This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Studies in Income and Wealth
Volume Author/Editor: Conference on Research in Income and Wealth.

Volume Publisher: UMI
Volume ISBN: 0-870-14167-8

Volume URL: http://www.nber.org/books/unkn50-1
Publication Date: 1950

Chapter Title: Land Utilization Data as Background Information for the National Balance Sheet and Approximations of the Value of Forest Lands

Chapter Author: Lawrence A. Reuss
Chapter URL: http://www.nber.org/chapters/c3145
Chapter pages in book: (p. 219-234)

Land Utilization Data as Background Information for the National Balance Sheet and Approximations of the Value of Forest Lands

Lawrence A. Reuss
Bureau of Agricultural Economics

The objectives of this paper are twofold: to present statistics on the major types of use and ownership of land in the United States and approximations of the value of forest and woodland by ownership classes. The former is intended as background information to show the place of private and public lands, land in farms and not in farms, in the total ownership and use pictures, thereby serving as reference material in integrating estimates of the value of various types of land reported by various ownership and use classes. The latter is designed to meet more directly the needs of the National Balance Sheet. Whenever possible, overlapping areas of ownership, use, and value are indicated.

## A Sources of Data

Historically, the collection of land utilization statistics was begun by the Department of Commerce, with the Census of 1850. Farm land was enumerated as 'improved' or 'unimproved'. In three decades the agricultural enumeration was modified only slightly. However, the Census Act of 1879 provided for a more elaborate collection of statistics, and in 1890 and in later Census years schedules were expanded and revised.

After the turn of the century various land utilization statistics were collected by branches of the Department of Agriculture, such as the Forest Service and the Crop and Livestock Estimating Service of the Bureau of Agricultural Economics. Other contributions to the literature on this subject were made by numerous agencies, state universities, and individuals.

From the viewpoint of land utilization, major emphasis has been upon the collection of statistics on crops-acreage and kind. The Census has been the primary source of data concerning land in farms in Census years. Statistics for land not in farms have been less complete and have included studies of individual items by interested agencies; for example, estimates of forest land acreage by the Forest Service, public domain lands by the Department of the Interior, and studies of local areas by federal, state, and private agencies and individuals.

During the 1930's studies by the National Resources Planning Board and similar agencies contributed greatly to statistics on total land utilization. Since 1920 the Bureau of Agricultural Economics has prepared periodic inventories of land use and in more recent years several production adjustment studies.

Statistics on the utilization of land in farms in 1929, 1934, and 1944 (Tables 1 and 2) are almost entirely from the Census. 'Total farm land' in all years is from the Census, as are 'total land area' and 'total nonfarm land'. Uses not reported by the Census and modifications in Census data are based largely upon studies by the Department of Agriculture, including those on forest and grazing land, and upon charts, maps, records, and reports of various federal and state agencies.

Nowhere is a complete record kept of both the ownership and the use of the nation's land. To do so would require comprehensive inventories periodically. The estimates of ownership in Tables $3-5$ were compiled from many federal and state reports and records-publications of the various federal departments, such as Agriculture, Interior, Commerce, War, and Navy, as well as reports of many state agencies administering state lands or concerned with the assessment and taxation of land. The totals are not complete or fully comparable in all respects, but indicate the general size of holdings.

Noncensus sources of land utilization and ownership statistics include the following:
Department of Agriculture:
Agriculture Yearbook
1915, 1921, and 1932
'Our Forage Resources', by C. V. Piper et al (1923), pp. 311-414
'Utilization of Our Lands for Crops, Pasture and Forests', by L. C. Gray et al (1923)
'Soils and Men' (1938)
'Our Major Land Use Problems and Suggested Lines of Action', by L. C. Gray (1940), pp. $398-415$
'Climate and Man' (1941)
Agricultural Statistics, published annually (Government Printing Office)
A Graphic Summary of American Agriculture, Misc. Pub. 105 (1931)

A Graphic Summary of Physical Features and Land Utilization in the United States, by O. E. Baker, Misc. Pub. 260 (May 1937)
A Graphic Summary of Farm Crops, by O. E. Baker and A. B. Genung, Misc. Pub. 297 (March 1938)
Bureau of Agricultural Economics: Federal Rural Lands, by L. A. Reuss and O. O. McCracken (June 1947; multilithed)
Forest Service: Gaging the Timber Resources of the United States (1946)

United States Congress:
A National Plan for American Forestry, Senate Doc. 12, 73d Cong., lst Sess. (1933)
The Western Range, Senate Doc. 199, 74th Cong., 2d Sess. (1936)
Federal Ownership of Real Estate and Its Bearing on State and Local Taxation: Report of a Special Federal Real Estate Committee, House Doc. 111, 76th Cong., 1st Sess. (1937)
Public Lands, Tax Problems, etc., H. R. Report 1884, 78th Cong., 2d Sess., Sept. 14, 1944, and H. R. Report 5, 80th Cong., 1st Sess. (Jan. 3, 1947)
National Resources Board:
A Report on National Planning and Public Works in Relation to Natural Resources and Including Land Use and Water Resources with Findings and Recommendations (1934)
Supplementary Report of the Land Use Planning Committee (1935)

Annual reports of various governmental agencies, including the Chief of the Forest Service, Commissioner of the General Land Office, Chief of the Soil Conservation Service, Secretary of the Interior, and reports of various state officers administering state lands or concerned with the assessment of land for taxation.
A History of Public Land Policies, by B. H. Hibbard (Macmillan, 1925)

Land Economics, by R. T. Ely and G. S. Wehrwein (Macmillan, 1947)

Our Landed Heritage, by R. M. Robbins (Princeton University Press, 1942)

## B Definitions

Land utilization and ownership terms as used in this paper are defined as follows:
'Cropland' includes cropland harvested, crop failure, and cropland idle or fallow, as shown by the Census of Agriculture.
'Nonforested pasture and range land' includes nonforested pasture and grazing land, whether plowable or not.
'Grazing land' includes nonforested pasture and range land and forest and woodland grazed.
'Forest and woodland', as defined by the Census, includes grazed and ungrazed "Farm wood lots or timber tracts, natural or planted, and cutover land with young growth, which has or will have value as wood or timber". ${ }^{1}$ Chaparral and woody shrubs were omitted.

As defined by the United States Forest Service, 'commercial forest land' includes "land capable of producing timber of commercial quantity and quality, and available now or prospectively for commercial use'; 'noncommercial forest land' includes lands "such as oak-cedar breaks of Texas and Oklahoma, mesquite, pinon-juniper in the West, chaparral in southern California, remote and inaccessible alpine ranges, and other areas which appear to be permanently out of the commercial timber-producing class because of low productivity or extreme inaccessibility". ${ }^{2}$
'Other land' includes 'service' areas, such as urban areas, highways and roads, railroad rights-of-way, farmsteads, farm lanes, parks, game refuges, and airports; also lands having slight surface use value except for wildlife and watershed protection and recreation (desert areas, rock, sand dunes, swampland, etc.). 'Total land area', as defined by the Census, includes "dry land and land temporarily or partially covered by water, such as marshland, swamps and river flood plains . . ." (except tidal flats) ". . . streams, sloughs, estuaries, and canals less than $1 / 8$ of a statute mile in width; and lakes, reservoirs, and ponds having less than 40 acres of area". ${ }^{3}$
'Private land' is land held or owned by private individuals, groups, or corporations, and is generally used for private purposes.
${ }^{1}$ Bureau of the Census, United States Summary, Agriculture (First Series, 1940), p. 4.
${ }^{2}{ }^{\text {'Basic }}$ Forest Statistics for the U.S.-as of Beginning of 1945-Preliminary Data from the Reappraisal Project' (Forest Service, July 1946).
${ }^{3}$ Bureau of the Census, Areas of the United States, 1940, p. 2.
'Public land' is land owned or held by federal, state, county, municipal, or other governments for common or public purposes. Public land usually includes Indian lands held in trust by the government and administered for the benefit of the Indians.

## C The Land Area

In the continental United States are about 1,905 million acres of land-industrial centers, cities, towns, seaports, villages, corn belt farms, cotton farms, dairy farms, ranches, irrigated valleys, timberlands, xocky mountain tops, deserts, swamplands.

Agricultural uses are principally three-pasture, crop, and forest. Sometimes land uses are competitive, sometimes complementary. Often forest land is used simultaneously for timber production and for grazing. The dividing line between certain types of land use is not everywhere clear-cut. For example, classifications of nonforested grazing land and desert land differ because in periods of favorable rainfall grazing tends to expand into areas usually too dry for use. Further expansion and progress in land inventory and classification will be necessary before all differences in classification can be entirely reconciled.

Cropland accounts for approximately 403 million acres, or over one-fifth of the land area. In addition, about 109 million acres are in plowable pasture, making a total of about 512 million acres cultivable for crops.

Open (nonforested) pasture and range land occupies 707 million acres, 37 percent of the land area of the United States, and constitutes the largest single item of land use and one of the nation's greatest and most essential land resources. All grazing land, open and forested, accounts for over a billion acres, or 55 percent of the entire land area. Though distributed throughout the country, over half is in the 17 western states. Livestock and livestock products produced in large part on pasture and other grazing lands are among the country's leading agricultural commodities.

Some 624 million acres are classified on the basis of cover
types as being 'forest land'. This includes commercial timberland, some open land prospectively available for commercial timber production and noncommercial woodland. However, some of this land has been withdrawn from timber cutting and is enclosed in state and national parks, military reservations, and other preserves. The withdrawn area has been estimated, for purposes of land utilization studies, to be 14 million acres and is included as 'other land' or as 'service areas'. In addition, some of this woodland and brushland, estimated to be 8 million acres, has apparently been classified by the Census as 'nonforested pasture land in farms'. After making these deductions for purposes of land utilization studies, some 602 million acres of forest land are available for timber production.

Of the total area having forest cover, over half is grazed. Only about 20 percent of the 461 million acres of commercial forest land remains in old growth timber. Of the other 80 percent, a very large part is not fully productive. Heavy cutting, fire, insects, and diseases have made heavy inroads, and have left much land poorly stocked.

Other uses of land include sites of cities, rural residential and industrial areas, farmsteads, roads, railroads, ditches, parks, wildlife sanctuaries, and military and naval sites; also deserts, rock, sand dunes, swamps, etc. having slight surface use value except incidentally for watershed and wildlife protection and recreation. There is some indication that since 1929 acreages of cropland and forest land have declined slightly, of 'other' land increased (Table 1).

## Table 1

Trend in Major Land Uses, 1929, 1939, 1944 (millions of acres)

|  | 1929 | 1939 | 1944 |
| :--- | ---: | ---: | ---: |
|  | 413 | 399 | 403 |
| Cropland (see Definitions) | 708 | 723 | 707 |
| Nonforested pasture and range land | 607 | 602 | 602 |
| Forest and woodland ${ }^{\text {a }}$ | 177 | 181 | 193 |
| Other | $1,905^{\mathrm{b}}$ | 1,905 | 1,905 |
| Total land area |  |  |  |

[^0]
## 1 Land in Farms and Not in Farms

Extensive conversion of nonfarm pasture land to farm pasture land and increases in land in farms are evident from Table 2. Commenting upon the increase in land in farms in the Mountain States from 1939 to 1944, the Bureau of the Census states: ${ }^{4}$
4 'Preliminary Compilation of Number of Farms and Acres in Farms in the United States, by Counties: 1945 Census of Agriculture', Bureau of the Census, Nov. 30, 1945, p. 1 .

Table 2
Uses of Land in Farms and Not in Farms, 1929, 1939, 1944 (millions of acres)

|  | 1929 |  | 1939 |  | 1944 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{gathered} \text { In } \\ \text { farms } \end{gathered}$ | Not in farms | $\begin{gathered} \text { In } \\ \text { farms } \end{gathered}$ | Not in farms | $\stackrel{\text { In }}{\text { farms }}$ | Not in farms |
| Cropland | 413 | 0 | 399 | 0 | 403 | 0 |
| Pasture \& range land (nonforested) | 379 | 329 | 461 | 262 | 529 | 178 |
| Forest \& woodland (excl. parks, etc.) | 150 | 457 | 157 | 445 | 166 | 436 |
| 'Service' areas | 25 | 40 | 29 | 49 | 29 | 71 |
| Military lands ${ }^{\text {a }}$ | 0 | 4 | 0 | 5 | 0 | 25 |
| Highways \& roads ${ }^{\text {b }}$ | 13 | 6 | 15 | 5 | 15 | 5 |
| Parks ${ }^{\circ}$ | 0 | 10 | 0 | 16 | 0 | 18 |
| Urban areas ${ }^{\text {d }}$ | 0 | 12 | 0 | 13 | 0 | 13 |
| Farmsteads ${ }^{\text {® }}$ | 8 | 0 | 10 | 0 | 10 | 0 |
| Game refuges ${ }^{\text {e }}$ | 0 | 4 | 0 | 5 | 0 | 5 |
| Railroad r.o.w. ${ }^{\text {g }}$ | 2 | 2 | 2 | 2 | 2 | 2 |
| Farm roads \& lanes ${ }^{\text {a }}$ | 2 | 0 | 2 | 0 | 2 | 0 |
| Airports ${ }^{\text {b }}$ | 0 | 1 | 0 | 1 | 0 |  |
| Other service ${ }^{1}$ | 0 | 1 | 0 | 2 | 0 | 2 |
| Land having slight surface use value | 20 | 92 | 15 | 88 | 15 | 78 |
| Total land area | 987 | 918 | 1,061 | 844 | 1,142 | 763 |

Preliminary, subject to revision.
${ }^{\text {a }}$ Federal Rural Lands. Military lands minus military airports.
${ }^{6}$ Unpublished tabulation of the Soil Conservation Service, 1941.
e National Park Service lands from Federal Rural Lands. State park land from unpublished tabulation of the Soil Conservation Service, 1941.
${ }^{\text {d Estimated by F. J. Marschner, BAE. Area of places with populations over } 100}$ in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, South Dakota, and Vermont; area of places with populations over 1,000 in all other states.
${ }^{0}$ Estimated by BAE.
${ }^{2}$ Federal lands administered by Fish and Wildlife Service, Department of the Interior.
${ }^{\mathrm{g}}$ From tabulation by Interstate Commerce Commission, Jan. 1947.
${ }^{n}$ From tabulation by Department of Commerce, Civil Aeronautics Administration.
${ }^{1}$ Miscellaneous federal lands, experimental farms, etc.
"Much of this reported gain in Mountain States land in farms probably is due to inclusion of grazing lands not previously reported as land in farms. To this extent, the increased acreage reflects changes in the control of the land and not increased agricultural activity. Public domain grazed under permit and open range neither owned nor leased by those using such range are not included as farm acreage, but when such land passes into private control through lease or purchase, it is counted as farm acreage.
The 1945 Census includes as farm acreage more Indian grazing land, due to changes in the method of enumerating agricultural activities on Indian reservations. In previous censuses, much of this grazing land was not counted because it was considered open range .. ."

The shift from nonfarm to farmland reflects, therefore, both agriculture development and a change in classification.

## 2 Land Ownership

Though the lion's share of the land of the United States, nearly 70 percent, is privately owned, nearly 560 million acres are administered by federal, state, and local government agencies combined. However, much public land is used by local farmers and ranchers for grazing; it is just as agricultural as neighboring private lands similarly used.

Among the significant changes in land ownership since 1929 have been the shift of pasture and range from public to private ownership and the increase in publicly owned 'service areas' (parks, game refuges, military land, highways, etc.). The decline in publicly owned land having slight surface use value is attributed in part to the creation of game preserves, recreation areas, and military reservations in desert areas, and in part to the development of water sources by deep wells, etc. Although the area of publicly owned grazing land has declined, the amount of such land reported in farms has substantially increased (Table 3).

Table 3
Approximate Ownership of Land, 1929, 1939, 1944 (millions of acres)

|  | 1929 |  | 1939 |  | 1944 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Private | Public | Private | Public | Private | Public |
|  |  |  | A L L | L A N D |  |  |
| Cropland | 409 | 4 | 396 | 3 | 398 | 5 |
| Pasture \& range land | 434 | 274 | 476 | 247 | 455 | 252 |
| Forest \& woodland | 431 | 176 | 393 | 209 | 402 | 200 |
| 'Service' areas | 24 | 41 | 27 | 51 | 27 | 73 |
| Military | 0 | 4 | 0 | 5 | 0 | 25 |
| Highways \& roads | 0 | 19 | 0 | 20 | 0 | 20 |
| Parks | 0 | 10 | 10 | 16 | 0 | 18 |
| Urban areas | 9.5 | 2.5 | 10.5 | 2.5 | 10.5 | 2.5 |
| Farmsteads | 8 | 0 | 10 | 0 | 10 | 0 |
| Game refuges | 0 | 4 | 0 | 5 | 0 | 5 |
| Railroad r.o.w. | 4 | 0 | 4 | 0 | 4 | 0 |
| Farm roads \& lanes | 2 | 0 | 2 | 0 | 2 | 0 |
| Airports | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Other service | 0 | 1 | 0 | 2 | 0 | 2 |
| Land having slight surface use value | 61 | 51 | 61 | 42 | 63 | 30 |
| Total | 1,359 | 546 | 1,353 | 552 | 1,345 | 560 |
|  |  | L | N D | F A R | M s |  |
| Cropland | 409 | 4 | 396 | 3 | 398 | 5 |
| Pasture \& range land | 340 | 39 | 433 | 28 | 455 | 74 |
| Forest \& woodland | 137 | 13 | 144 | 13 | 145 | 21 |
| 'Service' areas | 12 | 13 | 14 | 15 | 14 | 15 |
| Highways \& roads | 0 | 13 | 0 | 15 | 0 | 15 |
| Farmsteads . | 8 | 0 | 10 | 0 | 10 | 0 |
| Railroad r.o.w. | 2 | 0 | 2 | 0 | 2 | 0 |
| Farm roads \& lanes | 2 | 0 | 2 | 0 | 2 | 0 |
| Land having slight surface use value | 20 | 0 | 15 | 0 | 15 | 0 |
| Total | 918 | 69 | 1,002 | 59 | 1,027 | 115 |
|  |  | L A N | N 0 T | $1 \mathrm{~N} \mathbf{F}$ | A R m S |  |
| Pasture \& range land | 94 | 235 | 43 | 219 | 0 | 178 |
| Forest \& wood]and | 294 | 163 | 249 | 196 | 257 | 179 |
| 'Service' areas | 12 | 28 | 13 | 36 | 13 | 58 |
| Military lands | 0 | 4 | 0 | 5 | 0 | 25 |
| Highways \& roads | 0 | 6 | 0 | 5 | 0 | 5 |
| Parks | 0 | 10 | 0 | 16 | 0 | 18 |
| Urban areas | 9.5 | 2.5 | 10.5 | 2.5 | 10.5 | 2.5 |
| Game refuges | 0 | 4 | 0 | 5 | 0 | 5 |
| Railroad r.o.w. | 2 | 0 | 2 | 0 | 2 | 0 |
| Airports | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Other service | 0 | 1 | 0 | 2 | 0 | 2 |
| Land having slight surface use value | $41^{\text {a }}$ | $51^{\text {b }}$ | $46^{\text {a }}$ | $42^{\text {b }}$ | $48^{a}$ | $30^{\text {b }}$ |
| Total | 441 | 477 | 351 | 493 | 318 | 445 |

The totals should be regarded as approximations of the acreages of land held privately and by public groups and in the different uses rather than the results of a detailed enumeration. All data are preliminary, subject to revision.
${ }^{2}$ Total private land having slight surface use value (except for watershed and wildlife protection and recreation) minus 'land having slight surface use value in farms.
${ }^{\text {b }}$ Same as total public land of slight surface use value.

## 3 Public Land in Farms and Ranches

Public land as usually defined includes the 57 million acres held in trust or otherwise administered by the federal government for the Indians. Much of this land is reported by the Census of Agriculture as in crop, grazing, and forest use in farms and ranches. A large part of the state land is suitable for grazing and is leased to farmers and ranchers and reported as land in farms. In addition to Indian and state land, probably $15-20$ million acres of federal land leased outright or covered by use permits issued to individual farmers and ranchers are reported in farms. Land reported in farms by farmers and ranchers includes, especially in the areas of rectangular survey, lands used for public highways and roads. About 115 million acres of publicly owned land are now included by the Census of Agriculture as land in farms and ranches. Detailed study may raise or lower this estimate; however, a substantial acreage of public land is known to be reported as in farms and ranches.

## 4 Character and Use of the Public Land

The best of the public domain lands was disposed of through homestead, mining, timber, and other Congressional acts, including allotments to Indians, grants to states and railroads, withdrawals of watershed areas for national forests, setting aside parks and wildlife sanctuaries, reservations for reclamation of suitable valley areas, flood control, national defense, and other federal purposes: With minor exceptions, the remaining public domain lands are in the 11 Rocky Mountain and Pacific states, mainly in regions where the normal annual rainfall is less than 15 inches-a fact that largely accounts for their still being in the hands of the government. Large areas are rough and broken, frequently containing much sand and bare rock and having other desert-like characteristics.

Altogether, the federal government administers for various public purposes about 408 million acres of original public domain land and 50 million acres of acquired land (Table 4). In addition to these 458 million acres administered by the fed-
eral government, state and local governments control a tentatively estimated 102 million acres (a gross approximation subject to change). Most of the state land was originally public domain land granted to the states for public purposes. Much of it is now used for grazing and forestry. Some land has been acquired for special purposes, such as water supply areas, wildlife preserves, parks, forests, and institutional needs. Additional areas have reverted to states and local governments because of nonpayment of taxes.

Table 4<br>Federal Rural Lands, 1945

$\left.\begin{array}{lr} & \begin{array}{c}\text { Millions } \\ \text { of acres }\end{array} \\ \text { National forests (set aside for protection \& conservation of watershed }\end{array}\right)$

## D Approximations of the Value of Forest Land

Some 624 million acres are classified on the basis of cover as being 'forest land'. As mentioned above, some is in parks, military reservations, and other preserves; and some woodlands and brushlands have apparently been classified by the Census as 'nonforested pasture land in farms'. According to the recent reappraisal of forest resources by the Forest Service, Gaging the Timber Resources of the United States, there are 461 million acres of commercial and 163 million acres of noncommercial forest land.

The 1946 value of all land having forest or woodland cover has been estimated by the Forest Service to be $\$ 8$ billion (see Memorandum). Immediate sale of all forest land and timber

Forest Land

|  | Commercial | Noncommercial <br> (millions of acres) | Total |
| :--- | :---: | :---: | :---: |
| Federally owned or managed | 89 | 88 | 177 |
| $\quad$ National forest | 73 | 50 | 123 |
| Indian reservation | 7 | 10 | 17 |
| Grazing service | 1 | 16 | 17 |
| Other | 8 | 12 | 20 |
| State | $\mathbf{8}$ | 10 | 28 |
| County \& municipal | 116 | 1 | 10 |
| Total public | 139 | 99 | 215 |
| Farm woodland | 206 | $27^{\mathrm{a}}$ | $166^{\mathrm{a}}$ |
| Industrial \& other private | 345 | $37^{\mathrm{c}}$ | $243^{\mathrm{c}}$ |
| Total private | 64 | 409 |  |
| Grand total | 461 | 163 | 624 |

Gaging the Timber Resources of the United States and unpublished tabulations of the Forest Service, except as indicated in notes $a, b$, and $c$.
${ }^{\text {a }}$ Difference between total forest and woodland in farms as shown by Census of 1945 and commercial farm woodland as shown by Forest Service reappraisal.
${ }^{\text {b }}$ Census of Agriculture, 1945.
${ }^{c}$ Residual items.
for commercial use is assumed. It was not deemed possible without considerable research to give in detail the value of forest land by various claimants. However, values were established for 'public', 'farm', and 'other private' forest lands as $\$ 2.4, \$ 1.8$, and $\$ 3.8$ billion, respectively. All farm forests were assumed to be privately owned. The value of roads, logging equipment, etc., and public values for watershed protection, recreation in the forested portions of parks and in other forest areas, power sites, wildlife, etc. were not included.

The value of all forest land was estimated to be $\$ 5.4$ billion in 1939 and $\$ 5.6$ billion in 1929. 'Public' forest land was valued at $\$ 1.3$ billion and 'farm' forest land at $\$ 1.2$ billion in both 1929 and 1939. 'Other private' forest land declined in value from $\$ 3.1$ billion in 1929 to $\$ 2.9$ billion in 1939.

In 1939 dollars, 1929, 1939, and 1946 values of all commercial forest land were $\$ 5.85, \$ 5.4$, and $\$ 4.8$ billion, respectively; of 'public' forest land, $\$ 1.35, \$ 1.3$, and $\$ 1.2$ billion; of 'farm' forests, $\$ 1.2, \$ 1.2$, and $\$ 1.1$ billion, and of 'other private' forest land, $\$ 3.3, \$ 2.9$, and $\$ 2.5$ billion.

## E Nonforested Pasture and Range Land Outside of Farms

Estimates presented above indicate the existence of about 178 million acres of nonfarm public grazing land that is not included in the valuations set by either the Balance Sheet of Agriculture or the forest land valuations. This is properly a part of the land assets listed under 'government'. As far as is known, no adequate survey has been made to determine the value of this land in dollars and cents. In the Annual Report of the Director of the Grazing Service, fiscal year ended June 30, 1945, it was assumed that the 144 million acres of grazing land in the custody of the Grazing Service had an average value of $\$ 1.25$ an acre for soil and forage, or a total of $\$ 179$ million. Assumptions were also made concerning values for watershed purposes ( $\$ 144$ million); woodland and forest (valued at 50 cents a cord, or a total of $\$ 115$ million); range improvements (residual value $\$ 10$ million); and special uses ( $\$ 52$ million). However, this valuation is not based on a 'market value' concept and includes an estimated 18 million acres of forest and woodland. Soil, forage, and range improvement values would probably be the major factors in establishing the market price of the nonforested range land.

## F Other Nonfarm Lands

The land utilization estimates presented above indicate the existence of some 149 million acres of 'other' land not in farms. Included are 71 million acres of 'service' lands and 78 million acres of 'land having slight surface use value'. Forest lands withdrawn from timber cutting, and included in 'service' areas (parks, military lands, etc.)-estimated to be 14 million acreswere included in the value of all forest land estimated by the Forest Service. The balance of the nonfarm 'service' areas (about 57 million acres) includes some 13 million acres of urban land and some 44 million acres of military lands, highways and roads, parks, game refuges, airports, and miscellaneous service areas, largely in public ownership.

COPY
MEMORANDUM
Washington 25, D. C.
September 19, 1947
FOREST SERVICE
To: V. Webster Johnson, Chief, Div. of Land Economics Bureau of Agricultural Economics
Attention: Lawrence A. Reuss
From: Edward C. Crafts, Chief, Division of Forest Economics By: H. R. Josephson, Acting
Subject: RE-PRICES-Forest Values
In accordance with discussions with Messrs. Reuss and Burroughs, we have prepared estimates of the market value of forest lands in the United States for the years 1946, 1939 and 1929 which are shown in the attached table. These estimates were prepared for use by a committee of which Mr. Copeland of the Federal Reserve Office is chairman.

As indicated in a footnote to the attached table, these estimates are tentative and preliminary. They are based on a rather narrow concept of market value, which assumes immediate sale of all forest land and timber for commercial uses. Hence, the figures do not include certain large public values, value of roads, logging equipment, etc., nor the value of range lands, which are often closely associated with forest lands. The breakdown of value between public, farm and other private categories of ownership is believed to be of less reliability than the figures for total value of all forest lands.

Attachment
/s/ H. R. Josephson
COPY
Estimated Market Value of Forest Land in the United States, 1946, 1939 and 19291

| Year | Public | Farm <br> (million dollars) | Other <br> Private | Total |
| :---: | :---: | :---: | :---: | :---: |
| 1946 value | 2,400 | 1,800 | 3,800 | 8,000 |
| at 1939 prices | 1,200 | 1,100 | 2,500 | 4,800 |
| 1939 value | 1,300 | 1,200 | 2,900 | 5,400 |
| 1929 value | 1,300 | 1,200 | 3,100 | 5,600 |
| at 1939 prices | 1,350 | 1,200 | 3,300 | 5,850 |

1 Preliminary estimates. Figures assume immediate sale of all forest land and timber for commercial uses. Figures do not include (l) large public values in water production, recreation, wildlife, etc.; (2) value of improvements, equipment, etc.; and (3) value of nonforest range.


[^0]:    Preliminary, subject to revision.
    2 Forest and woodland outside of parks, military reservations, etc.
    ${ }^{\text {b }}$ Complete remeasurement made in connection with the 1940 Census.

