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## *Range Land Problems and Policies*

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**L**AND IN THE WESTERN TWO-FIFTHS OF THE UNITED States is devoted largely to the production of livestock through grazing of the natural vegetation. About 5 per cent of the more than three-fourths billion acres in the eleven western states is utilized by tilling or raising crops. Formerly ranchers raised no products, not even tame hay for livestock feed. They depended entirely on grazing of the natural vegetation to support their livestock enterprises. Even today in many areas in the western arid regions where ranching is the major type of land use, the ranchers raise no crops of any kind, but cut wild hay or native hay or grasses and feed this to livestock during the winter when the range cannot be grazed.

Failure to produce supplemental feeds or hay for winter use in the early days was one of the most important factors contributing to sweeping failures of many ranches during severe winters. A continually increasing proportion of ranchers in our arid areas are putting up a considerable amount of native or tame hay for winter feed

to stabilize their operations, and to protect themselves against disastrous winters. Wherever irrigation water is available in ranching areas, it is being used largely to produce hay for livestock feeding.

### CHARACTERISTICS OF RANCHING

Ranching, as a type of agricultural land utilization, differs significantly from dry farming, irrigated farming, or typical agricultural operations in more humid climates. The peculiarities of ranching give rise to important economic problems which are significant in determining the land use pattern and the policies which must be developed to solve range land use problems satisfactorily.

**SIZE OF RANCH UNITS.** Probably the most significant characteristic peculiar to ranching is the very large size of operating units. In Montana, for example, it requires at least four thousand acres, with average grazing land, to carry enough livestock to provide a ranch family sufficient income to support a reasonable standard of living, judged by modern American standards.<sup>1</sup>

The average size of farm unit in the United States is approximately 195 acres. The average size of operating unit in range land states such as Wyoming and Arizona is 2,533 acres and 2,881 acres respectively, or many times the average size of the farm unit of the country as a whole. This indicates the importance of the spatial element in ranching and the resulting very sparse population pattern. Thus, ranching may be characterized as a rather extensive form of

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<sup>1</sup> Grazing lands in Montana are grouped into five grades on the basis of the number of acres required per one thousand pound steer or one animal unit for a ten-month grazing period. Eighteen acres of first grade grazing land are required to graze one animal unit for a ten-month period, nineteen to twenty-seven of second grade land, twenty-eight to thirty-seven of third grade land, thirty-eight to fifty-five of fourth grade land, and fifty-six acres and over of fifth grade land. A minimum of one hundred animal units is necessary to provide a typical ranch family with sufficient income to support a reasonable standard of living judged by modern American standards. One hundred and twenty-five animal units is considered more nearly adequate. For purposes of determining animal units, five sheep are considered the equivalent of one cow. According to Saunderson, a "minimum comfort" standard of living would appear to require a ranch having about one hundred twenty-five to one hundred fifty units of cattle, or a band of one thousand to twelve hundred sheep. This is assuming that such stock ranches have few if any other sources of income and have the "average ranch family" of four to five people. (See M. H. Saunderson, "Readjusting Montana's Agriculture," V, Economic Changes in Montana's Livestock Production, Montana Agricultural Experiment Station, Bulletin No. 311, page 18, February, 1936.)

land use with comparatively low absorption per acre of capital investment. The sparse population contributes to social and economic problems, such as the high per capita cost of providing schools, roads, communications, and related services.

**RANCHING CHARACTERIZED BY RELATIVELY SLOW TURNOVER.** In some of the more humid and warmer sections of the country, especially in vegetable production, a farmer may get two or three crops or even more from his land in one year. But in the case of ranching, turnover is much slower. For example, in the case of beef cattle, it takes from two to three years to grow a steer to marketable size. In the case of sheep only one lamb crop can be produced annually, and only one wool crop. Many cattle ranchers do not run a cow-calf combination, but purchase yearling steers and graze them for a season before marketing them. Even when the cattle rancher sells his calf crop annually, he gets only one crop a year.

It requires from twelve to twenty years to get a good stand of native grass established in the western states, particularly in the plains region, so that the ability to shift from farming to ranching, for example, is strictly limited and requires many years. A farmer's decision to expand his cattle numbers and reduce his farming operations would have to be made not a month in advance, but years in advance of his plans to market his product.

**HIGH FIXED CHARGES IN RANCHING.** Heavy fixed charges are pronounced in ranching, primarily because real estate (land and buildings), especially land, comprises a much larger percentage of the total capital investment than in many other lines of endeavor. Since property taxes are relied upon to provide the main source of revenue for schools and local governmental operating expenses, property taxes are relatively high and rigid. The fact that they do not vary promptly with price changes as do income, sales, or similar taxes, places a heavy fixed charge upon agricultural enterprises such as ranching which use large areas of land.

**RANCHING A HIGHLY COMMERCIALIZED ENTERPRISE.** Agriculture, generally, is much less commercialized than most industries, and consequently reacts differently to price and income changes. However, in the case of ranching, operations are very highly commercialized. On most ranches only one enterprise is operated, namely cattle or sheep. More units than formerly are now operating both cattle and sheep,

but ranches are still highly specialized and tend to emphasize either cattle or sheep, but not both. Ranching is therefore a highly specialized business.

Evidence that ranch units are highly commercialized can be seen from the fact that less than 4 per cent of the total value of products produced on the ranch is used by the operator's family in the case of stock ranches, compared with more than four times this amount (over 16 per cent) in the case of general farms, and nearly 66 per cent in the case of self-sufficing farms.<sup>2</sup> This high degree of commercialization means that ranchers are especially vulnerable to price fluctuations accompanying vicissitudes of the business cycle, and weather variations characteristic of the semi-arid west, which determine the carrying capacity of grazing lands.

**ELASTICITY OF DEMAND FOR RANCH PRODUCTS.** Consumer demand for most agricultural products is relatively inelastic compared with the demand for many nonagricultural products. However, there is considerable elasticity in the wants of consumers for different types of food. Thus, the total importance of farm products is very great, but their marginal importance is modest. The demand for meat (beef and lamb) from American ranches fluctuates closely with the purchasing power of the public and the index of general employment.

When a large amount of unemployment exists and labor income is low, meat prices slump badly. On the other hand, when business activity is at a high level and wage earnings are high, meat prices soar. Thus, the cattle rancher is dependent to a large extent, and more so than some other types of agricultural operators, upon the general level of business activity and the vicissitudes of the business cycle.

The above characteristics of ranching as an industry point out some of the conditions which ranchers must face in their operations, and some of the problems which determine the land use policies that must be followed if ranching is to operate satisfactorily in our modern economy.

#### **RANGE LAND TENURE AND TENANCY**

The most significant land use problems associated with ranching are those involving tenure of range lands. Valuation, credit, taxation,

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<sup>2</sup> These data are for Montana farm and ranch units and are taken from R. R. Renne and H. H. Lord, "Montana Farm Price Variations," Montana Agricultural Extension Service Circular No. 93, page 5, June, 1938.

and conservation problems are also significant, but the most controversial and significant problems at the present time involve ownership and leasing arrangements of our western ranges.

**OWNERSHIP AND USE OF THE WESTERN RANGE.** Less than half of the nearly three-fourths of a billion acres of range land in the eleven western states is privately owned. The federal government owns 54 per cent, or 406 million acres, of the total land area of these western states where livestock production is the basic industry in the two hundred counties of the area. The Forest Service and the Bureau of Land Management administer more than three-fourths of this acreage, and the Indian Service an additional tenth.

Federal lands are poorer than average range lands, and their physical contribution to livestock production is not proportional to their acreage. In spite of this, federal range lands constitute the major acreage of the western states and they furnish some very strategic and fundamental resources, particularly as watershed areas, recreational spots, summer grazing, etc. Consequently, they are of great importance to the West.

Much of the publicly owned range land in our western states is leased by ranch operators for grazing purposes. Therefore, the number of livestock carried by the average operating unit is considerably larger than the privately owned land within the ranch unit alone could support. The landlord-tenant relationships growing out of this arrangement have given rise to serious controversies in recent years. During the past two years, in particular, heated controversy has arisen over the relative merits of public compared with private ownership of these western range lands.

The combined sheep and cattle using public grazing land have declined approximately one-tenth in animal unit months in the last three years, due in part to reduction in permitted grazing in National Forests. The number of sheep grazing on federal lands in the western states has declined more than one-fourth in the past five years, the decline on National Forests and on grazing districts (administered by the Bureau of Land Management) being approximately equal, 28.5 per cent and 27.2 per cent respectively. During these same years sheep numbers in the western states have declined more than one-third (34.1 per cent). Thus, there is very little difference between National Forests and grazing districts in percentage decrease in sheep numbers. In both cases the amount of the drop is less than the decrease in total sheep in the eleven western states.

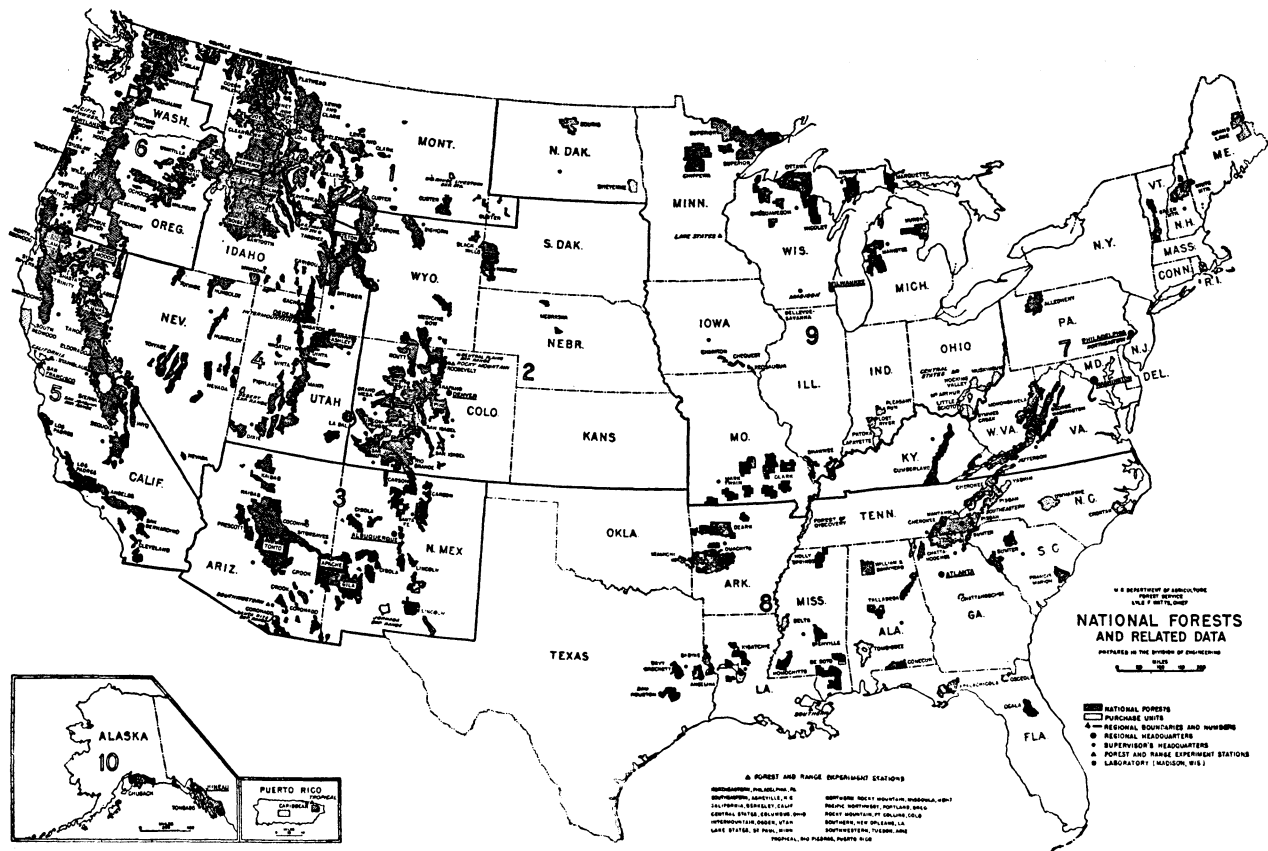


FIG. 7.1.—National Forests of the United States. (This is the same as Figure 39 in Renne, *Land Economics*, p. 475. Original source is "Forest Land Resources, Requirements, Problems, and Policy," National Resources Board, Government Printing Office,

Cattle grazing on public lands increased 7.6 per cent from 1942 to 1947 while cattle numbers in the eleven western states increased 4.3 per cent. The numbers on grazing district lands increased 14.8 per cent while those on National Forests declined 4.1 per cent.<sup>3</sup> Therefore, reduction in the total animal units of grazing on western public range lands in the last few years is due largely to reduction in number of cattle permitted to graze on National Forests. Incidentally, about twice as many cattle and about two and one-third times as many sheep graze on grazing district land as on National Forest lands.

The wild-life population (antelope, deer, and elk) on western grazing lands, particularly the National Forest areas, has increased significantly during recent years, from 161 thousand animal units in 1921 to 310 thousand animal units in 1931, 514 thousand in 1941, and 540 thousand in 1946.<sup>4</sup> This is an increase in the five-year period of almost 5 per cent, more than 70 per cent for the fifteen-year period, and some 235 per cent for the twenty-five year period. Total livestock animal units grazed on National Forests in the eleven western states decreased 53.2 per cent during the thirty-year period 1918 to 1947.

Heated controversy over the management of western range lands has resulted from the above developments. Extensive hearings have been held during the past two years by the Committee on Public Lands regarding further proposed cuts in numbers of livestock to be permitted to graze on National Forests. Many argue that the carrying capacity of the range has not deteriorated and cite continued large livestock production as evidence. However, the increased use of crop feeds and the use of more efficient animals obscure, in part, the deterioration in range resources. Also, for some types of range the livestock grazing use and the weights of the animals marketed may be maintained for some years although adverse changes in the soil-holding range plants may be occurring. In the Rocky Mountain Region, many of the perennial bunch grasses have diminished from overuse, according to range ecologists, but livestock production has been fairly well maintained on the browse feed and the annual grasses and weeds that are not good soil protectors. In

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<sup>3</sup> See Report of the hearings before the Committee on Public Lands and the Subcommittee on Public Lands, House of Representatives, on Forest Service Policy and Public Lands Policy; 80th Congress, 2nd Session; House of Representatives Report No. 2456, page 5.

<sup>4</sup> *Ibid.*, page 15.

such cases, soil erosion can reach an advanced stage before livestock production is significantly reduced. This condition jeopardizes the watershed lands of much of the Rocky Mountain Region which contains the headwaters of the main streams of the West.

The two major federal agencies acting as landlords for the western range lands are the National Forest Service and the Bureau of Land Management in the Department of Interior. The national forests of the western states (see Fig. 7.1) include some 136 million acres, of which about 80 million are usable for grazing. The Bureau of Land Management administers 169 million acres of public domain land, which includes 132 million acres of grazing land within grazing districts and 36 million acres outside of grazing districts (see Fig. 7.2).<sup>5</sup> The number of livestock permitted to graze on Taylor grazing district lands has been substantially maintained in recent years, so the controversy concerning our public range lands has centered on the Forest Service and its policies.

Lands at highest altitudes are the key watershed areas in our western states. They are located at the headwaters of our major rivers. These lands ordinarily receive the most precipitation, as much as forty or fifty inches yearly, compared with as low as fifteen to twenty inches of rainfall in the valley and foothill areas. Two-thirds of all the land of the southwestern, intermountain, and western plains receive less than fifteen inches of rain annually, which is not enough for crop production without supplemental water. The high country, or so-called mountain watersheds, must therefore furnish the life blood, or water, for the West.

The high country in the West is largely forest and range land. Because of the great watershed values of these lands, they must be handled with full acknowledgment of these watershed values. These values in the aggregate exceed that of all the cash products the lands may yield, because water is such a limiting or strategic factor in many areas that it is the very basis of life itself. In addition it produces hydro-electric energy and in some cases is used for transportation purposes.

Taylor grazing district lands are considerably below average in quality. In general they are the poorest of the western grazing lands. For years they were grazed excessively by all who could run their cattle or sheep on them. In 1934, when the Taylor Grazing Act was passed, these lands were in a serious state of deterioration.

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<sup>5</sup> *Ibid.*, page 2.



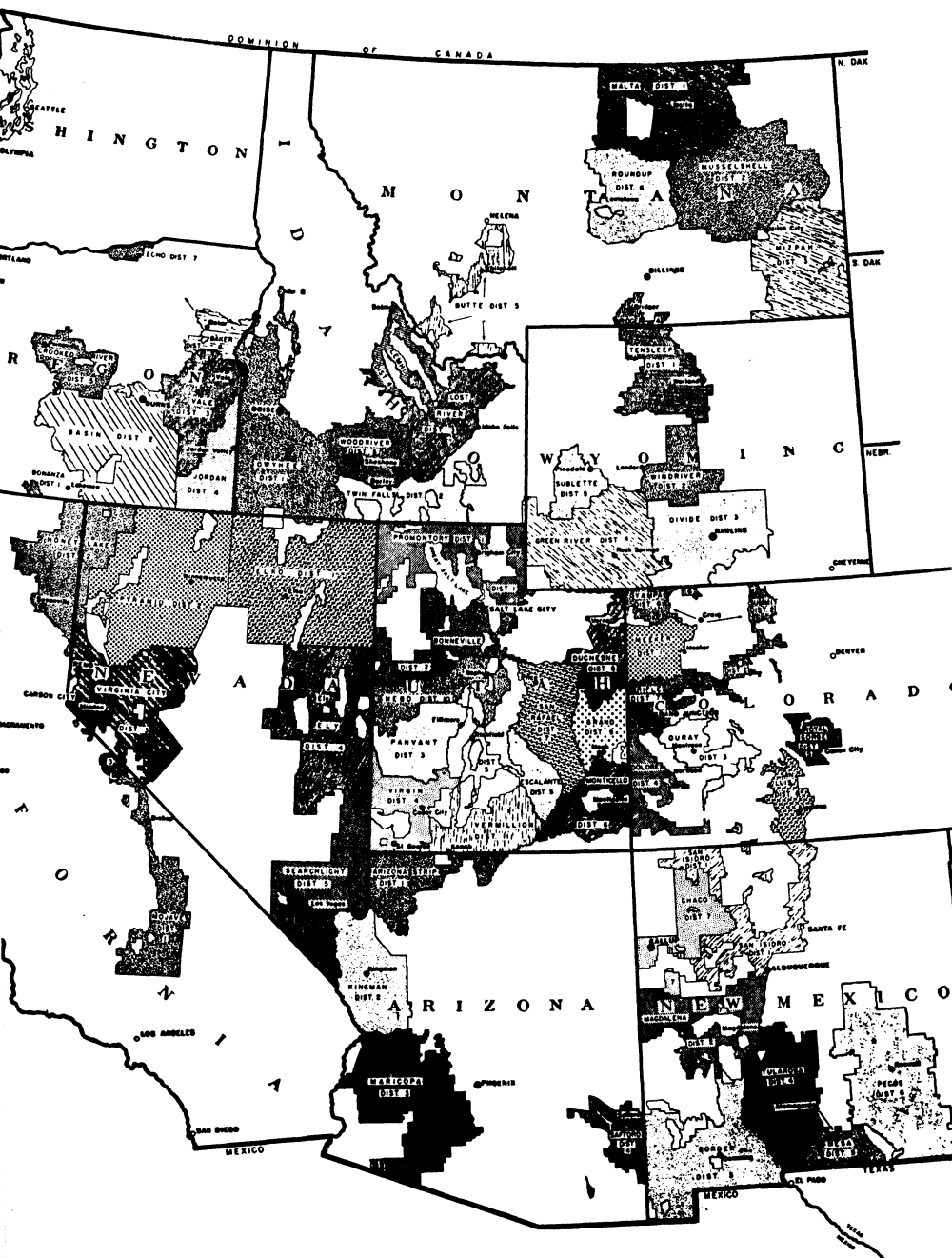


FIG. 7.2.—Map of the western states showing grazing districts under Taylor Grazing Act.

Much has been done through controlled grazing to improve these lands, but there is still much to be done, including more adequate stock water supplies, reseeding, control or reduction of aggressive and poisonous range weeds, rodents, etc.

**MULTIPLE AND CONFLICTING USES OF THE WESTERN RANGE.** Range lands in the western states have a wide variety of uses. Besides providing grass for domestic livestock, they are used for recreation (winter and summer camp sites, hunting, primitive areas, scenic areas, etc.), for municipal water and power sources, for water production for irrigation purposes, for watershed protection to prevent floods and silting of reservoirs, for lumber and wood products, for mining and prospecting for mineral wealth, for Indian welfare purposes, and for other uses. The multiplicity of uses and services of range land in our national economy is one of the main sources of conflict between users of range land and the supervising or administering agency.

The United States Forest Service administers the national forests under a system of "multiple use," which is management for coordinated maintenance and use of the forest resources and values. Under "multiple use" management, all the various uses must be coordinated and conflicts adjusted in the entire over-all management of the area so that the area taken as a whole can be devoted to those most productive uses for the permanent good of the whole people, and not for the temporary benefit of a few individuals or groups.

**PUBLIC VERSUS PRIVATE OWNERSHIP.** The argument has been advanced that federal range lands in the western states should be returned to private ownership as soon as possible, and that under private ownership use would be more efficient. The United States has followed a policy of private ownership of agricultural lands throughout the years. Where there is good evidence to show that private ownership makes most efficient use of land resources, such ownership, in keeping with our established national policy, should be permitted and encouraged.

In some areas of the West, average carrying capacity approximates a point where the net capital value falls to about zero. Under existing tax assessment procedures and institutional arrangements many stockmen prefer public ownership and leasing from the federal government to paying excessive taxes on such lands. As will be pointed out under the section "Assessment and Taxation," until

there is decided improvement in our local land assessment procedures so that lands are assessed more in keeping with their carrying capacity, and until there is assurance that assessments will be closely related to carrying capacity over a period of years, most stockmen will find it more satisfactory to lease rather than to own much of the federal range lands.

The multiplicity of uses of western range lands is often given as a reason for federal ownership as against private ownership. Many lands in the midwest and eastern part of the nation, however, have multiple purpose functions and are privately owned. The characteristic of multiple uses alone, therefore, does not apply solely to the western range lands.

Undoubtedly, much of the opposition to permitting western federally owned range lands to go into private ownership is based upon the conviction that much of our agricultural lands, through private ownership, have been exploited, and that western range lands would be similarly exploited if privately owned and controlled. The dust storms of the thirties, the extensive and serious soil erosion which occurred in many sections of our land, and related problems have led many to believe that a move to put any considerable portion of the existing federally owned range lands into private ownership would be a backward step, and should be vigorously resisted. One of the major arguments for this point of view is the fact that under private control, the competition of uses for land results in shifts to more intensive uses in high price or high profit prospect periods, with resulting serious long run economic and social consequences. For example, much land whose highest and best use is for grazing, will be put into wheat or in another crop in high price and favorable weather periods. It is extremely difficult to get these lands back to the less intensive grazing use readily. Ordinarily the transfer back occurs only when a series of natural forces such as adverse weather or heavy insect pest ravages, coupled with unfavorable prices push the land into the less intensive use. As a rule it requires several years and good management to reestablish or approach the former productivity of the land in terms of livestock carrying capacity.

Much of the acreage of the western public range lands is not suitable for division into units for single operator control. Consequently, competitive allocation of leasing rights is practically impossible. In the first place, the acreage is not blocked out into economic operating range units, or if such acreages do occur, there are other limitations such as inadequate water supplies, absence

of hay lands, grazing adapted to only one season of the year, or some other shortcoming which makes them inadequate as operating range units in themselves. Thus, these lands can be used only in conjunction with other lands already privately owned or with other lands controlled by other federal agencies for other purposes such as watershed protection, or with other lands owned by another public agency such as the state or county government.

The only competition that occurs for these federal grazing lands is that which occurs between owners or leasees, or controllers of other adjacent land. It cannot be between these adjacent operators and the public at large. In many cases there is no competition, even with adjacent property holders, because frequently the federal grazing lands are so located relative to other lands that only one operator is in a position to make effective use of them. The system of competitive allocation of leases through competitive bidding would keep the pattern of operations in an impossible state of instability and insecurity.

Still another factor which complicates the matter of private ownership of existing federally owned range lands is the fact that privately owned range lands already carry investment and assessed values that include to a large extent the forage value supplied free or at a nominal cost by associated federal lands. In other words, if the federally owned range lands were opened up to private ownership, the individual operator who owns some land but leases federally owned range lands now would be faced with the need for buying these formerly free or nominal-cost forage resources, the value of which he has already incorporated into his overhead and of which he is already paying part or most of the cost. Obviously, if the federally owned lands go into private ownership, they would go on the tax rolls, and since the land already owned by the private users would not be reduced in taxable value, anything that the owners had to pay for the lands beyond a nominal price would result in investment and tax costs that are already being carried on the present privately owned lands. It is true that this situation can be corrected by legislation, regulation, or administration, but institutional reforms come slowly, and in the meantime those who purchase the lands would be penalized to the economic competitive advantage of those who do not. Thus, there are some of the federally owned range lands that could justifiably be offered for private ownership, but many of them would not be accepted even if they were offered without price.

One further characteristic of federally owned western range lands contributing to the difficulty of moving these lands into private

ownership should be mentioned. Many of the western federally owned range lands, even though they are used for grazing and for nothing else, are not amenable to use and ownership by one rancher alone. Much of the winter sheep range, for example, is of such a type that sheep bands must herd over it in large circles, or must be free to move considerable distances as weather conditions, particularly winter storms or drought, dictate. Open range herding over common areas with other bands is a long established pattern, and single range allotments are not customary or practicable.<sup>6</sup> Private ownership could, of course, be worked out for such areas on a collective basis grouping together several private enterprisers, but this is a new departure in terms of ownership procedures.

In view of the above facts, the conclusion seems logical that private ownership of all or certainly most of the western range lands is not feasible or desirable. As a matter of fact, it seems clear that if all of the federally owned range lands were opened up for private appropriation, a great deal of them would remain publicly owned. On the other hand, it is just as unrealistic to insist that all of the federally owned range lands of the West must remain in federal or public ownership. There are some pieces of land that need not be retained in either federal or public ownership, but these parcels are not numerous and the total acreage involved would not approach a major portion of the present federally owned range lands. These parcels would have to be free from the shortcomings mentioned, or have some special qualities that would make them particularly useful and important to a particular ranch or operator so that he could afford and would be willing to pay the taxes that would be assessed against these lands under private ownership.

Solution to western range land tenure and tenancy problems is not private ownership, except in a few limited instances. The record of public land management by states and counties of the West does not provide encouragement for proponents of state ownership. Many reasons can be advanced to show that of all public agencies involved the federal government is in a position to do the most effective job of public range land management.

**IMPROVING LANDLORD-TENANT RELATIONSHIPS.** The main problem in western public range land management is landlord-tenant relationships. The problem is seriously complicated by the fact that in the case of these lands the landlord is the government. Livestock oper-

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<sup>6</sup> See M. M. Kelso, *Current Issues in Federal Land Management in the Western United States*, Journal of Farm Economics, November, 1947, page 1309.

ators (tenants) moreover, are a part of the government as are every other group of citizens in the country. In the case of our midwestern and eastern farm lands which are under private ownership, landlord-tenant relationships concern two or more private individuals, the government acting as an umpire or arbitrator. This relationship does not exist in the case of western range lands, because for a major portion of the acreage, the government is the landlord.

There is no question but that the recent controversy over Forest Service management policy on western range lands has arisen from the fact that the Forest Service limits the number of livestock that can be grazed on the range lands in the National Forests. The Forest Service Advisory Boards at the present time deal only with the conduct of grazing. Many ranchers want these boards to regulate the number of stock that can be grazed on these lands. Such action would almost certainly conflict with the interest of other users of the forests and with the public interest in sound watershed management.

There is a tendency to identify the interests of the administering agency with those being served and regulated in the case of land managed by the state land offices or by the Bureau of Land Management. Advisory boards for these agencies recommend carrying capacity of the range, issuance of permits or licenses, rules for land use allotments, seasonal use and improvements in the case of the Taylor grazing leases. Rentals charged have been extremely low, in view of recent high livestock prices, but in general the conflict of multiple uses has not been as definite or as involved in these grazing lands as in the case of National Forest lands. The Bureau of Land Management has made a sincere attempt to balance equitably the interests of the several users of western lands. But their problem has been a much less difficult or involved one than that of the Forest Service which has to reconcile not only the interests of various livestock men, but also the interests of lumbermen, irrigationists, recreationists, sportsmen, and others.

The tenant or user of western public range lands wants security of expectations, or what might be called stability of tenure, so that he can operate efficiently over a period of years. If difficulties arise between himself and the government (the landlord), he wants an impartial arbitration of such differences. He also wants reasonable payment of damages, by either party, and compensation for unexhausted improvements to be included in the leasing arrangements. The landlord, in turn, wants protection against damage to his

resources. Both the tenant and the landlord want a level of charges commensurate with productivity, and a policy which is satisfactory to both regarding who, among several possible beneficiaries, shall be given the right to use the land.

Some students of the problem recommend creation of a new kind of public body for administering western public lands. They suggest that on this new administering board should be represented both the user and the administering federal agency. For example, an administrative board of five members could be set up for a given area comprising one sheepman elected by sheepmen in the area, one cattleman elected by cattlemen in the area, two designated by the Secretary of the Interior or by the Forest Service, depending upon the agency which has jurisdiction of the grazing land in question, and one selected by a board of at least three of the four members. If this board were to meet regularly, say quarterly, and render prompt decisions that would be binding on both parties, a means would be provided, so these students argue, for more effective and fair administration of western public range lands.<sup>7</sup>

If any such administering boards are set up, certainly all interests involved in multiple use of the lands must be represented in such a way that these various interests or users will have an equitable part in the determination of management policies. This may be extremely difficult to do. Nevertheless, the principle involved is a significant one, namely that some means must be set up by which both users and the administering federal agency or landlord are represented effectively on the administrative body or board, otherwise misunderstandings, confusion and dissatisfaction are likely to be continuous. Short of this type of administering agency there must be a continued and effective public relations program consisting primarily of thorough information being made available to the public and to the users at all times as to the reasons for management policies that have been established by the administering federal agency, and the considerations involved in arriving at these decisions.

A national forest advisory board was recommended by the Committee on Public Lands to the Secretary of Agriculture in its preliminary report on Forest Service policy about two years ago. A National Forest Board of Review consisting of three individuals has been appointed by the Secretary of Agriculture to serve in an

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<sup>7</sup> For a more complete statement of this proposal see M. M. Kelso, "Current Issues in Federal Land Management in the Western United States," *Journal of Farm Economics*, November, 1947.

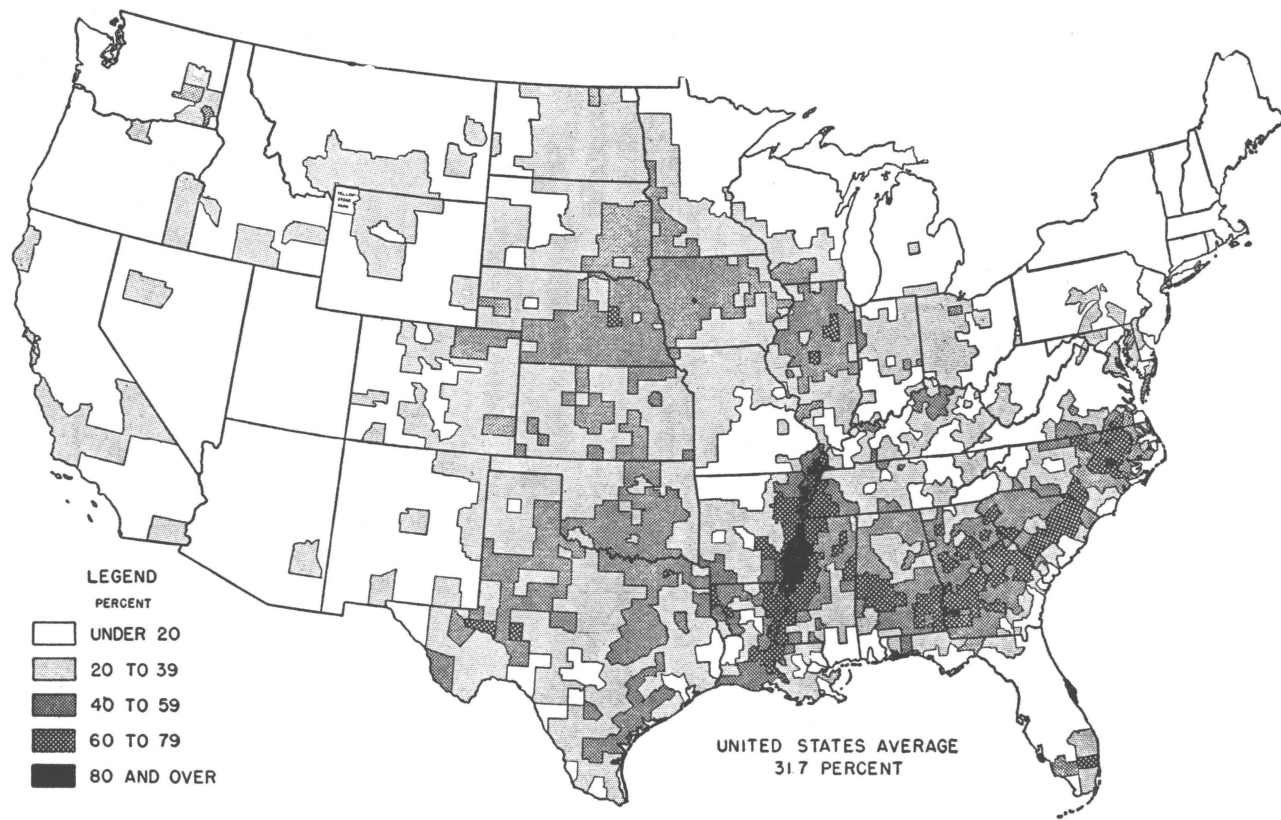


FIG. 7.3.—Percentage of all Farms Operated by Tenants, Jan. 1, 1945. "Graphic Summary of Farm Tenure in the U.S.," U.S. Department of Commerce and U.S. Department of Agriculture, Government Printing Office, Washington, D.C., 1948. page 10.



advisory capacity with him for the administration of Forest Service lands.<sup>8</sup> This step is a recognition of the desirability of working out some means of effectively articulating the interests of users and the public in general with that of the staff of the administering federal agency or landlord in the administration of western range lands.

According to the Committee on Public Lands, one significant source of dissatisfaction or misunderstanding among users, the public and the administering federal agency in the case of western range lands is the lack of an adequate plan of payments to the states by the federal government in lieu of taxes for federal lands. More than four-fifths of the total federal land holdings are in the western states, and it is estimated that some 200 million dollars yearly would probably be necessary for an adequate program of payments to the state by the federal government in lieu of taxes.<sup>9</sup>

TENANCY IN RANGE LAND AREAS. Although nearly a third of the nation's farms are operated by tenants and more than four-fifths in some counties in the southern states, only a seventh (14.5 per cent) are operated by tenants in the eleven western states. Only six of the 200 counties in the western states have as much as 40 per cent tenancy and the great majority have less than 20 per cent (see Fig. 7.3). Only one region of the nation, the Northeast, has a lower percentage of tenancy than the western states.

Livestock production as carried on under western range conditions, does not lend itself to a high percentage of tenancy comparable with that in wheat and cotton growing areas. These two crops are annual cash crops and tenants can move from farm to farm annually or every two or three years without serious economic disadvantage. Range livestock production, especially cattle production, ordinarily requires a period of years to complete one production cycle. Also successful management and husbandship require knowledge of and familiarity with the particular ranch and the livestock over a period much longer than a year.

Western range operators lease large acreages from the Forest Service and the Bureau of Land Management, as noted earlier, but these lands are not listed by the census as "land in farms" and do

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<sup>8</sup> Members of the Board are Dr. Jonathan Forman, Columbus, Ohio, Professor G. B. MacDonald, Ames, Iowa, and the author. They were appointed in the late summer of 1948. The first meeting of the Board was held in Washington, D. C., March 7-11, 1949.

<sup>9</sup> Report of the Hearings before the Committee on Public Lands and the Subcommittee on Public Lands, *op. cit.*, page 2.

not show up in census tenancy figures. A large proportion of our ranchers rent land, largely publicly owned, and many lease more acres than they own.

#### RANGE LAND VALUATION AND CREDIT

A majority of ranchers have borrowed at one time or another in the operation of their ranch business. Ranchers generally have made rather heavy and widespread use of credit, and it has been an important and frequently deciding factor in the success or failure of the ranch operation. Credit has undoubtedly enabled many to weather trying times when their current income was insufficient to meet current expenditures. It has enabled many to reap relatively early the advantages of improved practices, devices, and services, which they would have had to postpone until they had saved up enough to purchase them with cash. At the same time it has also been a great burden to many through its excessive or improper use, and in the case of some ranchers it has proved their complete undoing.

**SOUND CREDIT PRACTICES FOR RANGE LANDS.** Climate and topography limit agriculture in more than nine-tenths of the area of our eleven western states to range livestock production—a highly commercialized, one-enterprise type of operation. This high degree of commercialization and specialization makes ranchers peculiarly affected by highly fluctuating price levels characteristic of our modern economy. With extreme fluctuations in carrying capacity and price the funds to meet overhead costs (including principal and interest payments on indebtedness) vary greatly. Debt service charges are one of the most important farm and ranch overhead items. Hence, farm credit policies should be those which result in bringing the amount lent into line with the long-time carrying capacity of the ranch, and the annual loan repayments should be flexible and adjusted to current income in terms of buying power rather than dollars.<sup>10</sup>

Too many loans are made on range lands with insufficient knowledge and appreciation of the long-time carrying capacity, or true

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<sup>10</sup> For a more detailed explanation of these recommendations and the arguments for their adoption in mortgage contracts see the author's treatment in "Montana Farm Bankruptcies," Montana Agricultural Experiment Station Bull. 360, June 1938; "Montana Farm Foreclosures," Montana Agricultural Experiment Station Bull. 368, February, 1939; and "Land Credit Practices and Successful Farm Operation," Journal of Land and Public Utility Economics, November, 1938, pages 442-451.

worth of the lands. A very large number of the disastrous loan experience cases have occurred because the amount loaned was too large in proportion to the true value of the land. Such loans are frequently made during boom periods or at times of high prices when an exaggerated opinion about current as well as ultimate value of the land prevails. A widespread lack of knowledge of carrying capacity or normal values of range areas on the part of many lenders, contributes to unsatisfactory loan experience in these areas.

Too frequently loans are made for too short a period so that the annual cost of paying off the loan is too heavy or the uncertainty of being able to renew or refinance the loan under satisfactory terms when it matures is a constant source of worry and tends to encourage short-sighted land use practices. In recent years much improvement has been made on this point in the case of range lands.

The method of repayment of the loan is an especially important factor determining satisfactory loan experience in the case of range lands. Much of our western range lands is located in the western part of the Great Plains area and the semiarid and arid southwest areas. In these areas, the climatic conditions are such that any variation in precipitation above or below normal is extremely important. Precipitation above average results in bumper grass and high carrying capacity, but precipitation below normal results in extremely low carrying capacity or complete inability to carry any livestock at all because of drying up of water holes and drying up of the range. In 1934 and 1936, for example, cattle and sheep in many sections of the West, particularly the Great Plains section, had to be moved out and many were slaughtered on the spot. Under these conditions, man's inventive mind must develop a workable substitute or replacement for the natural cushion or buffer of crop dependability which exists in the more humid areas.

Over a period of years sufficient to cover a complete business cycle and the usual range of weather conditions, the range lands of the West will return an average income under existing management practices which compares favorably with that of other agricultural areas of the nation. Hence, it is a matter of working out credit practices adapted to the variable weather conditions that may occur. Since debt service charges (principal and interest payments) are one of the most important ranch overhead items, the annual loan repayments (principal and interest) should be variable and adjusted to current income. The payments should not be a fixed amount annually characteristic of current amortized loans, but repayment provisions in mortgage contracts should be definitely related to, and vary with,

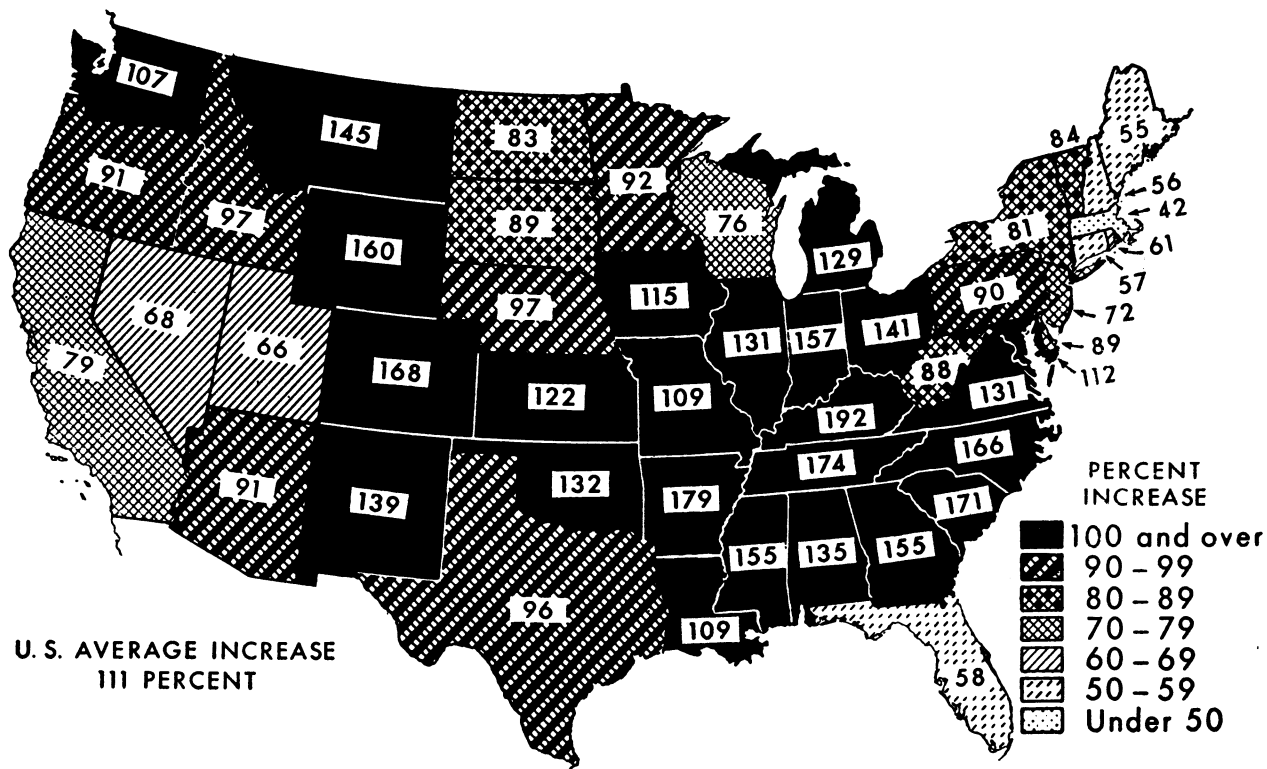


FIG. 7.4.—Percentage Change in Average Value Per Acre of Farm Real Estate from 1935-39, Average to March, 1949.

the income earned annually.<sup>11</sup> In addition to such "variable" or "flexible" repayment provisions which should include arrangements for forward payments in case of good years at the beginning of the loan period, a forbearance clause should be included providing that the lender wait, in the case of very bad years, until the carrying capacity recovers and the rancher has some income that can be applied to the loan. An intensive educational program will be necessary before such provisions become general in mortgage contracts on range lands.

**TRENDS IN RANGE LAND VALUES.** Agricultural land values for the country as a whole rose sharply during and immediately following World Wars I and II. Using 1912-14 = 100, agricultural land values in the United States rose from an index of 103 in 1915 to 170 in 1920, fell to 127 in 1925, and to 115 in 1930, to 79 in 1935, rose to 84 in 1940, to 114 in 1944, and continued to rise until in 1949 they reached an index of 175 or three-fourths above the 1912-14 level and approximately 3 per cent above the post-World War I peak of 1920. The largest increases in value per acre in recent years have occurred in the South Atlantic and South Central states. Large increases in value per acre of ranch real estate have also occurred in most of the eleven western states. (See Fig. 7.4.)

The first significant declines in land value since the late '30's occurred during the quarter ending March 1, 1949. At that time values were at or below their November 1948 level in all of the mountain and Pacific states. Largest percentage declines from November 1948 to March 1949, occurred in Montana and Oregon with 10 per cent and 9 per cent declines respectively. Every one of the western states showed declines of 3 per cent or more for this period, with the exception of New Mexico where there was no change in values. These declines in value compared with a decrease of 1 per cent for the United States as a whole for the same period. Declines in prices of livestock and the severe winter apparently were the major factors responsible for lower land values in the mountain states.<sup>12</sup>

Meat prices are particularly subject to wide swings associated with vicissitudes of the business cycle, and any major decline in business

<sup>11</sup> See the author's treatment in "Land Economics," Harpers, New York, 1947, page 549.

<sup>12</sup> See "Current Developments in the Farm Real Estate Market," USDA, Bureau of Agricultural Economics, page 2, Mimeographed release April 20, 1949.

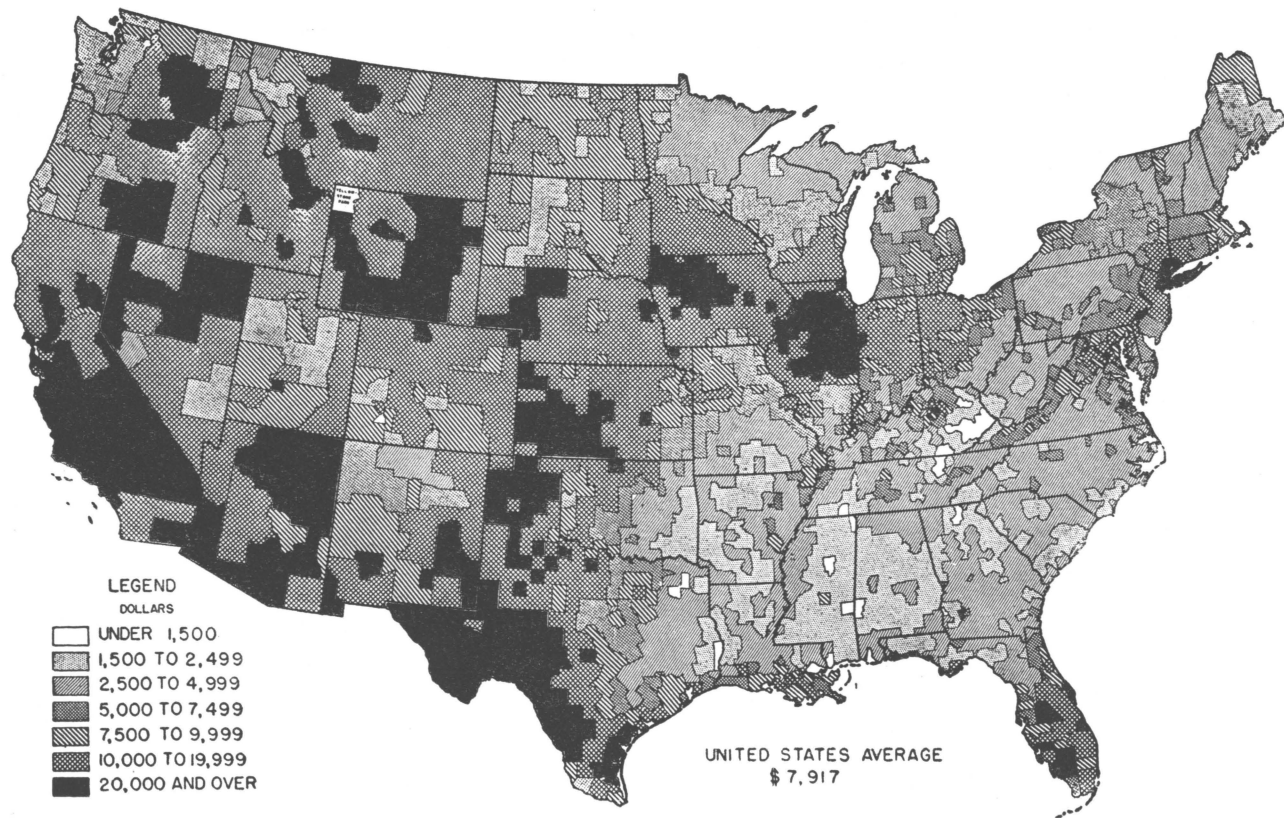


FIG. 7.5.—Average Value of Land and Buildings Per Farm, Jan. 1, 1945. (from "Graphic Summary of Farm Tenure in the U.S." page 30.)

activity will undoubtedly result in rather severe declines in livestock prices. Such declines would tend to drive range land values considerably below present relatively high levels. In the eight mountain states, for example, range land values were approximately two-thirds above their 1912-14 level at the end of the first quarter of 1949.<sup>13</sup>

Western ranchers are in comparatively good financial condition, and many have paid off much or all of their indebtedness in recent years. However, there have been new operators who have come into the business with the high livestock prices of recent years and have borrowed heavily to finance their investment in range land and livestock. Many of these operators are particularly vulnerable to any major decline in livestock prices. For the most part, however, the range livestock industry is on a sound financial footing, and unless business declines are severe, there should not be widespread range land foreclosures or bankruptcies. The fact that ranching requires a large investment in land means that any serious declines in agricultural income will be particularly disastrous to western ranch operators. Figure 5 shows the average value of land and buildings per farm on January 1, 1945. Note the particularly heavy investment in land and buildings, but especially land, in the western states where ranching predominates as the major enterprise in many of the counties.

#### RANGE LAND ASSESSMENT AND TAXATION

Range land taxes are one of the most rigid and inescapable out-of-pocket costs threatening the stability of western ranch operations. Land taxes are particularly significant in much of the range area of the West, because of (1) the wide fluctuations in annual ranch income resulting from variations in precipitation and livestock prices, (2) the tendency of governmental agencies and costs to expand during high income periods and to remain high or relatively fixed during the inevitable periods of low ranch income, and (3) the failure to distribute the taxes levied according to the ability to pay.

**TRENDS IN RANGE LAND TAXES.** Taxes on farm real estate in the eight mountain states are now more than twice their 1909-13 level and

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<sup>13</sup> The index of value per acre for farm real estate for the eight mountain states on March 1, 1949, was 163, using 1912-14 = 100. This is somewhat less than the national average which was 175 on March 1, 1949. *Ibid.*, page 7.

almost three and one-half times the pre-World War I level in the three Pacific Coast states. Moreover, increases have been significant in recent years, particularly since the close of World War II. In 1930, farm real estate taxes in the mountain states stood at 237 and for the Pacific Coast states at 290. The same figures for 1947 are 208 and 342 respectively.<sup>14</sup>

Farm real estate taxes generally increased greatly from the beginning of the first World War to the end of the '20's. During the '30's farm real estate taxes were maintained at approximately twice their prewar level. Decline in agricultural income after 1929, and the extremely severe drought and insect pest ravages in the western states in the early '30's made it impossible for many ranchers to meet tax assessments in the '30's. Continued widespread tax delinquencies during the '30's, increased transfers of ranches through tax deed foreclosure, and related distress in ranching areas have called attention to the need for fairer and more equitable range land taxation.

One of the principal causes of range land tax delinquencies is the failure of the rigid or inelastic real estate taxes based on general property tax levies to adjust promptly and completely to changes in ranch income. Adjustment of assessments more in line with capitalized income or productivity value would tend to encourage more stable operation of range lands. Lack of uniform assessment standards and the absence of assessed values based on true earning power or carrying capacity of the land (capitalized income value) has resulted in much overassessment particularly on the poorer, less productive grades of range lands. A system of land classification for tax assessment, based upon scientific evaluation of the grazing lands, is essential to reduce discrepancies in tax burdens resulting from present inadequate or unscientific classifications and assessments.

In a study made by the author in Montana, it was found that the best grades of grazing land were assessed about two and one-half times their capitalized productivity or carrying capacity value, while the average grades were overassessed about four times, and the poorest grades from five to eight times.<sup>15</sup>

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<sup>14</sup> See "Agricultural Finance Review," USDA, Bureau of Agricultural Economics, Washington, D.C., Volume 2, page 124, November, 1948.

<sup>15</sup> For first grade grazing land the ratio of assessment value to productivity value was 2.41, for second grade 2.36, for third grade 4.11, for fourth grade 5.12, and for fifth grade 7.80. See R. R. Renne, and H. H. Lord, "Assessment of Montana Farm Lands," Montana Agricultural Station Bulletin No. 348, page 32, October, 1937.



IMPROVING RANGE LAND TAX ASSESSMENTS. Instability in the control of range land contributes to destructive range management practices. Adjusting the tax assessments on low grade range lands into line with the carrying capacity of these lands would tend to encourage private ownership and better range land management practices. Any plan for improving assessment of western range lands should be designed to correct the two major evils which now exist, namely (1) the failure to assess range lands in accordance with their ability to pay (carrying capacity or productivity) particularly the tendency to over-assess the lower grades, and (2) the lack of any uniformity in assessment policies among counties or among various areas within a state. The first major step in the improvement of tax assessment on range lands is the making of a scientific soil classification and an economic evaluation of the land so that correct assessment values can be computed. Also needed in most of the states is a state agency with authority and funds to administer such an assessment system and enforce uniform compliance with established assessment standards over the entire state.<sup>16</sup>

If range land taxes are to be made variable or flexible to fluctuate in keeping with periodic variations in ranch income, other significant adjustments must be made in tax policies, particularly by local governmental units. It is neither feasible nor desirable to change the program of governmental services from year to year in keeping with variations in ranch income. Consequently, certain fundamental adjustments must necessarily be made in the financial plans and operations of local governmental units particularly. Governmental units are in a better position to carry cash reserves than is the average ranch operator. For this reason, in contrast to present practices, governmental units should carry cash reserves and plan their budget so that tax levies could be lowered in the lean years, thus enabling individual ranchers to survive the impacts of the inevitable low-income period. To do this a program of "forward" payments of taxes should be a part of the plan so that governmental reserves can be built up in good years. This problem is a very complicated one, and requires not only legislation changing present laws in many of the states, but a sound educational program so that the tendency to pork-barrel governmental surpluses will not occur in the good years and thus result in inadequate resources to take care of the lean years.

Complicated as the problem is, the possibilities are of such sig-

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<sup>16</sup> *Ibid.*, page 43.

nificance to stable range land operations that every effort should be made by research and educational agencies to bring about changes which will make it possible to adjust tax assessments on range lands in line with current carrying capacity or productivity.

#### CONSERVATION OF THE WESTERN RANGE

The prolonged severe drought of the early '30's, combined with excessive overgrazing, particularly of the remaining public domain lands that had not been taken up for settlement by private individuals, brought about serious deterioration of western ranges. Millions of acres are eroding, some severely and others less severely, and the carrying capacity in many areas has not been maintained. The Chief of the Forest Service in his annual report for 1947 states that on many of the western ranges one can see bunches of grass on which root crowns stand several inches above the ground surface, indicating that several inches of soil have washed or blown away during the lifetime of these individual grass plants. It has been estimated that about half of the national forest range allotments are in satisfactory condition. Others are improving gradually, but it will take a long period to put them into satisfactory condition. Where severe range deterioration is occurring, substantial reductions in livestock numbers are being made. These reductions are being made gradually to lessen hardships on permittees.

In some areas of the West where water is very scarce, some people have the notion that removal of vegetative cover on watersheds is desirable. A bare watershed would produce more water to fill up irrigation reservoirs, so some believe. Certainly, bare watersheds produce quicker water runoff, but there would be no protection of the soil against erosion, and mud as well as water would pour into the reservoirs. Flash floods would tend to damage improvements in the drainage area. Moreover, it should not be forgotten that the more water that runs off the surface, the less there is available for underground supplies, and the greater likelihood of wells going dry.

If watershed range lands are overgrazed or poorly managed, serious consequences result. Excessive cattle or sheep numbers allowed on the range trample to dust areas where they concentrate. Vegetation becomes sparse and erosion increases. Heavy grazing tends to kill out choice perennial grasses with large spread root systems, which are replaced with small root annual grasses and weeds. These are not only less effective in preventing erosion and soil runoff, but

they are low in forage value. Stock turned on the range too early in the spring when the soil is still wet from snow are particularly damaging.

**IMPROVEMENTS NEEDED ON WESTERN RANGE LANDS.** The condition of much of our public range land today is better than it was a decade or two ago. However, continued drought in some areas and earlier serious deterioration of others has resulted in a considerable portion of our western range lands being in an unsatisfactory condition. Improvements needed include additional stock reservoirs in many areas, fencing and related improvements, reseeding, and rodent and poisonous weed control. In some cases purchase and management of additional land by federal, state, or community agencies are becoming increasingly desirable for critical flood source areas and for upstream lands most important as water supply sources where individual owners cannot afford to take necessary measures for watershed protection. More intensive management on many national forest timberlands and ranges, particularly those that are most important forest watershed lands, is needed, but good management must also be applied on watershed lands in private ownership. This will require an extensive educational program and additional research.

The Forest Service estimates that from three to four million acres in national forests should be reseeded. About 200 thousand acres of range lands in national forests have been reseeded to date. On depleted range lands in private ownership, reseeding should be stepped up through conservation payments by federal action agencies, such as the Agricultural Adjustment Administration, to improve watershed conditions and restore wasted lands to maximum carrying capacity.

An educational program to acquaint ranchmen with means by which they can determine the condition of their own range land and the potentialities for improvement is needed. The ability to recognize some of the more important forage plants of the area, some skill in judging relative abundance, an approximate idea of the kind of vegetation the area once supported, a knowledge of which plants increase and which decrease under heavy and light grazing, and related information are essential if there is to be widespread adoption of conservation measures on range lands.

The employment of a range management specialist on the Extension Service staff in states with large acreages of range lands would undoubtedly help to get this educational job done. Federal and state action and development agencies concerned with range

lands can do much to assist this educational program by close cooperation with the Agricultural Extension Service and a joint discussion of development of programs and plans.

**SOIL CONSERVATION DISTRICTS.** Most of the states with the encouragement of the federal government through the Soil Conservation Service have passed soil conservation district laws. These laws permit farmers and ranchers to organize soil conservation districts which have the status of governmental subdivisions. Their major objective is to combat soil erosion and to prevent local misuse of land by cooperative land-use regulations. Soil conservation districts are now established extensively in most of the states as shown in Chapter 6.

The use of soil conservation districts to conserve soil is an application of the police power. Individual operators who refuse to employ conservation measures called for by the district's regulations are subject to the same legal procedures as any individual who violates a regularly established statute or ordinance of any other governmental unit.

Soil conservation districts cannot control land occupancy except indirectly through forcing agricultural operations to cease in extreme cases. However, there is nothing to prevent soil conservation districts from being given zoning powers through broadening their present scope of action by statutory amendment. At the present time they operate as specialized means of dealing with a specialized problem, namely erosion control.

**TAYLOR GRAZING DISTRICTS.** In recent years grazing districts to conserve range lands have been established in many western states under the federal Taylor Grazing District Act (refer to Fig. 7.2) and state grass conservation acts. The purpose of the Taylor Grazing Act, passed June 28, 1934, is "to stop injuries to public grazing lands by preventing overgrazing and soil deterioration, provide for orderly use, improvement, and development, to stabilize the livestock industry on the public range, and other purposes." The Secretary of the Department of Interior is authorized to create grazing districts from any part of the vacant and unappropriated public domain which is valuable chiefly for grazing and located in the eleven western states and North and South Dakota. Within districts, grazing is regulated on a permit system similar to that in use on national forests. Preference in regard to permits is given to those within or near a

district who are land owners engaged in the livestock business, bona fide occupants or owners of water or water rights, and persons acknowledged as enjoying use of the public range at the time the district is formed.

**STATE GRAZING DISTRICTS.** Many western states have passed legislation providing for the establishment of grazing districts which are non-profit cooperative associations of livestock operators to control and manage the use of range land within their boundaries.

In general, state grazing district laws empower cooperative associations of livestock operators to lease or purchase grazing lands, to develop and manage district controlled lands, and to allocate grazing privileges among members and nonmembers. Thus, grazing district legislation permits the establishment of collective tenure devices for securing and maintaining control over the right to use range land.

State grazing districts thrive most successfully where there is a checkerboard pattern of ownership (numerous small parcels, owned by a variety of absentee and local individual corporate owners), while Taylor grazing districts seem to be most useful in areas where federal lands comprise a large proportion of the total area and are of such low productivity that they have never been taken up by private individuals. In Montana, 37 state grazing districts have been established, largely in the eastern half of the state, and include between a sixth and a seventh of the state's area within their boundaries.

The development of soil conservation, Taylor grazing, and state grazing districts has done much to improve the control and use of western range lands. These agencies should be especially effective in the years ahead, and bring about continued improvement in the condition of our western range lands to assure best use and sound conservation of this important resource.

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