

Section I.—HOW THE LAND IS USED IN THE 48 STATES

USES OF LAND IN THE UNITED STATES

As the United States expanded in area from the time of settlement to the middle of the last century, the land resources awaiting development were great and the settlers and tools to develop and use these resources were scarce. One hundred years ago the United States, which by that time had reached its present continental extent, contained a population of only 23 million. Only 113 million acres of improved land existed then and additional millions of acres of good agricultural land awaited settlement and development. The ratio of population to improved land was approximately 5 acres per person.

In the middle of the last century new land for settlement was taken as a matter of fact. Very few thought of limited land for agricultural expansion. The great problem was to get enough labor with the limited equipment available to clear, fence, irrigate, drain, and add other improvements. A hundred years later at mid-century the situation is different. The land area is approximately the same now as it was in 1850. However, the population count of 1950 was 151 million, which was more than six times that of a century ago. This represents an increase of more than a million a year, which is a rapid rate of growth in numbers and an even more notable percentage increase. During the same century, no other large political unit except Australia had such a high proportional increase. While the population of the United States was increasing the land resources were being rapidly transferred into farms and other uses from the large public domain that still existed in 1850.

In 1950, the farm land area of the United States was approximately 1,159 million acres. Acreage of land in farms has increased steadily during the last 100 years, except for three decades which departed noticeably from a uniform increase. During the decade of the Civil War (1860-70) there was no appreciable increase of land in farms. The war disrupted the westward migration and delayed the building of railroads, which were a necessity in settling grassland areas where streams no longer afforded a satisfactory means of getting produce to market and supplies back to the farm. The war also materially lowered the number of immigrants entering this country from Europe and elsewhere. The decade of 1890 to 1900 was a period of greatly expanded farm acreage in the Great Plains where a farm or ranch had to be considerably larger than in the Eastern States. The decade of the 1920's, with its high level of industrial employment and its sharp reduction in immigration, was a period of small increase of land in farms. In the 1930's, a larger increase of land in farms than in the 1920's can be attributed in part to the return-to-the-farm movement of that decade.

No extensive areas of good farm land now remain in Federal ownership. Between 1940 and 1950, most of the new farm land was being added in the 17 Western States and in Florida. Most of this land added to farms during the last decade is suitable only for grazing. It is unlikely that any great net expansion of the farm land acreage will occur within the next two decades, unless all the privately owned woodland used for grazing is classified as land in farms. Land going out of farms has become an appreciable acreage, particularly in several Northeastern States. Furthermore, the limited available water and the rough land preclude further sizable additions in the West.

As a nation, the United States is still rich in land resources. Not only is the quantity of available land great, but the quality of the land is good compared to that of many countries. The variety of possible uses is enhanced by a favorable latitudinal

spread and by the arrangement of mountains in the West which add to the climatic as well as to the topographic, soil, and vegetative diversity. In several areas insufficient water, poor soils, and rough topography lower the productive capacity. The agricultural potential of the interior lowlands has been highly favorable. This region is centrally located and near other resources such as coal, iron ore, and petroleum. These agricultural and industrial resources in close proximity and linked by the excellent waterway system of the Great Lakes were the major hub of resource development in the last century. Attention has been focused on this part of the country, but the South as a region where much besides cotton can be grown has been recently rediscovered.

Per-capita land resources of the United States are very large indeed when we compare them with such densely populated countries as Japan, China, India, the countries of western Europe, or the world as a whole. If the cropland, pasture, and forest lands of the United States were allotted on a per-capita basis, as of the 1949 use, each person would get 2.7 acres of cropland in use for crops, 4.6 acres of nonforested pasture and grazing land, and 4 acres of woodland and forest, not all of which is of commercial value. This is a total of 11.3 acres on which production of crops, grass, and timber is feasible. Exactly comparable categories of land use are not available for other countries or for the world as a whole. However, the Food and Agriculture Organization of the United Nations, in its 1950 Yearbook, published estimates of world land use which included arable or cropped land, 3,089 million acres; meadow and permanent pasture, 5,404 million acres; and forest and woodland, 9,943 million acres. Another estimated 937 million acres are classified as unused but potentially productive. Also, in its 1950 Yearbook, this organization estimated world population at 2,377 million in mid-1949. Allocating these estimated acreages on a per-capita basis gives 1.3 acres of arable or cropped land, 2.3 acres of meadow and permanent pasture, 4.2 acres of forest and woodland, and 0.4 acres of unused but potentially productive land. The total world per-capita acreage in these four categories of use is 8.2 acres. The United States has a greater total per-capita acreage of land for crops, pasture, and forest than the population of the world as a whole. More land in the United States for crops and pasture is of especial significance in appraising the per-capita distribution of land resources.

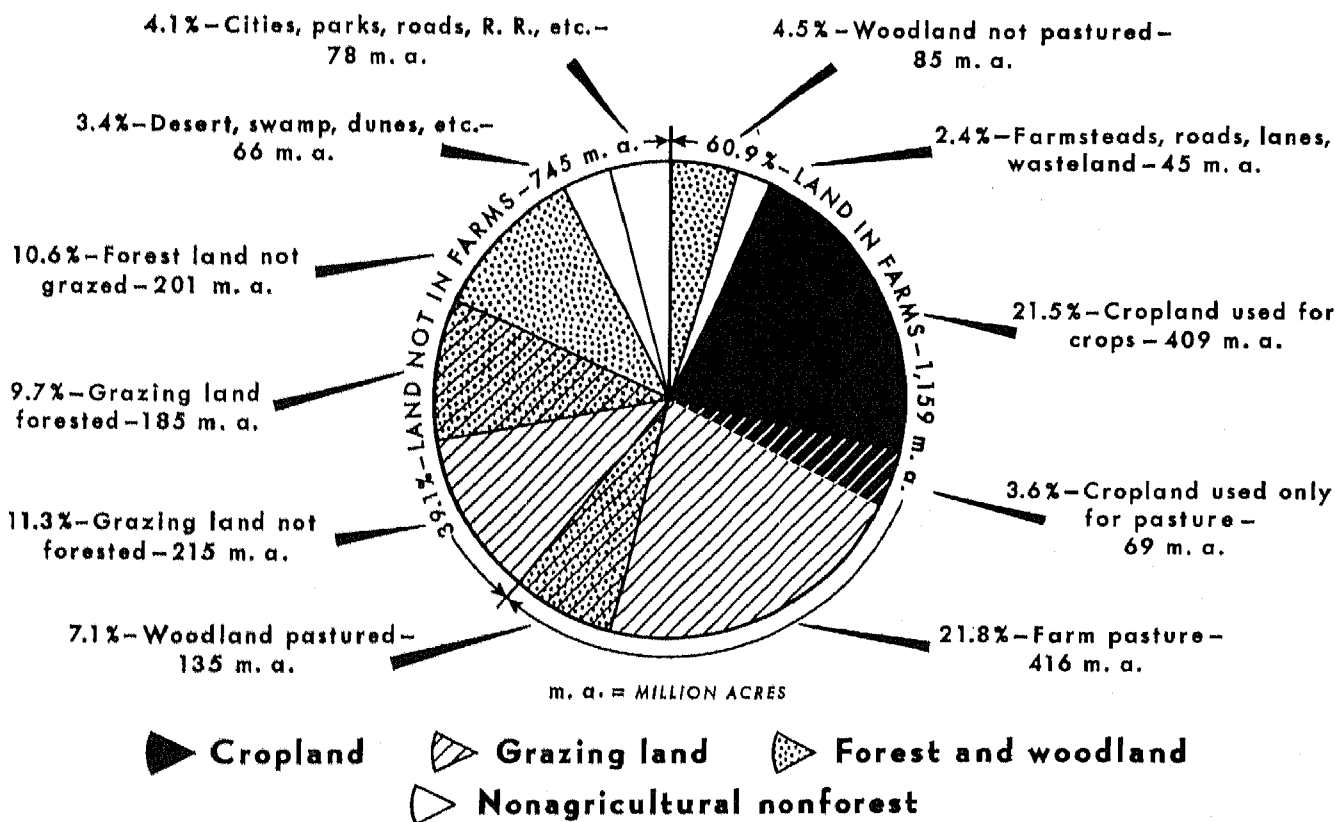
Marked change in the per-capita acreage of crops, pasture, and forest land has occurred since 1880. In 1879, land in use for crops was 3.8 acres per capita; available nonforested pasture and range, which included idle grassland in considerable quantity, was about 18.7 acres; and forest and woodland, including noncommercial forest land, was approximately 12.6 acres. This was a total of about 35 acres of crop, pasture, or forest land per person, more than three times as much as was available to each person in 1949. In 1919, near the end of the period of mass immigration into the United States, the total per-capita acreage in these three categories of use was only 16.2 acres. This was less than half the 1879 acreage, as the population had more than doubled in the 40 years between 1879 and 1919. There was a rapid conversion of grazing and pastureland into cropland. Especially in the Great Plains States, many less productive acres of cropland were added. This should be remembered when it is noted that the per-capita acreage available for crops in 1919 remained at 3.8 acres while nonforested pasture and range was 7.1 acres and forest and woodland 5.3 acres.

Shrinking per-capita acreage available for food production has been effectively counterbalanced in the United States by an expanding output per acre and per animal unit. Gains in production through advances in technology and widespread adoption of conservation practices have been large; but there are still great losses which continue to hamper the effective use of our land resources. Accelerated erosion on land used for agriculture is still a major problem that needs continuing attention. Floods damage some of the best farm land in river valleys. Underde-

veloped land often needs protection against flood hazards before it can be used for agriculture. Forest fires are a great menace to our forest resources. The Forest Service estimates that approximately 11 million acres were burned over in 1951—more than the combined area of the States of Connecticut, Massachusetts, and Rhode Island. These and other continuing losses to soil, water, forest, and grassland resources need to be further diminished in order to maintain adequate levels of agricultural production for our growing population.

MAJOR USES OF LAND, 1950

Total U. S. Acreage = 1,904 Million Acres



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MAJOR USES OF LAND

Major land uses of the United States may be grouped in several ways on the basis of available data. This results from alternate and dual uses in crop, pasture, and forest land categories. A further division of the total land area into land in farms and land not in farms is often desirable. Total land available for crops makes up 25.1 percent of the 1,904 million acres of land in the United States. Farm pasture, which includes open permanent and woodland pasture, accounts for 28.9 percent of all land. Farm woodland not pastured (4.5 percent) and other land in farms (2.4 percent) round out the 60.9 percent of the total land area in farms. Grazing land not in farms, which represents 21.0 percent of the total area, includes both grassland and forest land grazed. Forest land not grazed adds another 10.6 percent. Special uses, which include urban areas, rural highways and roads,

rural railroads, parks, wildlife areas, national defense, and other services, make up 4.1 percent. Miscellaneous other land, such as sand dunes, beaches, bare rock, and desert, add up to 3.4 percent of the land area.

Another break-down of uses shows 409 million acres in cropland used for crops, 700 million acres in nonwooded pasture and grazing land, 606 million acres in woodland and forest, and 189 million acres in other uses. When it is desirable to have pasture and grazing land differentiated in more detail, this can be done as follows: Cropland used for crops, 409 million acres; cropland used only for pasture, 69 million acres; open permanent farm pasture, 416 million acres; farm woodland pasture, 135 million acres; open grazing land not in farms, 215 million acres; nonfarm forest grazed, 185 million acres; forest and woodland not pastured, 286 million acres; and other uses 189 million acres.

LAND IN FARMS AND NOT IN FARMS

During the last 100 years, land in farms has increased decade by decade until in 1950 only two-fifths of the total land area, or 745 million acres, remained outside of farms. In 1850, when the frontier of settlement had begun to move out upon the prairies, only about a sixth of the United States was in farms.

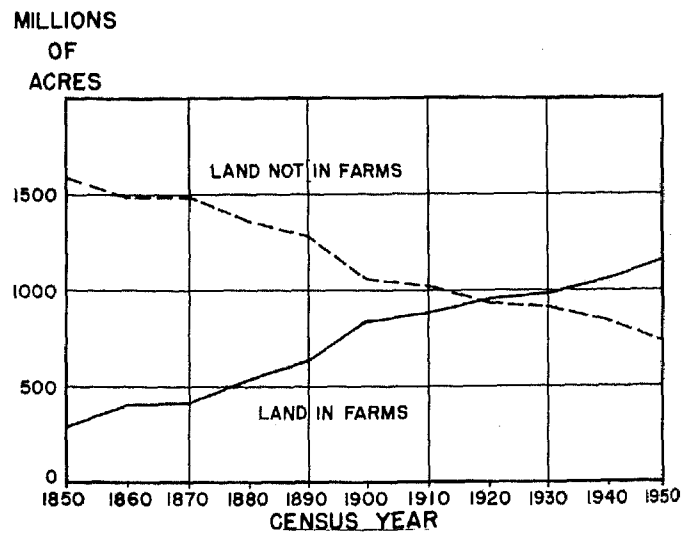
TREND IN LAND UTILIZATION, 1880-1950

Between 1940 and 1950, several important changes in land utilization occurred. Cropland harvested was 23 million acres greater than in 1939 but 9 million acres less than in 1944. The 1949 acreage was about 15 million acres lower than the peak harvested acreages of 1919 and 1929. Farm pasture had increased by 24 million acres since 1940. Forest and cut-over land in farms, which had declined to 150 million acres in 1930, continued to increase between 1940 and 1950. Part of this increase is explained by reversion of pasture and cropland to woodland but most of the pronounced increase in such areas as south central Texas is owing primarily to differences in interpretation of the meaning of woodland from one census to the next.

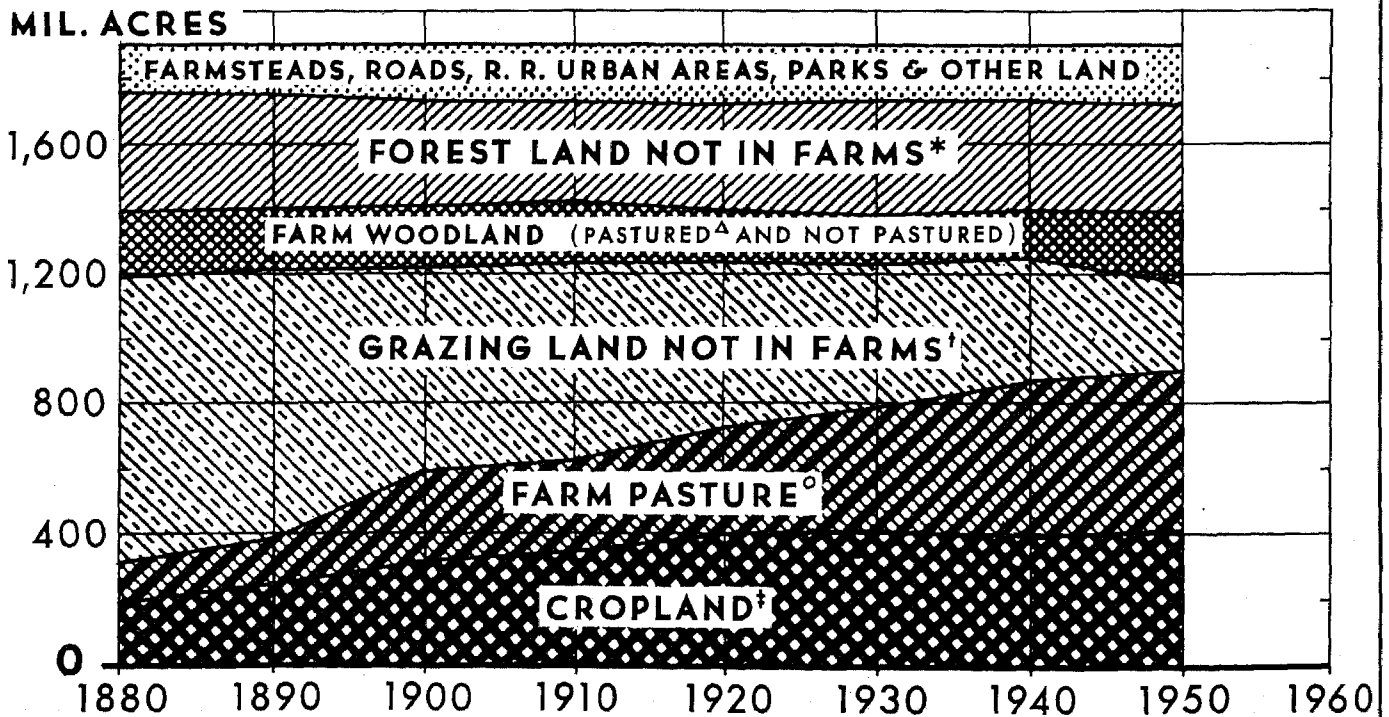
Before 1920, a decade by decade increase in farm pasture and cropland occurred as grazing land not in farms was transferred to the farm area. Since 1880, forest land not in farms and farm woodland have changed much less than has acreage used as pasture and cropland. In 1880, the acreages in different uses were as follows: Cropland, 188 million acres; farm pasture, 122 million acres; grazing land not in farms, 883 million acres; farm woodland,

190 million acres; forest land not in farms, 368 million acres; and farmsteads, roads, and similar uses, approximately 154 million acres.

ACREAGE OF LAND IN FARMS AND NOT IN FARMS, FOR THE UNITED STATES: 1850-1950



THE TREND IN LAND UTILIZATION

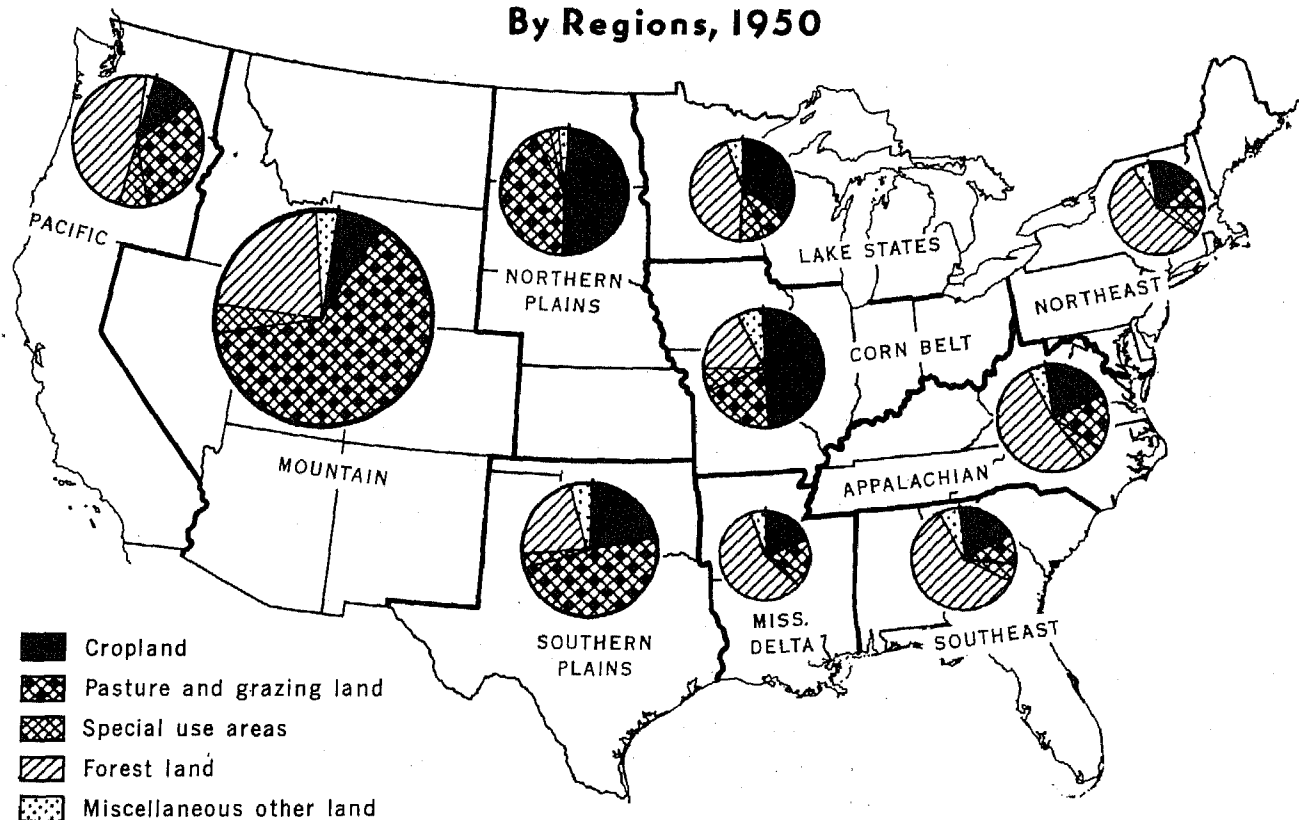


CONTINENTAL UNITED STATES EXCLUSIVE OF ALASKA.
 *CHIEFLY COMMERCIAL TIMBER LAND, APPROXIMATELY 120 MILLION ACRES WERE ESTIMATED GRAZED DURING THE YEARS 1949-51.
 † 135 MILLION ACRES WERE REPORTED GRAZED IN 1949.
 ‡ INCLUDES GRASSLAND, ARID WOODLAND, AND BRUSHLAND GRAZED.
 ° OPEN PASTURE IN FARMS, INCLUDING CROPLAND USED ONLY FOR PASTURE AND OTHER PLOWABLE PASTURE.
 † INCLUDES SOIL IMPROVEMENT CROPS, SUMMER FALLOW, AND LAND SEED TO CROPS FOR HARVEST THE SUCCEEDING YEAR.
 CROPLAND ACREAGES ARE FOR THE YEAR PRECEDING THE DATE OF THE CENSUS.

LAND USE BY FARM-PRODUCTION REGIONS AND STATES

MAJOR USES OF ALL LAND AS COMPARED WITH TOTAL LAND AREA

By Regions, 1950



- Cropland
- ▨ Pasture and grazing land
- ▩ Special use areas
- ▧ Forest land
- ▤ Miscellaneous other land

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MAJOR USES OF ALL LAND BY REGIONS

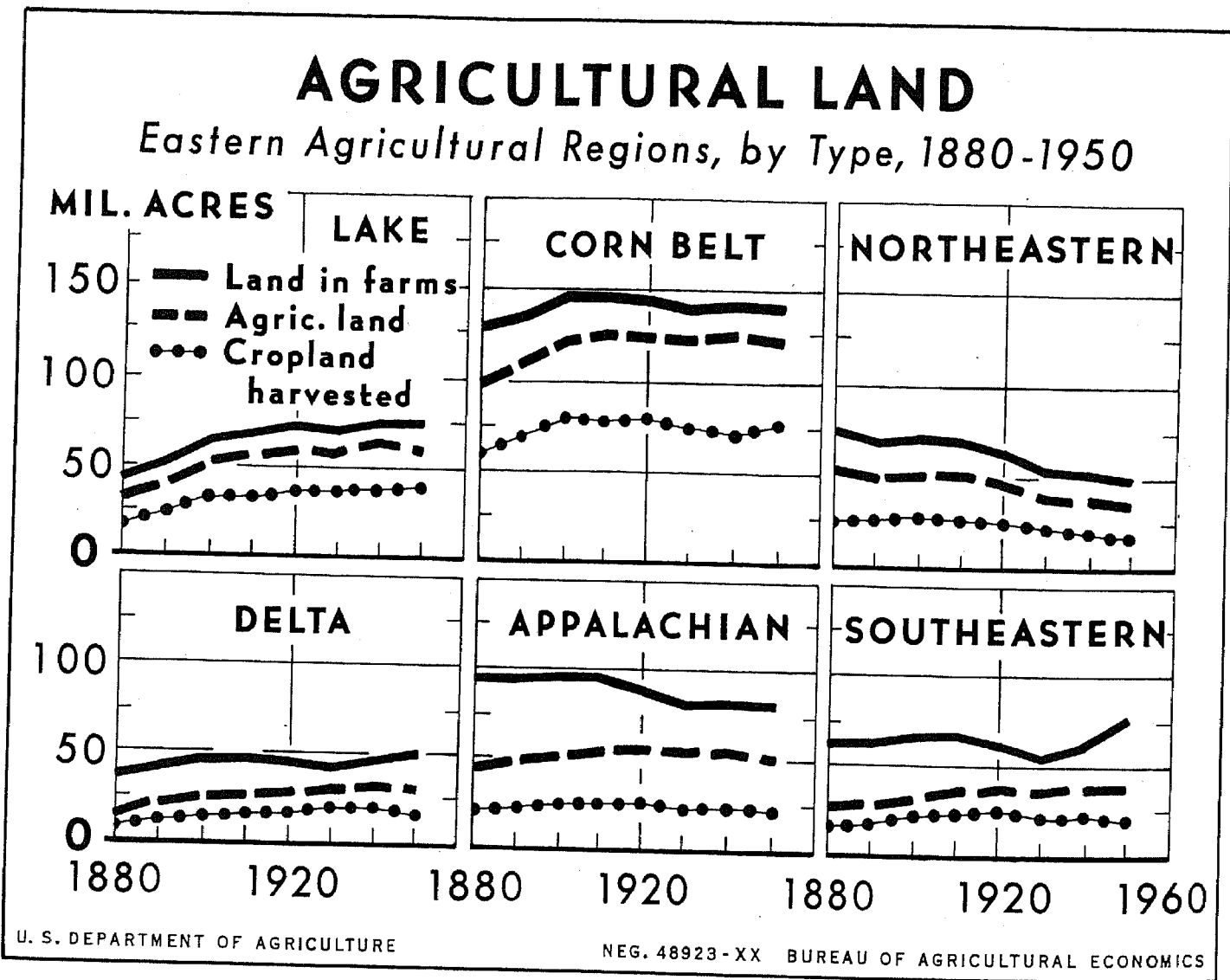
Several striking regional characteristics are shown by the map of major land uses for 1950. The high proportions of cropland in the Corn Belt and Northern Plains States, of grazing land in the Mountain and Great Plains States, and of forest land in the other regions are most obvious. In the Corn Belt and Northern Plains States, 49.0 percent of the total land area was in cropland used for crops in 1949. No other part of the country had nearly so high a proportion. The Northeast had 18.1 percent; the South, 20.4 percent; and the West, 7.6 percent. New England and the Mountain States had less than 10 percent of the total area in cropland. Level topography, good to excellent soils, adequate rainfall, and a moderately long growing season exist over much of the Corn Belt and Northern Plains States. No other area of similar size has such a favorable combination of physical conditions for the production of crops.

Grazing and pasture land is concentrated in the 17 Western States where inadequate moisture restricts crop production largely to those crops produced by irrigation and dry farming. The quality of the land used for grazing varies greatly in the West. In the 11 Western States, grazing and pasture land accounts for 55.5 percent of the land area and in the six Great Plains States, for 45.3 percent. East of the Great Plains, pastureland constitutes less than a fifth of the total land area in all farm-production divisions. In the Corn Belt, 19.0 percent of the area is devoted to pasture; but in the New England, Southeast, and Lake States,

pasture occupies less than 10.0 percent of the land area. New England has only 5.8 percent of its area in pasture.

Forest land occupies 55.9 percent of the total area in the Northeast and 44.6 percent in the Lake States. New England and the Middle Atlantic States have nearly the same acreages in forest land, but proportionally New England has 76.7 percent of its area in forest compared with 44.2 percent in the Middle Atlantic States. If the Southern Plains States are excluded, the South has more than half of its area in forests. The Southeastern States with 59.6 percent, the Mississippi Delta States with 56.8 percent, and the Appalachian States with 52.5 percent rank after New England in proportion of land devoted to forests. The Northern Plains States have only 2.4 percent of the land area in forests. In the Southern Plains, the inclusion of semiarid woodland largely explains why 22.0 percent of that region is forest land. In the West, the Pacific States have 47.4 percent of the total area in forest or woodland, but the Mountain States have only 21.5 percent.

Special uses include highways, roads, and railroad rights-of-way, farmsteads, urban and town areas, parks, wildlife refuges, airports, and military reservations. From 3 to 8 percent of the area of all regions except the Middle Atlantic States is accounted for by these uses. In the Middle Atlantic States, 13.0 percent of the total land area is in special uses. This is largely explained by the presence of large urban centers. Miscellaneous uses such as marshes, sand dunes, beaches, bare rock, and areas not accounted for make up the remainder of the land area. These uses comprise from 2 to 8 percent of the land area of all regions.

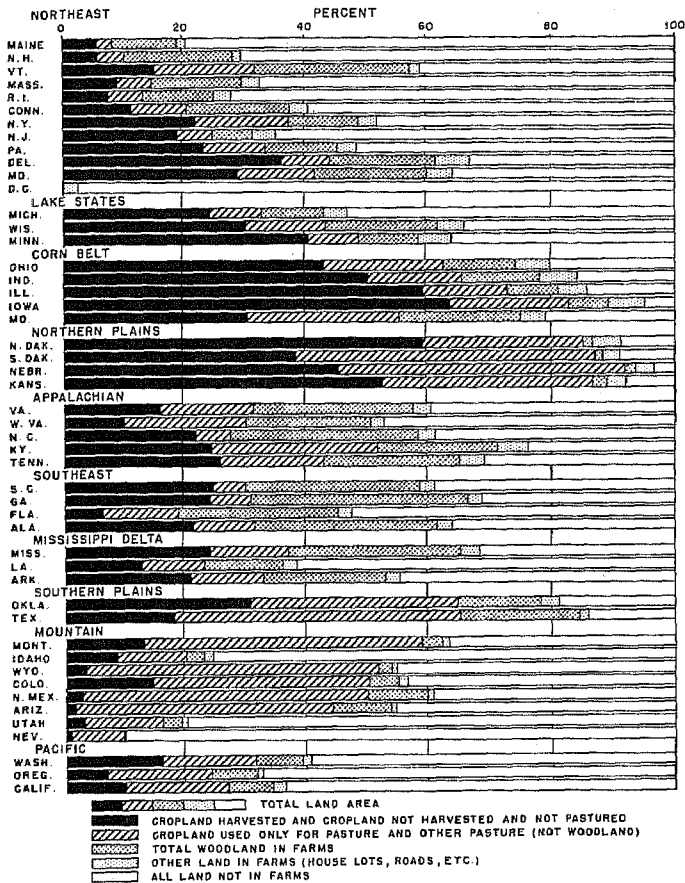


AGRICULTURAL LAND, 1880-1950

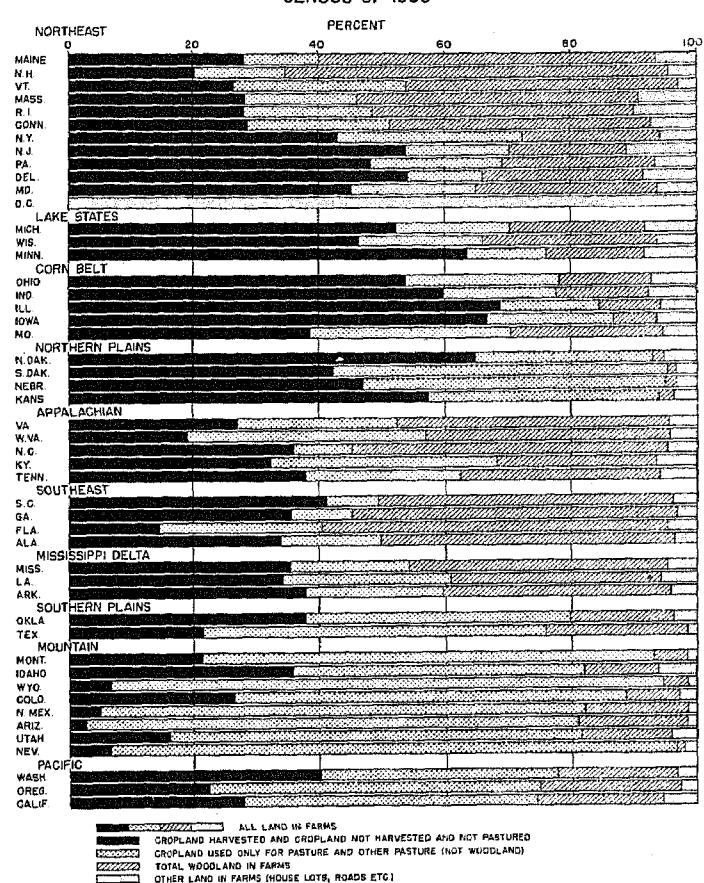
Trend charts for the agricultural regions east of the Great Plains indicate significant similarities and differences among the six regions. In the Northeastern States, agricultural land has almost continuously declined since 1880. In these States, land in farms declined by 25.9 million acres between 1880 and 1950, with an accompanying decline in the agricultural land (which excludes farm woodland) and cropland harvested. In the Corn Belt and Appalachian States, peak acreages of land in farms were reached before 1920. Acreages of agricultural land and cropland

harvested generally increased before 1920 in these two regions. During the last 30 years, acreage has fluctuated in the Corn Belt States and has shown a downward trend in the Appalachian States. In the Lake, Delta, and Southeastern States there was a decade by decade increase of land in farms until 1910 or 1920, followed by a decline in acreage until 1930. During the last two decades, land in farms has increased appreciably in these three regions. The peak acreage for the 70-year period was reported in 1940 or 1950. In the Lake, Delta, and Southeastern States, relatively marked increases in agricultural land and cropland harvested before World War I were followed by much lesser increases or slight decreases.

PERCENT DISTRIBUTION OF TOTAL LAND AREA BY MAJOR USES: CENSUS OF 1950



PERCENT DISTRIBUTION OF LAND IN FARMS BY MAJOR USES: CENSUS OF 1950



PERCENT DISTRIBUTION OF TOTAL LAND AND OF LAND IN FARMS BY MAJOR USES

A break-down of major land uses by States often cuts across type-of-farming areas and regions delimited largely upon the basis of physical conditions. However, for numerous purposes it is useful to make State by State comparisons. Cropland used for crops accounts for more than half the total land area in only Iowa, Illinois, North Dakota, Kansas, and Indiana. In 1949, Iowa, the leading State, had 63.9 percent of its total land area devoted to crops. The average for the United States was 21.5 percent. Seven States in the West (Nevada, Arizona, New Mexico, Utah, Wyoming, Idaho, and Oregon), four in the Northeast (Maine, New Hampshire, Rhode Island, and Massachusetts), and one in the South (Florida), had less than one-tenth of the total area in cropland used for crops. The five lowest ranking States were in the West, with Nevada and Arizona having the smallest acreages in cropland. Maine, New Hampshire, and Florida were the lowest ranking States in the East.

Pasture and grazing land in farms (excluding woodland pasture but including cropland used for pasture) made up more than 40 percent of the total land area in Wyoming, South Dakota, New Mexico, Texas, Nebraska, Montana, and Arizona. All of these States, except Arizona and New Mexico, are partially in the Great Plains. Thirteen States had less than 10 percent of their areas in pasture or grazing land. Nine States are located in the Northeast and Lake State regions.

Woodland in farms constitutes the greatest proportion of total area in several Southern States. Georgia, North Carolina, Alabama, South Carolina, Mississippi, Virginia, and Florida have more than 25 percent of the total area in this use. Vermont was the only other State having more than 25 percent of its area in farm woodland. All of the Western, the Northern Plains States, Iowa, New Jersey, Illinois, and Minnesota had less than 10 percent of their areas in farm woodland.

If these major uses are expressed as a percentage of land in farms, it is possible to note the importance of cropland, pastureland and woodland relative to the land actually in farms. In Minnesota, Delaware, Ohio, New Jersey, and Michigan, where much land is outside of farms, the cropland used for crops constitutes more than one-half the farm land but not nearly so large a proportion of the total land area. In Illinois, Iowa, North Dakota, Indiana, and Kansas more than one-half of the farm land was used for crops. In the Mountain States, grazing or pasture land is the dominant use of land in farms. It accounts for more than three-fifths of the farm or ranch area in all of these States except Idaho. The proportion of farm woodland is especially marked in New England and in the States of the South Atlantic and Gulf Coastal Plains from Virginia to Mississippi. Only in these States does woodland in farms constitute more than two-fifths of the farm area. Other uses of land in farms, including farmsteads, roads, and wasteland, occupy a larger proportion of the farm area in the Northeastern, Lake, and Corn Belt States than in most other States.

GRAPHIC SUMMARY

FACTORS AFFECTING LAND USE

Physical conditions.—Physical features and utilization of land in the United States were the subject of a previous graphic summary prepared in 1937. These selected maps on physical conditions are for convenient reference rather than for detailed analysis or reappraisal of the significance of climate, soil, topography, or vegetative cover to land use. As the map of major land-use regions is studied along with the maps of land relief, soils, length of frost-free season, annual precipitation, and native vegetation, the influence of the physical features is readily observed. The major land-use differentiations were made by arranging the dominant uses in various combinations. The names that designate the sub-regions are suggestive of the factors affecting land use. Terms such as coastal plain, desert, black prairie, piedmont, flatwoods, arid high plains, and delta identify these major uses of land in relation to the physical features influencing their development. The basis of this regional division of the United States according to land use is better appreciated if the maps of various uses are compared and studied in conjunction with the generalized maps of physical features.

Within the first 50 years of this century, many adjustments and changes have altered the relationships of physical conditions to land use. Several technological developments, the advent of conservation-mindedness, and changes in land-use practices influence greatly the production of agricultural and forest commodities.

Near the end of the last century, the era of reckless exploitation of resources began to merge slowly into a period of resource conservation. In 1909, the National Conservation Commission was organized to conduct an inventory of the Nation's resources. A White House Conference of Governors called by President Theodore Roosevelt during the previous year was largely responsible for the establishment of many State departments of conservation. These were important initial steps toward checking the exploitative use of resources. At that time, there was an aroused public interest in the rapid disappearance of the Nation's forests; therefore the greatest emphasis was placed upon conservation of forests.

Forest reserves to be withdrawn from the public domain were authorized by the Forest Reserve Act passed in 1891. This was an important step in launching a national forest program in the United States. At the latest available survey in 1945, there were 123 million acres of forest land in the national forests, of which approximately 100 million acres had been withdrawn from the public domain. (While the total national forest acreage in continental United States is approximately 160 million acres, 25 to 27 million acres comprise scattered areas of grass and small desert shrubs and 8 to 10 million acres consist of barren and miscellaneous other areas.) Other public forests owned by Federal, State, and local governments totaled 92 million acres in 1945. These publicly-owned forests now constitute more than a third of all forested land and about a fourth of the commercial forest land. This public acquisition of forest land is an attempt to insure careful use of this major resource. However, public ownership is only one aspect of the program to attain wise use of forest land. Protection against fire, improved control of insects and disease, and similar measures are needed for both public and private forests. There is much yet to be done, but the progress of the last 50 years toward more efficient use of the 606 million acres of forest land is encouraging.

World War I had called attention to other activities and the interest in conservation lagged badly until the early 1930's when the need for action was again recognized. Soil conservation received the greatest attention but other resources were not neglected as this second conservation movement got under way.

Realization of the need for soil conservation was long overdue, for several million acres of land had been ruined or damaged severely for immediate crop use. On several million more acres,

soils had deteriorated rapidly during the predominantly exploitative period of land use from which the Nation is now emerging. The Soil Conservation Service, through cooperation with soil-conservation districts, has initiated a program aimed at making more effective use of soil, water, and vegetative resources. Permanent improvements that will check the accelerated loss of soil and water and the deterioration of grasslands and forests are being introduced on a large number of farms each year. The progress has been good, but only about a fourth of the job has been completed. By the end of 1951, nearly a million farms covering 286 million acres were cooperating with the Soil Conservation Service through the medium of the soil-conservation districts. This means that almost a fifth of the farms were initiating or carrying out soil-conserving practices of one kind or another on a fourth of the land in farms. Various conservation practices applied to the land already are facilitating more efficient and conservative use of several million acres. Almost half of the Nation's farms in 1951 were receiving some financial assistance for certain conservation practices from the agricultural conservation program administered by the Production and Marketing Administration. These farms represented more than half the farm land area. These latter figures probably include most of the farms and farm land operated in cooperation with the two conservation programs here mentioned. Accordingly, it is estimated that about half the farms and farm acres are being used to some extent under conservation systems of farming. These several conservation improvements and others are contributing toward an increased farm output on a more permanent basis than has existed before. Yet there is still much land from which more is taken from the soil than is returned. However, basic changes in attitudes toward conserving resources are evolving and these are leading to better adjustments of land use to physical conditions.

Population changes and distribution.—The population increase of 19 million in the United States from 1940 to 1950 was a greater numerical increase than for any previous decade. This large increase of population has upset prewar predictions as to the future need for farm land. Although the high birth rates associated with postwar prosperity, a backlog of marriages, and a post-World War I peak in births have declined from the peak of 1947, they are still much higher than the low rates of the 1930's. Despite this accelerated addition to the total population between 1940 and 1950, the diet has improved. An increased per-capita consumption has been accompanied by an improved diet with more livestock products, vegetables, and fruits consumed. Substitution of tractors for horses and mules, increased use of fertilizers, hybrid corn, and conservation practices are largely responsible for the increased output necessary to feed the additional population on an improved diet. Looking ahead to 1975, the Bureau of the Census anticipates a population of about 193 million. This estimate is based on the assumptions that the fertility rate will decline almost to pre-World War II levels, that the death rate will decline slightly, and that net immigration will be constant at about 200,000 per year.

This or even a smaller population increase will necessitate a sizable increase in domestic agricultural production, although alternatives exist. A reduction in agricultural exports would mean an increase in farm commodities available for domestic consumption. An estimated average of only 22 million acres of harvested crops was used for producing exports over the 5-year period 1935-39, while for 1945-49 the average acreage so used was about 44 million acres. Increased imports of agricultural commodities to be paid for by increased exports of nonagricultural goods is another possibility. At present, the leading agricultural imports, with the exception of wool, are mainly only such products as coffee, natural rubber, and cane sugar, which

cannot be grown favorably in the continental United States to an extent necessary to supply the demand. Domestic agricultural production may be increased through the use of additional acres and by increased production per acre. Several million acres of undeveloped land can be converted into more intensive use as cropland and pasture largely through irrigation, drainage, and clearing. At the same time, it will be necessary, in the interest of attaining more permanent agricultural production, to retire an appreciable acreage of misused land to better-adjusted uses such as permanent pasture and woodland. Therefore, it is probable that the greater part of the additional food and fiber needed will be obtained through more production on the land now being used for crops and pasture rather than through an appreciable increase in cropland. Future increases in farm output depend upon further technological advances and more conservation farming. Not only are future advances needed but these improvements must be used by more farmers.

Some major shifts in the distribution of population occurred in the last decade. This redistribution of population between 1940 and 1950 must be taken into account in planning future land requirements. Some regional adjustments in land use will need to accompany this shifting of population in order to attain more efficient commodity distribution. The greatest numerical increase in population between 1940 and 1950 occurred in California, which added 3,678,836 persons. Other States increasing by more than 1,000,000 between 1940 and 1950 were New York (1,351,050), Texas (1,296,370), Michigan (1,115,660), and Ohio (1,039,015). These 5 States had 44.6 percent of the total United States population increase during the 1940's. The big proportional increases are heavily concentrated in the West, where 7 of the 9 States having more than a 25 percent increase are located. These States are California, Arizona, Nevada, Oregon, Washington, New Mexico, and Utah. Elsewhere, only Florida and Maryland had similar large proportional increases. New industrial activity, presence of installations of the Defense Department, and recreational and resort appeal are among the factors that led to marked increases of population in these States. Several States with few of these attractions experienced net decreases or only small increases. Oklahoma, North Dakota, Arkansas, and Mississippi actually lost population; and 16 States, including the four northernmost New England States and six of the West North Central States, had gains of less than 10 percent.

The farm population declined from 30.5 million to 23.3 million between 1940 and 1950. The 1950 figures exclude families living on farms who have no connection with agriculture. Opportunities for off-farm employment and service in the Armed Forces were largely responsible for this decrease between 1940 and 1950. Competition for labor has encouraged rapid farm mechanization and consolidation.

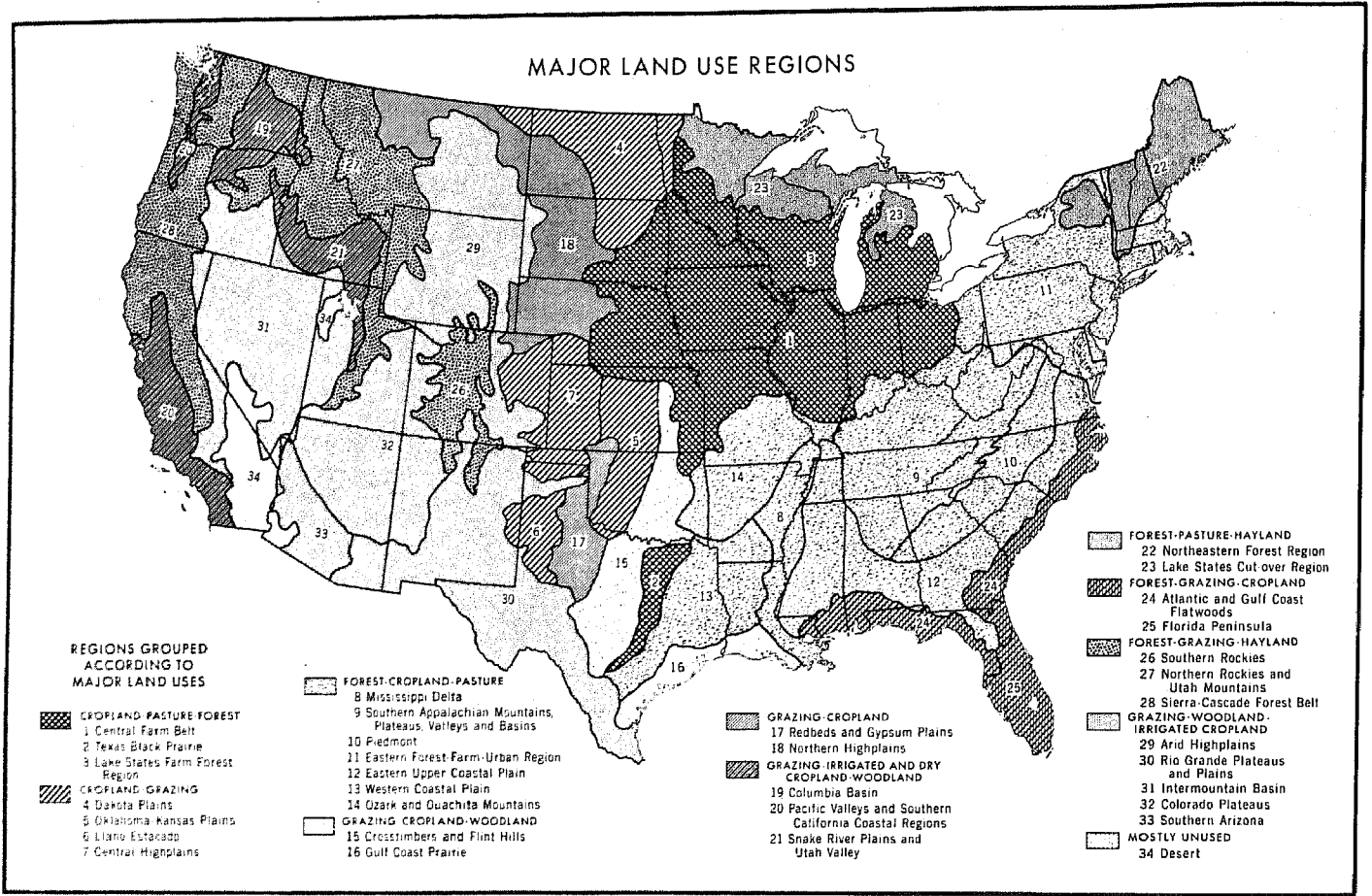
This decrease in farm population was accompanied by an increase in both the rural nonfarm and urban populations. In 1950, according to the 1950 definition, the urban population constituted 64 percent of the total population, rural nonfarm accounted for 20.5 percent, and the farm population made up only 15.5 percent. The suburbs of urban areas and open-countryside areas adjacent to large cities have generally had the greatest increases. Good roads, improved automobiles, rural electrification, the 5-day work week, and urban perimeter locations of new factories now make it possible for urban employees to enjoy the amenities of rural life without many inconveniences.

Agricultural technology and other forces.—The large-scale substitution of capital for land and labor has been of outstanding importance in offsetting a shrinking per-capita acreage of land available for production of food and fiber in the United States. Several technological advances have led to greatly increased production. This is emphasized by the nearly stationary acreage of cropland since 1920 compared with a greatly expanded farm output during the same period. Close integration of mineral and soil resources has played a major role in maintaining adequate agricultural production for the increasing population and improving the level of living. The use of petroleum has released for other uses large acreages of feed grains and forage formerly necessary for feed for farm work power. Since World War I, this substitution has freed nearly 70 million acres for production of food for human consumption.

Moreover, the use of tractor power has made it possible to increase yields through more timely performance of farm operations. This improved timeliness of operation is especially beneficial in years when adverse weather conditions delay planting, tilling, and harvesting of crops at the proper time. Mineral fertilizers are used in greatly expanded quantities. More than four times as much fertilizer and about seven times as much lime were applied in 1950 as in 1920. Part of this increased use of fertilizer has been necessary to offset the reduced applications of animal manure as horses and mules declined in number. Improvement in the efficiency of farm crops and animals has also been highly significant. The greatest single crop improvement has been the widespread use of hybrid corn. Yields per acre have been increased about a fifth over open-pollinated varieties. As corn occupied approximately a fourth of the cropland, or an average of 85.7 million acres, from 1946 to 1950, this increased yield per acre is equivalent to adding about 17 million acres of cropland. Hybrid corn is now used on practically all of the Corn Belt acreage and on about three-fourths of the remaining acreage. More effective control of disease and insects also means higher productivity per acre or per animal. Shifts from less productive to more productive crops have been made. Especially has this been true in the substitution of more legume hay for other hay crops. Experiments in animal breeding and improved feeding practices are expected to enable farmers to obtain more efficient conversion of this and other feed into animal products.

During the next decade, further advances along these lines may be expected. There will be a further substitution of mechanical power for animal power. However, this cannot be expected to release too many additional acres for production of crops for human consumption, as the horse and mule population in 1950 was only 7,603,910. Much of this future adoption of mechanical power will come in the South where the greater part of the remaining horse and mule population is located. Accompanying the spread of tractor power will be the adoption of improved machinery for special purposes. Mechanical equipment used for haymaking is likely to become much more widely used than at present. It is almost certain that cotton pickers and strippers will be rapidly introduced in our major cotton-growing areas. Additional use of corn pickers and vegetable harvesters can also be expected.

Although recent advances in agricultural technology have accounted for great increases in farm output, reliance upon extension of these advances will not be adequate to maintain food production for the prospective increases in population. An active and comprehensive program of research will be vital to the promotion of further expansion of agricultural production.



U.S. DEPARTMENT OF AGRICULTURE

NEG. 46926

BUREAU OF AGRICULTURAL ECONOMICS

MAJOR LAND-USE REGIONS

This map divides the United States into major regions of land use according to the combinations and relative importance of cropland, pasture and grazing land, and woodland and forest. On this basis, eastern United States has five regions, two of which are conspicuously more extensive than the other three. In the cropland-pasture-forest areas of the Middle West and the Texas Black Prairie, cropland occupies from one-half to three-fourths of the land area. In the greater part of eastern United States, the forest-cropland-pasture region has the leading proportion of its area in forests with only about a third of the area in crops.

However, there are islands and ribbons of concentrated cropland and pasture where topography and soils are more favorable. The northern Piedmont, Mississippi Delta, Lexington Plain, southern shores of Lake Ontario, and several other smaller areas have more land in crops and pasture than in forests. The forest-pasture-hay land combination of the Northeastern forest and the Lake States cut-over regions are nearly coextensive with the relatively infertile podzol soils. Along the South Atlantic and Gulf coasts and in most of Florida, woodland is often grazed. In subregions 22, 23, 24, and 25, cropland occupies only about one-tenth of the land area. In the grazing-cropland-woodland combination of the Gulf Coast Prairies, Cross-timbers, and Flint Hills areas, grazing is the leading land use; but about one-third to two-fifths of the land in these areas is cropland.

Lying in a north-south transitional belt between these land-use regions of the humid East and those of the mostly semiarid and arid West are areas in which there is a cropland-grazing or grazing-cropland combination of uses, depending upon the proportion of the land area in cropland. The western part of this transitional belt is subject to large fluctuations in the proportion of land used for crops and grazing because of climatic and market variations. In the West, grazing and forest land uses occupy most of the area, but irrigated and dry cropland areas in widely

varying combinations are of great importance from a production standpoint.

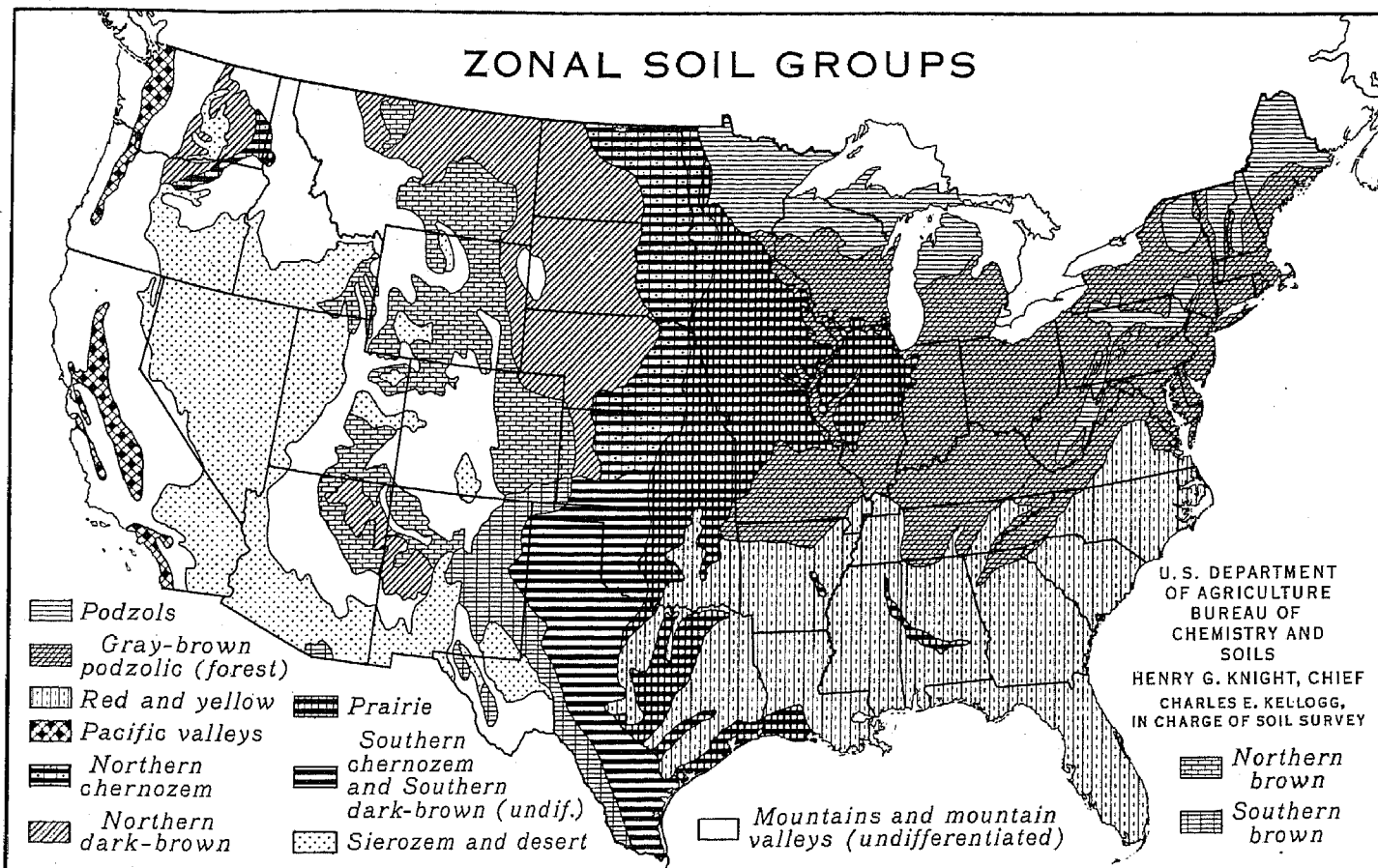
This generalized map of land use offers a useful tool in the study of other maps and graphs dealing with more specific aspects of land use elsewhere in this summary.

MAJOR SOILS REGIONS

A map of zonal soil groups can show only a generalized distribution of the highly diverse soil features of the United States. Comparison of soil, vegetation, and climatic maps reveals many similarities which emphasize the influence of climate and vegetation, along with parent material and topographic features, upon soil formation. The significance of soils to the distribution of major land uses is appreciated by comparison of the zonal soil map with the map of major land-use regions.

NATIVE VEGETATION

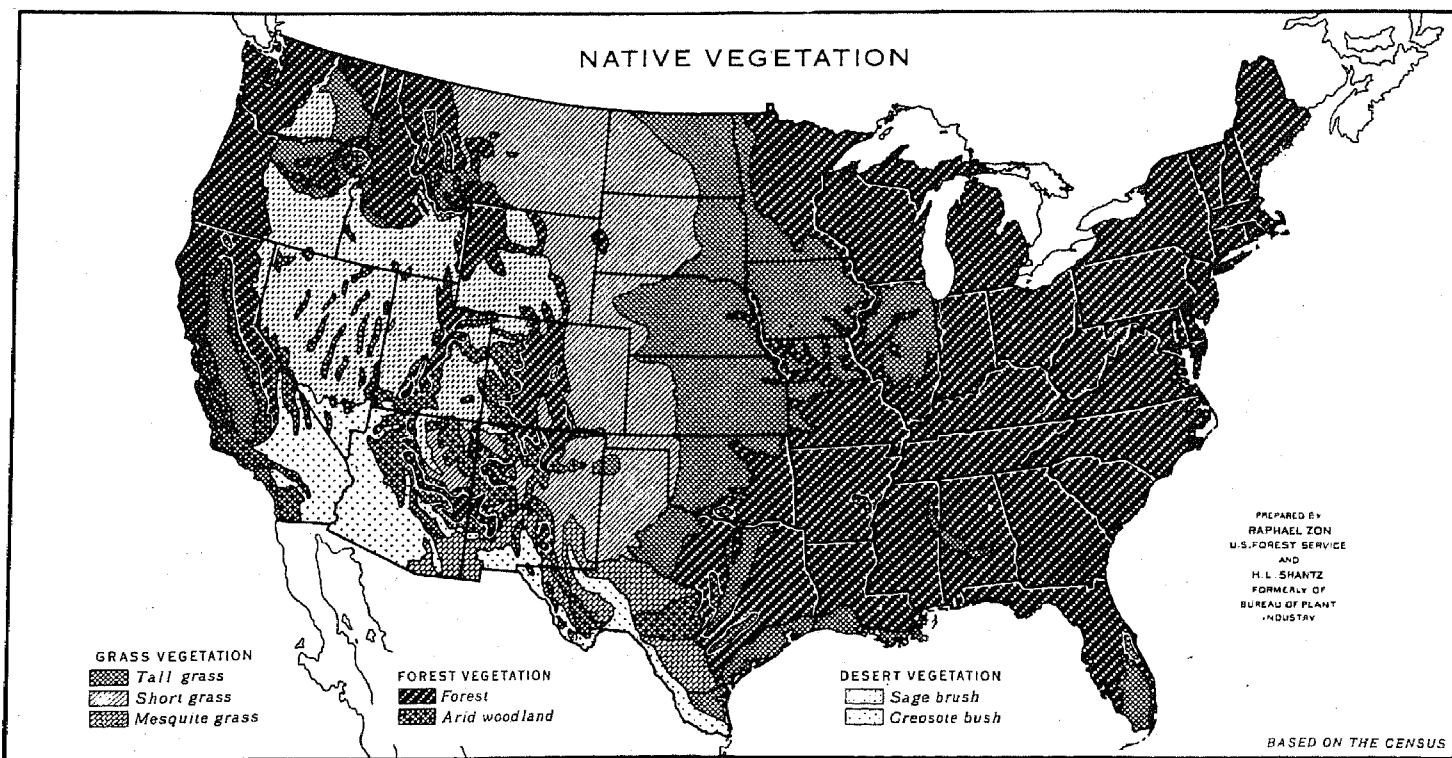
There are three major categories of native vegetation in the United States—forest, grassland, and desert. Nearly half of the total area of 1,904 million acres was originally forest and arid woodland. Native grasslands occupied slightly less than two-fifths of the total area, and desert shrub largely accounted for the remaining area. Originally the forests of eastern United States made a nearly continuous cover except for relatively small areas of grass in Texas, Florida, Louisiana, Alabama, and Mississippi. In the West, forests are associated with mountains, since there the precipitation is generally much greater, especially on the windward slopes. The greatest continuous expanse of grassland meets the Rocky Mountain forests on the west and on the east penetrates in wedge-like fashion into the eastern forested area. Desert vegetation is most widespread in the intermountain area between the Rocky and Cascade-Sierra Nevada mountains and in the southwestern part of Arizona and the southeastern part of California.



U. S. DEPARTMENT OF AGRICULTURE

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BUREAU OF AGRICULTURAL ECONOMICS



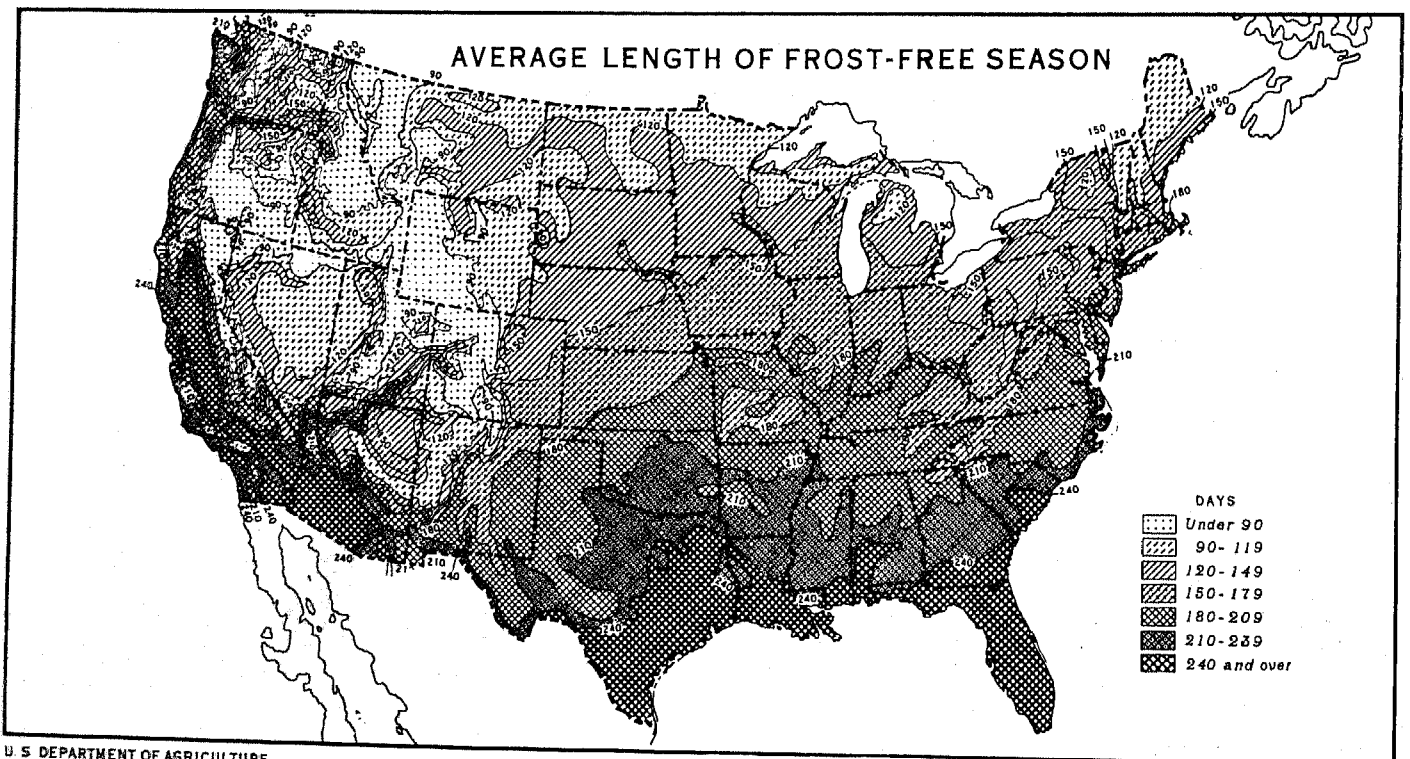
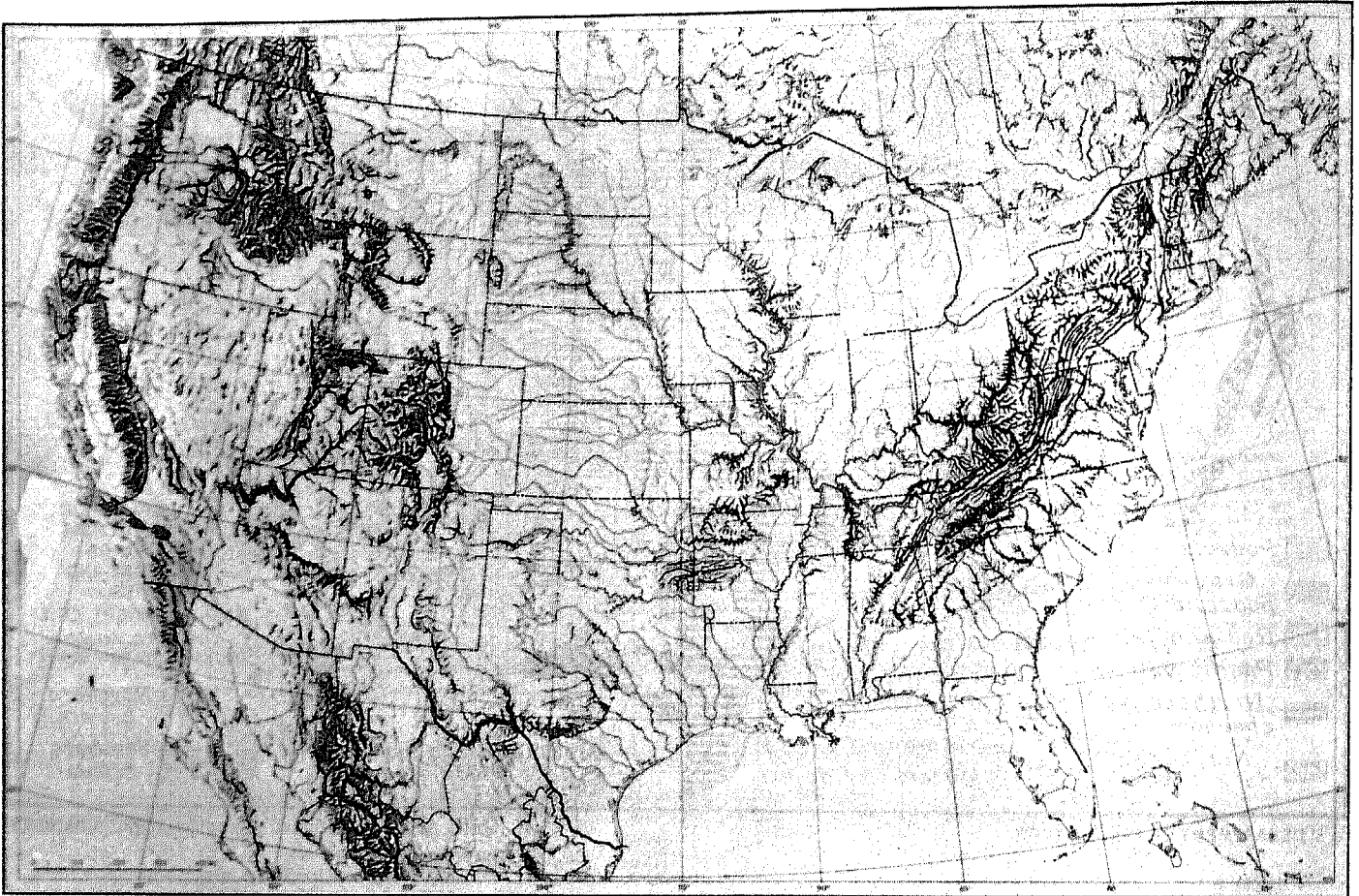
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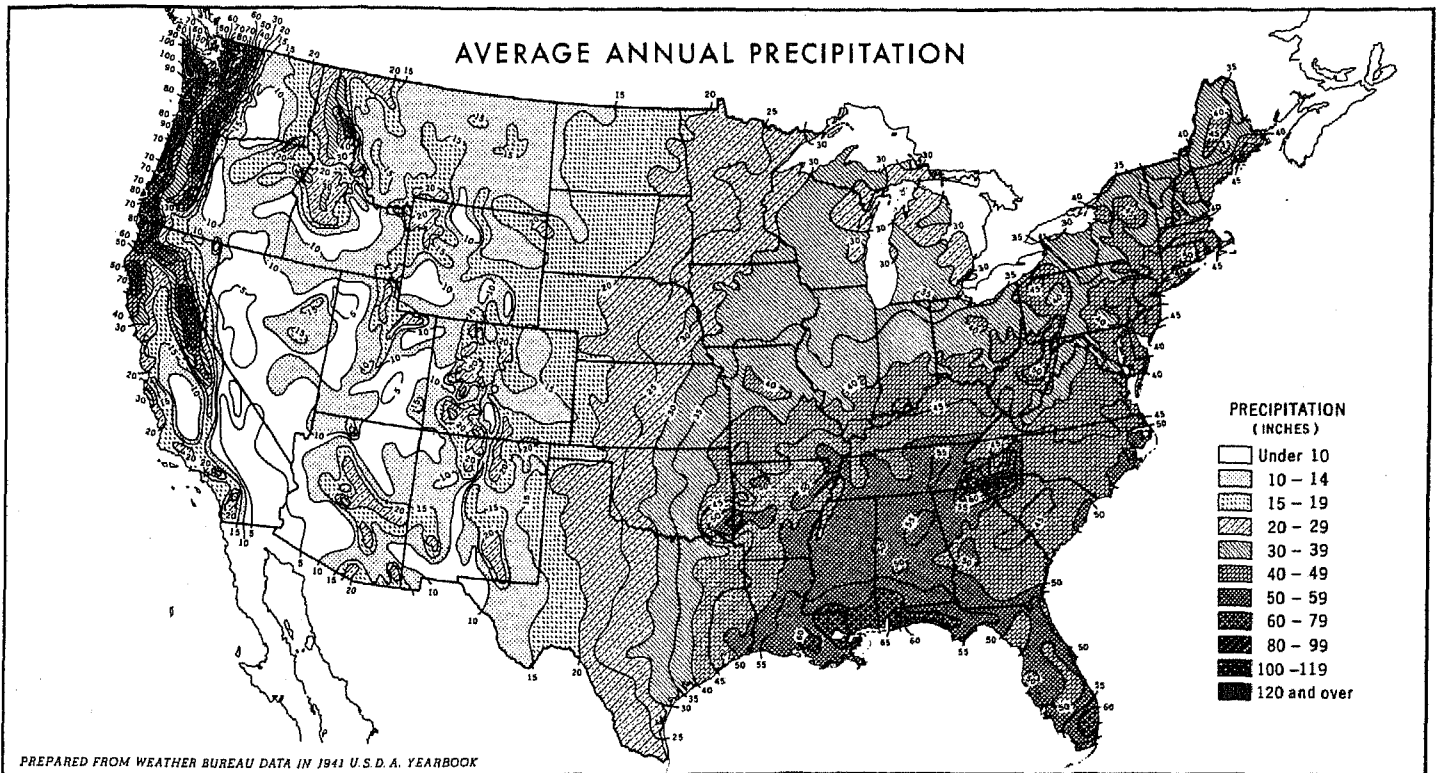
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BUREAU OF AGRICULTURAL ECONOMICS

GRAPHIC SUMMARY

LAND RELIEF OF THE UNITED STATES





LAND RELIEF

The great variety of topographic features is strikingly outlined on the relief map of the United States. The Atlantic and Gulf coastal plains are distinctly defined as these meet the Piedmont. Ridge and valley and dissected plateau features of the Appalachians are easily discernible as having limited agricultural use. The interior highlands centered in Missouri and Arkansas also stand out clearly as rough land with restricted possibilities for modern mechanized agriculture. Stream dissection in areas of little relief such as the interior lowlands and the Great Plains may be detected. In the West, different mountain groups are sharply delineated. The Great Basin centering on Nevada and Utah, the Colorado and Columbia plateaus, the Great Valley of California, and other less extensive features are shown.

AVERAGE LENGTH OF FROST-FREE SEASON

Particularly in the use of land for crops the length of the frost-free season is a major limitation upon use. Only a very small part of the United States has the year-around frost-free season needed for production of citrus and other tropical and subtropical crops. As fast rail, truck, and even air transport has shortened the time in transit for fresh vegetables and fruits, southern regions have been able to take better advantage of their much longer frost-free season to produce these perishable commodities when they cannot be produced farther north. At the other extreme,

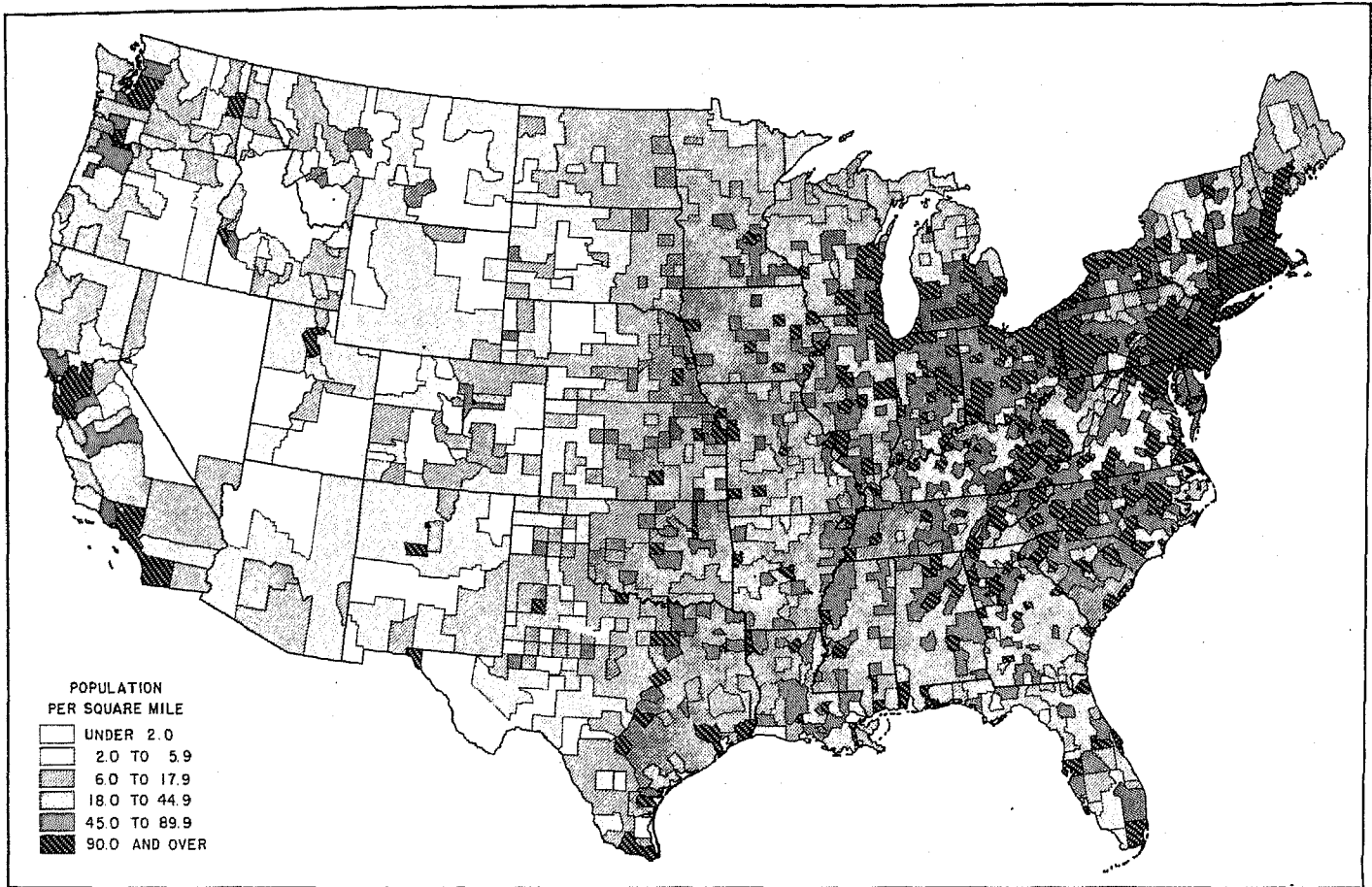
the frost-free season on the north fringe of the country and at higher elevations does not extend over even a third of the year. This makes it difficult or impossible to produce such a widely grown crop as corn, which requires a longer growing period.

AVERAGE ANNUAL PRECIPITATION

A map of average annual precipitation indicates only one of several moisture conditions relevant to land use. Average total amount of rainfall during the year has long been used to divide the United States into a humid East and a semiarid and arid West. In the East, agriculture is possible without using such techniques as irrigation and dry farming to produce crops. Obscured by this reliance upon a single figure of total average annual precipitation are such important considerations as the effectiveness of the moisture in terms of rate of evaporation, seasonal distribution, reliability or fluctuation from year to year, type of soil, and degree of slope. Several more inches of moisture are required to produce wheat in the Texas Panhandle than in more northern wheat areas where evaporation is lower. Northwestern Iowa gets only half as much rain as western Ohio yet warm-season precipitation from April to September, inclusive, represents three-fourths of the annual rainfall in Iowa compared to about half that in Ohio. Year to year fluctuations of rainfall are especially precarious in the transitional zone between East and West where the average rainfall is barely enough to permit agriculture without irrigation. Contrasts in soil type and degree of slope also create diversity in the effectiveness of precipitation.

GRAPHIC SUMMARY

POPULATION PER SQUARE MILE BY COUNTIES: 1950

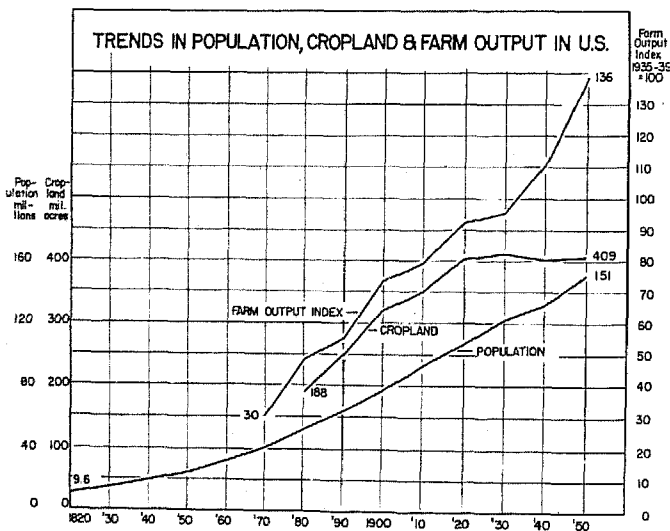


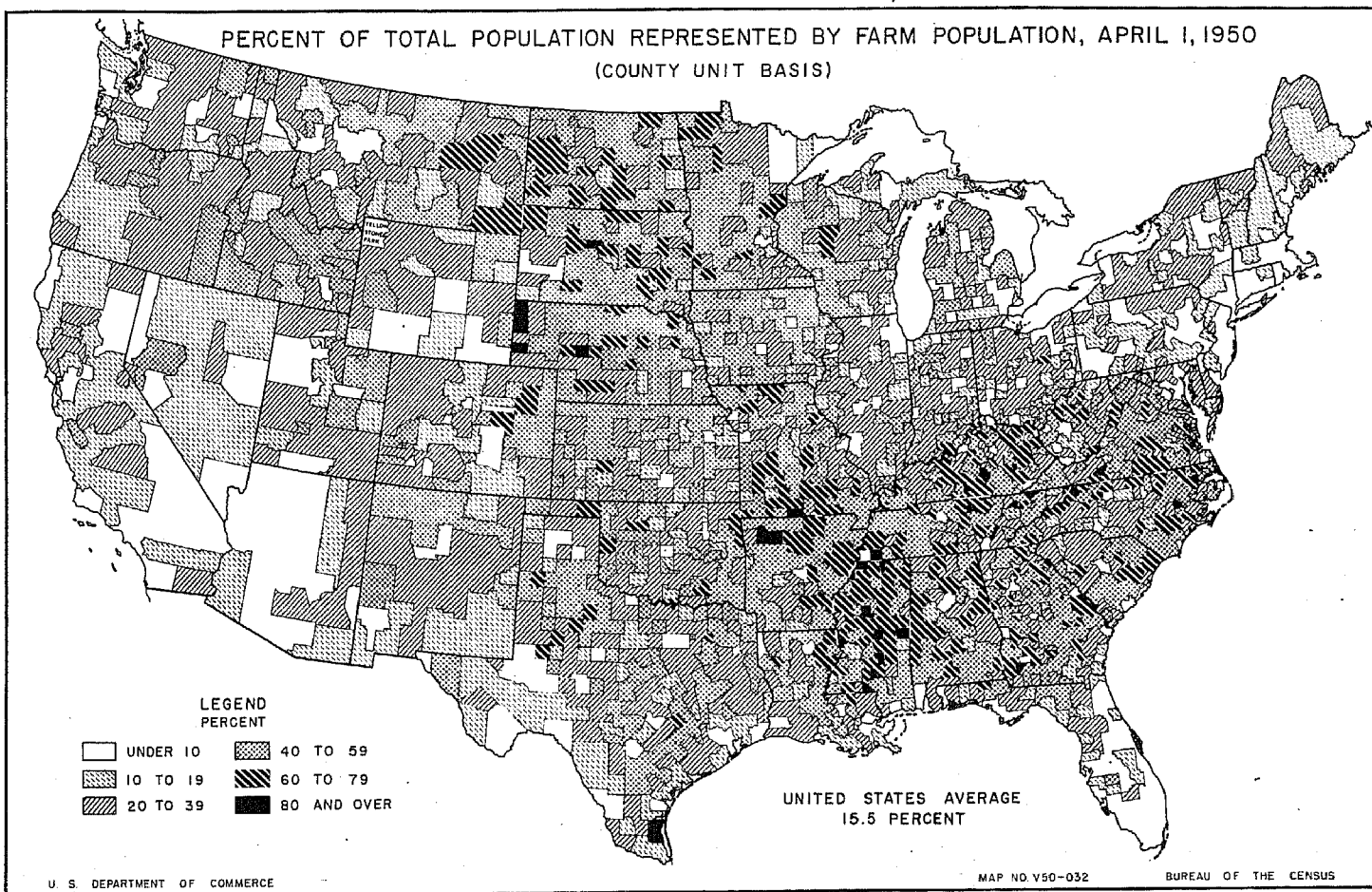
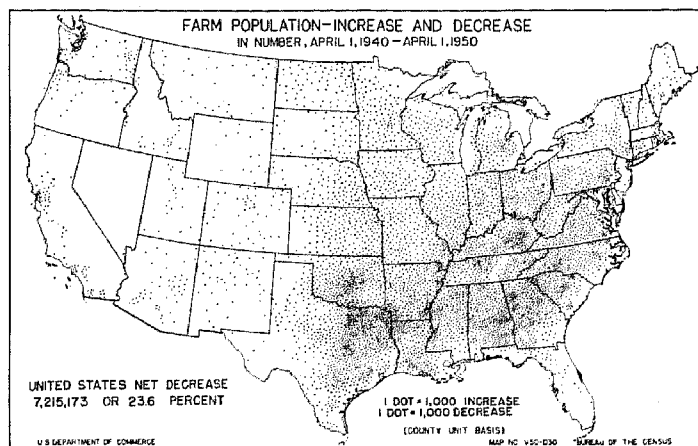
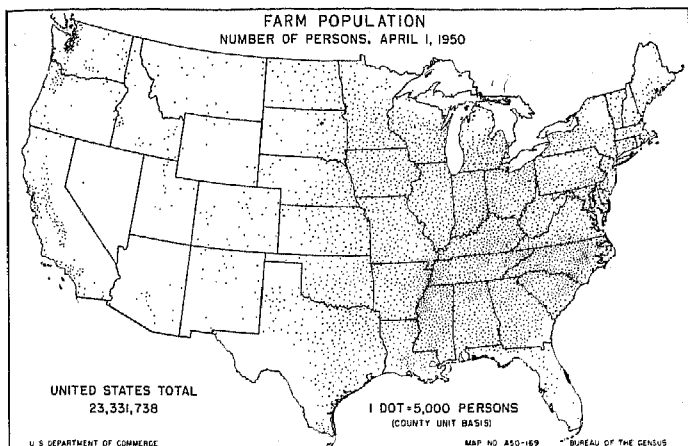
POPULATION PER SQUARE MILE BY COUNTIES: 1950

Densely populated counties are concentrated in parts of the Northeast, Lake, and Corn Belt States where industry is located. In the South, the Piedmont and Appalachians have several contiguous counties with high densities. Elsewhere, only scattered counties have densities exceeding 90 persons per square mile. Counties with low densities are restricted almost entirely to the western half of the United States. For the most part, leading agricultural areas have intermediate densities. In countries with little manufacturing, areas of dense population and leading agricultural regions more nearly coincide than in the United States. Good transportation facilities, political stability, large area, climatic contrast, and high per-capita income are among the prevailing conditions in the United States which make it possible for agricultural and nonagricultural goods to be exchanged freely among regions.

TRENDS IN POPULATION, CROPLAND, AND FARM OUTPUT

Until about 1920, expansion of cropland acreage largely accounted for the increase in farm output necessary to feed the growing population of the United States. Since 1920, acreage of cropland has been nearly stationary. However, the farm output continued to increase after 1920 and especially after 1940 the rise was very sharp. With this increased productivity per acre, it has been possible to feed the additional population on a substantially improved diet.





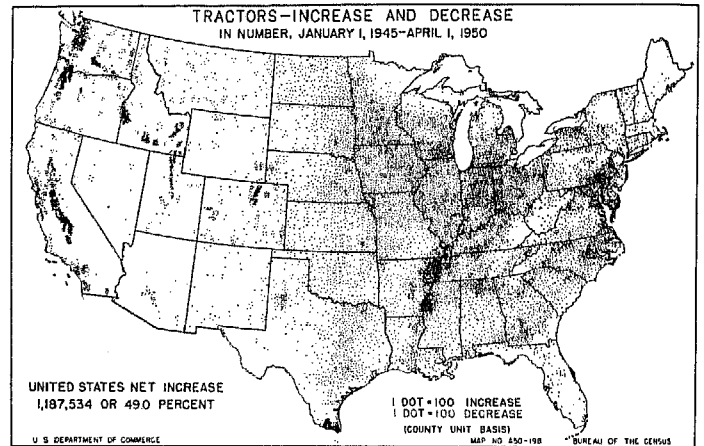
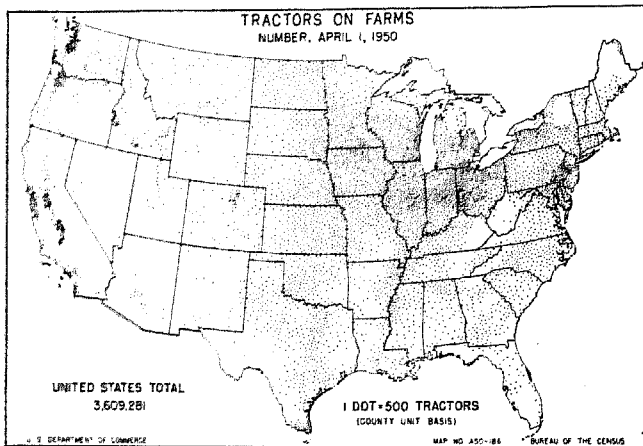
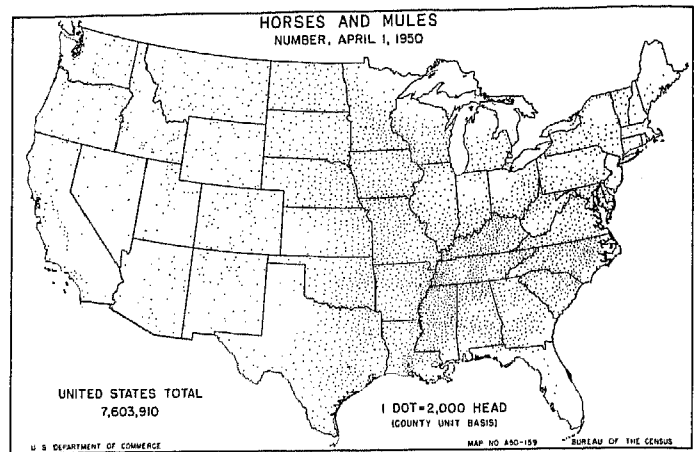
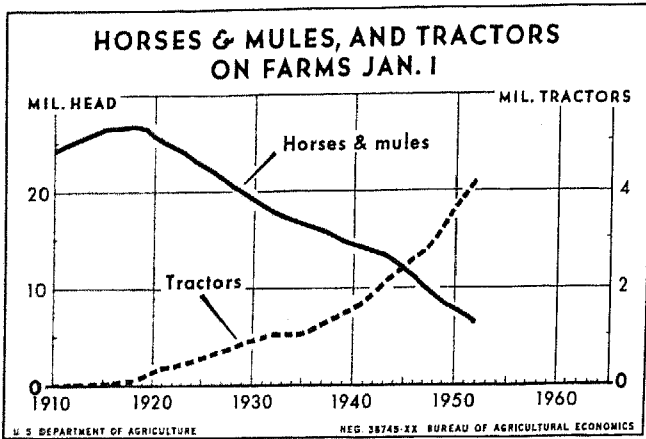
FARM POPULATION

In 1950, the Appalachian, Southeastern, and Mississippi Delta States, which make up only 17.9 percent of the land area of the United States had 42.3 percent of the Nation's farm population. The Mississippi Delta with many small tenant-operated cotton farms and the tobacco region of North Carolina and South Carolina have particularly high farm population densities. Numerous part-time and residential farms in the Southern Appalachians account for a relatively dense farm population where conditions for commercial agriculture are not too favorable. The Southern States also have farm families that are larger than the average for the United States farm population.

Farm population declined in practically all parts of the United States between 1940 and 1950. Only in a few areas located mainly in the West was there any increase. The most marked decline occurred in the South where large numbers moved from farms to

both northern and southern cities in which good opportunities for employment existed. Many areas of sharp decline in farm population coincide closely with large increases in number of tractors. Abandonment of farm land accounts for decline in some areas. In other areas, consolidation of farms is taking place and many farm operators have ceased to operate the farms on which they still reside because they are now employed off the farm. Often the cropland on these farms is rented to a neighboring farmer.

Farm population comprises only 15.5 percent of the total population of the United States. In the Pacific States, all of the North-eastern States except Vermont, and in Ohio, Michigan, Illinois, Florida, Arizona, Colorado, Nevada, and Utah, less than 15.5 percent of the total population lives on farms. Those who live on farms account for more than a third of the total population in only a few States—Mississippi, Arkansas, North Dakota, South Dakota, and North Carolina. In the other Southern and Great Plains States, except Florida and Texas, more than a fifth but less than a third of the total population live on farms.



HORSES AND MULES AND TRACTORS

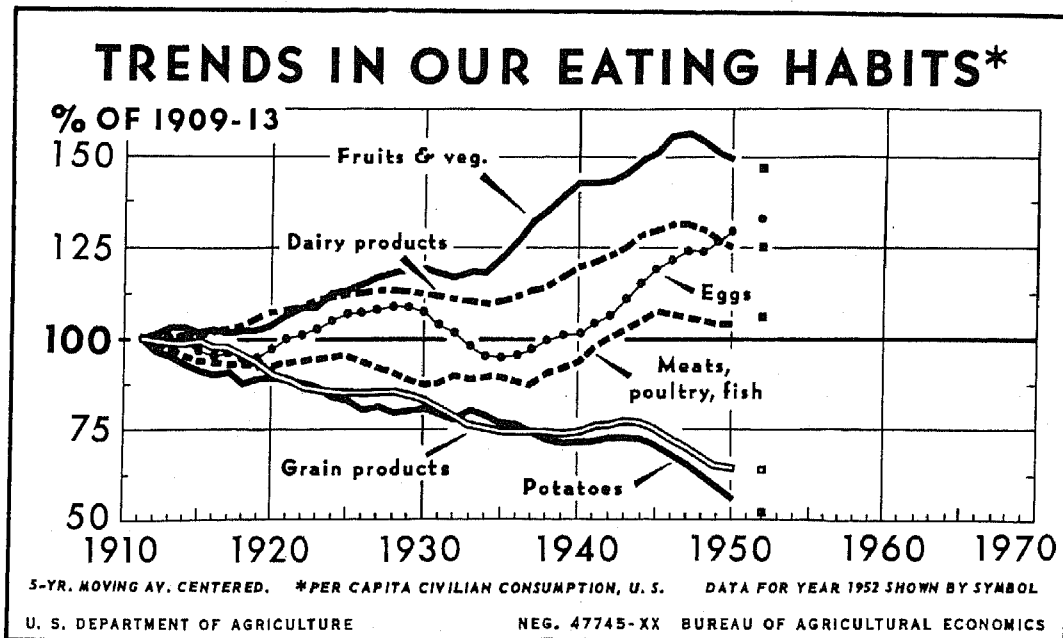
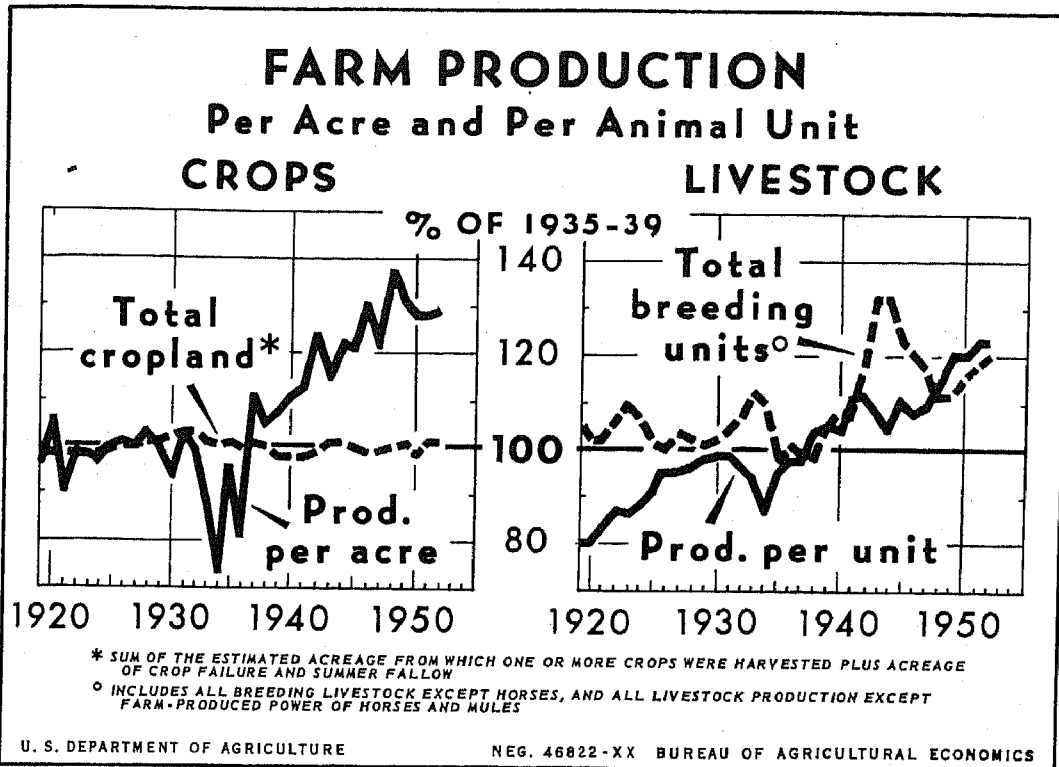
Horses and mules have declined rapidly in number since reaching a peak between 1910 and 1920. In 1950, the horse and mule population was only a third that of 1920. This reduction in use of animal power on farms has released nearly 70 million acres of cropland for the production of food and fiber for human consumption. An increase in farm tractors and the use of petroleum has accompanied this decline in horse and mule population. Approximately 1.2 million tractors were added to the number of tractors on farms between 1945 and 1950. The increase in number of tractors on farms has been particularly large since 1935. Very little increase in the number of farm tractors occurred during the first half of the 1930's. Introduction of rubber tires on tractors increased the mobility of farmers, which made it easier for them to operate larger farms composed of separated tracts of land. The manufacture of general-purpose tractors has facilitated the substitution of tractors for horses and mules on smaller farms.

Today animal power is used very little in the corn and wheat areas of the Midwest where formerly it was so important. In 1920, the most distinct concentration of horses stretched from central Ohio west to eastern Nebraska. In 1950, this region had a distinctly small number of horses and mules. The most noticeable concentration of horses and mules in 1950 occurred in the Lower Mississippi Valley. Mules are more numerous than horses in most parts of the South. In the West, horses are still used on

cattle and sheep ranches, but the "jeep" and light planes are now doing some of the work formerly done by cow ponies on ranches. Areas where crops are grown in the West have only a few remaining horses and mules. The few thousand work animals in the Northeastern States in 1950 were only a remnant of a much larger number formerly used.

Substitution of tractors for horses and mules has been almost complete in most of the leading agricultural regions of the United States. Tractors are not so commonly used on small farms with low production. These farms are most numerous in hilly areas of eastern United States. The corn, wheat, and dairy regions of the North Central States have the heaviest tractor densities. Tractors are also numerous in the irrigated areas of the West; the dairy, fruit, and vegetable areas of the Northeast; and the Texas Black Prairie and Mississippi Delta of the South.

The number of tractors in practically all parts of the United States increased between 1945 and 1950. Greatest increases occurred in the Mississippi Delta and in irrigated areas in the Pacific States. Other parts of the South also showed large increases compared to those of previous 5-year periods. Even in areas in which tractor power has been widely used for some time, a continued increase occurred. The more rapid substitution of tractor for animal power on the better agricultural land has been a factor in reducing agricultural land in areas not so well suited to mechanization.



FARM PRODUCTION PER ACRE AND PER ANIMAL UNIT

The high farm production per acre and per animal unit which has prevailed since the mid-1930's has met the needs of a war emergency and of an expanding population. Increased per-acre application and more widespread use of fertilizers, introduction of hybrid corn, other plant improvements, better control of insects, and good crop weather have been outstanding in obtaining this large increase in crop production. Greater efficiency in livestock production has come about through more and better feed per animal unit, less loss through disease, and improvement in breeding stock.

TRENDS IN OUR EATING HABITS

Several significant changes in the diet have taken place during the last 50 years. Pronounced decreases in per-capita consumption of potatoes and grain products have occurred. Rising per-capita consumption of fruits and vegetables, dairy products, eggs, meats, poultry, and fish since the mid-1930's reflect a general improvement in the diet. Greater efficiency in marketing perishables has made possible the increased per-capita consumption of those commodities. Less physical exertion in most occupations, the greater access to perishable foods, changes in consumer incomes, and better appreciation of the importance of good nutrition have made for dietary changes.

PUBLIC AND NONFARM PRIVATE LAND

The land area of the United States may be divided broadly into privately and publicly owned land. There are 1,342 million acres of private land which comprise 70.5 percent of the total land area. Most of this land is in farms, although privately owned timberland, grazing land, home sites, industrial plants, and urban areas are important nonfarm uses of land in private ownership. In 1950, publicly owned land, some of which is in farms, and Indian land, which is held in trust by the Federal Government, accounted for 562 million acres, or 29.5 percent of all land. The largest part of this public land area was 399 million acres of federally owned land, which was 20.9 percent of the total land area. The States owned 80 million acres, or 4.3 percent of the land area. Land owned by counties and municipalities totaled 16 million acres. Another 57 million acres are Indian land. The remaining 10 million acres are in highway and road rights-of-way and unaccounted for areas.

Federal land is divided among several agencies for administrative purposes according to the use for which it has been dedicated. The Bureau of Land Management of the Department of the Interior administers 179.1 million acres. The Forest Service of the Department of Agriculture is responsible for 160.6 million acres. Together these two agencies are in charge of 85 percent of the federally owned land. Other agencies in charge of most of the remaining federally owned land are the Department of Defense (21.5 million acres), National Park Service (14.0 million acres), Bureau of Reclamation (9.9 million acres), Soil Conservation Service (7.4 million acres), Fish and Wildlife Service (4.1 million acres), and the Tennessee Valley Authority (0.5 million acres). The Bureau of Indian Affairs holds in trust 57.3 million acres of Indian land.

About nine-tenths of the land in Federal ownership is the remainder of the original public domain; the other tenth has been acquired by purchase, exchange, or gift. The original public domain was a vast 1,400 million acres. This land comprised most of the original area of 34 States except for State and private claims that were recognized by the Federal Government. These States became known as the public domain States. The original 13 States and Texas had no public domain, although these States as a group had considerable acreages of unentered State land at the time they joined the Union. Most of the original public domain was disposed of through patents to homesteaders, grants to States and railroad corporations, and public sales. Much of what yet remains of this vast public domain is land unsuited for private ownership such as dry and rough lands in the West.

Nearly nine-tenths of the Federal and Indian lands are located in the 11 Western States. The largest acreages in Federal ownership are in Nevada, Arizona, and California which have approximately a third of all Federal and Indian lands. Federal and Indian lands comprise 84.0 percent of the land area in Nevada, 72.0 percent in Utah, 69.8 percent in Arizona, 65.0 percent in Idaho, 53.1 percent in Oregon, and 52.4 percent in Wyoming. In each of the five other Western States, Federal and Indian lands account for more than a third, but less than half, of the land area. In all other States except South Dakota and New Hampshire, Federal and Indian lands make up less than a tenth of the State area. In South Dakota, the 17.6 percent of State area under Federal control is largely accounted for by nearly 6 million acres of Indian land. In New Hampshire, 11.8 percent of the area is in federally owned land, most of which is administered by the Forest Service.

The names of the various Federal agencies administering public lands serve as a partial indication of the uses of land owned or held in trust by the Federal Government. The Bureau of Land Management is largely responsible for the management of most of the land not suited for farming or forestry. Most of the land managed by this agency is suitable only for carefully controlled grazing on a limited and seasonal basis. A large part of it is

administered by districts under the provisions of the Taylor Grazing Act of 1934. Some of the land outside grazing districts is leased to ranchmen for grazing. Most of the land administered by the Bureau of Land Management is located in the 11 Western States.

The Forest Service is responsible for administration of the national forests, which are also heavily concentrated in the 11 Western States. Approximately 138 of the 161 million acres are located in these States. The national forests in the West are for the most part originally forested areas that have been reserved as a part of the public domain, chiefly because they were not suited for private development. In the East, land in the national forests has been obtained mostly by acquisition. This is mainly land misused in farming. In addition to being reserves of timberland, national forests have an important function in protecting critical watersheds. In the West, these watersheds furnish vital irrigation water; and in the East, protection of watersheds is an essential aid in flood control and in the supply of industrial and domestic water for large metropolitan areas and urban centers. About 45 percent of the national forest area is grazed under permits issued to local ranchers and farmers.

Four-fifths of the Indian land is located in the 11 Western States. Arizona, New Mexico, and Montana have the largest areas. Arizona alone has 19.5 million acres, while New Mexico has 7.3 million, and Montana, 6.5 million acres. The combined acreage in these 3 States amounts to nearly three-fifths of all Indian land in the United States. All of the other 11 Western States have between one-half million and 3 million acres. Outside of the Western States, South Dakota and Oklahoma have the most extensive Indian holdings with 5.8 and 2.9 million acres, respectively. North Dakota, Minnesota, and Wisconsin are the only other non-Western States that have more than 100,000 acres of Indian land. Indian land is generally of low quality because of aridity. In 1950, less than 3 million acres were used as cropland and much of that is suitable only for dry farming. About one-half million acres were irrigated. Grazing land accounted for about 44 million acres, much of which has a very low carrying capacity. Some of the Indian land in the East and at higher elevations in the West is sufficiently forested to have some commercial forest value.

Lands under the jurisdiction of the Department of Defense totaled more than 21 million acres in 1950. Two-thirds of this land was situated in the 11 Western States, with Nevada, California, Arizona, Utah, and New Mexico each having more than a million acres. Texas is the only other State having more than a million acres of land used for military purposes in 1950. Most of the land in the West administered by the Department of Defense is arid or semiarid land that is of little use for cropland but that has appreciable value for grazing or forestry. It is well suited for the training of military personnel and for the testing of weapons and aircraft where large contiguous areas are needed. In the Eastern States, sizable acreages of land in use for crops and pasture were acquired for military use during World War II.

The national parks supervised by the National Park Service consist of 11.9 million acres which were reserved from the public domain and 2.1 million acres of acquired land. Four-fifths of this area is in the 11 Western States. California, Wyoming, Arizona, Montana, and Washington each have more than a million acres. Seven non-Western States each have more than 100,000 but less than a million acres in national parks. These States are Texas, Florida, North Carolina, Virginia, Tennessee, South Dakota, and Michigan. Land in national parks set aside because of scenic or historic values attracts millions of recreation seekers each year. However, a large part of the population is concentrated in north-

eastern United States, far removed from the major areas set aside in national parks. In the East, settlement preceded the concept of reserving public land having scenic value, although many areas of rough land might have been better used if they had never been farmed. While recreational use comes first, lands in national parks also are useful in reserving timber and in protecting watersheds.

Practically all of the land administered by the Bureau of Reclamation is in the West. Most of this land is held on a temporary basis awaiting actual or projected development of reclamation works. It is land that has been transferred from other agencies to the Bureau of Reclamation. When an irrigation project is completed, it is ultimately turned over to private ownership for agricultural use; but in the case of cancelled projects the land reverts to the former administering agency.

The Soil Conservation Service has acquired land largely under authority of the Bankhead-Jones Farm Tenant Act passed in 1937. Much of this land, which is intermixed with private holdings, is in need of conservation practices. Successful application of such practices will help to initiate more careful and appropriate use of surrounding privately owned land. About one-half of this land is located in Montana, North Dakota, and South Dakota.

Most of the land managed by the Fish and Wildlife Service is of little agricultural value. It comprises areas essential for the pro-

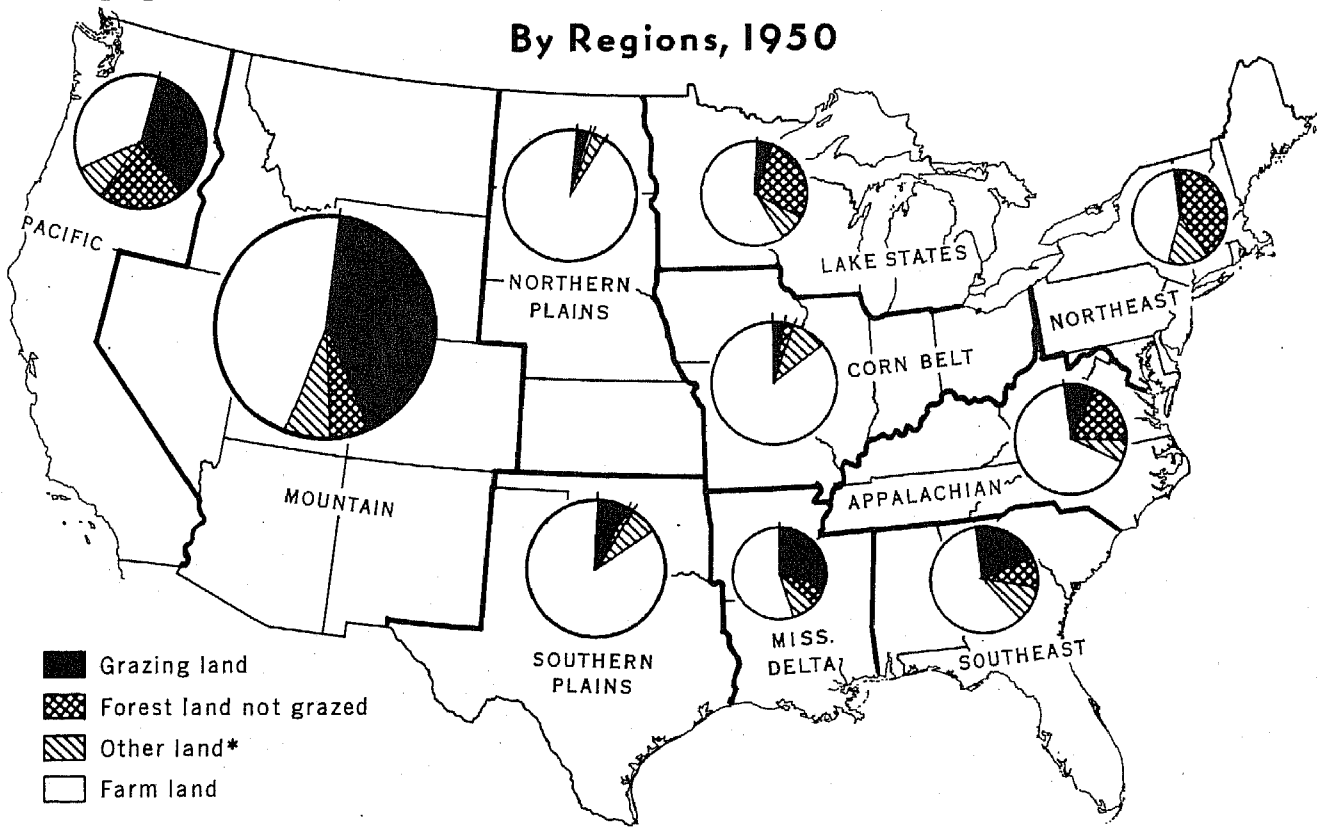
tection and propagation of fish and wildlife. Montana, Oregon, Georgia, Nevada, Louisiana, Florida, and Minnesota have the largest acreages devoted to this use.

In 1950, the States owned approximately 80 million acres of rural land, excluding road rights-of-way. Holdings were acquired largely through original grants of land to the States by the Federal Government and by acquisition of tax-forfeited land. Less than a third of the State lands were designated for specific uses such as forests or parks. In some of the public domain States with large areas of land granted to the States by the Federal Government, the land was generally leased for agricultural use. Of the 80.3 million acres of State land in 1950, 44.1 million acres were used for grazing and 2.4 million acres for farming. Commercial forests occupied about 17.9 million acres. Fish and game reserves accounted for 4.7 million acres and 2.4 million acres were in State parks and recreational areas. Nearly nine-tenths of all State land was in these major use categories. State-owned rural land used for farming and grazing was almost entirely in the 17 Western States. Half of this land used for agriculture was in New Mexico, Arizona, and Montana. Two-thirds of the State forest land having commercial value was located in the Lake and Northeastern States.

Land owned by counties and municipalities was estimated to be about 16 million acres in 1950. Another 10 million acres were in highway and road rights-of-way and other uses for which an accounting could not be made.

MAJOR USES OF NONFARM LAND AS COMPARED WITH TOTAL LAND AREA

By Regions, 1950



- Grazing land
- ▨ Forest land not grazed
- ▧ Other land*
- Farm land

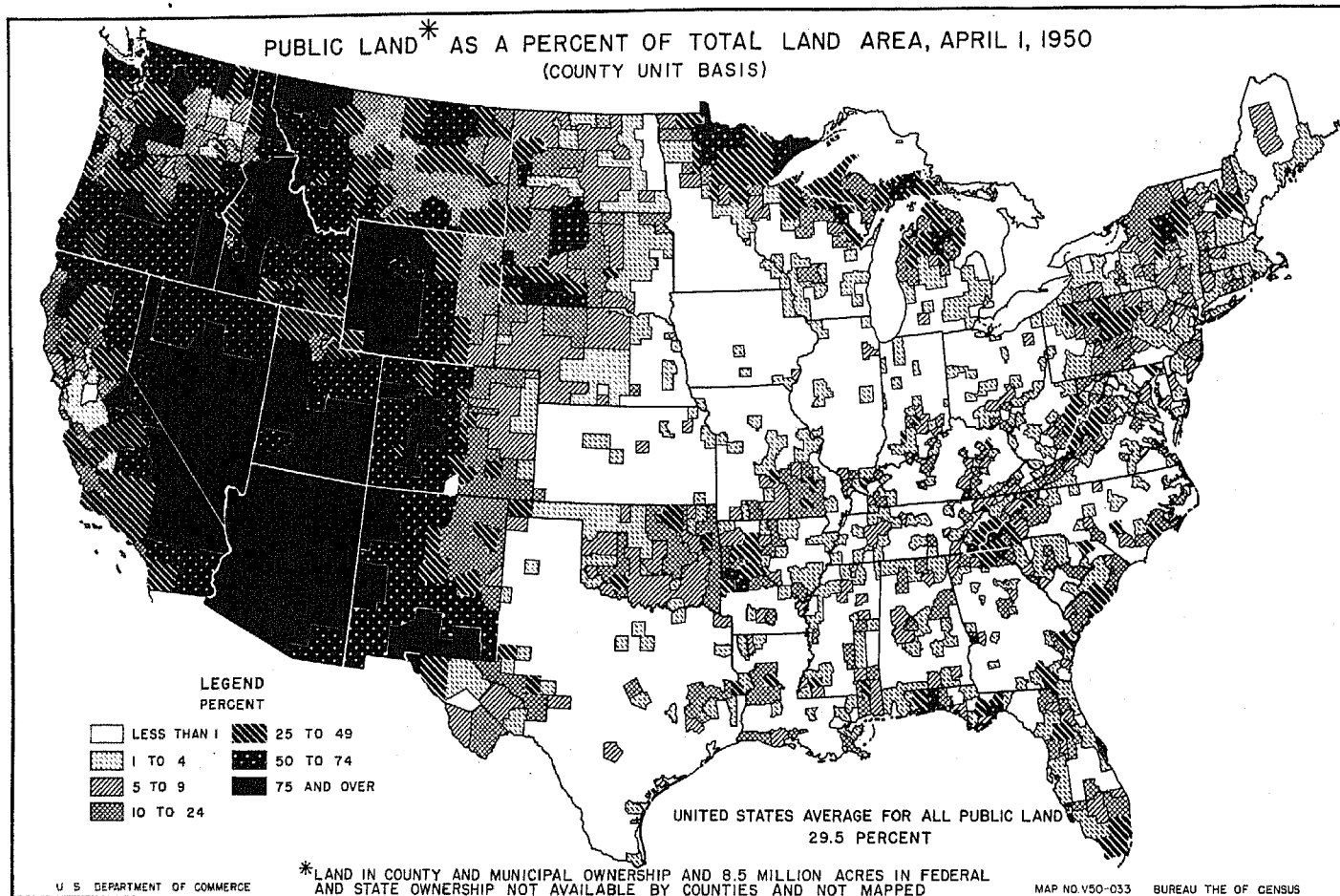
*INCLUDES URBAN AREAS, PARKS, HIGHWAYS, RAILROAD RIGHTS-OF-WAY, AIRPORTS, AND OTHER SPECIAL USES, AND MISCELLANEOUS LAND AREAS NOT OTHERWISE ACCOUNTED FOR

MAJOR USES OF NONFARM LAND

In 1950, total land not in farms amounted to 745 million acres. Of this nonfarm land, 601 million acres were forest and grazing land, of which 379 million acres were publicly owned and 222 million acres were privately owned. Special uses such as cities, parks, roads, railroads, and military areas add another 78 million acres; and 66 million acres of miscellaneous land such as tidal flats, sand dunes, beaches, open swamp, and bare rock complete the 745 million acres of nonfarm land.

Nonfarm land represents more than half of the total land area in the Pacific, Northeastern, and Mountain States. In the Corn

Belt and Great Plains States, it comprises less than one-sixth of the area. In the other regions, one-third to one-half of the land area is outside of farms. Nonfarm grazing land constitutes more than a fifth of the area in the Mountain, Pacific, Mississippi Delta, and Southeastern States. In the Delta and Southeastern States, this grazing land is largely forested. In the Pacific, Northeastern, and Lake States, more than a fifth and in the Appalachian States, nearly a fifth of the area is nonfarm forest land which is not grazed. In the Great Plains and Corn Belt States, where so much of the total area is farm land, other uses such as cities, parks, highways, railroads, airports, and wasteland account for more nonfarm acreage than land used for grazing or forestry.



PUBLIC LAND

Land in Federal and State ownership is predominantly land that is not well suited to private management. The distribution of public land is explained largely by the history of acquisition and disposal of Federal and State land and by contrasts in physical conditions. Counties having more than half of their land areas remaining in public ownership are almost entirely located in the drier and rougher parts of the 11 Western States. Insufficient moisture for crops or for unlimited grazing is the chief factor that limits private ownership. In the Eastern States, settlement preceded a plan for retention of land in public ownership. As a consequence, it is only in recent years that land in the Appalachians and similar rough areas in the East has been returning to public ownership, largely through Federal and State acquisition by purchase or by tax forfeiture.

In parts of the Northeast and especially New England, only a

small percentage of the land is in public ownership, although the physical characteristics are relatively unfavorable for agricultural use. The nearness of large urban centers has made this land attractive for summer homes, part-time farms, and rural residences. Private holdings of large tracts of timber exist in Maine. In many of the scattered counties showing higher proportions in public ownership than adjacent counties, the explanation may be that a State or national park has been set aside to preserve some scenic or historic site or it may denote the presence of a military reservation. As this map does not show land owned by municipalities, the influence of large centers of population cannot be detected. Poorly drained land has remained in public ownership in some areas such as the Everglades of southern Florida, the tidal marshes and swampland of North Carolina and South Carolina, and parts of the Louisiana coast. The impact of the Tennessee Valley project upon public ownership is also evident in some counties of that river basin.

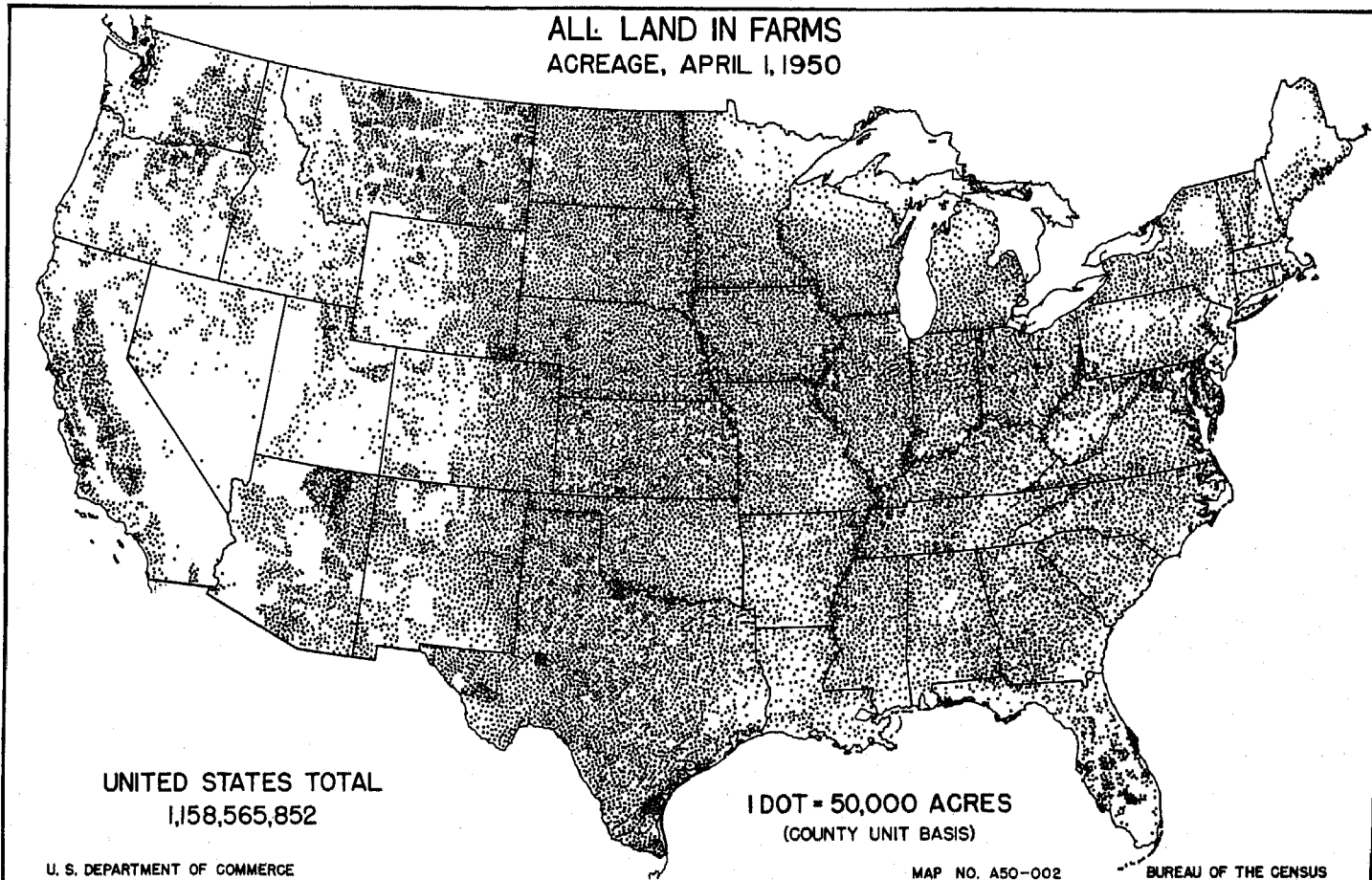
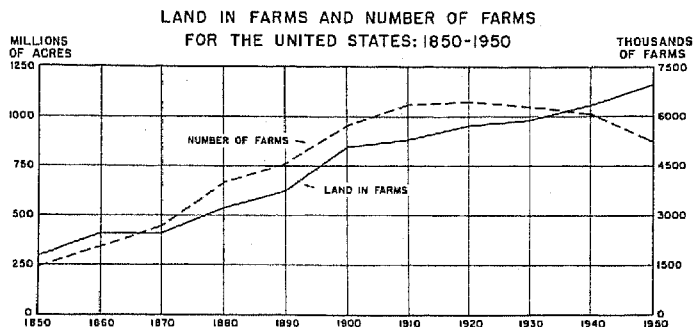
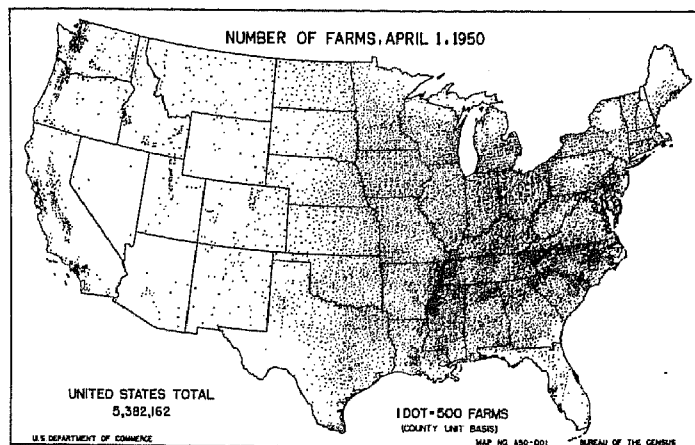
FARMS AND THE FARM AREA

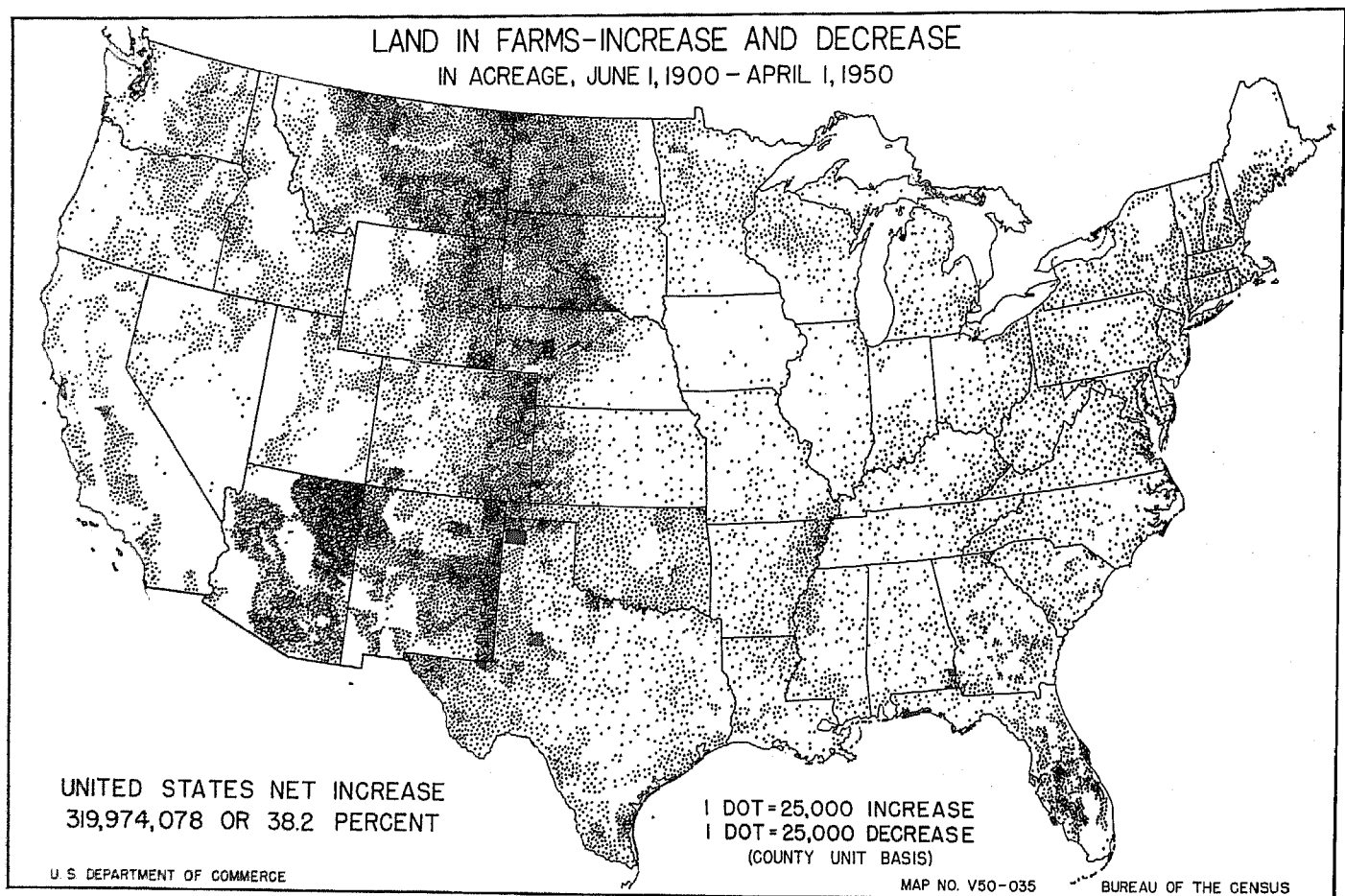
NUMBER OF FARMS AND LAND IN FARMS

In the Great Plains and the Corn Belt, land in farms occupies a high proportion of the area and is uniformly distributed. West of the Rockies, inadequate rainfall and mountains greatly restrict the land in farms. In the Eastern States, farm land is most limited where hilly topography, infertile soils, or poor drainage extend over sizable areas. High densities of farm land in some counties result from showing the total acreage of large farms in the county in which the farm headquarters is located, even though the farm acreage may extend into other counties.

Farms are most densely spaced in parts of the South and West. In the inner Coastal Plain and in the Piedmont of North Carolina and South Carolina, tobacco, which requires much labor, is grown on small closely spaced farms. In the Southern Appalachians and adjacent foothills, part-time and residential farms are associated with depleted land and a relatively dense rural population which now has opportunities for nonfarm employment. In the Mississippi Delta, there are many small tenant-operated cotton farms. In scattered valleys of the West where water is available, farms are relatively small but they are intensively used for vegetables, fruits, and other crops. Elsewhere in the West, farms are large and often widely scattered. The northern fringe of eastern United States with its relatively infertile soils and the poorly drained parts of the South Atlantic and Gulf Coastal Plains, including much of Florida, are characterized by a sparsity of farms.

During most of the settlement period the acreage in farms increased rapidly. Since 1900, smaller proportional increases have continued to enlarge the farm acreage. The expansion of land in farms was accompanied by corresponding increases in the number of farms until the first peak in number of farms was reported in the 1920 Census. There were more than a million fewer farms in 1950 than in 1920. The decline in number of farms was interrupted briefly during the early 1930's by a sharp increase in number of farms. During the depression years, many people left the cities seeking subsistence. Commercial farms have become larger and fewer in number. Change in the definition of a farm in the 1950 Census has eliminated several thousand holdings that were previously counted as farms.





LAND IN FARMS, INCREASE AND DECREASE, 1900-1950

Widespread increase of land in farms has occurred since 1900. The Great Plains and Western States have had the greatest expansion. There are special explanations for the decreases shown for a few counties in these States. In some of these counties, the decrease is probably due primarily to a difference between the two censuses in the reporting of acreages in large farms which extend across county boundaries. In other counties, the decrease is associated with urban expansion, establishment of military reservations, or to similar removal of land from the farm area.

In the Northeastern and Appalachian States, decrease of land in farms has occurred over large areas. Slight increases have taken place in only a few areas. In the Southeastern and Delta States, both increases and decreases have occurred. Generally, increases of land in farms in these Southern States have been connected with the clearing and drainage of land and with improved flood control. This is especially noticeable on the flood plains of the Mississippi and its adjacent tributaries, in Florida, and elsewhere on the Coastal Plain. Decreases have occurred more generally on the Piedmont, in the Ozark-Ouachita Highlands, the Southern Appalachians, and other hilly areas. In the Corn Belt and Lake States, land in farms has changed relatively little except for some decline in the hilly unglaciated southern part of the Corn Belt States and increase in the cut-over areas in the northern parts of the Lake States.

PERCENT OF TOTAL LAND AREA IN FARMS

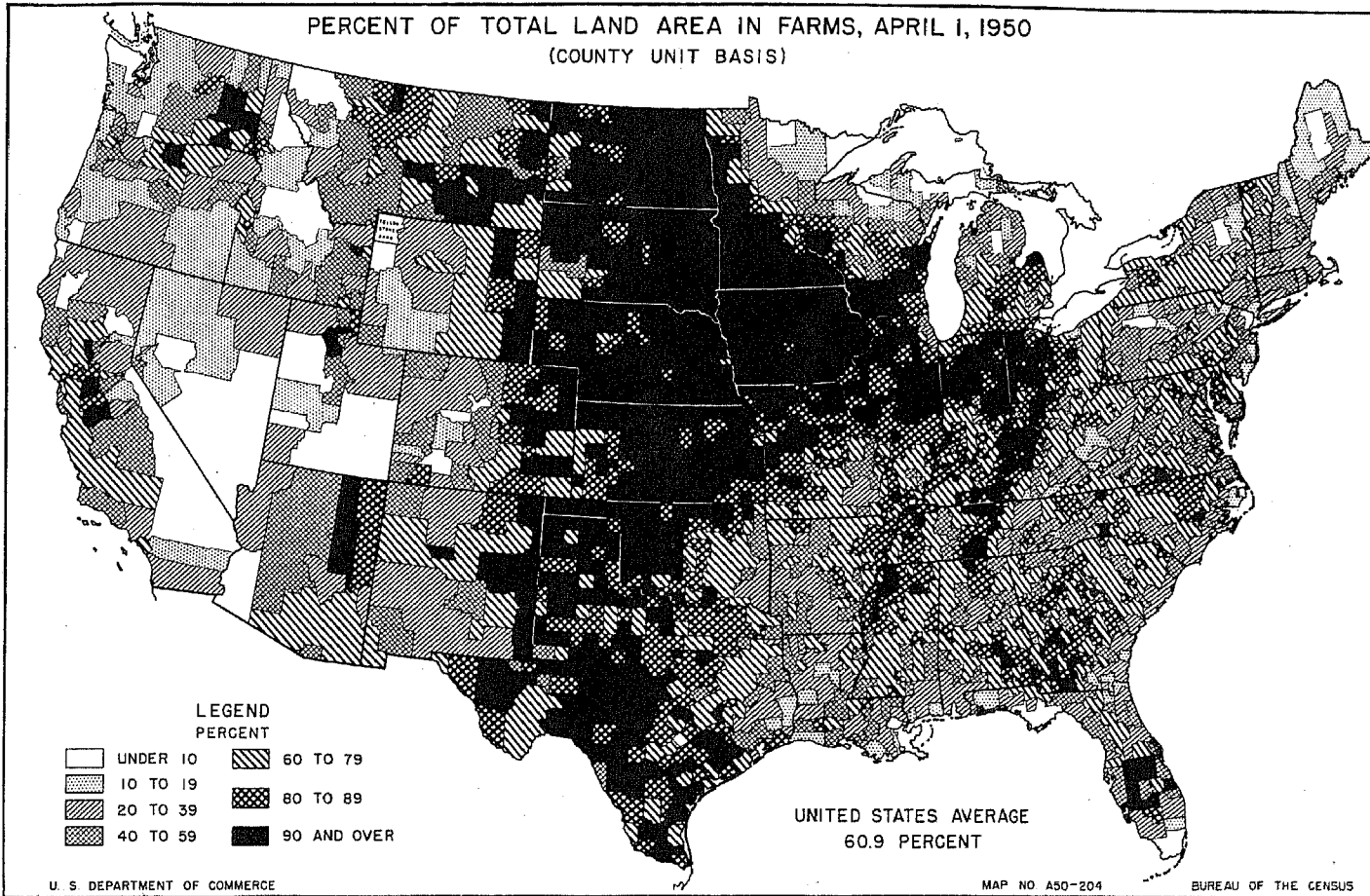
In the Great Plains, Corn Belt, and Dairy Belt, most of the counties have more than 90 percent of their areas in farms. Scarcely anywhere else in the world are physical conditions so favorable for agriculture over such a large area. Elsewhere in the United States only a few counties have more than 90 percent of their areas in farms. East of the Rocky Mountains, counties with less than 20 percent of their areas in farms are mostly located near the southern coast and the northern border. In the Western States, a large proportion of the area is not in farms.

VALUE OF LAND AND BUILDINGS

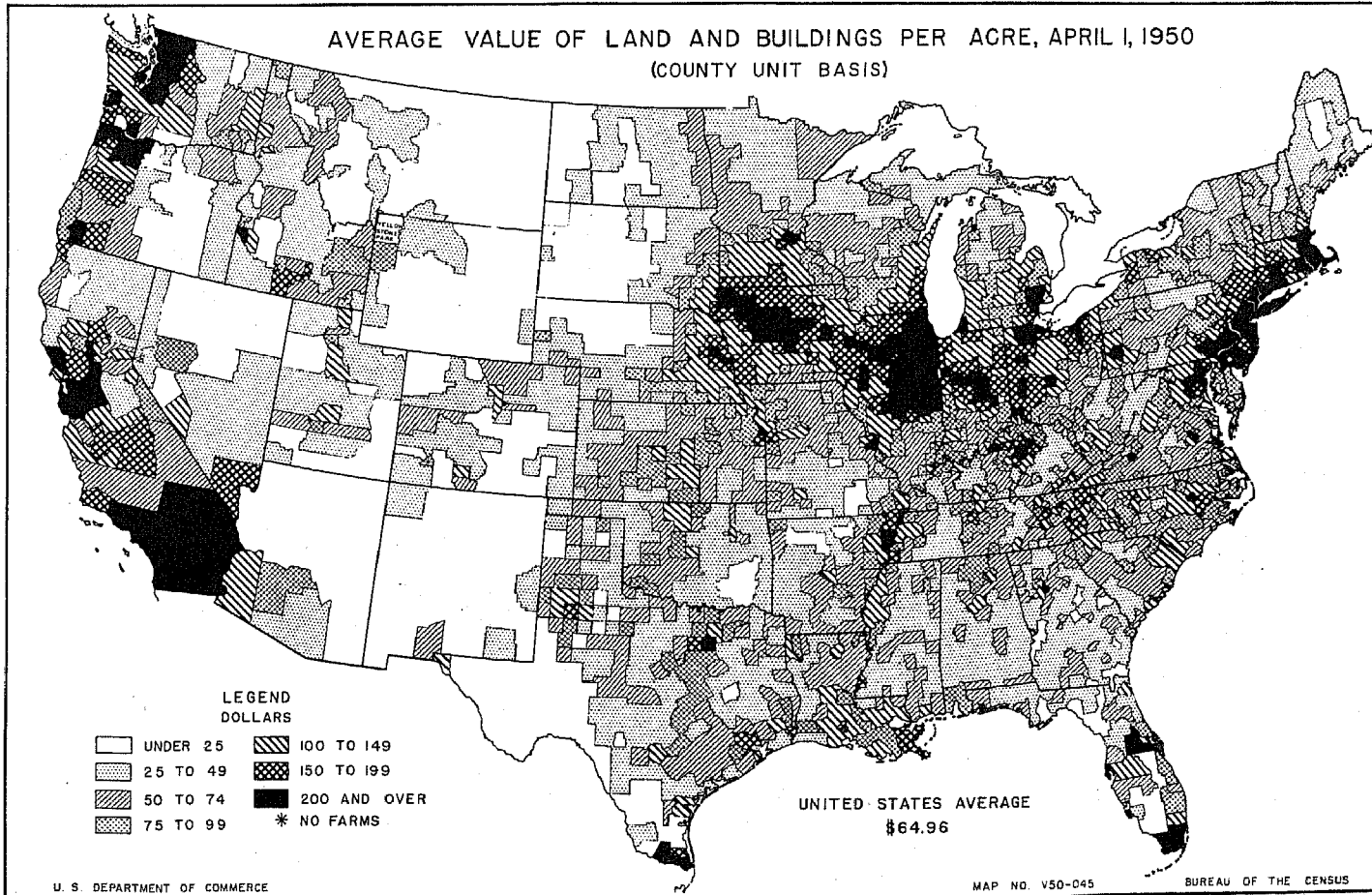
Highest average values of rural land and buildings are associated especially with high productivity of land or large concentrations of population. The most extensive area of high values is found in the North Central States, stretching from eastern Ohio to eastern Nebraska. In this area, high average values may be primarily attributed to the productive capacity of the land. High values also occur along the Eastern seaboard from Virginia to New Hampshire and in the Pacific States where large cities influence values of farm land. In some areas, the high value may be owing partly to heavy investment in buildings, as in the dairy region of southeastern Wisconsin. Even relatively infertile land located near centers of population may be highly valued if it can be used for production of bulky or perishable farm products such as milk and vegetables or for part-time farming. Low land values prevail over large areas of the Western States where physical conditions are not suitable for production of crops.

LAND UTILIZATION

PERCENT OF TOTAL LAND AREA IN FARMS, APRIL 1, 1950
(COUNTY UNIT BASIS)

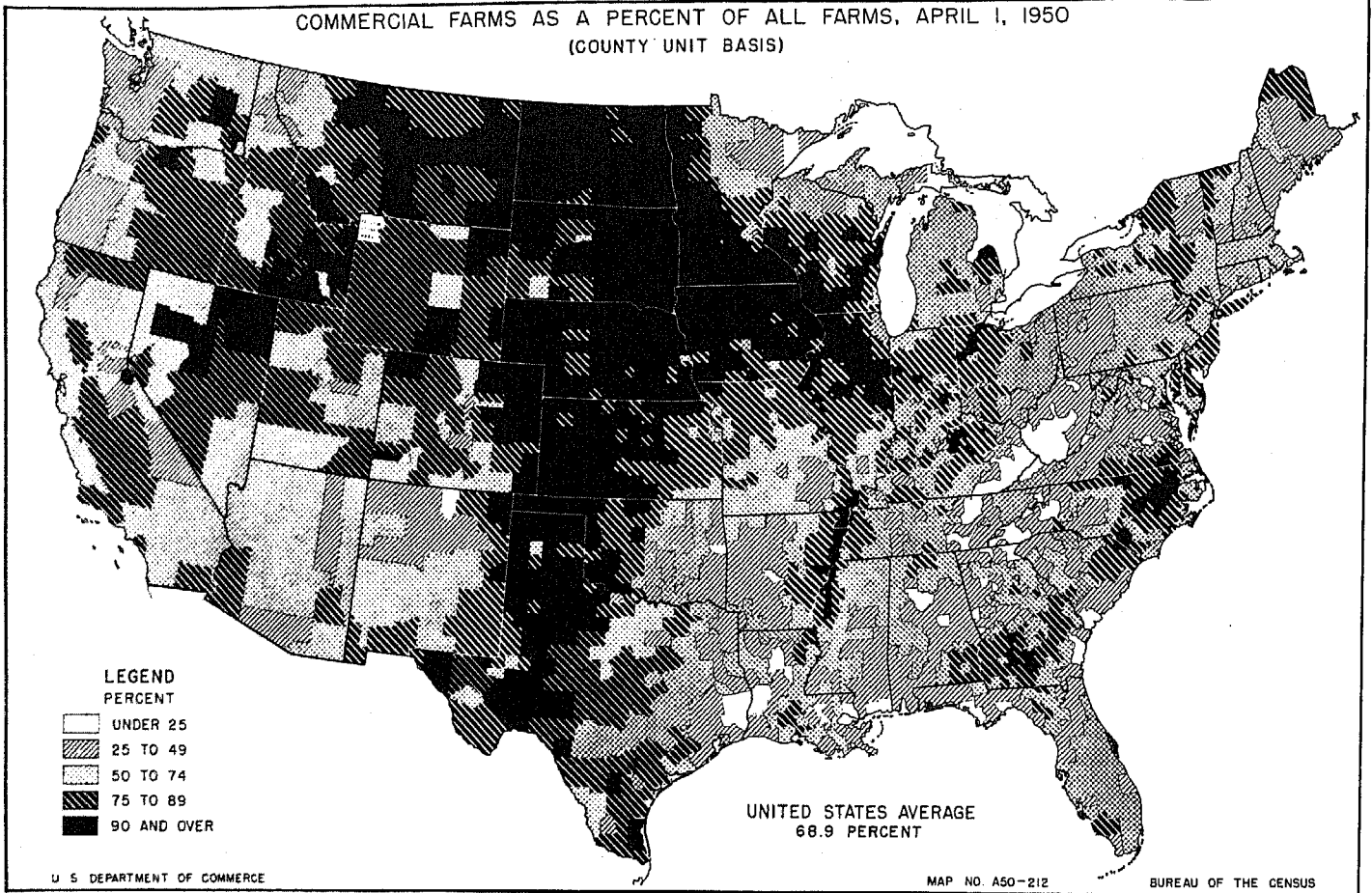


AVERAGE VALUE OF LAND AND BUILDINGS PER ACRE, APRIL 1, 1950
(COUNTY UNIT BASIS)

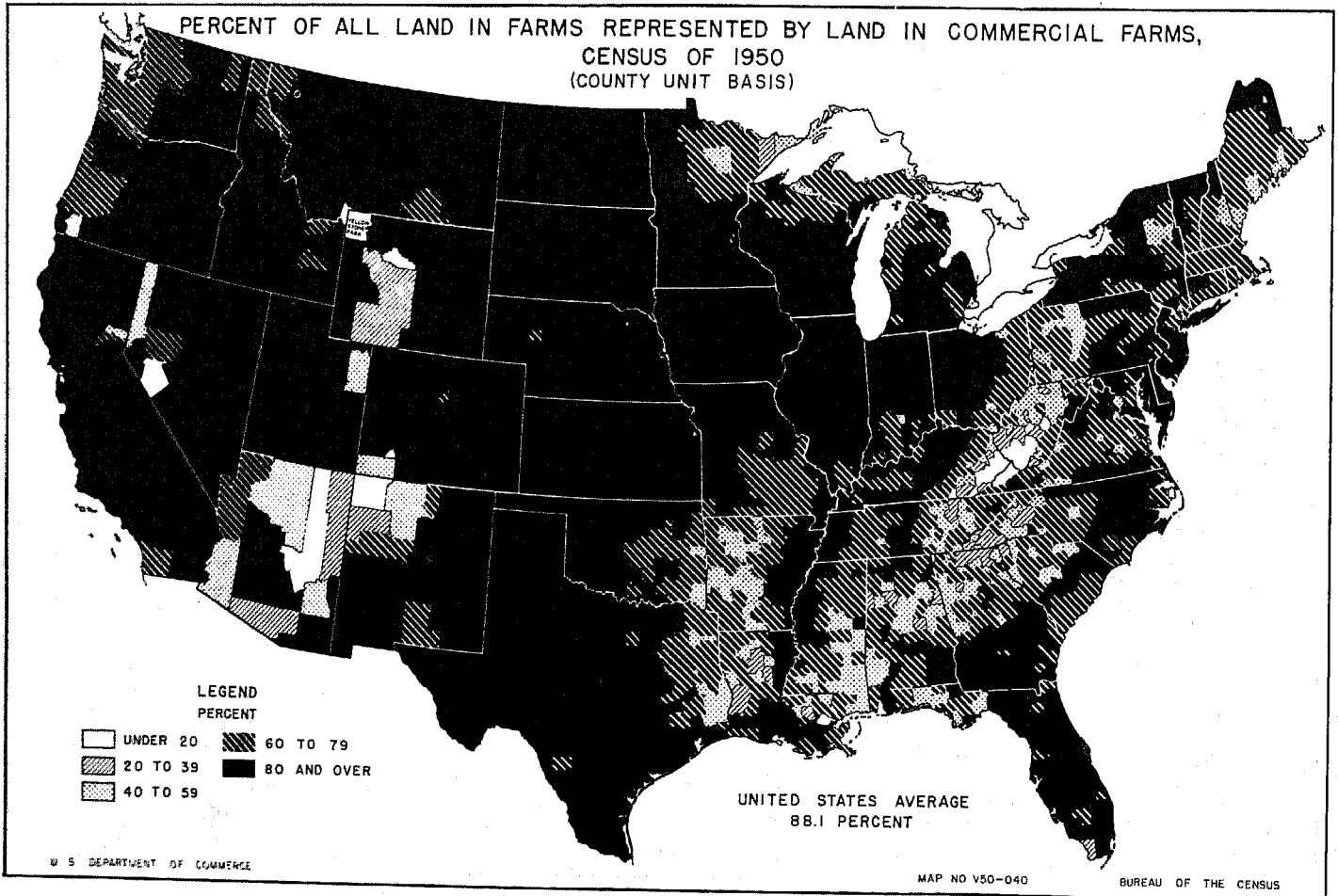


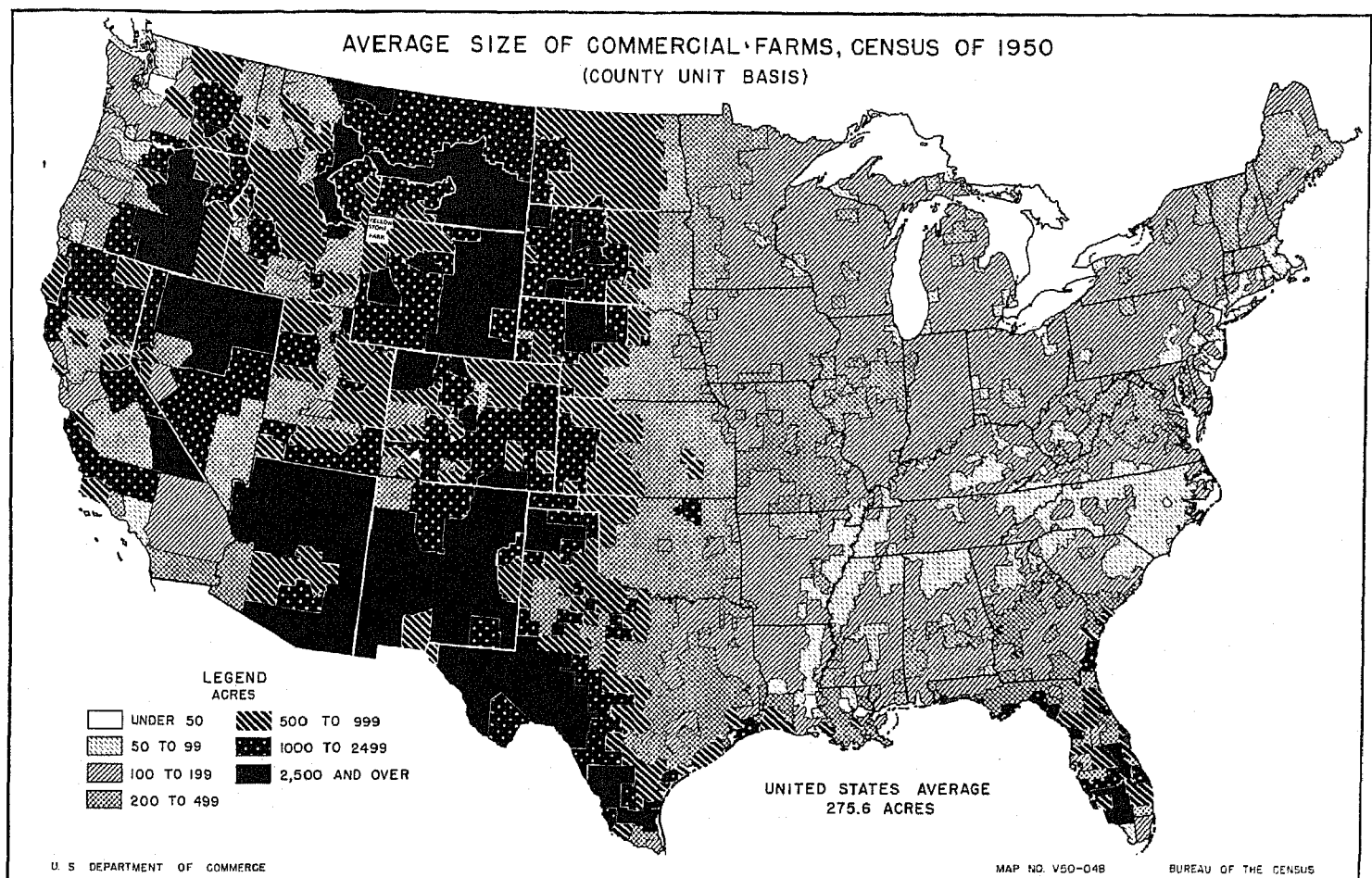
GRAPHIC SUMMARY

COMMERCIAL FARMS AS A PERCENT OF ALL FARMS, APRIL 1, 1950
(COUNTY UNIT BASIS)



PERCENT OF ALL LAND IN FARMS REPRESENTED BY LAND IN COMMERCIAL FARMS,
CENSUS OF 1950
(COUNTY UNIT BASIS)





COMMERCIAL FARMS

For many years, an increasing number of persons dependent partly or entirely upon nonfarm sources of income for their living have established residences in rural areas. Improvements in communication and transportation have given impetus to this trend. Partly as a result of these changes, the number of part-time and residential farms has increased. The significance of these farms in utilization of our land resources is becoming more important, although they contributed only a negligible proportion, 2.5 percent, of the total value of all farm products sold in 1949.

Of the total number of farms in the United States in 1950, only 68.9 percent were commercial farms. Areas showing the highest percentage of commercial farms were in the Corn Belt, Great Plains, and northern Mountain States. Farms other than commercial (all those classed by the Census as part-time, residential, or abnormal) made up a relatively high proportion of the total in most of the eastern part of the country, except the Corn Belt and the southern part of the Lake States.

Commercial farms accounted for 88 percent of all land in farms. For the most part, the proportion of all farm land reported by part-time, residential, and abnormal farms was highest in the areas of rough and mountainous topography in the eastern part of the country. Much of this acreage is not well suited to agriculture; it consists largely of land formerly used more intensively for farming.

Size of farms in terms of total acres is affected by such factors as the type of agricultural operations, size of ownership units, topography, and climatic conditions. Because physical and

climatic conditions do not have as great an effect upon the size of part-time, residential, and abnormal farms, and because these farms account for such a small percentage of all farm products sold, the accompanying map on size was based on commercial farms only.

The smallest commercial farms were in the Southeastern, Appalachian, and Delta States. A high proportion of the farms operated by croppers or other tenants are closely associated with production of the major cash crops such as cotton, tobacco, and peanuts in these States. These crops have high labor requirements and as mechanization is generally lacking, the typical farm has fewer acres than in other major regions of the country.

Farms in the range areas of the West are larger than in any other major region. The bulk of the land is suitable only for grazing; and because of the extremely low carrying capacity per acre, a typical commercial farm or ranch in that region must comprise a large acreage if it is to be an economic unit. In the Plains States and the Corn Belt, climatic and other conditions are favorable for production of grains. These crops and the relatively level topography of the area are particularly adaptable to mechanization. Consequently, the size of most farms is larger than for other regions except the 11 Western States.

In numerous smaller localities, the average size of farm differs appreciably from surrounding areas. For instance, in Florida and some of the mountainous areas of the East, the farms may be large because of a high proportion of pastureland or woodland included in the total acreage. Likewise, limited areas of small farms may be due to a predominance of such specialized intensive types as fruit, vegetable, or poultry farms.

FARM LAND DEVELOPMENT

Expected additions to the population, further increases in per-capita consumption, and dietary changes and improvements will undoubtedly mean a continuing need for new farm land in addition to increased agricultural production through further advance in and more widespread adoption of improved technology and conservation practices. It now appears likely that the greater share of the needed increase in agricultural production during the next two decades will result from increasing yields on the crop and pasture land now in use. It may also be necessary to move forward in reclamation activities in order to attain the needed higher production levels and adjust the distribution of production to any further redistribution of population that may occur.

Development of new agricultural land today depends mainly upon the cost of development, as the lands that are still unused for crops or pasture are ordinarily those which are more expensive to reclaim. High prices for agricultural commodities for the last several years have encouraged improvement of land now in use through additional drainage, clearing, or irrigation and through development of new tracts formerly considered unprofitable to reclaim.

The Soil Conservation Service of the U. S. Department of Agriculture, on the basis of physical-capability surveys, estimates that 285 million acres of land now in forest and grass are potentially adapted to cultivated crops. Not all of this vast acreage is good land. Some of it is below the average of the land now in cultivation. It is not recommended that more than a small proportion of this land be developed in the next few years, since the demand for cropland is not nearly as great in the United States as in the more populous countries. In western Europe, most of this land would be used for crops today. Open grasslands, mostly in farms, comprise 150 million acres of this potential cropland. Grasslands potentially suitable for crop production are mostly located in the Great Plains. Improved moisture and soil conservation, new and improved types of crops, and improved equipment are expected to facilitate future increased use of these lands for crop production when there is sufficient need for the grains and other crops that can be grown there. The 135 million acres of woodland which is potential cropland are mainly in private ownership; only about 45 million acres are in farms. Many of the 135 million acres were formerly used for crops or pasture, but they have reverted to woodland because of competition from newly developed lands. This woodland suitable for crops is concentrated in the Southeast.

If present trends continue, about 35 to 40 million acres of new land best adapted for potential agricultural development by drainage, irrigation, flood protection, and clearing probably will be available as cropland by 1975. Approximately 80 million acres of open permanent pasture could also be used for a rotation of crops and pasture with such improvements as liming and fertilizing. At the same time, 12 to 15 million acres will be needed as additional space for cities, roads, airports, and similar uses. Another 45 million acres presently used for cropland are not fitted for that use because of susceptibility to accelerated erosion when used for crops. This cropland should be transferred to other use, largely as pasture. This means an approximate net addition of 60 million acres which would make a total of 538 million acres of cropland and rotation pasture by 1975. Again it must be emphasized that the extent to which additional land suitable for crops is actually developed will depend upon prevailing price levels, public policy toward reclamation, further growth and redistribution of population, and other factors.

Recent and probable new land development is concentrated in the South and West. The Lower Mississippi Valley and the Coastal Plain have large acreages available for farm land if drained,

cleared, or protected from floods. A combination of these measures is necessary in reclaiming some of this area. Large additions of improved cropland and pasture have been made to existing farms and plantations, especially since 1945, as a result of clearing, drainage, and flood control. Mechanization has helped make this improvement feasible. Although clearing and draining of wet land is going on in some parts of the South, eroded and steep sloping land is reverting to pine woodland.

A large area for future development lies in the marshlands and swamplands of the Lower Mississippi Valley, if and when economic conditions are favorable. The low-lying grass-covered marshlands near the coast and the forested swamplands along the lower course of the Mississippi River will need carefully directed reclamation programs to aid in establishing successful farms. In the extensive marshlands, where flooding by brackish water has encouraged growth of native grasses, a major problem is to protect these areas from tidal overflow, especially during hurricanes and other storms. Maintenance of proper soil drainage in these marshlands, which have an average elevation of about 2 feet above sea level, is also a serious problem. Pumping has generally proved too expensive unless the land is intensively used. The wooded swamplands lying along the Lower Mississippi River are now more adequately protected against floods than formerly. During the last 20 years, large numbers of tenant farmers from Delta cotton plantations, as well as farmers from adjacent depleted hill farms, have settled these lowlands. Improved flood protection and available land for sale advertised by lumber companies after timber had been largely removed have encouraged settlement. Initiating and maintaining adequate drainage has been a major problem on much of the potentially good farm land being settled and put into cotton and other crops. Establishment of proper drainage facilities depends in large part upon the willingness of individual farmers to cooperate with each other in organizing drainage enterprises. Closer cooperation among States in the Lower Mississippi Valley is also an important prerequisite to a more comprehensive and successful drainage program.

In the West, several irrigation projects in different stages of construction and planning constitute a major reclamation activity. Limitations imposed by an inadequate water supply for land otherwise physically capable of use for crops or pasture have made it necessary to irrigate the land. In the United States, irrigation became an important practice only in the present century, as the drier parts of the country are among those most recently settled. Increased participation by the Federal and State governments in planning and constructing irrigation projects has accompanied an evident inability on the part of private enterprise to develop large-scale and multiple-purpose projects.

The Columbia Basin project, the largest single irrigation venture of the Bureau of Reclamation, was placed in partial operation in mid-1952. A million acres of new farm land will eventually be supplied with water from the Grand Coulee reservoir. In California, the Central Valley project has also advanced rapidly and water is now being diverted by canal from the Sacramento River to the lower San Joaquin Valley. In turn, this will make more water available to irrigate the southern (upper) part of that valley. Shasta Dam on the upper Sacramento and Friant Dam on the San Joaquin above Fresno will impound stream flow from the upper mountain slopes for use on the farm lands situated on the lower slopes and valley floors. Supplementary water for existing farms has been an important part of this comprehensive scheme.

Another spectacular effort to obtain more water for irrigation is the Colorado-Big Thompson project. This installation will impound water on the more abundantly watered western slopes of

the Rockies and will divert this water through a transmountain tunnel to water-deficient irrigated areas of eastern Colorado. These are some of the better known projects which, along with numerous others, may supply the necessary water to irrigate several million additional acres of land in the West.

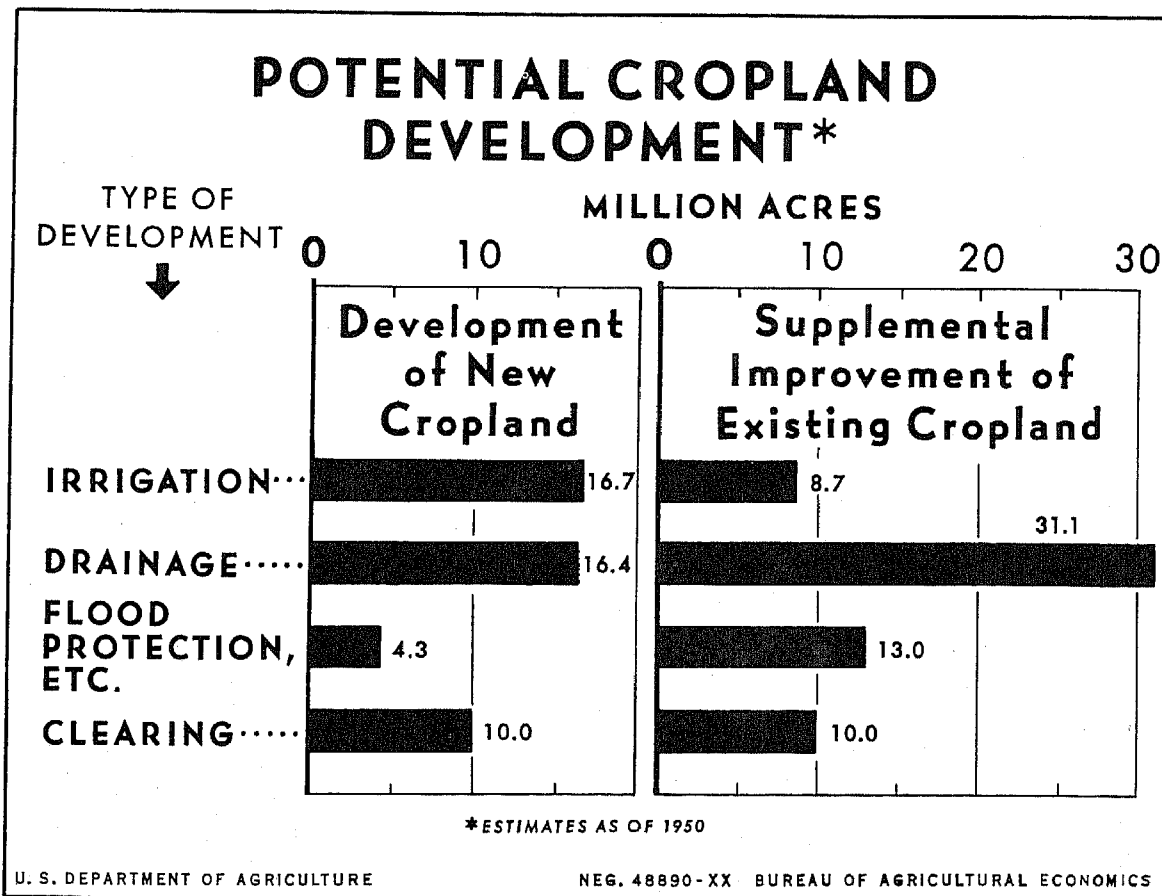
Greatest actual increase in irrigated land during the last decade occurred on the Llano Estacado of west Texas. In 16 affected counties, irrigated land, as reported by the Census of Agriculture, increased from 209,570 acres in 1940 to 1,536,853 acres in 1950. The west Texas irrigation is made possible largely by pumping water from privately owned farm wells. This irrigated land has been used principally for producing cotton. The 1939 cotton acreage for these 16 counties was 888,220 acres, compared to 2,053,445 acres in 1949. In 1939, total production of cotton in these counties was 361,760 bales. In 1944, it was 443,364 bales and, in 1949, it had jumped to 1,286,473 bales. This great expansion of irrigation was mainly in response to the favorable cotton prices that have prevailed for the last several years.

Individual farmers have invested the necessary capital to drill the wells. Well irrigation started in this part of Texas before World War I, but it was the dry years of the mid-1930's and the availability of more efficient pumping equipment that aroused new interest in pump irrigation. The increase in irrigated land has been especially large since 1943. The rapid exploitation of the

water resources in this area has resulted in a lowering of the water table. Careful planning and conservation measures will be necessary to place the use of water on a more permanent basis on the Llano Estacado.

Recently the practice of supplemental irrigation has been introduced to areas where crops are generally produced without irrigation. Crop yields may be lowered considerably by insufficient moisture, although there may be no pronounced drought. The relationships between rate of evaporation and precipitation are now better understood, and the economic feasibility of irrigating to supplement precipitation in order to maximize crop yields is gaining recognition. In Florida and New Jersey, supplemental water is now applied on sizable acreages of vegetables and fruits. Irrigation of pasture in the East has also been undertaken on a small scale, especially in areas in which dairying is important and where late-summer droughts severely limit use of pastures in producing milk during that part of the year. Light movable aluminum pipes in lengths of 20 feet with sprinklers attached are used when pumping is necessary.

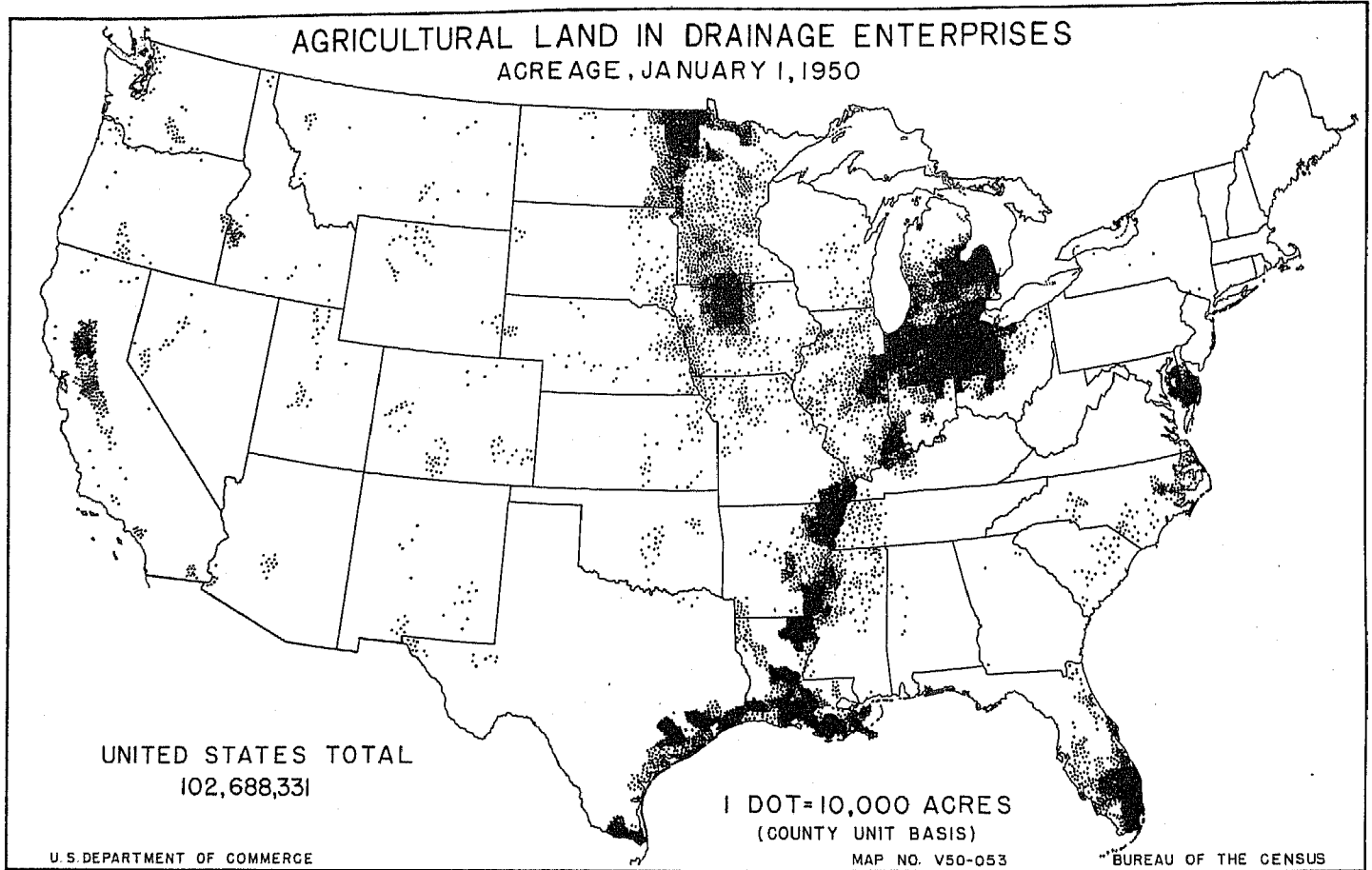
Possibilities of converting salt water into fresh water for use in irrigating crops have recently introduced speculation as to future prospects for irrigating land in some parts of the world. It is yet too early to foresee what will come of this approach to water shortages.



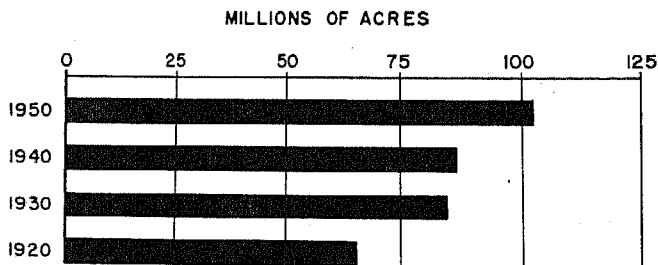
POTENTIAL CROPLAND DEVELOPMENT

Estimates of land suitable for cropland through development of new cropland or supplemental improvement of existing cropland are given in the report of the President's Water Resources Policy Commission, 1950. Much of the 47.4 million acres of new land which is currently classified as best adapted for agricultural use is likely to be developed by 1975. This excepts land that will be developed through irrigation, which probably will require more time for full development than other types. If present trends continue, about 4.6 million acres of the 16.7 million

acres of irrigable land may be irrigated by 1975. As yields on irrigated land average about one-half more than on nonirrigated land, this is equivalent to adding about 6.9 million acres of average cropland by 1975. Supplemental improvement of existing cropland appears feasible on about 62.8 million acres. If it is assumed that this supplemental improvement by irrigation, drainage, flood protection, and clearing, will result in an estimated one-third increase in production, an equivalent of approximately 21 million acres of new cropland would thus be added to the Nation's productive capacity by supplemental improvement.



**AGRICULTURAL LAND IN DRAINAGE ENTERPRISES,
FOR THE UNITED STATES: 1920 — 1950**



AGRICULTURAL LAND IN DRAINAGE ENTERPRISES

As the land in this country was being settled, thousands of acres were too wet to be of much agricultural value. Since that time much of this land has been drained and now is included as some of our most productive farm land. According to the Census of Drainage for 1950, some 102,688,331 acres were reported in organized drainage enterprises. This does not usually include areas of less than 500 acres of agricultural land regardless of whether they were in organized enterprises or represented a private operation.

Most of the land in drainage enterprises was located in northwestern Ohio, northern Indiana, eastern Illinois, southern Michigan, Minnesota, Iowa, southern Florida, the Mississippi Delta, the Eastern Shore of Maryland, southern Delaware, and the Coastal Plain of Texas and Louisiana. The smaller acreages of drained land scattered throughout the West are usually associated with irrigated land.

In 1920, when the first Census of Drainage was taken, 65,495,038 acres were reported in organized drainage enterprises. At that

time, more than three-fourths of the total were located in the eight Corn Belt and Lake States. Each succeeding Census of Drainage showed increases in total acreages, amounting to 56.8 percent from 1920 to 1950. All States, except Wisconsin, had an increase during the 30-year period. The State showing the greatest change in acreage was Louisiana with 2,266,328 acres in 1920 and 12,161,665 acres in 1950 or a net increase of 9,895,337 acres. Florida was next with an increase of 4,446,603 acres and Texas third with an increase of 3,628,658 acres. Even though the Corn Belt and Lake States was one of the major areas for early development of land through drainage, this type of land improvement has continued in these States since 1920 on a sizable scale.

IRRIGATED LAND IN FARMS

Irrigation has made possible the successful utilization of areas of arid and semiarid land of the West for agricultural purposes. To a much smaller extent, irrigation is used in numerous areas of the humid East. Although not usually essential, where used in the East it has greatly increased production per acre. Irrigated land in farms in 1949, as reported in the Census of Agriculture, totaled 25,787,455 acres. Some 94.1 percent of this was in the 17 Western States, 5.3 percent in Arkansas, Louisiana, and Florida, and only 0.6 percent in the other 28 States. California was the leading State, with a total of 6,438,324 acres, Texas second with 3,131,534 acres, and Colorado third with 2,872,348 acres.

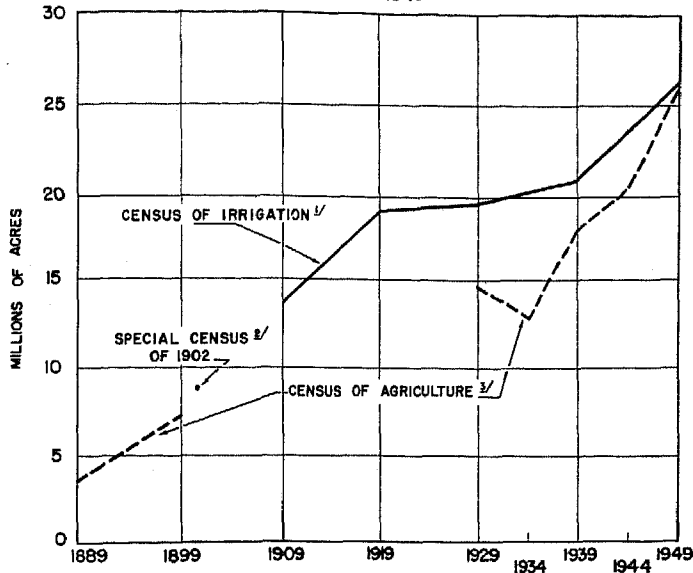
Irrigated acreage was particularly high in the fruit-, vegetable-, and cotton-producing valleys of California; in the High Plains and the Lower Rio Grande Valley of Texas; in southern Idaho; and in a few valleys of Colorado, Oregon, and Washington. Many cattle ranches throughout the West depend upon irrigated land to produce hay for use between grazing seasons.

The chart on page 29 shows the acreage of irrigated land in the United States, as reported for specified years from 1889 to 1949. The discrepancies in the data for 1929, 1939, and 1949 between the Census of Irrigation and the Census of Agriculture are probably owing to (1) overestimation and duplication of irrigated acreage as reported for irrigation enterprises, (2) underreporting of ir-

by farmers, and (3) limitations of the acreage and harvested plus irrigated pasture reported for Agriculture, and of that of irrigated cropland for the 1930 Census.

use in irrigated acreage probably occurred from in any previous 10-year period. During this of Agriculture showed an increase of 7,804,625 the greatest increase, a total of 2,236,896 acres California was second with 2,161,770 acres and with 404,800 acres. Specific areas showing re the valleys of California, the High Plains of ral Arizona, along the North Platte River in he east coast of Florida, the Coastal Plain of na, and the eastern lowlands of Arkansas. A mber of counties showing decreases in irrigated or importance and are not shown on the map

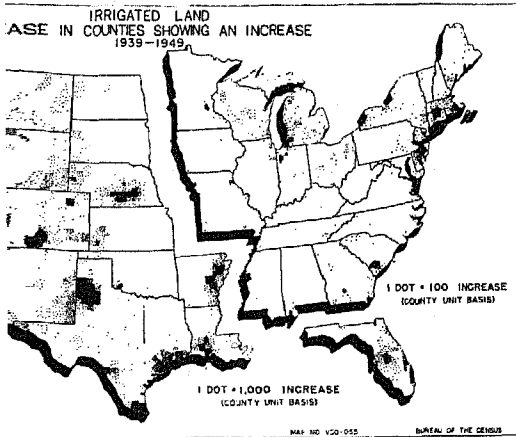
ACREAGE OF IRRIGATED LAND IN THE UNITED STATES: 1889 TO 1949



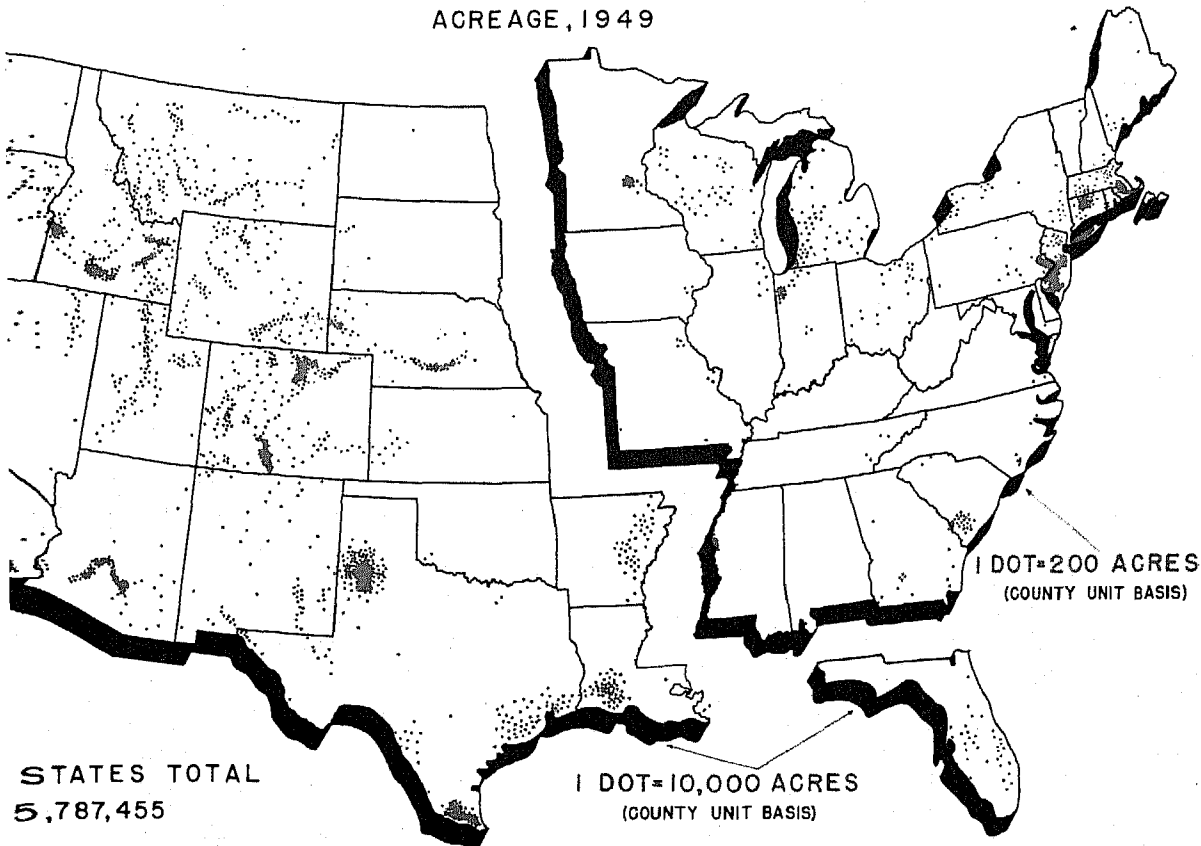
1/ TOTAL IRRIGATED LAND IN FARMS. FOR 1909, 1919, AND 1929, IRRIGATION CENSUS INCLUDED THE 17 WESTERN STATES AND ARKANSAS AND LOUISIANA; FOR 1939 AND 1949, FLORIDA ALSO INCLUDED.

2/ TOTAL IRRIGATED LAND, ALL STATES.

3/ FOR 1889 AND 1899, CENSUS TOTAL FOR IRRIGATED LAND IN FARMS INCLUDED THE 17 WESTERN STATES, ARKANSAS AND LOUISIANA; FOR 1929, IRRIGATED LAND FROM WHICH CROPS WERE HARVESTED, SAME 19 STATES; FOR 1934, IRRIGATED CROPS, SAME 19 STATES; FOR 1939, IRRIGATED CROPLAND HARVESTED PLUS IRRIGATED PASTURE, 48 STATES; FOR 1944 AND 1949, TOTAL IRRIGATED LAND 48 STATES. DATA FOR 1909 AND 1919 NOT AVAILABLE.



IRRIGATED LAND IN FARMS ACREAGE, 1949



STATES TOTAL
5,787,455

LAND USED FOR AGRICULTURE

Cropland and classes of crops.—Land used for crops or adapted to crops is the most productive part of the Nation's land resources. Data available for cropland are divided into three major categories, the most important of which is land used for crops. In 1949, crops were harvested from 345 million acres of cropland. Cropland used only for pasture, which totaled 69 million acres in 1949, is classified separately, as it generally has a higher carrying capacity than other pasture and grazing land. Cropland not used for crops or pasture is usually subdivided as to whether it was idle, fallow, or planted to crops that were not harvested. In 1949, there were 64 million acres in this category. Cultivated summer fallow accounted for 26 million acres, crop failure for an estimated 10 million acres, and other cropland for about 28 million acres. Part of this other cropland was used for soil-improvement crops which were not harvested, newly seeded crops, land being prepared, and idle cropland.

From the end of the Civil War to the end of World War I, acreage used for crops increased consistently decade by decade. By the end of World War I, much of the land most easily converted into cropland had been settled. During the last 30 years, there have been fluctuations but no appreciable over-all increase in land used for crops.

Regional shifts in acreage of cropland have accompanied the westward migration of population. In 1879, the Northeastern, Appalachian, and Southeastern States had 36.7 percent of the total crop acreage, but in 1949 this combination of States had only 16.4 percent of the total cropland harvested. During the same period, the North Central, Southern Plains, and Delta States had an increase from 60.2 percent to 72.0 percent in the total acreage in crops. The Mountain and Pacific States had only 3.1 percent of the acreage in harvested crops in 1879, but in 1949, 11.6 percent of the cropland harvested was in those 11 States.

Principal crops and specified classes of livestock.—Regional diversity in the use of cropland is a well recognized feature of agriculture in the United States. In some regions, one or two crops occupy a large proportion of the cropland, while in others, crops are more varied. Crop and livestock associations are an important consideration in the delimitation of agricultural regions. The basic patterns of production have become well established; but regional patterns are not static and recognition of important changes must be made from time to time. An example of such a change is the westward shift of cotton production. In 1900, only a little more than two-fifths of the cotton acreage was located west of the Mississippi River. In 1950, two-thirds of the acreage was so located. Not only have regional shifts in areas of crop production occurred but such crops as soybeans, sorghums, and peanuts, which had little or no significance 50 years ago, are now important crops.

Pasture and grazing land.—In 1950, there were 1,020 million acres of pasture and grazing land in the United States. This land is unevenly distributed and varies greatly in carrying capacity. Cropland used for pasture (69 million acres), open permanent pasture (416 million acres), and woodland pasture (135 million acres) constituted the pasture and grazing land in farms. The grazing land not in farms totaled 400 million acres, of which 185 million acres were forested.

Three-fourths of the 400 million acres of nonfarm grazing land is located in the 17 Western States. The Southern States have most of the remaining acreage. In the 17 Western States, two-fifths of all pasture and grazing land is publicly owned. Although the carrying capacity of public grazing land is low, this vast area of land is widely used by assignment to ranchmen through permit or lease. It supplements their own grazing land and without it economical units of ranch operation often might not be possible. Insufficient moisture for crops accounts mainly for the large acreage devoted to grazing in the West. In the humid East, topography places a major limitation upon the use of

land for crops, but land that is too rough for crops can often be used for pasture. Generally, land best suited for pasture is not used for that purpose, as use for crops takes priority over use for pasture.

Geographic contrasts in carrying capacity of pasture and grazing land are explained largely in terms of availability of moisture, soil fertility, type of vegetative cover, and length of grazing season. The more productive pastures are located in such areas as the coastal valleys of Washington and Oregon, the Mississippi Delta, and irrigated pastures in areas of mild climate. In these regions, a favorable combination of the physical factors that affect pastureland exists.

Native plants supply most of the grazed forage in the 17 Western States, except for the humid areas of the Pacific Northwest. Irrigated pastures are used particularly in the Pacific States where dairying is important. In the East, introduced grasses and legumes are generally used, except along the Gulf and South Atlantic coasts (including Florida), where native plants are now supplemented by tame grasses and grazed crops.

In the United States, fullest use of the billion acres of pasture and grazing land has not been realized. There is a growing appreciation of what has been widely characterized as grassland agriculture. If a more permanent system of farming is to evolve, increasing attention must be given to pasture and grazing land, which could produce a great deal more than it now does. Grasses and legumes have major roles to play in the conservation of soil and water resources. In meeting the needs of an expanding population seeking higher levels of living, more effective use of pasture and grazing land probably will be imperative.

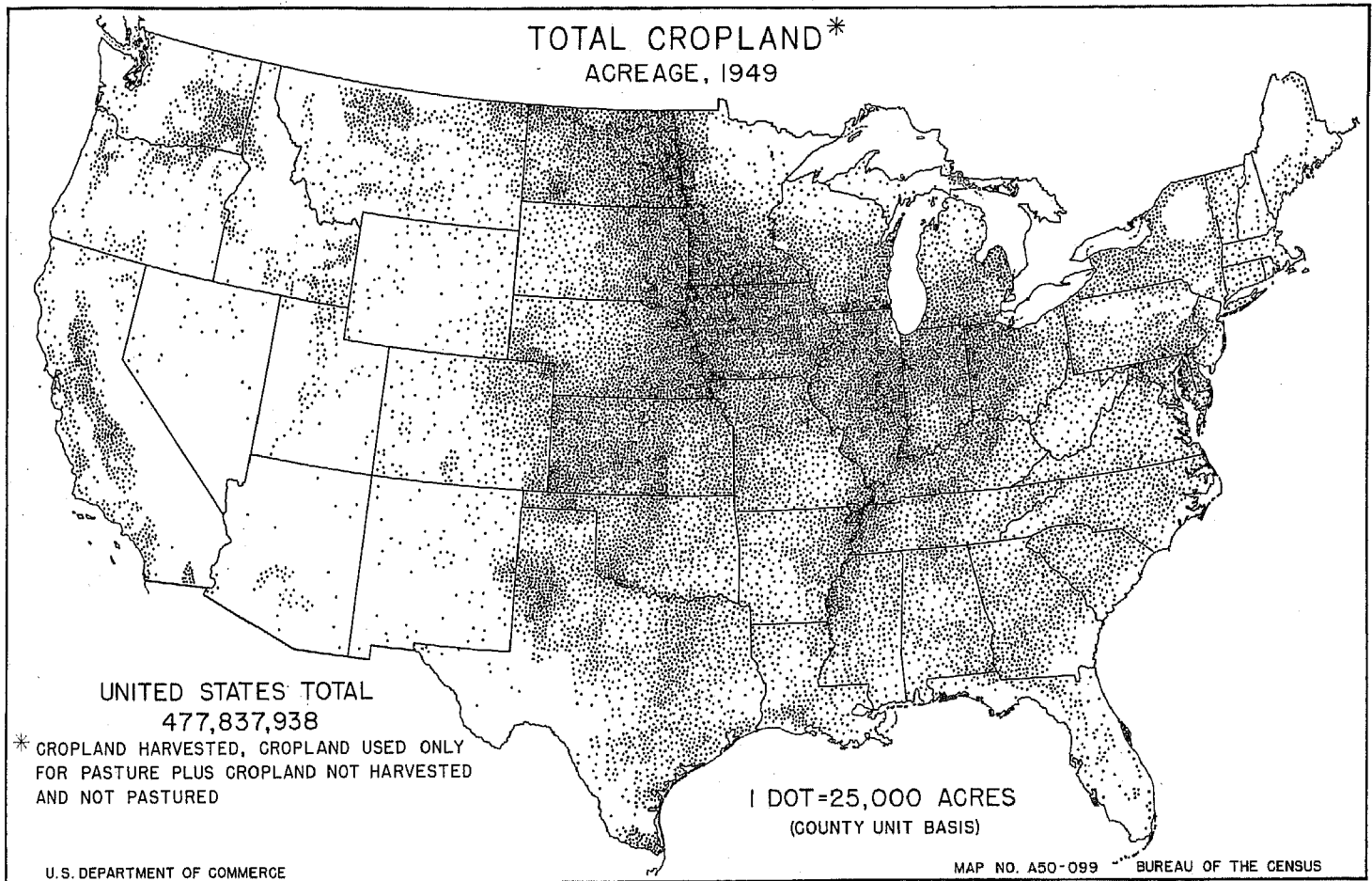
Woodland and forest.—Nearly a third of the total land area of the United States was classified as forest or woodland in 1950. Of this 606 million acres of forest and woodland, 286 million acres were not grazed or pastured. Woodland in farms totaled 220 million acres, of which 135 million were pastured. The 386 million acres not in farms were about equally divided between those used for grazing (185 million acres) and those not grazed (201 million acres). About four-fifths of the nonfarm forest land is capable of producing commercial timber, but abandoned crop and pastureland which is reverting to forest adds up to a sizable acreage with less value for timber than the original forest cover. Promoting satisfactory forest management on much of the farm woodland has been difficult. This is because of several problems, which include the making of tax adjustments on forested land, grazing of woodland, inadequate fire protection, lack of knowledge of what constitutes good forest management, and lack of short-time returns from forest land. However, progress is being made.

Farm woodland is principally located in the humid eastern part of the country except for areas of pinon-juniper, chaparral, mesquite, cedar, and post oak. In 1949, the Southern States, which comprise only 29.1 percent of the total land area, had 57.3 percent of all woodland in farms. Three-fifths of the total woodland in farms was reported pastured in 1949. For the most part, this pastured woodland has a low carrying capacity.

Forest land not in farms is most heavily concentrated in four regions. In the 11 Western States, the nonfarm forests coincide closely with mountains. The greater rainfall of the mountains, particularly the windward slopes, accounts for the heavier forest growth while rough topography has been largely responsible for keeping these areas outside of farms. In the South, nonfarm forest and woodland are particularly associated with the Southern Appalachian, Ozark, and Ouachita highlands, much of which has never been in farms; abandoned farmlands of the Southern Piedmont and Coastal Plain; and coastal and Mississippi Valley wet lands. In the Northeast, several areas have remained largely

in nonfarm forests, such as much of Maine, the White Mountains of New Hampshire, the Adirondacks and Catskills of New York, the unglaciated Allegheny Plateau of Pennsylvania, and the parallel ridges of the Appalachians. The fourth major area of nonfarm forest is located in the northern part of the Lake States,

where relatively infertile soils and poor drainage have greatly restricted use for agriculture. Lesser areas with a considerable acreage of nonfarm forests are the unglaciated southern counties of Ohio, Indiana, and Illinois; unglaciated southwestern Wisconsin; and the Black Hills of South Dakota.



TOTAL CROPLAND

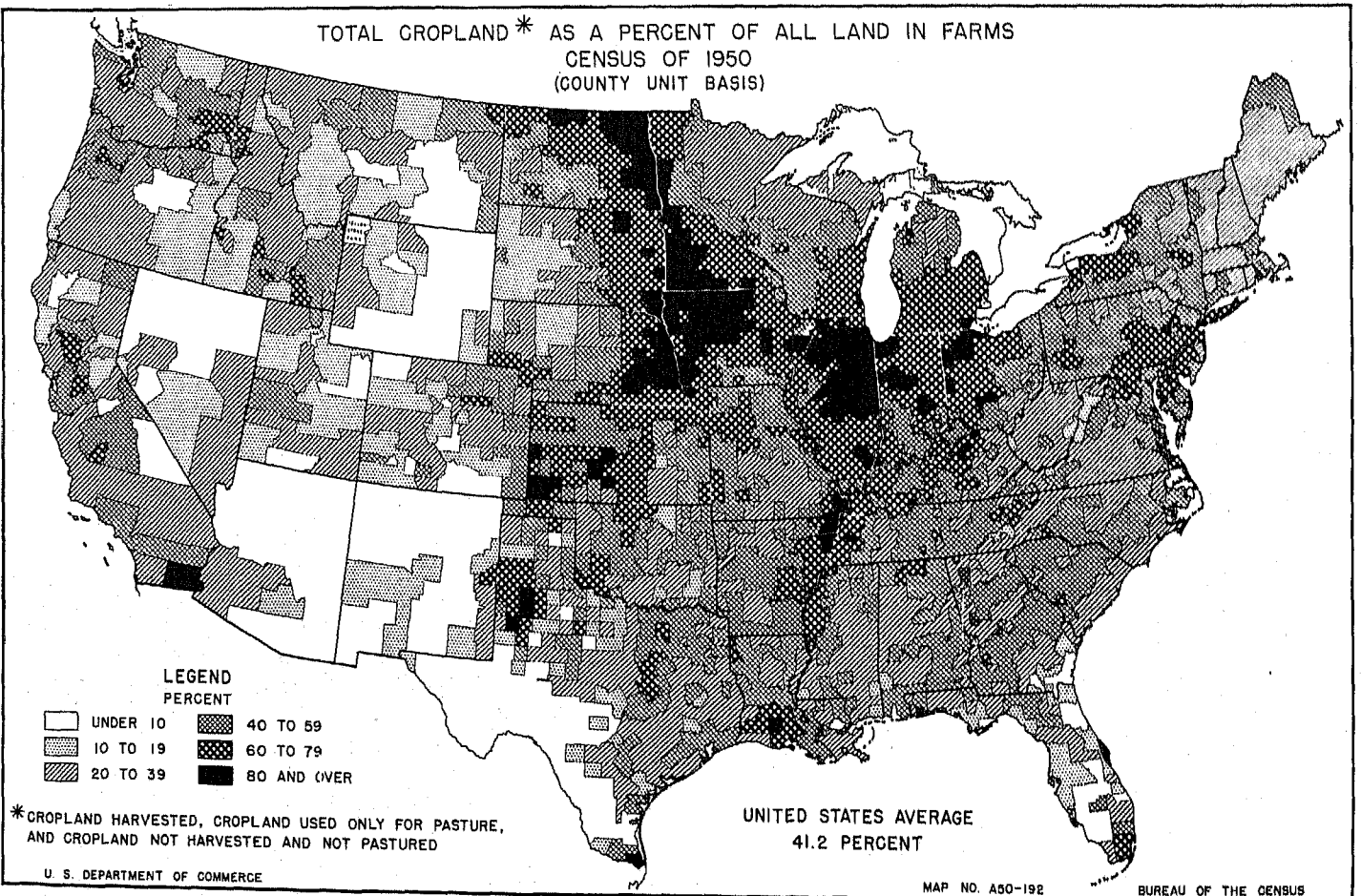
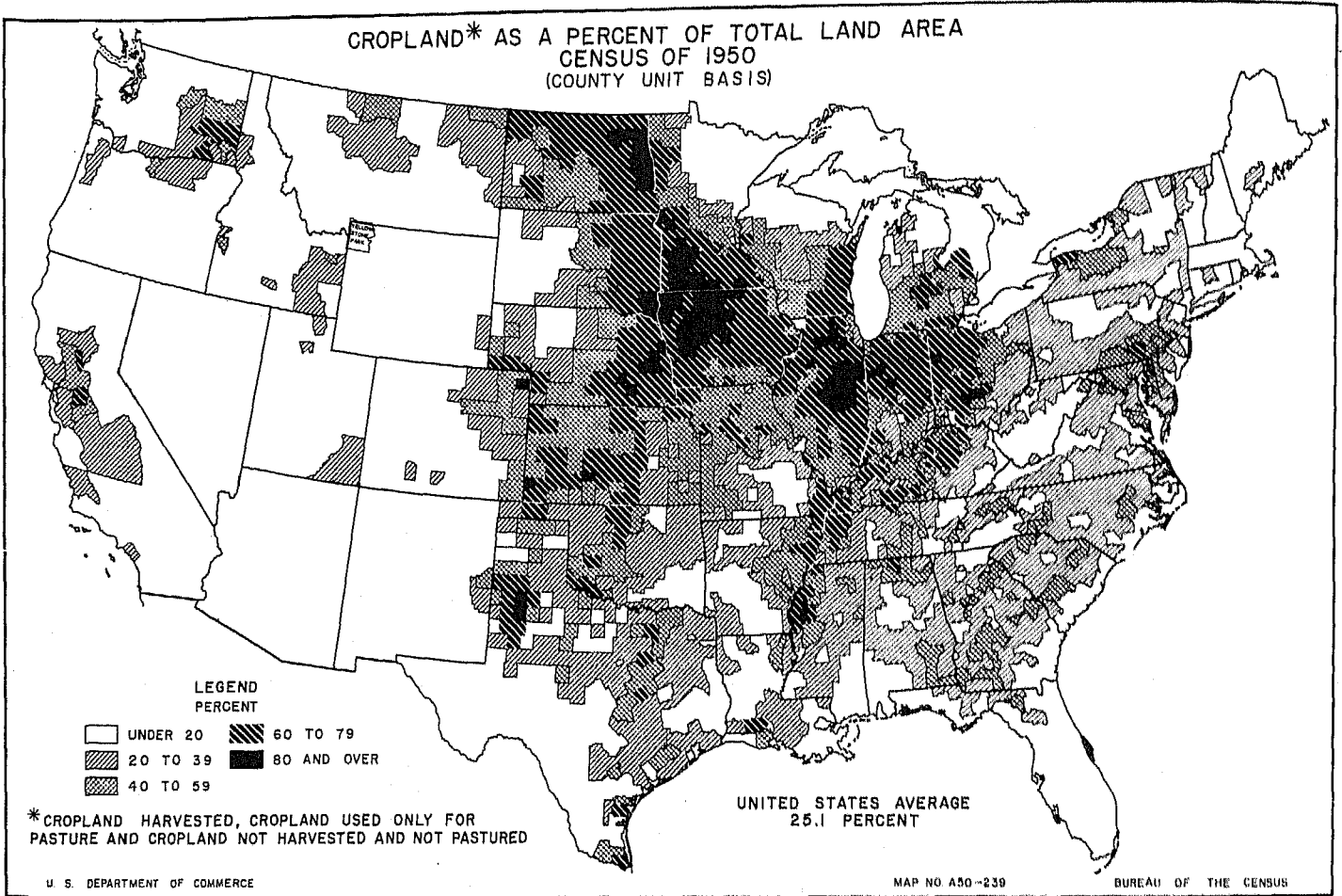
If the map showing the distribution of total cropland is compared with the maps of land relief, zonal soils, native vegetation, annual precipitation, and average length of frost-free season, close associations between density of cropland and physical features are easily observable. Soils, land relief, and precipitation influence directly the distribution of cropland. Native vegetation is highly significant in explaining contrasts in soils and the rate of cropland development during the period of settlement. Length of frost-free season and temperature contrasts more directly affect the distribution of crops rather than the distribution of land used for crops in the United States.

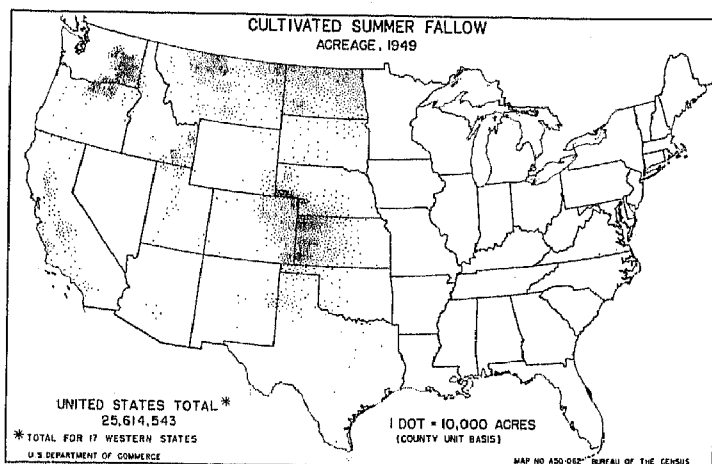
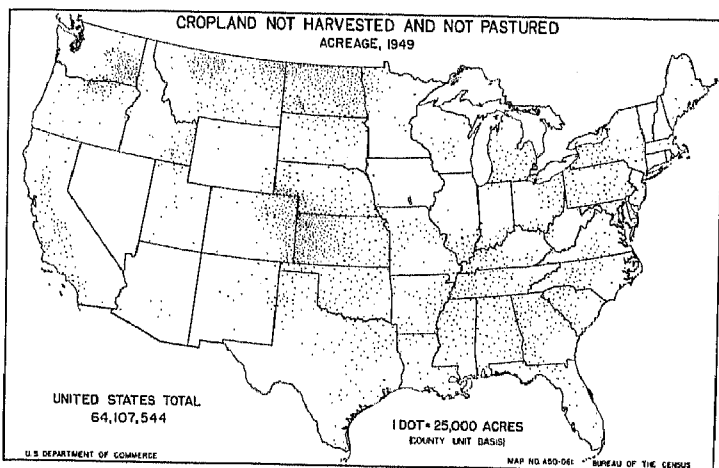
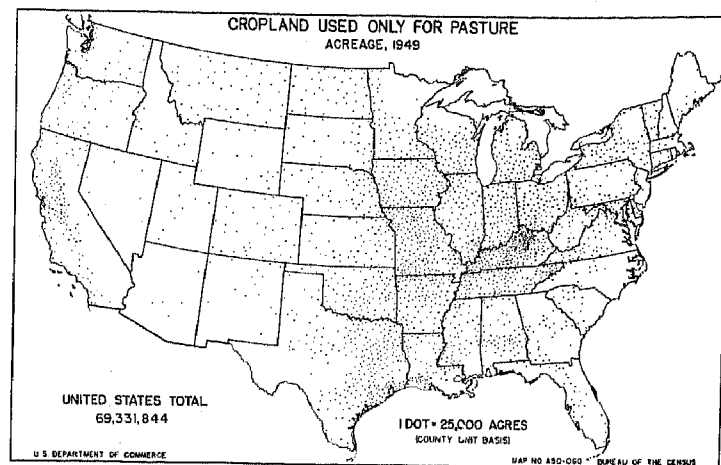
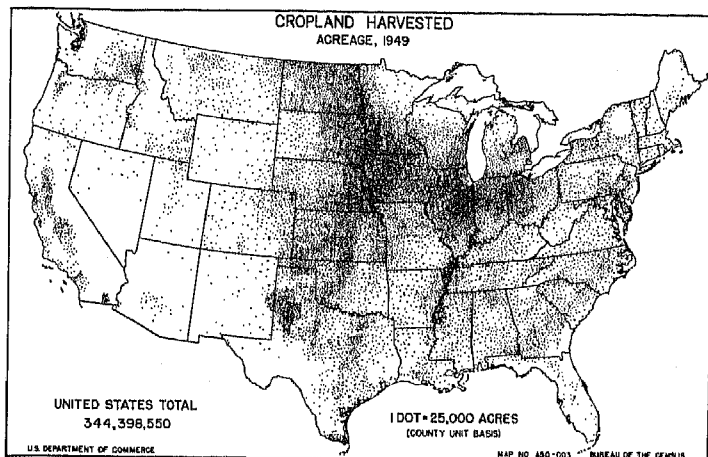
Half of the total cropland of the country is now concentrated in the 12 North Central States, which comprise only a fourth of the total land area of the United States. This heavy concentration of cropland is especially associated with the fertile prairie and chernozem soils. The Lower Mississippi Valley alluvial soils, the dark brown and chernozem soils of the Columbia Plateau, and the coastal prairie soils of Louisiana and Texas illustrate other associations of fertile soils with high densities of cropland. In

eastern United States, conspicuously low densities of cropland are associated with the relatively infertile podzols of the northern parts of the Lake and Northeastern States; with areas of marked local relief such as the Appalachian, Adirondack, and Ozark-Ouachita highlands; and with infertile soils and poor drainage of the Atlantic and Gulf coastal plains. In the Great Plains States, low densities of cropland are particularly associated with the Sand Hills of Nebraska, the Badlands and Black Hills of South Dakota, and semiarid southwestern Texas. Available water for irrigation associated with fertile soils is a major factor accounting for high densities of cropland along the Lower Rio Grande and in the Llano Estacado of northwestern Texas.

In the 11 Western States, availability of water ranks foremost among the factors that affect the distribution of cropland. These States have more land with soils and relief favorable for cropland use than water available for irrigation. Most of the cropland in the 11 Western States is either irrigated or dry-farmed. Irrigated cropland is concentrated principally along major rivers where suitable soils and topography exist, and on alluvial fans at the bases of mountains where relatively short streams originating on the better-watered upper slopes may be diverted for irrigation purposes.

GRAPHIC SUMMARY





CROPLAND AS A PERCENT OF TOTAL LAND AND OF LAND IN FARMS

The relative importance of cropland among the major uses of land is obtained by showing its distribution as a proportion of total land area and of land in farms. Cropland makes up 80 percent or more of the land area in only a few counties in the United States. Counties having this high proportion of the total area in cropland are almost entirely located in the North Central States. Three areas made up of several contiguous counties coincide closely with areas of prairie and chernozem soils which required extensive drainage for crop production.

Counties having between 60 and 79 percent of the land area in cropland are also largely confined to the Corn Belt, Great Plains, and Lake States. Thus, a large contiguous belt of counties with 60 percent or more of the land in cropland extends from central Ohio to the northwestern part of North Dakota. Only in parts of Kentucky, the Mississippi Delta, and the Columbia Plateau of southeastern Washington are there several adjoining counties with 60 percent or more of the land area in crops.

Counties having between 20 and 59 percent of their land area in cropland are widely distributed east of the Rocky Mountains. In the 11 Western States, most of the counties having more than 20 percent of their land area in cropland are those with large acreages of cultivated summer fallow. In most counties in the Western States, irrigated cropland constitutes less than 20 percent of the land area, because a ribbon or small area of irrigated land is generally surrounded by grazing and nonagricultural land.

The most extensive areas with less than 20 percent of the land area in cropland are associated with inadequate moisture and mountains in the Western States and southwestern Texas. In several other States different combinations of unfavorable physical conditions sharply limit the acreage of cropland over large areas.

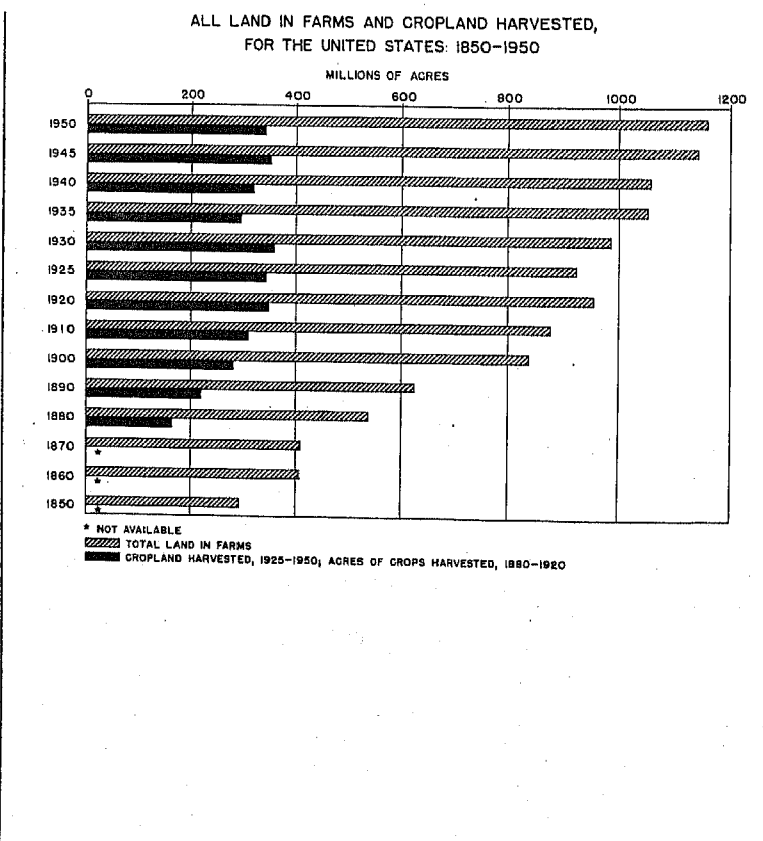
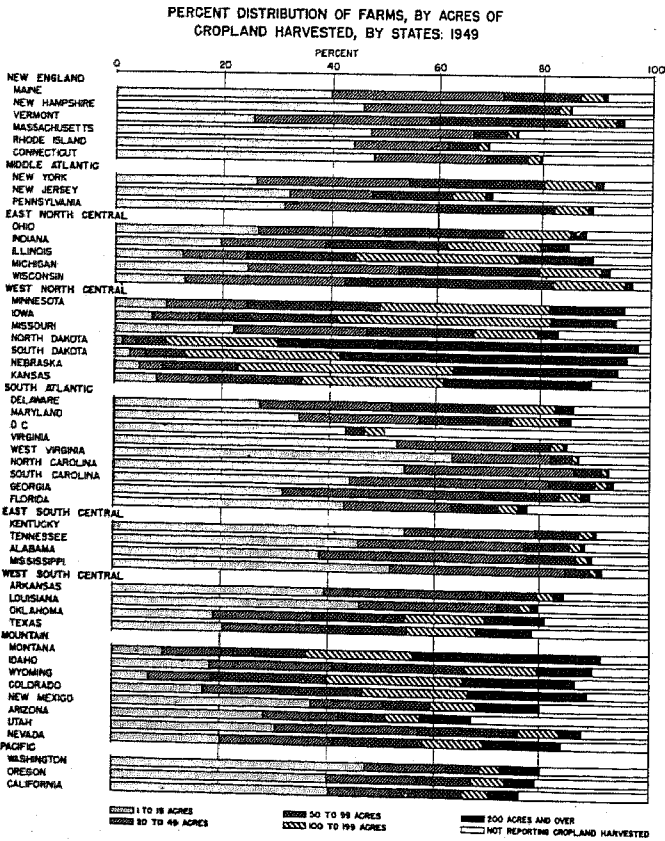
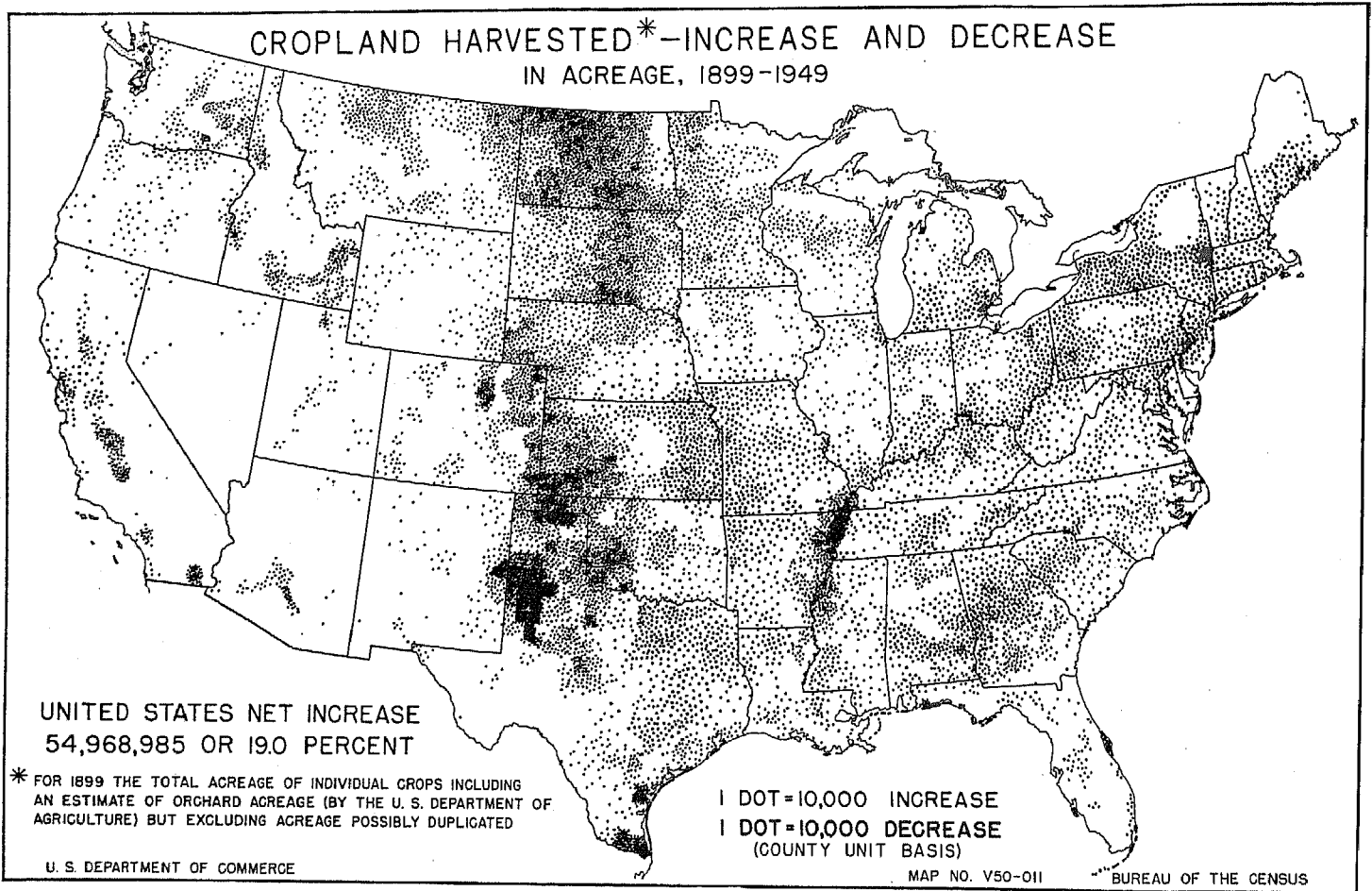
In those regions where land in farms comprises a high proportion of the total land area, cropland shown as a percentage of all land

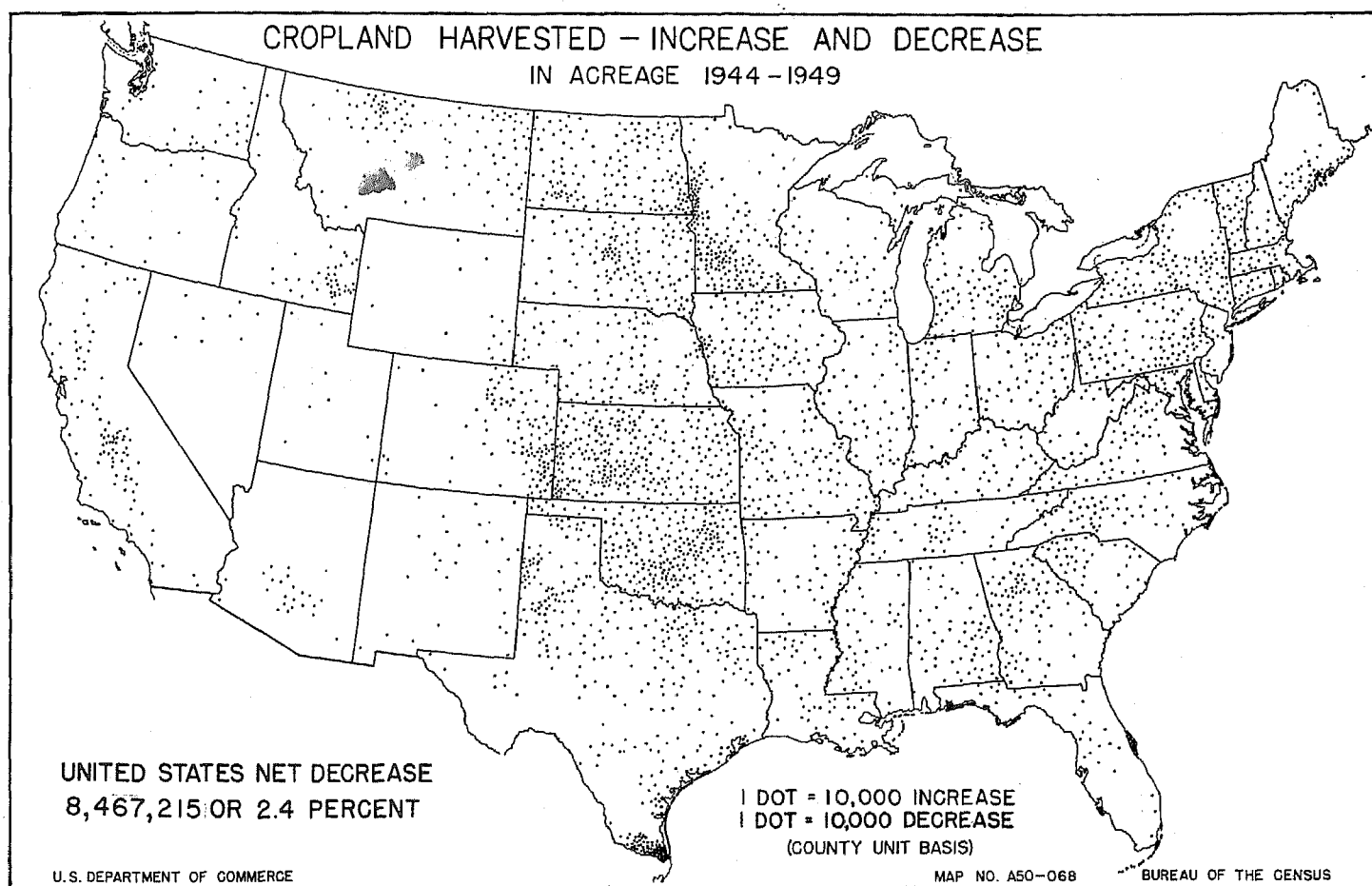
in farms is similar to the pattern of cropland as a percentage of total land area. It is where land in farms makes up a relatively small part of the total area that the relationship of cropland to total farm land is most helpful in presenting a better picture of the significance of cropland to the farming operation in different parts of the United States. A good example of the different pattern shown by the two maps is found in Imperial County, Calif., which has only a fifth of its area in farms, but where cropland accounts for more than four-fifths of the farm area.

CROPLAND BY USE

Cropland harvested accounted for nearly three-fourths of the total cropland reported by the Census of Agriculture for 1949. The four leading crops—corn, wheat, oats, and cotton—made up nearly two-thirds of the cropland harvested in 1949. A high proportion of the land in crops is devoted to one or more of these four crops in most of the areas of high cropland density. In the Corn Belt States, corn, oats, and soybeans occupied nearly three-fourths of the acreage of cropland harvested. In the Northern Plains States, wheat, corn, and oats accounted for more than two-thirds of the cropland harvested, while in the Southern Plains States, wheat, cotton, and grain sorghums made up about three-fourths of the total acreage of cropland harvested. In the Mississippi Delta States, cotton was the dominant crop and, together with corn, made up two-thirds of the harvested cropland.

Cropland not harvested and not pastured is most concentrated where the use of cultivated summer fallow is a regular cropping practice. This is shown by the map of cultivated summer fallow, the acreage of which is a part of the cropland not harvested and not pastured. About a third of the 38.5 million acres of crop failure and other cropland was located in the 17 Western States in 1949. The small acreage of nonharvested and nonpastured cropland is evident in the Corn Belt. Cropland used only for pasture is widely and evenly distributed, with the exception of the Bluegrass region of Kentucky.





CROPLAND HARVESTED

Considerable regional contrast is found in the proportion of farms reporting acreage of cropland harvested in 1949. The areas showing largest proportion of farms having less than 20 acres of cropland harvested are located in the New England, Southern (except Texas and Oklahoma), and Pacific States. In parts of these regions there are many small noncommercial farms which have little or no cropland. The highest proportion of farms having more than 200 acres of cropland per farm occurs principally in those States with all or part of their areas in the Great Plains. Corn Belt farms having between 50 and 200 acres of cropland per farm are more numerous than those having less than 50 or more than 200 acres. Physical conditions, period and pattern of settlement, and position relative to concentration of population are significant factors in accounting for regional differences in acreage of cropland per farm. Farms located in hilly areas are often small and have little cropland. Farms in regions of semiarid and subhumid climate generally have large acreages of cropland harvested except for those farms or ranches on which grazing of livestock is the dominant activity. Farms near centers of population frequently specialize in crops requiring much labor but little land.

During the last 100 years land in farms increased almost uninterruptedly from 293.6 million acres reported in 1850 to the 1,158.6 million acres in 1950. The decade of greatest increase of land in farms was that of 1890 to 1900 when large acreages of subhumid and semiarid land became ranches and farms. The last decade has added nearly 100 million acres of land to the farm area, mostly in the West and South. Cropland harvested increased decade by decade until 1920. Since that time acreage has fluctuated but no progressive increase has occurred.

Between 1899 and 1949, there was a net increase of nearly 55 million acres of cropland harvested. During these 50 years, cropland harvested increased greatly in some areas, while in other parts of the United States it declined. The most striking and widespread increase occurred in the Great Plains where wheat, cotton, and later, sorghums became major crops. In the South, acreage in harvested cropland expanded mostly in the Mississippi Delta, Coastal Plain, and in the Lower Rio Grande Valley. The

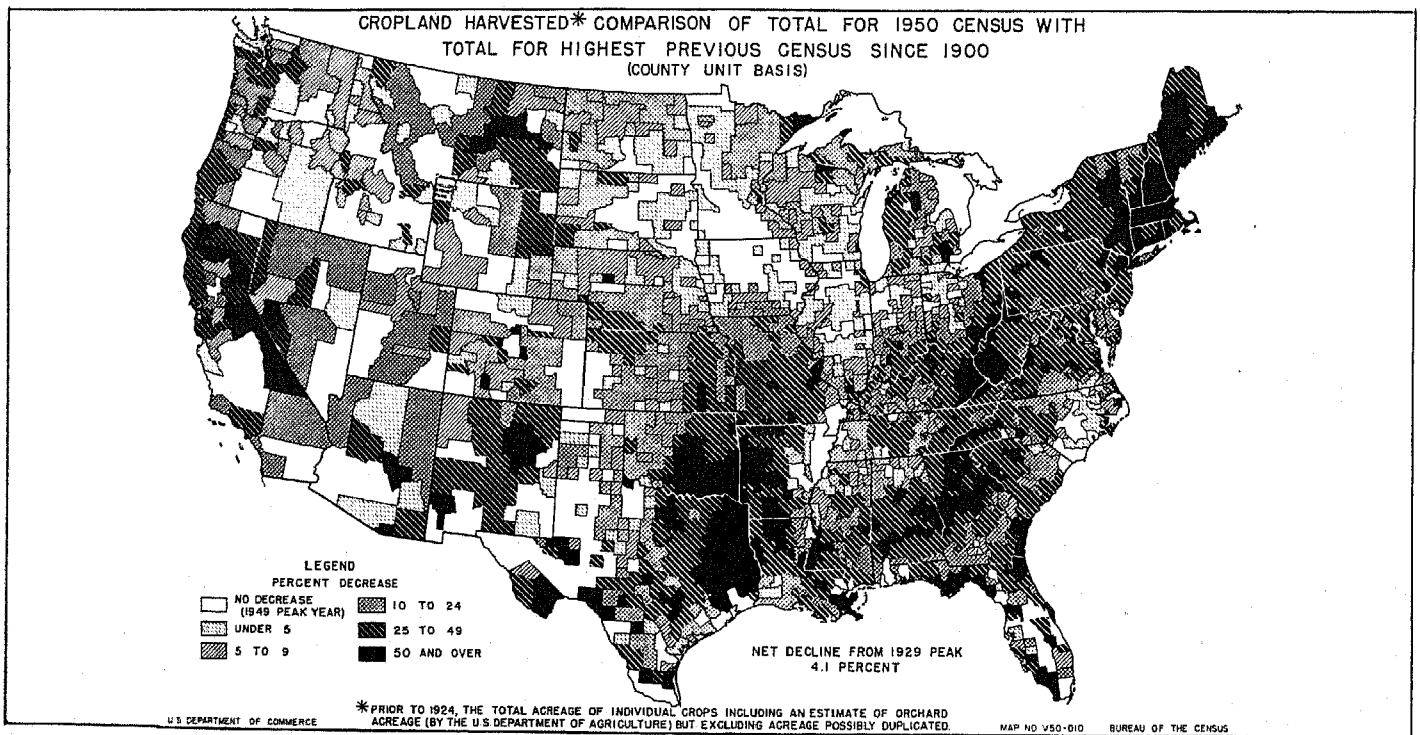
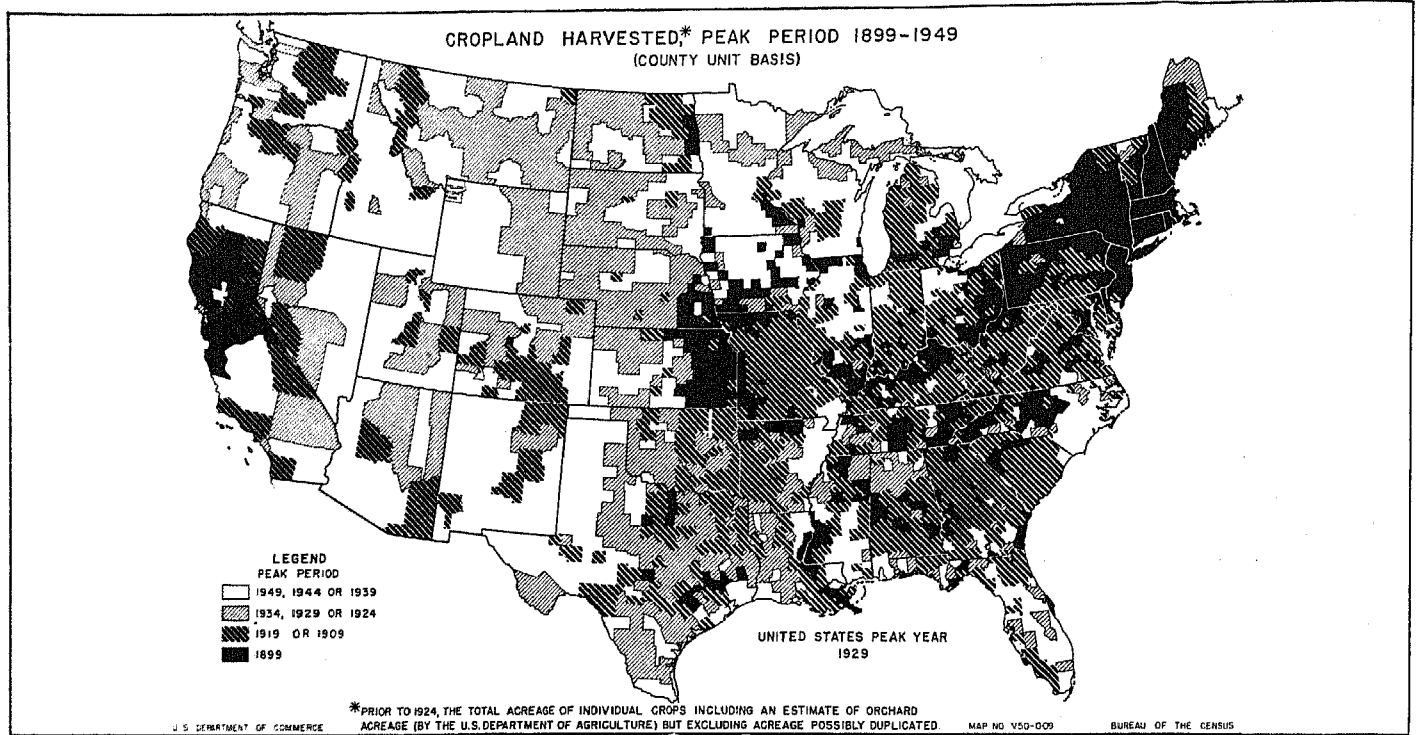
Mississippi Delta, with improved flood-protection and drainage, greatly expanded acreage in cotton and other crops. In the Coastal Plain, use of fertilizers, drainage of land, suitability of soils for producing bright tobacco in North Carolina, South Carolina, and Georgia, expansion of peanut acreage in Alabama and Georgia, increased production of citrus fruits and vegetables, and additional acreages devoted to rice in Louisiana and Texas, have contributed to the increase in cropland. The Lower Rio Grande Valley has greatly expanded acreage of cropland through irrigation. In the Corn Belt and Lake States, cropland has been added largely through drainage of wet lands on existing farms. In the 11 Western States, the increase in acreage of cropland harvested is largely associated with the development of irrigation and dry farming.

Decreases in cropland harvested between 1899 and 1949 occurred mostly east of the Great Plains. The decline is associated principally with hilly areas where soil erosion and depletion have taken place. The most extensive areas of decrease are located in the Northeastern States, southern Piedmont, hill-land fringe of the Ohio Valley, eastern Texas, and the Ozark-Ouachita Highlands and adjacent hilly areas. Several small areas of sharp decline are largely associated with the growth of cities, as in northeastern Illinois and parts of southern Michigan.

Between the end of World War II and 1949, there was a net decrease of 8.5 million acres reported in cropland harvested. As the estimated crop failure for the Nation as a whole for 1949 was approximately the same as the 10 million acres in 1944, the decrease represented an actual decline in the land in use for crops. Areas showing increases were largely associated with the drainage and clearing of land in eastern Arkansas, improvement of drainage on wet prairie land in northwest Iowa and adjacent Minnesota, increased wheat acreages in dry-farming areas, and expansion of irrigated land in the Western States. Decreases occurred in many areas where cropland in use for crops during the war shifted to other uses following the war.

Most of the land that was originally cleared or improved for crop production has continued to be used for that purpose. However, many acres in some areas are now used as farm pasture and woodland and some are no longer included as land in farms.

GRAPHIC SUMMARY

**CROPLAND HARVESTED—Continued**

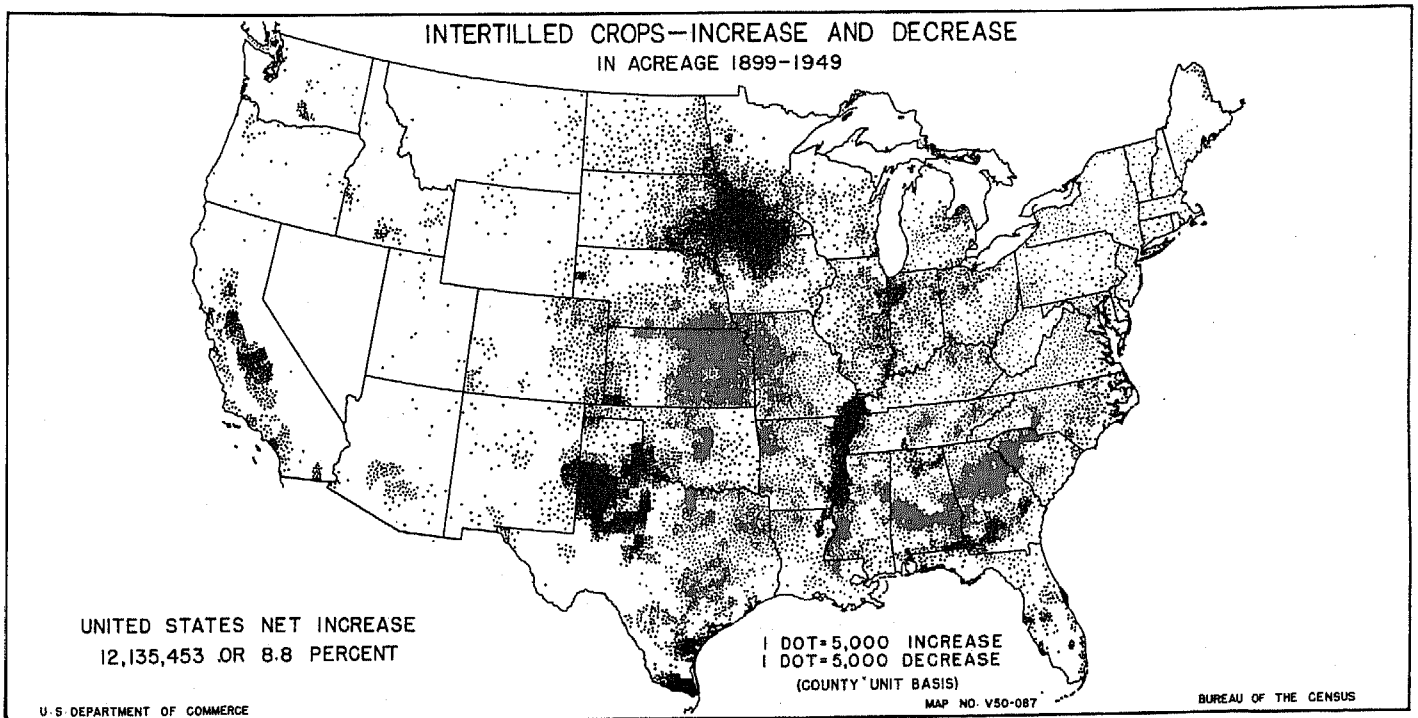
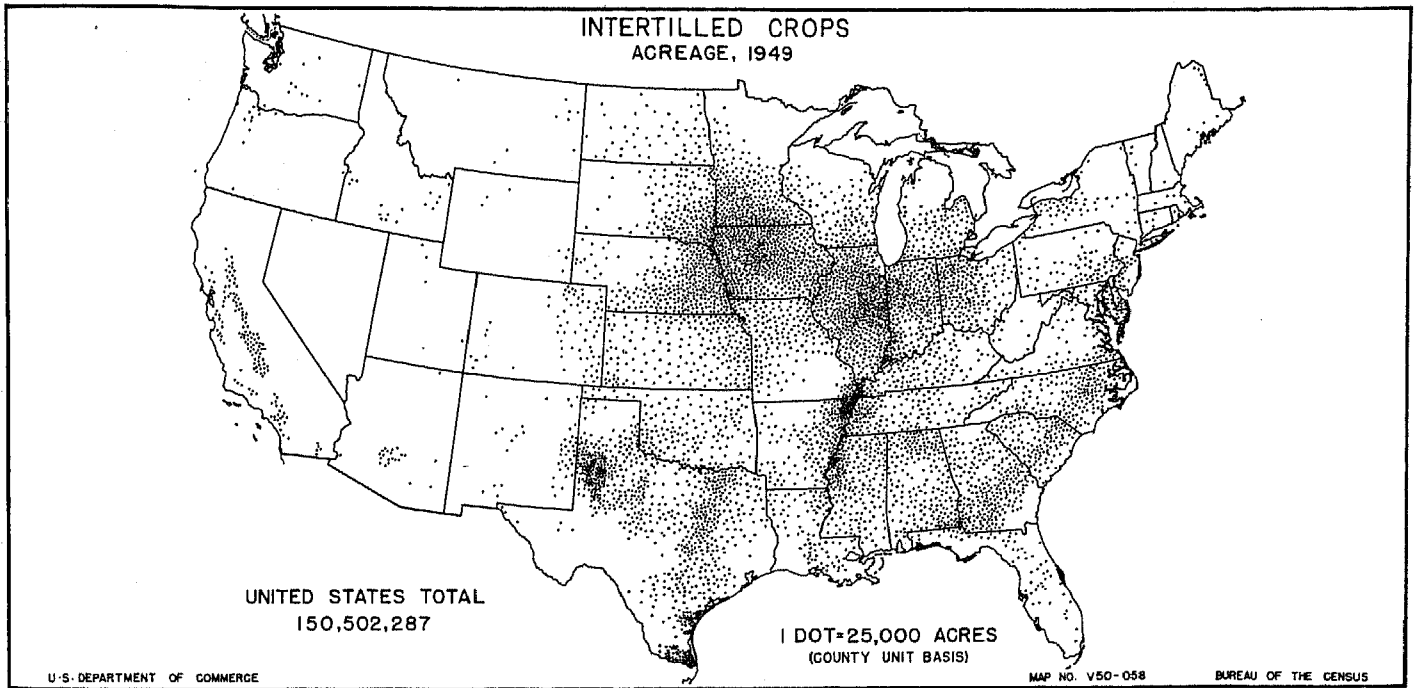
These shifts in land use have not occurred at the same time nor to the same extent in different parts of the country.

For most areas east of the Great Plains excepting Minnesota, Wisconsin, the northern part of the Corn Belt, the Mississippi Delta, and Florida, the peak period in cropland harvested occurred in 1920 or earlier. Limited new land development was more than offset by abandonment or a change in use after 1920. Most of the areas in which the peak period occurred after 1920 can be explained by new land development, mainly through drainage and clearing.

In the West, the peak in cropland harvested for most counties came after 1920 and in many cases as late as 1950. For the 11 Western States, 1950 was the peak year with more than double

the acreage reported 50 years earlier. Large increases in acreage of irrigated land were primarily responsible for this continued expansion. Widely contrasting changes within relatively small areas may be owing partly to other factors. These include shifts in land use from cropland to pasture, acquisition of large acreages for reservoir sites, military reservations, and changes from one county to another in the headquarters for reporting large farming operations in different census years.

Decreases in acreage from the peak period compared to 1950 was greatest in the originally forested areas east of the Great Plains except for the Corn Belt, Lake States, and the areas in which large acreages were drained such as the Mississippi Delta and Florida.



INTERTILLED CROPS

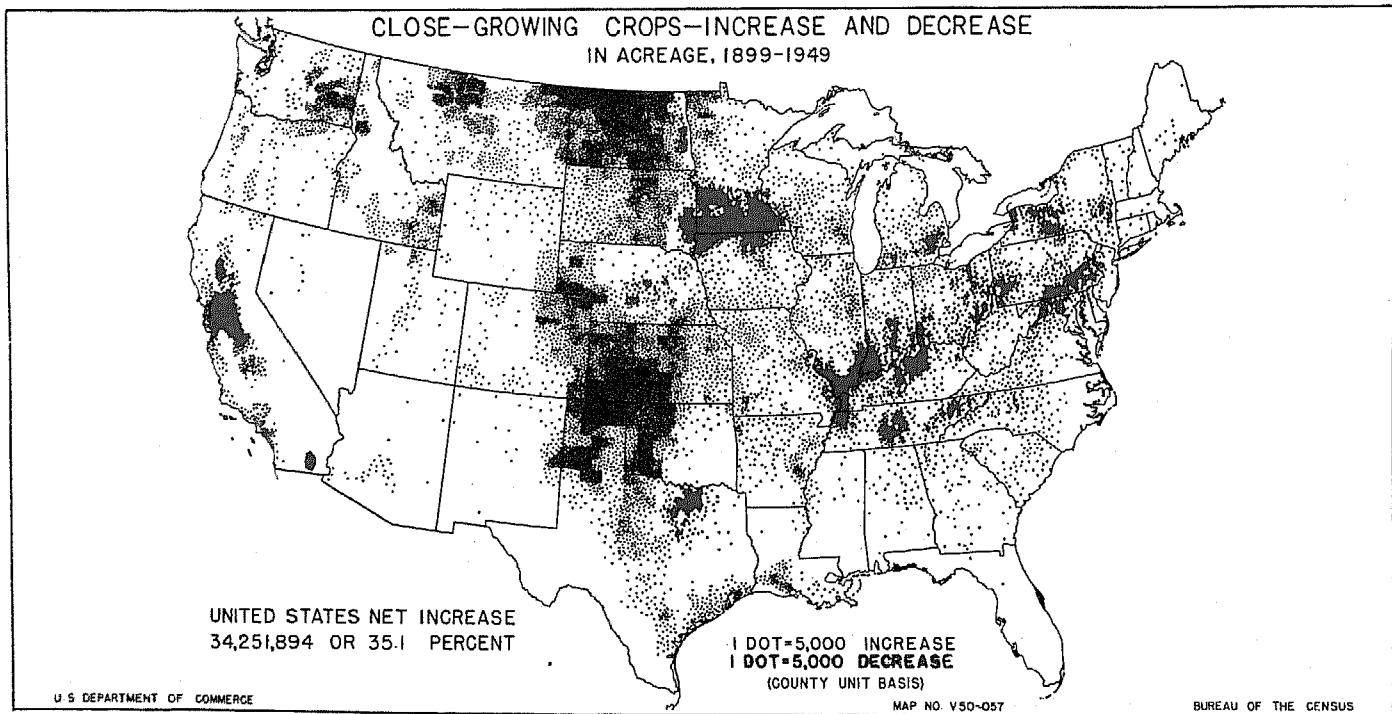
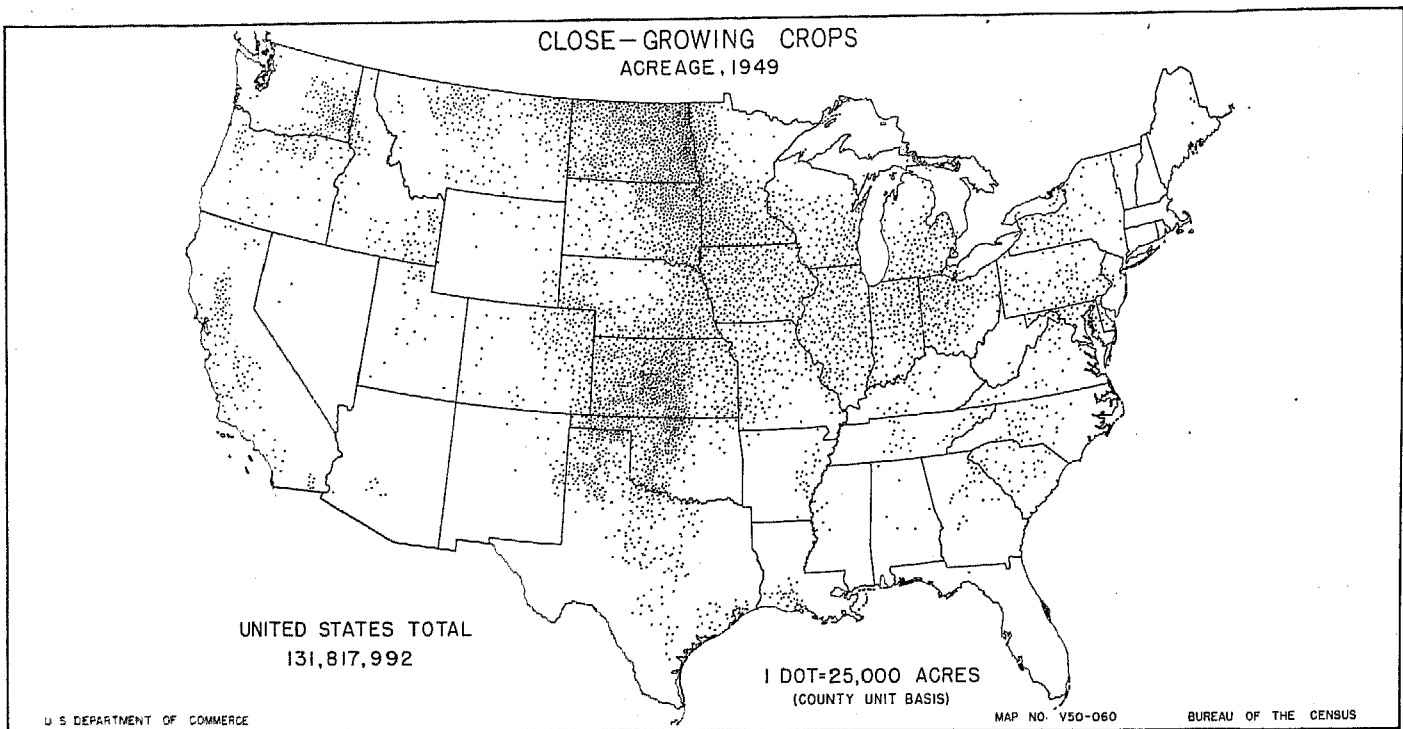
Interest in soil and water conservation has led to a classification of crops based essentially upon their relative effectiveness in limiting or preventing erosion. Intertilled crops are primarily those normally cultivated during the growing season, which supply, during most of the year, the poorest vegetative protection for the soil. They include corn, sorghum, cotton, tobacco, peanuts, soybeans, cowpeas, potatoes, vegetables, fruits, and other crops.

In 1949, 150,502,287 acres, or 43.7 percent of the total acres of cropland harvested, were in intertilled crops. Of the total acreage in this group of crops, corn and cotton represented 73.0 percent. Areas with the largest acreage of intertilled crops were, as might be expected, in the Corn Belt and the main cotton-producing areas of Texas and the Mississippi Delta. Large acreages

of vegetables, tobacco, peanuts, and cotton are also grown in the cash-crop area of the Atlantic Coastal Plain from New Jersey through Georgia.

Changes in the acreage of intertilled crops during the last 50 years were apparently associated with some of the major shifts in the agriculture of this country. The heaviest increases generally occurred in areas of greatest land development through drainage and irrigation, such as the Mississippi Delta, the southern and High Plains areas of Texas, central and southern California, and the area in and around southern Minnesota. Decreases were general throughout the mountainous and rougher regions of the East, where the total acreage in cropland harvested has also declined, in the Southeastern States where the acreage of cotton has declined greatly, and in Kansas, Missouri, and adjoining areas where a significant shift from corn to small grains has occurred.

GRAPHIC SUMMARY

**CLOSE-GROWING CROPS**

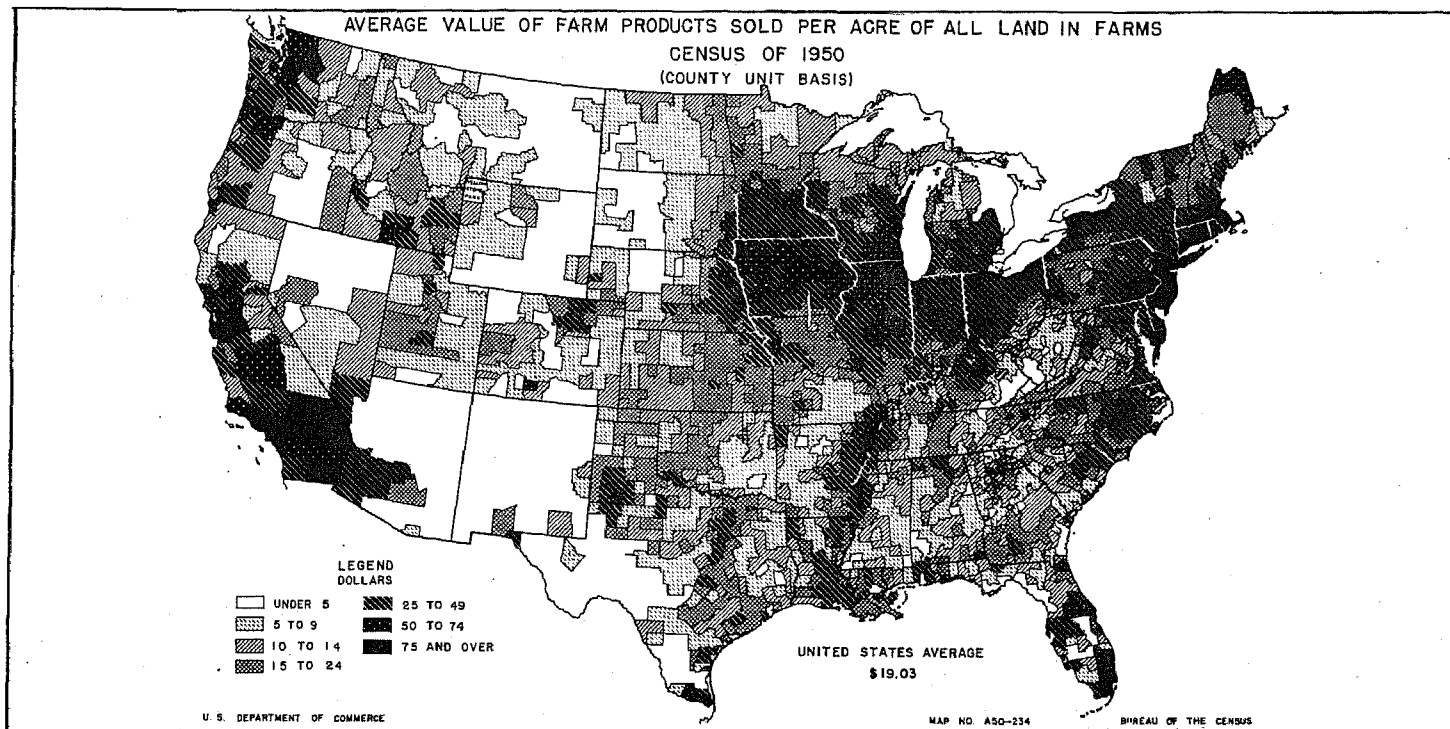
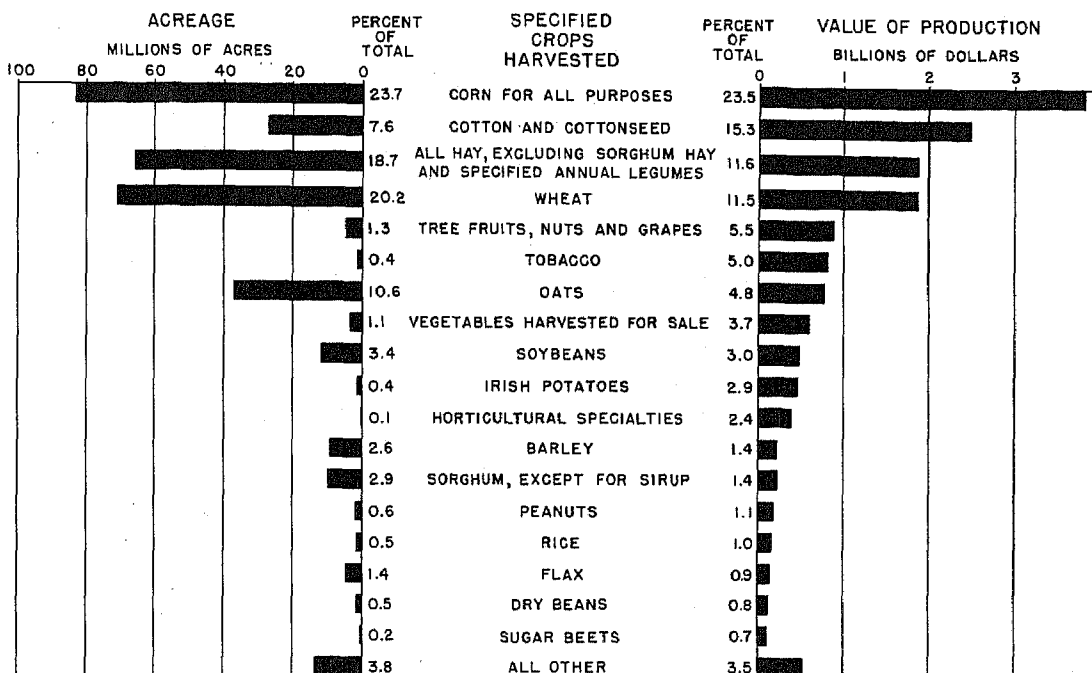
Close-growing crops are more effective than clean-tilled crops in checking soil and moisture losses through erosion but they are not as effective as a good stand of perennial hay or a well established pasture. Wheat, oats, barley, rye, flax, and rice are important close-growing crops. A total of 131,817,992 acres, or 38.3 percent of all cropland harvested in 1949, was in crops included under this classification.

Heaviest concentration of close-growing crops in 1949 coincided closely with the major wheat-producing areas of the country—parts of the Great Plains and part of the Columbia Plateau. This might be expected because wheat represented 54 percent of the total acreage used for these crops. The Corn Belt and the southern part of the Lake States also showed large acreages,

mostly wheat, oats, and other small grains grown in rotation with corn and hay.

East of the Great Plains, most areas showed decreases in the acreage of close-growing crops since 1900, particularly in the northwestern part of the Corn Belt and in the mountainous and hilly areas. These decreases were associated with abandonment of farm land as well as with a shift in production to other areas. The few areas showing an increase were the rice-producing section of southwestern Louisiana, the Mississippi Delta, the Piedmont and Upper Coastal Plains of North and South Carolina and Georgia, an area in the Corn Belt stretching from northwestern Ohio to northern Missouri, and the northern parts of the Lake States. In the West, the only significant area of decrease was in California. Increases in acreages were particularly heavy in the Plains States and the Northwest areas, where most of the expansion of large-scale production of wheat occurred after 1900.

SPECIFIED CROPS HARVESTED - ACREAGE AND VALUE OF PRODUCTION, FOR THE UNITED STATES: 1949



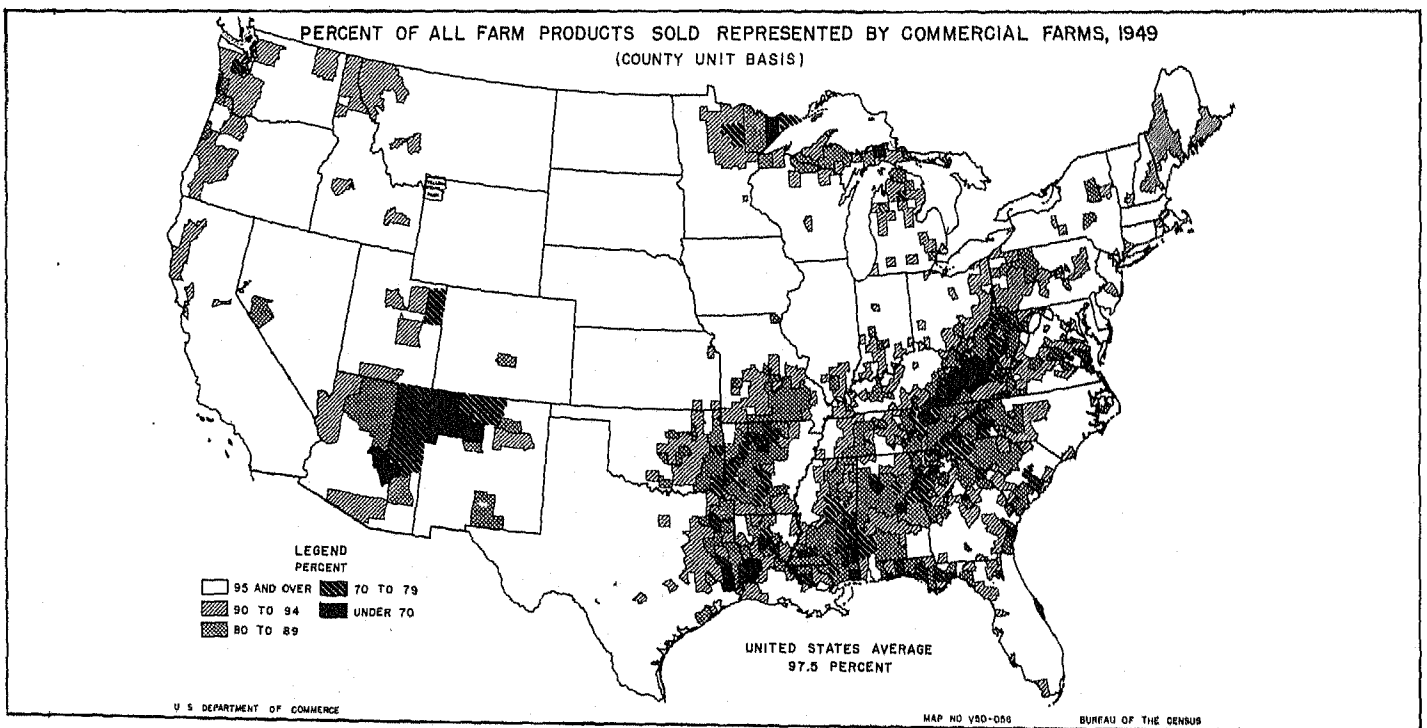
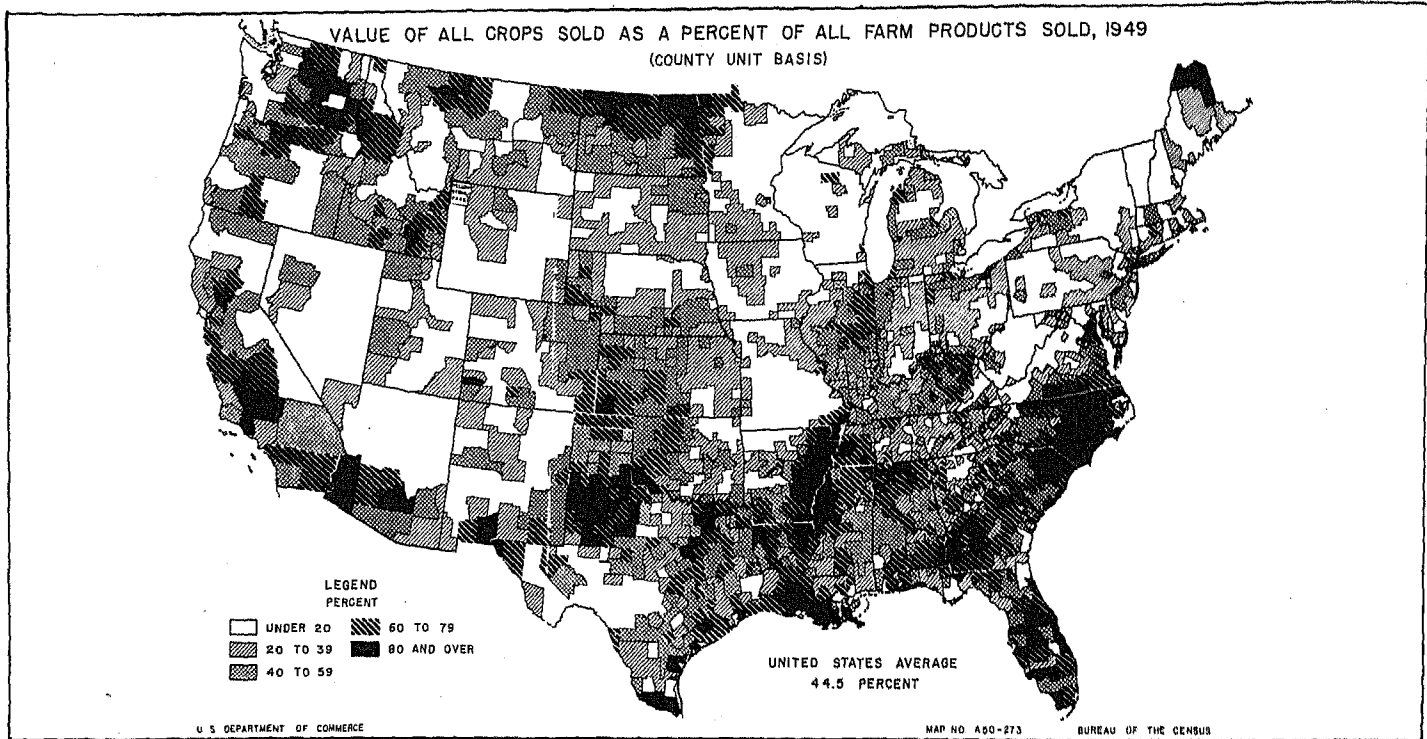
SPECIFIED CROPS HARVESTED

Five crops represented 80.8 percent of the acreage and 66.7 percent of the farm value of all crops in 1949. These crops were corn, cotton, wheat, hay, and oats. Corn, hay, and oats are used primarily for livestock while cotton and, in most cases, wheat are cash crops. Vegetables, fruit and nut crops, tobacco, Irish potatoes, and horticultural specialties use less land but more of the other factors of production than the principal field crops. They represented only 3.3 percent of the total acreage of crops harvested but 19.5 percent of the total value of all crops harvested.

VALUE OF FARM PRODUCTS SOLD

The intensity of agricultural production throughout the United States is shown rather well by the average value of farm products sold per acre of farm land. This is true even though the varying proportion of all land in farms in different parts of the country is not indicated on the map. Value of production per acre was high in the Corn Belt, in southern and central California, along most of the Atlantic Coastal Plain, and in a few other specialized crop-producing areas. The range areas of the West showed a low value because of the extremely small quantity of feed produced per acre on nonirrigated land.

GRAPHIC SUMMARY

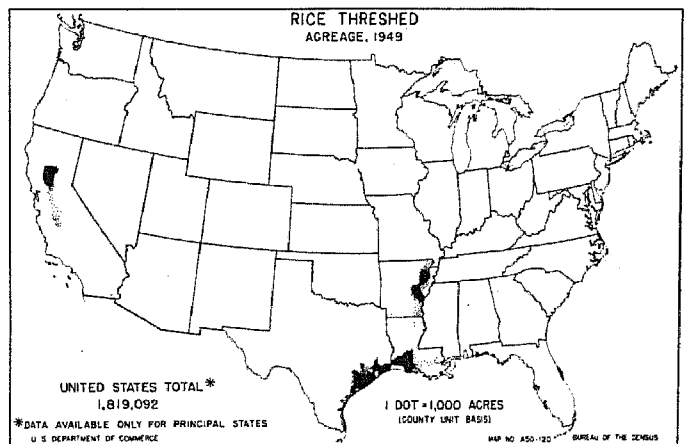
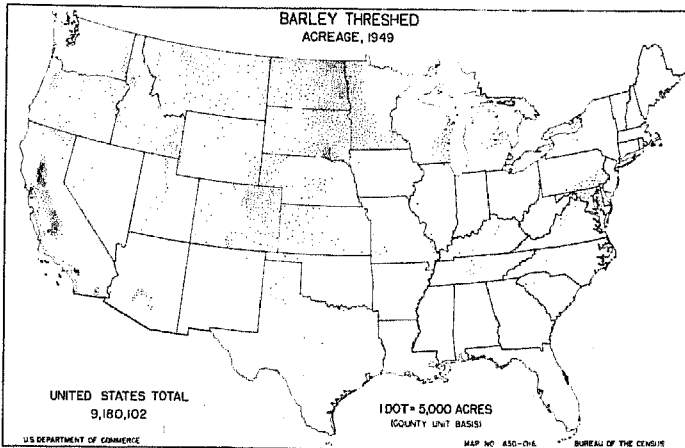
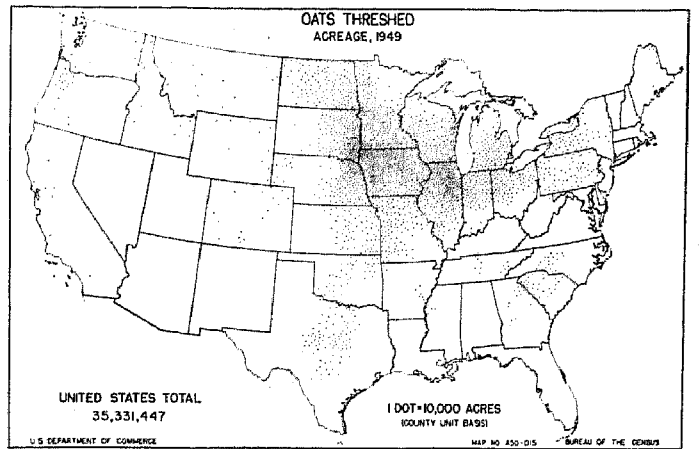
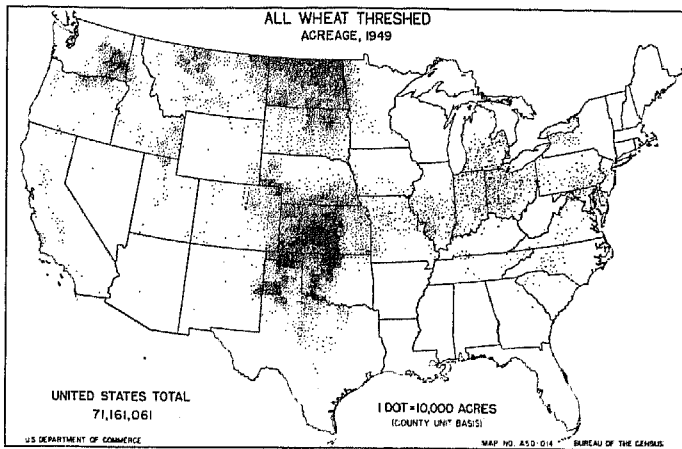
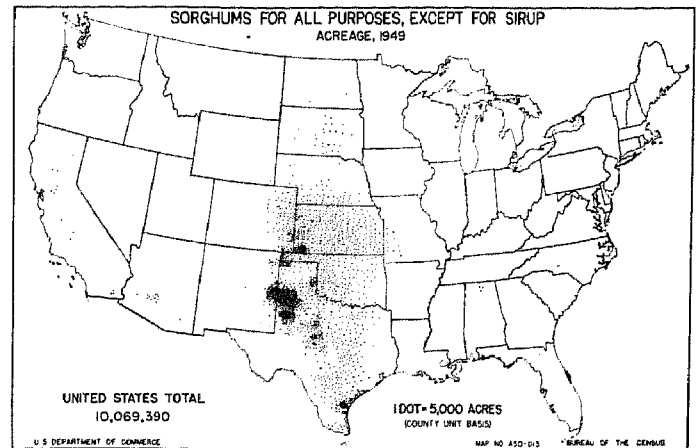
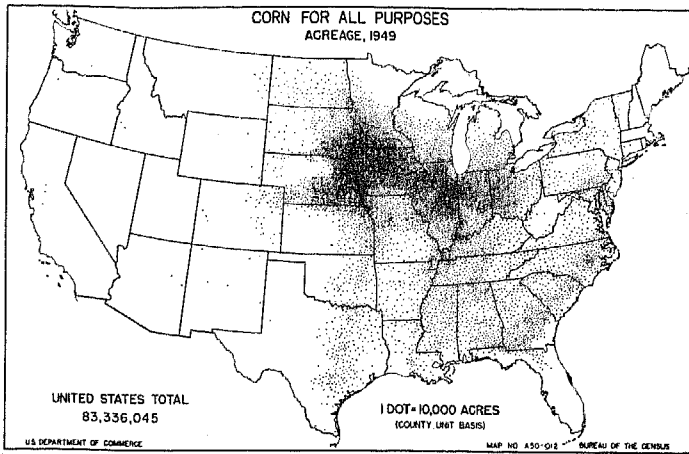


VALUE OF ALL CROPS SOLD

Crop sales as a percentage of total value of all farm products were highest in the Piedmont and Coastal Plain of the Southeastern States, the Mississippi Delta, northwestern Texas, the cash-grain area of northern North Dakota, the citrus and vegetable areas of central and southern Florida, the rice and sugarcane area in southern Louisiana, the irrigated fruit and vegetable areas in the valleys of California and Arizona, and several specialized fruit and vegetable areas throughout the country. Crop sales were relatively low in comparison to livestock sales in the range areas of the West, where crop production is limited except in a few specialized areas, the western part of the Corn Belt and the dairy areas of Minnesota and Wisconsin, and the Northeast where most of the crops are fed to livestock on the farms.

PERCENT OF FARM PRODUCTS SOLD BY COMMERCIAL FARMS

For many years, an increasing number of operators of farms have earned a part of their living at nonfarm work. As a consequence, the number of farms classed as part-time and residential by the Census in 1950 formed a large proportion of the total in many parts of the country. Although in 1950 these farms (other farms excluding abnormal) comprised 31.0 percent of all farms, they contained only 8.6 percent of all land in farms and accounted for only 2.1 percent of the value of all farm products sold in 1949. In number, these farms are most important in the Appalachian, Southeastern, and Mississippi Delta States; the northern part of the Lake States; and parts of Arizona and New Mexico. In these areas, total agricultural production is relatively low.



PRINCIPAL CROPS

Corn.—In 1949, almost a fourth of the total cropland harvested was in corn, 90.2 percent of which was harvested for grain and 5.2 percent for silage. Production of corn centered in the States of Iowa, Illinois, Indiana, and adjacent areas commonly referred to as the Corn Belt. Even in the Eastern and Southern States, a high proportion of the total cropland was in corn because of its high feed value, even in areas where yields are relatively low. Most of the acreage harvested for silage was in the northern fringe of the Corn Belt and in the Northeast where it is used for supplemental roughage on dairy farms.

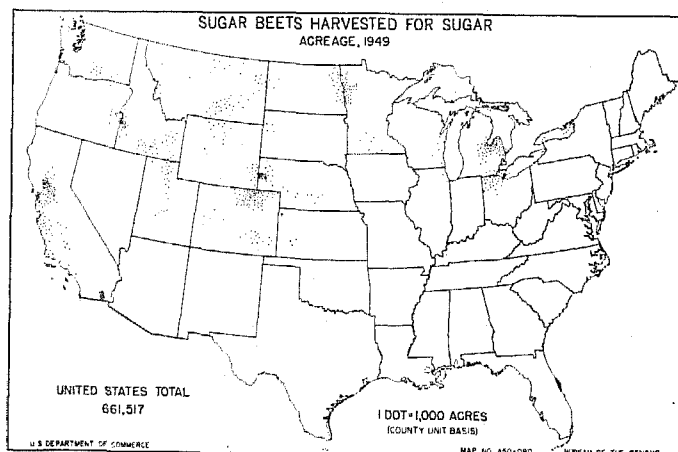
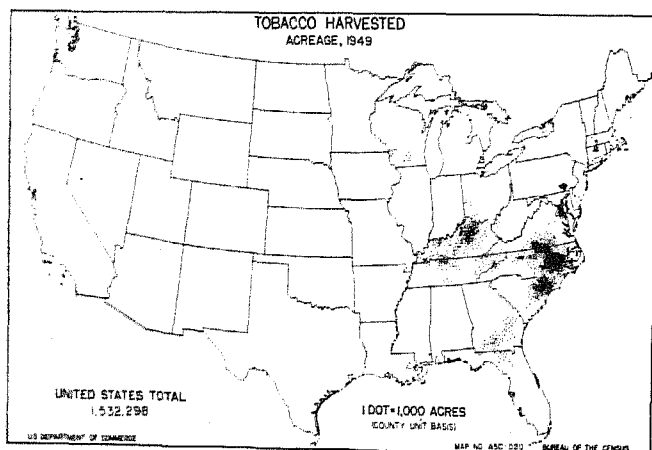
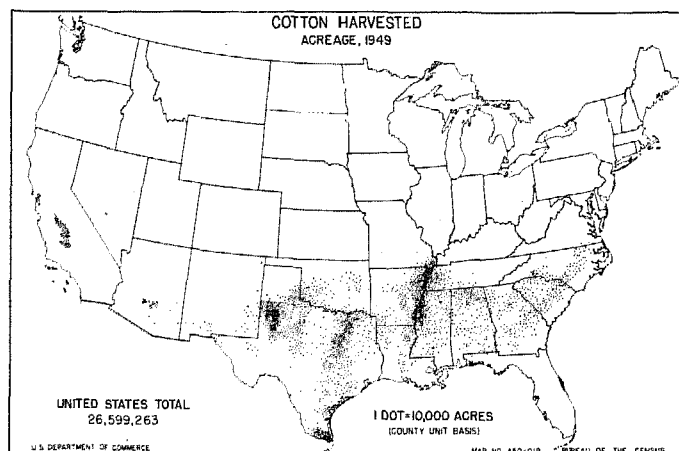
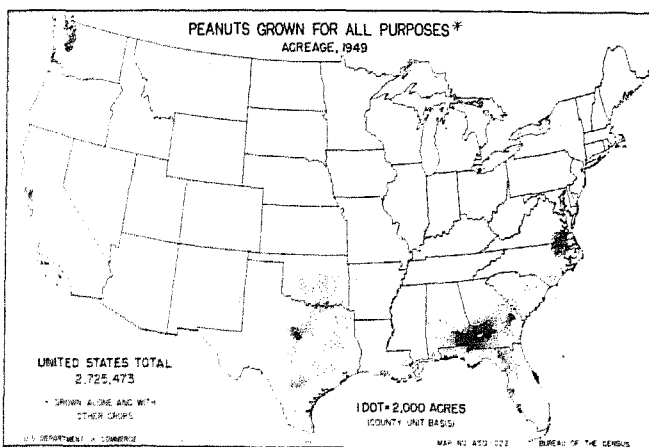
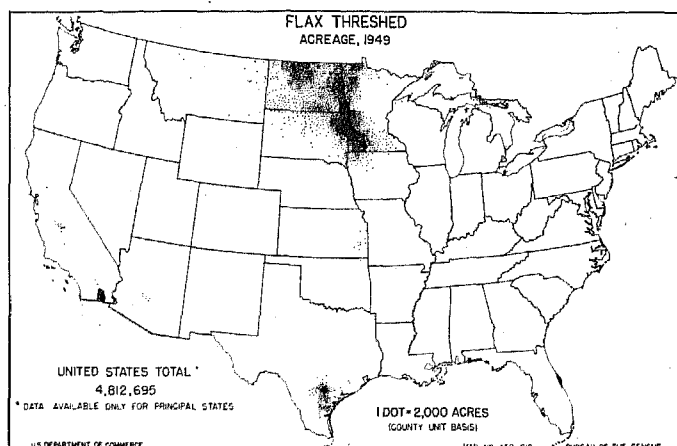
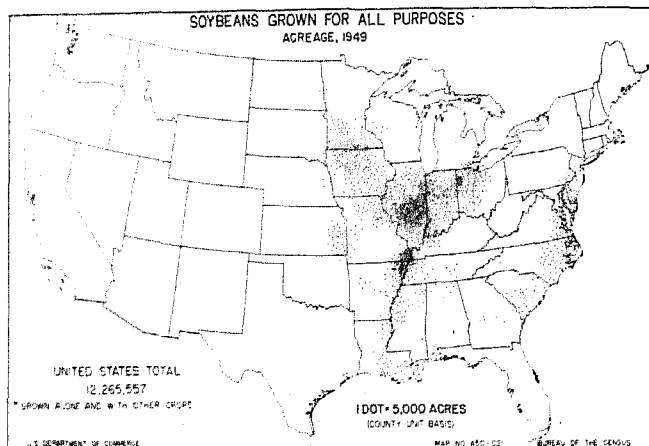
Sorghums.—In 1949, the total acreage of sorghums grown for all purposes, except sirup, was 10,069,390. Most of the acreage was located in Texas, Oklahoma, Kansas, and eastern New Mexico and Colorado. This area has low rainfall, which curtails production of corn and a growing season of sufficient length for sorghum crops to mature. Most of the 62.8 percent of the total acreage

harvested for grain or seed was grown in a much more limited area than the acreage grazed or grown for silage, hay, or dry forage.

Wheat.—Slightly more than 60 percent of the 71,161,061 acres of wheat harvested in 1949 was located in the Great Plains States. The winter wheat-growing areas are centered in Kansas, in the Columbia Plateau (sometimes called Columbia River Basin) of Washington, and in the eastern part of the Corn Belt, and extend through Pennsylvania. Acreage of spring wheat is largely concentrated in North Dakota, South Dakota, Montana, and Minnesota.

Oats.—The Corn Belt, particularly in the central and northern parts, also produces most of the oats. Although this crop is especially adapted to a moderately cool and moist climate, it is found as far south as central Texas and Georgia where winter oats are grown. A large percentage of the oats in the Southern States, although produced for grain, is fed unthreshed.

Barley.—Compared to corn, oats, and wheat, barley is a relatively minor grain crop in terms of the acreage harvested. It is



PRINCIPAL CROPS—Continued

rather widely grown but a large part of the acreage is in the spring-wheat area of North Dakota, South Dakota, and western Minnesota, the Central Valley of California, and northeastern Colorado.

Rice.—Production of rice is confined almost completely to a few areas. They are located in the Coastal Plain of Texas and Louisiana, eastern Arkansas, and the Sacramento and upper San Joaquin valleys of California.

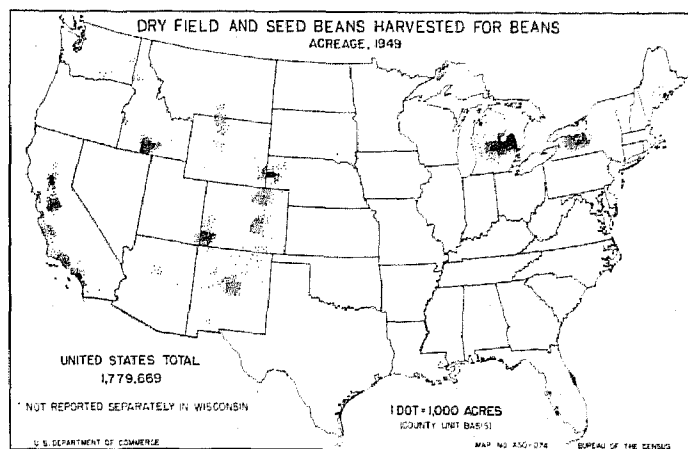
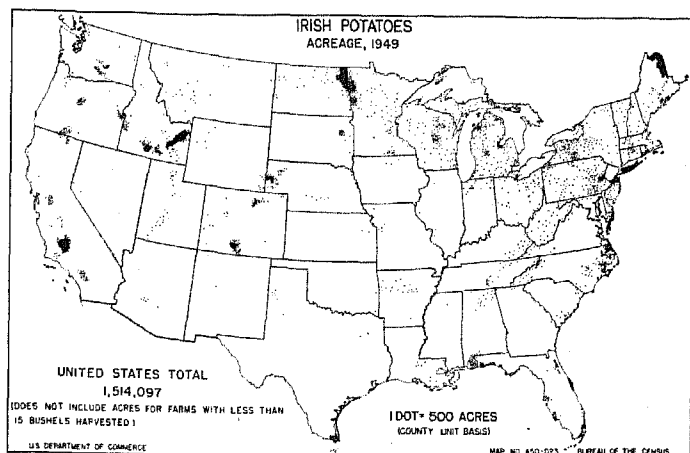
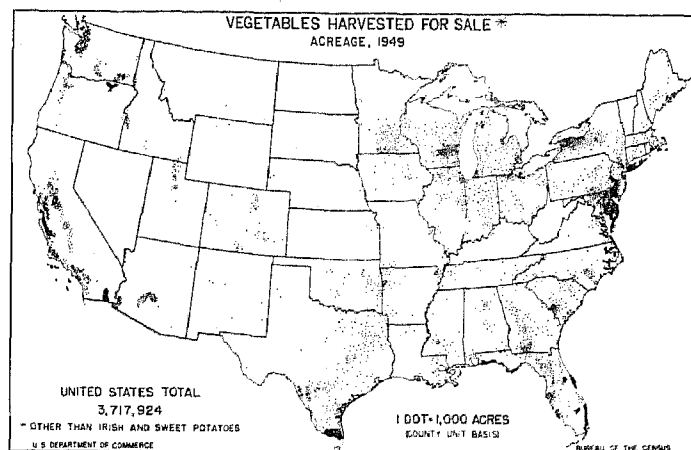
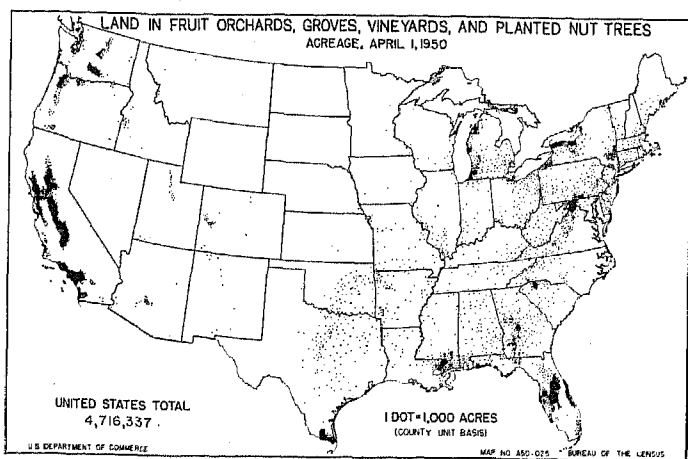
Soybeans.—Production of soybeans in 1949 was located almost completely in the eastern half of the country. Principal areas were in the Corn Belt, along the Mississippi River, and along the Eastern Seaboard from New Jersey to South Carolina. Much of the acreage in the southern areas was grown with other crops and was used for forage or as a soil-improvement crop. Of the total acreage harvested for all purposes, 82.7 percent was harvested for beans. Most of this was in Illinois, Indiana, and the Mississippi Delta.

Flax.—Most of the flax acreage was located in the spring-wheat areas of North Dakota, northeastern South Dakota, and

western Minnesota. Two smaller areas of concentrated production were in the Imperial Valley of California and in southeastern Texas.

Peanuts.—In 1949, peanut production was concentrated in a relatively few areas—in the eastern parts of North Carolina and Virginia and in the southern parts of Alabama and Georgia and the northern part of Florida. Almost all of the peanuts harvested as nuts for sale were grown in these two general areas. Other important producing areas were located in Texas and Oklahoma. Of the total acreage of peanuts grown for all purposes, 78.3 percent was harvested for picking or threshing.

Cotton.—Cotton is the most important nonfood agricultural commodity in the United States. It is widely grown in the South, being by far the most important cash crop. The northern limits of growth correspond rather closely to the area which has a growing season of at least 200 or more days. Heaviest concentration of acreage occurs in the Mississippi Delta and in a few areas in Texas. Some of the cotton acreage in Texas and practically all of the acreage reported in New Mexico, Arizona, and California was irrigated in 1949.



PRINCIPAL CROPS—Continued

Tobacco.—Tobacco acreage is located almost entirely east of the Mississippi River. Most of the production is in Kentucky, Tennessee, Virginia, North Carolina, South Carolina, and Georgia. Other areas with intensive production are found in southern Maryland, Lancaster County in Pennsylvania, southwestern Wisconsin, and the Connecticut River Valley. Different types of tobacco require widely varying types of soil. The crop is also grown under greatly different climatic conditions.

Sugar beets.—The sugar beet crop in the United States is largely irrigated, although in Michigan, northwestern Ohio, and a few other scattered areas it is not irrigated.

Land in orchards.—Land in fruit orchards, groves, vineyards, and planted nut trees amounted to 4,716,337 acres in 1949. This acreage does not include that for many farms which had less than half an acre each in orchards.

For the most part, the acreage of tree fruits and nuts and grapes was concentrated in specialized areas. California, by far the chief producing State, accounted for 31.2 percent of the total United States acreage. The next five most important States—Florida, Texas, New York, Michigan, and Georgia—accounted for 30.8 percent of the total.

The concentration of acreage shown in southern California represents citrus fruits, grapes, avocados, and walnuts, while in central California grapes, peaches, apricots, plums, prunes, olives, figs, apples, walnuts, and almonds account for most of the acreage. In Washington, most of the acreage was in apples, pears, and peaches, and in Oregon, in pears, cherries, plums and prunes, and walnuts. Citrus fruits, primarily oranges and grapefruit, account for practically all of the acreage reported in the Lower Rio Grande Valley of Texas and in most of Florida. The widely scattered acreage in the Cotton Belt is made up mostly of peaches and pecans, except for a considerable acreage of tung nuts in southern Mississippi, eastern Louisiana, and northern Florida. In Michigan and New York, most of the acreage represents peaches, grapes, apples, and cherries. Acreage in other parts of the Northeastern States is used mainly for apples and peaches.

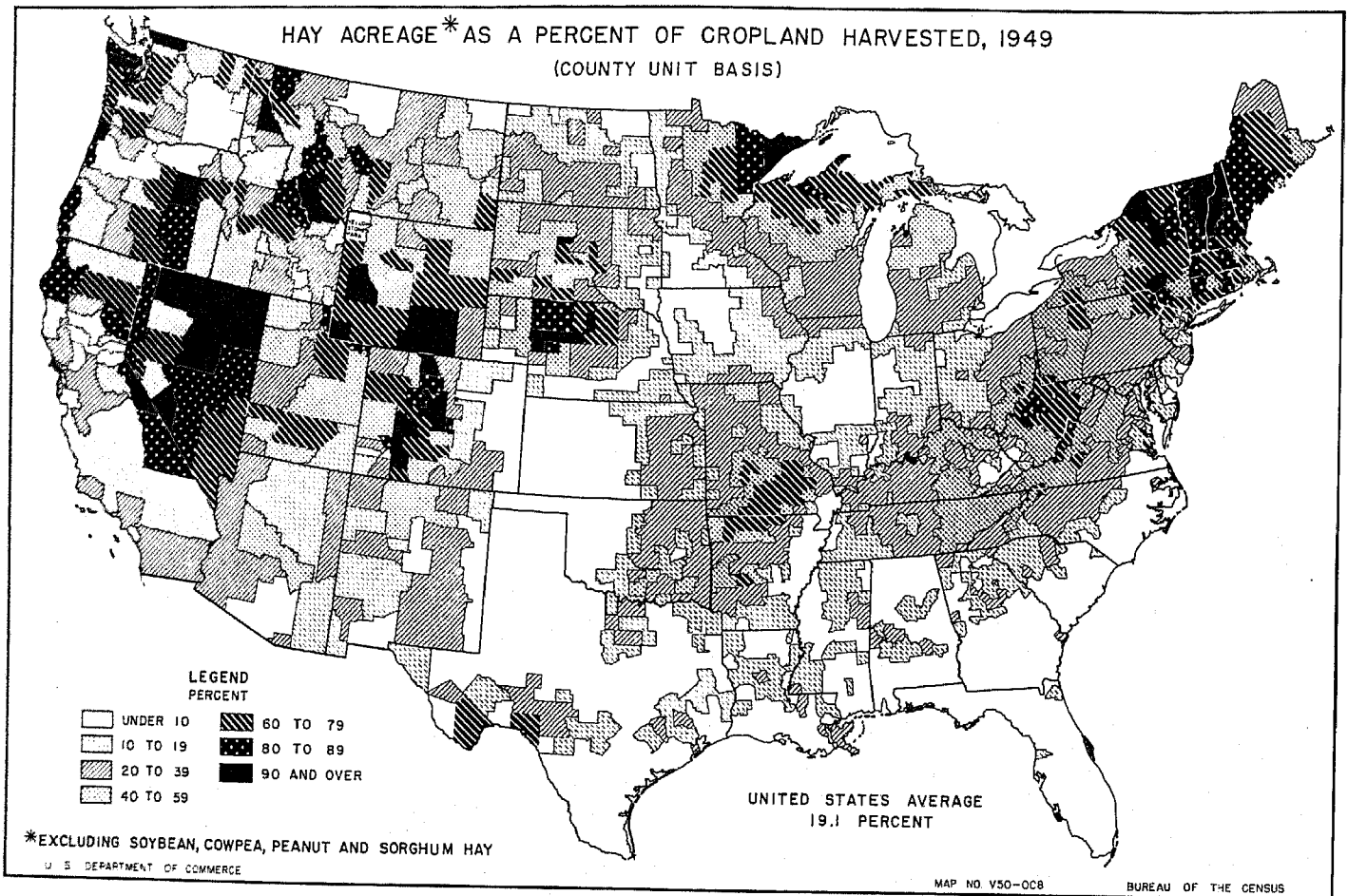
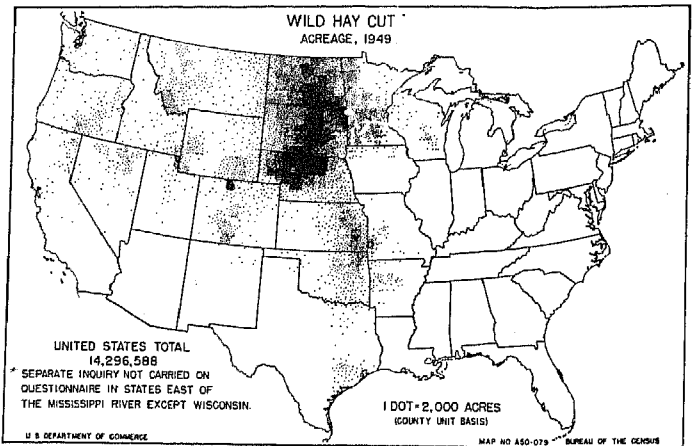
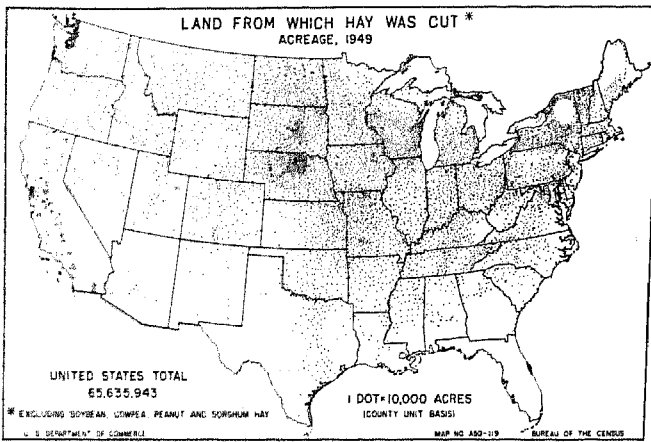
Vegetables.—In 1949, a total of 3,717,924 acres of vegetables

other than Irish potatoes and sweetpotatoes was harvested for sale. Of this total, 57.4 percent was used for the production of the five leading vegetables as measured by acreage. These were sweet corn, tomatoes, watermelons, green peas, and green snap beans. The area of heaviest production of fresh vegetables for market was along the Atlantic Coast from Long Island, N. Y., to the eastern part of Virginia. The principal production areas for fresh vegetables for the winter season were in Florida, the Lower Rio Grande Valley of Texas, and a few areas in California and Arizona. With improvements in transportation and in packaging, acreage used to produce vegetables has steadily increased in areas that are located far from the major consuming centers of the Northeast but which have favorable growing conditions.

Irish potatoes.—Most of the Irish potato acreage in the Eastern States is located where the climate is cool. Areas of heaviest production are in Aroostook County, Me.; Long Island, N. Y.; New Jersey; and the Red River Valley of North Dakota and Minnesota. In the West, the acreage is concentrated in limited areas to a greater extent than in the East. Largest acreages are in southern Idaho; Kern County, Calif.; and south central Colorado. The commercial production of Irish potatoes in the Southern States has been partly owing to a demand for both an early and intermediate crop that can reach the market before the crop in the Northern States matures. Seasonal temperatures are also more favorable for Irish potato production in the Southern States in the early spring than in the summer.

Even though growing conditions are not too favorable in many parts of the country, Irish potatoes are grown on a large number of farms for home use only. In 1949, the number of farms for the United States as a whole which produced Irish potatoes was 1,649,906. Of this number, 988,320 produced less than 15 bushels each. Only 62,404 farms harvested 3 or more acres; however, these farms produced 90.6 percent of the crop.

Dry beans.—Acreage of dry field and seed beans harvested for beans in 1949 was heavily concentrated in a few areas. Production in the East was almost entirely limited to central Michigan and western New York. In the 17 Western States, production was located mostly in a few areas of California, Idaho, Wyoming, Nebraska, Colorado, and New Mexico.



PRINCIPAL CROPS—Continued

Hay.—Hay was cut from 65,635,943 acres in 1949. This acreage did not include acreages of soybean, cowpea, peanut, and sorghum hay. More farms grow hay than any other crop except corn and except for corn and wheat, more cropland was used for hay than for any other crop. A large number of hay crops with different growing requirements aid in the widespread production of hay.

Most of the hay is used on the farm where it is produced. In the predominantly dairy areas of the North Central, Northeastern, and Appalachian States, production of hay is particularly large. In these States, the cool moist climate and the heavy soils are favorable for production of clover and timothy, the principal hay crop produced. The topography commonly found in many dairy areas is not well suited to production of other crops.

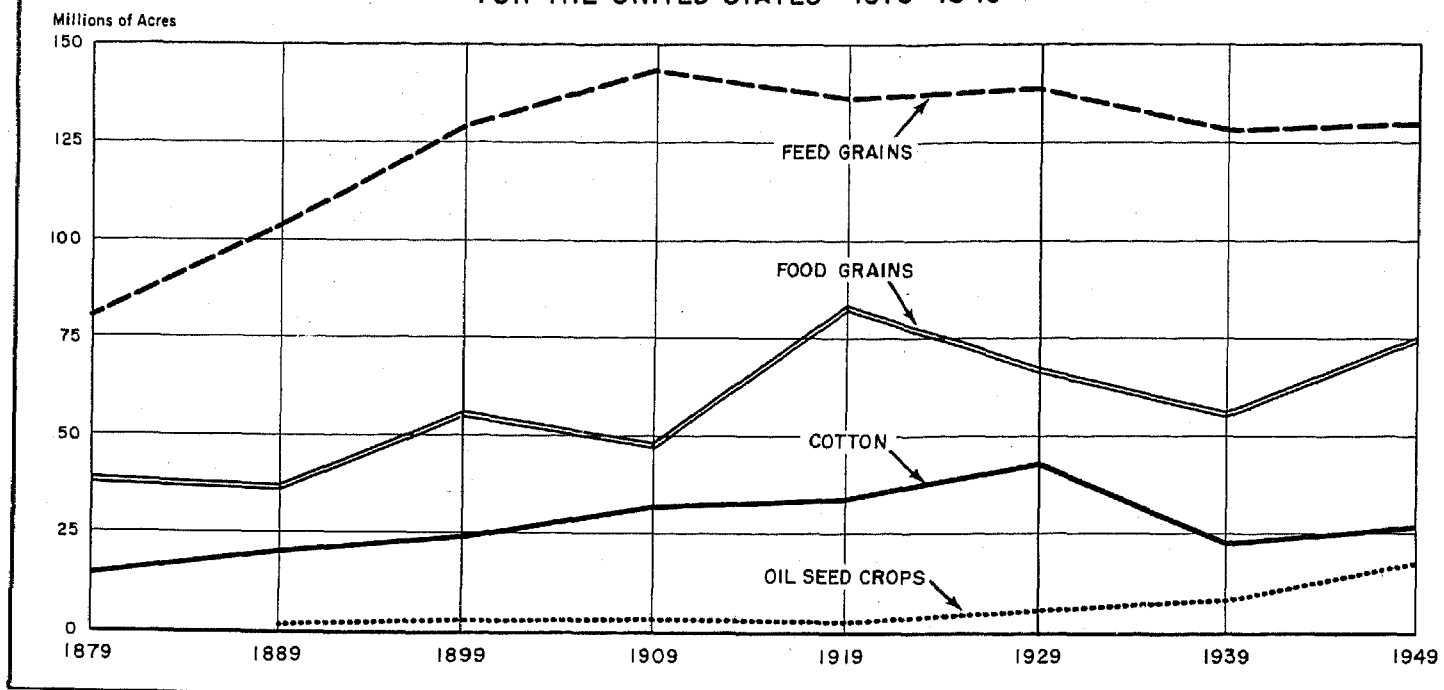
Acreage of wild hay is found primarily in North Dakota, South Dakota, and Nebraska. In this area, rainfall is too low for

satisfactory production of clover or timothy.

In the 11 Western States most of the hay is alfalfa grown on irrigated land. Growing conditions are very favorable because many of the soils need little or no lime applied and the crop can be harvested without the danger of rain. Alfalfa is also an important hay crop in the Corn Belt and Lake States, particularly in southern Wisconsin. In the Southeastern and Delta States, annual legumes are generally used for hay because the climate is too warm for satisfactory production of clover or timothy. In Texas, Oklahoma, and Kansas sorghums are an important forage crop.

Hay makes up a particularly high proportion of the total cropland harvested in the Lake, Northeastern, Northern Plains, and the 11 Western States. In these areas, either dairy or beef cattle are important farming enterprises which not only utilize the plentiful supply of pasture and grazing land available but also require large acreages of hay to provide the additional roughage for winter use.

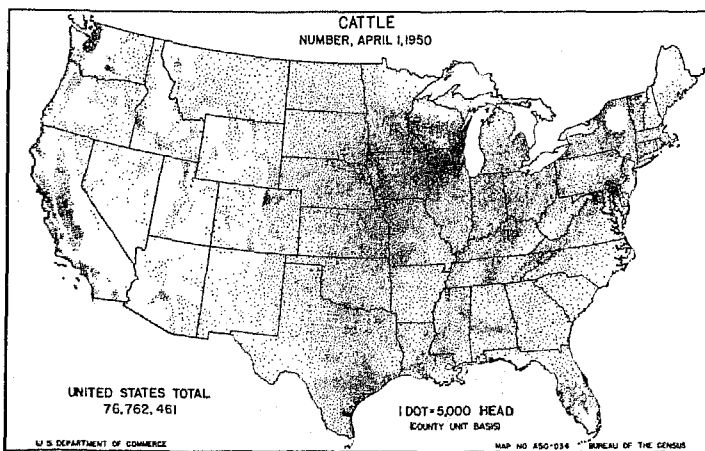
ACREAGES IN FOOD GRAINS, FEED GRAINS, OIL SEED CROPS, AND COTTON
FOR THE UNITED STATES: 1879-1949



FOOD GRAINS, FEED GRAINS, OILSEED CROPS, COTTON

Food grains, feed grains, oilseed crops, and cotton occupied nearly three-fourths of the cropland harvested in 1949. The food grains—wheat, rice, rye, and buckwheat—occupied about a fifth of the cropland harvested in 1949. Peak acreages of food grains were grown in response to a great need for food in western Europe during and after World Wars I and II. The feed grains—corn, oats, barley, grain sorghum, and mixed small grains—occupied

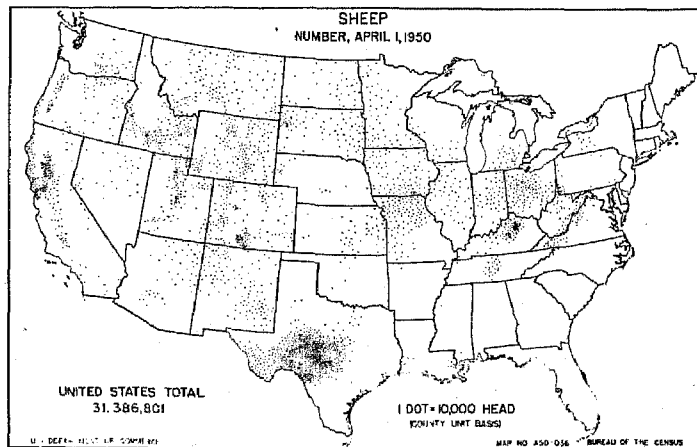
a greater acreage than food grains, because of the requirement of livestock in the United States. The leading oilseed crops other than cotton are soybeans, flax, and peanuts. This group of crop is more significant now than formerly, mainly because of the increased use of vegetable oils for food and industrial purposes. Soybeans, only a minor crop before World War I, were harvested for beans from more than 10 million acres in 1949. Cotton acreage reached a peak in the late 1920's. Increased use of synthetic fibers, expanded production of cotton in foreign countries, and increased yield per acre were factors leading to a sharp reduction in cotton acreage.



CATTLE AND SHEEP

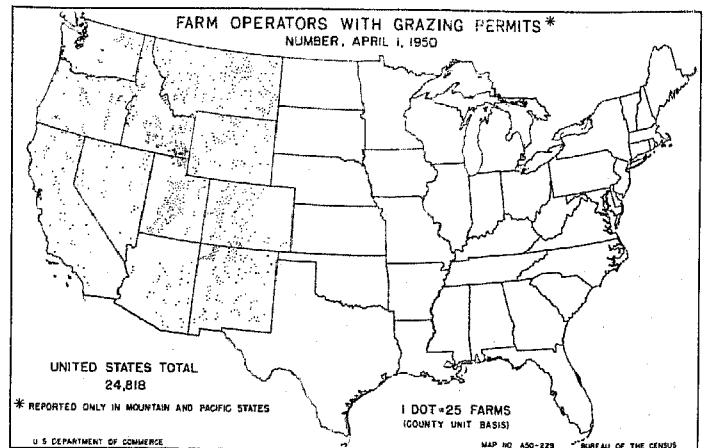
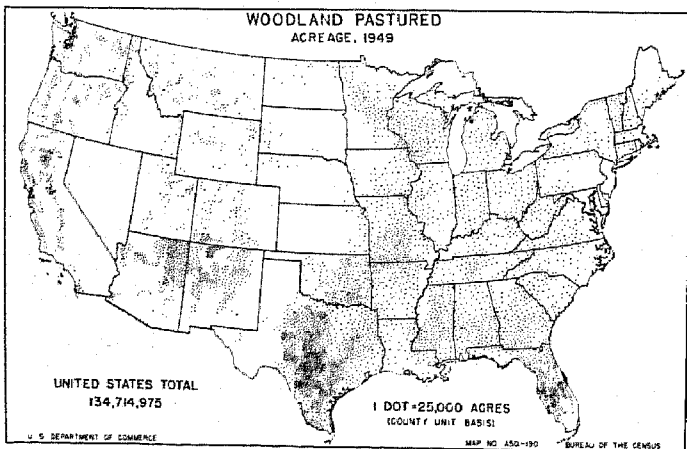
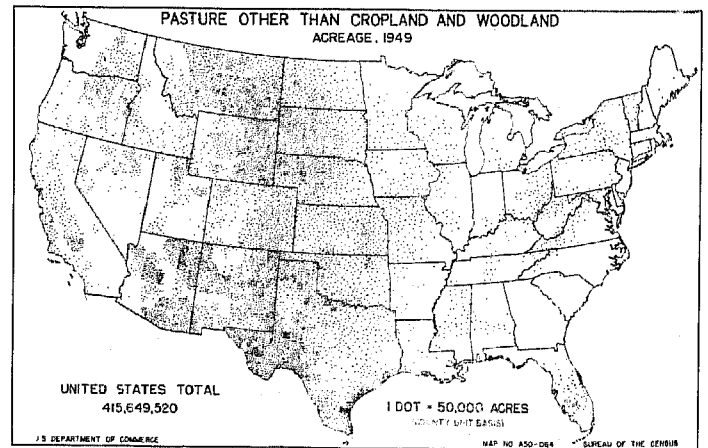
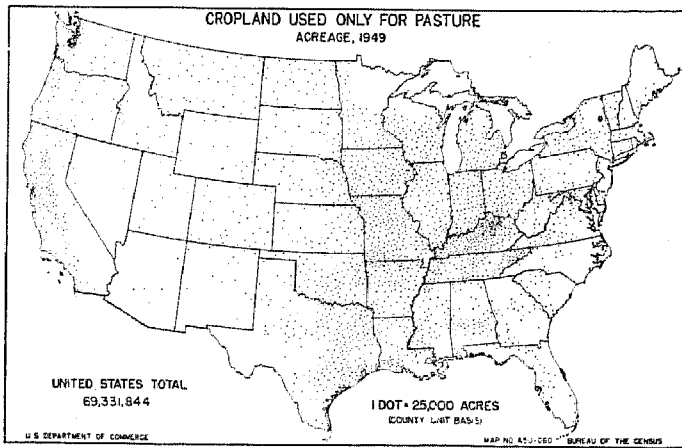
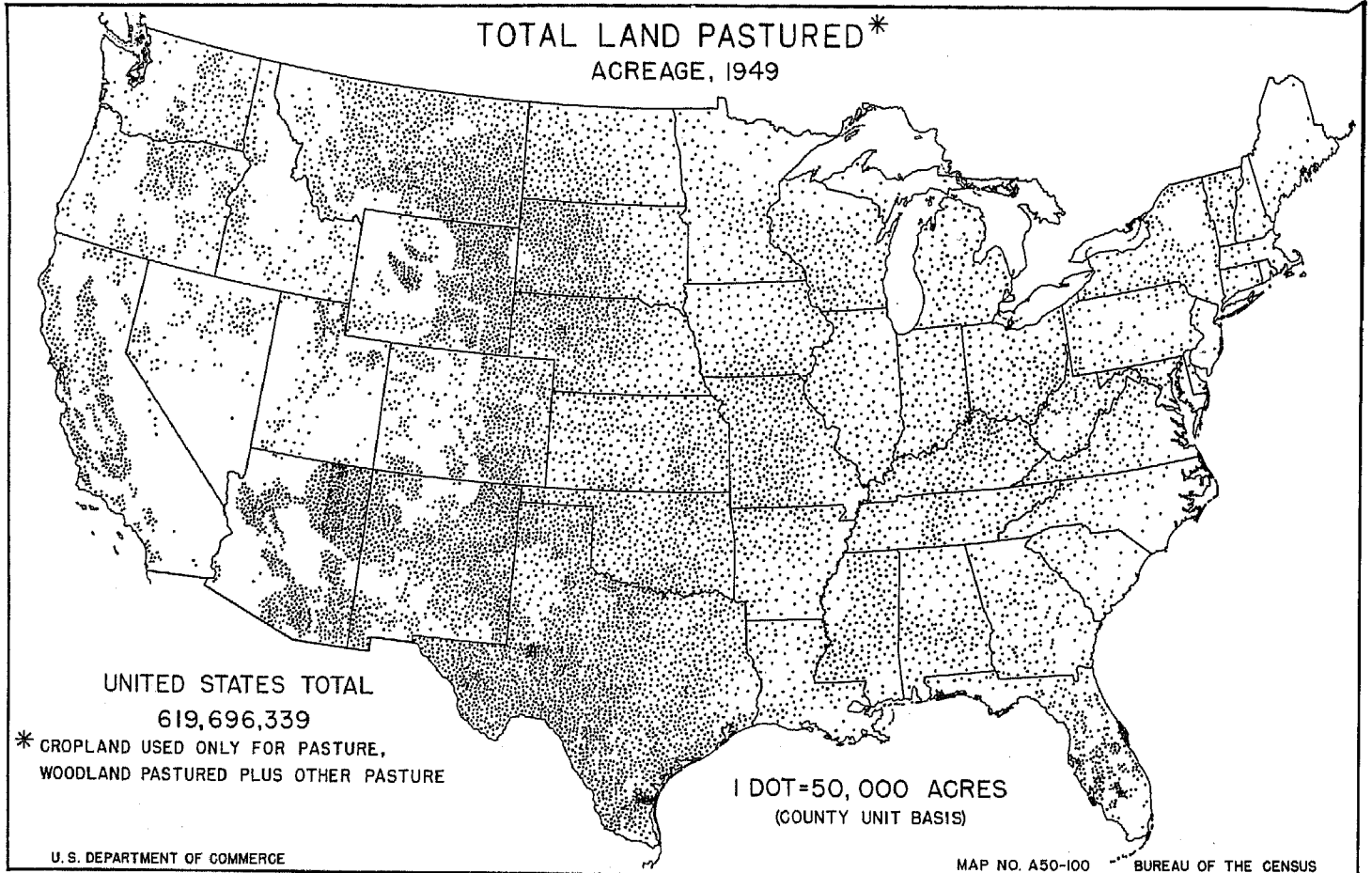
In this country, the keeping of cattle and sheep, the principal forage-consuming types of livestock, are closely associated with or determine the land use. A high percentage of the land is suitable only for grazing or for production of hay crops. This is particularly true of the semiarid range lands in the West and the large acreages of rough and steep land and heavy soils of the Northeastern and Lake States.

Cattle on farms, April 1, 1950, were rather well distributed throughout the country. The heaviest concentrations were in

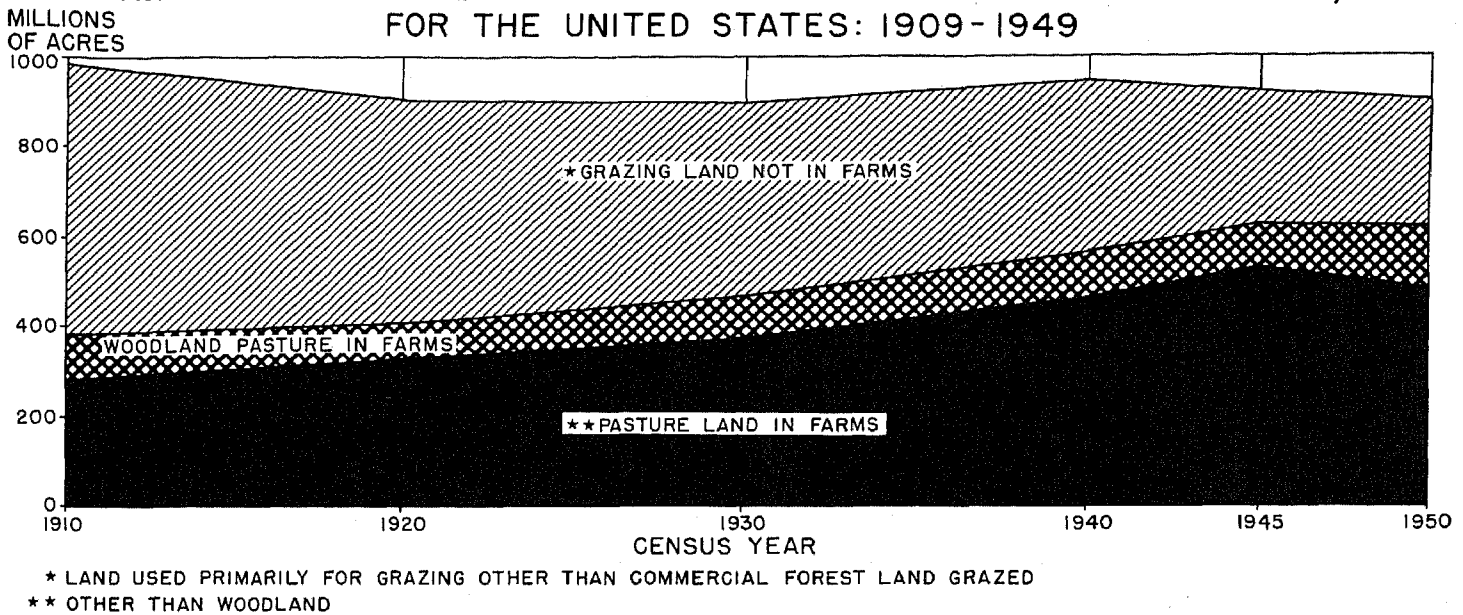


southern Wisconsin, southern Minnesota, and Iowa. Rather heavy concentrations were also reported in the other Corn Belt States and along the eastern part of the Great Plains. Milk cows were concentrated to a large extent in the Lake, Corn Belt, and Northeastern States. Other cattle are raised primarily in the range States, with large numbers moved eastward to the feed-grain producing area of the Corn Belt for fattening.

Most of the sheep are found in the Western States, with a heavy concentration in southwest Texas. In the East, they are located primarily in the Corn Belt and in central Kentucky. Sheep were formerly more important in the East than at present.



ALL PASTURE LAND IN FARMS AND GRAZING LAND NOT IN FARMS,
FOR THE UNITED STATES: 1909-1949



PASTURE AND GRAZING LAND

Total land pastured in farms in 1949 amounted to 620 million acres. This was 53.5 percent of the total farm land area. The above figure does not include a considerable acreage from which a crop was harvested but which was also pastured during part of the year. There are also some 400 million acres of grazing land not in farms, three-fourths of which are in the 11 Western States.

Farm land used for pasture was well distributed throughout the United States in 1949 with the heaviest concentration in the Plains States and west to the foothills of the Rocky Mountains. Those parts of the country with little or no farm pasture were primarily mountainous or forested areas with only a limited acreage of land in farms. The type and quality of pasture and grazing land vary greatly within areas and among different parts of the country.

Cropland used only for pasture totaled 69 million acres, or 11.2 percent of all land in farms used for pasture. This land was distributed throughout all parts of the country with the greatest acreage in the eastern humid areas. Much of this land is included in regular crop rotations, although a considerable acreage is used only for pasture for many years.

Woodland pastured represented 21.7 percent of all farm pastureland. Approximately one-half of this was located east of the Great Plains. Much of it included poorly drained and rough land of little or no value as cropland and which has never been cleared. A high proportion also represented land that was at one time cleared but has since been reforested, largely by natural growth. In the 17 Western States, a high percentage of the woodland pastured was represented by noncommercial growth of chaparral, mesquite, pinon-juniper, and semiarid shrub and brush growth.

Pasture other than cropland and woodland accounted for a little more than two-thirds of the total acreage in farm pasture or grazing lands. Most of this is located in the 17 Western States. Either limited rainfall or rough topography makes much of this land unsuitable for crop production and as pasture it has relatively low carrying capacity. The acreage of this type of pasture in the Eastern States is generally too eroded, thin, rough, or wet for satisfactory use as cropland. Much of this land has been tilled in the past but, because of extensive soil depletion and increased competition from other areas, it is no longer used for crop production.

In the West, because of the large acreages required by cattle ranches to operate as economic units, many operators acquire a

right to use public lands by obtaining grazing permits. These are complementary to owned or leased land. Large acreages of both Federal- and State-owned grazing lands are administered through the granting of permits rather than through leasing. Much of the forested land and land in watersheds is administered by the Forest Service of the U. S. Department of Agriculture, whereas other public lands are largely administered by the Bureau of Land Management of the U. S. Department of the Interior. In the enumeration for the 1950 Census of Agriculture, lands used under permit were not to be included as land in farms. No inquiry was carried on the 1950 Census Questionnaire for the acreage of lands used under permit. However, a total of 24,818 farm operators in the 11 Western States reported grazing permits in 1950. These operators were located throughout all of these States rather than in a few areas.

The above chart shows the trend in the acreage of pastureland in farms and grazing land not in farms for census periods from 1910 to 1950. The data are limited to land used primarily for grazing other than commercial forest land grazed. In 1950, approximately 900 million acres of land were used for grazing, excluding the 120 million acres of commercial forests not in farms. Of this total, 620 million acres were in farms and 280 million acres were not in farms. During the last 40 years, the major change or trend has been a steady decline in the acreage of grazing land not in farms and an almost corresponding increase in total acreage of pasture in farms. Practically all of this increase has taken place in the Western States.

SEASONAL USE OF WESTERN RANGE

(See map on following page)

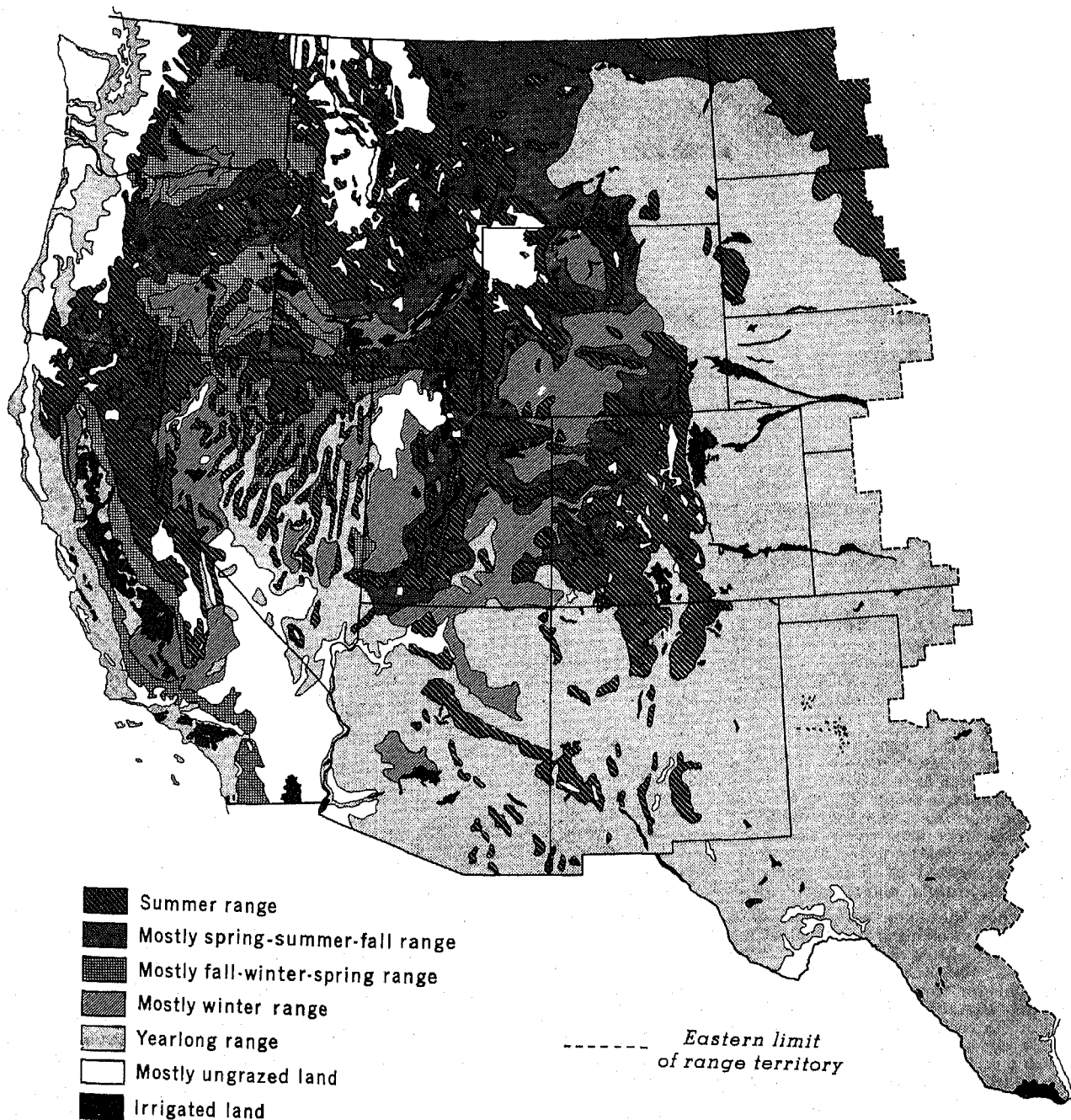
A major limitation upon the use of Western range land is the necessity of grazing large areas for only a part of the year. This restriction is associated with snow cover and low temperatures at higher elevations and with inadequate moisture in other places. Some of the more heavily forested mountain slopes, deserts, national parks, and military reservations are largely ungrazed. The summer range areas, which can be used for from 3 to 6 months, are at higher elevations. Grazing land in the Great Plains, the Southwest, and along the Pacific Coast is available for use throughout the year but this range varies considerably in carrying capacity.

Although it may be possible from the standpoint of good curing qualities of the forage or a mild winter climate to use the range throughout the year, large areas may be used only during the

winter if summer range is available nearby, or if cropland and irrigated pasture furnish supplemental feed. Lack of water may also restrict the use of year-long range to those periods when temporary surface water is available. At intermediate elevations, spring and fall grazing is possible. The range suitable for spring and fall use is of major importance to the ranchers. Particularly in spring when stored forage is depleted or when it becomes necessary to remove the animals from cropland in order to prevent dam-

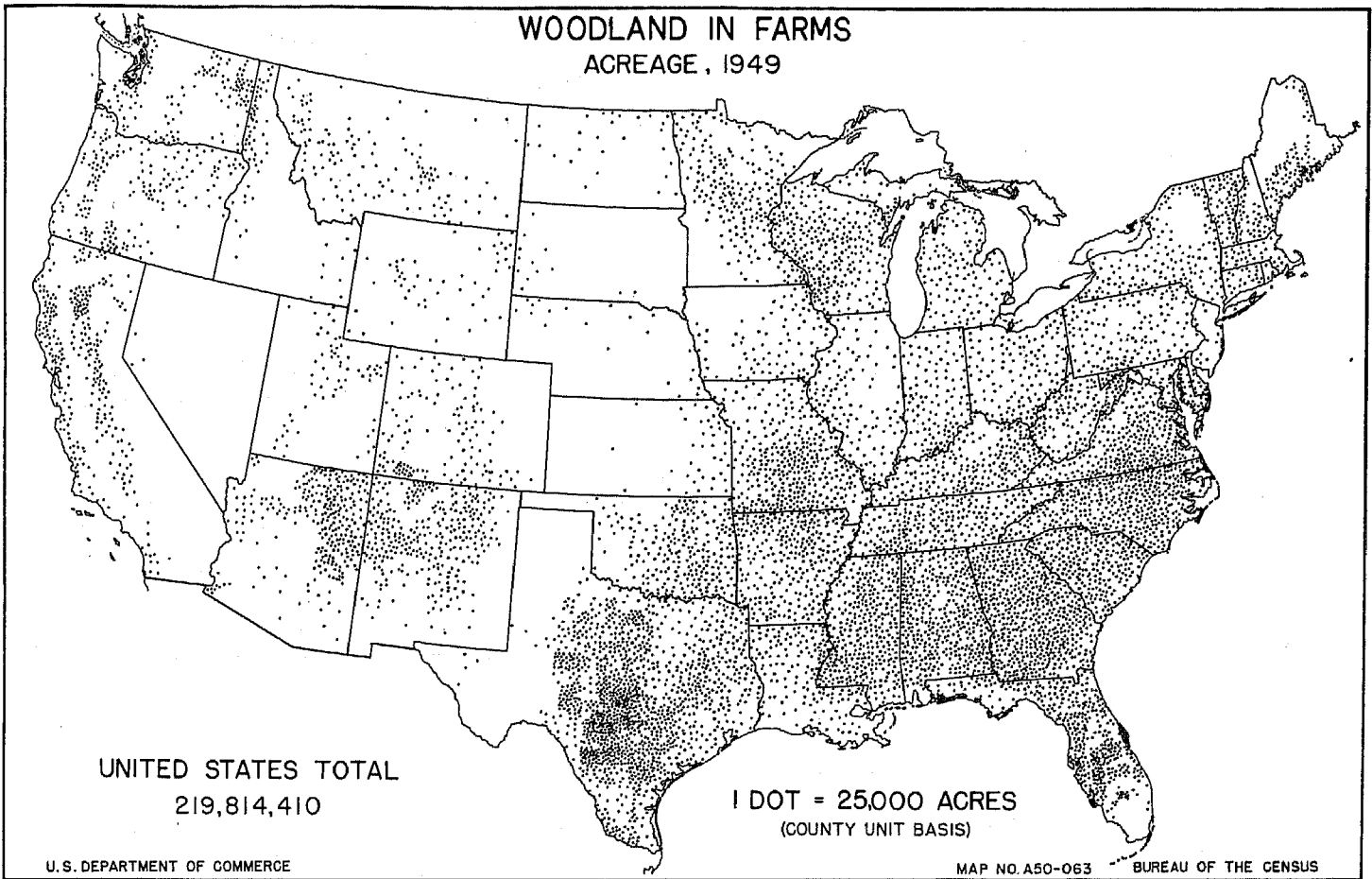
age to growing crops, the grazing lands at intermediate elevations may be used until snow disappears at higher elevations. Some parts of the Western range have forage composed of annual species which are best used for grazing during fall, winter, and spring. The foothills that surround the Central Valley of California, where the summers are very dry, have this type of range. One of the major problems of establishing good range management is how to obtain proper seasonal use of the range.

SEASONAL USE OF WESTERN RANGE, 1947

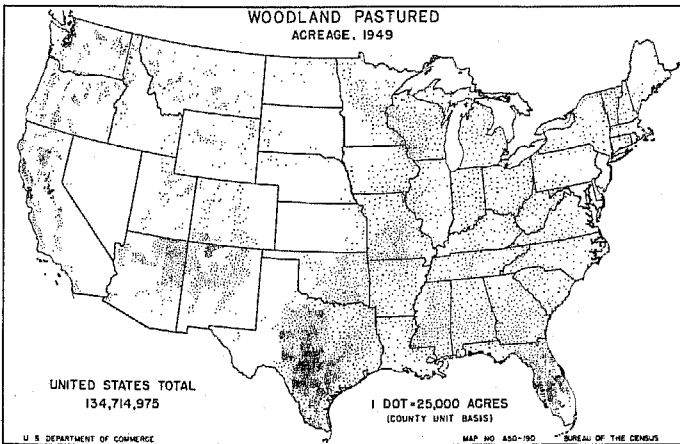


BUREAU OF AGRICULTURAL ECONOMICS IN COOPERATION WITH THE U. S. FOREST SERVICE

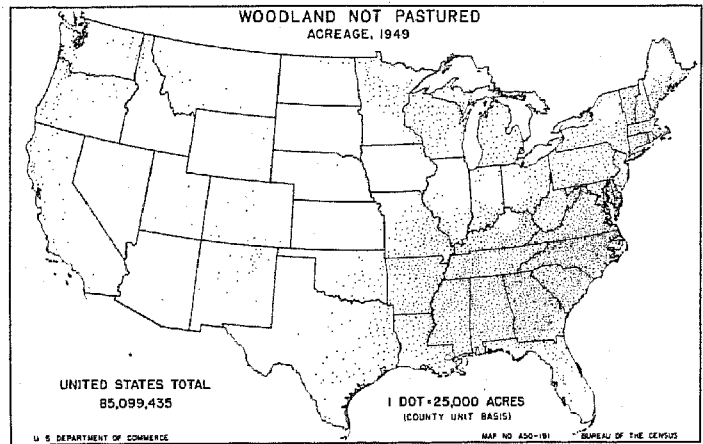
WOODLAND IN FARMS
ACREAGE, 1949



WOODLAND PASTURED
ACREAGE, 1949



WOODLAND NOT PASTURED
ACREAGE, 1949



WOODLAND AND FOREST

Some 606 million acres, or a third of the total land area of the United States, is classed as forest and woodland. This does not include some forest land not available for timber cutting in special-use areas such as parks, wildlife refuges, and military reservations. Approximately three-fourths of the forested area is classed as commercial. East of the Great Plains almost the entire acreage is commercial, largely second growth. In contrast, about two-thirds of the acreage in the Great Plains States and half of the acreage in the Western States, which consists primarily of mesquite, chaparral, pinon-juniper, and semiarid shrub and brush growth, is classed as noncommercial.

Of the total woodland, 220 million acres, or a third, was in farms and two-thirds was not in farms. The above maps do not include distribution of the forest land not in farms, located primarily in the 11 Western States, in the northern part of the Lake States, in the Northeast, and in the South.

In 1950, woodland in farms comprised 19 percent of the total farm land area. Most of this woodland lies in the humid areas east of the Great Plains while a smaller acreage is found primarily along mountain slopes and plateaus of the Western States. Much of the farm woodland represents cut-over areas that have never been cleared for crop production. A high percentage is also land which was originally forested and later cleared, but which has since reverted to various degrees of reforestation. This trend has been closely associated with the decline in acres of cropland harvested since 1900, particularly in the rougher sections of the Appalachians, the northern parts of the Lake States, and other Eastern highland areas.

Of the total farm woodland, three-fifths was used for grazing livestock. Practically all of the farm woodland in the 11 Western, Great Plains, and Corn Belt States was grazed, while a large percentage in the other parts of the country was also used as pasture. Most of the woodland not grazed was reported in the East, particularly in the Appalachian and Southeastern States with the exception of Florida.

Section II.—HOW THE LAND IS USED IN THE TERRITORIES AND POSSESSIONS

For the first time, the graphic summary of land use includes a section on the territories and possessions of the United States. Although limitations of data and space restrict the scope of such a section, an increasing public interest in the territories and possessions makes it desirable to include some significant charts and maps. Land improvement and development, mineral utilization, the question of Statehood, and an increasing attraction for recreation contribute to this aroused attention.

The combined area of the territories and possessions is equal to one-fifth the area of continental United States. Alaska, with 571,065 square miles, comprises most of the 581,351 square miles (372,064,640 acres) of land area outside continental United States. Alaska is more than twice as large as Texas, while Hawaii (6,410 square miles), Puerto Rico (3,423 square miles), and Guam, the Virgin Islands, American Samoa, and lesser islands (453 square miles), with a combined land area of 10,286 square miles, are about equal in size to New Jersey, Delaware, and Rhode Island.

The 1950 Census reported a population of 2,945,359 for the territories and possessions. This is 1.9 percent of the total United States population. Alaska is sparsely populated with 128,643 inhabitants. More than three-fifths of the population is concen-

trated in the districts of Anchorage, Fairbanks, and the southeastern coast, which constitute one-eighth of the area of Alaska. Less than one-half million acres has passed into private ownership in Alaska. Hawaii had a population of one-half million (499,794) in 1950, which was an increase of slightly more than 18 percent since 1940. Only 31 percent of the population resides in rural areas. Honolulu has approximately half of the total population of Hawaii. Hawaii, with about 80 persons per square mile, has a population density comparable to that of North Carolina.

Puerto Rico is more densely populated than any State except Rhode Island. In 1950, the Island had a population of 2,210,703 persons residing in an area of only 3,423 square miles. It had a population density of 645.8 persons per square mile. Rhode Island, about a third the size of Puerto Rico, had 748.5 persons per square mile. However, only 15.7 percent of the population of Rhode Island is rural compared to 59.5 percent in Puerto Rico. San Juan and nearby Río Piedras on the north coast and Ponce on the south coast are the three largest cities. The combined population of these three cities is nearly one-half million, which accounts for a fifth of the population of the Island. Between 1940 and 1950, there was a marked increase in urban population.

ALASKA

Physical conditions and land use.—Within Alaska there are several significant differences in topography, climate, vegetation, and soils which, along with other factors, affect the use of land. Much of Alaska is mountainous. Most of the southern part is made up of islands and peninsulas, and a narrow strip of mainland which rises abruptly to the crest of the Alaska Range and the mountains of British Columbia. In this coastal fringe, there is very little level land. Especially along the southeastern fiorded coast, there is little level land suitable for agricultural development. The mountains are so near to the coast in southern Alaska that they limit the maritime climate to a small area.

On the south central coast, the Cook Inlet Lowlands, which include the Susitna Valley, Matanuska Valley, and the west side of the Kenai Peninsula, have the most favorable physical conditions for agriculture in Alaska. These Lowlands with an approximate area of 8,000 square miles, only part of which is physically feasible for agricultural development, comprise about 1 percent of the land area of Alaska. Southwestern Alaska, which is composed of the Alaska Peninsula, the Aleutian Islands, and the Bristol Bay area, is mostly rugged. Predominantly grass-covered, portions of this part of Alaska may be used for grazing.

To the north and west of the extensive Alaska Range is a large interior area drained by the Yukon and Kuskokwin rivers. Several areas of rolling uplands in the interior appear to be physically suitable for agriculture, but extensive areas of poor drainage in the lower parts of these two river valleys are a major handicap to the development of farm land. Most of the present farm land in this interior part of Alaska is in the Tanana Valley in which Fairbanks is located. Still farther north are the Brooks Range and the Arctic Slope. Well within the Arctic Circle, this part of Alaska will remain largely tundra partially used by the Eskimos for the grazing of reindeer.

Climatically, the more pronounced differences exist between the southern coast with its maritime climate and the interior to the north of the Alaska Range which has continental characteristics. The southern coast has an appreciably milder winter, cooler summer, longer frost-free period, and more precipitation than the interior. Data from selected stations support this characteriza-

tion. The heavy precipitation of the southern coast is present where moisture-laden air from a relatively warm body of water is forced to rise as it approaches the mountains. Much of the Cook Inlet Lowlands are not exposed to these winds, hence, the precipitation at Anchorage is much less than at nearby Seward. Similarly, conspicuous local differences in temperature and length of frost-free season exist in southern Alaska, depending primarily upon differences in exposure to the warming influence of the Alaska Current.

Climatic limitations upon the agricultural use of land in Alaska are an outstanding handicap. In northern Alaska, where frost may be expected at any time during the year and where the landscape is predominantly treeless, nonagricultural uses, except for grazing of reindeer, will continue to constitute the principal use. The interior of Alaska has a frost-free season averaging less than 100 days. This is a very short season for production of most agricultural commodities, but the highest average July temperatures are recorded in this part of Alaska. There is also a long duration of possible sunlight in Alaska, although on many days the cloud cover limits the effectiveness of the long days upon plant growth. This long duration of sunlight is advantageous in counteracting the shortness of the frost-free period. The long cold

CLIMATIC SUMMARY FOR SELECTED STATIONS IN ALASKA

Station and location	Elevation	Temperature		Frost-free season	Average precipitation	
		January average	July average		Annual	Summer
	<i>Feet</i>	<i>° F.</i>	<i>° F.</i>	<i>Days</i>	<i>Inches</i>	<i>Inches</i>
Juneau (southeast coast).....	72	27.5	56.6	172	83.2	16.3
Seward (south central coast).....	55	22.4	55.3	132	73.7	11.2
Anchorage (Cook Inlet).....	111	11.2	57.0	110	14.3	4.9
Dutch Harbor (Aleutian Islands).....	13	32.2	51.3	145	56.8	7.0
Fairbanks (Interior).....	440	-11.6	60.0	89	11.9	5.3
Barrow (Arctic Slope).....	13	-17.0	40.2	17	4.3	1.9

winters are an especial handicap to livestock production, as they necessitate adequate shelter for the animals and storage of large quantities of hay and forage for winter use. Although annual precipitation averages less than 15 inches in interior Alaska, nearly half of this occurs in summer. Late summer rains often interfere with the harvest.

Very little detailed soil surveying has been done in Alaska, but reconnaissance work indicates that only a small part of the territory has soils suitable for cultivated crop farming similar to those of the remainder of the United States. The Cook Inlet Lowlands and parts of the Yukon and Tanana Valleys have soils which respond well to fertilization. Farmers on these favorable soils are confronted with the problem of raising fertility with expensive fertilizers brought from the States. Livestock manure is expected to play a leading role in maintaining and improving fertility until commercial fertilizers can be more cheaply supplied to Alaskan farms. In addition to this fertility problem, farmers are confronted with some special soil problems. In the Tanana Valley soil-washing on sloping land is a significant difficulty. Permanently frozen subsoil, which occurs in most of Alaska except the southern part, prevents adequate subsurface drainage and thus encourages more rapid surface run-off. Irregular subsidence of the surface soil, because of the melting of subsoil ice lenses and blocks, is also a problem. Furthermore, the frozen subsoil must be carefully considered when planning a water supply and in erecting buildings, especially if they are to be heated.

The original vegetative cover of Alaska consisted of forests, tundra, and grasslands. The forests are of two major types. The coastal type, which occupies approximately a tenth of the territorial land area, lies along the southeastern and south central coasts. Scrub growth and muskeg considerably reduce the commercial timber of this forest. Two species constitute most of the total stand; about three-fourths is western hemlock and about a fifth is Sitka spruce. This forest type constitutes the most valuable commercial timber in Alaska. From the standpoint of future use it may be noted that most of this western-hemlock-Sitka-spruce forest is at an elevation ranging from sea level to 2,500 feet and that it lies within 3 miles of tidewater, where the heaviest rainfall occurs.

The interior forest is spread over three-fifths of central Alaska. No inventory as to the extent of these forests has been made, but the Forest Service estimates that some 125 million forested acres exist in this part of Alaska. White spruce and birch constitute the principal species. This forest type is commercially much less valuable than the coastal forest. The slow rate of growth and inaccessibility are limiting factors in its future utilization. The small size of the trees and a low volume of timber per acre, which are characteristic of this interior forest, mean that the timber will probably be used locally.

The remainder of Alaska is mostly covered with tundra and grasslands, except for snowfields and glaciers. The tundra, with its sedges, lichens, moss, and other shrubs, is a treeless land occupying the Arctic Slope, the Seward Peninsula, and a large strip of the Kuskokwim-Yukon Delta near the Bering Sea. Reindeer grazing is the most promising present and near future use of this tundra. Grasslands are found on the Alaska Peninsula, Aleutian Islands, Kodiak Island, and smaller islands nearby. The predominant cover is a dense waist-high growth of grass which offers possibilities for grazing cattle and sheep.

Farms, farm land, principal crops, and livestock.—Most of Alaska's farms are concentrated in the Cook Inlet Lowlands and in the Tanana Valley in the vicinity of Fairbanks. Two-thirds of the 525 farms enumerated in the 1950 Census of Agriculture are located in the Cook Inlet Lowlands, principally in the Matanuska Valley and secondarily on the west side of the Kenai Peninsula. Another one-sixth of the farms are in the Tanana Valley. Three-

fifths of these farms are within 10 miles of the nearest trading center. The farms fall about equally into commercial and non-commercial farms. Military activity during the last decade has increased the local market, especially for potatoes, dairy products, poultry, and vegetables; and farms specializing in these products constitute the leading farm types.

Nearly nine-tenths of all farms in Alaska, as enumerated by the Census, have less than 200 acres. Two-fifths of them have less than 100 acres. Only four farms have more than 1,000 acres, but these very large farms account for about five-sixths of all land reported in farms by the 1950 Census of Agriculture. Dairy, general, and potato farms average from 175 to 200 acres in size, while vegetable and poultry farms average less than 100 acres.

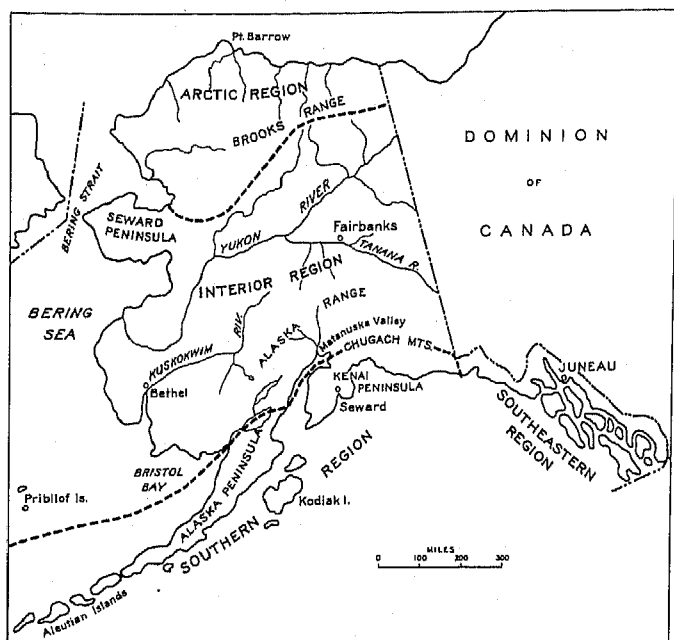
Two-thirds of the farmers who operate these farms have spent 5 years or less on their farms while only a fourth of them have operated their farms for more than 10 years. Thus, most of the present farmers either started operations since World War II or began farming as a part of the Matanuska Valley Colonization Project started in 1935. Of the 525 reporting farms, 445, or more than five-sixths, were operated by full owners in 1950; however, only about a tenth of the land in farms is operated by owners, as much publicly owned land is leased to farmers. Tractor power was used on more than two-thirds of the commercial farms, but on 232 farms there were no tractors, horses, or mules. Commercial farms produced more than 95 percent of all farm products sold in 1949.

The farm land of Alaska constitutes only about 0.1 percent of the land area. Only 12,000 acres were used for cropland and crops were harvested from less than 7,000 acres. Pasture, classified by the Census of Agriculture as noncropland and nonwoodland pasture, accounts for 356,000 of the 422,000 acres of land reported in farms. This pasture is used very little at present. Therefore, approximately 65,000 acres, divided into about 520 farms, constitute the most important part of the farm land of Alaska. Of this, 36,000 acres are in woodland which is not pastured; another 10,000 acres are in house lots, roads, wasteland, and other similar uses. The remaining 19,000 acres, of which 7,000 acres are woodland pasture, produce the crops and livestock products of Alaskan farms. The major part of this remaining land is located in the Matanuska and Tanana Valleys. Clearing of new land for agriculture has progressed slowly since 1945. About 2,600 acres were reported by the Census as cleared between 1945 and 1950. Farmers reported that about 27,000 acres of the 43,000 acres of woodland on their farms were physically suitable for clearing for cropland. The high cost of clearing with the limited equipment available and the restricted markets for some farmers, such as those on the Kenai Peninsula, help to account for the lack of development.

The variety of leading crops and livestock commodities produced in Alaska is limited rather sharply by climate and available markets. Potatoes and vegetables are the leading crops sold. Dairy products, poultry, and eggs account for more than half of all farm produce sold. Difficulty in maturing small grains makes production of grain relatively unimportant. Feeding of beef cattle is handicapped by the long winters when large quantities of hay and forage must be used. Production of the more perishable dairy products has proved more profitable.

Agriculture in Alaska is carried on at a relatively high cost of production and is limited in its ability to compete successfully with other sources of supply in exporting to the States and to foreign markets. It is also subject to strong competition from the States and elsewhere in Alaskan markets. Its market now and in the foreseeable future is the local market, which depends upon strong, permanent sources of nonagricultural purchasing power in Alaska.

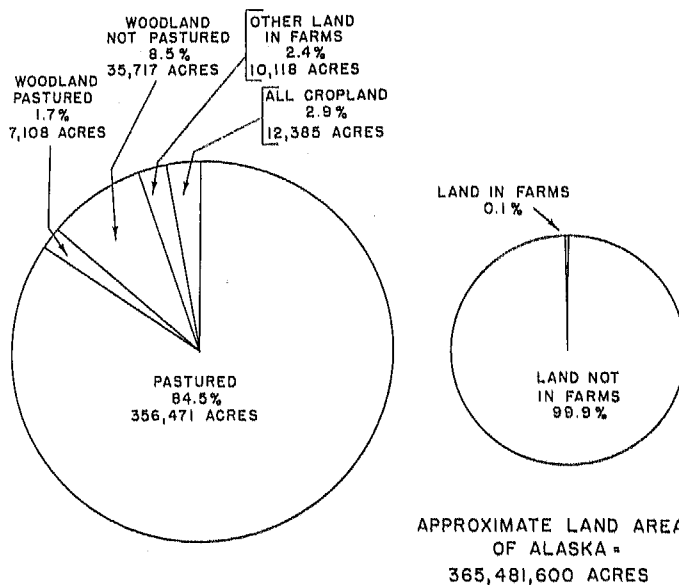
ALASKA



USES OF LAND IN ALASKA

In Alaska, land reported in farms by the Census comprises an infinitely small part of the land area. This farm land is less than half that of Delaware. In 1949, land used for pasture as reported by the Census accounted for more than five-sixths of all land in farms. Practically all of the large acreage of noncropland and nonwoodland pasture was on three farms. Only about half of the cropland was harvested while a fourth was idle or fallow. Two-thirds of this idle or fallow cropland was reported on the miscellaneous and unclassified farms, most of which were part-time farms. Land not in farms is largely undeveloped forest, tundra, and grassland.

USES OF LAND IN FARMS FOR ALASKA: 1949

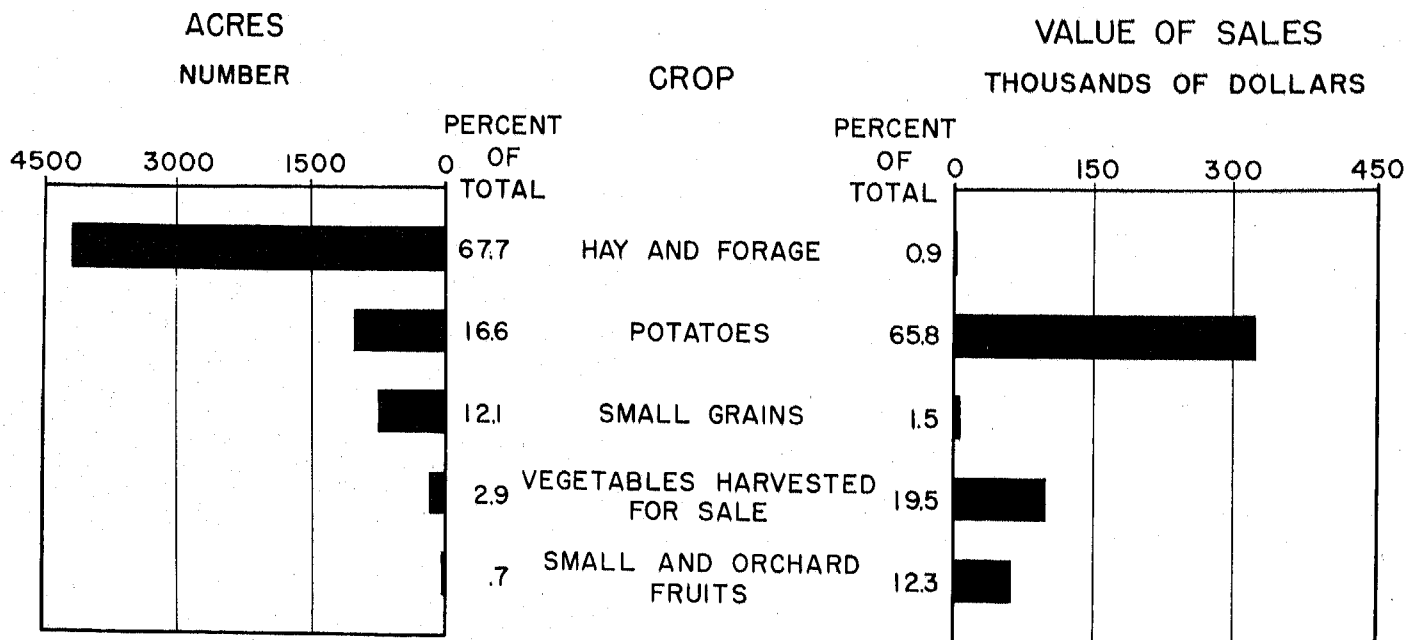


LAND IN FARMS = 421,799 ACRES

SPECIFIED CROPS IN ALASKA

Hay and forage crops for dairy feed accounted for two-thirds of the acreage of crops harvested in 1949. Mixed grains provided most of the hay and forage. The leading crop sold was Irish potatoes which made up more than three-fifths of the value of all crops sold and about a fifth of the value of all farm products sold. Dairy products accounted for approximately two-fifths of the farm produce sold.

SPECIFIED CROPS HARVESTED-RELATIVE IMPORTANCE IN ACREAGE AND VALUE FOR ALASKA: 1949



HAWAII

Physical conditions and use of the land.—The main islands of Hawaii are located between the parallels of 18° 55' and 22° 15' north latitude. If these islands were transposed to the general longitude of Florida, the northern island of the Hawaiian group would be approximately 150 miles south of Key West while the southernmost tip would nearly touch the north coast of Puerto Rico. Eight principal islands constitute most of the area and contain practically all of the territorial population. In order of decreasing size, these islands are Hawaii, Maui, Oahu, Kauai, Molokai, Lanai, Niihau, and Kahoolawe. The island of Hawaii, which is somewhat smaller than Connecticut, has nearly two-thirds of the territorial land area. These islands in their trade-wind setting have an essentially tropical climate, although differences in elevation and exposure to the prevailing winds make for significant contrasts in temperature and amount of precipitation. The islands have been built up by repeated flows of basaltic lava and other volcanic materials and are now characterized by much rocky and steeply sloping land. Agricultural land is limited to high plains, lower slopes, and the coastal fringe. The high porosity of the dark red soils makes for good drainage and aeration. Fertilizers are applied in large quantities, especially in the production of sugarcane and pineapples. The vegetation of the islands differs markedly with changes in elevation and exposure to the northeast trade winds.

The insular and low-latitude climate of territorial Hawaii is conspicuously conditioned by the northeast trades and by mountains. The islands have very sharp leeward and windward contrasts as well as altitudinal differences in temperature and particularly in precipitation. The northeast trade winds, as they blow toward the equator across the Pacific, evaporate large quantities of moisture from the ocean surface. As this air is warmed, its moisture-holding capacity is increased but the water vapor does not condense until cooling of the air takes place. As these winds reach the islands, with their numerous volcanic cones rising to several thousand feet above sea level, they are forced to rise abruptly and exaggerated cooling occurs on the windward slopes. Moisture is precipitated in copious quantities, particularly at elevations ranging from 1,000 to 5,000 feet. As the air flows over the mountains and descends on the leeward side, it is appreciably warmed by compression. This air which is warmed brings very little rain to the leeward (southwest generally) parts of the islands; therefore tremendous contrasts in precipitation and also differences in temperature, humidity, and cloudiness exist between the leeward and the windward parts of the islands. The summary table of climatic data illustrates some of the differences in precipitation and temperature that exist. Frost, freezing temperatures, and snow seldom occur below 4,000 feet elevation, but above 6,000 feet these conditions frequently exist. Sudden changes in weather are rare and there is little change from season to season. Average temperatures are slightly higher at comparable elevations on leeward sides, since humidity and cloud cover are less there. For Hawaii as a whole, November to April is the wet season of the year, although there is no pronounced seasonal concentration of precipitation for most of the territory. Several climatic stations on the windward slopes record more than 200 inches rainfall a year. The windward slopes of Mount Waialeale on Kauai Island receive an annual average precipitation of more than 450 inches, which makes it one of the wettest spots on record in the world.

Favorable topography and soils and an adequate water supply for crop production, especially sugarcane, frequently do not coincide; therefore irrigation of sugarcane is generally practiced except on the island of Hawaii where the windward lowlands receive sufficient rainfall to grow cane without irrigation. Rainfall on rugged slopes must be trapped and stored for irrigating the cane fields at lower levels. Ground water is also pumped to get adequate supplies of water. Land with favorable soils and topography for cane production situated on leeward slopes is generally

CLIMATIC SUMMARY FOR SELECTED STATIONS IN HAWAII

Station and location	Elevation	Temperature		Average precipitation		
		January average	July average	Annual	November to April	May to October
Hilo (windward Hawaii).....	Feet 40	°F. 70.2	°F. 74.7	Inches 137.1	Inches 77.0	Inches 60.1
Napooopo (leeward Hawaii, Kona district).....	450	72.2	76.6	35.4	13.9	21.5
Eleele (leeward coast of Kauai)	150	71.0	76.8	28.6	19.6	9.0
Honomanu (windward Maui)	1,350	64.1	68.8	235.0	129.1	105.9

more difficult to irrigate. Unless these pronounced local differences in precipitation in territorial Hawaii are recognized, it is difficult to realize the need for irrigation on islands that receive such great amounts of precipitation. Pineapples are the second most important crop; they do not require nearly as much water as sugarcane. Consequently they can be produced on drier land where it is not feasible to irrigate. Much of the land of the islands is too rough and stony or too dry for crop production. Especially the windward slopes of the older volcanic materials have been severely dissected by the torrential rains. To remove the vegetative cover for crop production on many slopes invites uncontrollable accelerated erosion. Dry lands having unfavorable topography or lacking water for irrigation constitute considerable areas for grazing.

Farms, farm land, principal crops, and livestock.—According to the 1950 Census of Agriculture, about three-fifths of Hawaii's approximate land area of 4,100,000 acres was in farms. Nearly two-fifths of the territory is public land. The land area, according to its use, can be conveniently divided into four general categories. Land used for crops in 1949 constituted 297,000 acres, or 7.2 percent of the total land area. In 1947, the Territorial Board of Agriculture and Forestry reported 1,064,000 acres in public and private forest reserves which constitute 25.9 percent of the land area. Grazing lands, which were estimated at 1,638,000 acres in 1947, make up approximately 40.0 percent of the territorial land. Park lands and land of the Armed Forces accounted for 228,000 acres as of June 30, 1948. This was 5.6 percent of the land area. The remaining 873,000 acres (21.3 percent) are in wasteland, cities, towns, roads, and other uses not accounted for. Significant distributional contrasts in land use exist among the different islands.

Cropland used for crops is concentrated principally in four parts of the territory. The largest of these is on the island of Hawaii and lies in a nearly continuous strip extending from the north tip along the northeast coast to an area about 10 to 15 miles south of Hilo. Here, sugarcane is planted in the lowlands and on the lower slopes upward to an elevation of about 2,000 feet. This crop occupied nine-tenths of all land used for crops on the island of Hawaii, which had slightly more than a third of the territorial cropland used for crops in 1949. A second nearly continuous area of crop production is situated in the western third of the island of Maui, where both sugarcane and pineapples are important crops. Most of the cultivated land on Maui lies below 1,000 feet elevation, although pineapple production extends to nearly 2,000 feet in one area. On nearby Lanai, pineapples are grown on the leeward slopes at an elevation ranging from 1,000 to 2,000 feet, and this island leads all the others in acreage devoted to this crop. Maui and Lanai had approximately a fourth of the territorial cropland used for crops.

Cropland on Oahu is situated almost entirely in the western half of the island and to the north of Pearl Harbor. This third important area of cropland constituted another one-fifth of the territorial land in crops in 1949. Proportionally, Oahu has more of its total area in crops than any of the other islands. A sixth of

the island is devoted to sugarcane, pineapples, and a number of nonplantation crops. Much of the nonplantation crop acreage is in vegetables produced mainly for Honolulu and military installations. On Oahu, sugarcane is produced almost entirely below 500 feet elevation while pineapple production is restricted to the higher slopes between 500 and 1,000 feet elevation where irrigation is not practical.

The fourth major area of cropland is a coastal arc on the island of Kauai. This arc of cropland includes the eastern and southern coasts and part of the western coast. The greater part of the cropland is below 500 feet elevation, although pineapples are grown on the higher slopes in one southern area. On Kauai, sugarcane occupies four-fifths of the cropland used for crops.

The greater part of the forest reserve of the territory is situated on windward mountain slopes. The more extensive forests are associated with Mt. Waialeale on Kauai; the northwest-southeast trending Koolau Range of Oahu; the northern, eastern, and southern slopes of Haleakala Mountain on Maui; and the eastern slopes of Mauna Kea and Mauna Loa on the island of Hawaii. Kauai has the highest proportion of forested land with about two-fifths of its total area in forests. Nearly a third of the islands of Maui and Oahu and approximately a fifth of the island of Hawaii are forested. The eastern half of Molokai is largely forested except for the south and east coasts.

Grazing land occupies more than a fifth of the land area on all islands except Oahu, where relatively little land is grazed. The island of Hawaii has the most extensive area with about half of the island classified as grazing land. About 150,000 acres of land classified as cropland are used for pasture on the islands of Hawaii, Maui, Molokai, and Lanai. Woodland pasture is concentrated principally on the island of Hawaii. In the drier parts of the islands, pastures occupy most of the land not suited to the growing of pineapple or irrigated sugarcane. The land grazed varies considerably in quality.

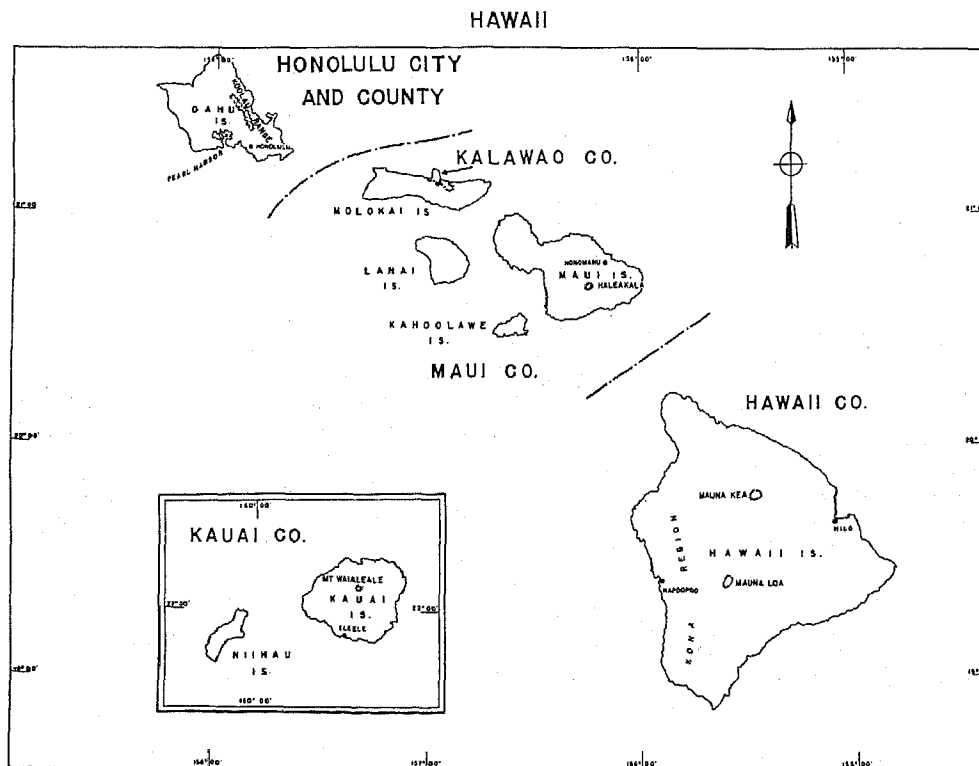
Wasteland mainly composed of bare lava or a thin ash mantle at high altitudes is concentrated on the islands of Hawaii and Maui. Nearly nine-tenths of the 168,000 acres of park lands are on the

island of Hawaii. Land used by the Armed Forces is mostly on Oahu.

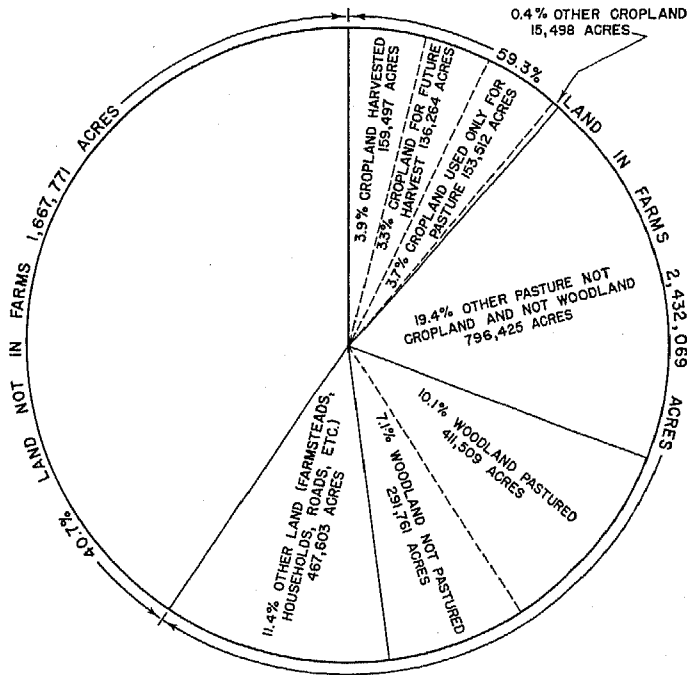
In the territory of Hawaii the size of farms varies from the integrated plantations producing sugarcane and pineapples and the large cattle ranches to many small noncommercial farms which produce very little. About two-fifths of the farms are noncommercial part-time and residential units which have only 3.2 percent of the cropland acreage. Farms specializing in the production of beef cattle account for three-fifths of the land in farms, but have only 0.4 percent of the cropland used for crops. Five-sixths of the cropland used only for pasture is on these livestock farms. Although the part-time, residential, and abnormal farms account for such a large proportion of the farms and the large farms specializing in beef cattle include so much of the farm land, these farms produced only 7.4 percent of the value of farm products sold in 1949.

The sugarcane and pineapple plantations, with approximately 90 percent of the cropland used for crops, produced nearly 85 percent of the value of farm produce sold in 1949. Thirty-one sugarcane and 13 pineapple plantations produced four-fifths of all farm produce sold in 1949. These large plantations are carefully managed and organized units which dominate the agricultural economy of the territory. Heavy applications of fertilizer and water make for exceptionally high yields in Hawaii. Practically all of the 117,000 acres of irrigated land are in sugarcane. The sugarcane plantations employed more than 15,000 regular hired workers in 1949, while 4,000 were regularly employed on the pineapple plantations. Production of these crops in Hawaii is highly mechanized. This intensive utilization of soil and water resources on the sugarcane and pineapple plantations, combined with favorable mainland markets, enables Hawaii to compete with other areas that produce these crops with lower labor costs.

Livestock production in Hawaii is restricted mainly to beef cattle, although dairying and poultry raising are fairly important on Oahu near the sizable Honolulu market. The island of Hawaii raises the greatest number of beef cattle. However, cattle numbers could be considerably increased by improvement of much of the grazing land.



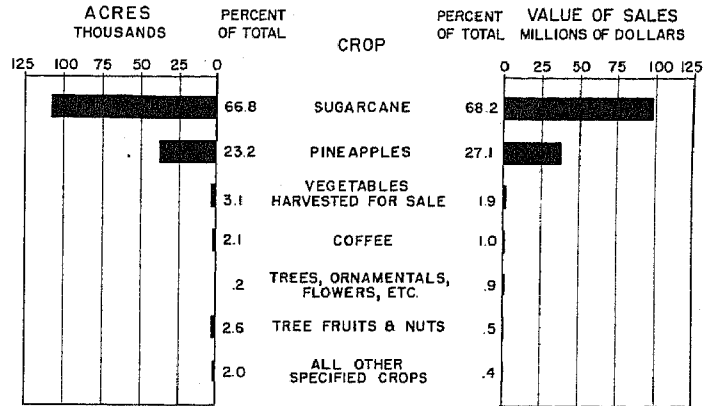
USES OF LAND IN HAWAII: 1949



USES OF LAND IN HAWAII

With three-fifths of the land area in farms, Hawaii has a proportion nearly identical to continental United States. All land pastured constituted approximately 56 percent of the farm land in 1949. Much of this pasture land has a low carrying capacity. The 297,000 acres of cropland used for crops contribute most of the value of all farm produce. Since sugarcane takes from 18 to 22 months to mature in Hawaii, cropland devoted to that crop is about equally divided between cropland harvested and cropland for future harvest. Pineapples also require a long growing period

SPECIFIED CROPS HARVESTED - RELATIVE IMPORTANCE IN ACREAGE AND VALUE FOR HAWAII: 1949



and, like sugarcane, yield more than a single crop from one planting. Therefore a part of the acreage used for that crop lies fallow between the end of one series of harvests and the planting of a new crop. The sizable acreage of farm land in uses other than cropland, pasture, or forest is largely in nonvegetated lava flows and unusable palis, gulches, and streambeds.

SPECIFIED CROPS IN HAWAII

Sugarcane and pineapples, the dominant Hawaiian crops, constituted more than 90 percent of the acreage of cropland harvested and approximately 95 percent of the value of all crops harvested for sale in 1949. These two leading crops are produced on large plantations which utilize intensive irrigation (for sugarcane, except on the island of Hawaii), heavy applications of fertilizer, hired labor, and mechanized equipment. High-quality coffee is produced in the Kona district on the island of Hawaii, but the acreage is not large. Except for several vegetables and fruits, food crops are not nearly sufficient to meet territorial needs. During World War II, concerted effort was made to produce more food in the Islands, but since 1945 the acreage in food crops has declined.

PUERTO RICO

Puerto Rico is a tropical island located in the eastern part of the Caribbean Sea. The island was visited by Columbus in 1493 and remained under Spanish rule until 1898 when it became a part of the United States. During the past 50 years the population has more than doubled and today the territory is faced with the serious problem of how to accommodate so many people and at the same time improve the level of living. During its long history much of the best land has been used to produce agricultural commodities for export. Subsistence crops are commonly grown on less desirable land.

The climate of Puerto Rico is highly favorable for a wide variety of crops. Although the island is small, differences in relief are sufficient to make for conspicuous local contrasts in precipitation and temperature. Like the islands of Hawaii, Puerto Rico is in the latitude of the northeast trade winds. Windward slopes receive a great deal more precipitation than the leeward southern coast and the relatively flat northwest coast.

Differences in temperature are mainly associated with differences in elevation, since the island has a latitudinal spread of only about 40 miles at the widest place. Lowest temperatures occur at higher elevations, but very little of the island is more than 3,000 feet above sea level. The insular situation and the persistent trade winds sharply limit the occurrence of temperatures in excess of 100° F. Highest average temperatures are associated with the drier coastal areas and the interior valleys. The constancy of the trades also maintains the relative humidity at a comfortable level for much of the year. Summarized climatic data for selected

stations present some of the more important differences in temperature and precipitation.

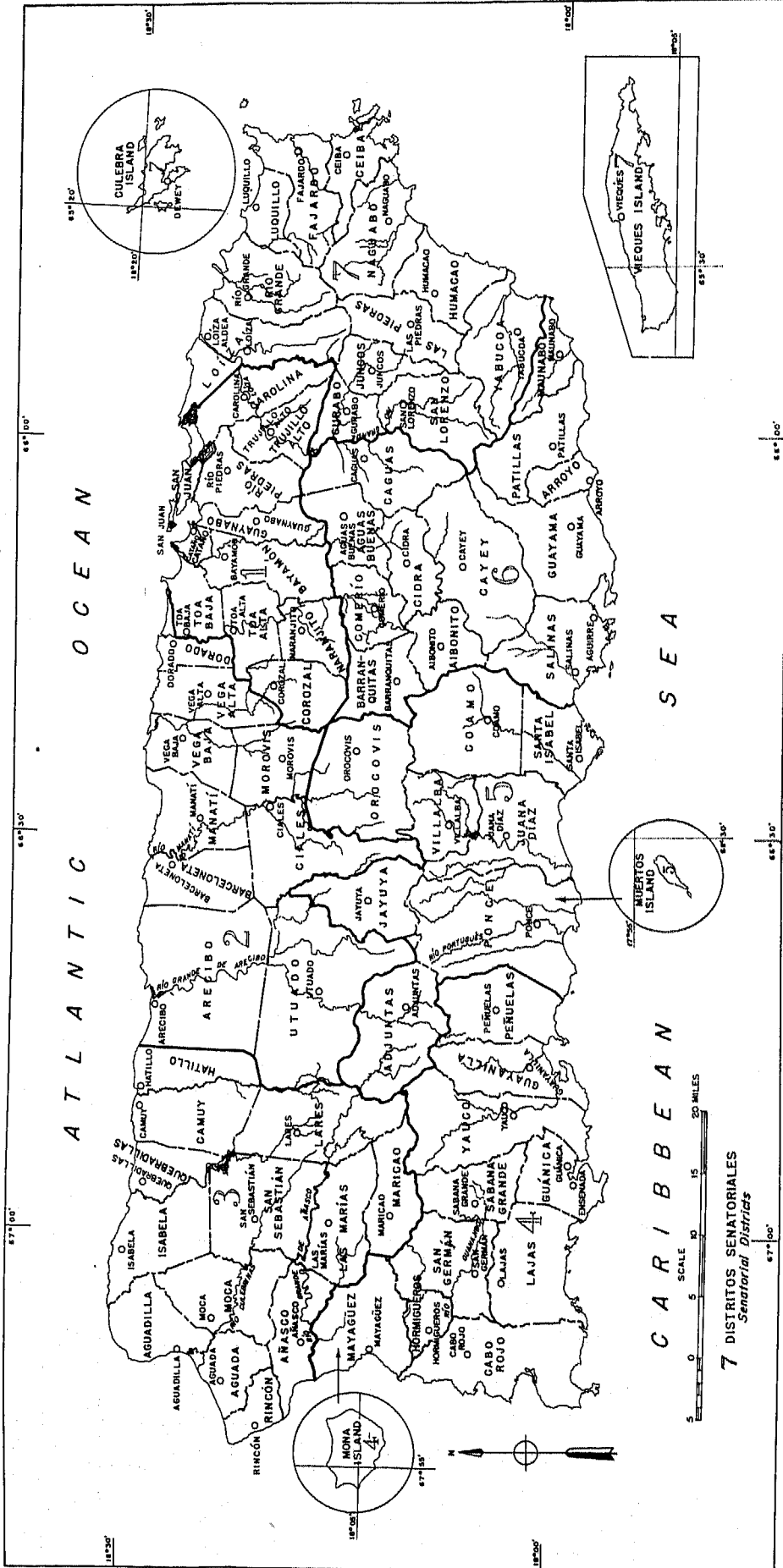
Differences in precipitation have more influence upon the distribution of crops than temperature, although coffee is associated with lower temperatures at higher elevations. For satisfactory yields, sugarcane, the dominant crop, requires more than 60 inches of rainfall, or irrigation if there is less than that amount. Moisture effectiveness is lowered by the high rate of evaporation and by extreme porosity of soils derived from limestone formations in some parts of the island. Hurricanes are also a menace in Puerto Rico.

CLIMATIC SUMMARY FOR SELECTED STATIONS IN PUERTO RICO

Station and location	Elevation	Temperature		Average precipitation		
		January average	July average	Annual	November to April	May to October
Río Piedras (north coast)	75 Feet	73.1 °F.	78.8 °F.	72.8 Inches	30.5 Inches	42.3 Inches
Ponce (south coast)	80	75.4	81.0	35.4	10.4	25.0
Maricao (western interior upland)	1,500	70.1	74.0	108.7	30.8	77.9
San Lorenzo (eastern interior valley)	203	72.9	78.8	73.5	25.3	48.2

1 August is slightly warmer.
 2 February and March are slightly cooler.
 3 August and September are slightly warmer.

PUERTO RICO
DISTritos SENATORIALES, MUNICIPALIDADES, CIUDADES Y PUEBLOS—SENATORIAL DISTRICTS, MUNICIPALITIES, CITIES, AND TOWNS



The most striking relief features of Puerto Rico are the Cordillera Central, which has a west to east orientation, and the outlying Sierra de Luquillo, which is centered in the eastern part of the island. These mountain cores descend to a piedmont upland which for the most part has been severely dissected by numerous streams originating on the well watered higher slopes. Some of the interior valleys are sufficiently large to have floodplains of moderate size. This piedmont upland and the mountainous backbone are widely used for production of subsistence crops on numerous small farms. Coffee and tobacco are important commercial crops also produced in the uplands. Steep slopes are commonly cultivated. Although much erosion has occurred on the intensively cropped fields, it is not nearly as severe as might be expected, even on slopes ranging up to an angle of 45 degrees. Some erosion is beneficial in gradually removing the highly leached surface portion of the soil. Many of these upland soils were highly leached of plant nutrients even before they were cultivated and application of fertilizers is necessary to improve yields. South of the Cordillera Central is an east-west belt of upland extending nearly across the island which is largely used for pasture and subsistence crops. In the southern uplands, annual rainfall is less than 60 inches.

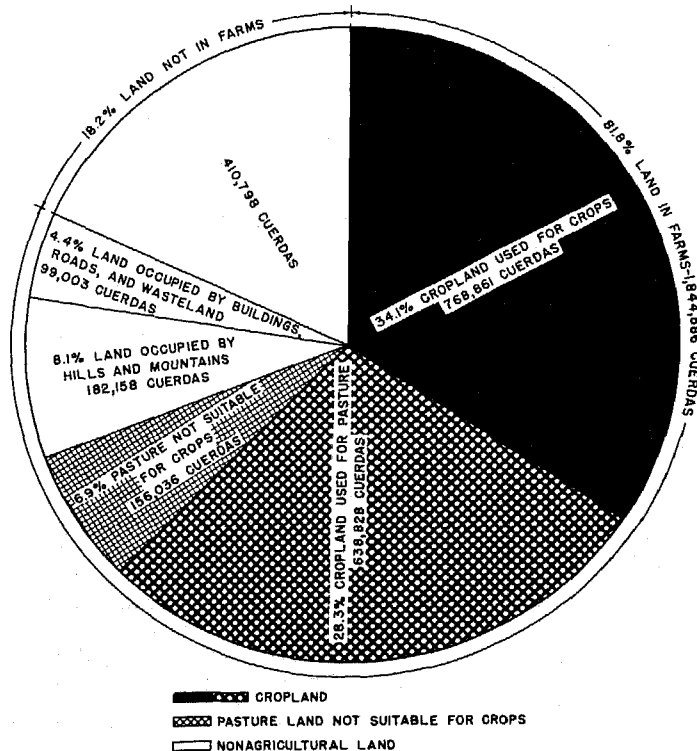
Encircling the island are the coastal lowlands, which meet the uplands at an elevation of about 250 feet above sea level. These lowlands comprise about a third of the total area. They are widest along the north coast with a maximum width of about 13 miles near Lares, but for the most part, they are narrow. Much of the northern coastal lowlands is underlain by horizontal limestone strata. Along the innermost belt of this coastal plain in the northwest is an area with numerous conical hills, known as "haystack" hills, which are the remnants caused by solution of relatively pure limestone. These hills are too stony and rough for cultivation and are largely brushland used for pasture.

Elsewhere the coastal lowlands are mainly used for sugarcane, the island's leading commercial crop. The highest yields are obtained on the south coast where irrigation is employed. On this coast the soils are not so highly leached under the drier climatic conditions, and sugarcane has not been raised long in this part of the island. The well drained alluvial soils are best for sugarcane. Soils derived from limestone are not so favorable for cane, because of greater porosity and acidity in some places. However, these limestone soils are used to advantage in the production of pineapples and citrus fruit in the northern lowlands and foothills. Along the shore, coconuts are grown on sandy soils which have a neutral or alkaline reaction.

Four-fifths of the total land area of Puerto Rico was in farms in 1950. The 53,515 farms vary greatly in size and output from the large units producing sugarcane to the small subsistence and part-time farms. Two-fifths of all land in farms and two-fifths of all cropland is situated on 1,072 farms of 260 cuerdas and over, which comprise less than 2 percent of the number of farms. (A cuerda is 0.9712 of an acre.) Much of the better cropland is a part of these larger farms. More than nine-tenths of the farms are operated by owners, but the farms operated by 421 managers in 1950 comprised nearly a fifth of all land in farms. These manager-operated farms are primarily owned by large corporations or by the Government of Puerto Rico. In addition to the farms of Puerto Rico, there are more than 50,000 parcels which have between one-fourth of 1 cuerda and 3 cuerdas. About two-thirds of the operators of these parcels work elsewhere much of the time.

A detailed soil survey of Puerto Rico was published in 1942. Near completion is a comprehensive land-use survey, which will furnish data for a rural land-use map. These and other studies now in progress are essential to planning more effective utilization of agricultural resources in Puerto Rico.

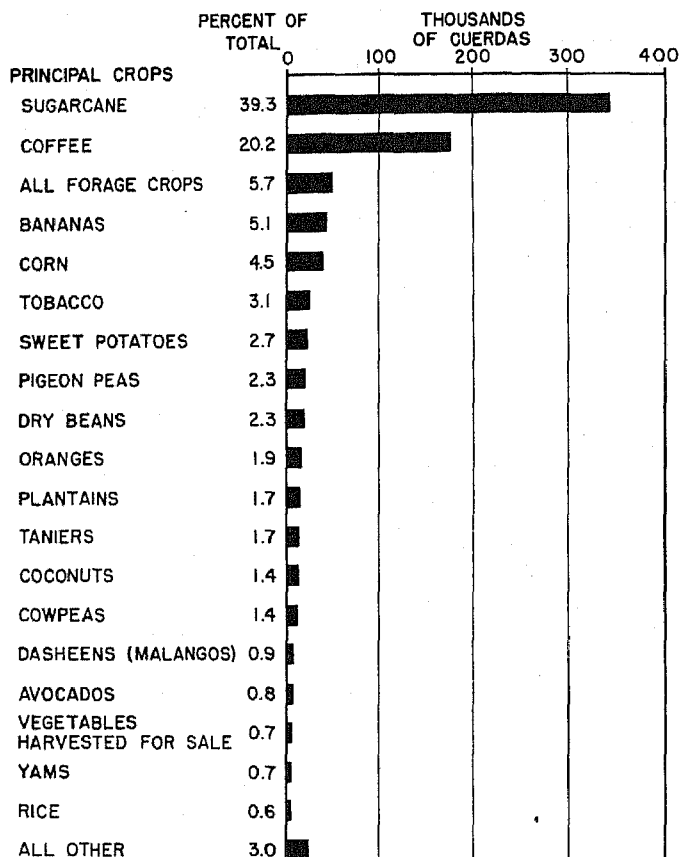
USES OF LAND IN PUERTO RICO: 1949



USES OF LAND IN PUERTO RICO

Cropland used for crops accounted for 41.7 percent of the land in farms or 34.1 percent of the total land area in 1950. Land used for crops totaled 768,861 cuerdas (746,718 acres). Pasture, part of which is suitable for crops, is the other principal use of farm land. More than two-fifths of the land in farms, or 794,864 cuerdas (771,972 acres), was classified as pasture land in 1950. The remainder of 281,161 cuerdas (273,064 acres) in farms was occupied by hills, buildings, roads, and wasteland.

SPECIFIED CROPS HARVESTED - RELATIVE IMPORTANCE IN ACREAGE, FOR PUERTO RICO: 1949



SPECIFIED CROPS IN PUERTO RICO

Sugarcane was harvested from 344,067 cuerdas in 1949, which was nearly 100,000 cuerdas more than the previous census year peak in 1935. Coffee was harvested from 176,386 cuerdas, which was slightly less than that grown in 1939. These two crops occupy more land than all other crops combined. Although sugarcane and coffee dominate the crop acreage, Puerto Rico grows a great variety of crops for home use as well as others for export, including tobacco, pineapples, and coconuts. Fruits and vegetables account for most of the remaining acreage of crops harvested. Rice and corn are the only important cereal crops grown. Tobacco is a high-value crop occupying 26,834 cuerdas in 1949. Cotton occupied less than 3,000 cuerdas. These two crops were a great deal more important 20 years ago than at present.

THE POSSESSIONS

The possessions are scattered and small. These outlying possessions include the Virgin Islands, situated in the Caribbean east of Puerto Rico; Guam, one of the Mariana Islands, lying east of the Philippines; American Samoa in the South Pacific near the Fiji Islands; and several other tiny islands in the Pacific. The combined population of these islands was 106,219 persons in 1950.

The Virgin Islands have steeply sloping ridges which meet the sea in spurs. There are only small areas of level land between some of these ridges. The climate is similar to that of Puerto Rico, although, because of the lower elevation, there is less contrast in precipitation and temperature. Soils are derived principally from volcanic materials. The islands were purchased from Denmark in 1917. Historically, sugarcane has been the dominant crop and even steep hillsides have been used for its production. Following the freeing of the slaves and with large-scale competition on better watered or irrigated areas, the acreage of sugarcane declined. However, it is still the dominant crop, comprising nearly four-fifths of the 5,594 acres of harvested cropland in 1949. Production of fruits and vegetables and cattle raising are other agricultural activities. About a fourth of the 63,753 acres in farms is classed as cropland but much of it is pastured or not used for crops.

Guam, which is located at latitude 13° N., is a well-watered tropical island acquired by the United States in 1898 following the

Spanish-American War. The island has a northern coral-capped plateau and a southern mountainous chain of volcanic origin. Agricultural activities consist mostly of raising fruits and vegetables and keeping a few livestock. Corn, taro, yams, cassava, coconuts, and bananas are among the crops grown. Farm livestock include cattle, goats, hogs, and chickens. There are no important commercial crops. Most of the employed natives of Guam are directly or indirectly supported by Government activity on the island.

American Samoa at latitude 14° S. is about the same distance to the south of the equator as Guam is to the north. The islands are the tops of volcanic cones often surrounded by coral reefs. The tropical climate, which is modified by the trade winds, has local variations in rainfall but few differences in temperature. The Samoan Islands are inhabited by Polynesians who have increased in numbers following a cessation of tribal wars and an improvement in health conditions. Native population more than doubled between 1920 and 1950, increasing from 7,776 to 18,937. Coconuts grown for copra for export form the leading commercial crop. Some cacao is also grown. Taro, breadfruit, papayas, pineapples, and sugarcane for thatching are the leading noncommercial crops grown. Most of the agriculture is carried on by the natives, and plantations are of no commercial importance.