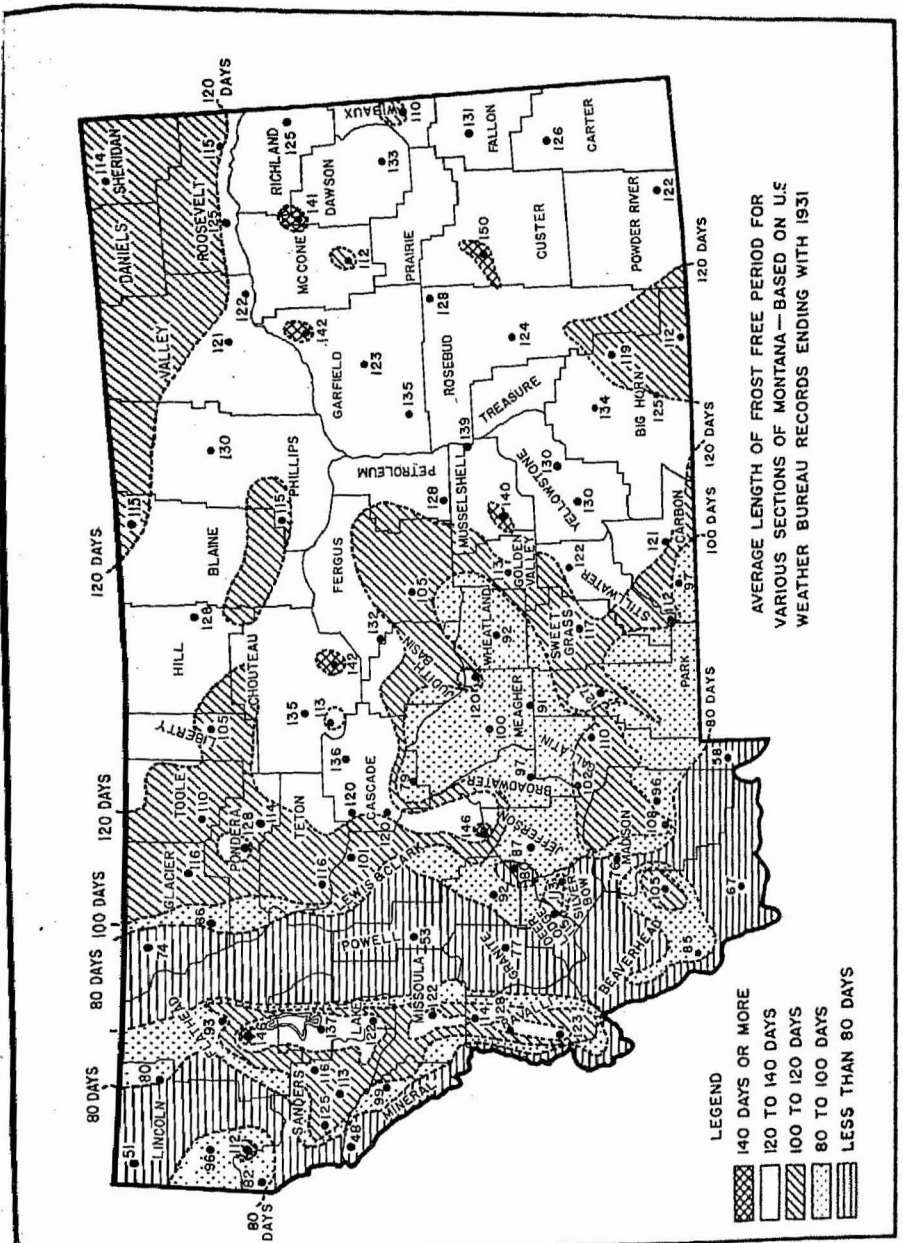

AVERAGE LENGTH OF FROST FREE PERIOD FOR VARIOUS SECTIONS OF MONTANA—BASED ON U.S. WEATHER BUREAU RECORDS ENDING WITH 1931
LEGEND
140 DAYS OR MORE
120 TO 140 DAYS
100 TO 120 DAYS
80 TO 100 DAYS
LESS THAN 80 DAYS
120 DAYS
100 DAYS
80 DAYS
SHERIDAN
DANIELS
ROOSEVELT
VALLEY
RICHLAND
DAWSON
MC CONE
PRAIRIE
WIBAUX
FALLON
CARTER
CUSTER
POWDER RIVER
GARFIELD
ROSEBUD
TREASURE
BIG HORN
HILL
BLAINE
PHILLIPS
PETROLEUM
FERGUS
MUSSELSHELL
YELLOWSTONE
GOLDEN VALLEY
SWEET GRASS
STILLWATER
CARBON
PARK
LIBERTY
CHOUTEAU
JUDITH BASIN
WHEATLAND
WEIGHER
MEAGHER
CASCADE
BROADWATER
GLACIER
TOOLE
PONDERA
TETON
LEWIS & CLARK
JEFFERSON
GALLATIN
MADISON
BEAVERHEAD
POWELL
LAKE
MISSOULA
SANDERS
MINERAL
LINCOLN

Figure 4.

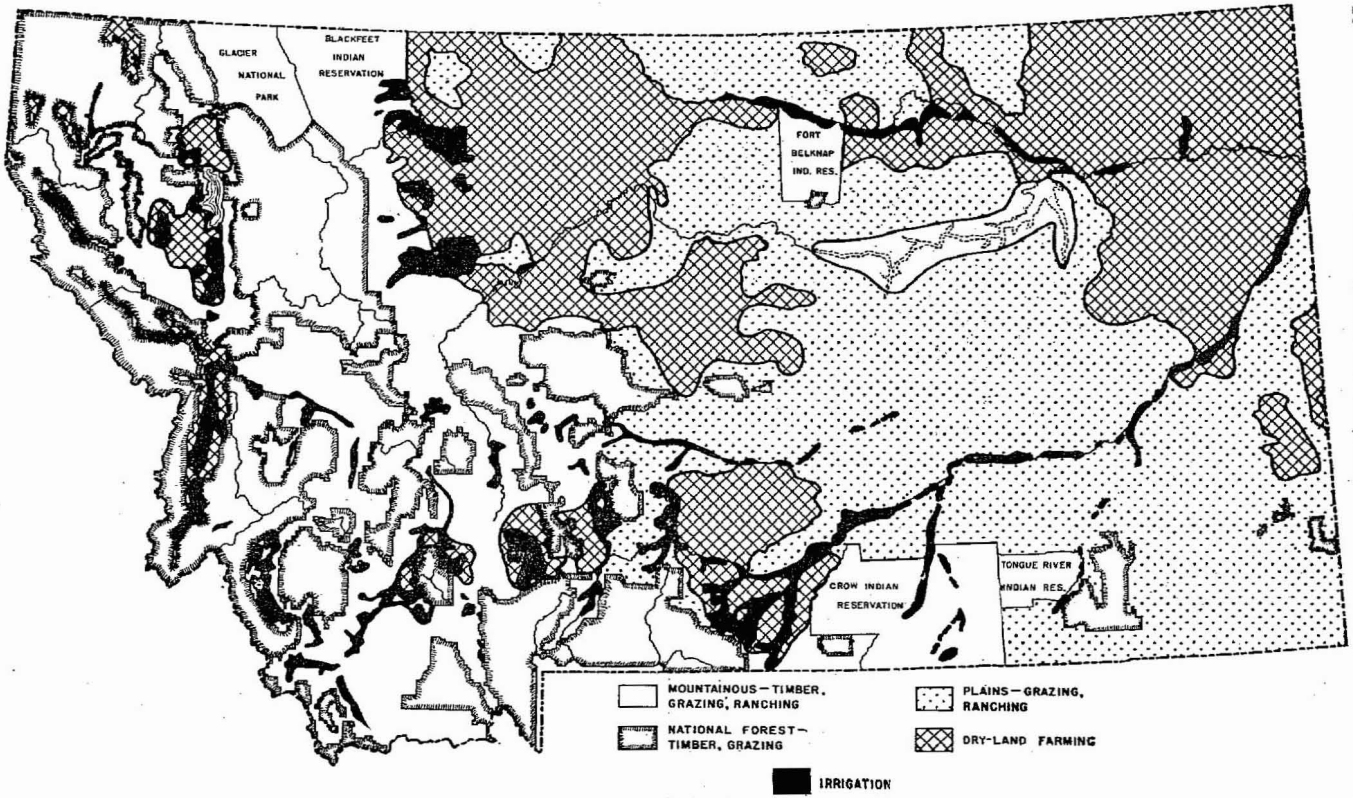


Figure 5—General land use, Montana.

days or more when no killing frosts occur. Much of this mountain area experiences extreme variations in temperatures within a distance of only a few miles. What are known as "frost pockets" are common to certain local areas and must be carefully considered in determining the crops to be grown.

KINDS OF FARMING

The previous discussion emphasizes the wide range of soils, topography and climatic conditions which are found in Montana. Because of this variation, numerous kinds or types of farming are practiced. In the following discussion these types of farming have been grouped under four main headings: Irrigation farming, livestock ranching, dry-land farming, and specialized farming. The generalized land use map, figure 5, shows roughly where the different kinds of farming are located.

It should be understood that the areas shown on this land use map are not devoted exclusively to the type of farming indicated. Actually there is much intermingling of types in all areas of the state. Furthermore, there are many combinations of these types in each area. For instance, in the range areas there is some dry-land farming and in the dry-land farming areas there are some strictly livestock outfits. In both areas combination grain and livestock set-ups are common. The map merely indicates the most common type of farming in each area.

Irrigation Farming

It will be seen from the map that the irrigated areas are widely scattered over the state. Early irrigation development took place along the streams where water could be diverted to the land by simple structures and at low cost. Later, larger and more costly irrigation works were constructed which brought water to larger areas. At the present time there are about 1,600,000 acres of irrigated land in the state and it is estimated that upwards of an additional million acres are suitable for development.

Irrigation water is supplied by direct diversion and pumping from streams and from storage reservoirs. In 1939, according to the Agricultural Census, 47.2 percent of the total irrigated land received its water by direct appropriation by individuals or partnerships from small streams. Of the remainder, 26.6 percent was supplied from cooperative irrigation projects, 19.4 percent from Federal reclamation or Indian irrigation projects, and 6.8 percent from state, company or other projects.

Irrigation is important to Montana agriculture. Although only 14.5 percent of the state's total crop land is under irrigation, the irrigated lands produce approximately 50 percent of the crops

harvested each year. Production from the lands under the ditch is also much more uniform and dependable than that from the dry-land areas. During occasional periods of drought, stockmen are able to purchase feed for their livestock from irrigation farmers. The feeding of stock on the irrigated farms also provides a market for feeder livestock from surrounding areas. It will thus be seen that irrigation is an important stabilizer to the agriculture of a semi-arid state.

Generally, farmers in the irrigated areas operate a diversified type of farm, although those in some areas specialize in certain products. Sugar beets are the most important irrigated cash

Irrigation offers many opportunities for diversified farming in Montana.

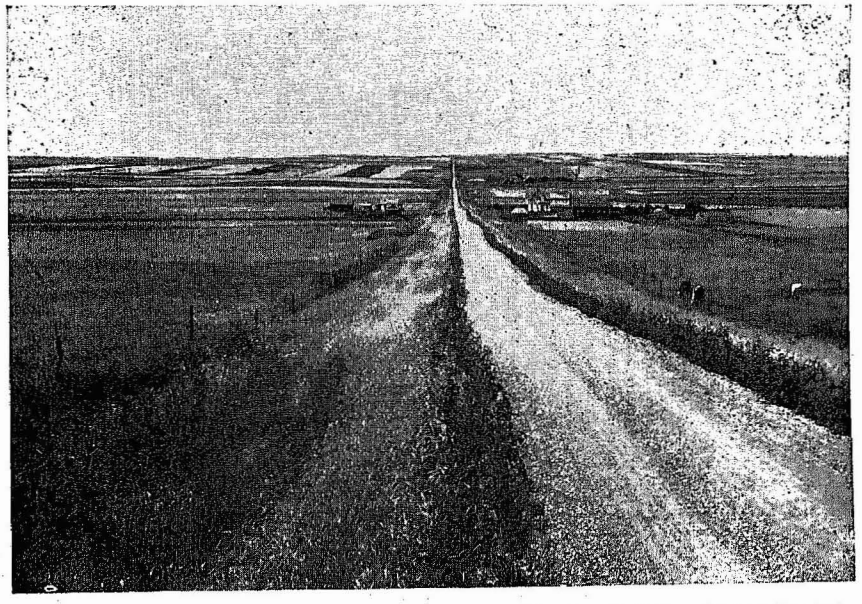
crop and are grown in all irrigated areas with the exception of the higher mountain valleys. Dry beans, seed and canning peas and potatoes are also important cash crops in irrigated areas. About 50 percent of the total irrigated cropland is devoted to the production of tame hay. This crop is usually of high quality and is either fed on the farm or sold to stockmen in adjacent areas. Corn, oats, barley and wheat grown under irrigation account for about 20 percent of the irrigated cropland. These crops are used mainly for feed. Livestock feeding is an important enterprise on many irrigated farms especially in the areas where the growing

and processing of sugar beets provide a supply of beet by-products in the form of tops, pulp and molasses.

Irrigation farming is vastly different from that where moisture for crop production is supplied by nature through precipitation. Farmers on irrigated land must give more consideration to soils, including their fertility, capactiy for absorbing and holding moisture, drainage, and salt content. The slope of the land is also an important factor in the distribution of irrigation water. Rough, uneven land is difficult and costly to irrigate. In addition, irrigation farmers are vitally concerned with such things as water rights, adequacy of water supply and cost of water.

Dry-Land Farming

Dry-land farming, or the production of crops on non-irrigated land, is the most common type of agriculture in central, north-central and northeastern Montana. These areas are suited for dry farming because of a combination of good deep soils, relatively large areas of level to gently rolling land, and somewhat more favorable climatic conditions.



(Courtesy Soil Conservation Service)

Dry land farms in Montana. Wheat and fallow in strips control wind erosion.

Within these dry-land farming areas there are several types, or combinations of types of farming, ranging from cash grain to mixed diversified farming. On the diversified dry-land farms a variety of commodities are produced including grains, hay, dairy products, poultry and livestock.

Wheat is the principal dry-land crop and is most successfully grown on land which has been summer-fallowed the previous year. Summer-fallowing is the practice of leaving part of the land idle each year and cultivating it several times during the summer to retain moisture and keep down weed growth. Winter wheat is grown mainly in central and north central Montana while spring wheat is adapted to all parts of the state. Other dry-land crops include oats, barley, rye, flaxseed, mustard seed, and hay. With the exception of flaxseed and mustard, these crops are adapted to all sections of the state. The production of mustard seed is confined to a few counties in the west north central part of Montana while the largest acreage of flaxseed is grown in the northeastern part of the state.

The number of dry-land farms have been decreasing steadily since 1920. During the same period there has been an increase in the size of farms and the acreage under cultivation per farm. The size of these farms varies widely within and between localities. In general, the cash grain farms and the combination wheat and livestock farms, are larger than the diversified farms. Experience has shown that a section, or 640 acres of average quality cultivated dry-land, is about the minimum size unit required to provide a reasonably good living for a family.

The great majority of Montana dry-land farms are now highly mechanized and, therefore, larger units are usually more profitable because of the more efficient use of machinery and equipment. On lower quality lands, larger units are necessary to produce the desired income. But since field operating costs per acre are about the same regardless of the quality of the land, some lands of low productivity will not pay these costs regardless of the size of unit, and therefore cannot be profitably used for crop production. Such lands are commonly referred to as "submarginal."

It is not uncommon for dry-land farmers to lease land in addition to what they own in order to operate more efficiently, although in recent years many operators have been acquiring title to most or all of the land they farm.

One outstanding characteristic of Montana dry-land farming is the "ups and downs" caused by variations in weather conditions. Success depends on many things including proper and timely tillage to conserve soil and moisture, use of adapted var-

ieties of crops, provisions for reserves of feed and finances, the ability to take advantage of favorable conditions and to accept and overcome reverses and obstacles.

Livestock Ranching

Practically all the land, which is not under cultivation or in timber, is used for the grazing of livestock. Both cattle and sheep ranches are located in all sections of the state although some areas are used mainly by one or the other of these classes of livestock. Since the conditions in the eastern or plains area are entirely different from those of the mountain and foothill areas of the western half of Montana, they must be considered separately.

The production of livestock and livestock products is Montana's principal agricultural industry. Over half the total annual cash farm income is received from livestock and livestock products. Cattle and sheep are the most important classes of range livestock. Normally the total number of cattle runs from one, to one and a half million head. The number of sheep varies from three to four million head.

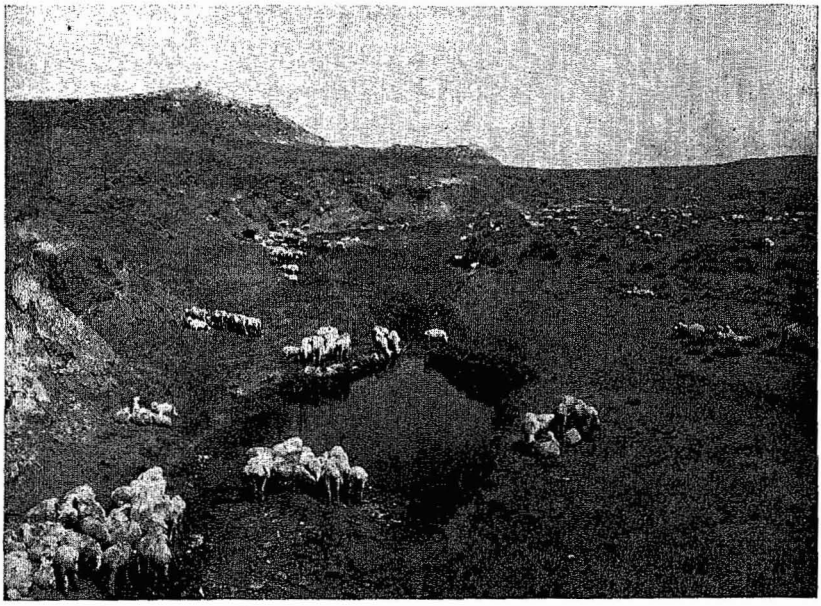
Plains Ranching

Roughly, the eastern one-half of Montana lies in the Northern Great Plains. This region varies considerably as to soils and topography, with the greater portion of it being suited only for grazing. Ranch headquarters are usually located along the small streams. Winter feeding periods in different parts of the plains vary from one to five months. There are also wide year to year variations in the feeding period within localities. The principal hay and forage crops are alfalfa, sweet clover, native grasses, small grain hay, and corn. Because of the extreme variations in weather conditions affecting both the amount of feed produced and the amount required, the plains stockmen must give careful consideration to feed reserves which can be carried over from one year to the next. Stock water is provided by springs, streams, reservoirs and wells. In recent years, many small dams have been constructed which have greatly improved the utilization of range lands.

Cattle and sheep outfits vary greatly as to size. The minimum number of stock required for a reasonably good living for a family will also vary according to individual circumstances. As a rule 200 head of cattle or 1,000 head of sheep is considered the minimum number for efficient operation. As to the number of acres of land which is required for grazing and feed production, there is again a wide range. As an average, about 32 acres is

required for a cow or for five sheep for the season. This means that for 200 cattle somewhere in the neighborhood of 6,400 acres of land is necessary. The same size outfit will usually have from 75 to 150 acres of irrigated land devoted to the production of winter feed.

Very few stockmen in the plains area own all of their grazing land. A common practice is the leasing of land either individually



Sheep on a "short grass" summer range in eastern central Montana. Sheep do well on this type of range with proper management.

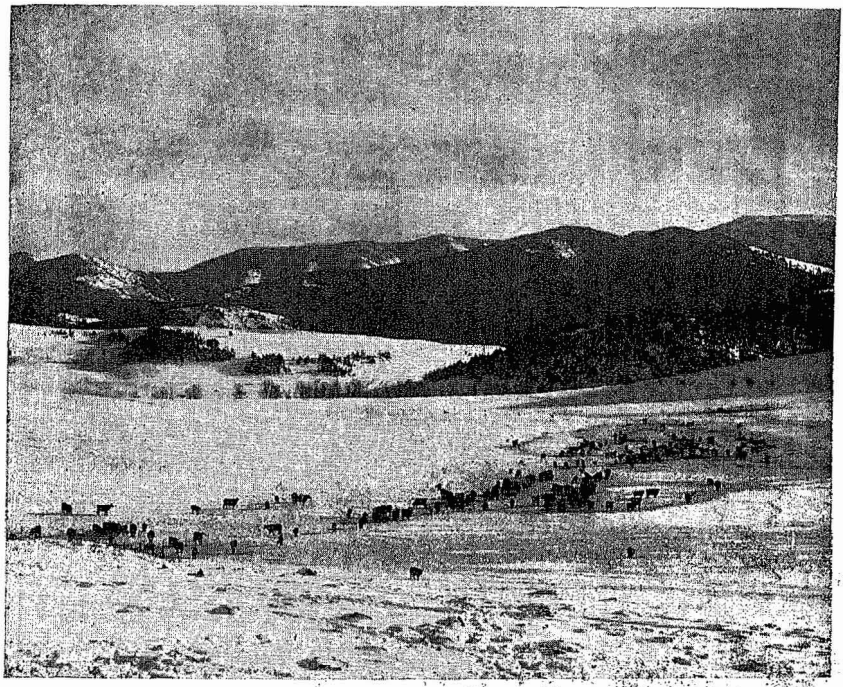
or cooperatively. Cooperative grazing districts organized under State law now administer approximately 15 million acres of grazing land which is used by members of the districts under a permit system. These lands are leased from individuals, county and state governments, banks, insurance companies, and others. Public domain lands in the area are used by stockmen usually under permits issued by the Grazing Service. There is also grazing available under permit on National Forests located in the isolated mountain areas.

Mountain and Foothill Ranching

The western half of Montana is a mountainous area, a large part of which is under Federal control in the National Forests.

The stock ranches in this region are located principally in the higher mountain valleys. In these valleys, hay is usually fed continuously for from three to five months during the winter. Alfalfa and native grasses, grown in irrigated and sub irrigated meadows, make up the bulk of this hay. Stock water is usually abundantly supplied by streams and springs.

The National Forests include the more mountainous, timbered parts of the region. About 20 percent of these reserves are used for grazing purposes. Permits are required for the use of these lands and to a certain degree are attached to established ranch units which provide grazing for part of the year and produce a



Beef production is the major livestock enterprise in Montana.

sufficient supply of winter feed for the stock covered by permits. Grazing under permit is usually obtained at lower cost than on privately owned land. Thus the National Forests play an important part in the ranch industry of the region.

As in the plains, ranches in this area vary greatly in size. The minimum number of cattle or sheep required is substantially the same as that discussed under "plains ranching." Assuming

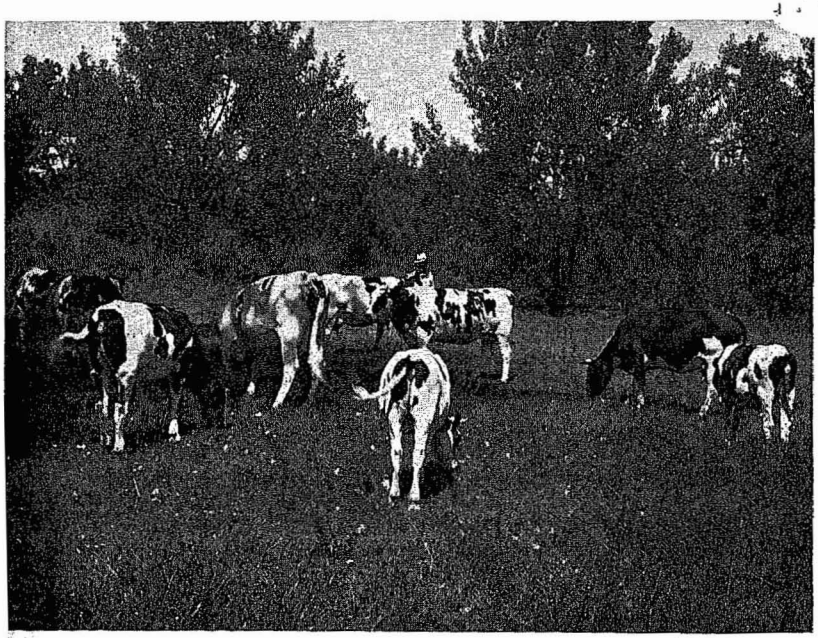
that summer grazing is provided by forest permit, a ranch with 200 cattle in this area should own or control from three to five sections of land for spring and fall grazing. In addition, from 150 to 200 acres of meadow would be required for feed production. Such meadows are also customarily used for spring and fall grazing.

Specialized Farming

Widely scattered throughout the state are numerous farms which might be classed as specialized farms. These include farms which produce dairy products, poultry, truck crops, fruit, seed crops, etc., either as the main enterprise or as an important side line.

Dairying

Montana is generally not considered a dairy state. Yet the total annual gross income from milk is only slightly less than that from sheep and wool. This is significant considering that Montana ranks third among the states in sheep numbers. The greater proportion of dairy products are produced in the mountain



Good pasture is required for successful dairy farming.

valleys and irrigated areas where alfalfa hay and feed grains are produced for winter feeding and good pastures are available in summer. Dairy production in the eastern part of the state is confined mainly to the irrigated areas although some dry-land farmers produce cream as a side line to their regular farming operations.

Commercial dairy farms are usually located close to the larger towns and cities which provide a ready market for fluid milk and cream. Some of these farmers produce all or part of their feed while others purchase hay and feed grains in the surrounding areas.

Dairy herds are being continually improved through the use of purebred sires. High producing cows, good irrigated pastures and good management are the first requirements for success with the dairy enterprise.

Poultry

Poultry raising, though one of the minor industries, is an important side line on many Montana farms. Commercial egg and poultry producers are usually located near the larger towns which offer a market for poultry products. With better marketing facilities the poultry industry could be expanded considerably, especially in the lower mountain valleys where climatic conditions are particularly favorable.

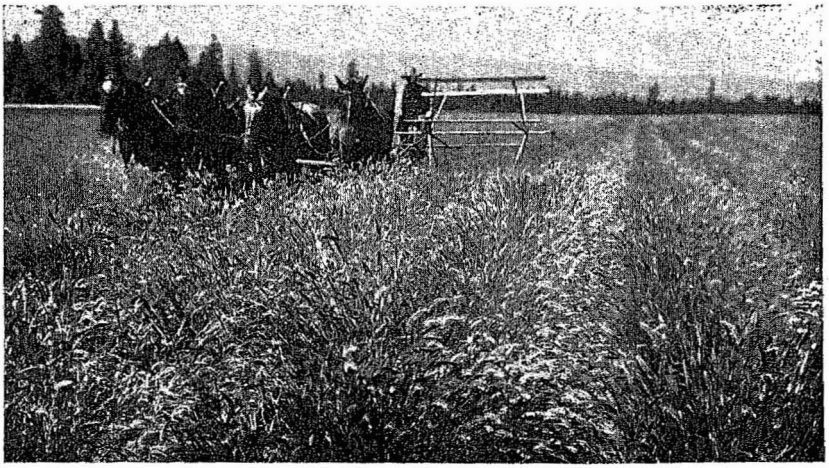
Turkeys are well adapted to Montana conditions and are raised in all parts of the state. There is always a strong demand for quality birds and growers are assured a ready market. The bulk of the turkeys are marketed cooperatively.

Success with poultry requires high producing disease-free stock, good housing, proper feeding of home grown feeds and good management.

Seed Crops

Various kinds and varieties of pure seeds are produced in all sections of the state. Seed production is usually regarded as a side line but some producers have made it their major enterprise.

Alfalfa is by far the most important seed crop and is produced largely in the dry-land areas of central and southeastern Montana. The production of this crop fits in well with livestock enterprises where the alfalfa can be harvested for either feed or seed as required.



Harvesting crested wheat grass for seed. Over 2,500,000 acres of crested wheat grass is now grown in Montana mostly for pasture and hay production.

Seed peas are another important seed crop grown commercially in limited areas of the state. This crop is produced mainly on irrigated lands at higher elevations where lower temperatures prevail. A considerable acreage of dry-land peas are also grown in the Flathead Valley.

While the bulk of the potato crop is sold locally or used for home consumption there are a number of highly successful growers of certified seed potatoes. Certified seed potatoes are grown on both irrigated and dry-land under a careful system of crop rotation. This seed finds a ready market locally and in other states.

Standard varieties of wheat, oats, barley, flax, rye and other field crops are also grown under a state-wide program of seed certification. Most of this seed is used within the state to improve the quality and yield of commercial crops.

Truck and Fruit Crops

Commercial truck crops are of relatively minor importance except as a supply of fresh vegetables for local markets. Production is confined mainly to irrigated areas adjacent to the larger population centers. Only a small amount of these crops are canned commercially.

The commercial production of tree fruits in Montana is fo

the most part confined to areas west of the Continental Divide and the Clark Fork Valley in Carbon County. Sweet cherries are of considerable importance in the vicinity of Flathead Lake and in the Bitterroot Valley. Apples are grown over a wider area with production centering in the Bitterroot Valley.

COUNTY CROP AND LIVESTOCK INFORMATION

A study of the figures given in table 1 will give some idea of the land use, type of farming, and productivity of the land for wheat production in the different counties and areas of the State. Wheat is included in this table because it is the most widely grown crop. In 1944 approximately 50 percent of the land in crops was devoted to wheat production.

It will be noted that the average size of farm in Montana is 1,110 acres and that the average acreage varies from 165 acres in Flathead County to over 3,900 acres per farm in Meagher County. This is accounted for by the fact that Meagher County is a strictly ranching area in which most of the land is used for grazing. Flathead County, on the other hand, has large timbered areas, few livestock ranches and an important diversified farming area which is farmed quite intensively in comparatively small units. Similar comparisons may be drawn between other counties. Large units and a small amount of cultivated land usually indicate that ranching is the major type of agriculture.

In comparing wheat yields in the different counties, consideration must be given to the percentage of the crop produced on irrigated and dry-land. Generally the counties with the highest yields of wheat per acre are the counties where a large percentage of the wheat is grown on irrigated land. Wheat is not a major crop, however, in most irrigated areas.

Table 1.—Figures by Counties on Size of Farm, Acreage of Cropland, Acreage of Wheat, Wheat Yields and Livestock Numbers

County	Percentage of Total Land in Farms 1/	Average Size of Farm 1/	Percentage Land in Farms Cultivated 2/	Average Acreage Cultivated Per Farm 2/	Wheat Acreage Seeded 1940 (1000) 3/	Wheat Yield Per Seeded Acre 1919-43 3/	Livestock Numbers 4/		
							Beef Cattle	Dairy Cattle	All Sheep
Deer Lodge	13	333	7	25	1.0	16.6	5,600	800	8,000
Flathead	9	165	52	85	32.3	15.1	10,100	5,500	7,100
Granite	27	1,449	14	196	1.8	14.5	17,700	400	10,000
Lake	49	282	63	175	24.7	15.7	20,000	12,000	31,000
Lincoln	5	197	20	40	1.5	13.9	6,200	1,500	2,500
Mineral	4	251	21	54	1.4	14.7	900	200	500
Missoula	15	324	28	92	9.4	14.2	14,000	3,400	3,300
Powell	43	2,088	12	267	2.8	14.8	24,600	1,500	53,200
Ravalli	21	212	25	53	6.4	19.5	19,800	10,700	25,000
Sanders	17	360	29	104	7.6	15.3	15,600	4,000	17,000
Blaine	60	1,510	20	298	77.6	12.3	31,400	3,200	156,200
Chouteau	83	1,500	36	536	306.5	12.5	38,800	2,900	48,400
Glacier	43	1,661	17	274	55.8	11.5	13,800	1,200	92,300
Hill	75	1,138	43	484	260.2	10.2	21,500	3,200	21,800
Liberty	87	1,929	40	772	115.8	11.3	8,800	700	22,000
Phillips	41	1,311	16	209	85.0	10.5	28,400	2,400	78,500
Pondera	79	940	59	559	165.4	15.8	10,500	2,600	58,000
Teton	75	1,019	40	409	157.0	14.7	21,300	4,400	88,100
Toole	83	1,832	27	487	95.4	11.1	11,600	1,300	66,000
Daniels	76	780	70	546	225.2	10.4	11,400	2,000	28,600
Dawson	63	1,130	44	501	144.5	8.8	20,000	3,300	56,000
Garfield	29	1,511	9	141	51.2	8.4	20,600	1,000	113,000
McCone	60	1,342	21	283	123.2	8.6	20,000	2,500	67,200
Richland	68	740	47	346	142.0	10.2	19,000	3,900	25,000
Roosevelt	53	768	86	664	249.2	9.9	23,700	3,300	25,100
Sheridan	80	705	57	402	258.9	10.3	13,700	4,800	16,500
Valley	39	966	37	361	236.6	9.6	33,000	4,700	84,000
Broadwater	41	1,220	28	591	13.2	15.0	17,000	1,200	30,000
Cascade	75	911	31	303	136.4	14.9	38,400	5,300	78,400
Fergus	63	1,156	30	343	221.7	12.7	49,400	5,800	84,000
Golden Valley	81	2,283	34	776	22.7	9.2	10,300	900	45,000

Table 1 (Continued)—Figures by Counties on Size of Farm, Acreage of Cropland, Acreage of Wheat, Wheat Yields and Livestock Numbers

County	Percentage of Total Land in Farms 1/	Average Size of Farm 1/	Percentage Land in Farms Cultivated 2/	Avreage Acreage Cultivated Per Farm 2/	Wheat Acreage Seeded 1940 (1000) 3/	Wheat Yield Per Seeded Acre 1919-43 3/	Livestock Numbers 4/		
							Beef Cattle	Dairy Cattle	All Sheep
Judith Basin	69	1,377	36	597	124.6	12.3	28,000	2,200	70,000
Lewis & Clark	42	1,763	8	138	12.5	12.4	27,900	2,100	80,000
Meagher	60	3,949	3	119	2.1	11.0	24,000	800	112,400
Musselshell	60	2,305	25	385	24.0	8.7	12,000	800	44,600
Petroleum	25	1,490	9	137	9.6	7.0	9,300	500	48,600
Wheatland	90	3,582	5	168	12.9	8.8	17,100	500	111,500
Beaverhead	36	2,832	5	133	2.4	18.6	67,600	2,600	195,500
Gallatin	53	686	33	224	80.2	18.6	39,600	9,000	52,000
Jefferson	28	895	11	99	5.6	13.6	11,800	2,200	17,700
Madison	36	1,237	16	194	10.5	17.2	36,400	3,600	118,300
Silver Bow	19	429	4	20	.3	18.0	2,100	700	7,400
Big Horn	51	1,492	10	155	60.8	12.9	85,000	3,200	160,000
Carbon	44	543	37	198	41.3	16.1	23,600	5,500	65,000
Park	43	1,146	26	297	27.1	15.8	22,000	3,000	70,000
Stillwater	70	1,015	41	420	78.7	11.8	22,800	3,400	55,000
Sweet Grass	89	2,258	14	315	12.1	12.6	23,500	2,500	110,000
Treasure	48	1,476	27	402	7.5	10.1	10,300	400	6,200
Yellowstone	74	785	36	283	81.1	13.4	50,800	8,400	90,700
Carter	60	1,998	7	168	16.7	8.5	22,200	1,700	214,700
Custer	54	2,634	4	98	24.4	8.0	43,100	2,300	86,300
Fallon	74	1,510	21	310	73.3	8.8	16,300	2,400	38,100
Powder River	64	1,958	9	179	22.1	8.4	47,400	1,900	109,800
Prairie	35	1,510	23	346	46.3	7.4	10,300	1,100	60,000
Rosebud	52	2,412	3	80	29.4	8.2	49,500	1,700	109,500
Wibaux	64	980	34	335	58.1	9.5	13,000	1,700	18,600
STATE	49	1,110	25	277	4,096.0	11.7	1,299,440	163,896	3,486,113

1/ U. S. Agricultural Census, 1940.
2/ Computed.
3/ Division of Agricultural Statistics, Bureau of Agricultural Economics.
4/ Unpublished data from 1943 Production Capacity Study.

PUBLIC SERVICES

Highways and Roads

Montana is served by a state and county highway system. There are approximately 5,000 miles of paved highway in the state, most of which was built and is maintained as part of the Federal Aid Highway System. Main county roads are elevated and gravelled.

That much still remains to be done in the development of a more adequate system of roads is shown by the 1940 Agricultural Census which indicates the kinds of roads on which farms are located. The reports show that 11 percent of the farms are on paved highways, 20 percent on gravel roads, 34 percent on improved dirt roads, and 33 percent on unimproved dirt roads.

Railroads

Montana is served by an adequate railway system. Three transcontinental railroads cross the state from east to west and each of these roads have branch lines reaching out to many communities. Three other major roads have branches serving certain areas in the state and five local railroads serve smaller communities.

Electric Power

Two major power companies together with one smaller company serve all of the cities of Montana and some of the more thickly settled rural areas. Rural Electrification Cooperatives had 3,149 miles of rural power lines and were serving 7,054 farm and small town customers on October 1, 1944. At that time there were also applications filed for 3,025 additional miles of line to serve an additional 4,350 to 5,000 rural customers. These lines will be constructed as soon as labor and materials become available and it is reasonable to expect still further development in the future. Because of their isolation, however, many farms and ranches cannot be economically served with electric power from REA or other power lines. A large number of these isolated farms have installed wind chargers or other home plants to serve many of their needs.

Telephones

According to the 1940 Census only 6,966 or 17 percent of Montana farms had telephone service. Rural telephone lines are most common in the thickly settled areas. Most of these lines have been built and are maintained by the farmers themselves.

Schools

Montana grade schools, in general, maintain a high standard although considerable variation exists between school districts. One of the most acute problems in maintaining adequate rural educational facilities in recent years has been the decreasing number of children of grade school age. Many rural schools have been closed because the number of children in attendance did not justify their continued operation. This meant that many rural families in the more sparsely settled areas were forced to move to town so that their children might attend school. The inconvenience and costs involved in such situations warrants careful investigation on the part of new settlers. In the more thickly populated areas, school facilities have been maintained or bus lines have been established for transporting the rural children to town schools.

High schools are maintained in most of the larger towns. In areas where bus facilities are not available, high school students from rural areas generally arrange to live in town during the school year. Under this arrangement larger numbers of students attend a small number of schools, making possible a higher standard of high school education than would otherwise be possible.

The state also maintains a system of higher education composed of six separate units as follows: Eastern Montana State Normal College at Billings, Montana State College at Bozeman, Montana School of Mines at Butte, Montana State Normal College at Dillon, Northern Montana College at Havre, and the Montana State University at Missoula.

OPPORTUNITIES IN FARMING AND RANCHING

The question often is asked about opportunities to get established in farming through homesteading public domain land in Montana. Such opportunities are practically non-existent. There still are nearly six and one-half million acres of public domain in Montana. An Executive Order issued in 1934, shortly after passage of the Taylor Grazing Act, withdrew from homestead entry the greater part of the unreserved and unappropriated public domain, making it available for inclusion in grazing districts. It still is possible to homestead certain public domain land providing an investigation and classification by the U. S. General Land Office shows that the land in question is more valuable for crop production than for grazing. The U. S. General Land Office at Billings or at Great Falls, Montana is the place to inquire about homesteading procedure for any such land.

While there are some occasional tracts of public domain susceptible of successful crop production by irrigating, usually by pumping, they are very few and they are difficult to locate. Practically all these remaining lands are grazing in character and generally have a low carrying capacity. They often lack stock water and generally are located in isolated areas that do not support roads, schools and other community services. The reason this public domain remains, is that even in prosperous times during the homesteading period and since, local people have not believed it worth the cost and effort of homesteading. Practically all this remaining public domain in Montana is being used under permit or lease by established farmers and ranchers who own a headquarters unit producing winter feed and usually a substantial amount of grazing land in addition. The right to use this public domain generally is acquired through purchase or lease of an established ranch.

Because there are practically no free lands open to homesteading in Montana persons wishing to get started in farming or ranching will have to buy or lease land. Farms or ranches for sale or lease by retiring operators probably offer the greatest opportunity in the immediate future. As new lands are brought under irrigation they will offer additional opportunities for new farmers. New farming units thus created may provide places for those who must first start as tenants or even hired laborers since they will probably be developed gradually over a period of years.

For the average person desiring to buy or rent a farm probably the safest advice would be to get good land in a well developed community. Such places are usually more profitable even though prices seem high compared with poorer farms. Too often, buyers with limited funds invest in poor land because of the relatively low price per acre. Studies actually show, however, that as a general thing poor lands cost more in comparison to their productive capacity than do good lands. Moreover, because of the lower productivity a larger unit of poor land will be required than will be true for good land. This being true, the investment required per farm unit may not be greatly different as between good and poor land.

On the other hand some lands can be acquired which are only partially developed. Such lands often can be developed into profitable units through hard work, intelligent planning and careful management. Lands which have been abandoned should be carefully appraised to determine the reason why they were abandoned. Such investigation will usually reveal that the owners found them unprofitable under existing conditions.

Farms for sale or rent can be located through newspaper advertisements, real estate dealers, railway agricultural development departments, bankers, National Farm Loan Associations and insurance companies. Chambers of commerce or county extension agents can furnish names of such agencies located in their communities.

After reading this bulletin it will be plain that in a region with such variations in conditions as exist in Montana no amount of reading or correspondence can take the place of a personal study and investigation. The form, "Things to Look for in Buying or Leasing a Farm or Ranch" will be helpful in making such a study. County extension agents, located in most county seat towns, will gladly help by supplying such information as is available. County agricultural advisory committees organized in most counties are the best source of advice on the requirements for successful farm operation in their respective counties.

Things to Look for in Buying or Renting Farm or Ranch

Things to Look For	Condition and Rating		
	Good	Fair	Poor
Location of Farm or Ranch			
Climate from standpoint of health of your family			
Suitability for the type of agriculture you have in mind			
Schools			
Churches			
Hospital and health facilities			
Marketing facilities			
Roads:			
Kind and condition			
Is there right of way to farm?			
Neighbors and social organizations			
Telephone service			
Electric service			
Mail delivery			
Farm or Ranch Layout			
Acres in farm———? Is farm of adequate size?			
Location of irrigation ditches			
Location of drainage ditches			
Location of buildings			
Arrangement of buildings			
Cropland			
Acres ——— Is acreage of cropland sufficient?			
Topography or lay of land			
Kind of soil and fertility			
Erosion conditions			
Weeds (particularly perennial noxious weeds)			
Size and shape of fields			
Water rights:			
Date of water right			
How much water right goes with farm?			
Source of water			
Drainage			

Things to Look for in Buying or Renting a Farm or Ranch (Continued)

Things to Look For	Condition and Rating		
	Good	Fair	Poor
Pasture and Range Land			
Acres ———			
Supply and location of water			
Quality of forage			
Poisonous weeds and perennial noxious weeds			
Protection for stock			
Accessibility			
Location with respect to National Forest or other publicly controlled grazing			
Availability of outside grazing			
Cost of outside grazing			
Buildings and Fences			
Location			
Condition			
Age			
Suitability for kind of farming contemplated			
Domestic and stock water in relation to buildings			
Is house desirable as a home:			
Condition			
Size			
Arrangement			
Heating			
Surroundings			
Taxes			
Are taxes in line with productivity of the farm?			
Taxes in relation to similar farms in community?			
Price			
Will the income from the farm be sufficient to pay operating costs, upkeep, taxes, and family living, and leave enough to pay principal and interest charges on machinery, equipment, livestock and land?			

Montana County Extension Service Offices

Beaverhead	Post Office	Dillon
Big Horn	Court House	Hardin
Blaine	Armory Building	Chinook
Broadwater	Office	Helena, Lewis and Clark County
Carbon	City Hall	Joliet
Carter	Office	Baker, Fallon County
Cascade	Federal Building	Great Falls
Chouteau	Court House	Fort Benton
Custer	Post Office	Miles City
Daniels	Court House	Scobey
Dawson	Court House, annex	Glendive
Deer Lodge	Office	Deer Lodge, Powell County
Fallon	Court House	Baker
Fergus	Federal Building	Lewistown
Flathead	Court House	Kalispell
Gallatin	Court House	Bozeman
Glacier	Court House	Cut Bank
Golden Valley	Office	Roundup, Musselshell County
Granite	Court House	Phillipsburg
Hill	Court House	Havre
Jefferson	Agricultural Building	Whitehall
Lake	City Hall	Ronan
Lewis and Clark	Federal Building	Helena
Madison	Office	Whitehall, Jefferson County
Meagher	Sherman Hotel	White Sulphur Springs
Missoula	Court House	Missoula
Musselshell	Court House	Roundup
Park	Court House	Livingston
Phillips	Court House	Malta
Pondera	Court House	Conrad
Powder River	Office	Miles City, Custer County
Powell	Court House	Deer Lodge
Prairie	Court House	Terry
Ravalli	Court House	Hamilton
Richland	Court House	Sidney
Roosevelt	Agricultural Building	Culbertson
Rosebud	Court House	Forsyth
Sanders	Court House	Thompson Falls
Sheridan	Court House	Plentywood
Stillwater	Court House	Columbus
Sweet Grass	Court House	Big Timber
Teton	Court House	Choteau
Toole	Court House	Shelby
Valley	Agricultural Building	Glasgow
Wheatland	Court House	Harlowton
Wibaux	Agricultural Building	Wibaux
Yellowstone	Agricultural Building	Billings