SUMMARY FOR THE UNITED STATES.

INTRODUCTION.

This report presents a summary of the statistics of drainage for the United States collected at the census of 1920. The figures relate to conditions on January 1, 1920, except where indicated otherwise. No census of drainage has been taken heretofore, so there are no comparable figures for any previous year. The statistics relate to the artificial drainage of land in farms, and of other land that is expected to be used ultimately for agricultural purposes.

The drainage census divides naturally into two parts, one relating to improvement work undertaken by individual farm owners, the other to improvement or reclamation work of mutual benefit to a number of owners organized in accordance with the statutes. The former has been termed drainage on farms, and the latter termed drainage enterprises. These enterprises in some states include considerable areas of timber and other unimproved land not yet included in farms.

The statistics for drainage on farms were collected in the general census of agriculture, while those for drainage enterprises were obtained in a special canvass of those enterprises. Since drainage on farms may be either inside or outside a drainage enterprise, and since the drains that each owner installs upon his own farm may be either supplemental to or entirely independent of the works installed by an enterprise, the figures for the two parts of the drainage census are presented separately.

No census of drainage enterprises was taken in the states of the New England and Middle Atlantic divisions, or the other states north of Potomac River. No enterprises of a public nature in Alabama, Virginia, and West Virginia had begun actual construction on January 1, 1920, so those states have been omitted entirely from this part of the census. The figures for drainage on farms include all states.

TABLE 1.—SUMMARY: 1920.

ITEM.	Amount.	Per cent of total.
DRAINAGE ON FARMS.		
Number of all farms in the United States	6,448,343	100.0
Farms reporting land having drainage	924,810	14.3
Farms reporting land needing drainage	956,095	14.8
All land in farms—acres	955,883,715	100.0
Improved land in farms—acres	503,073,007	52.6
Farm land reported as provided with drainage—acres	53,024,975	5.5
Farm land reported as needing drainage—acres	39,110,357	4.1
Needing drainage only—acres	10,459,181	1.1
Needing drainage and clearing—acres	28,651,176	3.0
DRAINAGE ENTERPRISES.		
Approximate land area of the states included—acres	1,717,932,160	100.0
All land in operating drainage enterprises—acres	65,495,038	3.8
Improved land—acres	44,288,235	2.6
Per cent of all improved land in farms	8.8	
Timber and cut-over land—acres	11,283,532	0.7
Other unimproved land—acres	9,923,271	0.6
Swampy, subject to overflow, seeped, or alkali—acres	7,224,213	11.0
Suffering a loss of crops from defective drainage—acres	3,011,407	4.6
Improved land prior to drainage—acres	24,586,236	37.5
Increase since drainage began—acres	19,701,999	30.1
Land in nonoperating enterprises—acres	3,924,821	0.2
Open ditches in operating enterprises—miles	111,770.0	100.0
Completed—miles	107,468.2	96.2
Additional under construction—miles	4,301.8	3.8
Tile drains in operating enterprises—miles	45,173.8	100.0
Completed—miles	42,311.7	93.7
Additional under construction—miles	2,862.1	6.3
Total capital invested in and required for completion of operating enterprises	$434,594,979	100.0
Capital invested in these enterprises to Dec. 31, 1919	372,273,567	85.7
Additional capital required to complete these enterprises	62,321,412	14.3
Average cost per acre when completed	6.64	

DRAINAGE ON FARMS.

Explanation of terms.—To secure uniformity in the returns relating to drainage on farms, the Bureau of the Census supplied its enumerators with certain definitions, which were substantially as follows:

Drainage of agricultural land was defined, for census purposes, as the act or process of drawing off an excess of water by underground conduits, pipes, or tiles, or by open or covered trenches in the surface of the ground, for the purpose of improving the condition of the soil and crops.

The area provided with drainage, in farms, includes the acreage actually benefited or made of more value for agricultural purposes, by artificial drainage, but does not include land on which only temporary work has been done, such as "bedding" the fields or laying out "dead furrows" to hasten the surface flow.

The area needing drainage, in farms, comprises the additional land that is not now suitable for crops, but which could be made available for cultivation (1) "by drainage only," which is the acreage needing no clearing or which is covered with grass, weeds, or other annual growth, and (2) "by drainage and clearing," which is the acreage covered with trees, stumps, or perennial woody shrubs.

Improved land in farms includes all land regularly tilled or mowed, land in pasture which has been cleared or tilled, land lying fallow, land in gardens, orchards, vineyards, and nurseries, and land occupied by farm buildings.

Woodland in farms includes all land covered with natural or planted forest trees which produce, or later may produce, firewood or other forest products.

Farms in drainage and levee districts are those for which the operators answered affirmatively the question, "Has any part of this farm been afforded drainage or protection against overflow by a drainage or levee district, or by the state, the county, or a private company or individual?" Levee districts, however, generally are not included in the enterprises for which data are given in this report (see definition of drainage enterprises below).

Farms and farm land.—The acreage shown for drainage on farms represents land where drainage is actually in operation and which has actually become more fully available for growing crops by reason of the drainage. This is to be distinguished from the area merely provided with outlet facilities by organized drainage enterprises. Drainage on farms represents in most cases the result of work done by the farm owner, either independently or supplemental to the work done by a drainage enterprise, but the acreage would include also any farm land receiving similar benefits directly from the works of an enterprise.

DRAINAGE ENTERPRISES.

Explanation of terms.—The more important terms used in connection with the census of drainage enterprises were defined as follows:

Drainage enterprises comprise public corporations and local improvement districts formed under state laws, commercial enterprises draining swamp or overflowed land for sale, any other organizations that may be engaged in extensive land-drainage work, and also tracts of 500 acres or more drained by individual owners. Enterprises such as levee districts that have not authorized the construction of open ditches or tile drains are not included.

Enterprises located in more than one county were divided, for tabulation, and the part in each county treated as a separate enterprise, though the capacities of drainage pumping plants are given only in the counties in which the plants are located.

Operating enterprises, as designated in this report, are those drainage enterprises that had completed the drainage works authorized, or had at any rate begun actual construction work, on or before January 1, 1920; enterprises that had been established but had not begun construction are termed "nonoperating."

Land in drainage enterprises is the area that has been benefited or is to be benefited by the improvement works constructed by the enterprises. In the case of overlapping enterprises, deduction has been made for the amount of duplication.

All land in drainage enterprises is divided, without regard to drainage condition, into (*a*) improved land; (*b*) timber and cut-over land, which would require clearing to be thoroughly fit for cultivation; and (*c*) all other unimproved land, which would not require expensive clearing before cultivation.

The assessed acreage for any single enterprise is the same as the area in that enterprise. However, the total assessed acreage may be considerably greater than the total land in enterprises, for in summing up the assessed acreage in the county or state, deduction was not made for acreage assessed in more than one enterprise.

Improved land in drainage enterprises consists very largely of improved farm land, though it may include some other improved land receiving benefit from the works of the enterprises.

Timber and cut-over land includes farm woodland of natural or planted forest trees as well as other timber land or areas that would need clearing of trees, stumps, or perennial woody shrubs.

Land designated as swampy or subject to overflow includes all land permanently or generally too wet for cultivation, land subject to periodical inundation by stream floods, seeped and alkali land in irrigated regions, and all other land unfit for cultivation by reason of insufficient drainage. This classification is without respect to the conditions as to improvement or timber.

The area suffering a loss of crops is intended to include only land devoted to planted crops, which suffer damage, either partial or complete, because of defective drainage. Land which would be cultivated if drained or protected against overflow is not included.

Capital invested, for the purpose of this investigation, was defined as cost, including charges for engineering, organization, rights of way, construction of drainage works, damages, land and buildings except those held for sale or farming, and any other expenditures properly chargeable to drainage and paid by the enterprise.

The drainage works of an enterprise include all varieties of underground conduits, pipes, or lines of tile, or drains of stone, wood, or other material; also open ditches and canals, together with accessory levees, dikes, dams, weirs, pumping machinery, gates, and other devices for the draining away or control of surface and soil waters.

Tile, as the term is here used, includes pipes of earthenware, concrete, or other material buried beneath the surface in such a way as to permit the excess water to flow away. The size, if circular, is expressed by the inside diameter in inches.

Ditches include all open artificial trenches, usually with sloping sides. The width is that of the bottom.

The type of drainage shows whether the drainage water from an enterprise is discharged by gravity or by pumping.

A pumping district is one where all or a part of the water from the drains collecting at a low point must be raised by some form of machinery in order that it may be removed from the area.

Drainage pumps include all kinds of machinery and devices for lifting the drainage water.

Pumping engines include all kinds of engines and motors for operating the drainage pumps.

Operating and nonoperating enterprises.—In most of the tables that follow, statistics are given for operating enterprises only. These enterprises, as already defined, include both those which have completed their drainage works and those with such works under construction; among the latter may be some that had completed the original plan of reclamation or improvement several years ago but were constructing extensions or enlargements on January 1, 1920. The nonoperating enterprises have a legal existence, though they have not yet accomplished any drainage. They may include enterprises that on the census date had completed their plans, sold bonds to cover the cost of the undertakings, and let contracts for the construction work; and also projects that had just been established by decree of the court or other designated authority and were still subject to considerable change in area, plan of drainage works, and cost. The figures are presented for the United States as a whole in Table 2, and for geographic divisions and states in State Tables II and III (pages 373 and 374).

TABLE 2.—LAND AND CAPITAL INVESTED IN ALL ENTERPRISES, CLASSIFIED AS BETWEEN OPERATING AND NONOPERATING ENTERPRISES: 1920.

CLASS.	LAND.		CAPITAL.[1]		
			To Dec. 31, 1919.		Additional required to complete.
	Acreage.	Per cent of total.	Amount.	Per cent of total.	
All organized enterprises	69,419,859	100.0	$373,397,025	100.0	$97,259,090
Operating enterprises	65,495,038	94.3	372,273,567	99.7	62,321,412
With works completed	56,763,751	81.8	293,857,023	78.7	.....
With works under construction	8,731,287	12.6	78,416,544	21.0	62,321,412
Nonoperating enterprises	3,924,821	5.7	1,123,458	0.3	34,937,678

[1] The inquiry asked for the "total cost of the enterprise to Dec. 31, 1919," and for an "estimate of additional investment to complete."

Location of enterprises.—Three-fourths of all the land in drainage enterprises in the United States (78 per cent of the area in operating enterprises and 75 per cent of that in all enterprises) is situated in those states north of the Ohio and Missouri Rivers and east of the Rocky Mountains, including Missouri and Kansas. The Southern states from the Potomac to the Rio Grande contain 19 per cent of the land in operating enterprises and 22 per cent of that in all drainage enterprises, and the western states have the remaining 3 per cent. The drainage water from three-fourths of the land in the enterprises in the United States ultimately reaches the Mississippi River. In the northeastern states, omitted from these statistics, comparatively little drainage for agriculture has been undertaken.

Michigan has a greater area in drainage enterprises than any other state, 9,754,679 acres reported in all enterprises, and Indiana, Iowa, Minnesota, and Ohio reported areas ranging from 5,000,000 to 9,000,000 acres each. Indiana has the greatest portion of its area organized for drainage, more than 39 per cent of all land in the state having been included in operating enterprises, and nearly 41 per cent in both operating and nonoperating enterprises. The distribution of the land in operating enterprises is shown by the map following page 346, and the figures for all enterprises, for each geographic division and state, are given in State Tables II, III, and IV (pages 373 to 375).

TABLE 3.—LAND AND CAPITAL INVESTED IN ALL ENTERPRISES, CLASSIFIED BY DRAINAGE BASIN: 1920.

DRAINAGE BASIN.	LAND.		CAPITAL.		
			To Dec. 31, 1919.		Additional required to complete.
	Acreage.	Per cent of total.	Amount.	Per cent of total.	
All organized enterprises	69,419,859	100.0	$373,397,025	100.0	$97,259,090
Operating enterprises	65,495,038	94.3	372,273,567	99.7	62,321,412
Atlantic Ocean	2,053,786	3.0	17,004,954	4.6	13,900,175
Gulf of Mexico, east[1]	807,712	1.2	4,776,673	1.3	748,904
Lower Mississippi River[2]	8,072,564	11.6	47,516,484	12.7	21,683,482
Ohio River	10,998,378	15.8	42,582,673	11.4	1,588,775
Missouri River	2,510,150	3.6	21,350,055	5.7	2,466,268
Upper Mississippi River[2]	10,850,408	15.6	105,159,705	28.2	8,893,447
Gulf of Mexico, west[1]	3,324,860	4.8	10,950,007	2.9	899,293
Rio Grande	766,670	1.1	3,508,703	0.9	1,885,500
Great Basin	129,763	0.2	1,123,324	0.3	1,865,300
Colorado River	136,280	0.2	814,864	0.2	1,699,195
Pacific Ocean	80,401	0.1	1,363,986	0.4	150,000
San Francisco Bay	986,118	1.4	46,184,577	12.4	5,194,474
Columbia River	173,716	0.3	3,378,710	0.9	149,000
Hudson Bay	7,992,846	11.5	16,223,414	4.3	480,500
Great Lakes	16,611,386	23.9	50,335,438	13.5	717,099
Nonoperating enterprises	3,924,821	5.7	1,123,458	0.3	34,937,678
Atlantic Ocean	1,044,921	1.5	242,721	0.1	2,957,792
Gulf of Mexico, east[1]	41,230	0.1	25,056	(3)	403,194
Lower Mississippi River[2]	1,194,600	1.7	350,928	0.1	11,475,017
Ohio River	158,932	0.2	69,475	(3)	1,591,407
Missouri River	352,894	0.5	155,916	(3)	6,785,438
Upper Mississippi River[2]	521,759	0.8	140,028	(3)	7,424,581
Gulf of Mexico, west[1]	383,490	0.6	46,000	(3)	1,417,500
Rio Grande	7,000	(3)	.....	.....	150,000
Great Basin	20,731	(3)	9,500	(3)	647,500
Colorado River	25,345	(3)	500	(3)	535,000
Pacific Ocean	12,900	(3)	1,000	(3)	400,000
Columbia River	18,955	(3)	54,725	(3)	205,000
Hudson Bay	23,312	(3)	2,484	(3)	104,023
Great Lakes	118,752	0.2	25,125	(3)	841,226

[1] The eastern and western areas drained into the Gulf of Mexico are separated by the region tributary to Mississippi River, and do not include the land drained into either the Mississippi or the Rio Grande.
[2] The division between upper and lower Mississippi River is made at the Missouri.
[3] Less than one-tenth of 1 per cent.

Condition of land in enterprises.—The statistics secured show that of all the land in operating enterprises slightly more than two-thirds is improved, and somewhat more than one-tenth still is swampy or subject to overflow, including land too wet for cultivation and that injured by the concentration of salts, commonly called alkali, in the surface soil as a result of irrigation. The improved land is approximately 75 per cent of all land in the operating enterprises in the two north central geographic divisions of the United States, 45 per cent in the three southern divisions, and 87 per cent in the two western divisions. The portions swampy, wet, subject to overflow, or alkali are approximately 8 per cent, 24 per cent, and 12 per cent, respectively, in the northern, southern, and western groups of states. The condition of the land before drainage, in the operating enterprises, is shown in State Table V (pages 376 to 379).

In general, those drainage enterprises in the Atlantic Coastal Plain, from North Carolina to Texas and including the alluvial land of the lower Mississippi Valley,

have been organized for the reclamation of rather large areas of level swamp land. The swampy land in the North Central states, except in the northern parts of Minnesota, Wisconsin, and Michigan, is generally broken into smaller tracts by a slightly rolling topography. Those enterprises in the Piedmont section of the South Atlantic states and those bordering the streams of moderate size in the Mississippi River system are intended principally to protect against inundation by stream floods or to remove the overflow water promptly. Nearly all of the enterprises in the Mountain states and a large part of those in the Pacific states are for the drainage or protection of irrigated land injured or threatened with seepage and alkali.

In the Western states, irrigated land comprising 52,873 acres in drainage districts and 600,578 acres in irrigation districts and irrigation projects of the United States Reclamation Service is reported as not to have needed drainage or protection for itself, but to have been assessed for the cost of drainage merely on account of being responsible for injury to the other land. This acreage in the irrigation enterprises is not included in the tabulations in this report.

The usual purpose of an organized enterprise is merely to provide adequate outlets into which the landowners of the district may drain their farms and to afford relief from overflows for the district as a unit. Therefore, the fact that an enterprise which has completed the construction of the drainage works authorized contains land still swampy, subject to overflow, seeped, or alkali, or that suffers damage to crops, does not show that the improvement works are inadequate for the purpose intended. Perhaps some of the supplemental drains that are properly the work of individual farm owners have not been constructed.

TABLE 4.—LAND IN ALL ENTERPRISES, CLASSIFIED BY CONDITION: 1920.

CONDITION OF LAND.	OPERATING ENTERPRISES.				Non-operating enterprises (acres).
	Total.		Works completed (acres).	Works under construction (acres).	
	Acreage.	Per cent of all land.			
All land in enterprises	65,495,038	100.0	56,763,751	8,731,287	3,924,821
Improved land	44,288,235	67.6	40,828,982	3,459,253	1,376,495
Timber and cut-over land	11,283,532	17.2	8,209,492	3,074,040	1,294,018
Other unimproved land	9,923,271	15.2	7,725,277	2,197,994	1,254,308
Swampy, subject to overflow, seeped, or alkali	7,224,213	11.0	4,496,922	2,727,291	2,299,562
Suffering a loss of crops	3,011,407	4.6	2,340,065	671,342	239,192

Size of enterprises.—To show the statistics by counties, as has been done in the reports on drainage for separate states, required that an enterprise located in more than one county be divided, and the part in each county be considered as a separate enterprise. In this way 56,949 operating drainage enterprises are counted in the United States, with an average area of 1,680 acres assessed. The number of enterprises includes both those organized for original construction, and those for reconstruction undertaken by petition and hearings in the same manner as prescribed for establishing new drains, which has been the customary method for maintaining or renewing public ditches in some states; it includes also those organized for extending drains constructed previously, or for uniting two or more such drains into a single system.

The assessed acreage exceeds the land in operating enterprises by 30,134,253 acres, which is the amount of overlapping. The land in enterprises and the assessed acreage on each line of Table 5 refer to the same enterprises. From the total area of each enterprise, designated as the assessed area, the net amount of overlapping with enterprises organized previously was deducted, to determine the area to be tabulated as land in enterprises.

There are 543 nonoperating enterprises, which have a total assessed area of 5,245,428 acres and an average area of 9,660 acres. Of this total, 1,282,107 acres are a duplication of land assessed in earlier enterprises.

TABLE 5.—LAND IN OPERATING ENTERPRISES, CLASSIFIED BY SIZE OF AREA ASSESSED: 1920.

SIZE GROUP.	Land in enterprises (acres).	ASSESSED AREA.	
		Acreage.	Per cent of total.
All operating enterprises	65,495,038	95,629,291	100.0
Less than 200 acres	791,506	1,155,395	1.2
200 to 499 acres	3,263,873	5,285,772	5.5
500 to 999 acres	5,456,072	9,202,602	9.6
1,000 to 4,999 acres	18,637,501	30,153,424	31.5
5,000 to 9,999 acres	9,176,406	13,848,393	14.5
10,000 to 49,999 acres	17,737,764	23,412,104	24.5
50,000 to 99,999 acres	6,508,673	7,840,623	8.2
100,000 to 499,999 acres	3,923,243	4,730,978	4.9

Character of enterprises.—Most of the drainage enterprises, comprising 92.4 per cent of all the land in the operating enterprises, are public corporations or local improvement districts organized in accordance with general state laws specially framed to permit or to encourage the reclamation and improvement of land that is swampy, wet, or subject to overflow. Such enterprises have been classified here as drainage districts and county drains, according to whether the executive authority is vested in officers specially chosen for each district, or in regular county officials serving in the same capacity for all the county drains in their respective counties. This classification is not recognized in all states, however, and the term district is used in several states for enterprises here designated as county drains. The district form of organization has been used altogether in Colorado, Georgia, Idaho, Louisiana, Tennessee, Texas, Utah, and Wyoming, and the county form entirely in Iowa,[1] Michigan, Minnesota, Montana, North Dakota, Ohio, and South Dakota, for public enterprises established primarily for drainage. Both forms have been used in the

[1] Excepting those pumping districts governed by elected trustees.

other states where organized drainage is important, but in Arkansas, Florida, Illinois, and North Carolina the area served by county drains is less than 5 per cent of the total in enterprises. A few laws prescribe for each enterprise a governing board comprising both regular county officials and members specially appointed or elected for the enterprise.

A considerable number of drainage districts have been established by special acts of the state legislatures, which determined more or less specifically for each district what land should be included, the manner of selecting the officers, their duties and powers, and the various steps in securing construction of the improvement works, in financing the project, and in apportioning and collecting the assessments to pay the expenses incurred. Rather more than one-third, in acreage, of the operating drainage districts in Arkansas, and practically one-fourth in Florida, have been created by such special legislation.

In general, drainage districts and county drains are established by order of the administrative board of the county or by decree of a court designated in the drainage law, after petition, investigation, and public hearings to determine the necessity and public utility of the project. The statutes provide the basis for apportioning the cost against the property to be benefited by the proposed work, and most of the states authorize the issue of drainage bonds by the districts or by the counties.

Township drains are similar to county drains, but the officers of the townships, instead of the county boards, determine whether the enterprise shall be established and afterwards control construction of the works authorized.

The state drainage projects are located in Florida and Minnesota. Those in the former state are drainage districts organized under special acts of the legislature; those in the latter state have the character of enterprises classified here as county drains, with state instead of county officials in control after the decree of establishment has been issued.

Irrigation districts included as drainage enterprises are those public corporations formed to construct and operate irrigation works, which have undertaken the construction of works to drain or protect land in the district injured or threatened with seepage or alkali as a result of the irrigation. In character they are not unlike drainage districts. The area of the drainage enterprise is the area to be drained or protected, not the area of the irrigation district.

The United States Reclamation Service irrigation projects are included as drainage enterprises under the same circumstances as irrigation districts, the area of the drainage enterprise being the area to be benefited by the drainage works.

Commercial developments are principally enterprises formed under ordinary business corporation laws for the primary purpose of reclaiming unimproved land to be sold at a profit.

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Individual ownership enterprises are private undertakings by single farm owners, or occasionally by a few owners cooperating without formal organization, for improving land already in farms. Only those individual enterprises designed to benefit 500 acres or more have been included in the statistics for drainage enterprises. They are included also with the smaller undertakings in the figures for drainage on farms.

TABLE 6.—LAND AND CAPITAL INVESTED IN ALL ENTERPRISES, CLASSIFIED BY CHARACTER OF ENTERPRISE: 1920.

CHARACTER OF ENTERPRISE.	LAND.		CAPITAL.		
			To Dec. 31, 1919.		Additional required to complete.
	Acreage.	Per cent of total.	Amount.	Per cent of total.	
All organized enterprises	69,419,859	100.0	$373,397,025	100.0	$97,259,090
Operating enterprises	65,495,038	94.3	372,273,567	99.7	62,321,412
Drainage districts [1]	22,069,597	31.8	172,013,972	46.1	39,136,568
General state laws	20,239,956	29.2	147,511,259	39.5	24,593,523
Special acts	1,829,641	2.6	24,502,713	6.6	14,543,045
County drains [1]	37,870,803	54.6	169,743,093	45.5	9,682,477
Township drains	195,133	0.3	574,963	0.2	4,500
State drainage projects	1,422,844	2.0	6,845,429	1.8	6,434,440
U. S. Reclamation Service	287,899	0.4	3,912,370	1.0	2,530,243
Irrigation districts	175,200	0.3	1,459,714	0.4	2,553,829
Commercial developments	212,421	0.3	3,279,829	0.9	1,128,000
Individual ownerships	432,397	0.6	6,449,252	1.7	841,750
Not reported [1]	2,828,744	4.1	7,994,945	2.1	9,605
Nonoperating enterprises	3,924,821	5.7	1,123,458	0.3	34,937,678
Drainage districts	3,260,104	4.7	772,834	0.2	26,339,970
General state laws	2,667,056	3.8	752,830	0.2	25,073,970
Special acts	593,048	0.9	20,004	(2)	1,266,000
County drains	596,694	0.9	302,224	0.1	8,139,808
Township drains	423	(2)	.....	.....	2,400
U. S. Reclamation Service	7,000	(2)	.....	.....	150,000
Commercial developments	50,000	0.1	45,000	(2)	150,000
Individual ownerships	10,600	(2)	3,400	(2)	155,500

[1] All of the statistics for which character of enterprises was not reported, except 35,062 acres and $218,951 invested to Dec. 31, 1919, relate to either drainage districts or county drains in Indiana.
[2] Less than one-tenth of 1 per cent.

Drainage works.—The total works completed by drainage enterprises to December 31, 1919, comprised 107,468.2 miles of open ditches, 42,311.7 miles of tile drains, and 3,519.8 miles of accessory levees; the additional lengths under construction were 4,301.8 miles of open ditches, 2,862.1 miles of tile drains, and 810.2 miles of levees. These figures do not include drains or levees installed by individual farm owners supplemental to the works of the enterprises, nor the works of flood-protection or levee districts that had not undertaken the construction of ditches or tile drains. There are 212 pumping districts among the operating drainage enterprises in the United States.

The average depth of the main or outlet ditch was reported for each enterprise. The maximum depth of outlet reported for any enterprise in the United States and the maximum in each state are shown in line 15 of State Table V. The maximum length, width, and depth of outlet shown in that table for any state may not refer to the same enterprise.

In State Table V, line 16 shows the mean depth of branch ditches (open ditches only), which is a very crude indication of the depth of soil drainage that may be obtained in the enterprises as determined by the

depth of outlet provided for farm drains. The mean depth was computed by giving each separate depth a weight in proportion to the acreage it serves. As most enterprises reported depths in whole numbers only, the occasional decimals were omitted in making these computations. Depths less than 3 feet and those 10 feet and greater were omitted, because it seemed that they did not represent so well the average depths of outlet provided for all the farms in those enterprises. To include these groups, computed as 3 feet and 10 feet, respectively, would show the mean depth for the United States 5.5 instead of 5.4 feet.

TABLE 7.—LAND AND CAPITAL INVESTED IN OPERATING ENTERPRISES, CLASSIFIED BY KIND OF DRAINAGE WORKS: 1920.

KIND OF WORKS.	LAND.		CAPITAL.		
			To Dec. 31, 1919.		
	Acreage.	Per cent of total.	Amount.	Per cent of total.	Additional required to complete.
All kinds	65,495,038	100.0	$372,273,567	100.0	$62,321,412
Open ditches only	43,658,485	66.7	155,943,040	41.9	21,798,959
Open ditches and levees	5,656,000	8.6	82,263,934	22.1	27,114,634
Tile drains only	4,951,152	7.6	46,537,986	12.5	2,516,169
Tile drains and levees	23,109	(1)	264,000	0.1	
Open ditches and tile drains	10,731,279	16.4	73,457,209	19.7	9,888,175
Open ditches, tile drains, and levees	475,013	0.7	13,807,398	3.7	1,003,475

[1] Less than one-tenth of 1 per cent.

TABLE 8.—LAND AND CAPITAL INVESTED IN OPERATING ENTERPRISES, CLASSIFIED BY TYPE OF DRAINAGE: 1920.

TYPE OF DRAINAGE.	LAND.		CAPITAL.		
			To Dec. 31, 1919.		
	Acreage.	Per cent of total.	Amount.	Per cent of total.	Additional required to complete.
All operating enterprises	65,495,038	100.0	$372,273,567	100.0	$62,321,412
Gravity drainage only	63,602,475	97.1	306,443,303	82.3	48,396,322
All drainage by pumping	781,441	1.2	32,020,807	8.6	2,001,761
Part gravity and part pumping	1,111,122	1.7	33,809,457	9.1	11,923,329
Total area served by pumps	1,544,010	2.4			

TABLE 9.—PUMPING PLANTS OF OPERATING ENTERPRISES, AND ACREAGE SERVED, CLASSIFIED BY KIND OF POWER: 1920.

KIND OF POWER.	ENGINE CAPACITY.		PUMP CAPACITY.		AREA SERVED.	
	Horsepower.	Per cent of total.	Gallons per minute.	Per cent of total.	Acreage.	Per cent of total.
All operating enterprises	67,189	100.0	15,949,166	100.0	1,544,010	100.0
Steam	17,311	25.8	7,125,848	44.7	496,426	32.0
Electric	36,472	54.3	5,733,756	36.0	706,794	45.6
Internal combustion	6,691	10.0	1,844,662	11.6	250,452	16.2
Steam and electric	[1] 5,485	8.2	974,200	6.1	67,466	4.4
Electric and internal combustion	[2] 890	1.3	189,500	1.2	14,723	1.0
Steam and internal combustion	[3] 215	0.3	77,600	0.5	5,800	0.4
Not reported	125	0.2	3,600	(4)	[5] 2,349	0.2

[1] Includes 2,450 steam, 1,330 electric, and 1,705 not divided.
[2] Includes 230 electric, 245 internal combustion, and 415 not divided.
[3] Includes 75 steam and 140 internal combustion.
[4] Less than one-tenth of 1 per cent.
[5] Includes 594 acres served by 1 water-wheel.

TABLE 10.—PUMPING PLANTS OF OPERATING ENTERPRISES, AND ACREAGE SERVED, CLASSIFIED BY KIND OF PUMP: 1920.

KIND OF PUMP.	Number of pumps.	PUMP CAPACITY.		ENGINE CAPACITY.		AREA SERVED.	
		Gallons per minute.	Per cent of total.	Horsepower.	Per cent of total.	Acreage.	Per cent of total.
All operating enterprises	453	15,949,166	100.0	67,189	100.0	1,544,010	100.0
Centrifugal	423	14,500,308	90.9	62,509	93.0	1,371,447	88.8
Rotary	7	53,348	0.3	360	0.5	4,341	0.3
Rotary and centrifugal	3	75,000	0.5	200	0.3	2,600	0.2
Screw	11	1,223,660	7.7	3,845	5.7	129,804	8.4
Centrifugal and screw	3	84,000	0.5	125	0.2	4,200	0.3
Not reported	6	12,850	0.1	150	0.2	[1] 31,618	2.0

[1] Includes 594 acres served by 1 water-wheel.

TABLE 11.—LAND IN OPERATING ENTERPRISES, CLASSIFIED BY AVERAGE DEPTH OF BRANCH DITCHES: 1920.

DEPTH OF BRANCH DITCHES.	Acreage.	Per cent of total.
All operating enterprises	65,495,038	100.0
Less than 3 feet	1,295,633	2.0
3.0 to 3.9 feet	4,100,380	6.3
4.0 to 4.9 feet	6,640,135	10.1
5.0 to 5.9 feet	5,402,497	8.2
6.0 to 6.9 feet	5,737,251	8.8
7.0 to 7.9 feet	3,488,588	5.3
8.0 to 8.9 feet	4,019,691	6.1
9.0 to 9.9 feet	496,595	0.8
10 feet and more	1,511,584	2.3
Not reporting branches	32,802,684	50.1

Maintenance of works.—Most of the laws governing drainage enterprises provide that the executive boards of those enterprises classified herein as drainage districts may maintain and repair the drainage works of their districts, and that the county boards or other designated public officials may keep the county drains in proper condition. In states having two or more drainage laws, a different method of maintenance may be provided for the enterprises established under each statute. Inspection of the public drainage works at least once each year is required in Iowa, and twice each season in those counties of Minnesota in which the cost of the enterprises has reached $50,000. Annual estimates of funds necessary for maintenance work are now required by law for part or all of the public drainage enterprises in nearly every state in which public drainage organization is authorized. All public drains in Michigan and all dredged ditches in Indiana are repaired or reconstructed only upon petition and after proceedings similar to those required for establishing a new drain. In some other states also this has been the usual method of obtaining repairs until very recently.

The greater part of the laws provide that the costs for maintenance and repairs shall be assessed against the land that was assessed for original construction of the works, and in the same proportion as the construction cost. Maintenance costs for all the drainage enterprises in Texas and for those established under certain laws in other states are apportioned according to the assessed value of the property in the enterprises. In Louisiana

the costs are assessed in proportion to property valuation or at a uniform rate per acre. Some statutes have authorized or required that the ditches be divided into sections and allotted to the landowners for keeping in repair.

TABLE 12.—LAND AND CAPITAL INVESTED IN OPERATING ENTERPRISES, CLASSIFIED BY METHOD OF MAINTENANCE: 1920.

METHOD OF MAINTENANCE.	LAND.		CAPITAL.		
			To Dec. 31, 1919.		
	Acreage.	Per cent of total.	Amount.	Per cent of total.	Additional required to complete.
All operating enterprises	65,495,038	100.0	$372,273,567	100.0	$62,321,412
By district forces	14,184,281	21.7	132,883,309	35.7	23,717,025
By contract	12,687,978	19.4	83,422,369	22.4	5,474,587
By method not specified	553,058	0.8	6,317,582	1.7	313,775
By landowners	3,550,148	5.4	16,082,606	4.3	1,668,543
No maintenance provided	30,512,636	46.6	113,343,700	30.4	8,852,658
Not reporting	4,006,937	6.1	20,224,001	5.4	22,294,824

Further information than is given in the above table was not secured regarding maintenance provided for the drainage works. It is probable that the amount of systematic maintenance is actually much less than the table would seem to indicate; that only an inconsiderable number of landowners clean out the public drains of their own initiative; and that much of the contract work, and even some of that reported as done by district forces, is really reconstruction of drains that have been more or less neglected.

Date of organization.—The progress in drainage development is shown only roughly by the dates of the organization of the enterprises, which are the dates when the orders of establishment were issued, since there may be a period of one or more years between the order of establishment and the beginning of actual construction, and since the work of construction may occupy several years for a large enterprise. It was not practicable, however, for the census to secure data as to the time of the beginning or the completion of the drainage works. Under the date of organization are tabulated the entire area, works, and capital of each enterprise, even including extensions made after the original plan of reclamation was completed. For such enterprises as irrigation districts, the date is approximately that when the drainage, rather than the irrigation, was undertaken.

Owing to the incompleteness of the records of drainage work in Michigan before 1897, when the county drain law was enacted, no attempt was made to secure information regarding the enterprises established previous to that year. In some counties in other states, more particularly in Indiana and Ohio, the records of the earlier drainage enterprises were incomplete or, in some cases, entirely missing.

TABLE 13.—LAND IN OPERATING ENTERPRISES, CLASSIFIED BY DATE ENTERPRISE WAS ORGANIZED: 1920.

DATE OF ORGANIZATION.	LAND.		AREA ASSESSED.	
	Acreage.	Per cent of total.	Acreage.	Per cent of total.
All operating enterprises	65,495,038	100.0	95,629,291	100.0
Before 1860	97,319	0.1	98,119	0.1
1860 to 1869	783,357	1.2	932,565	1.0
1870 to 1879	2,077,717	3.2	3,413,277	3.6
1880 to 1889	5,424,294	8.3	8,843,654	9.2
1890 to 1899	6,026,937	9.2	11,575,924	12.1
1900 to 1904	7,606,753	11.6	12,200,468	12.8
1905 to 1909	14,530,397	22.2	20,228,636	21.2
1910 to 1914	17,344,098	26.5	22,245,539	23.3
1915 to 1919	11,374,619	17.4	15,828,501	16.6
Not reported	229,547	0.4	262,608	0.3

TABLE 14.—CAPITAL INVESTED IN OPERATING ENTERPRISES, CLASSIFIED BY DATE ENTERPRISE WAS ORGANIZED: 1920.

DATE OF ORGANIZATION.	CAPITAL.		
	To Dec. 31, 1919.		Additional required to complete.
	Amount.	Per cent of total.	
All operating enterprises	$372,273,567	100.0	$62,321,412
Before 1860	182,716	(1)	
1860 to 1869	1,689,852	0.5	
1870 to 1879	8,126,391	2.2	
1880 to 1889	23,934,330	6.4	1,840,829
1890 to 1899	24,498,861	6.6	521,310
1900 to 1904	26,706,464	7.2	709,063
1905 to 1909	76,072,320	20.4	7,612,491
1910 to 1914	120,269,596	32.3	14,455,410
1915 to 1919	87,379,002	23.5	36,771,650
Not reported	3,414,035	0.9	410,659

[1] Less than one-tenth of 1 per cent.

TABLE 15.—DRAINS AND LEVEES (COMPLETED AND UNDER CONSTRUCTION) IN OPERATING ENTERPRISES, CLASSIFIED BY DATE ENTERPRISE WAS ORGANIZED: 1920.

DATE OF ORGANIZATION.	DITCHES.		TILE.		LEVEES.	
	Miles.	Per cent of total.	Miles.	Per cent of total.	Miles.	Per cent of total.
All drains and levees	111,770.0	100.0	45,173.8	100.0	4,330.0	100.0
Before 1860	173.7	0.2	4.2	(1)		
1860 to 1869	2,295.5	2.1	47.5	0.1	21.0	0.5
1870 to 1879	6,671.9	6.0	372.5	0.8	64.2	1.5
1880 to 1889	14,763.2	13.2	2,582.0	5.7	218.7	5.0
1890 to 1899	12,747.3	11.4	4,306.0	9.5	376.1	8.7
1900 to 1904	12,308.3	11.0	3,735.4	8.3	438.5	10.1
1905 to 1909	20,538.9	18.4	7,877.8	17.4	801.1	18.5
1910 to 1914	24,875.7	22.3	11,812.3	26.1	1,331.1	30.7
1915 to 1919	16,897.5	15.1	14,237.7	31.5	885.8	20.4
Not reported	498.0	0.4	198.4	0.4	193.5	4.5

[1] Less than one-tenth of 1 per cent.

Crops.—The principal crops grown upon the drained land in drainage enterprises are corn, wheat, cotton, hay, and sugar beets. Data were not secured to show the part of each enterprise planted to any crop, so the enterprises have been classified according to the principal crop, and the total area of improved land is shown thus classified in State Table V. No data were secured at the general census of agriculture which would make it possible to separate the crops grown upon land drained artificially from those produced upon land drained naturally.

STATE TABLE I.—DRAINAGE ON FARMS, BY GEOGRAPHIC DIVISIONS AND STATES: 1920.

DIVISION AND STATE.	NUMBER OF FARMS.				Area of all land (acres).	LAND IN FARMS.							
											Needing drainage.		
	All farms.	Having drainage.	Needing drainage.	In drainage and levee districts.		Total (acres).	Improved (acres).	Woodland (acres).	Other unimproved (acres).	Provided with drainage (acres).	Total (acres).	Drainage only (acres).	Drainage and clearing (acres).
United States	**6,448,343**	**924,815**	**956,095**	**172,793**	**1,903,215,360**	**955,883,715**	**503,073,007**	**167,730,794**	**285,079,914**	**53,024,975**	**39,169,639**	**10,459,181**	**28,710,458**
GEOGRAPHIC DIVISIONS:													
New England	156,564	9,083	17,571	252	39,664,640	16,990,642	6,114,601	7,020,311	3,855,730	129,799	397,267	86,991	310,276
Middle Atlantic	425,147	61,549	69,216	1,583	64,000,000	40,572,901	26,562,107	8,659,237	5,351,557	1,673,638	1,412,038	505,910	906,128
East North Central	1,084,744	429,584	302,008	63,789	157,160,960	117,735,179	87,894,835	18,061,460	11,778,884	30,737,056	8,870,356	3,243,427	5,626,929
West North Central	1,096,951	163,714	169,593	47,883	326,914,560	256,973,229	171,394,439	18,761,832	66,816,958	11,758,939	7,260,539	4,187,385	3,073,154
South Atlantic	1,158,976	114,983	156,780	6,979	172,205,440	97,775,243	48,509,886	41,802,263	7,463,094	2,865,072	7,511,230	696,687	6,814,543
East South Central	1,051,600	69,597	106,972	17,290	114,885,760	78,897,463	44,380,132	28,414,524	6,102,807	1,720,517	4,279,968	462,040	3,817,928
West South Central	996,088	44,835	91,595	25,010	275,037,440	173,449,127	64,189,606	29,749,152	79,510,369	2,365,701	7,134,572	734,305	6,400,267
Mountain	244,109	9,754	14,988	3,551	549,765,760	117,337,226	30,105,868	6,887,071	80,344,287	456,015	969,948	329,359	640,589
Pacific	234,164	21,716	27,372	6,456	203,580,800	56,152,705	23,921,533	8,374,944	23,856,228	1,318,238	1,333,721	213,077	1,120,644
NEW ENGLAND:													
Maine	48,227	2,068	5,425	25	19,132,800	5,425,968	1,977,329	2,447,597	1,001,042	26,302	142,053	19,930	122,123
New Hampshire	20,523	1,013	1,794	16	5,779,840	2,603,806	702,902	1,299,838	601,066	11,777	40,783	9,914	30,869
Vermont	29,075	1,728	3,042	35	5,839,360	4,235,811	1,691,595	1,428,309	1,115,907	35,649	68,912	19,265	49,647
Massachusetts	32,001	2,955	4,112	138	5,144,960	2,494,477	908,834	1,030,386	555,257	39,022	80,883	21,212	59,671
Rhode Island	4,083	116	359	2	682,880	331,600	132,855	130,462	68,283	2,403	8,174	2,240	5,934
Connecticut	22,655	1,203	2,839	36	3,084,800	1,898,980	701,086	683,719	514,175	14,646	56,462	14,430	42,032
MIDDLE ATLANTIC:													
New York	193,195	33,896	38,523	1,447	30,498,560	20,632,803	13,158,781	4,160,567	3,313,455	1,180,423	779,467	318,865	460,602
New Jersey	29,702	4,903	3,423	136	4,808,960	2,282,585	1,555,607	454,768	272,210	174,260	77,881	29,193	48,688
Pennsylvania	202,250	22,750	27,265	238	28,692,480	17,657,513	11,847,719	4,043,902	1,765,892	318,955	554,690	157,852	396,838
EAST NORTH CENTRAL:													
Ohio	256,695	130,117	85,326	7,315	26,073,600	23,515,888	18,542,353	3,198,929	1,774,606	7,365,532	2,014,889	886,557	1,128,332
Indiana	205,126	111,435	66,413	14,839	23,068,800	21,063,332	16,680,212	3,141,042	1,242,078	8,308,844	1,717,068	673,952	1,043,116
Illinois	237,181	99,246	33,731	14,586	35,867,520	31,974,775	27,294,533	3,102,579	1,577,663	11,247,637	1,228,739	641,493	587,246
Michigan	196,447	66,948	64,310	23,356	36,787,200	19,032,961	12,925,521	3,217,000	2,890,440	3,156,632	2,070,387	579,813	1,490,574
Wisconsin	189,295	21,838	52,228	3,693	35,363,840	22,148,223	12,452,216	5,401,910	4,294,097	658,411	1,839,273	461,612	1,377,661
WEST NORTH CENTRAL:													
Minnesota	178,478	53,011	73,905	16,421	51,749,120	30,221,758	21,481,710	4,482,656	4,257,392	2,993,034	3,504,574	1,801,457	1,703,117
Iowa	213,439	88,865	56,083	20,658	35,575,040	33,474,896	28,606,951	2,295,274	2,572,671	7,334,404	2,052,942	1,661,744	391,198
Missouri	263,004	11,917	19,572	7,743	43,985,280	34,774,679	24,832,966	8,553,857	1,387,856	859,663	830,693	163,178	667,515
North Dakota	77,690	682	2,669	341	44,917,120	36,214,751	24,563,178	679,836	10,971,737	89,054	211,305	53,161	158,144
South Dakota	74,637	4,077	11,828	1,028	49,195,520	34,636,491	18,199,250	536,183	15,901,058	161,371	446,915	356,049	90,866
Nebraska	124,417	2,356	2,963	1,064	49,157,120	42,225,475	23,109,624	900,933	18,214,918	214,428	145,818	115,425	30,393
Kansas	165,286	2,806	2,573	628	52,335,360	45,425,179	30,600,760	1,313,093	13,511,326	106,985	68,292	36,371	31,921
SOUTH ATLANTIC:													
Delaware	10,140	4,246	2,488	1,321	1,257,600	944,511	653,052	222,658	68,801	185,831	68,969	7,967	61,002
Maryland	47,908	6,911	6,658	272	6,362,240	4,757,999	3,136,728	1,327,221	294,050	249,799	184,820	33,267	151,553
District of Columbia	204	21	12	.....	38,400	5,668	4,258	828	582	197	115	58	57
Virginia	186,242	9,899	27,740	140	25,767,680	18,561,112	9,460,492	7,907,352	1,193,268	225,068	1,172,580	77,192	1,095,388
West Virginia	87,289	1,949	10,304	33	15,374,080	9,569,790	5,520,308	3,469,444	580,038	38,464	310,868	32,253	278,615
North Carolina	269,763	45,246	42,247	1,881	31,193,600	20,021,736	8,198,409	10,299,547	1,523,780	1,066,933	1,925,343	189,401	1,735,942
South Carolina	192,693	26,993	24,508	1,071	19,516,800	12,426,675	6,184,159	5,302,575	939,941	676,152	1,341,903	125,548	1,216,355
Georgia	310,732	15,121	34,337	995	37,584,000	25,441,061	13,055,209	10,491,848	1,894,004	274,688	1,819,611	143,187	1,676,424
Florida	54,005	4,597	8,486	1,266	35,111,040	6,046,691	2,297,271	2,780,790	968,630	147,940	687,021	87,814	599,207
EAST SOUTH CENTRAL:													
Kentucky	270,626	5,817	19,592	773	25,715,840	21,612,772	13,975,746	6,018,280	1,618,746	225,228	573,299	84,189	489,110
Tennessee	252,774	8,887	20,997	2,669	26,679,680	19,510,856	11,185,302	7,080,169	1,245,385	254,118	640,479	76,644	563,835
Alabama	256,099	19,967	36,511	352	32,818,560	19,576,856	9,893,407	8,301,177	1,382,272	415,293	1,610,656	150,028	1,460,628
Mississippi	272,101	34,926	29,872	13,496	29,671,680	18,196,979	9,325,677	7,014,898	1,856,404	825,878	1,455,534	151,179	1,304,355
WEST SOUTH CENTRAL:													
Arkansas	232,604	13,426	33,437	10,882	33,616,000	17,456,750	9,210,556	7,396,028	850,166	497,489	1,642,403	129,987	1,512,416
Louisiana	135,463	21,271	14,985	10,516	29,061,760	10,019,822	5,626,226	3,614,040	779,556	1,004,935	1,095,769	179,305	916,464
Oklahoma	191,988	2,032	8,065	334	44,424,960	31,951,934	18,125,321	4,206,171	9,620,442	107,014	265,786	39,788	225,998
Texas	436,033	8,106	35,108	2,778	167,934,720	114,020,621	31,227,503	14,532,913	68,260,205	756,263	4,130,614	385,225	3,745,389
MOUNTAIN:													
Montana	57,677	756	1,728	336	93,523,840	35,070,656	11,007,278	1,646,462	22,416,916	51,146	113,293	36,342	76,951
Idaho	42,106	1,167	2,895	647	53,346,560	8,375,873	4,511,680	820,876	3,043,317	64,648	199,874	37,566	162,308
Wyoming	15,748	433	1,127	337	62,430,720	11,809,351	2,102,005	421,806	9,285,540	35,654	69,066	23,837	45,229
Colorado	59,934	2,749	4,399	696	66,341,120	24,462,014	7,744,757	1,415,420	15,301,837	127,037	270,997	80,121	190,876
New Mexico	29,844	1,294	998	484	78,401,920	24,409,633	1,717,224	1,817,460	20,874,949	47,311	49,102	29,016	20,086
Arizona	9,975	241	435	28	72,838,400	5,802,126	712,803	523,648	4,565,675	9,651	41,951	9,596	32,355
Utah	25,662	2,729	3,085	791	52,597,760	5,050,410	1,715,380	212,762	3,122,268	74,316	165,926	74,786	91,140
Nevada	3,163	385	321	232	70,285,440	2,357,163	594,741	28,637	1,733,785	46,252	59,739	38,095	21,644
PACIFIC:													
Washington	66,288	10,020	14,323	2,680	42,775,040	13,244,720	7,129,343	1,813,061	4,302,316	274,696	576,005	45,206	530,799
Oregon	50,206	6,618	9,862	573	61,188,480	13,542,318	4,913,851	2,309,596	6,318,871	229,582	471,396	75,063	396,333
California	117,670	5,078	3,187	3,203	99,617,280	29,365,667	11,878,339	4,252,287	13,235,041	813,960	286,320	92,808	193,512

STATE TABLE II.—LAND IN ALL DRAINAGE ENTERPRISES, CLASSIFIED AS BETWEEN OPERATING AND NONOPERATING ENTERPRISES, BY GEOGRAPHIC DIVISIONS AND STATES: 1920.

DIVISION AND STATE.	Approximate land area of states included (acres).	ALL ENTERPRISES.		OPERATING ENTERPRISES.				NONOPERATING ENTERPRISES.	
		Acreage.	Per cent of total.	All operating enterprises.		Works completed (acres).	Works under construction (acres).	Acreage.	Per cent of total.
				Acreage.	Per cent of total.				
States included	**1,717,932,160**	**69,419,859**	**100.0**	**65,495,038**	**100.0**	**56,763,751**	**8,731,287**	**3,924,821**	**100.0**
GEOGRAPHIC DIVISIONS:									
East North Central	157,160,960	32,073,734	46.2	31,627,176	48.3	30,475,905	1,151,271	446,558	11.4
West North Central	326,914,560	19,936,111	28.7	19,217,367	29.3	16,959,103	2,258,264	718,744	18.3
South Atlantic	123,405,440	3,436,887	5.0	2,385,384	3.6	861,312	1,524,072	1,051,503	26.8
East South Central	82,067,200	2,796,830	4.0	2,323,595	3.5	1,732,586	591,009	473,235	12.1
West South Central	275,037,440	9,062,480	13.1	7,924,197	12.1	5,750,958	2,173,239	1,138,283	29.0
Mountain	549,765,760	888,809	1.3	810,076	1.2	236,872	573,204	78,733	2.0
Pacific	203,580,800	1,225,008	1.8	1,207,243	1.8	747,015	460,228	17,765	0.5
EAST NORTH CENTRAL:									
Ohio	26,073,600	8,147,546	11.7	8,107,204	12.4	8,093,994	13,210	40,342	1.0
Indiana	23,068,800	9,375,907	13.5	9,087,183	13.9	8,867,674	219,509	288,724	7.4
Illinois	35,867,520	3,982,033	5.7	3,909,049	6.0	3,430,474	478,575	72,984	1.9
Michigan	36,787,200	9,754,679	14.1	9,729,171	14.9	9,511,555	217,616	25,508	0.6
Wisconsin	35,363,840	813,569	1.2	794,569	1.2	572,208	222,361	19,000	0.5
WEST NORTH CENTRAL:									
Minnesota	51,749,120	9,362,944	13.5	9,232,709	14.1	8,552,900	679,809	130,235	3.3
Iowa	35,575,040	5,383,012	7.8	5,224,478	8.0	4,685,080	539,398	158,534	4.0
Missouri	43,985,280	2,980,265	4.3	2,596,204	4.0	1,858,945	737,259	384,061	9.8
North Dakota	44,917,120	1,248,328	1.8	1,240,328	1.9	1,100,044	140,284	8,000	0.2
South Dakota	49,195,520	222,062	0.3	222,062	0.3	124,132	97,930	.....	.....
Nebraska	49,157,120	633,566	0.9	607,730	0.9	565,222	42,508	25,836	0.7
Kansas	52,335,360	105,934	0.2	93,856	0.1	72,780	21,076	12,078	0.3
SOUTH ATLANTIC:									
North Carolina	31,193,600	542,828	0.8	542,828	0.8	440,657	102,171	.....	.....
South Carolina	19,516,800	144,237	0.2	140,031	0.2	24,864	115,167	4,206	0.1
Georgia	37,584,000	104,006	0.1	65,452	0.1	43,723	21,729	38,554	1.0
Florida	35,111,040	2,645,816	3.8	1,637,073	2.5	352,068	1,285,005	1,008,743	25.7
EAST SOUTH CENTRAL:									
Kentucky	25,715,840	471,874	0.7	358,480	0.5	288,143	70,337	113,394	2.9
Tennessee	26,679,680	445,955	0.6	363,671	0.6	268,667	95,004	82,284	2.1
Mississippi	29,671,680	1,879,001	2.7	1,601,444	2.4	1,175,776	425,668	277,557	7.1
WEST SOUTH CENTRAL:									
Arkansas	33,616,000	4,151,834	6.0	3,479,591	5.3	2,124,446	1,355,145	672,243	17.1
Louisiana	29,061,760	2,732,368	3.9	2,266,328	3.5	1,534,634	731,694	466,040	11.9
Oklahoma	44,424,960	12,150	(1)	12,150	(1)	11,750	400	.....	.....
Texas	167,934,720	2,166,128	3.1	2,166,128	3.3	2,080,128	86,000	.....	.....
MOUNTAIN:									
Montana	93,523,840	168,682	0.2	168,682	0.3	44,682	124,000	.....	.....
Idaho	53,346,560	78,732	0.1	64,642	0.1	43,892	20,750	14,090	0.4
Wyoming	62,430,720	107,041	0.2	95,474	0.1	11,740	83,734	11,567	0.3
Colorado	66,341,120	171,656	0.2	171,656	0.3	66,816	104,840	.....	.....
New Mexico	78,401,920	147,219	0.2	140,219	0.2	20,169	120,050	7,000	0.2
Arizona	72,838,400	64,985	0.1	39,640	0.1	9,640	30,000	25,345	0.6
Utah	52,597,760	134,554	0.2	113,823	0.2	23,993	89,830	20,731	0.5
Nevada	70,285,440	15,940	(1)	15,940	(1)	15,940	.....	.....	.....
PACIFIC:									
Washington	42,775,040	99,789	0.1	94,924	0.1	90,084	4,840	4,865	0.1
Oregon	61,188,480	4,000	(1)	4,000	(1)	4,000	.....	.....	.....
California	99,617,280	1,121,219	1.6	1,108,319	1.7	652,931	455,388	12,900	0.3

[1] Less than one-tenth of 1 per cent.

STATE TABLE III.—CAPITAL INVESTED IN ALL DRAINAGE ENTERPRISES, CLASSIFIED AS BETWEEN OPERATING AND NONOPERATING ENTERPRISES, BY GEOGRAPHIC DIVISIONS AND STATES: 1920.

DIVISION AND STATE.	INVESTED TO DEC. 31, 1919.								ADDITIONAL REQUIRED TO COMPLETE.			
	Total.		Operating enterprises.				Nonoperating enterprises.		Total.		All operating enterprises.	Non-operating enterprises.
			All operating enterprises.		Works completed.	Works under construction.						
	Amount.	Per cent.	Amount.	Per cent.	Amount.	Amount.	Amount.	Per cent.	Amount.	Per cent.	Amount.	Amount.
States included	$373,397,025	100.0	$372,273,567	100.0	$293,857,023	$78,416,544	$1,123,458	100.0	$97,259,090	100.0	$62,321,412	$34,937,678
GEOGRAPHIC DIVISIONS:												
East North Central	134,359,233	36.0	134,269,666	36.1	119,525,193	14,744,473	89,567	8.0	13,376,507	13.8	9,452,661	3,923,846
West North Central	121,824,200	32.6	121,562,077	32.7	102,365,306	19,196,771	262,123	23.3	23,743,744	24.4	11,632,586	12,111,158
South Atlantic	19,096,139	5.1	18,847,093	5.1	6,805,285	12,041,808	249,046	22.2	17,512,611	18.0	14,476,175	3,036,436
East South Central	11,808,449	3.2	11,523,833	3.1	9,085,234	2,438,599	284,616	25.3	7,333,076	7.5	2,306,418	5,026,658
West South Central	29,112,366	7.8	28,946,385	7.8	20,473,933	8,472,452	165,981	14.8	21,902,834	22.5	13,411,222	8,491,612
Mountain	7,866,066	2.1	7,839,941	2.1	3,248,713	4,591,228	26,125	2.3	6,541,844	6.7	4,668,876	1,872,968
Pacific	49,330,572	13.2	49,284,572	13.2	32,353,359	16,931,213	46,000	4.1	6,848,474	7.0	6,373,474	475,000
EAST NORTH CENTRAL:												
Ohio	30,707,863	8.2	30,680,145	8.2	30,636,857	43,288	27,718	2.5	397,396	0.4	91,475	305,921
Indiana	31,201,517	8.4	31,147,682	8.4	30,154,296	993,386	53,835	4.8	2,729,055	2.8	796,176	1,932,879
Illinois	43,595,069	11.7	43,595,069	11.7	31,424,167	12,170,902	.....	.....	9,199,841	9.5	7,798,175	1,401,666
Michigan	24,686,729	6.6	24,683,715	6.6	24,100,929	582,786	3,014	0.3	537,645	0.6	365,265	172,380
Wisconsin	4,168,055	1.1	4,163,055	1.1	3,208,944	954,111	5,000	0.4	512,570	0.5	401,570	111,000
WEST NORTH CENTRAL:												
Minnesota	42,089,304	11.3	42,017,447	11.3	36,764,850	5,252,597	71,857	6.4	5,095,002	5.2	2,166,391	2,928,611
Iowa	49,649,775	13.3	49,627,304	13.3	44,630,537	4,996,767	22,471	2.0	6,858,477	7.1	4,542,574	2,315,903
Missouri	20,889,328	5.6	20,723,128	5.6	13,294,035	7,429,093	166,200	14.8	10,178,401	10.5	4,026,607	6,151,794
North Dakota	2,208,049	0.6	2,208,049	0.6	1,863,788	344,261	.....	.....	77,723	0.1	53,400	24,323
South Dakota	1,461,063	0.4	1,461,063	0.4	942,757	518,306	.....	.....	271,666	0.3	271,666	.....
Nebraska	4,588,578	1.2	4,588,578	1.2	4,121,486	467,092	.....	.....	821,841	0.8	298,103	523,738
Kansas	938,103	0.3	936,508	0.3	747,853	188,655	1,595	0.1	440,634	0.5	273,845	166,789
SOUTH ATLANTIC:												
North Carolina	3,623,518	1.0	3,623,518	1.0	3,075,018	548,500	.....	.....	902,500	0.9	902,500	.....
South Carolina	583,083	0.2	582,183	0.2	198,370	383,813	900	0.1	445,845	0.5	354,331	91,514
Georgia	828,681	0.2	794,585	0.2	614,636	179,949	34,096	3.0	1,231,176	1.3	303,654	927,522
Florida	14,060,857	3.8	13,846,807	3.7	2,917,261	10,929,546	214,050	19.1	14,933,090	15.4	12,915,690	2,017,400
EAST SOUTH CENTRAL:												
Kentucky	1,620,027	0.4	1,521,725	0.4	1,278,701	243,024	98,302	8.7	1,825,513	1.9	299,271	1,526,242
Tennessee	2,995,515	0.8	2,925,944	0.8	2,283,589	642,355	69,571	6.2	1,447,230	1.5	522,047	925,183
Mississippi	7,192,907	1.9	7,076,164	1.9	5,522,944	1,553,220	116,743	10.4	4,060,333	4.2	1,485,100	2,575,233
WEST SOUTH CENTRAL:												
Arkansas	14,217,155	3.8	14,147,174	3.8	9,385,025	4,762,149	69,981	6.2	18,637,337	19.2	11,741,425	6,895,912
Louisiana	9,117,991	2.4	9,021,991	2.4	5,956,938	3,065,053	96,000	8.5	2,564,497	2.6	968,797	1,595,700
Oklahoma	76,415	(1)	76,415	(1)	76,165	250	.....	.....	1,000	(1)	1,000	.....
Texas	5,700,805	1.5	5,700,805	1.5	5,055,805	645,000	.....	.....	700,000	0.7	700,000	.....
MOUNTAIN:												
Montana	664,990	0.2	664,990	0.2	393,969	271,021	.....	.....	181,476	0.2	181,476	.....
Idaho	1,678,294	0.4	1,668,569	0.4	1,237,578	430,991	9,725	0.9	250,000	0.3	120,000	130,000
Wyoming	1,182,362	0.3	1,175,962	0.3	32,231	1,143,731	6,400	0.6	901,873	0.9	491,405	410,468
Colorado	1,081,875	0.3	1,081,875	0.3	508,663	573,212	.....	.....	203,195	0.2	203,195	.....
New Mexico	1,710,796	0.5	1,710,796	0.5	361,989	1,348,807	.....	.....	1,345,500	1.4	1,195,500	150,000
Arizona	414,925	0.1	414,425	0.1	101,425	313,000	500	(1)	1,147,000	1.2	612,000	535,000
Utah	1,014,973	0.3	1,005,473	0.3	495,007	510,466	9,500	0.8	2,512,800	2.6	1,865,300	647,500
Nevada	117,851	(1)	117,851	(1)	117,851	.....	.....	.....	.....	.....	.....	.....
PACIFIC:												
Washington	1,442,419	0.4	1,397,419	0.4	1,376,809	20,610	45,000	4.0	114,000	0.1	39,000	75,000
Oregon	200,000	0.1	200,000	0.1	200,000	.....	.....	.....	.....	.....	.....	.....
California	47,688,153	12.8	47,687,153	12.8	30,776,550	16,910,603	1,000	0.1	6,734,474	6.9	6,334,474	400,000

[1] Less than one-tenth of 1 per cent.

STATE TABLE IV.—LAND IN ALL DRAINAGE ENTERPRISES, CLASSIFIED BY CONDITION, BY GEOGRAPHIC DIVISIONS AND STATES: 1920.

DIVISION AND STATE	Land in all enterprises (acres).	Per cent of all land in state.	OPERATING ENTERPRISES.						NONOPERATING ENTERPRISES.					
			Total (acres).	Improved land (acres).	Timber and cut-over land (acres).	Other unimproved land (acres).	Swampy or subject to overflow (acres).	Suffering a loss of crops (acres).	Total (acres).	Improved land (acres).	Timber and cut-over land (acres).	Other unimproved land (acres).	Swampy or subject to overflow (acres).	Suffering a loss of crops (acres).
States included	69,419,859	3.6	65,495,038	44,288,235	11,283,532	9,923,271	7,224,213	3,011,407	3,924,821	1,376,495	1,294,018	1,254,308	2,299,562	239,192
GEOGRAPHIC DIVISIONS:														
East North Central	32,073,734	20.4	31,627,176	25,282,065	4,457,151	1,887,960	2,012,248	1,283,296	446,558	270,083	77,653	98,822	144,363	61,024
West North Central	19,936,111	6.1	19,217,367	11,630,279	2,530,012	5,057,076	2,007,511	901,857	718,744	406,744	89,443	222,557	441,137	28,656
South Atlantic	3,436,887	2.0	2,385,384	388,345	862,334	1,134,705	849,342	58,194	1,051,503	36,800	314,640	700,063	719,579	38,280
East South Central	2,796,830	2.4	2,323,595	1,349,791	914,404	59,400	434,602	78,809	473,235	198,494	223,185	51,556	239,554	19,359
West South Central	9,062,480	3.3	7,924,197	3,877,166	2,506,431	1,540,600	1,670,037	483,495	1,138,283	398,471	587,147	152,665	709,355	68,150
Mountain	888,809	0.2	810,076	635,868	87	174,121	194,437	154,551	78,733	56,729	1,950	20,054	31,258	23,723
Pacific	1,225,008	0.6	1,207,243	1,124,721	13,113	69,409	56,036	51,205	17,765	9,174	.....	8,591	14,316	.....
EAST NORTH CENTRAL:														
Ohio	8,147,546	31.2	8,107,204	6,707,328	956,894	442,982	247,273	141,481	40,342	24,375	4,363	11,604	19,776	7,603
Indiana	9,375,907	40.6	9,087,183	7,605,565	942,378	539,240	386,320	210,678	288,724	192,190	51,212	45,322	64,677	38,456
Illinois	3,982,033	11.1	3,909,049	3,532,316	184,573	192,160	228,337	229,065	72,984	44,993	3,714	24,277	29,294	13,507
Michigan	9,754,679	26.5	9,729,171	7,182,352	2,195,562	351,257	1,020,207	692,224	25,508	8,245	15,039	2,224	12,316	1,458
Wisconsin	813,569	2.3	794,569	254,504	177,744	362,321	130,111	9,848	19,000	280	3,325	15,395	18,300	.....
WEST NORTH CENTRAL:														
Minnesota	9,362,944	18.1	9,232,709	3,818,490	1,370,023	4,044,196	1,193,136	471,094	130,235	34,494	7,158	88,583	78,922	981
Iowa	5,383,012	15.1	5,224,478	4,493,407	74,652	656,419	320,893	157,542	158,534	84,722	4,350	69,462	68,197	5,058
Missouri	2,980,265	6.8	2,596,204	1,474,302	1,074,860	47,042	454,360	242,258	384,061	265,063	77,268	41,730	270,382	17,917
North Dakota	1,248,328	2.8	1,240,328	1,026,574	.....	213,754	12,332	4,819	8,000	5,334	.....	2,666	2,000	.....
South Dakota	222,062	0.5	222,062	178,540	.....	43,522	6,067	481	.....	.....	.....	.....	.....	.....
Nebraska	633,566	1.3	607,730	551,517	6,342	49,871	14,019	19,575	25,836	5,853	267	19,716	21,636	4,700
Kansas	105,934	0.2	93,856	87,449	4,135	2,272	6,704	6,088	12,078	11,278	400	400	.....	.....
SOUTH ATLANTIC:														
North Carolina	542,828	1.7	542,828	204,928	244,576	93,324	77,494	12,771	.....	.....	.....	.....	.....	.....
South Carolina	144,237	0.7	140,031	59,075	64,955	16,001	18,206	3,093	4,206	976	1,548	1,682	4,106	.....
Georgia	104,006	0.3	65,452	29,753	10,155	25,544	21,951	1,832	38,554	9,622	9,426	19,506	23,232	6,862
Florida	2,645,816	7.5	1,637,073	94,589	542,648	999,836	731,691	40,498	1,008,743	26,202	303,666	678,875	692,241	31,418
EAST SOUTH CENTRAL:														
Kentucky	471,874	1.8	358,480	245,334	92,495	20,651	69,413	36,723	113,394	67,526	28,539	17,329	55,339	875
Tennessee	445,955	1.7	363,671	163,218	189,945	10,508	104,063	29,879	82,284	23,116	57,150	2,018	76,004	17,536
Mississippi	1,879,001	6.3	1,601,444	941,239	631,964	28,241	261,126	12,207	277,557	107,852	137,496	32,209	108,211	948
WEST SOUTH CENTRAL:														
Arkansas	4,151,834	12.4	3,479,591	1,491,777	1,923,382	64,432	897,547	153,957	672,243	217,491	414,707	40,045	496,573	20,774
Louisiana	2,732,368	9.4	2,266,328	1,269,391	467,822	529,115	569,189	198,935	466,040	180,980	172,440	112,620	212,782	47,376
Oklahoma	12,150	(1)	12,150	8,845	3,305	.....	2,250	1,838	.....	.....	.....	.....	.....	.....
Texas	2,166,128	1.3	2,166,128	1,107,153	111,922	947,053	201,051	128,765	.....	.....	.....	.....	.....	.....
MOUNTAIN:														
Montana	168,682	0.2	168,682	141,252	.....	27,430	19,630	21,964	.....	.....	.....	.....	.....	.....
Idaho	78,732	0.1	64,642	52,098	87	12,457	11,402	164	14,090	7,514	1,950	4,626	3,326	3,101
Wyoming	107,041	0.2	95,474	84,846	.....	10,628	20,785	6,595	11,567	7,513	.....	4,054	6,554	1,000
Colorado	171,656	0.3	171,656	123,031	.....	48,625	26,446	15,282	.....	.....	.....	.....	.....	.....
New Mexico	147,219	0.2	140,219	92,477	.....	47,742	20,572	24,420	7,000	1,750	.....	5,250	.....	1,155
Arizona	64,985	0.1	39,640	36,880	.....	2,760	2,160	2,160	25,345	22,276	.....	3,069	1,069	1,069
Utah	134,554	0.3	113,823	97,314	.....	16,509	88,181	76,803	20,731	17,676	.....	3,055	20,309	17,398
Nevada	15,940	(1)	15,940	7,970	.....	7,970	5,261	7,163	.....	.....	.....	.....	.....	.....
PACIFIC:														
Washington	99,789	0.2	94,924	81,886	850	12,188	10,873	8,996	4,865	3,174	.....	1,691	1,416	.....
Oregon	4,000	(1)	4,000	4,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
California	1,121,219	1.1	1,108,319	1,038,835	12,263	57,221	45,163	42,209	12,900	6,000	.....	6,900	12,900	.....

[1] Less than one-tenth of 1 per cent.

STATE TABLE V.—OPERATING DRAINAGE ENTERPRISES,

		STATES INCLUDED.	GEOGRAPHIC DIVISIONS.						
			East North Central.	West North Central.	South Atlantic.	East South Central.	West South Central.	Mountain.	Pacific.
	LAND AREA.								
1	Approximate land area of the division or state.....acres..	1,717,932,160	157,160,960	326,914,560	123,405,440	82,067,200	275,037,440	549,765,760	203,580,800
2	All land in operating drainage enterprises.....acres..	65,495,038	31,627,176	19,217,367	2,385,384	2,323,595	7,924,197	810,076	1,207,243
3	Improved land.....acres..	44,288,235	25,282,065	11,630,279	388,345	1,349,791	3,877,166	635,868	1,124,721
4	Per cent of all improved land in farms.....	8.8	28.8	6.8	0.8	3.0	6.0	2.1	4.7
5	Timber and cut-over land.....acres..	11,283,532	4,457,151	2,530,012	862,334	914,404	2,506,431	87	13,113
6	Other unimproved land.....acres..	9,923,271	1,887,960	5,057,076	1,134,705	59,400	1,540,600	174,121	69,409
7	Swampy or subject to overflow, in enterprises.....acres..	7,224,213	2,012,248	2,007,511	849,342	434,602	1,670,037	194,437	56,036
8	Suffering a loss of crops from defective drainage.....acres..	3,011,407	1,283,296	901,857	58,194	78,809	483,495	154,551	51,205
9	Assessed acreage.....acres..	95,629,291	59,131,679	21,262,129	2,517,852	2,326,635	8,363,124	810,076	1,217,796
10	Excess over all land in operating enterprises.....acres..	30,134,253	27,504,503	2,044,762	132,468	3,040	438,927	.....	10,553
	DRAINAGE WORKS.								
	Open ditches:								
11	Completed.....miles..	107,468.2	64,924.3	23,912.7	3,701.6	3,256.9	7,672.8	827.7	3,172.2
12	Additional under construction.....miles..	4,301.8	408.9	745.6	1,229.4	436.0	1,234.0	36.1	211.8
13	Maximum completed in any enterprise.....miles..	324.0	144.5	216.0	166.0	121.0	305.0	108.0	324.0
14	Maximum width at bottom of ditch [1].....feet..	400	125	125	90	120	200	25	400
15	Maximum of average depths of outlet ditches [1].....feet..	42.0	42.0	30.0	22.0	20.0	30.0	16.0	20.0
16	Mean depth of branch ditches [1].....feet..	5.4	4.7	5.5	5.1	6.8	5.6	6.7	4.6
	Tile drains:								
17	Completed.....miles..	42,311.7	23,325.2	17,109.3	101.5	325.3	20.6	1,248.2	181.6
18	Additional under construction.....miles..	2,362.1	369.6	1,285.0	161.0	55.3	2.0	965.5	23.7
19	Maximum completed in any enterprise.....miles..	210.0	200.0	210.0	64.0	80.0	10.0	206.0	47.0
20	Maximum size of tile [1].....inches..	60	60	52	24	36	40	38	36
	Accessory levees and dikes:								
21	Completed.....miles..	3,519.8	866.4	698.6	111.7	49.2	625.3	37.5	1,131.1
22	Additional under construction.....miles..	810.2	112.8	85.8	136.5	47.0	306.7	.....	121.4
	Pumping plants:								
23	Engine capacity.....horsepower..	67,189	20,190	6,003	1,275	250	10,465	480	28,526
24	Pump capacity.....gallons per minute..	15,949,166	2,964,014	1,086,800	1,083,600	78,000	5,965,150	72,560	4,699,042
25	Area served by pumps.....acres..	1,544,010	315,879	207,124	107,440	44,000	230,809	34,312	604,446
26	Area drained by open ditches only [1].....acres..	43,658,485	20,579,653	13,191,826	1,724,706	1,952,386	5,805,234	210,616	194,064
27	Length of these ditches.....miles..	84,628.5	51,005.9	19,304.1	3,787.9	3,234.4	6,409.4	422.9	463.9
28	Average length per acre.....feet..	10.2	13.1	7.7	11.6	8.7	5.8	10.6	12.6
29	Area having open ditches and levees [1].....acres..	5,656,000	760,034	1,109,924	651,478	311,224	2,077,507	31,412	714,421
30	Length of these ditches.....miles..	8,615.8	954.0	1,582.2	1,028.1	313.9	2,399.8	28.1	2,309.7
31	Average length per acre.....feet..	8.0	6.6	7.5	8.3	5.3	6.1	4.7	17.1
32	Length of the accessory levees.....miles..	3,746.7	670.3	683.0	206.2	96.2	931.0	32.0	1,128.0
33	Area drained by tile only [1].....acres..	4,951,152	3,088,386	1,734,658	.....	8,917	3,100	105,525	10,566
34	Length of these tile.....miles..	23,193.4	12,522.0	10,087.3	.....	115.0	20.0	402.8	46.3
35	Average length per acre.....feet..	24.7	21.4	30.7	.....	68.1	34.1	20.2	23.1
36	Area having tile drains and levees [1].....acres..	23,109	10,109	13,000	.....	.....	.....	.....	.....
37	Length of these tile.....miles..	11.0	2.0	9.0	.....	.....	.....	.....	.....
38	Average length per acre.....feet..	2.5	1.0	3.7	.....	.....	.....	.....	.....
39	Length of the accessory levees.....miles..	26.5	16.0	10.5	.....	.....	.....	.....	.....
40	Area drained by open ditches and tile [1].....acres..	10,731,279	6,941,175	3,071,610	.....	51,068	28,856	459,323	179,247
41	Length of these drains.....miles..	37,678.9	22,977.3	11,624.8	.....	410.2	85.0	2,157.7	423.9
42	Average length per acre.....feet..	18.5	17.5	20.0	.....	42.4	15.6	24.8	12.5
43	Area having open ditches, tile drains, and levees [1].....acres..	475,013	247,819	96,349	9,200	.....	9,500	3,200	108,945
44	Length of these drains.....miles..	2,816.2	1,566.8	445.2	377.5	.....	15.2	66.0	345.5
45	Average length per acre.....feet..	31.3	33.4	24.4	216.7	.....	8.4	108.9	16.7
46	Length of the accessory levees.....miles..	556.8	292.9	90.9	42.0	.....	1.0	5.5	124.5
	DEVELOPMENT OF LAND.								
47	Improved land in operating enterprises, 1920.....acres..	44,288,235	25,282,065	11,630,279	388,345	1,349,791	3,877,166	635,868	1,124,721
48	Improved land prior to drainage.....acres..	24,586,236	13,510,812	6,850,589	173,633	774,771	2,394,636	477,899	403,896
49	Increase since drainage.....acres..	19,701,999	11,771,253	4,779,690	214,712	575,020	1,482,530	157,969	720,825
50	Per cent of increase.....	80.1	87.1	69.8	123.7	74.2	61.9	33.1	178.5
51	Per cent increase is of all improved land in farms, 1920.....	3.9	13.4	2.8	0.4	1.3	2.3	0.5	3.0
52	Timber and cut-over land, 1920.....acres..	11,283,532	4,457,151	2,530,012	862,334	914,404	2,506,431	87	13,113
53	Timber and cut-over land prior to drainage.....acres..	21,753,774	12,924,601	3,229,756	971,139	1,420,474	3,164,160	97	43,547
54	Decrease since drainage.....acres..	10,470,242	8,467,450	699,744	108,805	506,070	657,729	10	30,434
55	Per cent of decrease.....	48.1	65.5	21.7	11.2	35.6	20.8	10.3	69.9
56	Other unimproved land, 1920.....acres..	9,923,271	1,887,960	5,057,076	1,134,705	59,400	1,540,600	174,121	69,409
57	Other unimproved land prior to drainage.....acres..	19,155,028	5,191,763	9,137,022	1,240,612	128,350	2,365,401	332,080	759,800
58	Decrease since drainage.....acres..	9,231,757	3,303,803	4,079,946	105,907	68,950	824,801	157,959	690,391
59	Per cent of decrease.....	48.2	63.6	44.7	8.5	53.7	34.9	47.6	90.9
60	Swampy or subject to overflow, 1920.....acres..	7,224,213	2,012,248	2,007,511	849,342	434,602	1,670,037	194,437	56,036
61	Swampy or subject to overflow, prior to drainage.....acres..	31,696,513	13,702,611	9,388,660	1,784,869	1,179,603	4,351,751	427,502	861,517
62	Decrease since drainage.....acres..	24,472,300	11,690,363	7,381,149	935,527	745,001	2,681,714	233,065	805,481
63	Per cent of decrease.....	77.2	85.3	78.6	52.4	63.2	61.6	54.5	93.5
	CAPITAL INVESTED AND COST PER ACRE.								
64	Total capital invested in and required to complete enterprises...dollars..	434,594,979	143,722,327	133,194,663	33,323,268	13,830,251	42,357,607	12,508,817	55,658,046
65	Capital invested in these enterprises to Dec. 31, 1919.....dollars..	372,273,567	134,269,666	121,562,077	18,847,093	11,523,833	28,946,385	7,839,941	49,284,572
66	Additional capital required to complete these enterprises...dollars..	62,321,412	9,452,661	11,632,586	14,476,175	2,306,418	13,411,222	4,668,876	6,373,474
67	Average cost per acre when completed.....dollars..	6.64	4.54	6.93	13.97	5.95	5.35	15.44	46.10
68	Enterprises constructing open ditches only.....dollars..	177,741,999	64,064,791	52,342,663	21,024,626	11,475,140	21,492,022	3,351,347	3,991,410
69	Average cost per acre when completed.....dollars..	4.07	3.11	3.97	12.19	5.88	3.70	15.91	20.57
70	Enterprises constructing open ditches and levees.....dollars..	109,378,568	20,889,257	11,352,636	11,888,642	1,634,345	20,531,585	1,005,000	42,077,103
71	Average cost per acre when completed.....dollars..	19.34	27.48	10.23	18.25	5.25	9.88	31.99	58.90
72	Enterprises constructing tile drains only.....dollars..	49,054,155	17,801,089	28,841,695	.....	80,479	41,000	1,837,577	452,315
73	Average cost per acre when completed.....dollars..	9.91	5.76	16.63	.....	9.03	13.23	17.41	42.81
74	Enterprises constructing tile drains and levees.....dollars..	264,000	160,000	104,000	.....	.....	.....	.....	.....
75	Average cost per acre when completed.....dollars..	11.42	15.83	8.00	.....	.....	.....	.....	.....
76	Enterprises constructing open ditches and tile drains.....dollars..	83,345,384	34,190,397	38,456,628	.....	640,287	253,000	6,174,893	3,630,179
77	Average cost per acre when completed.....dollars..	7.77	4.93	12.52	.....	12.54	8.77	13.44	20.25
78	Enterprises constructing open ditches, tile drains, and levees....dollars..	14,810,873	6,616,793	2,097,041	410,000	.....	40,000	140,000	5,507,039
79	Average cost per acre when completed.....dollars..	31.18	26.70	21.77	44.57	.....	4.21	43.75	50.55
	CROPS.								
	Improved land in enterprises reporting—								
80	Corn as principal crop on drained land.....acres..	27,089,387	18,280,046	6,951,913	215,984	486,124	1,057,601	1,130	96,589
81	Wheat as principal crop on drained land.....acres..	6,936,078	3,398,947	3,118,868	.....	.....	750	138,006	279,507
82	Cotton as principal crop on drained land.....acres..	2,763,213	.....	250,681	70,986	857,587	1,505,519	36,240	42,200
83	Hay as principal crop on drained land.....acres..	1,941,236	802,990	1,067,258	.....	1,080	4,315	17,008	48,585
84	Sugar beets as principal crop on drained land.....acres..	1,207,244	1,140,880	16,284	.....	.....	.....	35,255	14,825
85	Peas and beans (dried) as principal crop on drained land.....acres..	643,339	616,142	.....	.....	.....	.....	.....	27,197
86	Alfalfa as principal crop on drained land.....acres..	558,866	.....	3,230	.....	.....	28,500	373,459	153,677
87	Vegetables as principal crop on drained land.....acres..	570,218	297,810	7,339	32,737	.....	152,044	.....	80,288
88	Rice as principal crop on drained land.....acres..	523,167	.....	.....	.....	.....	446,130	.....	77,037
89	Sugar cane as principal crop on drained land.....acres..	483,896	.....	.....	17,623	.....	466,273	.....	.....
90	Potatoes as principal crop on drained land.....acres..	272,175	148,871	5,939	19,904	.....	.....	.....	97,461
91	Oats as principal crop on drained land.....acres..	274,242	102,926	166,739	.....	.....	.....	2,755	1,822
92	Barley as principal crop on drained land.....acres..	161,752	.....	1,778	.....	.....	.....	.....	159,974
93	Fruit as principal crop on drained land.....acres..	38,173	.....	.....	.....	.....	.....	.....	38,173
94	Citrus fruit as principal crop on drained land.....acres..	10,820	.....	.....	10,820	.....	.....	.....	.....
95	Other crops as principal ones on drained land.....acres..	617,587	379,142	2,184	17,491	.....	216,034	640	2,096
96	Not reporting principal crop on drained land.....acres..	196,842	114,311	38,066	2,800	5,000	.....	31,375	5,290

[1] When works under construction have been completed.

BY GEOGRAPHIC DIVISIONS AND STATES: 1920.

EAST NORTH CENTRAL.					WEST NORTH CENTRAL.							
Ohio.	Indiana.	Illinois.	Michigan.	Wisconsin.	Minnesota.	Iowa.	Missouri.	North Dakota.	South Dakota.	Nebraska.	Kansas.	
26,073,600	23,068,800	35,867,520	36,787,200	35,363,840	51,749,120	35,575,040	43,985,280	44,917,120	49,195,520	49,157,120	52,335,360	1
8,107,204	9,087,183	3,909,049	9,729,171	794,569	9,232,709	5,224,478	2,596,204	1,240,328	222,062	607,730	93,856	2
6,707,328	7,605,565	3,532,316	7,182,352	254,504	3,818,490	4,493,407	1,474,302	1,026,574	178,540	551,517	87,449	3
36.2	45.6	12.9	55.6	2.0	17.8	15.7	5.9	4.2	1.0	2.4	0.3	4
956,894	942,378	184,573	2,195,562	177,744	1,370,023	74,652	1,074,860	.....	.....	6,342	4,135	5
442,982	539,240	192,160	351,257	362,321	4,044,196	656,419	47,042	213,754	43,522	49,871	2,272	6
247,273	386,320	228,337	1,020,207	130,111	1,193,136	320,893	454,360	12,332	6,067	14,019	6,704	7
141,481	210,678	229,065	692,224	9,848	471,094	157,542	242,258	4,819	481	19,575	6,088	8
23,464,812	15,015,221	4,090,599	15,766,478	794,569	9,974,662	5,905,743	3,104,889	1,240,328	234,201	708,450	93,856	9
15,357,608	5,928,038	181,550	6,037,307	.....	741,953	681,265	508,685	.....	12,139	100,720	.....	10
24,984.0	17,470.7	4,754.5	16,023.8	1,691.3	14,657.0	3,998.0	3,438.7	708.3	237.8	734.5	138.4	11
13.4	123.4	65.7	118.4	88.0	166.1	81.1	460.4	4.0	8.1	18.7	7.2	12
44.1	100.0	80.0	75.0	144.5	216.0	82.3	179.3	45.1	28.6	80.0	14.4	13
125	125	100	70	60	72	90	125	80	100	100	54	14
18.0	27.5	42.0	13.0	13.0	24.0	25.0	22.0	14.0	10.5	18.0	30.0	15
3.9	5.1	4.8	4.3	6.5	4.9	6.5	7.0	3.7	4.8	6.1	4.3	16
9,205.3	8,227.6	3,507.1	2,173.9	211.3	5,924.6	10,384.9	38.8	9.3	179.3	359.4	213.0	17
8.3	185.7	127.1	8.4	40.1	462.7	768.6	5.9	.....	33.6	14.2	.....	18
50.0	100.0	200.0	10.5	43.0	153.0	127.0	15.0	4.5	25.9	100.0	210.0	19
60	48	48	48	30	48	52	30	22	36	48	30	20
9.6	165.8	650.2	33.1	7.7	0.1	45.2	456.9	2.1	2.4	26.8	165.1	21
4.0	9.2	97.1	.....	2.5	0.3	.....	74.9	.....	.....	2.8	7.8	22
125	625	18,225	1,065	150	.....	3,153	2,785	.....	.....	.....	65	23
3,600	55,348	2,843,066	62,000	.....	.....	530,800	552,000	.....	.....	.....	4,000	24
1,755	5,611	291,816	10,100	6,597	.....	134,616	70,308	.....	.....	.....	2,200	25
4,738,114	5,133,620	1,508,695	8,541,556	657,668	8,440,167	1,294,243	1,612,085	1,217,028	145,834	445,431	37,038	26
19,924.4	12,487.2	2,406.7	14,725.0	1,462.6	13,432.0	1,934.7	2,480.3	706.0	168.9	528.9	53.3	27
22.2	12.8	8.4	9.1	11.7	8.4	7.9	8.1	3.1	6.1	6.3	7.6	28
7,078	270,784	452,588	2,000	27,584	.....	26,228	883,432	9,600	4,120	138,551	47,993	29
11.1	210.5	559.7	93.6	79.1	.....	45.4	1,278.3	4.0	8.3	177.9	68.3	30
8.3	4.1	6.5	247.1	15.1	.....	9.1	7.6	2.2	10.6	6.8	7.5	31
6.8	153.6	469.1	33.1	7.7	.....	29.1	481.7	2.1	1.8	29.6	138.7	32
1,139,856	1,234,320	392,738	318,514	2,958	271,118	1,415,176	760	10,820	30,764	6,020	.....	33
5,274.7	4,639.5	1,206.9	1,303.7	97.2	2,816.1	6,785.7	4.0	9.0	116.0	356.5	.....	34
24.4	19.8	16.2	21.6	173.5	54.8	25.3	27.8	4.4	19.9	312.7	.....	35
.....	.....	10,109	.....	.....	.....	6,000	7,000	.....	.....	.....	.....	36
.....	.....	2.0	.....	.....	.....	6.0	3.0	.....	.....	.....	.....	37
.....	.....	1.0	.....	.....	.....	5.3	2.3	.....	.....	.....	.....	38
.....	.....	16.0	.....	.....	.....	8.0	2.5	.....	.....	.....	.....	39
2,219,770	2,423,949	1,327,996	867,101	102,359	516,782	2,444,906	46,240	2,880	40,664	17,728	2,410	40
8,933.4	8,481.7	3,012.4	2,202.2	347.6	4,907.3	6,392.2	88.9	2.6	164.5	63.5	5.8	41
21.2	18.5	12.0	13.4	17.9	50.1	13.8	10.2	4.8	21.4	18.9	12.7	42
2,386	24,510	216,923	.....	4,000	4,642	37,925	46,687	.....	680	.....	6,415	43
67.4	188.5	1,266.7	.....	44.2	55.0	68.6	89.3	.....	1.1	.....	231.2	44
149.2	40.6	30.8	.....	58.3	62.6	9.6	10.1	.....	8.5	.....	190.3	45
6.8	21.4	262.2	.....	2.5	0.4	8.1	47.6	.....	0.6	.....	34.2	46
6,707,328	7,605,565	3,532,316	7,182,352	254,504	3,818,490	4,493,407	1,474,302	1,026,574	178,540	551,517	87,449	47
3,955,220	5,396,387	2,062,521	2,046,613	50,071	1,722,875	3,210,496	760,796	691,005	98,724	292,621	74,072	48
2,752,108	2,209,178	1,469,795	5,135,739	204,433	2,095,615	1,282,911	713,506	335,569	79,816	258,896	13,377	49
69.6	40.9	71.3	250.9	408.3	121.6	40.0	93.8	48.6	80.8	88.5	18.1	50
14.8	13.2	5.4	39.7	1.6	9.8	4.5	2.9	1.4	0.4	1.1	(2)	51
956,894	942,378	184,573	2,195,562	177,744	1,370,023	74,652	1,074,860	.....	.....	6,342	4,135	52
3,079,180	2,324,978	479,498	6,809,213	231,732	1,473,820	93,994	1,646,297	.....	.....	8,797	6,848	53
2,122,286	1,382,600	294,925	4,613,651	53,988	103,797	19,342	571,437	.....	.....	2,455	2,713	54
68.9	59.5	61.5	67.8	23.3	7.0	20.6	34.7	.....	.....	27.9	39.6	55
442,982	539,240	192,160	351,257	362,321	4,044,196	656,419	47,042	213,754	43,522	49,871	2,272	56
1,072,804	1,365,818	1,367,030	873,345	512,766	6,036,014	1,919,988	189,111	549,323	123,338	306,312	12,936	57
629,822	826,578	1,174,870	522,088	150,445	1,991,818	1,263,569	142,069	335,569	79,816	256,441	10,664	58
58.7	60.5	85.9	59.8	29.3	33.0	65.8	75.1	61.1	64.7	83.7	82.4	59
247,273	386,320	228,337	1,020,207	130,111	1,193,136	320,893	454,360	12,332	6,067	14,019	6,704	60
3,126,885	3,247,265	1,864,138	4,763,016	701,307	4,634,641	1,567,960	2,013,704	619,159	141,491	395,253	16,452	61
2,879,612	2,860,945	1,635,801	3,742,809	571,196	3,441,505	1,247,067	1,559,344	606,827	135,424	381,234	9,748	62
92.1	88.1	87.8	78.6	81.4	74.3	79.5	77.4	98.0	95.7	96.5	59.3	63
30,771,620	31,943,858	51,393,244	25,048,980	4,564,625	44,183,838	54,169,878	24,749,735	2,261,449	1,732,729	4,886,681	1,210,353	64
30,680,145	31,147,682	43,595,069	24,683,715	4,163,055	42,017,447	49,627,304	20,723,128	2,208,049	1,461,063	4,588,578	936,508	65
91,475	796,176	7,798,175	365,265	401,570	2,166,391	4,542,574	4,026,607	53,400	271,666	298,103	273,845	66
3.80	3.52	13.15	2.57	5.74	4.79	10.37	9.53	1.82	7.80	8.04	12.90	67
15,360,631	14,565,990	11,874,658	19,041,495	3,222,017	23,238,989	8,856,170	13,442,666	2,200,158	891,770	3,034,949	677,961	68
3.24	2.84	7.87	2.23	4.90	2.75	6.84	8.34	1.81	6.11	6.81	18.30	69
50,080	920,976	19,459,251	176,284	282,666	.....	673,770	9,215,065	12,368	9,447	1,010,524	431,462	70
7.08	3.40	43.00	88.14	10.25	.....	25.69	10.43	1.29	2.29	7.29	8.99	71
5,997,698	6,275,168	3,181,397	2,287,056	59,770	7,391,548	20,886,476	17,500	42,908	360,263	143,000	.....	72
5.26	5.08	8.10	7.18	20.21	27.26	14.76	23.03	3.97	11.71	23.75	.....	73
.....	.....	160,000	.....	.....	.....	90,000	14,000	.....	.....	.....	.....	74
.....	.....	15.83	.....	.....	.....	15.00	2.00	.....	.....	.....	.....	75
9,285,211	9,811,999	10,641,870	3,544,145	907,172	13,360,171	23,424,200	485,230	6,015	468,539	698,208	14,265	76
4.18	4.05	8.01	4.09	8.86	25.85	9.58	10.49	2.09	11.52	39.38	5.92	77
78,000	369,725	6,076,068	.....	93,000	193,130	239,262	1,575,274	.....	2,710	.....	86,665	78
32.69	15.08	28.01	.....	23.25	41.60	6.31	33.74	.....	3.99	.....	13.51	79
6,309,143	6,943,654	3,404,489	1,525,685	97,075	927,801	4,365,787	980,387	.....	148,804	495,683	33,451	80
248,186	392,459	88,520	2,669,222	560	1,774,205	.....	243,234	1,000,389	27,926	21,295	51,819	81
.....	.....	.....	.....	.....	.....	.....	250,681	.....	.....	.....	.....	82
126,815	121,608	.....	456,601	97,966	940,935	90,381	.....	26,185	32	9,725	.....	83
.....	.....	.....	1,140,880	.....	.....	.....	.....	.....	.....	16,284	.....	84
.....	.....	.....	616,142	.....	.....	.....	.....	.....	.....	.....	.....	85
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,230	.....	86
14,883	2,296	5,380	272,843	2,408	.....	360	.....	.....	.....	4,800	2,179	87
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	88
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89
.....	.....	28,723	119,909	239	5,939	.....	.....	.....	.....	.....	.....	90
4,741	64,647	.....	10,032	[3] 23,506	166,239	.....	.....	.....	.....	500	.....	91
.....	.....	.....	.....	.....	.....	.....	.....	.....	1,778	.....	.....	92
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	94
201	.....	.....	359,351	19,590	2,184	.....	.....	.....	.....	.....	.....	95
3,359	80,901	5,204	11,687	13,160	1,187	36,879	.....	.....	.....	.....	.....	96

[2] Less than one-tenth of 1 per cent.

[3] Includes 17,980 acres reported as grain.

STATE TABLE V.—OPERATING DRAINAGE ENTERPRISES,

		SOUTH ATLANTIC.				EAST SOUTH CENTRAL.			WEST SOUTH CENTRAL.	
		North Carolina.	South Carolina.	Georgia.	Florida.	Kentucky.	Tennessee.	Mississippi.	Arkansas.	Louisiana.
	LAND AREA.									
1	Approximate land area of the state.....acres..	31,193,600	19,516,800	37,584,000	35,111,040	25,715,840	26,679,680	29,671,680	33,616,000	29,061,760
2	All land in operating drainage enterprises.....acres..	542,828	140,031	65,452	1,637,073	358,480	363,671	1,601,444	3,479,591	2,266,328
3	Improved land.....acres..	204,928	59,075	29,753	94,589	245,334	163,218	941,239	1,491,777	1,269,391
4	Per cent of all improved land in farms.....	2.5	1.0	0.2	4.1	1.8	1.5	10.1	16.2	22.6
5	Timber and cut-over land.....acres..	244,576	64,955	10,155	542,643	92,495	139,945	631,964	1,923,382	467,822
6	Other unimproved land.....acres..	93,324	16,001	25,544	999,836	20,651	10,508	28,241	64,432	529,115
7	Swampy or subject to overflow, in enterprises.....acres..	77,494	18,206	21,951	731,691	69,413	104,063	261,126	897,547	569,189
8	Suffering a loss of crops from defective drainage.....acres..	12,771	3,093	1,832	40,498	36,723	29,879	12,207	153,957	198,935
9	Assessed acreage.....	552,428	140,031	65,452	1,759,941	358,480	363,671	1,604,484	3,842,812	2,342,034
10	Excess over all land in operating enterprises.....acres..	9,600			122,868			3,040	363,221	75,706
	DRAINAGE WORKS.									
	Open ditches:									
11	Completed.....miles..	1,171.3	262.7	276.8	1,990.8	664.5	777.3	1,815.1	3,154.1	1,771.6
12	Additional under construction.....miles..	367.8	87.7	79.9	694.0	77.0	135.4	223.6	974.1	162.7
13	Maximum completed in any enterprise.....miles..	110.0	100.0	21.5	166.0	21.3	55.0	121.0	305.0	100.0
14	Maximum width at bottom of ditch [2].....feet..	70	28	46	90	34	80	120	100	100
15	Maximum of average depths of outlet ditches [2].....feet..	14.0	10.0	10.0	22.0	20.0	16.0	20.0	18.0	30.0
16	Mean depth of branch ditches [2].....feet..	6.7	5.2	5.1	4.3	5.1	6.8	6.8	6.9	5.1
	Tile drains:									
17	Completed.....miles..		101.5			86.2	0.3	238.8	20.4	0.2
18	Additional under construction.....miles..		161.0			1.0	0.1	54.2	2.0	
19	Maximum completed in any enterprise.....miles..		64.0			32.0	0.3	80.0	10.0	0.2
20	Maximum size of tile [3].....inches..		24			24	10	36	20	40
	Accessory levees and dikes:									
21	Completed.....miles..	33.5	12.0		66.2	0.2	42.3	6.7	119.8	440.7
22	Additional under construction.....miles..		30.0		106.5		10.2	36.8	240.8	65.9
	Pumping plants:									
23	Engine capacity.....horsepower..	1,000	155		120			250	2,800	7,665
24	Pump capacity.....gallons per minute..	1,000,000	44,600		39,000			78,000	720,000	5,245,150
25	Area served by pumps.....acres..	100,000	2,940		4,500			44,000	90,000	140,809
26	Area drained by open ditches only [2].....acres..	435,295	130,831	65,452	1,093,128	345,605	332,317	1,274,464	2,267,281	1,913,870
27	Length of these ditches.....miles..	1,404.6	235.4	356.7	1,791.2	687.1	862.2	1,685.1	2,464.3	1,366.4
28	Average length per acre.....feet..	17.0	9.5	28.8	8.7	10.5	13.7	7.0	5.7	3.8
29	Area having open ditches and levees [2].....acres..	107,533			543,945	1,140	30,854	279,230	1,171,354	351,958
30	Length of these ditches.....miles..	134.5			893.6	4.3	50.5	259.1	1,566.8	567.4
31	Average length per acre.....feet..	6.6			8.7	19.9	8.6	4.9	7.1	8.5
32	Length of the accessory levees.....miles..	33.5			172.7	0.2	52.5	43.5	359.6	506.6
33	Area drained by tile only [2].....acres..					117	500	8,300	3,100	
34	Length of these tile.....miles..					2.6	0.4	112.0	20.0	
35	Average length per acre.....feet..					117.3	4.2	71.2	34.1	
36	Area having tile drains and levees [2].....acres..									
37	Length of these tile.....miles..									
38	Average length per acre.....feet..									
39	Length of the accessory levees.....miles..									
40	Area drained by open ditches and tile [2].....acres..					11,618		39,450	28,356	500
41	Length of these drains.....miles..					134.7		275.5	84.3	0.7
42	Average length per acre.....feet..					61.2		36.9	15.7	7.4
43	Area having open ditches, tile drains, and levees [2].....acres..		9,200						9,500	
44	Length of these drains.....miles..		377.5						15.2	
45	Average length per acre.....feet..		216.7						8.4	
46	Length of the accessory levees.....miles..		42.0						1.0	
	DEVELOPMENT OF LAND.									
47	Improved land in operating enterprises, 1920.....acres..	204,928	59,075	29,753	94,589	245,334	163,218	941,239	1,491,777	1,269,391
48	Improved land prior to drainage.....acres..	84,714	51,349	7,229	30,341	181,915	86,028	506,828	887,864	936,902
49	Increase since drainage.....acres..	120,214	7,726	22,524	64,248	63,419	77,190	434,411	603,913	332,489
50	Per cent of increase.....	141.9	15.0	311.6	211.8	34.9	89.7	85.7	68.0	35.5
51	Per cent increase is of all improved land in farms, 1920.....	1.5	0.1	0.2	2.8	0.5	0.7	4.7	6.6	5.9
52	Timber and cut-over land, 1920.....acres..	244,576	64,955	10,155	542,648	92,495	139,945	631,964	1,923,382	467,822
53	Timber and cut-over land prior to drainage.....acres..	311,626	68,691	25,081	565,741	146,096	262,163	1,012,215	2,460,170	580,418
54	Decrease since drainage.....acres..	67,050	3,736	14,926	23,093	53,601	72,218	380,251	536,788	112,596
55	Per cent of decrease.....	21.5	5.4	59.5	4.1	36.7	27.5	37.6	21.8	19.4
56	Other unimproved land, 1920.....acres..	93,324	16,001	25,544	999,836	20,651	10,508	28,241	64,432	529,115
57	Other unimproved land prior to drainage.....acres..	146,488	19,991	33,142	1,040,991	30,469	15,480	82,401	131,557	749,008
58	Decrease since drainage.....acres..	53,164	3,990	7,598	41,155	9,818	4,972	54,160	67,125	219,893
59	Per cent of decrease.....	36.3	20.0	22.9	4.0	32.2	32.1	65.7	51.0	29.4
60	Swampy or subject to overflow, 1920.....acres..	77,494	18,206	21,951	731,691	69,413	104,063	261,126	897,547	569,189
61	Swampy or subject to overflow, prior to drainage.....acres..	311,110	91,354	54,092	1,328,313	199,161	353,027	627,415	2,065,264	1,278,995
62	Decrease since drainage.....acres..	233,616	73,148	32,141	596,622	129,748	248,964	366,289	1,167,717	709,806
63	Per cent of decrease.....	75.1	80.1	59.4	44.9	65.1	70.5	58.4	56.5	55.5
	CAPITAL INVESTED AND COST PER ACRE.									
64	Total capital invested in and required to complete enterprises..dollars..	4,526,018	936,514	1,098,239	26,762,497	1,820,996	3,447,991	8,561,264	25,888,599	9,990,788
65	Capital invested in these enterprises to Dec. 31, 1919.....dollars..	3,623,518	582,183	794,585	13,846,807	1,521,725	2,925,944	7,076,164	14,147,174	9,021,991
66	Additional capital required to complete these enterprises..dollars..	902,500	354,331	303,654	12,915,690	299,271	522,047	1,485,100	11,741,425	968,797
67	Average cost per acre when completed.....dollars..	8.34	6.69	16.78	16.35	5.08	9.48	5.35	7.44	4.41
68	Enterprises constructing open ditches only.....dollars..	3,729,644	526,514	1,098,239	15,670,229	1,702,397	2,951,791	6,820,952	11,001,651	4,868,251
69	Average cost per acre when completed.....dollars..	8.57	4.02	16.78	14.34	4.93	8.88	5.35	4.85	2.54
70	Enterprises constructing open ditches and levees.....dollars..	796,374			11,092,268	8,333	488,700	1,137,312	14,555,948	5,119,537
71	Average cost per acre when completed.....dollars..	7.41			20.39	7.31	15.84	4.07	12.43	14.55
72	Enterprises constructing tile drains only.....dollars..					1,979	7,500	71,000	41,000	
73	Average cost per acre when completed.....dollars..					16.91	15.00	8.55	13.23	
74	Enterprises constructing tile drains and levees.....dollars..									
75	Average cost per acre when completed.....dollars..									
76	Enterprises constructing open ditches and tile drains.....dollars..					108,287		532,000	250,000	3,000
77	Average cost per acre when completed.....dollars..					9.32		13.49	8.82	6.00
78	Enterprises constructing open ditches, tile drains, and levees..dollars..		410,000						40,000	
79	Average cost per acre when completed.....dollars..		44.57						4.21	
	CROPS.									
	Improved land in enterprises reporting—									
80	Corn as principal crop on drained land.....acres..	183,658	3,035	29,291		239,254	110,022	136,843	461,230	103,608
81	Wheat as principal crop on drained land.....acres..									
82	Cotton as principal crop on drained land.....acres..	19,678	51,308				53,196	804,391	909,973	241,430
83	Hay as principal crop on drained land.....acres..					1,080			2,320	
84	Sugar beets as principal crop on drained land.....acres..									
85	Peas and beans (dried) as principal crop on drained land..acres..									
86	Alfalfa as principal crop on drained land.....acres..									
87	Vegetables as principal crop on drained land.....acres..		1,232		31,505					6,341
88	Rice as principal crop on drained land.....acres..									446,130
89	Sugar cane as principal crop on drained land.....acres..				17,623					466,273
90	Potatoes as principal crop on drained land.....acres..		1,120		18,784					
91	Oats as principal crop on drained land.....acres..									
92	Barley as principal crop on drained land.....acres..									
93	Fruit as principal crop on drained land.....acres..									
94	Citrus fruit as principal crop on drained land.....acres..				10,820					
95	Other crops as principal ones on drained land.....acres..	1,350	2,380		13,761				118,254	5,609
96	Not reporting principal crop on drained land.....acres..	242		462	2,096	5,000				

[1] Less than one-tenth of 1 per cent. [2] When works under construction have been completed. [3] Includes 1,000 acres reported as grain.

BY GEOGRAPHIC DIVISIONS AND STATES: 1920—Continued.

WEST SOUTH CENTRAL—continued.		MOUNTAIN.								PACIFIC.			
Oklahoma.	Texas.	Montana.	Idaho.	Wyoming.	Colorado.	New Mexico.	Arizona.	Utah.	Nevada.	Washington.	Oregon.	California.	
44,424,960	167,934,720	93,523,840	53,346,560	62,430,720	66,341,120	78,401,920	72,838,400	52,597,760	70,285,440	42,775,040	61,188,480	99,617,280	1
12,150	2,166,128	168,682	64,642	95,474	171,656	140,219	39,640	113,823	15,940	94,924	4,000	1,108,319	2
8,845	1,107,153	141,252	52,098	84,846	123,031	92,477	36,880	97,314	7,970	81,886	4,000	1,038,835	3
(1)	3.5	1.3	1.2	4.0	1.6	5.4	5.2	5.7	1.3	1.1	0.1	8.7	4
3,305	111,922	.....	87	.....	.....	.....	.....	.....	.....	850	.....	12,263	5
.....	947,053	27,430	12,457	10,628	48,625	47,742	2,760	16,509	7,970	12,188	.....	57,221	6
2,250	201,051	19,630	11,402	20,785	26,446	20,572	2,160	88,181	5,261	10,873	.....	45,163	7
1,838	128,765	21,964	164	6,595	15,282	24,420	2,160	76,803	7,163	8,996	.....	42,209	8
12,150	2,166,128	168,682	64,642	95,474	171,656	140,219	39,640	113,823	15,940	105,477	4,000	1,108,319	9
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10,553	.....	.....	10
18.6	2,728.5	102.1	274.5	25.1	132.5	124.0	32.6	120.3	16.6	162.4	.....	3,009.8	11
1.6	95.6	1.3	14.7	1.3	14.3	.....	.....	4.5	.....	7.4	.....	204.4	12
8.5	140.0	20.0	108.0	17.6	26.5	100.0	24.1	58.8	16.6	18.0	.....	324.0	13
100	200	25	14	6	12	12	24	24	.....	40	.....	400	14
30.0	10.0	12.0	15.0	12.0	16.0	10.0	8.0	15.0	.....	10.0	.....	20.0	15
.....	3.8	6.3	5.7	7.9	7.0	.....	8.0	5.7	.....	5.4	.....	4.5	16
.....	.....	50.7	1.8	114.2	195.2	282.2	1.0	599.1	4.0	83.0	13.0	85.6	17
.....	.....	36.2	1.8	71.8	13.0	65.1	.....	777.6	.....	0.7	.....	23.0	18
.....	.....	48.8	1.0	47.1	59.0	120.1	1.0	206.0	4.0	14.1	13.0	47.0	19
.....	.....	24	36	24	38	30	12	24	18	32	30	36	20
5.0	59.8	.....	9.5	.....	.....	.....	26.0	2.0	.....	.....	.....	1,131.1	21
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.0	.....	120.4	22
.....	.....	.....	285	.....	.....	.....	175	20	.....	.....	.....	28,526	23
.....	.....	.....	36,200	.....	.....	.....	33,660	2,700	.....	.....	.....	4,699,042	24
.....	.....	.....	7,912	.....	.....	.....	25,000	1,400	.....	.....	.....	604,446	25
6,150	1,617,933	42,082	39,980	3,404	41,100	74,000	9,000	1,050	.....	63,405	.....	130,659	26
11.7	2,567.0	79.4	184.5	5.5	38.0	100.0	8.5	7.0	.....	100.9	.....	363.0	27
10.0	8.4	10.0	24.4	8.5	4.9	7.1	5.0	35.2	.....	8.4	.....	14.7	28
6,000	548,195	.....	1,412	.....	.....	.....	30,000	.....	.....	1,000	.....	713,421	29
8.5	257.1	.....	4.0	.....	.....	.....	24.1	.....	.....	8.0	.....	2,301.7	30
7.5	2.5	.....	15.0	.....	.....	.....	4.2	.....	.....	42.2	.....	17.0	31
5.0	59.8	.....	6.0	.....	.....	.....	26.0	.....	.....	1.0	.....	1,127.0	32
.....	.....	1,000	.....	54,650	10,776	34,138	640	4,321	.....	5,372	4,000	1,194	33
.....	.....	0.8	.....	93.1	70.0	199.7	1.0	38.2	.....	28.2	13.0	5.1	34
.....	.....	4.2	.....	9.0	34.3	30.9	8.3	46.7	.....	27.7	17.2	22.6	35
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	36
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	37
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39
.....	.....	125,600	22,750	37,420	119,780	32,081	.....	105,752	15,940	25,147	.....	154,100	40
.....	.....	110.1	101.3	113.8	247.0	171.6	.....	1,393.3	20.6	116.4	.....	307.5	41
.....	.....	4.6	23.5	16.1	10.9	28.2	.....	69.6	6.8	24.4	.....	10.5	42
.....	.....	.....	500	.....	.....	.....	.....	2,700	.....	.....	.....	108,945	43
.....	.....	.....	3.0	.....	.....	.....	.....	63.0	.....	.....	.....	345.5	44
.....	.....	.....	31.7	.....	.....	.....	.....	123.2	.....	.....	.....	16.7	45
.....	.....	.....	3.5	.....	.....	.....	.....	2.0	.....	.....	.....	124.5	46
8,845	1,107,153	141,252	52,098	84,846	123,031	92,477	36,880	97,314	7,970	81,886	4,000	1,038,835	47
3,595	566,275	107,645	24,650	83,206	68,657	77,265	19,112	89,394	7,970	49,748	4,000	350,148	48
5,250	540,878	33,607	27,448	1,640	54,374	15,212	17,768	7,920	.....	32,138	.....	688,687	49
146.0	95.5	31.2	111.4	2.0	79.2	19.7	93.0	8.9	.....	64.6	.....	196.7	50
(1)	1.7	0.3	0.6	0.1	0.7	0.9	2.5	0.5	.....	0.5	.....	5.8	51
3,305	111,922	.....	87	.....	.....	.....	.....	.....	.....	850	.....	12,263	52
6,930	116,642	.....	97	.....	.....	.....	.....	.....	.....	1,500	.....	42,047	53
3,625	4,720	.....	10	.....	.....	.....	.....	.....	.....	650	.....	29,784	54
52.3	4.0	.....	10.3	.....	.....	.....	.....	.....	.....	43.3	.....	70.8	55
100.0	947,053	27,430	12,457	10,628	48,625	47,742	2,760	16,509	7,970	12,188	.....	57,221	56
1,625	1,483,211	61,037	39,895	12,268	102,999	62,954	20,528	24,429	7,970	43,676	.....	716,124	57
1,625	536,158	33,607	27,438	1,640	54,374	15,212	17,768	7,920	.....	31,488	.....	658,903	58
100.0	36.1	55.1	68.8	13.4	52.8	24.2	86.6	32.4	.....	72.1	.....	92.0	59
2,250	201,051	19,630	11,402	20,785	26,446	20,572	2,160	88,181	5,261	10,873	.....	45,163	60
7,050	1,000,442	55,470	40,442	71,809	98,581	44,919	6,428	104,592	5,261	38,871	320	822,326	61
4,800	799,391	35,840	29,040	51,024	72,135	24,347	4,268	16,411	.....	27,998	320	777,163	62
68.1	79.9	64.6	71.8	71.1	73.2	54.2	66.4	15.7	.....	72.0	100.0	94.5	63
77,415	6,400,805	846,466	1,788,569	1,667,367	1,285,070	2,906,296	1,026,425	2,870,773	117,851	1,436,419	200,000	54,021,627	64
76,415	5,700,805	664,990	1,668,569	1,175,962	1,081,875	1,710,796	414,425	1,005,473	117,851	1,397,419	200,000	47,687,153	65
1,000	700,000	181,476	120,000	491,405	203,195	1,195,500	612,000	1,865,300	.....	39,000	.....	6,334,474	66
6.37	2.95	5.02	27.67	17.46	7.49	20.73	25.89	25.22	7.39	15.13	50.00	48.74	67
32,915	5,589,205	314,400	1,204,171	29,351	124,000	1,575,000	94,425	10,000	.....	584,035	.....	3,407,375	68
5.35	3.45	7.47	30.12	8.62	3.02	21.28	10.49	9.52	.....	9.21	.....	26.08	69
44,500	811,600	.....	80,000	.....	.....	.....	925,000	.....	.....	20,410	.....	42,056,693	70
7.42	1.48	.....	56.66	.....	.....	.....	30.83	.....	.....	20.41	.....	58.95	71
.....	.....	3,000	.....	859,172	183,663	643,692	7,000	141,050	.....	192,315	200,000	60,000	72
.....	.....	3.00	.....	15.72	17.04	18.86	10.94	32.64	.....	35.80	50.00	50.25	73
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	74
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	75
.....	.....	529,066	464,398	778,844	977,407	687,604	.....	2,619,723	117,851	639,659	.....	2,990,520	76
.....	.....	4.21	20.41	20.81	8.16	21.43	.....	24.77	7.39	25.44	.....	19.41	77
.....	.....	.....	40,000	.....	.....	.....	.....	100,000	.....	.....	.....	5,507,039	78
.....	.....	.....	80.00	.....	.....	.....	.....	37.04	.....	.....	.....	50.55	79
2,500	490,263	.....	.....	.....	1,130	.....	.....	.....	.....	.....	.....	96,589	80
750	[3] 108,142	[4] 16,900	.....	.....	5,040	[4] 6,874	.....	[4] 1,050	.....	4,468	.....	[5] 275,039	81
3,600	350,516	.....	.....	.....	.....	.....	36,240	.....	.....	.....	.....	42,200	82
1,995	.....	12,310	1,348	2,600	.....	.....	.....	750	.....	19,710	.....	28,875	83
.....	.....	.....	.....	15,742	4,883	.....	.....	14,630	.....	.....	.....	14,825	84
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27,197	85
.....	28,500	20,800	33,360	54,364	89,838	85,603	640	80,884	7,970	52,418	4,000	97,259	86
.....	145,703	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	80,288	87
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	77,037	88
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	89
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97,461	90
.....	.....	.....	490	140	2,125	.....	.....	.....	.....	.....	.....	1,822	91
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	159,974	92
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	38,173	93
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	94
.....	92,171	.....	.....	.....	640	.....	.....	.....	.....	.....	.....	2,096	95
.....	.....	.....	.....	12,000	19,375	.....	.....	.....	.....	5,290	.....	.....	96

[4] Reported as grain.

[5] Includes 198,012 acres reported as grain.