

The  
Yearbook of  
Agriculture  
1958



THE UNITED STATES

GOVERNMENT PRINTING OFFICE

# LAND

*the yearbook of agriculture*

1958

THE UNITED STATES DEPARTMENT

OF AGRICULTURE, WASHINGTON, D. C.

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LAND



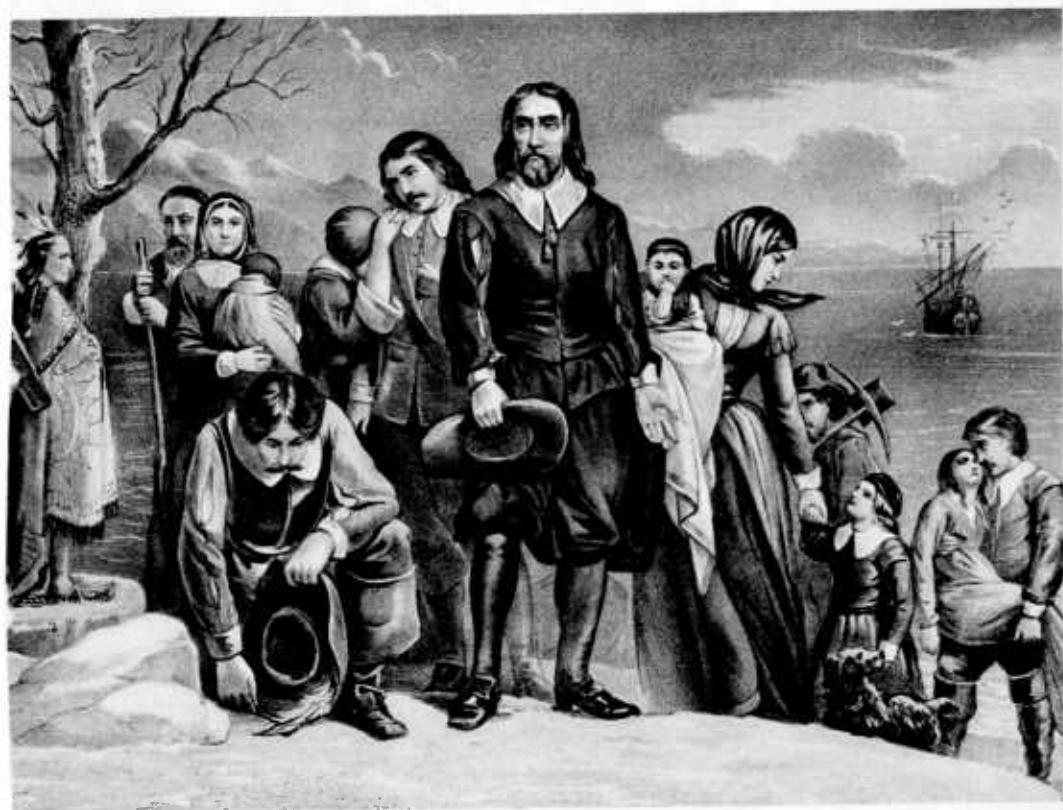
# Forever the land:

**A section of pictures.** An account of what the fathers found; the winning of the West; the growth of people and the Nation; the development of scientific agriculture; problems of this later day; what of the future?

The help of Robert B. Branstead of the Soil Conservation Service, Leland J. Prater of the Forest Service, and a committee, headed by Joseph D. Tonkin, of the Federal Extension Service in preparing this section of pictures is gratefully acknowledged.

Among the photographers are Mr. Prater; Mr. Branstead; Lloyd F. Ryan, Bluford W. Muir, J. L. Averell, Daniel O. Todd, J. G. Jack, K. D. Swan, Paul S. Bieler, George S. Griffith, Paul Fair, W. E. Seibel, Fred E. Dunham, William E. Hallen, and Roy M. Filloon, Forest Service; Hermann Postlethwaite and Ed Hunton, Office of Information; B. C. McClean, Gordon Smith, R. J. Wagner, Sam Cole, C. A. Rechenthin, and E. Cole, Soil Conservation Service; and photographers of the State Extension Services and land-grant colleges. The prints are from the Collections of the Library of Congress.

Some of the photographs were made later than the time to which we apply them, but because they typify the time, place, and event, the faults of anachronism and anachorism may not be serious.



Land where my fathers died.  
Land of the pilgrim's pride:  
Of thee I sing.



These the fathers found: Forests primeval,  
boundless, untrod by feudal foot. [Wisconsin]



In them were fuel for the home fires,  
wood for the homes that were coming,  
meat for the body, and peace for the soul. [Michigan]

Clear ran the streams:  
Unsullied, pure, and  
teeming with bass,  
trout, and salmon.

| Washington |





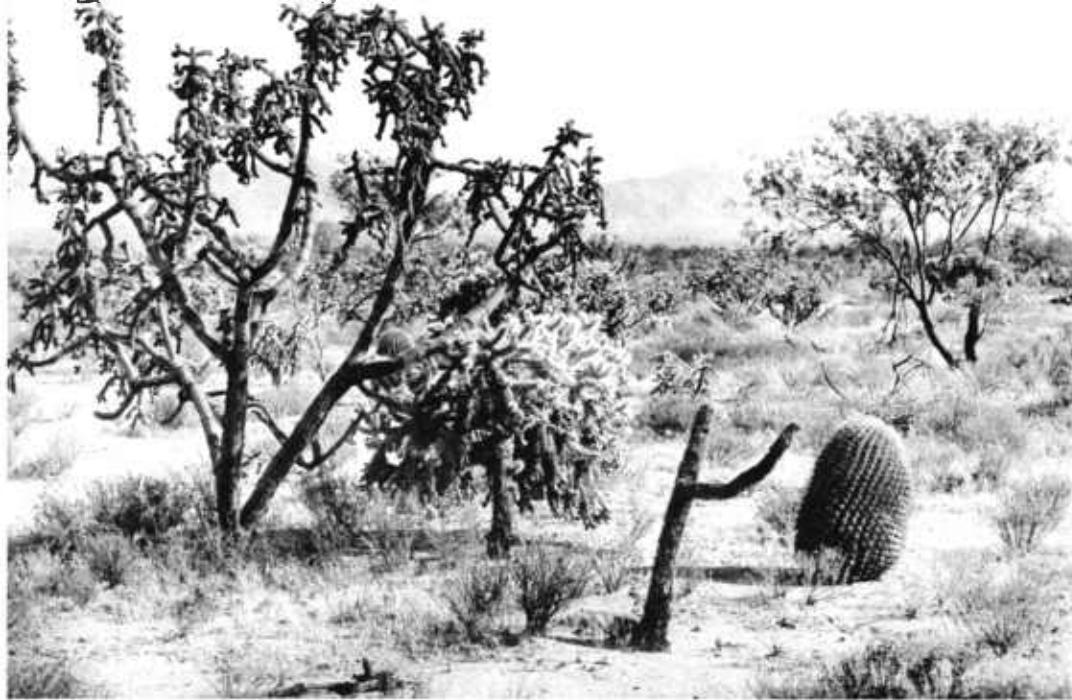
Creeks, swamps, marshes, potholes:  
All were part of Nature's design;  
each, in its way, a purposeful blessing. |South Carolina|



Prairies were to the westward,  
with grass belly-high to a horse. [Oklahoma]

Far beyond the world the fathers knew  
were mountains, majestic and awesome  
and holders of wealth for the future. [Washington]





The desert, remote and waiting for man to disclose its resources and values of space, beauty, quiet. [Arizona]

In this land, this diverse, unspoiled land that knew not despot and serfdom, the fathers planted their seed. [North Carolina]





They built. When need was, they defended  
their homes and their futures.

Some built stately mansions. [South Carolina]





Many moved westward. Hope and adventure were stronger than terrors and hardships of trackless expanses.

Before them went scouts and explorers, men who extended frontiers and saw new horizons. [Hayden Expedition, 1870]





Men lifted their eyes to the hills  
for the gold and the wisdom they found there.



# EMIGRATION



## UP THE MISSISSIPPI RIVER.

### The attention of Emigrants and the Public generally, is called to the now rapidly improving **TERRITORY OF MINNESOTA,**

Containing a population of 150,000, and goes into the Union as a State during the present year. According to an act of Congress passed last February, the State is munificently endowed with Lands for Public Schools and State Universities, also granting five per cent, on all sales of U. S. Lands for Internal Improvements. On the 3d March, 1857, grants of Land from Congress was made to the leading Trunk Railroads in Minnesota, so that in a short time the trip from New Orleans to any part of the State will be made in from two and a half to three days. The

### **CITY OF NININGER,**

Situated on the Mississippi River, 35 miles below St. Paul, is now a prominent point for a large Commercial Town, being backed by an extensive Agricultural, Grazing and Farming Country; has fine streams in the interior, well adapted for Milling in all its branches; and Manufacturing **WATER POWER** to any extent.

Mr. JOHN NININGER, (a Gentleman of large means, ideas and liberality, speaking the various languages,) is the principal Proprietor of **Nininger**. He laid it out on such principles as to encourage all **MECHANICS**, Merchants, or Professions of all kinds, on the same quality and footing; the consequence is, the place has gone ahead with such rapidity that it is now an established City, and will annually double in population for years to come.

Persons arriving by Ship or otherwise, can be transferred without expense to Steamers going to Saint Louis; or stop at Cairo, and take Railroad to Dunleith (on the Mississippi). Steamboats leave Saint Louis and Dunleith daily for **NININGER**, and make the trip from Dunleith in 36 to 48 hours.

### **NOTICES.**

1. All Railroads and Steamboats giving this card a conspicuous place, or *gratuitous insertion* in their cards, AIDS THE EMIGRANT and forwards their own interest.

2. For authentic documents, reliable information, and all particulars in regard to Occupations, Wages, Preempting Lands (in neighborhood), Lumber, Price of Lots, Expenses, &c., apply to

THOMAS B. WINSTON, 27 Camp street, New Orleans.  
ROBERT CAMPBELL, St. Louis.  
JOSEPH B. FORBES, Dunleith.



The people grew. The Nation grew.  
Lanes became roads. The roads became highways.

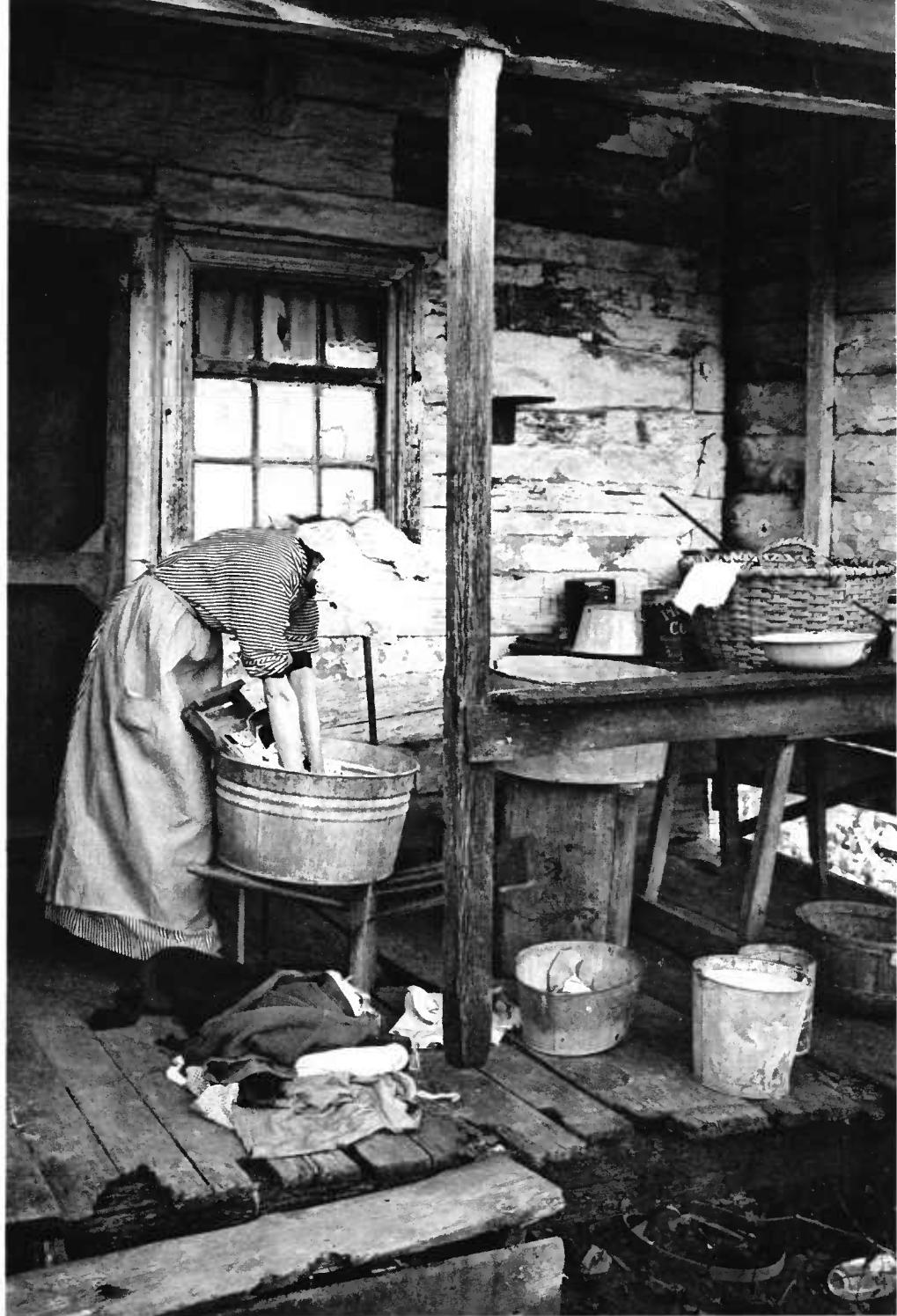




Railroads linked ocean and ocean.

The winning of the West meant primitive sod huts.





The winning of a new country meant drudgery and hard work.



It meant the few, forgotten comforts from the crossroads store.

For many, who failed to understand that methods of farming in the East would not succeed in the West, it meant poverty.





It meant despair, failure—or a new start, new hope.



Some sought other homes in a kinder place.

But life had its pleasures, too,  
like driving to town on Saturday afternoon.





And always there was faith in God, in themselves,  
and in the future of their Nation. [North Carolina]





A new day came to American farming when men of vision founded State colleges of agriculture [Pennsylvania]

and the countrywide system of county agents, dedicated men who showed them new methods





and expounded the principles of balanced farming.

Their sons and daughters joined 4-H Clubs.



In the West,  
and later  
in the East,  
they began to  
irrigate fields  
for larger and  
more certain  
harvests. [Utah]





The land yielded its bounty of hay.

|Lolo National Forest. Montana|



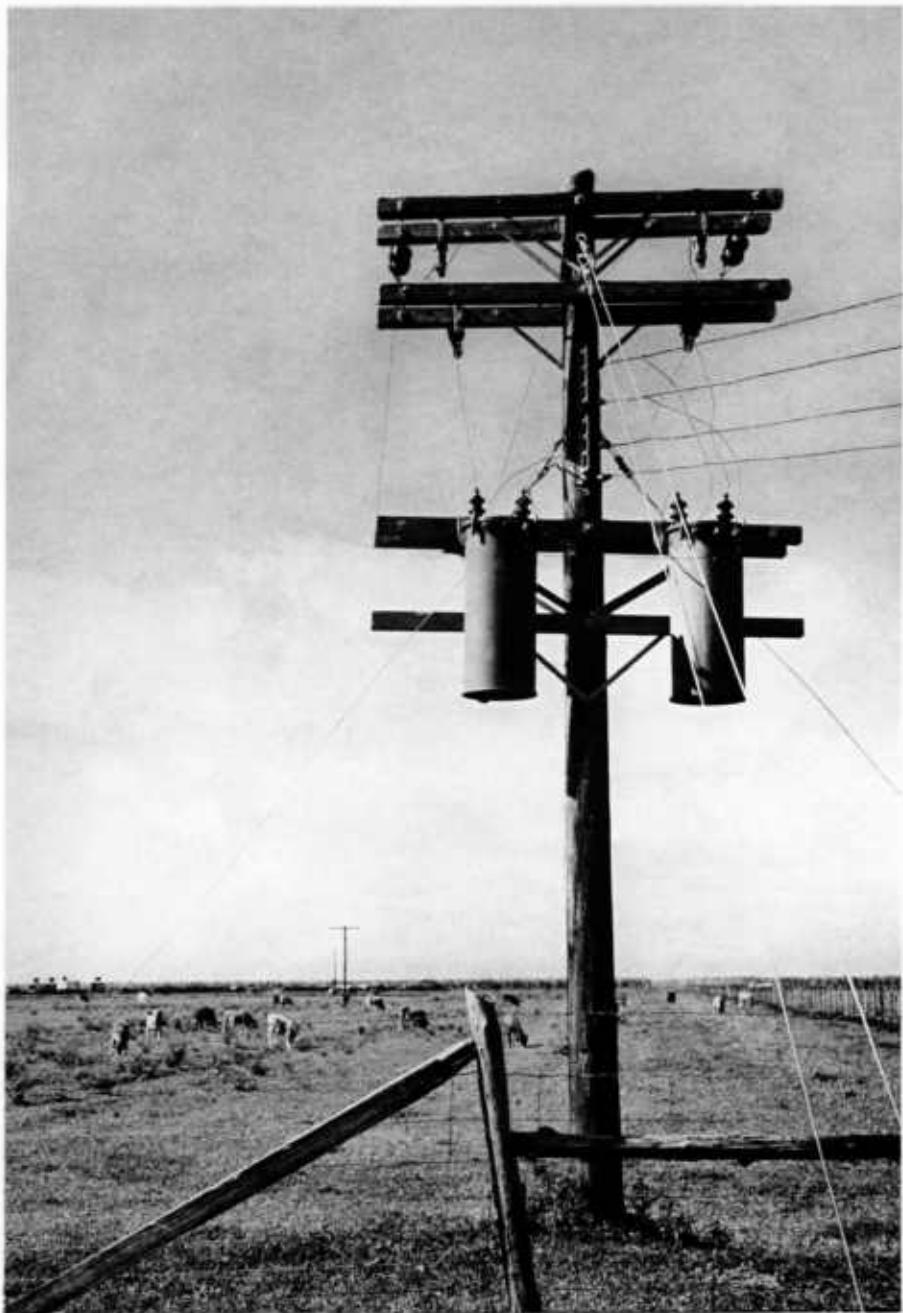
and pasture, [Idaho]



and corn, [Ohio]



and wheat—and much, much more. [North Dakota]



Electric power brought conveniences and greater efficiency to millions of remote farms.



So the fathers conquered a continent  
and learned much about land and themselves. And the sons?  
The sons, for quick profits and heedless of sons to come,  
cut over and let burn many forests. [Oregon]



Logging at an end, towns died. [California]

They let the streams be polluted. [Ohio]





Silt from denuded watersheds choked reservoirs,  
led to floods, and wasted water,  
which was becoming more and more precious. [California]



People plowed land that should be grassland,  
and saw how duststorms [Colorado]

could despoil the prairies. [Oklahoma]





They overgrazed and uncovered the slopes  
and paid the price in erosion, [Alabama]

in the forced sales of homes and farms, [Georgia]





and poverty.





Now we are at a crossroads. At this moment in history, when our population is growing, the demand for many products of fields and forest mounts, and the face of the land is changing, we can choose, perhaps for the last time, what we are to do with our land, our country. [New York]



We see how cities grow out into farmlands  
and orchards. [California]

We see how highways, airports, factories,  
and other developments, however necessary they may be,  
take over acres for all time. [Virginia]





For the future that we can build, we have the  
lessons of the past. We have the knowledge, from research  
and experience, of how to manage forests and keep them  
productive. [Lassen National Forest, California]



We have learned about the need to plant trees  
to protect some hillsides and how to do it  
and which trees to plant. [Mississippi]

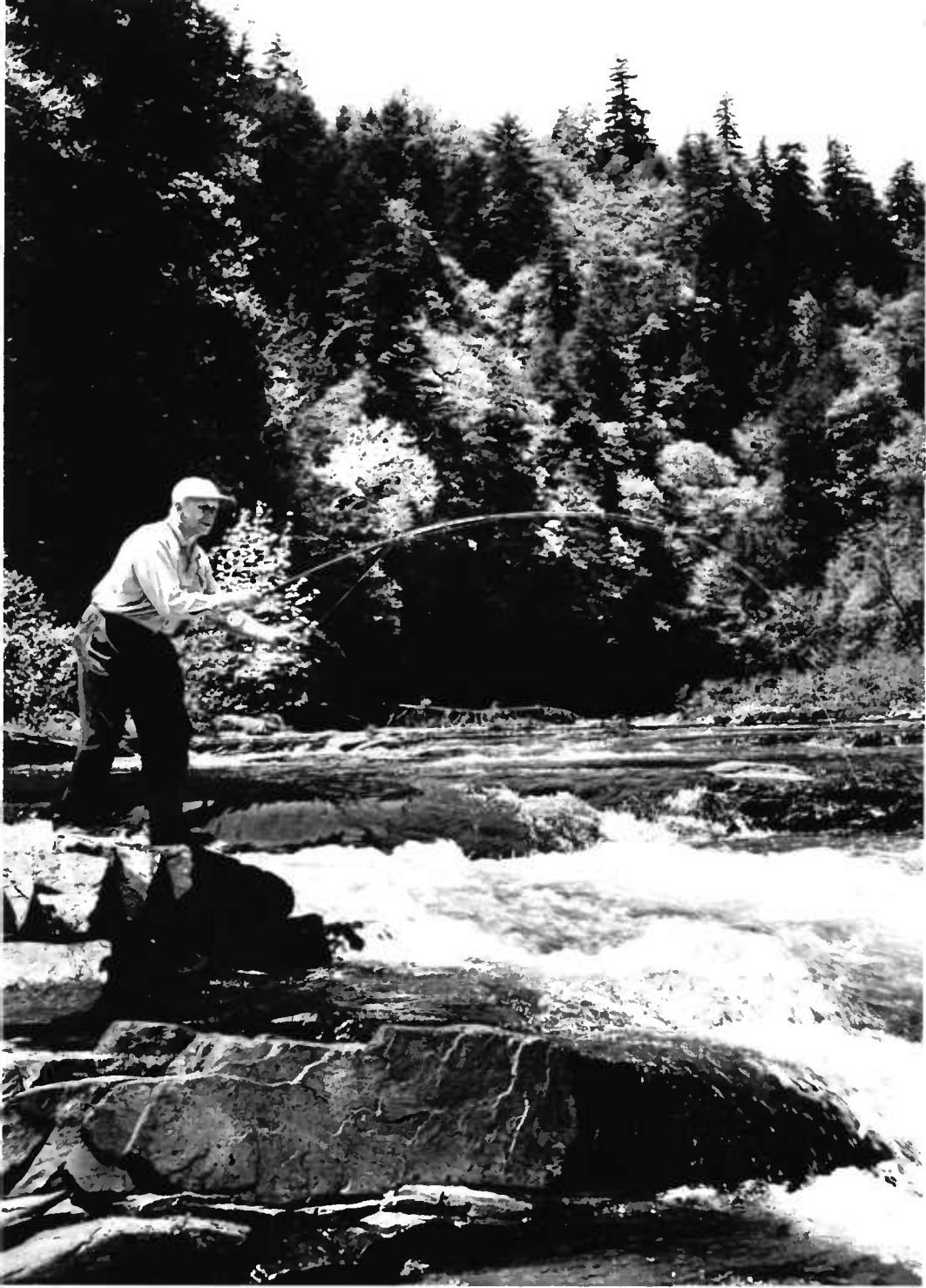
We have new kinds of grasses  
and knowledge of their management. [Texas]





We have a heightened appreciation of the beauty of our land  
and the growing need of people for recreation.

[Ouachita National Forest, Arkansas]



[Pisgah National Forest, North Carolina]

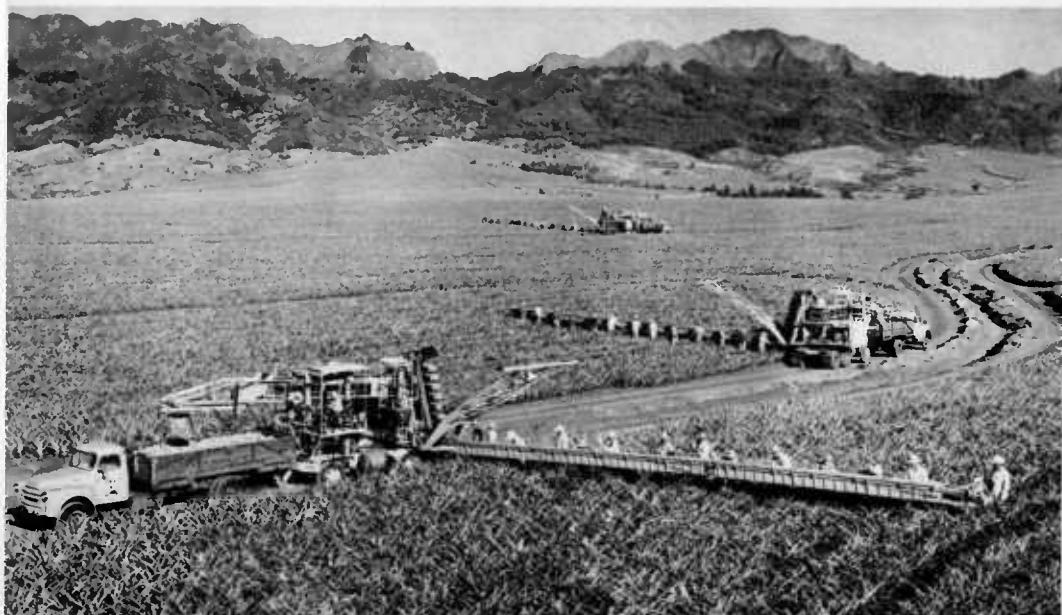


We have learned a good deal about irrigation, contour tillage, strip cropping, and other improvements that help prevent erosion. [Idaho]



Farmers, like those in this picture  
of a father and his son going over their partnership records,  
know more about the economics of farming.

Research is giving us a growing body of  
scientific knowledge, of importance to all of us. [Hawaii]



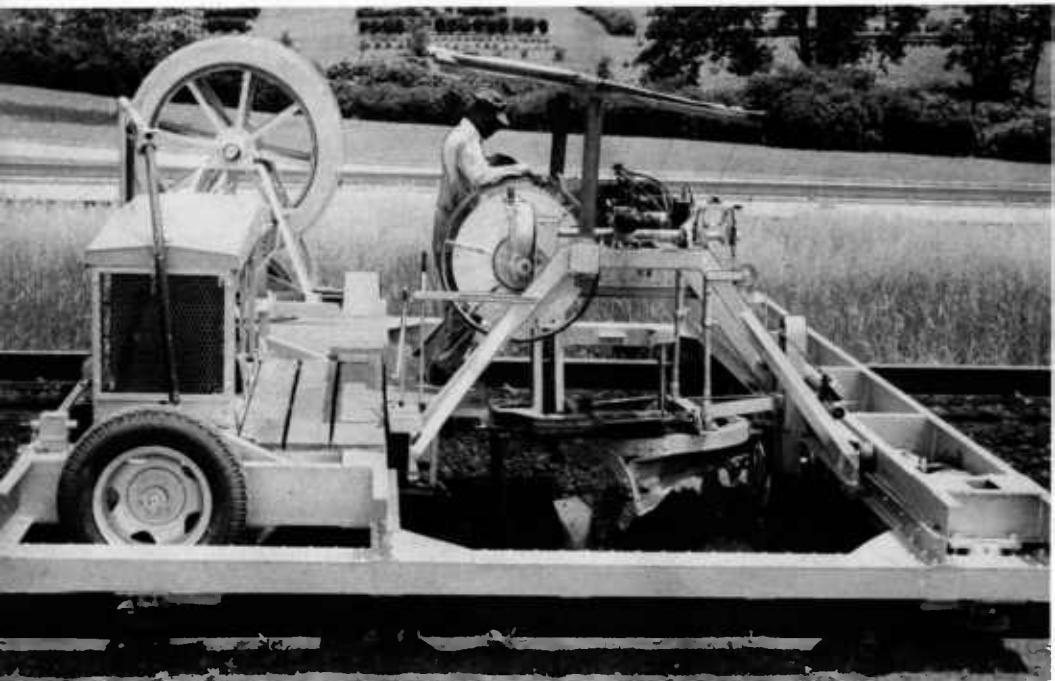


[Studies of the effect of cutting on water supplies in  
Fraser Experimental Forest, Colorado]



[Ceweeta Hydrologic Laboratory, Pisgah National Forest,  
North Carolina]

[National Tillage Machinery Laboratory, Auburn, Alabama]

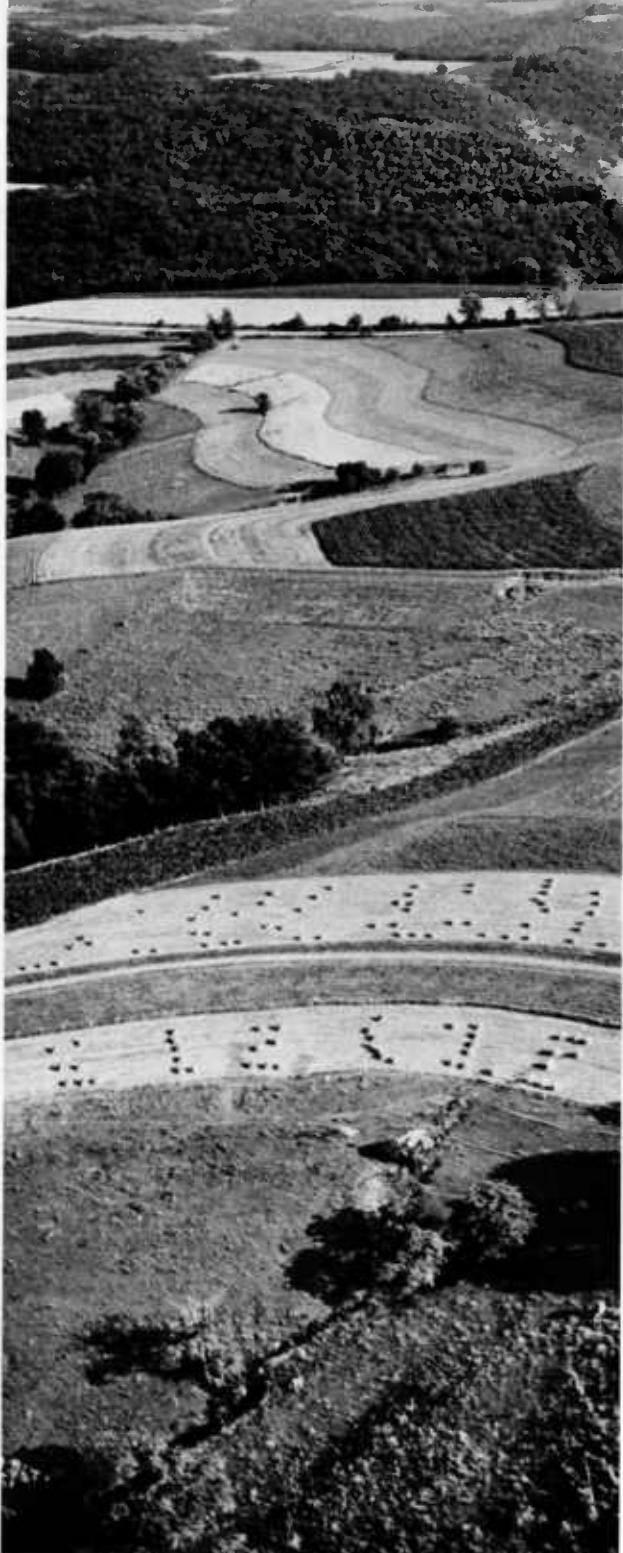




Our young people  
are eager to learn,  
confident,  
responsive.



Of this land  
and these people  
I sing:  
O beautiful  
for spacious skies  
And waving fields  
of grain  
[Wisconsin]







Their purple mountains' majesty

Above the fruited plain.

[Mt. Baker National Forest, Washington]

## A foreword by the

**Secretary of Agriculture.** Science has ushered in the Atomic and Space Age. Man has launched satellites and is now planning with a degree of confidence on reaching the moon. These thoughts and plans stir us. They are an index of the strength of human aspirations, imagination, and genius.

But with all our Space Age planning, we still live close to the land. Many of us make our living from it. Many others derive pleasure from the recreation that the forests, fields, and streams afford. For each of us the land provides living space and is the source of our food, clothing, and housing.

Land, indeed, is part and parcel of our growth as a Nation—of our history and our national attitudes toward freedom and democracy. Ours is a choice land, blessed of Heaven.

As citizens, then, we should know more about land. We should get a panoramic view of the makeup of our country—cropland, grazing and forest lands, city land, lakes, deserts, and mountains, all of which form the natural resources base of our Nation.

Worthwhile also is the knowledge we gain when we travel the land and see the variations in topography, soil, plant cover, and climate; the ownership and management of land; and the practices of farmers and ranchers. All reflect the forces of environment on man and the patterns of settlement.

From the technical viewpoint, we need to look ahead to the requirements of coming generations for food, fiber, and timber and for urban and rural development.

Such an inventory and projection can tell us what we must do to husband our God-given resources and how we must deal with problems of land use and conservation. It will remind us of the ways in which we have been careless, unaware, and indifferent to our heritage. It will also indicate some accomplishments in the wiser use of our land. Finally, it demonstrates again how much we have for which we must be thankful to the Creator of all.

This book will stimulate thought about our land and its use. It will provide much material for discussion. This is as it should be, for discussion often strikes the spark to ignite inspired thoughts that guide us into a better future. By *Ezra Taft Benson*.



## A preface by the editor.

We make a survey in this book of the land Americans have, use, and need. We discuss the land that was here when the colonists came, its importance in our history and growth, the use and management of public and private lands, the income and valuation of land, resources and prospective needs, and emerging problems of ownership and control.

We consider the profound changes these later days have brought, and we try to see what they mean in relation to our land resources: The growth of population and cities; the growth of the size of farms and the decline of the farm population (for land, used by people for people, has meaning only in terms of people); the use of millions of acres for highways, airports, factories, and subdivisions; the expanding number of part-time and residential "farms" of those who want to live two lives in the country and the city; the difficulties of getting started in farming; the need for more group action as the problems exceed the scope of individuals.

A broad subject—one worthy of our best effort; one that demands sharp thinking, deep wisdom, and courage to face up to the Nation's problems. Of the reader it asks the same and is worthy of his close attention, for our future will depend greatly on what we do with our land.

We present no ready program, no easy solution, and no definite policy. That is not our intention or our province; policies and programs are made by the people and their elected representatives. The suggestions presented here are personal, individual ones and are not necessarily those of the Department of Agriculture or any unit of the Government. Because the men who wrote the chapters were given no orders as to what they were to say, there are conflicts and contradictions. That is all to the good, however, because of the nature of the subject, which arouses strong opinions, depending (as one writer says) on whose ox is gored, and because of our purpose, which is to spur us to forward-looking action.

The members of the 1958 Yearbook Committee, which planned the scope and made the outline, are:

Sherman E. Johnson, Agricultural Research Service, Chairman

Ernst H. Wiecking, Agricultural Research Service, Secretary

Joseph Ackerman, Farm Foundation

Carleton P. Barnes, Agricultural Research Service

John B. Bennett, Department of the Interior

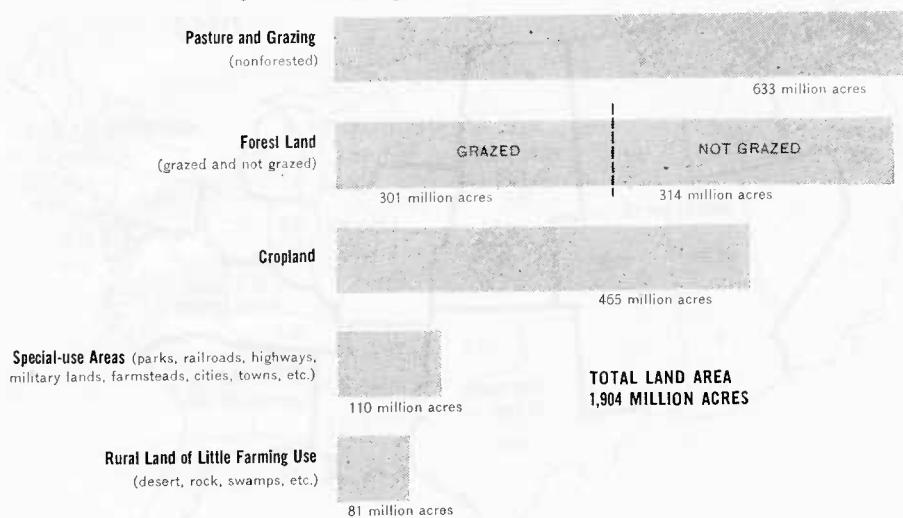
Howard E. Conklin, Cornell University  
Virgil D. Gilman, Federal Extension Service  
Carl P. Heisig, Agricultural Research Service  
James M. Hunt, Agricultural Conservation Program Service  
H. R. Josephson, Forest Service  
Charles E. Kellogg, Soil Conservation Service  
Edward F. Mynatt, Office of the General Counsel  
Lewis B. Nelson, Agricultural Research Service  
Harold E. Pinches, Agricultural Research Service  
D. Harper Simms, Soil Conservation Service  
Harry A. Steele, Agricultural Research Service  
Charles L. Stewart, University of Illinois  
John F. Timmons, Iowa State College

To them are due thanks for much hard work and unstinted effort, time, and thought.

If it were our policy to dedicate a Yearbook of Agriculture to an individual, this Yearbook would be dedicated to Charles L. Stewart, professor of agricultural economics in the University of Illinois, for his active interest in this book and this subject and for his devoted, conspicuously successful teaching of others to appreciate its scope and importance. By *Alfred Stefferud*, Office of Information.



## Major Uses of Land, 1954



A fourth of the land in the United States is cropland. One-third of it is grassland pasture and nonforest grazing land. Nearly one-third is woodland and forest, about half of which is grazed to some extent. The rest is in special and various other uses.

Of the cropland, about three-fourths is used for crops each year, and much of the remainder is pastured in rotation with crops. All cropland is in farms, but the acreage of pasture and grazing land not in farms comprises two-fifths of the total pasture area.

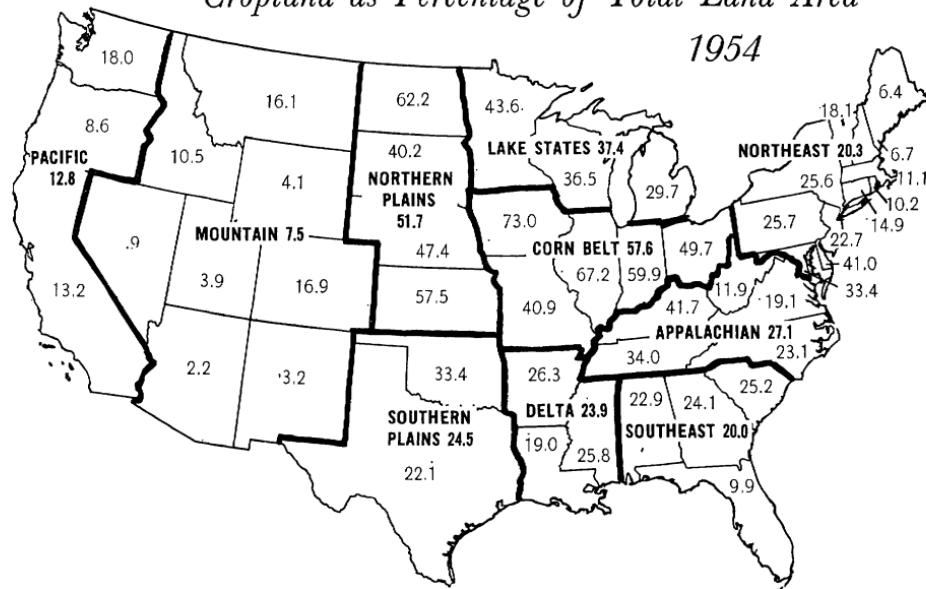
About 70 percent of the grazing land not in farms is publicly owned. The grazing land, both open and forested, that lies outside farms supplements land in farms.

Altogether, more than 80 percent of the total land area was used in the production of food and fiber in 1954. Urban areas, residential and industrial sites, farmsteads, highways, roads, railroads, airports, parks, and other special uses are high in value.

Finally, several million acres of semidesert, bare rock, marsh, and sand dunes are worth little for agricultural use, but they have utility for wildlife and recreational use.

*Cropland as Percentage of Total Land Area*

1954

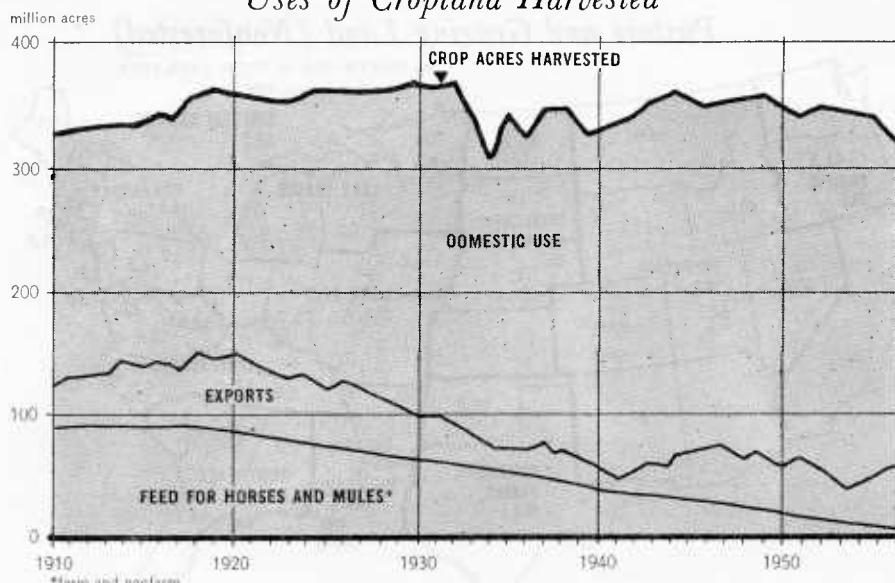


This map shows the general distribution of all cropland. More than 40 percent of the cropland was in the nine Corn Belt and northern Great Plains States in 1954, the year to which the latest census of agriculture pertained.

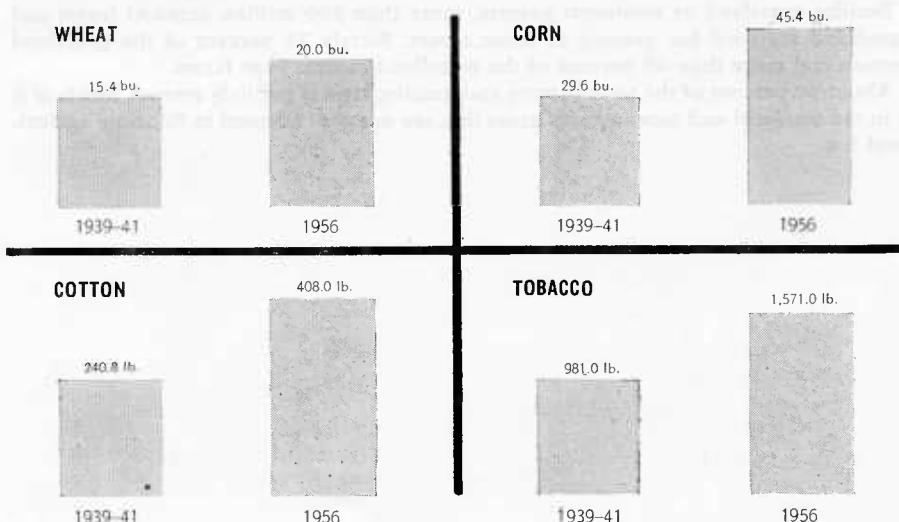
More than half of the total land area in Iowa, Illinois, Indiana, North Dakota, and Kansas was used for crops.

The Western States occupied two-fifths of the land area but contained only slightly more than one-seventh of the land used for crops. Texas, although it had the largest acreage of cropland of any State, used less than a fourth of its total area for this purpose.

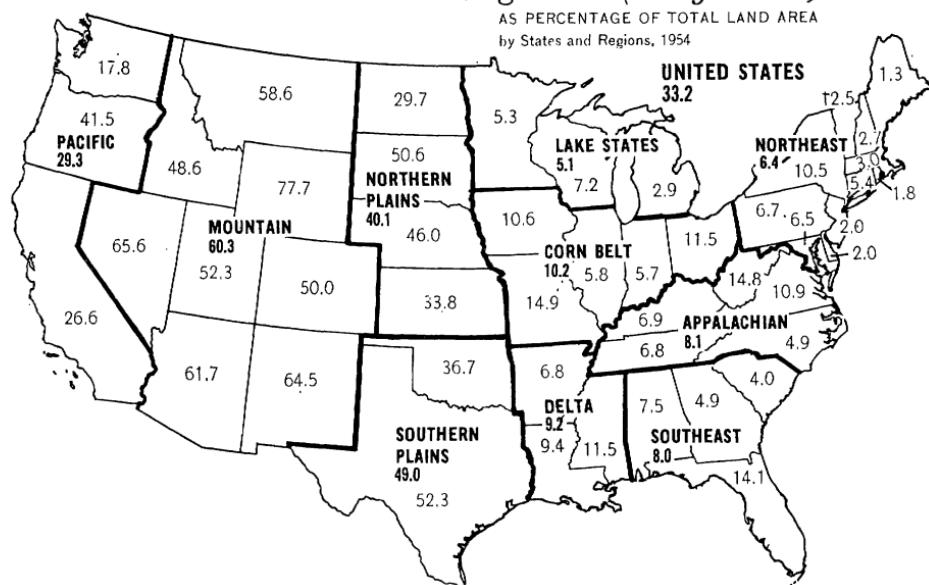
The total acreage of cropland varies greatly among regions. Pasture and grazing land are inseparable from arable farming over immense acreages. The arable pasture and cropland are readily interchangeable. For example, much of the reduction in crop acreages 1954 to 1958 has gone into pasture. When there is need for a greater acreage in crops, some of this pasture may be plowed up again for cultivation.

*Uses of Cropland Harvested*

Of the 326 million acres of crops harvested in 1956, about 16 percent was used to produce exported products; 3 percent, feed for horses and mules; and 81 percent, food, fiber, and tobacco. Farm output for human use increased at about the same rate as the United States population until just before the Second World War, when it began to rise faster. Much of the grain has come from an increased output per acre. The acreage of cropland in 1957 was slightly less than in 1940, but higher yields raised total production 24 percent. Increases have been marked for such crops as wheat, corn, cotton, and tobacco.

*Production per Harvested Acre*

## *Pasture and Grazing Land (Nonforested)*



Pastures and grazing land (including plowable and nonplowable grassland) account for the largest acreage of land use in the country—633 million acres, or nearly one-third of the land area.

Many types of pasture and grazing land are included, such as the highly productive pastures in the Northern and Central States, the irrigated pastures and natural grasslands of the Great Plains and the Western States, and the improved grazing areas of the South and West.

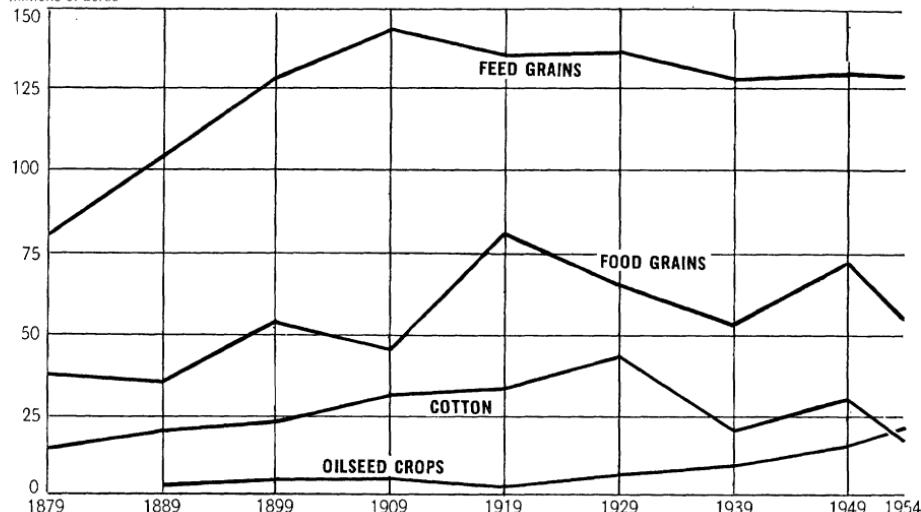
Besides grassland or nonforest pasture, more than 300 million acres of forest and woodland are used for grazing to some extent. Nearly 75 percent of the grassland pasture and more than 40 percent of the woodland pasture is in farms.

About 30 percent of the total pasture and grazing land is publicly owned. Much of it is in the semiarid and mountainous areas that are not well adapted to full-time agricultural use.

## *Acreages in Food Grains, Feed Grains, Oilseed Crops, and Cotton*

UNITED STATES, 1879-1954

millions of acres



The acreage used for food grains—wheat, rice, rye, and buckwheat—became more than 19 million acres smaller between 1949 and 1954 and declined another 12 million acres from 1954 to 1957.

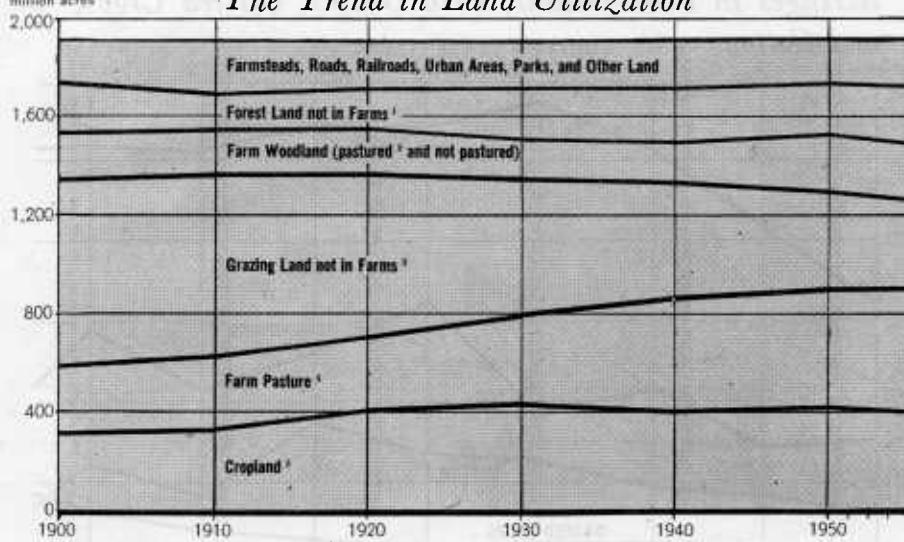
The total acreage of feed grains—corn, oats, barley, grain sorghum, and mixed small grains—occupied about the same acreage in 1954 as in 1949 but decreased by 5 million acres between 1954 and 1957. Some important shifts occurred. Corn harvested for grain declined. The acreages of sorghum harvested for grain, barley, and oats increased.

The acreage of cotton declined 7 million acres from 1949 to 1954 and another 6 million acres from 1954 to 1957. The acreage in soybeans and other oilseed crops increased about 6 million acres from 1949 to 1954 and 4 million acres from 1954 to 1957. Diversion of acreage from allotment crops to soybeans was a reason for the increase.

As a result of these and other shifts, the number of acres from which crops were harvested declined by about 19 million between 1954 and 1957. The drop was related to the existence of large stocks of certain crops and the resulting acreage controls and to the Soil Bank Program.

Fluctuations in the acreages used to produce the major crops in response to demand have been common in much of our agricultural history.

## The Trend in Land Utilization



<sup>1</sup> Excludes forested areas reserved for parks and related uses and arid woodland, brushland, and forest land used for grazing.

<sup>2</sup> 121 million acres were reported pastured in 1954.

<sup>3</sup> Includes grassland, arid woodland, brushland, and forest land grazed.

<sup>4</sup> Open pasture in farms, including cropland used only for pasture and other plowable pasture.

<sup>5</sup> Includes soil improvement crops, summer fallow, and land seeded to crops for harvest the succeeding year.

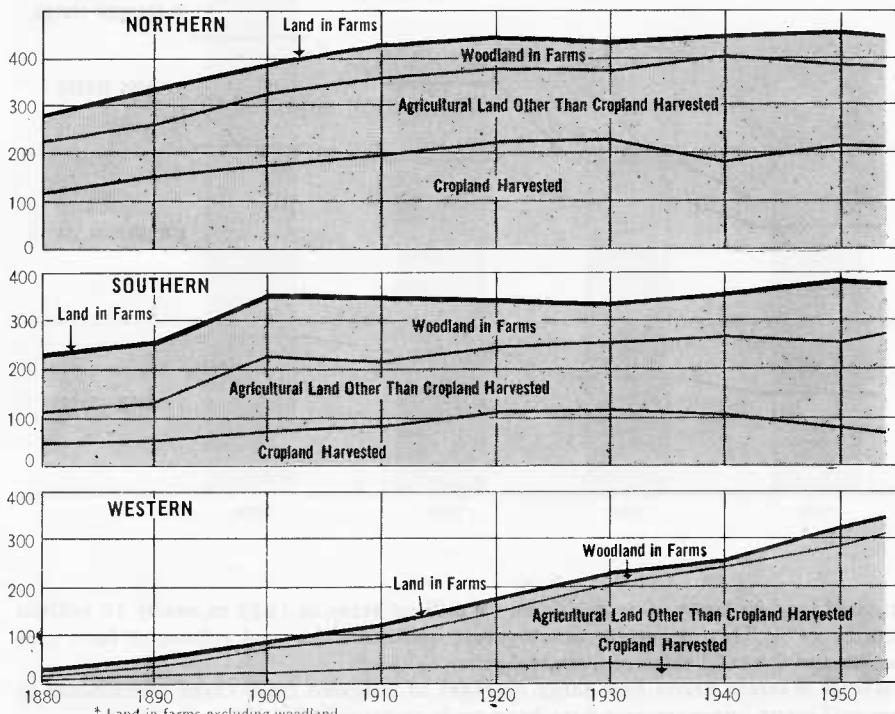
Cropland acreages are for the year preceding the date of the census except for 1954.

Notable shifts have occurred in the use of land since 1880. The total acreage in farms, crops, and pasture has increased generally in the West, the Corn Belt, and the Lower Mississippi Alluvial Valley, but the acreage in farms and crops has decreased in many parts of the East. The acreage occupied by cities, towns, rural residences, industrial plants, highways, airports, reservoirs, recreational areas, and other facilities has increased enormously with the growth in population, especially in the Eastern and West Coast States and around the Great Lakes.

A leveling off in the use of land for crops has occurred in the East since 1920, but the downward trend apparently is slowing down. The incorporation of grazing land into farms and ranches in the West has not always resulted in changed use, but abandonment of cropland in the East usually has meant a shift to pasture and eventually to woodland. In some areas of the Piedmont and other hill sections of Virginia, the Carolinas, Georgia, Alabama, and Mississippi, large acreages of cropland have been converted to pasture and large tracts have returned to forest. These regional shifts in cropland, pasture, and forest have been partly in balance, and so are not fully apparent in the national picture.

## Land in Farms, Agricultural Land\* and Cropland Harvested

BY REGIONS 1880-1954

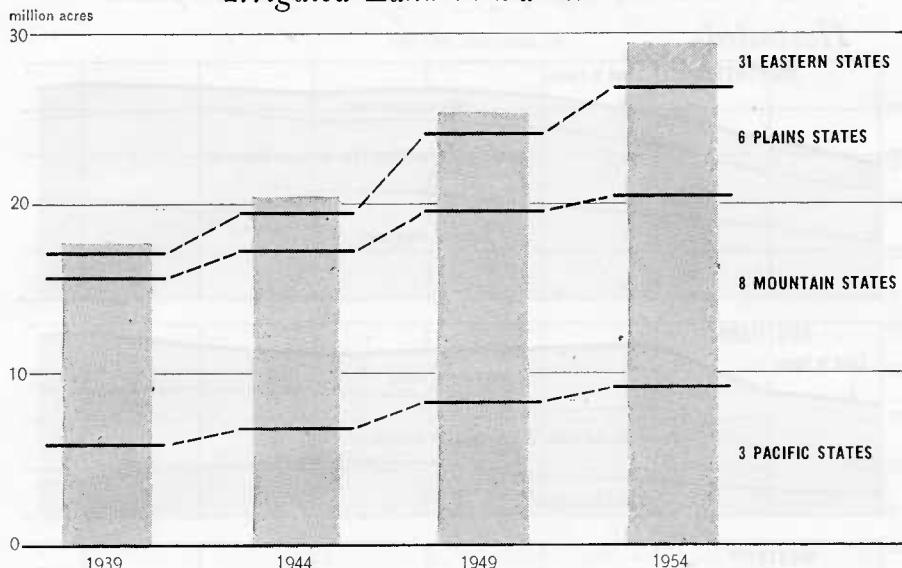


\* Land in farms excluding woodland

Land in farms, agricultural land (not including farm woodland), and cropland harvested increased generally until 1940 in the Northern, Southern, and Western States. Harvested cropland reached a peak acreage in the North and South in 1930 and in the West in 1950.

Several important contrasts in trends exist among farm production regions within these three groups of States. Cropland and pasture acreages in the Corn Belt and Lake States have not changed greatly in recent years. In the Northeastern States, the downward trend has continued but apparently is becoming stabilized. In some parts of the South, such as the Mississippi Delta and eastern North Carolina, the area used for farming has increased because of the clearing and drainage of new land and in Texas through irrigation, plowing up of grassland, and land clearing. In other sections, such as hill sections of the Southeastern States, large acreages of cropland have been converted to pasture and large tracts have reverted to forest.

## Irrigated Land in Farms



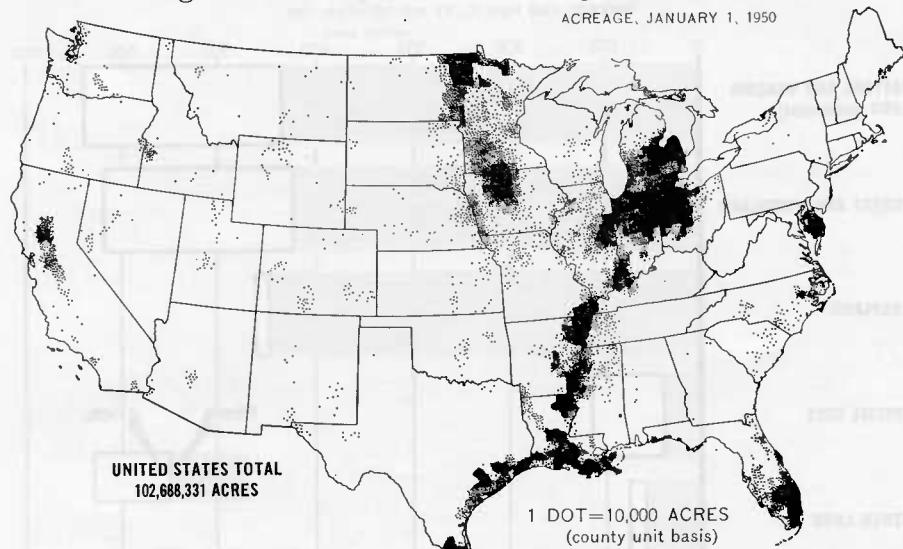
Irrigated land in farms increased from 18 million acres in 1939 to nearly 30 million acres in 1954. This important development influenced the total volume of farm production and the total value of farm real estate.

Several Western States have large acreages of irrigated land. Large investments in farm real estate improvements have been made to provide irrigation facilities.

Crop yields and income per acre generally average much higher on farms with irrigated land than on farms that have no irrigated land. Consequently many additions are being made in extent and location of irrigated acreages as new projects are developed and old ones are enlarged in various drainage basins of the West. Irrigation is increasing also in the rice areas of the South and in the eastern truck crop sections.

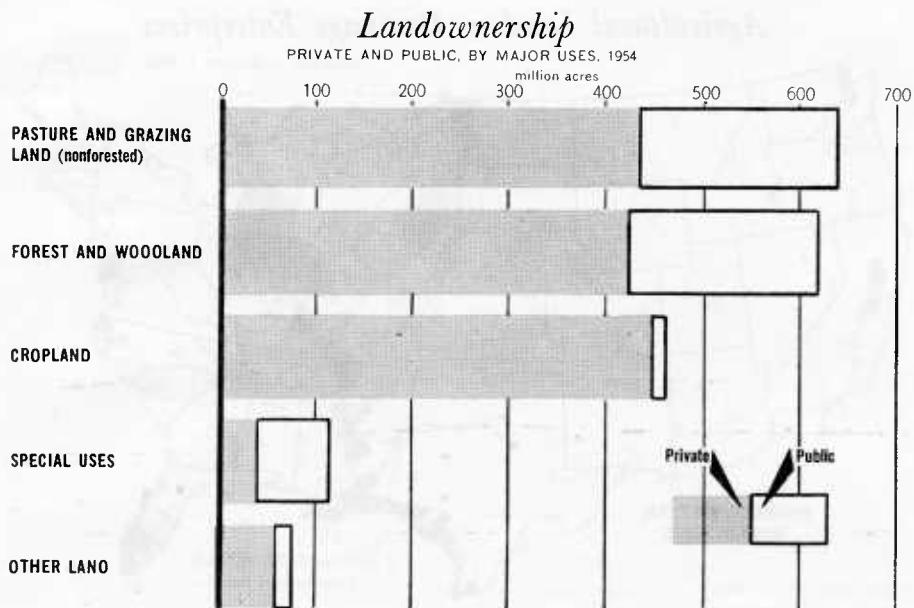
## *Agricultural Land in Drainage Enterprises*

ACREAGE, JANUARY 1, 1950



Farmland in organized drainage enterprises increased from 87 million acres in 1940 to nearly 103 million acres in 1950, or more than 1.5 million acres a year. About four-fifths, or 82 million acres, are improved. Of the unimproved land, 4 million acres are classified as suitable for development. Besides the land in organized drainage enterprises, there were an estimated 50 million acres of farmland drained by private or farm drainage—a total of 153 million acres of artificially drained land.

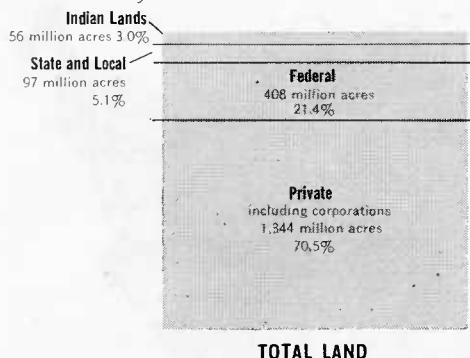
Many drainage improvements have been made since 1950. Records of local district and conservation programs show that large individual farm investments, as well as public investments, have been made to provide tile drains, farm ditches, and main outlets for excess waterflow. Drainage improvements have added greatly to farm production, income, and values in the Corn Belt, Lake States, Mississippi Delta, and Southern Coastal Plain.



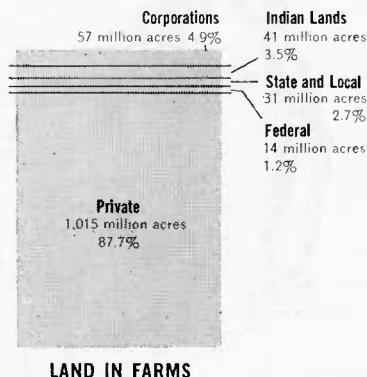
Nearly all cropland is privately owned. Only small areas are publicly owned—among them some State school lands and land held temporarily for a specific public purpose.

About a third of the grazing and forest lands are publicly owned. Much of it is in arid and mountainous areas that are not well adapted to full-time agricultural use. Special-use areas—parks, highways, reservoirs, and military posts, which are on land that has slight surface value for agriculture—make up a considerable part of the publicly owned land. Such special-use areas as highway rights-of-way, reservoirs, parks, and wildlife refuges are increasing. The acreage of public land, however, as a whole has shown a small decrease in recent years.

## *Ownership of Land and Land in Farms, for the United States, 1954*



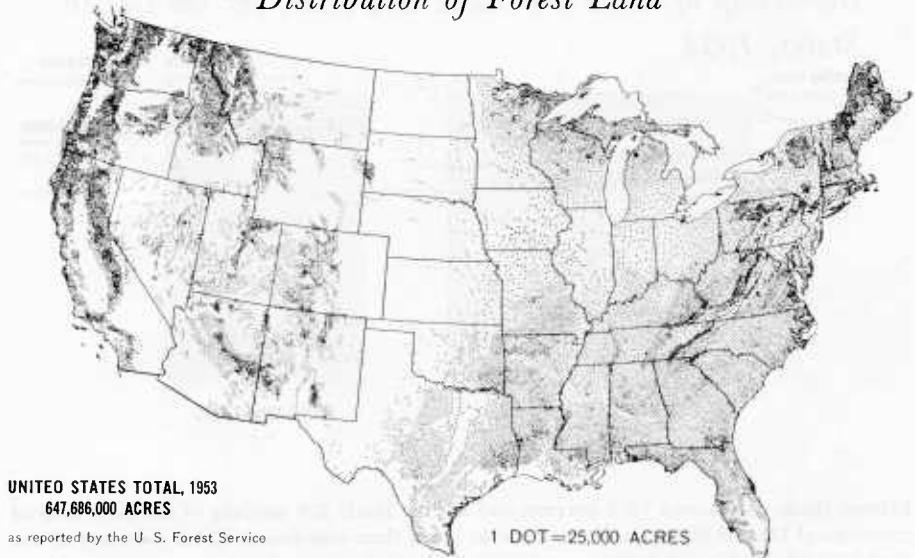
TOTAL LAND



LAND IN FARMS

Private lands comprised 70.6 percent and Indian lands 2.9 percent of the land area of continental United States in 1954. Title to more than one-fourth (26.5 percent) of the land area of the United States rested with Federal, State, or local governments. Much of it is in the West. Only 3.9 percent of the land in farms was publicly owned. Most of the land in farms owned by government was devoted almost entirely to grazing. Grazing land used by ranchers on a permit basis was not included as "land in farms." Private individuals owned 87.6 percent of the land in farms in 1954; corporations owned 5.0 percent; and Indian lands made up 3.5 percent.

Of the public land area, 407.9 million acres were owned in 1954 by the Federal Government; 80.3 million acres were owned by States; and an estimated 17 million acres were owned by local governments. The Federal land is mostly forests, parks, wildlife refuges, and range which was not homesteaded. The States also have large acreages in parks, forests, and wildlife refuges.

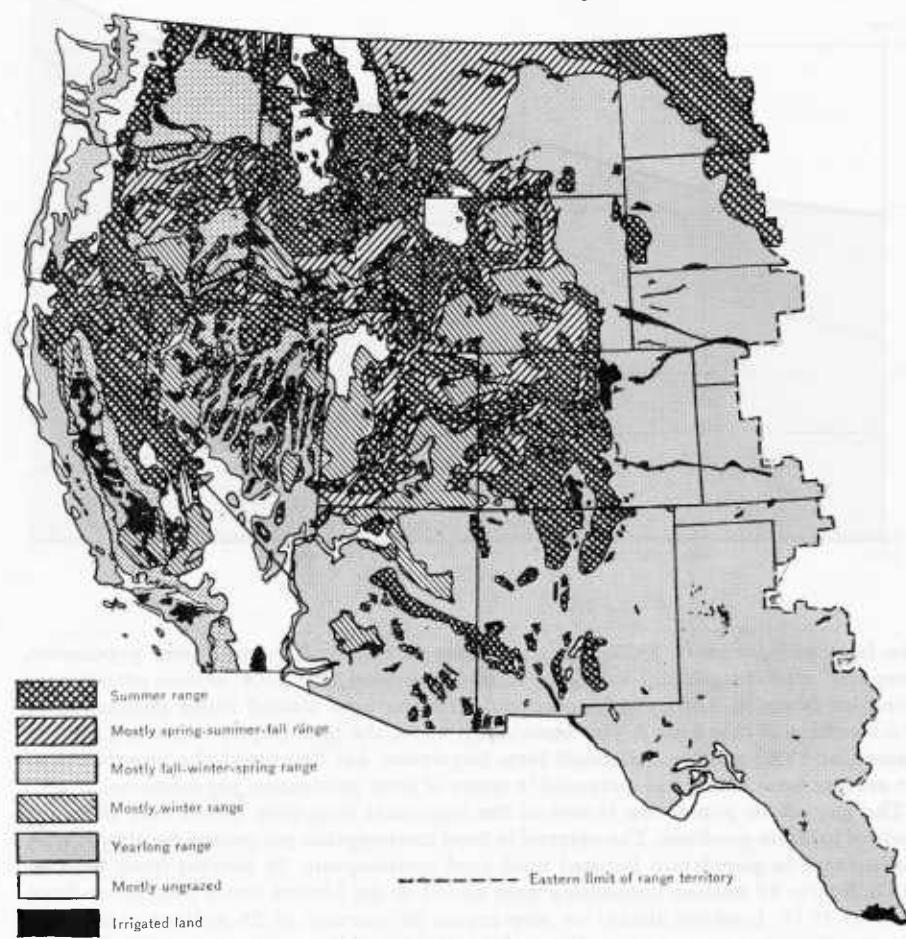
*Distribution of Forest Land*

Included in the total forest and woodland area in the continental United States (exclusive of Alaska) of 648 million acres are 484 million acres of commercial forest land and 164 million acres of noncommercial land.

The noncommercial forest and woodland includes 138 million acres of unproductive forest and 26 million acres reserved for special purposes such as parks and wildlife refuges.

The total forest area is considerably larger than the area devoted to cultivated crop land, but about the same as the grassland pasture and range area. Of the total acreage of forest and woodland, about 35 percent is in the Southern States, including Texas and Oklahoma. Nearly 12 percent of the forest is in the Northeastern States; 16 percent in the Lake and other North Central States; and 37 percent in the Western States. Nearly a fourth of the commercial timber acreage and more than two-thirds of the sawtimber, however, are in the Western States. One-third of the sawtimber alone is in Oregon and Washington.

## Seasonal Use of the Western Range

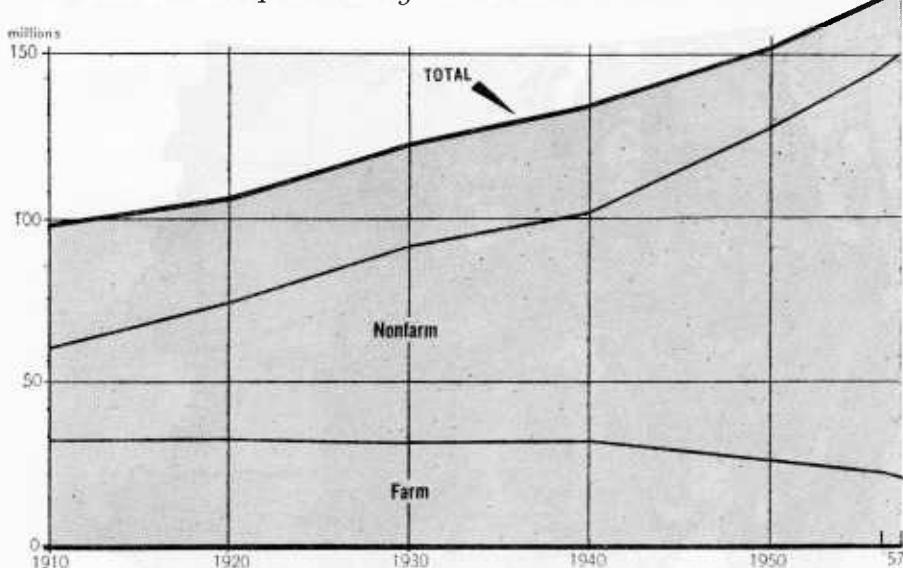


### Feed for All Livestock



Pasture furnished 37 percent of all feed for livestock in 1949-1950. Corn supplied 26 percent and hay 14 percent. Oats, barley, and other grains accounted for 9 percent. Animal protein feeds, oilseed meals, other high-protein feeds, and other byproducts also supplied 9 percent. Silage, beet pulp, skim milk, and seeds made up the remaining 5 percent of the feed for all livestock. Differences in climate and land in the Western States mean differences in season, type, and value of grazing. Higher areas furnish 3 to 6 months of summer grazing. Foothills and plateaus ordinarily do not carry animals more than 6 to 8 months without change of pasture.

*Population of the United States*



The farm population in 1957 was 12 percent of the total United States population, compared with 23 percent in 1940. It was estimated that 20.4 million people were living on farms in April 1957, compared with the total United States population of 170.5 million at that date. A year later, April 1958, the total population was 3 million greater, or 173.5 million. Although farm population has decreased, the importance of the average farm family has increased in terms of farm production per farmworker.

The growth in population is one of the important long-time trends that affect the demand for farm products. The uptrend in food consumption per person combined with the increase in population boosted total food consumption 39 percent from 1940 to 1957. Nearly 39 million consumers were added to the United States population from 1940 to 1957. Looking ahead, we may expect an increase of 25 million in the next decade—almost as many as now live in New York and Pennsylvania combined.

WITHIN THE LIMITATIONS I mentioned, airphoto interpretation provides basic data needed for economic analysis. We can identify and locate the areas where changes in land use have occurred. The photographs may be used as field location maps for detailed study. We can measure the acreage of change in use, and by com-

paring it with the size of the study area or the acreage of cropland, we can estimate the rate of change.

The airphoto interpretation method is not a substitute for detailed field study, but we are getting suitable data in a relatively short time, at low cost, and with a minimum number of experienced workers.

## The face of our land looks to the sky. To see its many features, we must get above it and look down.

The airphoto is our best chance to get a bird's-eye view of our farms and ranches; from an airplane we only get a fleeting view.

The photograph gives us the opportunity to study an area in detail, and we have a record of how things were at the time the picture was made. The natural red, green, black, gray, brown, tan, and yellow are black, white, and gray in an airphoto, but the story is there if we can interpret it. We can see a field partly plowed, shocks of grain, the new farm pond, and the other marks people make on the land.

Most of our agricultural areas have been photographed from above by private companies for the Department of Agriculture. Many have been photographed two or more times so that we can keep up with changes in the use of farmland. More than 6.6 million square miles have been photographed since 1938.

On the pages that follow are airphotos of typical farm regions throughout the United States. They were taken at a time when the characteristic patterns are most apparent. They give us another kind of tour, beginning in the Northeast and continuing generally southward and westward—more or less in the way our agriculture developed.



The well-drained sandy lands of Aroostook County in Maine (above) support intensive potato production. The wooded areas usually have poor drainage (September). The area shown in the picture below of a part of Hampshire County in Massachusetts is typical of the more intensive dairy sections. A sizable acreage is in grass; a minimum is in row crops. Much of the land is wooded, including some tracts that were once in cropland or pasture. The photograph was taken in June.



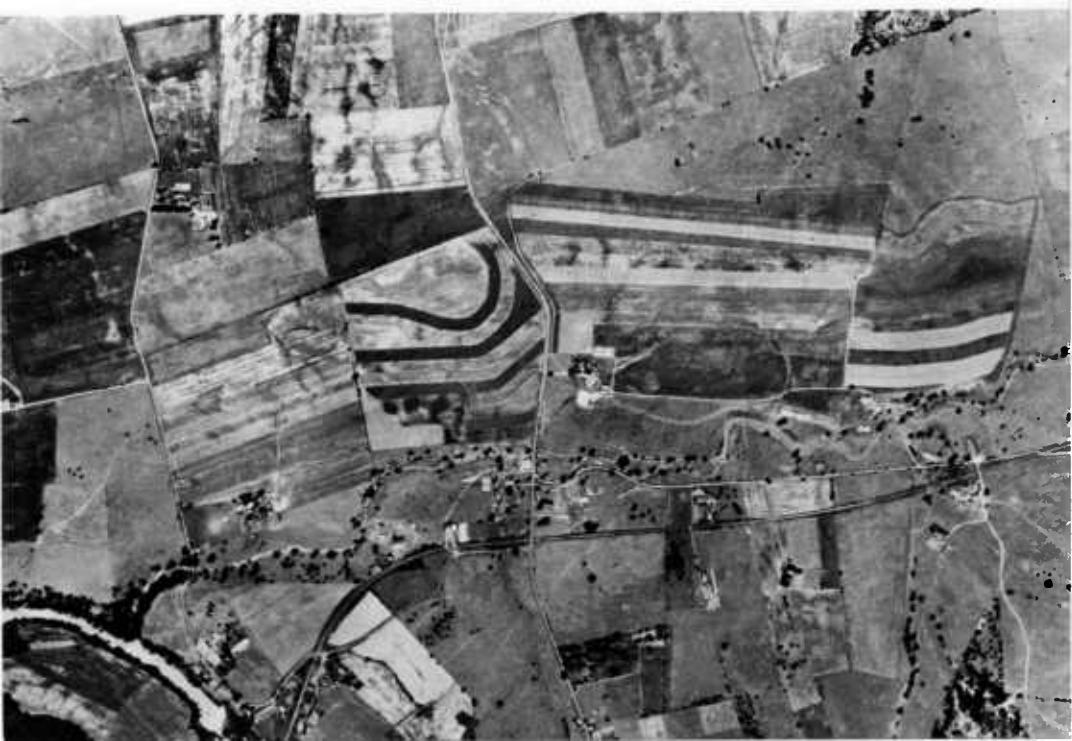


The farms shown in this picture (above) of a lake plain in Monroe County, New York, are typical of the orchard and truck-farming area along Lake Ontario. The gentle topography and climate favor the intensive production of vegetables and fruits (October). In Cumberland County in New Jersey, as in many coastal sections, truck crops to be sold as fresh vegetables and for canning are grown intensively on drained tracts that are adjacent to the tidal marshlands (September).





These farms (above) are in Lancaster County, Pennsylvania, in a section that has been intensively cultivated more than 200 years—with good management and careful attention to soil-conserving practices (June). This part of Rockingham County in Virginia (below) is similar to many other areas of the Limestone Valley, where general farming and live-stock raising predominate. Sloping land is stripcropped. Tracts near the streams are kept in pasture. This picture was taken in July.





The Bourbon County, Kentucky, area pictured above has a land pattern typical of the Kentucky bluegrass section. The gray areas with a scattering of dots (trees) are pastures. The round, black, white-rimmed areas are stock ponds. The cultivated fields look almost white in the picture. Much of the land is in pasture and hay (the black areas) (October). Pitt County in North Carolina (below) has many intensively cultivated tobacco farms. The buildings along the roads include many barns used for flue-curing the fine-leaf tobacco.



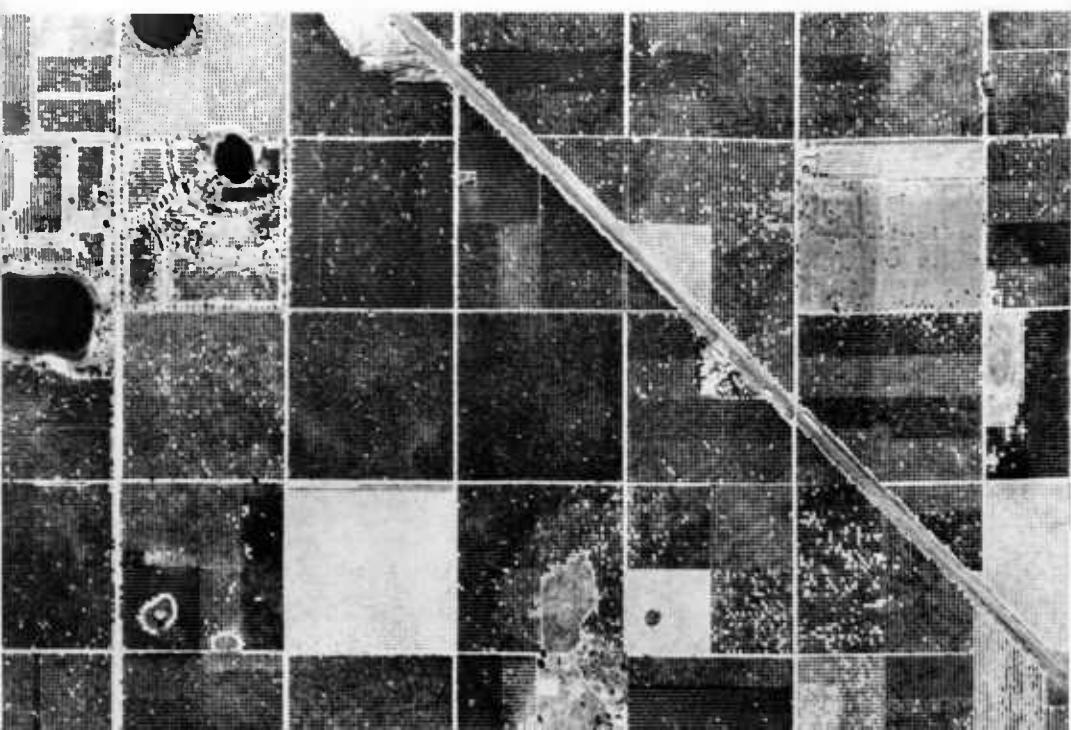


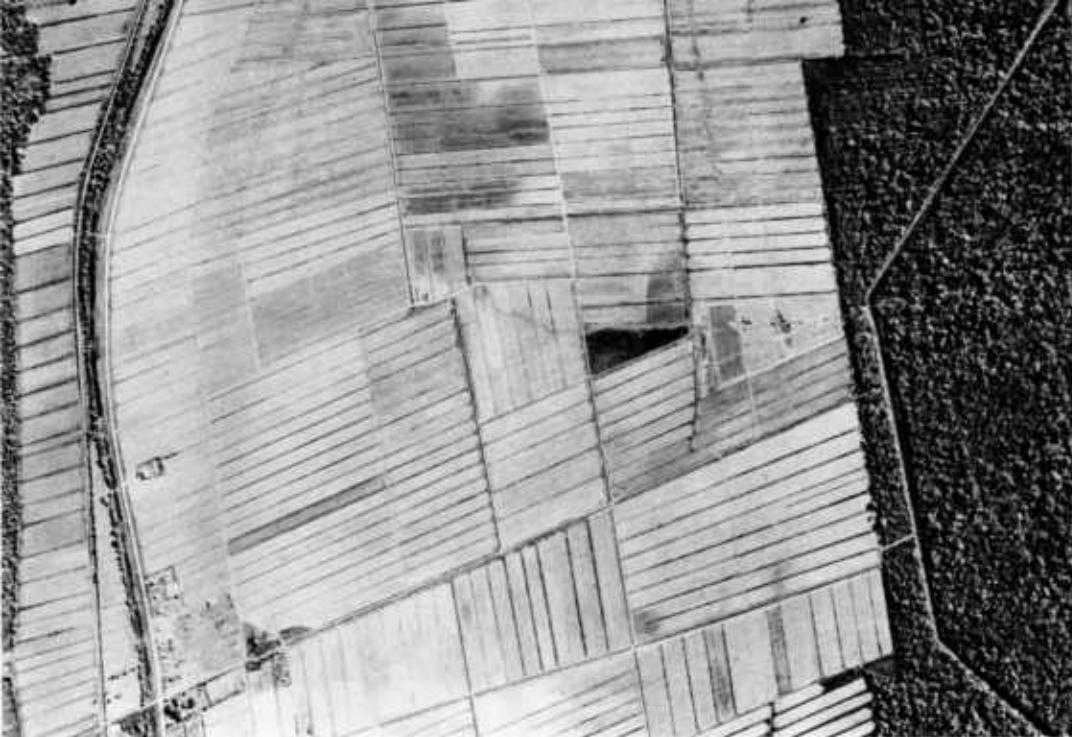
This part (above) of Beaufort County, North Carolina, is typical of many sections in the lower coastal plain of the Southeast, where drainage has been established by systems of ditch and tile lines. Undrained swampland can be seen on the left; some land next to the cultivated fields is partly drained. General farming is the major enterprise (February). Below is a part of Walton County, Georgia, which is typical of the Piedmont area where cotton was once the major crop. Two sets of terrace systems for control of soil erosion are visible. Those in operation appear in the white or cultivated areas. The older systems show in the darker gray areas. Some are idle and reverting to forest (April).





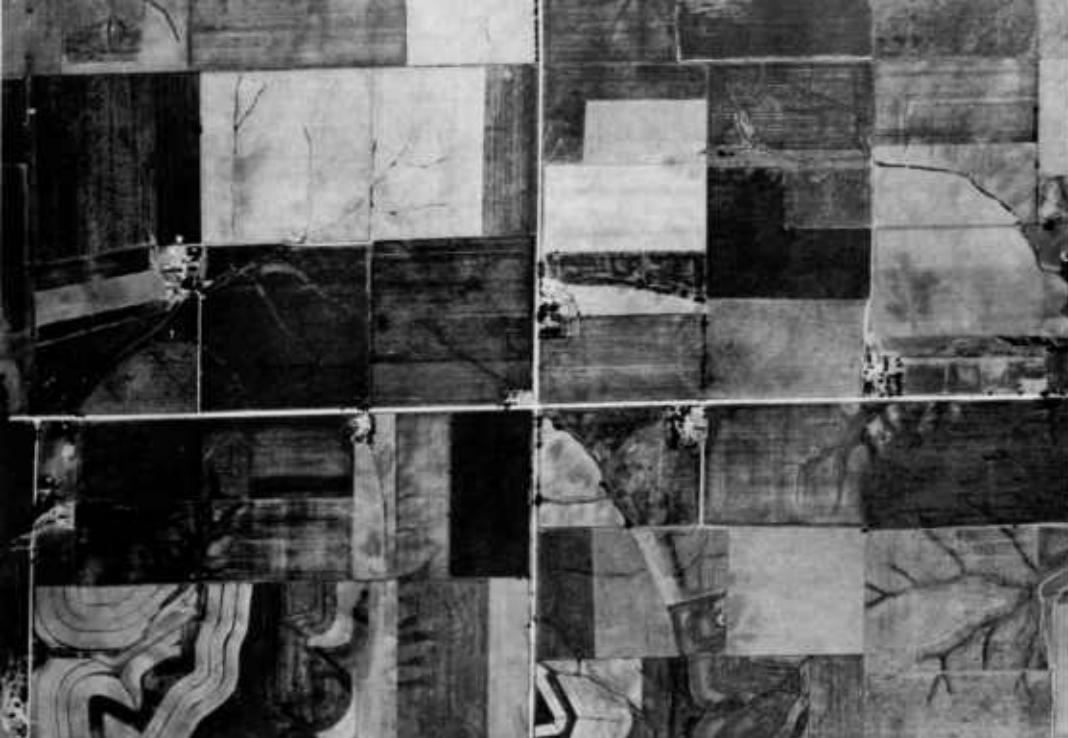
This portion of Tift County, Georgia, is like many other sections of the Coastal Plain. Terrace systems permit intensive cultivation of the low ridges between the many stream channels. The stream areas are in pasture and woods. The gray area near the center of the picture is a pecan orchard (March). This view of Polk County in central Florida (below) shows the usual pattern of citrus groves. The dark-colored round areas are small lakes, which are characteristic of this part of the Florida Peninsula (January).





This photograph (above), taken in Terrebonne Parish, Louisiana, indicates the intensive cultivation of land that has been drained between bayous. It has large sugar plantations. Farm buildings are visible in the lower left corner (March). This farm (below) in Sunflower County, Mississippi, exemplifies land patterns in the lower Mississippi Valley. The cultivated fields have been adjusted to the old meander channels formed when the river overflowed its banks in the past. The higher areas between the old channels now are the cropland (December).



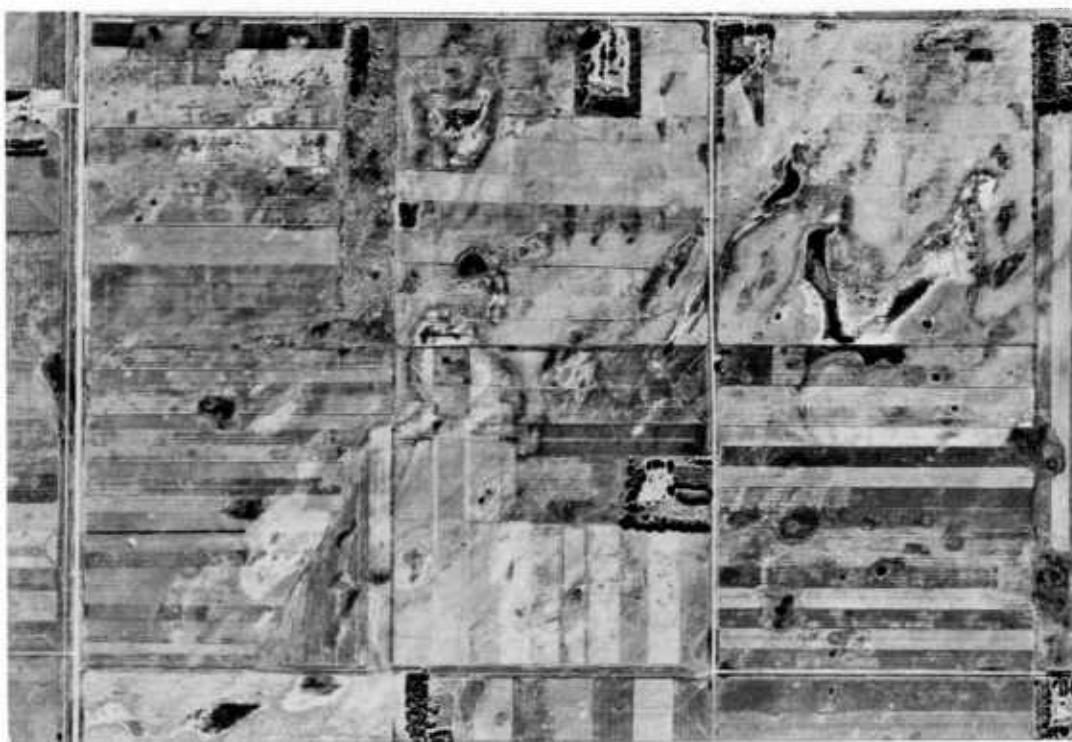


This area (above) in Green County, Wisconsin, is typical of the Lake States dairy region. Terraces and stripcropping help control erosion. The pattern of land use is somewhat like that in the Corn Belt, but more of the land is in pasture (June). The picture below of Webster County, Iowa, in the Corn Belt, shows a complete section of land bounded by roads on all sides. The land is used intensively. The chief crop is corn. Some hay and other forage crops are grown. The photograph, made in September, shows the tone and texture pattern of crops just before harvesttime.



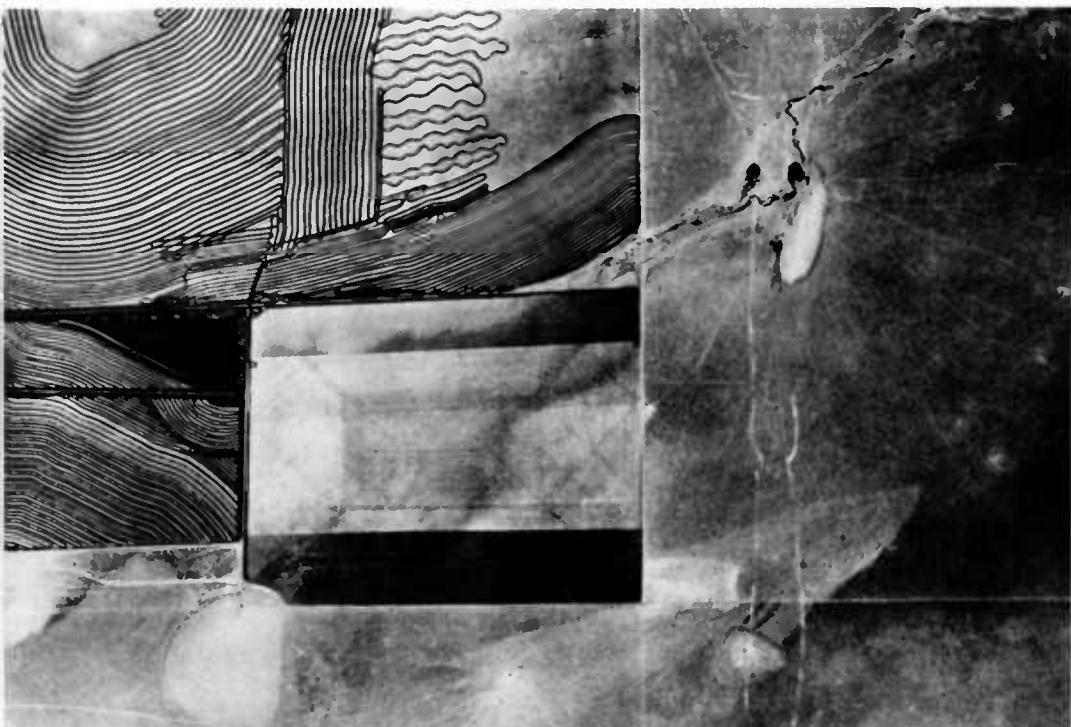


Wheat growers in Hill County, Montana (above), as in other parts of the wheat-producing sections of the Northern Plains, lay out alternate strips of wheat and fallow on the more level terrain and use rougher areas for range (September). Below is pictured a wheat-barley-flax area on the glaciated plains in Bottineau County, North Dakota. The depressions—potholes—occur in varying sizes. Trees form windbreaks around farmsteads, as in other localities in the Northern Plains (July).





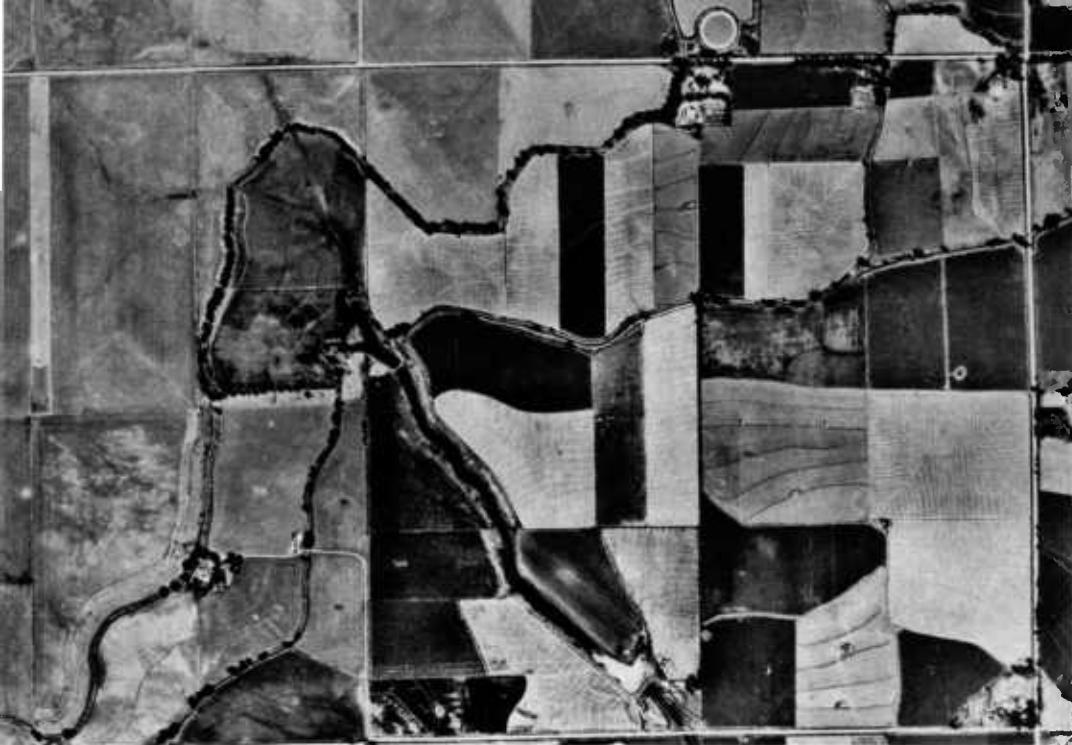
Parts of the large operating units that are typical of wheat-producing areas in the Northern Plains are shown in the picture above of a part of Kit Carson County, Colorado. Near the top of the photograph, the units of wheat and fallow alternate in separate large fields. In the lower part, the strips of wheat and fallow are relatively narrow so as to control wind erosion (September). In Randall County, Texas, on the High Plains of the Panhandle, both dryland farming tracts and rangeland occupy adjacent areas. The white, roughly circular patches are depressions in the caliche soils developed on limestone. The wavy dark lines in the upper part of the photograph are ridges made to control wind erosion (February).





The area pictured above in San Saba County, Texas, is typical of the southwestern all-year range. In the lower left half of the picture, juniper and mesquite are being cleared off for range improvement. In the upper middle portion, a dam has been built to provide a pond for watering livestock. The ranch buildings are at the end of the road, which appears as a white streak in the lower right (February). Below is a part of Ellis County, Texas, in the Black Prairie area of the Southern Plains. The curving lines mark terraces used to control erosion in fields where cotton and feed crops are grown. In the upper corners of the photograph we can see pasture areas (December).





In Weld County, Colorado, in the Rocky Mountain region, are many contrasts between dry and irrigation farming. At the left of the picture above is a dry-farming area, which is mainly in wheat. The rest of the photograph shows general farming with irrigation from canals, which are marked by trees. Storage ponds are connected to the canals. The circular object at the top and the irregular white spot near the lower middle are ponds. The white lines in several fields show where oats have been harvested (September). The ranches (below) along the John Day River in Grant County, Oregon, typify a combination of irrigated cropland in the valley and dry range on high land.





Cache County, Utah (above), contains many relatively small irrigated farms, on which sugar beets, small grain, and hay are the main crops. Many of the farmsteads are grouped in villages at crossroads like the one at the right in the photograph. At the top is a dry-land area (September). This area (below) of Tulare County, California, is typical of the more fertile areas of the Central Valley. Citrus and deciduous fruits, vegetables, and many field crops are grown. Some of the land is irrigated from one of the Central Valley Project canals that is seen in the photograph; at the left is an intensively farmed area; at the right is a nonirrigated dryland area (September).





The pattern of small and medium-sized farms along the Willamette River in Marion County, Oregon, is seen in the picture above. General farming is the main enterprise. The better soils are used for orchards and vegetables. Yakima County, Washington (below), is famous for its apple orchards, which flourish close to the dry mountain slopes that we can see at the bottom of the picture (June). Orchards have a distinctive pattern in airphotos.





The photographs above of the same area in Chicot County, Arkansas, reveal how farmland is developed by clearing and drainage. The picture on the left was taken in April 1951; the one on the right, in November 1955, when much of the cutover forest had been cleared. The white lines mark areas where felled trees were bulldozed into windrows and burned. The picture on the left below was taken in February 1938; the one on the right, in March 1955. Both show the same area in Robeson County, North Carolina. During this period, forest land had been cleared or was in process of being cleared. The black lines, roughly parallel to the roads (white lines), are trees pushed into windrows for drying.





The two photographs above of the same area near San Jose in Santa Clara County, California, illustrate the shift of land from farms to urban use. They were taken in January 1950 and June 1956. During this period, cropland and orchards became subdivisions for residences. This area (below) near Wilmington, Delaware, was photographed in 1937 (on the left) and 1954 (on the right). Housing developments are seen in the upper left corner and in the lower part of the 1954 photograph. The gray area with the white lines crossing in the left center of the 1954 picture is an airfield.



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