IRRIGATION—SUMMARY FOR THE UNITED STATES

INTRODUCTION

This summary for irrigation in the United States, prepared under the supervision of William Lane Austin, chief statistician for agriculture, assisted by Paul A. Ewing, specialist in irrigation, and Frank W. Sebring, administrative assistant, presents some of the statistics relating to irrigation in the 19 States listed on page 2. The final irrigation statistics, including those relating to irrigated crops, will appear in the irrigation volume of the reports of the Fifteenth Census of the United States, 1930.

Statistics for area irrigated and cost of maintenance and operation of irrigation works relate to 1929; other items relate to 1930. Throughout the tables statistics for the census of 1920 are shown for purposes of comparison although the 1920 statistics for Arkansas and Louisiana represent rice irrigation only. Statistics for number, area, and value of irrigated farms were collected in 1930 on the general farm schedule. All other statistics were obtained on special schedules for irrigation enterprises.

EXPLANATION OF TERMS USED IN THIS BULLETIN

Irrigated farms.—To be classed as a farm, an establishment must be at least 3 acres in extent or have produced crops to the value of $250 in the crop year preceding the census year.

Irrigated farms are those reporting the irrigation of any land whatsoever in the censuses of 1930 and 1920 for the crop years 1929 and 1919, respectively. "Wholly irrigated" farms include those reporting the irrigation of all harvested crops and of all land from which no crops were harvested because of failure; also, for farms without crops, those reporting the irrigation of all pasture land. "Partly irrigated" farms are those reporting the irrigation of part of but not all such crop land or pasture land.

Land in irrigated farms, 1930, is the area of the farms which were wholly or partly irrigated in 1929. It includes, but is not identical with, the area actually irrigated.

Tenure.—"Owners and managers" include full owners, part owners, and managers, as classified in the 1930 farm census. "Tenants" include cash tenants and other tenants.

Irrigation enterprise.—An "enterprise" is an independent irrigation establishment, and includes the works for supplying water and the land to which water is supplied, or is to be supplied, except that the cost or value of the land is not included in the "investment" in the enterprise. Only such enterprises as supplied water for irrigation in 1929, or were capable of supplying water in 1930, or were in advanced stages of construction, January 1, 1930, are included in the Fifteenth Census of the United States. The 1930 totals take into account various consolidations made since 1920.

Area irrigated.—Area irrigated is the acreage to which water was actually applied in the seasons (1929 and 1919) preceding the census years of the Fifteenth and Fourteenth Censuses, respectively. It is not the area for which water was available nor the area entitled to water.

Area enterprises were capable of supplying with water relates to the year of the census (1930 or 1920). It is based on estimates made by those controlling the enterprises, and represents the area which the constructed works and the controlled and normally available water supply could serve.

Irrigable area in enterprises (1930) and *Total area in enterprises* (1920) represent the extent of the plans of those controlling the enterprises.

Area of irrigated land reported as available, or to be available, for settlement relates to land within operating enterprises and not to land susceptible of reclamation and settlement by enterprises not included in the Fifteenth Census.

Character of enterprises.—The characters of enterprises under which all data are classified are as follows:

Individual or partnership enterprises, which belong to individual farmers or to groups of farmers associated without formal organization.

Cooperative or mutual enterprises, which are controlled by the water users combined in some organized form of cooperation under State laws. The most common form of organization is the stock company, the stock of which is owned by the water users.

Irrigation districts, which are public corporations established under State laws and empowered to issue bonds to obtain funds for the purchase or construction of irrigation works, and to levy and collect taxes or assessments for the payment of bonds and interest on them, and for the payment of the cost of maintenance and operation. The term "irrigation districts" also includes water-improvement districts, water-conservation districts, water-storage districts, etc., which in some States are in addition to irrigation districts and in other States are in lieu of them.

Carey Act enterprises, established under the Federal law of August 18, 1894, granting each of the States in the arid region 1,000,000 acres of land on condition that the State provide for its irrigation, and under amendments to that law granting additional areas to several of these States, if applied for.

Commercial enterprises, incorporated or otherwise, and including public utilities regulated by State commissions, which supply water for compensation to farmers who own no interest in the works.

United States Indian Service enterprises, established under various acts of the Congress providing for construction, by that service, of works for irrigation of land in Indian reservations.

United States Bureau of Reclamation enterprises, established under the Federal law of June 17, 1902, and its amendments.

State enterprises.—In a few instances the States themselves have carried out irrigation enterprises under special legislation.

City-water or sewage-disposal enterprises.

Values of irrigated farms.—The values of irrigated farms are those values reported in the 1930 farm census; hence the term applies only to the 1930 values of farms which were wholly or partly irrigated in 1929. They have no necessary relationship to the investment in irrigation enterprises.

Investment in irrigation enterprises.—The investment in irrigation enterprises is that reported by the owners, and represents investments by their predecessors only in cases where changes of ownership have not involved changes in investment. For the larger works the investment is taken, in most cases, from books of account and represents actual outlays. In the case of many private, partnership, and cooperative enterprises, however, the works were built by farmers who kept no records of money or labor expended, and the investment reported represents estimates. The investment includes cost of construction and cost of acquiring rights. The latter usually consists of filing fees only, but in some instances it includes litigation and the purchase price of rights. For the Fifteenth and Fourteenth Censuses the average investment per acre is based on the area enterprises were capable of supplying with water and on the investment to January 1, 1930, and January 1, 1920, respectively.

Maintenance and operation.—Cost of maintenance and operation was not reported by all enterprises, and averages are based on the areas irrigated in 1929 for which cost was reported. No estimate of total cost of maintenance and operation for all irrigation enterprises has been made. For enterprises operating pumping plants the cost of maintenance and operation includes cost of fuel and attendance.

Water rights.—The area irrigated has been classified by the character of rights under which water was received, except in Arkansas and Louisiana. The classes used are defined as follows:

Appropriation and use includes all rights acquired without formalities of any kind, and which have not been defined by the courts.

Notice filed and posted includes all rights for which claims of some kind have been either posted or filed, and which have not been defined by the courts.

Adjudicated by court includes all rights that have been defined by the courts.

Permit from State includes rights initiated under State laws requiring applications to appropriate water to be made to some State administrative agency, but does not include appropriations for which certificates or licenses have been issued.

Certificate or license from State includes rights initiated under State laws requiring applications to appropriate water to be made to some State administrative agency, and for which licenses or certificates have been issued.

Riparian rights include rights based on the ownership of riparian land.

Underground represents water taken from wells.

Date of beginning.—The date of beginning of irrigation enterprises is, in some cases, the date when construction began, and, in other cases, the date of filing a claim or applying for a permit. If a filing or application for permit was made and work was begun and continued with reasonable diligence, the date of filing is considered the date of beginning; otherwise, the date of construction is taken as the date of beginning.

Drainage basin.—The drainage basin of a stream is all the land drained by the stream and its tributaries, including land irrigated by flowing or pumped wells.

Units of quantity and capacity.—Capacities of canals, reservoirs, wells, pumps, and engines, and quantities of water used are expressed in the following units:

Capacities of canals and rates of flowing water are given in second-feet ("sec.-ft."), a shorter equivalent for cubic feet per second.

Capacities of wells and pumps are given in gallons per minute ("g. p. m."). Four hundred and fifty gallons per minute equal 1 second-foot.

Capacities of reservoirs are given in acre-feet ("ac.-ft."). An acre-foot of water is the quantity that will cover 1 acre to a depth of 1 foot. It equals 43,560 cubic feet.

Capacities of engines and motors are given in horsepower ("h. p."). One horsepower is the power required to lift 33,000 pounds through a vertical distance of 1 foot in 1 minute of time.

Average lift of pumps, in feet, is the static lift or the average vertical distance between the level of the water in the source of supply when the pumps are running and the point to which the water is lifted. It does not take into account friction and velocity heads.

TABLE 1.—SUMMARY FOR THE 19 IRRIGATION STATES: 1930 AND 1920

ITEM (See definitions in Introduction)	CENSUS OF—		INCREASE [1]	
	1930	1920	Amount	Per cent
All farms ... number	2,062,813	1,916,391	146,422	7.6
All land in farms ... acres	568,693,705	505,440,954	63,252,751	12.5
Approximate land area ... acres	1,223,989,120	1,223,989,120		
Farms irrigated ... number	265,147	222,789	42,358	19.0
Area irrigated ... acres	19,547,544	19,191,716	355,828	1.9
Area enterprises were capable of supplying with water ... acres	26,101,890	26,020,477	81,413	0.3
Area in enterprises [2] ... acres	36,599,470	35,890,821		
Proportion irrigated:				
All farms ... per cent	12.9	11.6		
All land in farms ... per cent	3.4	3.8		
Approximate land area ... per cent	1.6	1.6		
Excess of area enterprises were capable of supplying with water over area irrigated ... acres	6,554,346	6,828,761	−274,415	−4.0
Excess of area in enterprises [2] over area irrigated ... acres	17,051,926	16,699,105		
Area of irrigated land available, or to be available, for settlement ... acres	1,681,598	2,257,981	−576,383	−25.5
Value of irrigated farms (land, buildings (including dwellings), and implements and machinery) ... dollars	4,984,892,784	(3)		
Investment in irrigation enterprises ... dollars	1,032,755,790	697,657,328	335,098,462	48.0
Average, per acre, based on area enterprises were capable of supplying with water ... dollars	39.57	26.81	12.76	47.6
Estimated final cost of existing enterprises ... dollars	1,155,108,210	819,778,005	335,330,205	40.9
Average, per acre, based on area in enterprises [2] ... dollars	37.75	22.84		
Average annual cost, per acre, for maintenance and operation of irrigation works ... dollars	2.77	2.43	0.34	14.0

[1] A minus sign (−) denotes decrease. [2] Irrigable area, 1930; total area, 1920. [3] Figures not available.

TABLE 2.—FARMS AND SPECIFIED FARM VALUES FOR THE 19 IRRIGATION STATES, BY TENURE OF FARM OPERATOR, 1930

ITEM (See definitions in Introduction)	FARMS		SPECIFIED FARM VALUES					
	Number	Area	Land and buildings		Land alone		Implements and machinery	
			Total	Per acre	Total	Per acre	Total	Per acre
		Acres	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
All farms	2,062,813	568,693,705	23,104,278,234	35.35	6,636,732,434	11.67	1,320,915,546	2.32
Owners and managers	1,674,646	402,020,202	16,008,774,218	32.68			886,793,726	2.21
Tenants	388,167	166,673,503	7,093,503,796	42.61			434,121,820	2.60
Irrigated farms	265,147	78,330,222	4,620,761,819	59.10	3,942,266,249	50.33	257,110,965	3.28
Owners and managers	203,825	66,612,787	3,738,425,783	56.09	3,152,977,570	47.33	204,835,587	3.08
Tenants	61,322	11,716,435	882,335,634	75.13	789,288,679	67.31	52,275,378	4.46
Wholly irrigated farms	225,271	52,666,848	3,586,144,798	67.70	3,032,440,080	57.91	197,919,182	3.74
Owners and managers	173,354	44,304,371	2,884,649,167	64.73	2,414,682,534	54.18	156,517,741	3.51
Tenants	51,917	8,344,477	701,495,631	84.07	617,757,546	74.04	41,401,441	4.96
Partly irrigated farms	39,876	25,636,374	1,043,657,021	41.01	909,826,169	35.78	59,191,783	2.33
Owners and managers	30,471	22,046,386	851,774,618	38.63	738,335,036	33.49	48,317,846	2.19
Tenants	9,405	3,381,978	191,883,403	56.73	171,492,132	50.71	10,873,937	3.22
Farms not irrigated	1,797,666	490,364,483	18,471,496,435	31.95	2,694,466,185	5.49	1,063,804,581	2.17

FARMS AND AREA IRRIGATED

TABLE 3.—FARMS AND AREA IRRIGATED FOR THE 19 IRRIGATION STATES: 1890 TO 1930

CENSUS YEAR	Farms irrigated: Number	Farms irrigated: Increase	Farms irrigated: Proportion of all farms	Area irrigated: Area	Area irrigated: Increase	Area irrigated: Proportion of total land area	Area irrigated: Proportion of land in all farms
		Per cent	Per cent	Acres	Per cent	Per cent	Per cent
1930	231,147	[illegible]	12.9	19,547,544	1.9	1.6	3.4
1920	222,759	36.9	11.6	19,191,716	33.0	1.6	3.5
1910	162,723	43.0	9.2	14,433,285	89.4	1.2	3.3
1900	113,629	110.3	8.2	7,744,467	108.4	0.7	2.2
1890	54,136		5.8	3,715,738		0.3	2.2

TABLE 4.—AREA FOR THE 19 IRRIGATION STATES, BY DATE OF BEGINNING OF ENTERPRISES SUPPLYING WATER FOR IRRIGATION

DATE OF BEGINNING (See definitions in Introduction)	Enterprises, 1930	Area irrigated in 1929: Area	Area irrigated in 1929: Proportion of irrigable area in enterprises	Area enterprises were capable of supplying with water, 1930	Irrigable area in enterprises, 1930
	Number	Acres	Per cent	Acres	Acres
Total	75,517	19,547,544	63.9	28,101,990	30,550,470
Before 1860	722	402,237	68.2	498,462	589,544
1860–1869	1,737	1,229,607	82.0	1,448,582	1,490,789
1870–1879	2,879	1,770,224	69.9	2,297,582	2,532,853
1880–1889	5,641	3,624,824	74.4	4,393,494	4,871,818
1890–1899	4,237	2,649,077	54.8	3,596,819	4,831,790
1900–1904	3,191	1,863,645	68.7	2,326,395	2,744,894
1905–1909	2,938	2,845,641	61.1	4,145,297	4,659,747
1910–1914	6,017	1,151,524	38.7	1,623,598	3,074,270
1915–1919	6,574	1,138,308	57.9	1,698,822	1,966,174
1920–1924	7,896	774,744	48.0	1,119,649	1,612,437
1925–1929	11,063	813,786	50.9	1,197,058	1,598,032
Not reported	22,555	1,485,263	78.3	1,761,346	1,896,984

TABLE 5.—AREA FOR THE 19 IRRIGATION STATES, BY SOURCE OF WATER SUPPLY: 1929 AND 1919

SOURCE OF SUPPLY	Area irrigated: 1929	Area irrigated: 1919	Increase[1]: Area	Increase[1]: Per cent	Area enterprises were capable of supplying with water, 1930	Irrigable area in enterprises, 1930
	Acres	Acres	Acres		Acres	Acres
Total	19,547,544	19,191,716	355,828	1.9	28,101,990	30,550,470
Streams, gravity	12,986,675	14,527,090	−1,540,415	−10.6	17,108,197	20,251,920
Streams, pumped	1,713,386	1,226,510	486,876	39.7	2,798,760	3,283,786
Streams, gravity and pumped	258,094	193,588	64,456	33.3	427,238	582,676
Wells, pumped	2,061,735	1,283,108	778,627	62.4	2,474,893	2,725,636
Wells, flowing	46,479	58,856	−12,377	−21.0	55,987	61,908
Wells, pumped and flowing	18,780	33,695	−14,907	−44.2	22,757	22,687
Lakes, pumped	77,815	35,736	42,080	117.8	135,990	138,582
Lakes, gravity	58,112	100,653	−42,541	−42.3	131,823	162,594
Springs	217,297	158,008	59,289	37.5	226,786	264,179
Stored storm water[2]	26,587	86,873	−59,286	−69.8	68,254	77,998
City water	1,684	950	734	77.3	1,916	1,563
Sewage	2,578	1,575	953	36.9	6,182	4,686
Streams, gravity and wells, pumped	1,164,349	344,713	819,636	237.8	1,502,597	1,523,232
Streams, gravity and wells, flowing	21,285	82,665	−61,378	−74.2	34,227	36,686
Other mixed	865,454	995,621	−130,167	−13.1	1,136,178	1,360,576
Other	3,098		8,938		3,279	9,314
Not reported	20,412	[3] 12,140	7,234		21,139	22,326
Supplemental[4] from—						
Pumped streams	24,371		24,371		33,737	34,309
Pumped wells	293,626		293,626		321,786	330,485
Flowing wells	140		140		233	253

[1] A minus sign (−) denotes decrease. Per cent not shown when more than 1,000.
[2] In reservoirs filled from channels which carry water only during storms and are not classed as streams.
[3] Shown as "Other and not reported."
[4] Not considered in totals because included in enterprises reporting other sources of supply listed above.

AREA, BY CHARACTER OF ENTERPRISE

TABLE 6.—AREA FOR THE 19 IRRIGATION STATES, BY CHARACTER OF ENTERPRISE: 1930 AND 1920

[For number of enterprises by classes, see Table 12]

TYPE AND CHARACTER (See definitions in Introduction)	Census of— 1930	Census of— 1920	Increase[1]: Area	Increase[1]: Per cent
AREA IRRIGATED	Acres	Acres	Acres	
Total	19,547,544	19,191,716	355,828	1.9
Individual and partnership	6,455,381	6,885,607	−430,226	−6.4
Cooperative	5,371,334	5,592,400	−218,066	−4.7
Irrigation district	3,452,172	1,822,307	1,629,865	89.4
Carey Act	86,772	524,929	−437,157	−83.4
Commercial	1,230,755	1,822,981	−591,226	−32.4
United States Indian Service	381,840	334,451	47,389	10.6
United States Bureau of Reclamation	1,495,129	1,264,309	230,450	18.4
State	11,486	5,629	5,857	104.4
City	123,213	63,140	61,073	101.9
Other	186,244	7,230	179,008	
Not reported		570	−570	−100.0
AREA ENTERPRISES WERE CAPABLE OF SUPPLYING WITH WATER				
Total	28,101,990	28,020,477	81,513	0.3
Individual and partnership	7,982,142	9,255,130	−1,272,988	−13.8
Cooperative	7,961,081	8,403,298	−442,217	−5.3
Irrigation district	6,346,095	3,731,425	2,614,670	70.1
Carey Act	174,240	804,209	−630,062	−78.3
Commercial	2,120,380	2,756,393	−636,013	−23.1
United States Indian Service	758,408	484,459	274,009	32.8
United States Bureau of Reclamation	1,914,835	1,650,643	264,192	15.7
State	12,600	7,379	5,221	84.2
City	146,132	44,458	101,674	228.7
Other	233,573	8,346	224,827	
Not reported		625	−625	−100.0
AREA IN ENTERPRISES[2]				
Total	30,550,470	35,050,321		
Individual and partnership	8,802,084	11,808,412		
Cooperative	8,696,060	10,828,648		
Irrigation district	6,813,847	3,432,150		
Carey Act	182,246	1,185,957		
Commercial	2,619,697	3,970,221		
United States Indian Service	1,122,134	932,065		
United States Bureau of Reclamation	2,599,649	2,637,170		
State	14,221	8,861		
City	140,354	43,620		
Other	222,851	13,144		
Not reported		798		

[1] A minus sign (−) denotes decrease. Per cent not shown when more than 1,000.
[2] Irrigable area, 1930; total area, 1920.

Areas classified in Table 6 as "Carey Act" do not disclose the extent of the development which has been effected under the operation of that law, since most of the enterprises begun under it have reorganized and are reported in other classes. Under the operation of the Carey Act, the lands selected by the States are segregated from the public domain for specified periods during which the States undertake to cause adequate irrigation systems to be constructed and sufficient irrigation water made available, whereupon the lands are patented to the States by the Federal Government and disposed of by them to settlers. The Commissioner of the General Land Office on June 30, 1930, reported that 3,897,860 acres had been segregated and 1,174,903 acres patented. The report of June 30, 1920, shows 3,781,649 acres segregated and 888,793 acres patented.

Areas credited to United States Bureau of Reclamation include projects or project units constructed by that Bureau but now operated by irrigation districts or water-users' associations. The areas so credited do not include other lands partly served by Government works in both 1929 and 1919 with water carried through private canals under Warren Act (Act of February 21, 1911) or other water-service contracts. The outside areas so partly served in 1929 are reported by the Bureau of Reclamation as totalling 1,234,230 acres. The corresponding 1919 area was somewhat in excess of 900,000 acres.

Areas classified as "City" in 1930 include, besides other lands, several large tracts in California which in 1920 were reported under "Irrigation district" and other classifications. The status of most of these enterprises being unaltered legally, the change in classification is necessitated by the actual control now exercised by the cities.

Areas classified as "State" include 2 land settlement enterprises in California, as well as various State institutions there and elsewhere which are not development enterprises.

Areas classified as "Other" include 3 drainage districts which operate irrigation as well as drainage systems, and a much larger number of "reclamation" districts which exercise the functions of flood control or drainage, or both, in addition to those of irrigation. Reclamation districts have no connection with United States Bureau of Reclamation enterprises.

AREA, BY CHARACTER OF WATER RIGHTS

TABLE 7.—AREA IRRIGATED FOR THE 19 IRRIGATION STATES, BY CHARACTER OF RIGHTS UNDER WHICH WATER IS RECEIVED: 1929 AND 1919

WATER RIGHTS (See definitions in Introduction)	1929 Area	1929 Proportion of total	1919 Area	1919 Proportion of total
	Acres	*Per cent*	*Acres*	*Per cent*
Total	19,547,544	100.0	19,191,716	100.0
Appropriation and use	1,956,467	10.0	2,321,682	12.1
Notice filed and posted	1,853,279	9.5	2,765,636	14.4
Adjudicated by court	7,871,804	40.3	7,159,954	37.3
Permit from State	2,911,931	14.9	1,960,924	10.2
Certificate or license from State	1,161,896	5.9	1,288,124	6.7
Riparian	536,912	2.7	370,896	1.9
Underground	1,755,227	9.0	1,067,606	5.6
Other	102,156	0.5	494,564	2.6
Mixed	471,455	2.4		
Not reported [1]	932,426	4.8	1,562,330	8.2

[1] Includes acreage for Arkansas and Louisiana.

AREA, BY DRAINAGE BASIN

TABLE 8.—AREA FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN: 1929 AND 1919

DRAINAGE BASIN (See definitions in Introduction)	Area irrigated 1929	Area irrigated 1919	Area irrigated Increase [1]	Area enterprises were capable of supplying with water, 1930	Irrigable area in enterprises, 1930
	Acres	*Acres*	*Per cent*	*Acres*	*Acres*
Total	19,547,544	19,191,716	1.9	[illegible]	[illegible]
Red River (of the North) tributaries	2,039			2,039	2,480
Souris River and tributaries	1,433			1,433	1,433
Other tributaries	606			606	958
Missouri River and tributaries	4,183,189	4,147,279	0.9	5,473,312	5,321,873
Missouri River direct	24,337	27,702	−12.1	40,140	42,293
Jefferson River and tributaries	362,396	425,063	−14.8	468,328	479,621
Jefferson River direct	16,335	25,276	−35.4	18,848	19,882
Beaverhead River	131,358	143,672	−8.6	142,335	153,616
Big Hole River	146,730	184,054	−20.3	222,560	168,846
Ruby River	31,477	34,474	−8.7	38,528	38,501
Other tributaries	37,820	39,607	−4.5	46,023	48,878
Madison River	30,386	34,425	−11.8	37,064	46,329
Gallatin River	98,752	98,087	−1.4	114,408	120,221
Smith River	23,461	16,967	51.6	31,208	31,380
Sun River	26,878	31,763	−11.7	97,506	121,277
Teton River	46,974	44,944	4.5	66,794	67,000
Marias River	55,360	62,758	−13.3	90,404	101,814
Judith River	7,435	19,173	−61.0	13,073	14,061
Musselshell River	59,288	45,328	30.7	84,738	96,170
Milk River and tributaries	86,216	138,555	−38.7	190,226	215,509
Milk River direct	55,490	19,760	180.8	148,657	149,716
Snake River	28	383	−92.6	140	140
Other tributaries	32,698	57,876	−43.4	41,367	47,123
Yellowstone River and tributaries	961,161	980,825	−2.1	[illegible]	[illegible]
Yellowstone River direct	162,313	189,453	−14.3	236,401	242,693
Boulder River	11,389			12,476	12,081
Clark Fork and tributaries	92,966	77,798	19.6	111,062	115,330
Clark Fork direct	90,650	72,325	25.0	108,986	110,625
Tributaries	2,316	5,213	−55.5	2,095	2,695
Shields River	23,800	18,940	25.7	40,462	38,417
Stillwater River	22,162	23,920	−7.4	31,997	33,327
Big Horn River and tributaries	381,925	378,949	0.8	552,768	710,822
Big Horn River direct	88,098	90,962	−3.1	220,785	140,464
Popo Agie River	21,131	22,073	−4.3	30,280	31,343
Wind River	81,799	65,028	24.7	140,786	228,983
Owl Creek	20,746	11,610	80.1	18,822	20,051
No Wood River	13,294	18,420	−27.2	19,778	21,478
Greybull River	52,130	49,321	5.6	62,321	70,300
Shell Creek	7,168	11,960	−40.3	13,790	13,904
Shoshone River	93,636	95,491	0.8	143,082	143,703
Little Horn River	2,827	1,493	89.3	2,701	2,705
Other tributaries	18,382	17,040	6.4	18,371	18,390
Tongue River and tributaries	65,493	54,185	20.9	71,039	78,321
Tongue River direct	22,217	20,973	5.9	28,091	28,734
Goose Creek	35,422	27,027	28.3	35,964	39,493
Other tributaries	7,826	5,335	39.8	8,023	8,894
Powder River and tributaries	50,378	83,021	−42.9	58,415	69,510
Powder River direct	5,947	3,580	63.1	5,809	6,373
Red Fork Creek	485	3,541	−86.3	880	880
Crazy Woman Creek	2,028	21,263	−88.6	4,149	4,789
Clear Creek	35,266	39,646	−30.2	35,899	39,384
Other tributaries	6,647	15,084	−41.9	3,603	18,165
Other tributaries of Yellowstone River	61,829	69,155	−10.7	86,369	94,913
Missouri River and tributaries—Continued					
Little Missouri River	1,462	1,080	35.4	1,962	2,127
Moreau River	60	305	−80.3	60	60
Cheyenne River and tributaries	71,550	110,143	−35.0	115,960	132,063
Cheyenne River direct		[2] 101,299			
North Fork (Belle Fourche)	51,799	(2)		90,901	97,816
South Fork and tributaries	19,740	8,844	123.2	24,888	33,986
South Fork direct	17,724	5,906	200.1	21,707	30,645
Hat Creek	2,016	2,938	−31.4	3,181	3,341
Other tributaries of Cheyenne River	11			101	201
White River	8,662	8,006	8.4	13,110	13,795
Niobrara River	3,831	6,128	−37.6	4,563	4,706
Platte River and tributaries	2,315,297	2,136,462	8.4	2,813,195	3,081,690
Platte River direct	71,290	37,532	89.9	140,456	170,011
North Platte River and tributaries	951,359	872,140	9.1	1,198,645	1,312,827
North Platte River direct	441,263	351,036	25.7	529,278	540,704
Beaver Creek	3,132	2,621	19.5	4,176	4,176
Grand Encampment Creek	6,906	7,053	−2.1	11,522	11,682
Spring Creek	10,828	13,123	−17.5	13,197	13,107
Pass Creek	14,681	8,557	71.6	17,960	18,243
Medicine Bow River	36,879	54,500	−32.3	42,271	44,416
Sweetwater River	6,500	5,448	19.4	8,519	8,097
Muddy Creek	400	637	−30.1	400	400
Box Elder Creek	3,742	4,648	−19.5	8,496	8,496
La Prele Creek	16,549	9,100	81.8	16,908	17,462
Labonte Creek	4,383	4,376	0.2	4,828	4,876
Laramie River and tributaries	190,094	156,152	21.7	268,426	328,057
Laramie River direct	[3] 109,585	78,560		179,372	228,757
Little Laramie River	43,942	30,860	42.4	50,972	51,177
Sybille Creek	5,237	6,183	−15.3	5,387	5,934
North Laramie River	5,979	6,858	−12.8	6,366	11,474
Chugwater Creek	6,139	5,914	3.8	7,108	7,648
Other tributaries	19,212	[3] 27,784		19,227	21,067
Rawhide Creek	223	2,045	−89.0	225	225
Horse Creek	29,504	28,363	4.3	30,920	34,688
Other tributaries of North Platte River	186,180	224,431	−17.0	241,631	268,598
South Platte River and tributaries	1,267,604	1,224,974	3.5	1,441,367	1,568,134
South Platte River direct	470,802	362,191	30.0	504,642	540,615
Bear Creek	12,824	8,778	46.1	12,908	12,908
Clear Creek	85,676	79,172	8.2	131,778	143,682
St. Vrain Creek	178,560	244,831	−26.7	203,401	268,295
Big Thompson Creek	92,704	96,678	−4.1	100,753	100,818
Cache la Poudre River	286,400	267,107	7.2	328,029	378,085
Lone Tree Creek	10,902	4,928	121.8	10,942	11,290
Crow Creek	5,947	4,525	31.4	7,908	8,260
Big Beaver Creek	8,470	6,425	31.7	10,470	10,520
Lodgepole Creek	13,425	20,004	−32.9	17,211	18,018
Other tributaries	100,606	130,241	−22.7	113,330	117,037
Loup River	291	1,177	−75.3	672	732
Other tributaries of Platte River	24,731	379		32,055	28,970
Kansas River and tributaries	26,139	34,673	−24.6	32,823	36,913
Republican River	23,387	34,360	−31.9	29,080	32,872
Smoky Hill River	141	278	−49.3	326	391
Other tributaries	2,611	34		3,411	3,650
Other tributaries of Missouri River	74,342	51,989	43.0	131,164	223,498

[1] A minus sign (−) denotes decrease. Per cent not shown when more than 1,000.

[2] Belle Fourche River included in "Cheyenne River direct" in 1920.

[3] Laramie River direct includes 11,000 acres in 1930, reported in "Other tributaries of Laramie River" in 1920.

TABLE 8.—AREA FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN: 1929 AND 1919—Continued

DRAINAGE BASIN (See definitions in Introduction)	AREA IRRIGATED 1929	AREA IRRIGATED 1919	AREA IRRIGATED Increase [1]	Area enterprises were capable of supplying with water, 1930	Irrigable area in enterprises, 1930
Great Basin Drainage—Con.	*Acres*	*Acres*	*Per cent*	*Acres*	*Acres*
Independent streams	1,266,274	1,464,524	−13.4	1,778,073	2,186,613
Sevier River and tributaries	226,329	238,716	−20.5	309,737	338,671
Sevier River direct	145,795	171,072	−15.2	167,374	194,144
San Pitch River	64,270	77,618	−15.9	74,602	72,832
Other Creek	7,237	7,292	−0.7	7,792	7,792
Other tributaries	56,662	68,627	−20.6	84,966	62,672
Beaver River	23,191	26,722	−12.0	31,192	34,280
Coal Creek	14,495	27,260	−46.7	21,230	23,236
Deep Creek (Utah)	2,147	1,963	8.3	2,573	2,302
Grouse Creek	2,408	3,402	−29.6	2,876	3,576
Humboldt River and tributaries	126,426	162,779	−33.0	287,861	343,263
Humboldt River direct	27,731	68,166	−59.3	128,257	126,321
East Fork of Humboldt River	260	33,473	−99.2	260	260
La Moille Creek	18,827	12,270	−23.7	17,631	17,990
North Fork of Humboldt River	8,886	7,948	14.8	7,092	9,211
South Fork of Humboldt River	32,766	33,602	2.2	32,442	37,443
Pine Creek	2,705	3,260	−16.8	4,356	4,419
Reese River	2,882	11,178	−74.2	3,391	2,364
Little Humboldt River	5,765	6,389	−40.4	31,375	31,379
Other tributaries	41,422	11,071	274.2	84,026	112,876
Truckee River and tributaries	38,128	28,365	35.1	45,191	47,773
Truckee River direct	30,177	14,900	140.2	34,622	38,971
Steamboat Creek	2,194	2,162	2.8	3,256	3,230
Other tributaries	5,357	2,246	140.3	8,369	5,569
Carson River and tributaries	74,797	78,420	−4.8	134,236	170,648
Carson River direct	24,175	27,696	−13.1	70,790	42,644
Tributaries	50,622	47,822	6.3	64,447	128,002
Walker River and tributaries	91,894	152,835	−39.8	94,717	193,685
Walker River direct	88,082	133,681	−34.0	90,612	186,432
Tributaries [2]	3,812	19,154	−80.1	4,405	5,568
Steptoe Creek	4,567	3,720	22.8	7,496	8,279
Long Valley Creek	578	12,843	−95.4	1,139	1,400
Tributaries of Mono Lake	11,800	4,160	174.5	11,300	15,500
Susan River	24,088	31,284	−24.2	47,916	47,613
Mohave River	6,156	4,698	32.9	9,627	26,984
Owens River	25,809	144,624	−78.2	18,886	12,986
San Jacinto River	70,982	38,809	82.7	61,175	54,303
Quinn River	8,846	9,883	−11.6	19,927	11,080
Deep Creek (Oregon)	1,904	1,905		1,937	1,937
Donner und Blitzen River	78,606	21,587	266.4	91,362	103,580
Silvies River	25,727	64,862	−56.7	33,525	34,907
Other independent streams	382,158	311,667	25.8	525,805	622,390
Columbia River and tributaries	3,263,640	3,673,243	−12.4	4,341,344	4,890,151
Columbia River direct	18,065	24,362	−30.1	21,679	22,345
Kootenai River	7,642	3,962	35.9	8,829	10,530
Clark Fork and tributaries	263,732	286,266	−7.9	367,318	477,130
Clark Fork direct	14,687	5,776	154.3	18,189	20,253
Big Blackfoot River	32,402	40,604	−20.2	41,572	66,246
Bitter Root River	89,792	112,622	−20.3	180,792	214,601
Flathead River	50,727	44,323	14.8	129,986	143,787
Other tributaries	77,065	83,003	−7.1	97,267	133,282
Colville River	2,178	6,960	−68.7	2,447	3,622
Spokane River	18,622	16,453	13.2	23,495	26,229
Okanogan River and tributaries	23,452	20,590	4.3	27,794	29,100
Okanogan River direct	5,685	2,457	65.3	4,382	5,142
Tributaries	17,867	18,226	−3.6	23,226	23,966
Methow River	11,726	12,576	−6.9	17,346	19,474
Entiat River	1,962	2,064	−4.9	2,135	2,134
Wenatchee River	24,689	23,731	3.7	35,717	37,848
Crab Creek	1,763	6,866	−74.3	1,884	1,860
Yakima River and tributaries	322,298	327,288	−2.6	380,720	436,340
Yakima River direct	287,290	284,282	1.2	317,105	367,798
Naches River	26,800	19,564	36.9	38,398	36,534
Ahtanum Creek	8,177	6,267	−12.4	8,636	8,998
Other tributaries	28,361	52,968	−44.4	43,236	60,640
Snake River and tributaries [3]	2,339,284	2,712,608	−13.9	3,773,631	4,180,120
Snake River direct	720,770	743,159	−3.0	841,387	868,677
South Fork and tributaries	221,562	214,592	3.2	236,089	273,398
South Fork direct	163,290	152,564	7.0	183,315	187,821
Gros Ventre River	3,884	6,738	−42.3	4,151	6,021
Little Gros Ventre River	2,274	6,267	−63.7	3,280	3,028
Salt River	36,662	34,268	7.0	46,236	48,036
Other tributaries	15,252	14,781	3.2	22,391	28,092
Henrys Fork	174,990	206,586	−15.3	190,328	211,117
Blackfoot River	43,157	52,909	−18.4	78,949	91,363
Port Neuf River	41,776	37,988	9.9	38,728	58,846
Raft River	13,406	23,620	−43.2	21,386	37,381
Goose Creek	19,380	25,000	−22.5	23,426	38,424
Salmon Falls River	38,366	41,380	−6.7	49,396	60,424
Little Wood River	19,840	26,153	−24.2	21,662	29,729
Big Wood River	83,301	117,240	−28.9	117,349	132,314
Bruneau River	21,161	22,536	−6.1	26,890	27,782
Owyhee River	89,486	154,635	−42.1	71,005	198,867
Boise River	218,486	226,305	−3.4	321,320	375,757
Malheur River	52,192	78,800	−33.7	77,574	129,489
Payette River	122,480	122,873	−0.3	138,486	147,787
Weiser River	33,422	56,050	−40.3	48,006	62,338
Burnt River	18,519	24,387	−24.0	29,876	48,630
Powder River	103,998	146,686	−29.7	115,492	130,749
Pine Creek	12,480	12,632	−1.2	13,626	14,274
Imnaha River	6,306	4,527	41.0	8,166	8,538
Columbia River and tributaries—Continued					
Snake River and tributaries [3]—Con.	*Acres*	*Acres*	*Per cent*	*Acres*	*Acres*
Salmon River	93,818	115,108	−18.5	110,064	116,341
Grande Ronde River	57,653	79,191	−27.2	63,174	65,227
Clearwater River	4,896	4,623	5.9	5,164	5,216
Asotin Creek	3,513	3,051	15.1	4,341	4,341
Palouse River	980	1,734	−43.5	1,150	1,320
Other tributaries	70,141	124,503	−43.7	85,980	91,340
Independent streams in Snake River Basin	82,074	109,913	−25.3	164,459	170,083
Camas Creek	20,099	17,490	14.9	58,185	58,290
Beaver Creek	800	1,502	−46.8	1,530	1,546
Medicine Lodge Creek	3,985	5,019	−20.6	5,187	5,187
Little Lost River	4,964	11,532	−57.0	5,684	5,684
Big Lost River	40,079	72,798	−44.9	79,960	85,283
Other	12,154	1,562	678.1	13,881	14,603
Walla Walla River	29,631	39,784	−25.5	31,526	36,068
Klickitat River	6,767	12,232	−44.9	7,004	7,536
White Salmon River	4,034	6,247	−35.4	4,607	5,009
Umatilla River	35,795	43,571	−17.8	48,284	57,028
Willow Creek	5,382	5,553	−3.1	6,060	6,265
John Day River	40,495	36,141	12.0	44,284	48,211
Deschutes River	94,015	111,916	−16.0	139,444	181,445
Hood River	22,370	19,765	13.2	28,352	31,240
Willamette River	4,250	2,892	47.0	7,022	25,919
Other tributaries of Columbia River	35,260	29,934	17.8	52,275	63,344
Other independent streams in Columbia River Basin	5,558			6,163	7,031
Pacific Ocean streams other than Colorado and Columbia Rivers	4,225,071	3,570,687	18.4	6,158,896	6,878,141
Dungeness River	8,966	6,160	45.5	17,607	20,142
Rogue River and tributaries	53,930	35,560	52.9	74,651	81,714
Rogue River direct	11,931	3,256	266.4	14,836	20,123
Little Butte Creek	11,726	6,706	74.9	12,171	13,247
Bear Creek	14,862	8,319	78.7	20,290	20,425
Evans Creek	1,215	1,333	−8.9	1,482	1,517
Applegate River	9,266	10,650	−13.1	11,671	12,620
Illinois River	4,228	4,961	−12.8	5,526	6,079
Other tributaries	5,632	3,335	68.9	8,162	8,703
Klamath River and tributaries	187,991	153,195	22.8	284,948	316,239
Klamath River direct	63,727	65,720	−3.0	98,922	122,584
Lost River	60,426	58,568	3.2	75,857	77,179
Sprague River	7,587	7,800	−2.7	13,610	15,871
Other tributaries	56,257	21,017	167.5	76,554	100,614
Russian River	5,431	3,045	78.4	7,943	10,071
Sacramento River and tributaries	696,924	640,950	8.7	1,176,770	1,554,696
Sacramento River direct	277,457	194,397	42.7	530,983	578,410
Pit River	68,769	88,964	−22.5	83,058	94,151
Cow Creek	5,122	6,066	−15.6	5,757	5,877
Cottonwood Creek	2,446	2,972	−17.7	6,738	13,971
Battle Creek	4,570	2,965	54.1	5,824	6,352
Stony Creek	15,896	23,569	−32.5	24,626	25,218
Feather River	149,425	142,841	4.6	251,981	246,251
Yuba River	23,924	19,473	22.9	42,465	194,279
Cache Creek	24,160	24,541	−1.6	56,000	88,802
American River	27,379	47,150	−41.9	34,378	51,410
Other tributaries	96,922	86,905	11.3	134,954	148,977
San Joaquin River and tributaries [4]	2,403,390	2,102,694	14.3	3,542,702	3,773,964
San Joaquin River direct	471,750	642,261	−26.5	623,486	628,596
Kern River	236,241	290,641	−18.6	403,829	410,459
Tulare Lake	39,804	70,134	−43.2	45,819	46,891
Tule River	74,089	61,223	21.0	87,420	88,425
Kaweah River	222,262	149,932	48.2	316,135	323,800
Kings River	742,292	552,661	34.3	1,161,442	1,278,720
Fresno River	17,640	12,414	42.1	20,072	21,309
Merced River	140,131	65,151	115.1	195,641	197,436
Tuolumne River	207,347	165,533	25.3	247,165	247,681
Stanislaus River	81,581	73,356	8.9	147,702	177,073
Calaveras River	8,327	13,329	−37.5	9,143	9,491
Mokelumne River	85,172	36,848	131.1	109,164	114,588
Cosumnes River	7,865	3,256	141.6	25,821	26,614
Other tributaries	148,340	55,015	169.6	160,858	193,751
Independent streams in San Joaquin River Basin	17,344			17,130	18,713
Tributaries of San Francisco Bay other than Sacramento and San Joaquin Rivers	96,079	76,947	24.9	107,432	111,354
Coyote Creek	31,652	25,092	26.2	33,220	34,102
Guadalupe River	30,544	29,244	4.4	33,084	33,384
Other tributaries	35,892	22,607	69.3	41,128	43,868
Pajaro River	43,336	19,771	120.1	46,019	51,310
Salinas River	77,366	48,087	60.6	85,437	88,587
Santa Maria River	21,808	9,626	126.7	23,779	28,039
Santa Ynez River	11,660	3,497	240.6	16,608	18,523
Santa Clara River	61,492	28,276	117.5	69,288	74,091
Los Angeles River	83,407	58,697	41.2	130,606	133,310
San Gabriel River	88,892	127,146	−30.1	100,802	110,747
Santa Ana River	240,480	185,566	33.1	291,930	300,870
San Diego River	8,678	8,415	3.0	17,862	18,301
Other Pacific Ocean streams	101,898	58,432	74.4	144,675	162,080

[1] A minus sign (−) denotes decrease. Per cent not shown when more than 1,000.
[2] Including East Walker and West Walker Rivers.
[3] Not including "Independent streams in Snake River Basin."
[4] Not including "Independent streams in San Joaquin River Basin."

INVESTMENT, AND COST OF MAINTENANCE AND OPERATION OF IRRIGATION ENTERPRISES

TABLE 9.—INVESTMENT IN ENTERPRISES FOR THE 19 IRRIGATION STATES: 1890 TO 1930

CENSUS YEAR	INVESTMENT		AVERAGE, PER ACRE [1]	
	Amount	Increase	Amount	Increase
	Dollars	*Per cent*	*Dollars*	*Per cent*
1930	1,032,755,790	48.0	39.57	47.6
1920	697,057,328	117.0	26.81	69.1
1910	321,454,008	350.2	15.85	75.3
1900	70,010,594	137.1	9.04	13.6
1890	29,533,921	----------	7.96	----------

[1] Based on area enterprises were capable of supplying with water.

TABLE 10.—INVESTMENT FOR THE 19 IRRIGATION STATES, BY DATE OF BEGINNING, 1930

DATE OF BEGINNING (See definitions in Introduction)	INVESTMENT		
	Amount	Proportion of total	Average, per acre [1]
	Dollars	*Per cent*	*Dollars*
Total	1,032,755,790	100.0	39.57
Before 1860	15,694,247	1.5	31.61
1860–1869	14,262,037	1.4	9.74
1870–1879	34,408,810	3.3	14.35
1880–1889	79,461,911	7.7	18.09
1890–1899	86,572,758	8.4	24.14
1900–1904	73,323,337	7.1	31.51
1905–1909	245,887,448	23.8	59.30
1910–1914	70,738,038	6.9	43.57
1915–1919	74,026,373	7.2	44.64
1920–1924	144,344,584	14.0	128.99
1925–1929	142,944,869	13.8	129.12
Not reported	51,091,378	4.9	20.00

[1] Based on area enterprises were capable of supplying with water in 1930.

TABLE 11.—INVESTMENT, 1930; AND COST OF MAINTENANCE AND OPERATION, 1929; FOR THE 19 IRRIGATION STATES, BY SOURCE OF WATER SUPPLY

[When water is pumped, cost of maintenance and operation includes cost of fuel and attendance]

SOURCE OF SUPPLY	INVESTMENT, 1930			MAINTENANCE AND OPERATION, 1929	
	Amount	Proportion of total	Average, per acre	Irrigated area reporting	Average, per acre [1]
	Dollars	*Per cent*	*Dollars*	*Acres*	*Dollars*
Total	1,032,755,790	100.0	39.57	18,690,184	2.77
Streams, gravity	452,381,562	43.8	26.44	12,392,865	1.21
Streams, pumped	102,027,681	9.9	37.67	1,678,550	4.30
Streams, gravity and pumped	20,823,583	2.0	47.63	252,784	4.41
Wells, pumped	271,426,464	26.3	110.07	1,921,060	9.17
Wells, flowing	2,366,242	0.2	42.27	22,403	2.34
Wells, pumped and flowing	1,548,810	0.1	74.58	16,542	9.27
Lakes, pumped	3,591,977	0.3	26.43	76,518	3.93
Lakes, gravity	4,693,943	0.5	35.61	55,527	2.70
Springs	3,408,382	0.3	13.27	195,502	1.02
Stored storm water	1,822,458	0.2	28.31	36,023	1.31
City water	32,306	(2)	17.85	078	7.31
Sewage	261,986	(2)	65.35	2,902	2.16
Streams, gravity and wells, pumped	99,936,110	9.7	66.20	1,159,631	4.46
Streams, gravity and wells, flowing	578,037	0.1	16.89	20,268	2.52
Other mixed	56,702,676	5.5	49.82	843,802	3.52
Other	199,960	(2)	24.27	7,030	1.58
Not reported	392,682	(2)	18.58	7,739	2.46
Supplemental from—					
Pumped streams	927,158	0.1	28.28	[3] 23,899	6.27
Pumped wells	9,627,568	0.9	29.02	[3] 276,347	5.01
Flowing wells	6,200	(2)	24.31	[3] 57	0.01

[1] Based on area irrigated in 1929 reporting cost.
[2] Less than one-tenth of 1 per cent.
[3] Not considered in total because included in enterprises reporting other sources of supply listed above.

TABLE 12.—INVESTMENT FOR THE 19 IRRIGATION STATES, BY CHARACTER OF ENTERPRISE: 1930 AND 1920

CHARACTER OF ENTERPRISE (See definitions in Introduction)	Enterprises, 1930	INVESTMENT		INCREASE [1]	
		1930	1920	Amount	Per cent
	Number	*Dollars*	*Dollars*	*Dollars*	
Total	75,517	1,032,755,790	697,057,328	335,698,462	48.0
Individual and partnership	71,173	327,867,180	154,634,169	173,233,011	112.0
Cooperative	[2] 3,320	170,320,902	183,041,500	−3,711,538	−2.0
Irrigation district	[2] 363	210,733,476	88,573,514	122,159,962	137.9
Carey Act	13	7,565,604	32,080,695	−25,115,091	−76.8
Commercial	391	62,351,714	85,735,470	−23,383,756	−27.3
United States Indian Service	110	31,576,920	14,851,236	16,725,684	112.6
United States Bureau of Reclamation	30	193,989,576	129,509,819	64,479,757	49.8
State	40	1,046,554	344,174	702,380	204.1
City	45	15,511,463	2,936,678	12,574,785	428.2
Other	32	2,783,341	5,310,399	−2,527,058	−47.6
Not reported	----------	----------	39,674	−39,674	−100.0

[1] A minus sign (−) denotes decrease.
[2] Exclusive of water users' associations or irrigation districts which operate projects or project units constructed by the United States Bureau of Reclamation. (See text, second par., p. 5.)

TABLE 13.—INVESTMENT FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN: 1930 AND 1920

DRAINAGE BASIN (See definitions in Introduction)	INVESTMENT		INCREASE [1]	
	1930	1920	Amount	Per cent
	Dollars	*Dollars*	*Dollars*	
Total	1,032,755,790	697,657,328	335,098,462	48.0
Red River (of the North) tributaries	20,925		20,925	
Souris River and tributaries	5,775		5,775	
Other tributaries	15,150		15,150	
Missouri River and tributaries	136,506,721	131,553,106	4,953,615	3.8
Missouri River direct	1,535,899	2,300,975	−765,076	−33.3
Jefferson River and tributaries	2,417,277	5,370,454	−2,953,177	−55.0
Jefferson River direct	125,116	587,388	−462,272	−78.7
Beaverhead River	987,324	1,723,746	−736,422	−42.7
Big Hole River	699,070	1,669,767	−970,697	−58.1
Ruby River	212,595	550,000	−346,405	−62.0
Other tributaries	393,172	839,553	−437,381	−52.7
Madison River	193,345	460,823	−267,478	−58.0
Gallatin River	885,558	977,786	−92,228	−9.4
Smith River	134,099	190,836	−56,737	−29.7
Sun River	7,048,876	4,709,303	2,339,572	49.7
Teton River	1,160,236	1,251,130	−90,894	−7.3
Marias River	3,640,100	5,502,770	−1,862,670	−33.8
Judith River	90,134	281,842	−191,708	−68.0
Musselshell River	765,729	986,755	−221,026	−22.4
Milk River and tributaries	8,561,785	7,271,098	1,290,687	17.8
Milk River direct	5,503,687	154,208	5,349,479	
Snake River	800	8,600	−7,800	−90.7
Other tributaries	3,057,298	7,108,290	−4,050,992	−57.0
Yellowstone River and tributaries	31,917,310	30,181,550	1,735,760	5.8
Yellowstone River direct	7,070,112	7,508,390	−438,278	−5.8
Boulder River	92,927		92,927	
Clark Fork and tributaries	928,437	1,225,483	−297,046	−24.2
Clark Fork direct	920,562	1,163,593	−243,031	−20.9
Tributaries	7,875	61,890	−54,015	−87.3
Shields River	397,120	424,103	−26,983	−6.4
Stillwater River	674,220	307,873	366,347	119.0
Big Horn River and tributaries	19,775,462	16,670,257	3,105,205	18.6
Big Horn River direct	3,042,063	3,635,033	−592,970	−16.3
Popo Agie River	235,333	349,546	−114,213	−32.7
Wind River	5,949,958	2,101,819	3,848,139	183.1
Owl Creek	110,235	52,915	57,320	108.3
No Wood River	162,731	161,588	1,143	0.7
Greybull River	413,845	503,184	−89,339	−17.8
Shell Creek	386,300	380,420	5,880	1.5
Shoshone River	9,285,642	8,702,480	583,162	6.7
Little Horn River	39,590	35,000	4,590	13.1
Other tributaries	140,765	748,272	−598,507	−80.0
Tongue River and tributaries	1,207,250	1,419,629	−212,379	−15.0
Tongue River direct	509,703	734,059	−104,266	−22.4
Goose Creek	584,639	563,518	21,121	3.7
Other tributaries	52,818	122,052	−69,234	−56.7
Powder River and tributaries	823,698	1,195,398	−371,700	−31.1
Powder River direct	167,200	187,502	−20,302	−10.8
Red Fork Creek	15,300	78,500	−63,200	−80.5
Crazy Woman Creek	23,850	127,791	−103,941	−81.3
Clear Creek	551,488	553,465	−1,977	−0.4
Other tributaries	65,860	248,140	−182,280	−73.4
Other tributaries of Yellowstone River	948,084	1,430,417	−482,333	−33.7
Little Missouri River	28,656	71,608	−42,952	−60.0
Moreau River	60	40,927	−40,867	−99.9
Cheyenne River and tributaries	4,530,915	5,605,911	−1,065,996	−19.0
Cheyenne River direct		[2] 5,353,848	−5,353,848	
North Fork (Belle Fourche)	4,276,534	(2)		
South Fork and tributaries	257,131	252,063	5,068	2.0
South Fork direct	230,356	166,820	63,536	38.1
Hat Creek	26,775	85,243	−58,468	−68.6
Other tributaries of Cheyenne River	6,250		6,250	
White River	478,362	183,340	295,043	160.9
Niobrara River	26,879	360,439	−333,560	−92.5
Platte River and tributaries	69,493,120	62,893,983	6,599,137	10.5
Platte River direct	980,656	488,642	501,014	102.5
North Platte River and tributaries	31,010,963	25,702,212	5,308,741	20.7
North Platte River direct	23,310,257	17,624,060	5,686,197	32.3
Beaver Creek	11,427	37,497	−26,070	−69.5
Grand Encampment Creek	75,926	72,692	3,234	4.4
Spring Creek	62,731	184,290	−121,559	−66.0
Pass Creek	47,555	50,051	−2,496	−5.0
Medicine Bow River	434,825	340,664	88,161	25.4
Sweetwater River	78,200	87,322	−9,122	−10.4
Muddy Creek	6,000	7,770	−1,770	−22.8
Box Elder Creek	176,245	104,676	71,569	68.4
La Prele Creek	331,825	327,411	4,414	1.3
Labonte Creek	28,655	71,826	−43,171	−60.1
Laramie River and tributaries	4,268,150	4,386,096	−118,546	−2.7
Laramie River direct	[3] 3,454,911	974,841	2,480,070	
Little Laramie River	273,861	48,753	225,108	461.7
Sybille Creek	24,935	65,041	−40,106	−61.7
North Laramie River	276,120	396,708	−120,588	−30.4
Chugwater Creek	118,648	83,155	35,493	42.7
Other tributaries	119,675	[3] 2,818,198	−2,698,523	
Rawhide Creek	3,200	27,330	−24,130	−88.3
Horse Creek	627,000	536,475	91,125	17.0
Other tributaries of North Platte River	1,548,367	1,837,452	−289,085	−15.7
South Platte River and tributaries	36,899,152	36,676,829	222,323	0.6
South Platte River direct	17,085,220	9,199,612	8,485,608	92.2
Bear Creek	839,800	137,240	702,560	511.9
Clear Creek	2,771,458	862,200	1,909,249	221.4
St. Vrain Creek	1,964,750	9,298,122	−7,333,372	−78.9
Big Thompson Creek	2,317,830	1,102,316	1,215,514	110.3
Cache la Poudre River	9,491,597	7,946,409	1,545,188	19.4
Lone Tree Creek	150,420	2,767,273	−2,616,853	−94.6
Crow Creek	166,821	100,619	66,202	65.8
Big Beaver Creek	68,500	52,600	15,900	30.2
Lodgepole Creek	337,680	445,738	−108,058	−24.2
Other tributaries	1,105,076	4,764,691	−3,659,615	−76.8
Loup River	10,000	21,300	−11,300	−53.0
Other tributaries of Platte River	583,359	5,000	578,359	
Kansas River and tributaries	596,747	537,605	59,142	11.0
Republican River	490,429	500,285	−9,856	−2.0
Smoky Hill River	12,460	34,953	−22,493	−64.4
Other tributaries	93,858	2,367	91,491	
Other tributaries of Missouri River	2,992,605	2,373,962	618,643	26.1
Mississippi River and tributaries, exclusive of Missouri River	31,831,673	35,183,789	−3,352,116	−9.5
Mississippi River direct	284,998	302,385	−17,387	−5.7
Arkansas River and tributaries	21,722,223	30,241,390	−8,519,167	−28.2
Arkansas River direct	11,629,246	15,092,972	−3,463,726	−22.9
South Fork	81,110	60,000	12,110	17.6
Fountain River	419,889	965,287	−545,398	−56.5
St. Charles River	133,306	241,884	−108,578	−44.9
Huerfano River	1,590,384	3,204,519	−1,614,135	−50.4
Apishapa River	704,372	1,190,695	−306,323	−33.3
Purgatoire or Las Animas River and tributaries	1,564,900	494,963	1,069,937	216.2
Purgatoire or Las Animas River direct	1,546,150	491,450	1,054,700	214.6
Trinchera River	18,750	3,513	15,237	433.7
Canadian River and tributaries	1,917,560	5,155,486	−3,237,926	−62.8
Canadian River direct	51,395	148,331	−96,936	−65.4
Cimarron River	719,700	2,188,908	−1,469,208	−67.1
Vermejo River	340,995	1,248,537	−907,542	−72.7
Ocate Creek	230,350	319,529	−89,179	−27.9
Mora River	236,645	262,575	−25,930	−9.9
Ute Creek	23,500	7,000	16,500	235.7
Other tributaries	314,975	980,606	−665,631	−67.9
Cimarron River	203,310	416,304	−212,994	−51.2
Other tributaries of Arkansas River	3,388,146	3,410,280	−22,134	−0.6
St. Francis River	432,600	218,727	213,873	97.8
White River	4,165,818	3,992,967	172,851	4.3
Ouachita River	2,500	1,100	1,400	127.3
Red River and tributaries	5,206,434	398,534	4,807,900	
Other tributaries of Mississippi River	17,100	28,686	−11,586	−40.4
Gulf streams other than Mississippi River and Rio Grande	28,578,193	29,439,808	−861,615	−2.9
Atchafalaya River and tributaries	304,183	407,956	−103,773	−25.4
Tangipahoa River and tributaries	97,077		97,077	
Natalbany River and tributaries	287,221		287,221	
Vermilion River and tributaries	2,680,508	3,355,327	−674,819	−20.1
Calcasieu Lake, River, and tributaries	3,901,748	1,816,380	2,085,368	114.8
Mermentau River and tributaries	7,564,660	7,713,797	−149,137	−1.9
Sabine River and tributaries	700,643	673,935	26,708	4.0
Neches River	2,695,128	1,596,770	1,098,358	68.8
Trinity River	480,470	1,743,621	−1,263,151	−72.4
Brazos River	657,555	569,543	88,012	15.5
Colorado River	1,914,643	3,960,916	−1,046,273	−46.2
San Antonio River	3,038,635	5,087,542	−2,048,907	−40.3
Nueces River	3,071,489	1,326,555	1,744,934	131.5
Other Gulf streams	1,184,233	1,587,466	−403,233	−25.4
Rio Grande and tributaries [4]	52,979,214	33,885,580	19,093,634	56.3
Rio Grande direct	37,326,421	21,340,536	15,984,885	74.9
Alamosa River	801,325	556,909	244,416	43.9
La Jara River	17,825	30,275	−12,450	−41.1
Conejos River	839,670	564,739	274,937	48.7
Trinchera River	677,000	659,890	17,110	2.6
Rio Costilla	910,360	11,471	898,889	
Pueblo River	78,879	19,982	58,897	294.8
Rio Chama	133,858	141,891	−8,033	−5.7
Rio Santa Cruz	510,745	18,281	492,464	
Tesuque Creek	80,842	16,864	63,978	379.4
Rio Pueroo	548,233	88,109	460,124	522.2
Pecos River and tributaries	7,220,317	7,483,049	−262,732	−3.5
Pecos River direct	4,245,980	5,514,099	−1,268,119	−23.0
Gallinas River	43,850	519,566	−475,716	−91.6
Hondo River	621,088	578,094	43,594	7.5
Penasco River	107,545	222,693	−115,148	−51.7
Other tributaries	2,201,254	648,597	1,552,657	239.4
Other tributaries of Rio Grande	3,834,733	2,953,584	881,149	29.8
Independent streams in Rio Grande Drainage Basin	769,394	938,531	−169,137	−18.0
Rio Mimbres	260,071	318,062	−57,991	−18.2
Fresnal River	57,370	297,724	−240,354	−80.7
Rio Tularosa	20,000	33,000	−13,000	−41.0
Saguache River	55,465	103,048	−47,583	−46.2
San Luis River	56,775	184,312	−127,537	−69.2
Other independent streams	319,713	1,485	318,228	

[1] A minus sign (−) denotes decrease. Per cent not shown when more than 1,000.
[2] Belle Fourche River included in "Cheyenne River direct."
[3] Laramie River direct includes $2,440,000 in 1930, reported in "Other tributaries of Laramie River" in 1920.
[4] Not including "Independent streams in Rio Grande Drainage Basin."

TABLE 13.—INVESTMENT FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN: 1930 AND 1920—Continued

DRAINAGE BASIN (See definitions in Introduction)	INVESTMENT 1930	INVESTMENT 1920	INCREASE[1] Amount	INCREASE[1] Per cent
	Dollars	*Dollars*	*Dollars*	
Colorado River and tributaries	132, 350, 247	86, 696, 940	45, 653, 307	52. 7
Colorado River direct	35, 711, 728	28, 357, 883	7, 353, 845	25. 9
Green River and tributaries	8, 820, 435	8, 592, 346	228, 089	2. 7
Green River direct	630, 488	547, 166	83, 322	15. 2
New Fork	533, 415	293, 043	240, 372	82. 0
Horse Creek	19, 823	51, 163	−31, 340	−61. 3
Cottonwood Creek	20, 641	456, 827	−427, 186	−93. 5
South Piney Creek	7, 830	[2] 85, 728		
La Barge Creek	28, 900	39, 150	−10, 250	−26. 2
Fontenelle Creek	12, 600	33, 000	−20, 400	−61. 8
Bitter Creek	6, 445	93, 158	−86, 713	−93. 1
Blacks Fork	208, 405	566, 770	−358, 281	−63. 2
Henrys Fork	111, 750	77, 320	34, 430	44. 5
Ashley Fork River	402, 600	374, 140	28, 460	7. 6
Duchesne River	2, 977, 463	2, 428, 174	549, 289	22. 6
Price River	1, 140, 078	458, 725	681, 353	148. 5
San Rafael River	258, 800	288, 100	−29, 300	−10. 2
Yampa River and tributaries	973, 607	1, 197, 975	−224, 368	−18. 7
Yampa River direct	208, 435	102, 768	135, 667	83. 3
Little Snake River	210, 827	511, 556	−291, 729	−57. 0
Other tributaries	[2] 456, 345	523, 651		
White River	460, 500	447, 141	13, 359	3. 0
Other tributaries of Green River	1, 018, 000	1, 154, 760	−136, 760	−11. 8
Fraser River	12, 155	55, 860	−43, 705	−78. 2
Muddy Creek	110, 650	33, 122	77, 528	234. 1
Blue River	115, 210	116, 608	−1, 398	−1. 2
Eagle River	322, 084	109, 012	213, 072	195. 5
Roaring Fork	559, 053	407, 266	152, 087	37. 5
Plateau Creek	315, 135	341, 755	−26, 620	−7. 8
Gunnison River and tributaries	10, 538, 635	10, 745, 767	−207, 132	−1. 9
Gunnison River direct	784, 520	1, 001, 819	−217, 299	−21. 7
Taylor River	7, 700	6, 900	800	11. 6
Tomichi Creek	112, 835	129, 243	−16, 408	−12. 7
North Fork	764, 243	622, 047	141, 596	22. 7
Smith Fork	484, 950	396, 075	88, 875	22. 4
Uncompahgre River	6, 993, 474	6, 945, 702	47, 772	0. 7
Other tributaries	1, 390, 913	1, 043, 381	−252, 468	−15. 4
Rio Dolores	6, 482, 945	4, 847, 569	1, 635, 376	33. 7
Fremont River	294, 965	567, 050	−272, 085	−48. 0
Virgin River	708, 926	1, 622, 997	−914, 071	−56. 3
San Juan River and tributaries	2, 587, 588	3, 088, 495	−500, 907	−16. 2
San Juan River direct	717, 995	1, 039, 358	−321, 363	−30. 9
Mancos River	113, 355	35, 477	77, 878	219. 5
Los Pinos River	561, 050	524, 590	36, 460	7. 0
Animas River	811, 597	1, 148, 038	−336, 491	−29. 3
La Plata River	172, 714	142, 588	30, 126	21. 1
Other tributaries	210, 877	198, 304	12, 483	6. 3
Kanab Creek	13, 540	20, 500	−6, 960	−34. 0
Williams River	62, 321	55, 504	6, 817	12. 3
Little Colorado River and tributaries	1, 452, 187	460, 206	991, 981	215. 6
Little Colorado River direct	465, 060	146, 913	318, 147	216. 6
Nutrioso Creek	12, 250	16, 500	−4, 250	−25. 8
Concho Creek	52, 725	49, 228	3, 497	7. 1
Other tributaries	922, 152	247, 565	674, 587	272. 5
Gila River and tributaries	62, 542, 801	25, 230, 237	37, 306, 564	147. 8
Gila River direct	14, 262, 958	2, 888, 708	11, 374, 250	393. 7
San Francisco River	41, 904	25, 224	16, 740	66. 4
San Pedro River	184, 986	359, 153	−174, 168	−48. 5
Santa Cruz River	2, 251, 988	5, 168, 524	−2, 916, 536	−56. 4
Salt River and tributaries	36, 188, 493	14, 939, 034	21, 249, 459	142. 2
Salt River direct	32, 193, 073	14, 339, 874	17, 853, 199	124. 5
Tonto Creek	20, 550	9, 468	11, 082	117. 0
Rio Verde	402, 381	200, 482	252, 899	120. 7
Other tributaries	3, 512, 489	380, 210	3, 132, 279	823. 8
Agua Fria River	7, 461, 130	1, 428, 077	6, 023, 053	421. 8
Hassayampa River	26, 450	51, 299	−24, 849	−48. 4
Other tributaries of Gila River	2, 134, 833	376, 218	1, 758, 615	467. 4
Other tributaries of Colorado River	1, 698, 989	2, 038, 763	−339, 774	−16. 7
Whitewater Draw and tributaries	230, 606	299, 368	−68, 762	−23. 0
Great Basin Drainage	72, 068, 281	66, 580, 376	5, 478, 905	8. 2
Tributaries of Great Salt Lake	21, 884, 330	18, 109, 805	3, 774, 525	20. 8
Bear River and tributaries	7, 493, 444	7, 438, 075	55, 369	0. 7
Bear River direct	4, 176, 229	4, 512, 182	−336, 953	−7. 5
Little Bear River	703, 436	720, 363	−16, 927	−2. 3
Malad River	23, 384	18, 097	5, 287	29. 2
Thomas Fork	42, 830	25, 389	17, 441	68. 7
Mill Creek	91, 809	21, 012	70, 797	336. 9
Little Malad Creek	89, 952	332, 175	−242, 223	−72. 9
Other tributaries	2, 366, 804	1, 808, 857	557, 947	30. 8
Weber River and tributaries	4, 956, 709	2, 106, 048	2, 849, 721	135. 3
Weber River direct	3, 713, 175	1, 353, 323	2, 359, 852	174. 4
Ogden River	925, 750	423, 755	502, 001	118. 5
East Canyon Creek	45, 485	74, 010	−28, 526	−38. 5
Other tributaries	271, 353	254, 960	16, 393	6. 4
Jordan River and Utah Lake and tributaries	9, 435, 117	8, 565, 682	869, 435	10. 2
Jordan River direct	1, 897, 577	746, 836	1, 150, 741	154. 1
Spanish Fork River	3, 837, 653	4, 126, 999	−289, 346	−7. 0
Hobble Creek	225, 712	41, 024	184, 688	450. 2
Provo River	1, 694, 118	985, 979	708, 139	71. 8
American Fork River	62, 000	302, 449	−240, 449	−79. 5
Little Cottonwood Creek	217, 178	226, 221	−9, 043	−4. 0
Big Cottonwood Creek	173, 453	315, 563	−142, 110	−45. 0
Other tributaries	1, 327, 426	1, 820, 611	−493, 185	−27. 1
Great Basin Drainage—Contd.				
Independent streams	50, 183, 951	48, 479, 571	1, 704, 380	3. 5
Sevier River and tributaries	6, 793, 638	9, 500, 836	−2, 716, 198	−28. 6
Sevier River direct	4, 539, 682	7, 374, 975	−2, 835, 293	−38. 4
San Pitch River	1, 005, 530	1, 142, 510	−136, 980	−12. 0
Otter Creek	225, 470	151, 850	73, 620	48. 5
Other tributaries	1, 022, 956	840, 501	182, 455	21. 7
Beaver River	793, 337	842, 305	−48, 968	−5. 8
Coal Creek	182, 140	179, 171	2, 969	1. 7
Deep Creek (Utah)	12, 277	8, 844	3, 433	38. 8
Grouse Creek	27, 700	28, 338	−638	−2. 3
Humboldt River and tributaries	2, 559, 497	1, 751, 566	807, 931	46. 1
Humboldt River direct	1, 210, 629	739, 995	476, 634	64. 4
East Fork of Humboldt River	2, 050	202, 071	−199, 421	−98. 7
La Moille Creek	160, 475	91, 280	69, 195	75. 8
North Fork of Humboldt River	20, 145	57, 403	−37, 258	−64. 9
South Fork of Humboldt River	345, 400	288, 162	57, 238	19. 9
Pine Creek	20, 252	2, 809	17, 443	621. 0
Reese River	42, 975	79, 120	−36, 145	−45. 7
Little Humboldt River	40, 740	2, 544	38, 196	
Other tributaries	710, 231	288, 182	422, 049	146. 4
Truckee River and tributaries	1, 814, 690	594, 187	1, 220, 503	205. 4
Truckee River direct	1, 572, 525	485, 900	1, 086, 625	223. 6
Steamboat Creek	161, 400	42, 070	119, 330	283. 6
Other tributaries	80, 765	66, 217	14, 548	22. 0
Carson River and tributaries	7, 210, 361	8, 064, 685	−854, 324	−10. 6
Carson River direct	294, 902	164, 395	130, 507	79. 4
Tributaries	6, 915, 459	7, 900, 290	−984, 831	−12. 5
Walker River and tributaries	2, 213, 164	1, 699, 059	514, 105	30. 3
Walker River direct	2, 182, 664	1, 504, 464	678, 200	45. 1
Tributaries [3]	30, 500	194, 595	−164, 095	−84. 3
Steptoe Creek	222, 870	189, 986	32, 884	17. 3
Long Valley Creek	2, 526	171, 642	−169, 116	−98. 5
Tributaries of Mono Lake	1, 281, 055	5, 363, 858	−4, 082, 803	−76. 1
Susan River	1, 509, 048	242, 426	1, 266, 622	522. 5
Mohave River	1, 192, 329	616, 709	575, 620	93. 3
Owens River	325, 653	5, 785, 132	−5, 459, 479	−94. 4
San Jacinto River	4, 489, 207	2, 139, 257	2, 349, 950	109. 8
Quinn River	68, 858	50, 548	18, 310	36. 2
Deep Creek (Oregon)	5, 275	6, 829	−1, 554	−22. 8
Donner and Blitzen River	1, 804, 000	131, 750	1, 672, 250	
Silvies River	80, 114	1, 005, 862	−925, 748	−92. 0
Other independent streams	17, 596, 212	10, 097, 521	7, 498, 691	74. 3
Columbia River and tributaries	157, 355, 114	145, 672, 382	11, 682, 732	8. 0
Columbia River direct	1, 377, 002	2, 240, 216	−863, 214	−38. 5
Kootenai River	230, 535	221, 976	8, 559	3. 9
Clark Fork and tributaries	9, 047, 331	8, 421, 384	625, 947	7. 4
Clark Fork direct	504, 725	369, 320	135, 405	36. 7
Big Blackfoot River	233, 832	624, 291	−390, 459	−62. 5
Bitter Root River	1, 935, 651	1, 138, 329	797, 322	70. 0
Flathead River	5, 603, 512	4, 737, 311	866, 201	18. 3
Other tributaries	769, 611	1, 552, 133	−782, 522	−50. 4
Colville River	355, 290	486, 747	−131, 457	−27. 0
Spokane River	1, 352, 395	1, 637, 743	−285, 348	−17. 4
Okanogan River and tributaries	3, 233, 709	2, 259, 018	974, 781	43. 2
Okanogan River direct	234, 995	227, 290	7, 705	3. 4
Tributaries	2, 998, 804	2, 031, 728	967, 076	47. 6
Methow River	770, 183	483, 809	286, 374	59. 2
Entiat River	184, 992	73, 889	111, 103	150. 4
Wenatchee River	2, 922, 367	1, 868, 541	1, 053, 826	56. 4
Crab Creek	55, 950	859, 050	−803, 100	−93. 5
Yakima River and tributaries	25, 282, 348	14, 849, 689	10, 432, 659	70. 3
Yakima River direct	22, 044, 214	13, 012, 727	8, 731, 487	62. 8
Naches River	1, 740, 759	458, 027	1, 282, 732	281. 4
Ahtanum Creek	103, 747	88, 443	15, 304	17. 3
Other tributaries	787, 628	390, 492	397, 136	101. 7
Snake River and tributaries [4]	93, 265, 245	93, 625, 117	−359, 872	−0. 4
Snake River direct	33, 983, 494	37, 228, 741	−3, 245, 247	−8. 7
South Fork and tributaries	3, 584, 906	6, 957, 591	−3, 372, 685	−48. 5
South Fork direct	3, 342, 580	6, 693, 903	−3, 351, 317	−50. 1
Gros Ventre River	16, 475	31, 225	−14, 750	−47. 2
Little Gros Ventre River	4, 800	18, 740	−13, 940	−74. 4
Salt River	111, 368	149, 207	−37, 839	−25. 4
Other tributaries	109, 677	64, 510	45, 167	70. 0
Henrys Fork	1, 925, 652	2, 001, 841	−76, 189	−3. 8
Blackfoot River	1, 792, 321	1, 022, 276	770, 045	75. 3
Port Neuf River	620, 201	1, 141, 528	−512, 327	−44. 9
Raft River	50, 780	100, 928	−50, 142	−49. 7
Goose Creek	1, 508, 529	393, 755	1, 114, 765	283. 1
Salmon Falls River	2, 508, 895	4, 152, 745	−1, 553, 850	−37. 4
Little Wood River	686, 350	1, 016, 699	−330, 349	−32. 5
Big Wood River	9, 817, 833	5, 395, 133	4, 422, 700	82. 0
Bruneau River	571, 321	574, 955	−3, 634	−0. 6
Owyhee River	3, 200, 445	1, 411, 424	1, 849, 021	131. 0
Boise River	16, 135, 214	16, 013, 734	121, 480	0. 8
Malheur River	5, 512, 044	2, 027, 683	3, 485, 261	171. 9
Payette River	4, 695, 747	2, 915, 780	1, 779, 967	61. 0
Weiser River	1, 122, 601	2, 018, 450	−895, 759	−44. 4
Burnt River	255, 199	639, 491	−384, 292	−60. 1
Powder River	1, 290, 723	1, 552, 987	−262, 264	−16. 9
Pine Creek	152, 140	97, 522	54, 618	56. 0
Imnaha River	203, 301	206, 378	−3, 077	−1. 5
Salmon River	875, 750	1, 175, 362	−299, 612	−25. 5
Grande Ronde River	386, 759	471, 436	−84, 677	−18. 0
Clearwater River	431, 309	298, 755	132, 554	44. 4

[1] A minus sign (−) denotes decrease. Per cent not shown when more than 1,000.
[2] South Piney Creek included several projects in 1920 shown in "Other tributaries of Green River" in 1930.
[3] Including East Walker and West Walker Rivers.
[4] Not including "Independent streams in Snake River Basin."

TABLE 13.—INVESTMENT FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN: 1930 AND 1920—Continued

DRAINAGE BASIN (See definitions in Introduction)	INVESTMENT		INCREASE [1]	
	1930	1920	Amount	Per cent
Columbia River and tributaries—Continued				
Snake River and tributaries [2]—Con.	*Dollars*	*Dollars*	*Dollars*	
Asotin Creek	250,331	606,084	−355,753	−58.7
Palouse River	42,595	175,100	−132,505	−75.7
Other tributaries	1,500,818	4,028,739	−2,527,921	−62.7
Independent streams in Snake River Basin	2,575,068	3,828,606	−1,253,538	−32.7
Camas Creek	546,925	578,627	−31,702	−5.5
Beaver Creek	8,500	7,259	1,241	17.1
Medicine Lodge Creek	7,535	31,690	−24,155	−76.2
Little Lost River	16,600	474,465	−457,865	−96.5
Big Lost River	1,833,725	2,709,698	−875,973	−32.3
Other	161,783	26,867	134,916	502.2
Walla Walla River	747,053	1,171,914	−424,861	−36.3
Klickitat River	6,125	64,423	−58,298	−90.5
White Salmon River	111,862	91,786	20,076	21.9
Umatilla River	3,752,200	4,308,892	−556,692	−12.9
Willow Creek	79,547	60,139	19,408	32.3
John Day River	436,492	510,248	−73,756	−14.4
Deschutes River	6,046,877	5,078,636	968,241	19.1
Hood River	957,875	807,269	150,606	18.6
Willamette River	311,011	100,561	211,350	210.2
Other tributaries of Columbia River	3,042,631	2,022,729	1,019,902	38.9
Other independent streams in Columbia River Basin	610,036	----------	610,036	-------
Pacific Ocean streams other than Colorado and Columbia Rivers	420,065,422	167,393,448	252,666,974	150.9
Dungeness River	296,126	94,010	202,116	215.0
Rogue River and tributaries	5,144,992	1,783,989	3,361,003	188.4
Rogue River direct	1,605,192	165,665	1,439,527	868.9
Little Butte Creek	1,219,886	604,794	615,092	101.7
Bear Creek	1,475,733	615,878	859,855	139.6
Evans Creek	22,504	40,836	−18,332	−44.9
Applegate River	166,953	180,894	−13,941	−7.7
Illinois River	203,421	87,966	115,455	131.2
Other tributaries	451,303	87,956	363,347	413.1
Klamath River and tributaries	9,430,566	5,502,890	3,927,676	71.4
Klamath River direct	4,253,840	1,734,099	2,519,741	145.3
Lost River	4,295,740	3,451,383	844,357	24.5
Sprague River	259,900	32,308	227,592	703.0
Other tributaries	621,086	285,040	336,046	117.9
Russian River	534,835	162,630	372,205	228.9
Sacramento River and tributaries	118,750,541	28,833,106	89,917,435	311.9
Sacramento River direct	17,502,425	11,830,374	5,672,051	47.9
Pit River	982,284	799,913	182,371	22.8
Cow Creek	89,200	126,946	−37,686	−29.7
Cottonwood Creek	821,779	573,601	248,178	43.3
Battle Creek	87,685	95,139	−7,454	−7.8
Stony Creek	2,439,017	1,539,614	899,403	58.4
Feather River	82,408,623	3,937,380	78,531,243	-------
Yuba River	3,200,008	2,518,770	681,238	27.0
Cache Creek	2,421,872	916,477	1,505,395	164.3
American River	3,437,456	2,890,114	547,342	18.9
Other tributaries	5,300,132	3,004,778	1,695,354	47.0
San Joaquin River and tributaries [3]	111,540,168	71,694,653	39,845,515	55.6
San Joaquin River direct	12,006,191	9,224,164	2,782,027	30.2
Kern River	7,050,041	17,573,637	−10,523,596	−59.9
Tulare Lake	817,154	3,910,620	−3,093,466	−79.1
Tule River	4,133,082	2,842,495	1,291,487	45.4
Kaweah River	11,449,116	6,186,840	5,262,276	85.1
Kings River	24,300,065	8,145,446	16,155,219	198.3
Fresno River	432,791	415,385	17,406	4.2
Merced River	17,249,861	3,812,235	13,437,625	352.5
Tuolumne River	13,984,091	7,173,802	6,810,289	94.9
Stanislaus River	10,280,554	7,840,486	2,440,068	31.1
Calaveras River	463,580	818,995	−355,415	−43.4
Mokelumne River	3,709,181	1,675,137	2,034,044	121.4
Cosumnes River	592,683	153,899	438,784	285.1
Other tributaries	5,070,278	1,921,512	3,148,766	163.9
Independent streams in San Joaquin River Basin	906,636	----------	906,636	-------
Tributaries of San Francisco Bay other than Sacramento and San Joaquin Rivers	9,405,139	4,940,061	4,465,078	90.4
Coyote Creek	2,575,822	1,453,138	1,122,684	77.3
Guadalupe River	2,445,426	1,883,049	562,377	29.9
Other tributaries	4,383,891	1,603,874	2,780,017	173.3
Pajaro River	2,970,981	1,248,343	1,722,638	138.0
Salinas River	4,774,377	2,570,331	2,204,046	85.7
Santa María River	1,044,252	573,194	471,058	82.2
Santa Ynez River	3,606,837	284,037	3,322,800	-------
Santa Clara River	5,422,200	2,211,473	3,210,727	145.2
Los Angeles River	17,879,997	5,508,400	12,371,597	224.6
San Gabriel River	79,955,209	12,862,319	67,092,890	521.6
Santa Ana River	27,092,533	19,918,550	7,173,983	36.0
San Diego River	3,192,381	1,789,124	1,403,257	78.4
Other Pacific Ocean streams	18,117,052	7,421,338	10,695,314	144.1

[1] A minus sign (−) denotes decrease. Per cent not shown when more than 1,000.
[2] Not including "Independent streams in Snake River Basin."
[3] Not including "Independent streams in San Joaquin River Basin."

COST OF PREPARING LAND FOR IRRIGATION

The costs shown in Table 14 represent estimates of expenditures already made on the areas reporting, and include clearing and grading land, and building farm laterals and farm irrigation structures. They therefore represent expenditures additional to the investment in irrigation enterprises shown in Tables 9 to 13, inclusive.

TABLE 14.—ESTIMATED COST OF PREPARING LAND FOR THE 19 IRRIGATION STATES, 1930

ITEM	1930
Area reporting—acres	18,579,542
Estimated cost reported—dollars	524,046,596
Average, per acre—dollars	28.21

DRAINAGE OF IRRIGATED LAND

The areas in Table 15 relate only to lands within the boundaries of irrigation enterprises. "Additional area needing drainage" represents all lands so reported by the owners of the enterprises and includes lands producing partial crops as well as those wholly unproductive.

TABLE 15.—AREA WITHIN IRRIGATION ENTERPRISES FOR WHICH DRAINS HAVE BEEN INSTALLED AND ADDITIONAL AREA IN NEED OF DRAINAGE, FOR THE 19 IRRIGATION STATES: 1930 AND 1920

ITEM	1930	1920
Enterprises reporting land drained or needing drainage—number	3,853	3,068
Area [1] in enterprises reporting land drained or needing drainage—acres	10,611,415	8,860,760
Area for which drains have been installed—acres	3,707,354	1,519,853
Additional area needing drainage—acres	1,078,566	1,476,771
Proportion that area for which drains have been installed is of area [1] in all irrigation enterprises reporting drainage—per cent	34.9	17.2
Proportion that area for which drains have been installed is of area [1] in all irrigation enterprises—per cent	12.1	4.2
Proportion that area for which drains have been installed plus that needing drainage is of area [1] in all irrigation enterprises—per cent	15.6	8.3

[1] Irrigable area, 1930; total area, 1920.

QUANTITY OF WATER USED

The quantity of water used was reported on only part of the irrigation schedules, and all areas reporting "quantity of water entering canals" did not also report "quantity delivered to irrigators." In order that proper values may be assigned to the figures given, those representing measurements and those representing estimates are reported separately in Table 16. While the data are incomplete, the reports represent sufficient acreage to serve as bases for reliable averages.

Practice among irrigation enterprises is not uniform with regard to the place to which water is delivered; some carry it to individual farms, but others only to laterals which serve several farms. The "total quantity of water delivered to irrigators," shown in Table 16, is the quantity reported in answer to a question preceded by the inquiry: "Average head of water delivered per individual irrigator."

TABLE 16.—WATER USED FOR THE 19 IRRIGATION STATES: 1929 AND 1919

ITEM (See definitions in Introduction)	TOTAL		MEASURED		NOT MEASURED	
	1929	1919	1929	1919	1929	1919
Average flow of water entering canals ..... sec.-ft.	133,001	234,020	103,246	109,714	29,755	124,306
Area irrigated ..... acres	9,416,959	9,645,331	7,670,346	6,560,188	1,746,613	3,085,143
Average, per second-foot ..... acres	71	41	74	60	59	25
Total quantity of water entering canals ..... ac.-ft.	44,335,802	60,005,556	31,606,035	36,626,781	12,729,767	23,378,775
Area irrigated ..... acres	10,723,726	10,879,174	7,815,218	7,771,979	2,908,508	3,107,195
Average quantity per acre ..... ac.-ft.	4.1	5.5	4.0	4.7	4.4	7.5
Total quantity of water delivered to irrigators ..... ac.-ft.	17,968,596	15,330,104	14,311,037	8,673,341	3,657,559	6,665,763
Area irrigated ..... acres	6,474,338	6,059,953	5,054,632	3,980,026	1,419,706	2,079,927
Average quantity per acre ..... ac.-ft.	2.8	2.5	2.8	2.2	2.6	3.2

IRRIGATION WORKS

TABLE 17.—DAMS FOR THE 19 IRRIGATION STATES, BY MATERIAL, 1930

MATERIAL	DAMS	
	Diversion	Storage
	Number	*Number*
Total	21,947	2,949
Concrete or masonry	2,381	302
Timber	3,077	

MATERIAL	DAMS	
	Diversion	Storage
	Number	*Number*
Earth and rock	[1] 15,686	1,712
Other and mixed	803	719
Not reported		156

[1] Principally temporary dams, replaced annually.

TABLE 18.—LENGTH OF PIPE LINES FOR THE 19 IRRIGATION STATES, BY MATERIAL AND SIZE, 1930

MATERIAL AND SIZE (DIAMETER)	Length
	Miles
Total	17,363.1
Concrete:	
1 to 12 inches	7,519.1
13 to 30 inches	2,541.4
More than 30 inches	140.5
Not segregated by size	123.5
Clay:	
1 to 12 inches	235.4
13 to 30 inches	60.1
More than 30 inches	0.3
Not segregated by size	27.0
Metal:	
1 to 12 inches	4,919.7
13 to 30 inches	739.4
More than 30 inches	96.1
Not segregated by size	2.5

MATERIAL AND SIZE (DIAMETER)	Length
	Miles
Wood:	
1 to 12 inches	593.4
13 to 30 inches	296.7
More than 30 inches	109.7
Not segregated by size	4.0
Not segregated:	
Concrete and—	
Clay	12.2
Metal	530.5
Wood	11.3
Metal and—	
Clay	1.0
Wood	34.6
Concrete and—	
Clay and metal	40.8
Metal and wood	111.5
Material not specified	93.5

TABLE 19.—IRRIGATION WORKS FOR THE 19 IRRIGATION STATES, BY DATE OF BEGINNING, 1930

DATE OF BEGINNING (See definitions in Introduction)	DAMS		MAIN CANALS		Lateral canals, length	RESERVOIRS		Pipe lines, length	FLOWING WELLS		PUMPED WELLS		PUMPING PLANTS			
	Diversion	Storage	Capacity	Length		Number	Capacity		Number	Capacity	Number	Capacity	Number	Engine or motor capacity	Pumps	
															Number	Capacity
	Number	*Number*	*Sec.-ft.*	*Miles*	*Miles*		*Acre-ft.*	*Miles*		*G. p. m.*		*G. p. m.*		*H. p.*		*G. p. m.*
Total	21,947	2,949	547,314	75,375	51,427	5,122	24,508,590	17,363.1	4,811	609,367	56,720	32,467,120	59,344	1,283,419	61,445	57,244,859
Before 1860	600	127	11,151	2,900	1,238	138	223,066	221.3	9	350	75	60,937	89	4,456	101	90,063
1860-1869	1,719	80	42,859	5,180	2,170	102	195,052	73.6	21	300	54	24,573	72	1,350	78	74,345
1870-1879	3,172	165	49,725	8,166	2,994	206	262,319	260.2	107	6,574	82	68,299	105	7,664	115	818,006
1880-1889	5,074	333	103,746	15,748	6,488	391	1,478,372	1,035.7	513	39,255	260	177,612	338	22,712	373	1,292,116
1890-1899	3,046	321	76,226	10,809	7,371	381	1,513,410	976.2	310	21,447	610	430,994	623	30,074	714	2,719,256
1900-1904	1,828	289	58,700	6,818	6,492	353	1,855,623	545.8	462	64,626	704	452,875	916	30,607	990	2,956,984
1905-1909	1,237	331	97,518	8,323	13,149	507	11,210,849	1,990.2	396	112,029	1,704	1,320,961	1,911	108,307	2,075	5,384,338
1910-1914	1,388	417	27,382	4,688	3,141	740	1,647,521	2,020.7	677	116,701	5,371	3,146,633	5,602	151,797	5,940	5,946,919
1915-1919	956	263	26,379	3,637	3,408	501	2,334,230	2,225.4	517	41,509	6,623	4,276,141	6,961	182,727	7,216	9,503,745
1920-1924	659	198	20,694	2,565	1,765	470	2,484,704	2,782.5	572	57,419	7,902	4,567,304	8,258	171,067	8,468	6,042,094
1925-1929	605	214	16,570	1,857	2,554	509	1,188,870	2,000.2	532	71,065	10,829	6,270,295	11,551	218,037	11,908	8,066,589
Not reported	1,663	211	16,274	4,684	648	824	114,514	2,593.3	686	78,080	22,425	11,661,496	22,918	336,612	23,407	13,750,404

TABLE 20.—IRRIGATION WORKS FOR THE 19 IRRIGATION STATES, BY CHARACTER OF ENTERPRISE, 1930

CHARACTER OF ENTERPRISE (See definitions in Introduction)	DAMS		MAIN CANALS		Lateral canals, length	RESERVOIRS		Pipe lines, length	FLOWING WELLS		PUMPED WELLS		PUMPING PLANTS			
	Diversion	Storage	Capacity	Length		Number	Capacity		Number	Capacity	Number	Capacity	Number	Engine or motor capacity	Pumps	
															Number	Capacity
	Number	*Number*	*Sec.-ft.*	*Miles*	*Miles*		*Acre-ft.*	*Miles*		*G. p. m.*		*G. p. m.*		*H. p.*		*G. p. m.*
Total	21,947	2,949	547,314	75,375	51,427	5,122	24,508,590	17,363.1	4,811	609,367	56,729	32,467,120	59,344	1,283,419	61,445	57,244,859
Individual and partnership	18,971	1,953	141,492	40,831	4,818	3,753	910,829	9,870.3	4,278	565,266	53,908	29,301,036	56,387	939,008	57,803	36,661,720
Cooperative	2,256	590	205,317	19,638	13,751	871	2,871,247	3,115.3	191	23,581	1,100	873,092	1,189	111,296	1,494	4,312,711
Irrigation district	209	136	83,630	7,038	14,102	178	3,739,285	2,083.5	302	15,315	763	1,005,612	810	108,004	1,077	7,233,209
Carey Act	14	13	4,118	232	412	12	481,450	2.1								
Commercial	146	140	41,067	3,395	4,674	175	1,613,020	589.6	11	5,052	424	642,082	452	73,421	573	4,922,012
United States Indian Service	103	28	11,947	1,384	3,773	35	1,798,499	94.6	1	27	108	121,463	103	7,317	46	262,723
United States Bureau of Reclamation	52	48	55,393	2,250	9,435	47	12,978,850	433.5	3	30	180	380,000	198	30,577	232	1,896,587
State	0	4	80	37	14	14	351	218.2			54	34,855	72	2,100	81	76,617
City	30	27	2,235	426	141	35	114,956	954.8	1	90	101	107,080	103	5,141	94	1,007,480
Other	7	1	2,020	144	307	2	103	1.2	24	6	1	900	30	6,495	45	870,900

TABLE 21.—IRRIGATION WORKS FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN, 1930

DRAINAGE BASIN (See definitions in Introduction)	DAMS		MAIN CANALS		Lateral canals, length	RESERVOIRS		Pipelines, length	FLOWING WELLS		PUMPED WELLS		PUMPING PLANTS				
	Diversion	Storage	Capacity	Length		Number	Capacity		Number	Capacity	Number	Capacity	Number	Engine or motor capacity	Pumps: Number	Pumps: Capacity	Average lift
	No.	*No.*	*Sec.-ft.*	*Miles*	*Miles*		*Acre-ft.*	*Miles*		*G.p.m.*		*G. p. m.*		*H. p.*		*G. p. m.*	*Feet*
Total	21,047	2,949	547,314	75,375	51,427	5,122	24,508,580	17,363.1	4,811	609,367	56,729	32,487,120	59,344	1,283,419	61,445	57,244,859	51
Red River (of the North) tributaries			2	1				1.2					8	153	8	20,400	13
Souris River and tributaries													5	123	5	14,400	13
Other tributaries			2	1				1.2					3	30	3	6,000	14
Missouri River and tributaries	5,006	784	130,173	19,915	10,697	743	4,043,135	101.1	21	7,218	1,071	613,360	1,198	25,788	1,279	1,343,545	26
Missouri River direct	15	10	1,613	82	136	8	1,406	0.7					16	716	16	46,920	31
Jefferson River and tributaries	728	41	9,440	1,936	433	40	65,327	0.5			7	978	7	64	9	3,230	31
Jefferson River direct	22		766	125	17								2	40	2	2,250	6
Beaverhead River	298	12	3,258	694	230	13	54,025										
Big Hole River	287	9	3,612	594	80	8	2,965										
Ruby River	41	7	703	188	15	7	985										
Other tributaries	80	13	1,011	335	85	12	7,352	0.5			7	978	5	24	7	980	44
Madison River	23	6	1,005	263	20	7	791	0.2									
Gallatin River	159	1	3,040	563	255			0.2					1	15	1	2,300	13
Smith River	34	1	603	211	14	2	700										
Sun River	27	5	1,829	145	326	4	127,600	3.3			2	660	12	74	10	5,358	16
Teton River	19	4	1,383	170	121	4	96,001				2	1,600	10	112	13	7,800	17
Marias River	30	15	1,447	129	481	18	142,319	1.0					5	183	5	8,540	17
Judith River	38	3	423	134	21	1	1	1.1					2	10	2	2,450	8
Musselshell River	202	14	3,153	556	59	9	30,164	0.4			5	2,765	19	234	19	18,713	14
Milk River and tributaries	151	74	4,429	537	514	63	181,490	10.2	1	8	3	4,176	19	454	23	56,654	17
Milk River direct	25	9	2,230	308	440	6	80,870	10.2					7	230	11	35,810	14
Snake River		1				1	5										
Other tributaries	126	64	2,199	229	74	56	100,615		1	8	3	4,176	12	224	12	20,844	18
Yellowstone River and tributaries	1,000	86	29,530	5,344	2,671	90	575,611	4.9	6	2,265	4	555	55	3,284	68	273,074	19
Yellowstone River direct	23	2	5,349	597	499	2	1,700	1.0					27	2,952	36	245,249	22
Boulder River	3		524	87	6												
Clark Fork and tributaries	49	1	4,152	650	142	1	4,000	0.7	1	100			2	12	2	1,410	9
Clark Fork direct	49		4,108	636	139			0.7	1	100			2	12	2	1,410	9
Tributaries		1	44	14	3	1	4,000										
Shields River	101	2	1,166	394	59	1	800						1	20	1	4,000	14
Stillwater River	57	1	1,168	221	111								1	9	1	160	12
Big Horn River and tributaries	308	29	12,194	2,082	1,523	41	502,077	2.2	4	1,965			5	93	5	4,240	9
Big Horn River direct	23		1,703	323	221	2	42		2	950			5	93	5	4,240	9
Popo Agie River	16		721	209	35			0.8									
Wind River	50	5	4,070	363	586	5	38,435	0.4									
Owl Creek	20		342	115	20	2	400		1	1,000							
No Wood River	68	4	357	157	14	10	1,120										
Greybull River	20		882	238	66												
Shell Creek	4	3	199	98	35	1	1,610										
Shoshone River	24	4	3,520	339	538	5	459,570	1.0									
Little Horn River	8	2	30	44		3	206										
Other tributaries	69	11	361	196	8	13	694		1	15							
Tongue River and tributaries	84	11	1,482	414	86	13	47,554	1.0					7	118	7	6,335	12
Tongue River direct	34	5	629	152	11	3	35	1.0					6	96	6	5,000	12
Goose Creek	30	4	723	190	53	8	47,510										
Other tributaries	20	2	130	66	22	2	9						1	22	1	435	8
Powder River and tributaries	62	12	1,025	259	126	13	4,984		1	200			3	33	4	6,505	54
Powder River direct	9	3	118	22	4	4	60		1	200							
Red Fork Creek	4		8	8													
Crazy Woman Creek	9	3	50	24	17	3	567										
Clear Creek	12	3	741	131	103	2	4,354										
Other tributaries	28	3	108	74	2	4	3						3	33	4	6,505	54
Other tributaries of Yellowstone River	253	28	2,479	640	119	10	14,496				4	555	9	47	12	5,175	15
Little Missouri River	14	12	54	5		4	120	2.0									
Moreau River	1																
Cheyenne River and tributaries	116	25	2,060	418	741	14	205,433	8.4	9	3,005			5	80	5	3,580	32
North Fork (Belle Fourche)	57	6	1,474	258	715	2	203,040	7.2	8	2,975			2	22	2	1,360	35
South Fork and tributaries	58	16	585	159	26	12	2,393	0.2	1	30			3	58	3	2,220	31
South Fork direct	50	10	536	132	17	6	2,057	0.2	1	30			3	58	3	2,220	31
Hat Creek	8	6	49	27	9	6	336										
Other tributaries of Cheyenne River	1	3	1	1				1.0									
White River	22	3	100	53	24	1	12,000	5.5									
Niobrara River	18	11	43	40	8	3	675										
Platte River and tributaries	2,028	371	66,838	8,219	4,309	419	2,570,930	52.9			950	560,450	904	14,787	944	723,029	27
Platte River direct	3	2	3,375	159	334	4	189	1.0			4	990	6	37	6	3,290	9
North Platte River and tributaries	1,124	119	24,490	4,143	2,308	121	1,772,184	27.2			11	1,320	41	635	44	63,991	20
North Platte River direct	41	7	10,520	1,097	1,028	8	1,338,520	24.7			1	365	21	477	22	51,752	21
Beaver Creek	14	3	47	22		3	286										
Grand Encampment Creek	16		211	58													
Spring Creek	32	2	202	62	3	2	832										
Pass Creek	37	1	123	41	1	1	4										
Medicine Bow River	66	4	654	286	64	2	3,337	0.5					1	2	1	450	
Sweetwater River	21	9	215	94	6	5	796	0.6					1	30	1	1,200	15
Muddy Creek	1		9	3													
Box Elder Creek	7	3	21	70	11	3	600										
La Prele Creek	4	4	306	132	60	1	20,000	0.1									
Labonte Creek	9		98	43	7												
Laramie River and tributaries	426	20	6,277	1,035	174	23	249,223										
Laramie River direct	120	5	5,040	462	141	5	236,500										
Little Laramie River	63		614	193	13	2	200										
Sybille Creek	55		67	65		1	20										
North Laramie River	56	6	194	82	15	5	6,574										
Chugwater Creek	41	3	101	74		4	235										
Other tributaries	91	6	261	159	5	6	5,694										
Rawhide Creek	2		27	3													
Horse Creek	63	16	580	141	74	14	20,654										
Other tributaries of North Platte River	385	50	5,191	1,056	70	59	128,932	1.3			10	955	18	126	20	10,589	20
South Platte River and tributaries	897	246	38,965	3,914	1,067	285	798,317	23.5			603	196,262	382	5,215	398	243,265	24
South Platte River direct	100	20	16,741	1,520	596	23	386,654	3.4			7	6,165	14	270	15	12,114	21
Bear Creek	8	8	400	47	24	28	8,670	0.5									

TABLE 21.—IRRIGATION WORKS FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN, 1930—Continued

DRAINAGE BASIN (See definitions in Introduction)	DAMS		MAIN CANALS			RESERVOIRS			FLOWING WELLS		PUMPED WELLS		PUMPING PLANTS				
	Diversion	Storage	Capacity	Length	Lateral canals, length	Number	Capacity	Pipe lines, length	Number	Capacity	Number	Capacity	Number	Engine or motor capacity	Pumps		Average lift
															Number	Capacity	
Missouri River and tributaries—Con.																	
Platte River and tributaries—Continued.																	
South Platte River and tributaries—Con.	*No.*	*No.*	*Sec.-ft.*	*Miles*	*Miles*		*Acre-ft.*	*Miles*		*G.p.m.*		*G. p. m.*		*H. p.*		*G. p. m.*	*Feet*
Clear Creek	17	30	2,274	218	106	21	27,068	6.2			7	354	12	54	12	865	29
St. Vrain Creek	87	28	4,113	560	130	37	45,853	2.3			5	1,050	7	152	7	7,450	23
Big Thompson Creek	38	22	2,939	238	31	28	90,758	6.0					3	85	3	4,200	31
Cache la Poudre River	156	84	5,787	547	694	85	180,300	0.2			79	25,100	44	680	44	35,630	20
Lone Tree Creek	49	11	131	68		11	6,568	0.4			58	12,560	19	215	19	13,610	22
Crow Creek	75	7	191	65	4	8	2,947				9	4,200	5	104	5	5,900	25
Big Beaver Creek	10	1	819	39	1			0.1			1	1,750	2	48	2	2,760	26
Lodgepole Creek	62	10	236	120	22	8	6,716				10	12,800	15	230	15	22,100	31
Other tributaries	202	25	5,325	491	59	36	42,783	4.4			327	132,283	261	3,308	276	138,556	25
Loup River		1				1	28						6	155	6	7,725	23
Other tributaries of Platte River	4	3	8	3		8	221	1.2			438	361,878	469	8,745	490	404,758	30
Kansas River and tributaries	28	4	445	125	6	9	53	4.3			78	36,375	111	1,805	116	97,850	30
Republican River	21	2	401	108	6	5	46	0.6			46	26,035	67	1,120	68	62,370	28
Smoky Hill River	1	1	8	2		1	5	0.4			18	2,800	3	110	3	6,200	20
Other tributaries	6	1	36	15		3	2	3.3			14	7,540	41	575	45	29,280	33
Other tributaries of Missouri River	353	48	2,729	985	469	47	32,445	5.5	5	1,940	14	5,791	32	3,964	42	94,047	26
Mississippi River and tributaries, exclusive of Missouri River	814	180	49,701	3,540	1,909	209	1,523,856	114.9	7	993	2,216	2,104,316	1,742	78,378	1,804	2,418,238	54
Mississippi River direct	1	6	719	16		9	104	13.2			6	1,362	64	1,038	64	82,630	15
Arkansas River and tributaries	808	164	46,577	3,448	1,827	187	922,611	100.0	6	945	1,343	999,536	811	20,527	852	1,144,006	49
Arkansas River direct	45	14	24,066	1,077	1,354	21	501,007	6.7			458	626,004	448	22,414	454	697,559	68
South Fork	25		231	84	15												
Fountain River	4		619	180	16	12	8,704	0.5			1	200	2	50	2	10,200	29
St. Charles River	68	1	178	87	5	1	900				3	250	4	73	4	3,150	23
Huerfano River	133	17	3,434	474	7	15	49,471	6.4			7	5,875	7	81	7	5,875	23
Apishapa River	29	6	5,637	86	16	5	28,052	0.2			3	4,220	3	43	3	4,270	22
Purgatoire or Las Animas River and tributaries	81	7	1,553	221	53	1	20,000						2	50	2	3,000	14
Purgatoire or Las Animas River direct	77	4	1,547	216	53	1	20,000						2	50	2	3,000	14
Trinchera River	4	3	6	6													
Canadian River and tributaries	86	24	5,518	356	205	25	147,045	3.2			12	1,705	15	170	14	2,355	71
Canadian River direct	3	2	40	13		2	2	0.2			12	1,705	15	170	14	2,355	71
Cimarron River	9	4	989	52	93	4	96,400										
Vermejo River	4	9	3,012	40	70	9	18,340	1.0									
Oente Creek	2		117	25	10												
Mora River	58	4	1,060	201	11	3	24,800										
Ute Creek	2	1	5	5	1	2	380										
Other tributaries	8	4	295	14	20	5	7,123	2.0									
Cimarron River	8	5	157	52	6	8	3,530	0.2			5	1,330	5	46	8	1,480	35
Other tributaries of Arkansas River	320	90	5,184	831	150	99	103,836	82.8	6	945	854	359,862	325	6,600	358	416,117	24
St. Francis River											140	203,350	134	6,178	130	201,956	34
White River	1	3	1,300	22	3	7	1,070	0.6			662	838,588	655	39,052	677	913,982	72
Red River and tributaries	4	4	1,000	63	139	4	600,013	0.9			63	58,830	72	2,397	75	64,324	44
Other tributaries of Mississippi River		3				2	52	0.2	1	48	2	2,650	6	186	6	11,640	28
Gulf streams other than Mississippi River and Rio Grande	99	195	18,608	2,061	1,731	321	296,264	46.5	856	52,935	2,363	2,493,111	3,197	140,298	3,525	8,929,951	46
Atchafalaya River and tributaries	3	4	94	69	9	5	207	1.4			10	60,700	74	3,235	79	247,490	20
Tangipahoa River and tributaries		1							228	7,084	174	8,080	157	405	240	8,125	19
Natalbany River and tributaries						1	60		578	23,929	486	21,549	470	1,308	531	21,416	43
Vermillion River and tributaries	4		6,126	67	296						55	178,350	164	8,682	179	1,442,500	21
Calcasieu Lake, River, and tributaries	2	1	578	180	182	4	448				74	271,650	104	10,332	115	947,050	40
Mermentau River and tributaries	26	65	2,282	943	379	63	13,018	0.2			575	1,397,670	733	59,119	768	2,909,458	44
Sabina River and tributaries	4	1	1,628	50	42	1	20	0.4			7	16,800	17	2,213	17	201,600	35
Neches River			1,072	45	175								3	2,520	13	393,087	65
Trinity River	1	2	2,257	46	15	1	1	0.2			65	9,772	60	2,461	69	326,717	19
Brazos River	2	20	303	38	4	20	3,534	6.1	1	72	171	121,854	212	8,829	219	208,075	54
Colorado River	15	53	1,791	409	322	33	8,828	7.0	13	1,255	117	26,143	374	17,507	414	1,308,649	38
San Antonio River	4	4	711	53	232	13	263,281	6.6	6	3,520	27	16,647	30	982	42	34,267	32
Nueces River	17	30	45	33	21	103	6,840	8.1	30	16,173	407	155,378	445	12,553	485	217,182	97
Other Gulf streams	21	14	1,631	122	54	17	27	6.6			195	208,518	345	10,086	354	602,245	34
Rio Grande and tributaries [1]	780	85	36,370	4,647	4,193	233	3,119,157	287.2	892	273,299	881	269,453	636	45,902	743	3,651,286	36
Rio Grande direct	71	30	20,393	1,705	2,936	68	2,711,259	265.4	300	15,000	3	2,320	219	37,104	285	3,079,305	49
Alamosa River	19	1	1,150	105	68	1	17,500										
La Jara River	22		285	57	14												
Conejos River	70	1	4,312	369	45	1	6,500										
Trinchera River	21	2	193	84	53	2	24,000										
Rio Costilla	4	1	270	19	20	1	15,730										
Pueblo River	18		348	132	2												
Rio Chama	91	2	789	293	54	3	601										
Rio Santa Cruz	10	1	166	64	38	1	10,000										
Tesuque Creek	15		98	74	1			1.7									
Rio Pueroo	39	8	537	237	25	6	53,130										
Pecos River and tributaries	178	10	3,920	734	441	127	85,643	2.4	350	237,257	342	262,546	364	7,774	404	336,334	28
Pecos River direct	30	6	2,074	376	357	8	81,088	0.5	13	16,800	25	15,175	52	1,138	61	64,788	31
Gallinas River	15	1	243	44		2	70										
Hondo River	75		317	181	49	5	204	0.3	76	46,707	111	81,031	111	1,673	130	80,131	24
											1	600	1	20	1	600	40
Penasco River	24		107	47	8												
Other tributaries	25	3	219	86	27	112	4,281	1.6	201	173,750	205	165,740	200	4,943	212	190,815	29
Other tributaries of Rio Grande	231	23	3,909	774	496	23	194,785	17.7	242	21,042	36	4,587	53	934	54	235,647	57
Independent streams in Rio Grande Drainage Basin	133	14	2,289	507	34	73	1,466	0.7	73	3,372	350	229,178	348	7,008	356	230,300	50
Rio Mimbres	38	1	153	59	2	58	1,005				154	68,096	152	3,115	159	69,978	67
Fresnal River	5		20	27	2												
Rio Tularosa	1		40	4	10												
Saguache River	70	7	557	163	3	7	261	0.2	55	2,012							
San Luis River	13	2	1,159	180	17	2	176	0.2	17	360							
Other independent streams	6	4	310	74		6	24	0.3	1	1,000	196	161,082	196	3,893	197	160,322	38

[1] Not including "Independent streams in Rio Grande Drainage Basin."

TABLE 21.—IRRIGATION WORKS FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN, 1930—Continued

DRAINAGE BASIN (See definitions in Introduction)	DAMS		MAIN CANALS			RESERVOIRS			FLOWING WELLS		PUMPED WELLS		PUMPING PLANTS			
	Diversion	Storage	Capacity	Length	Lateral canals, length	Number	Capacity	Pipelines, length	Number	Capacity	Number	Capacity	Number	Engine or motor capacity	Pumps: Number	Pumps: Capacity	Average lift
	No.	*No.*	*Sec.-ft.*	*Miles*	*Miles*		*Acre-ft.*	*Miles*		*G.p.m.*		*G. p. m.*		*H. p.*		*G. p. m.*	*Feet*
Colorado River and tributaries	3,155	494	88,322	12,522	7,663	734	3,748,284	216.6	224	16,803	1,196	1,772,812	1,227	62,059	1,220	2,367,101	44
Colorado River direct	18		15,207	402	2,647	2	4	16.6	6	661	2	1,700	28	6,357	39	465,200	32
Green River and tributaries	1,359	102	17,145	4,329	1,465	101	185,530	1.6	4	510	3	410	21	1,071	22	16,774	20
Green River direct	76	1	1,563	331	32								13	980	14	13,544	20
Now Fork	83	4	1,228	328	40	4	31,670										
Horse Creek	11		94	38	59												
Cottonwood Creek	28		411	77	59												
South Piney Creek	10		145	14													
La Barge Creek	14		142	48	6												
Fontenelle Creek	5		24	16	2												
Bitter Creek	13	2	9	12	2	4	300		1	120	2	350	2	4	2	350	20
Blacks Fork	271	4	1,351	437	55	5	1,307				1	60	1	1	1	60	34
Henrys Fork	7	1	345	157	1	1	80										
Ashley Fork River	8		646	77	1												
Duchesne River	66	14	4,066	672	911	21	39,745	0.6	1	30							
Price River	21	7	353	108	18	6	50,685						1	40	1	1,350	6
San Rafael River	13	4	830	106	49	4	17,007										
Yampa River and tributaries	205	40	2,637	905	76	33	10,226	0.4					3	42	3	720	23
Yampa River direct	25	2	639	140	20	5	2,180						1	2	1	320	10.
Little Snake River	30	1	697	199	3	1	400						2	40	2	400	30
Other tributaries	240	37	1,301	626	53	27	7,646	0.4									
White River	183	14	930	344	15	9	5,741	0.5	2	360			1	4	1	750	12
Other tributaries of Green River	255	11	2,371	599	139	14	28,709	0.1									
Fraser River	17		142	41	3	1	8										
Muddy Creek	29	6	437	92	2	7	2,628										
Blue River	7	1	300	115		3	14	0.8									
Eagle River	3		342	143	10												
Roaring Fork	33	1	1,220	432	51	5	1,330	2.6					1	40	1	1,000	60
Plateau Creek	34	41	386	157	40	38	11,966	1.0									
Gunnison River and tributaries	404	155	10,176	1,670	678	161	48,019	8.3					15	1,421	18	47,237	65
Gunnison River direct	7		1,405	94	17			0.2					12	1,295	15	44,337	24
Taylor River	4		12	6													
Tomichi Creek	131		668	163				0.2					1	6	1	400	25
North Fork	21	29	1,132	281	78	28	9,189	3.8					2	120	2	2,500	388
Smith Fork	4	6	472	52	45	8	825										
Uncompahgre River	80	3	3,706	427	431	4	226	4.0									
Other tributaries	157	117	2,781	647	107	121	37,779	0.1									
Rio Dolores	107	15	1,990	500	247	13	20,146	1.3			1	205	4	37	4	1,845	24
Fremont River	31	10	477	119	8	11	4,376										
Virgin River	122	23	807	261	80	24	1,703	6.1	1	40	5	1,429	5	44	5	1,549	35
San Juan River and tributaries	304	17	4,573	1,365	262	13	4,681	2.8			1	50	2	14	2	317	86
San Juan River direct	33		603	216	5			0.1					1	12	1	300	132
Mancos River	15	3	398	132	12	5	1,684	2.0									
Los Pinos River	32	3	875	192	86			0.2									
Animas River	131		1,289	406	67			0.5									
La Plata River	42	4	691	170	82	2	180				1	50	1	2	1	17	40
Other tributaries	103	7	717	249	10	6	2,817										
Kanab Creek	2	1	66	5	1	6	508				3	17	3	2	3	17	58
Williams River	9	2	36	28		14	31	3.7	1	10	44	8,094	41	326	44	10,209	24
Little Colorado River and tributaries	36	33	398	224	57	41	81,292	2.1									
Little Colorado River direct	9	7	121	112	4	10	41,648										
Nutrioso Creek	4	2	3	2		3	1,001										
Concho Creek		2	16	2		2	1,197										
Other tributaries	23	22	251	108	53	26	37,446	2.1									
Gila River and tributaries	257	43	11,366	1,541	1,922	215	3,316,173	150.0	202	13,314	1,119	1,745,297	1,080	52,391	1,055	1,806,044	46
Gila River direct	53	2	3,951	521	603	1	1,200,000	2.3			89	147,300	95	4,653	23	141,010	38
San Francisco River	64	2	108	46	3	1	601	4.4					4	30	5	4,190	25
San Pedro River	12	6	112	144	1	61	98	3.0	105	3,106	24	9,310	27	283	28	12,210	24
Santa Cruz River	11	2	420	73	116	4	12	47.9			154	146,530	121	6,994	155	101,860	58
Salt River and tributaries	56	12	5,358	404	1,067	23	2,020,233	31.3			343	778,540	283	20,257	201	835,030	54
Salt River direct	2	4	4,475	240	936	4	2,015,500	0.1			227	537,500	153	13,835	160	587,750	33
Tonto Creek			1	1							5	165	6	47	6	185	38
Rio Verde	46	6	460	128	16	13	4,721	5.7			22	6,591	32	637	33	13,096	47
Other tributaries	8	2	423	35	115	6	12	25.5			89	234,284	92	5,738	92	234,599	89
Agua Fria River	11	10	935	186	106	22	92,086	26.1			186	278,876	214	8,681	214	322,042	52
Hassayampa River	6		45	15		2	2	3.6	1	150	10	3,144	14	121	14	4,708	29
Other tributaries of Gila River	44	9	417	152	26	101	3,141	31.4	96	10,058	313	381,597	322	11,372	325	383,404	44
Other tributaries of Colorado River	323	44	3,264	1,092	190	76	63,809	19.7	10	2,268	18	15,550	27	347	27	16,909	49
Whitewater Draw and tributaries	7	4	10	7		90	140	4.1	11	430	210	62,457	214	2,025	215	59,507	48
Great Basin Drainage	3,817	417	50,944	9,155	3,721	847	1,946,069	1,558.1	2,178	154,300	3,150	1,529,564	3,112	71,404	3,224	3,449,644	69
Tributaries of Great Salt Lake	1,123	137	17,692	3,178	1,739	154	402,788	69.3	719	35,525	107	31,786	182	10,537	210	863,660	40
Bear River and tributaries	553	50	8,083	1,619	607	61	35,988	14.1	111	4,545	88	20,920	140	4,126	151	200,215	42
Bear River direct	99	4	4,277	456	216	1	50	3.1					28	781	31	47,384	35
Little Bear River	99	3	970	189	173	4	168	1.7	53	1,829	1	300	7	104	7	4,755	28
Malad River	4		24	16	1	2	2,001										
Thomas Fork	14		54	30	1	1	40										
Mill Creek	22	1	266	126	10												
Little Malad Creek	22	5	152	79	16	3	410		21	750	5	600	1	6	1	600	12
Other tributaries	293	37	2,340	723	190	50	33,319	9.3	37	1,966	82	20,026	104	3,235	112	147,476	45
Weber River and tributaries	314	38	3,029	578	277	34	77,358	20.5	85	4,081	10	7,385	24	376	26	24,605	20
Weber River direct	102	3	2,003	228	90	5	74,301	0.3					8	142	9	9,545	17
Ogden River	53	6	450	132	159	1	1	7.6	9	1,786	3	500	2	13	3	500	32
East Canyon Creek	24	1	180	32	1	1	9										
Other tributaries	135	28	396	186	27	27	3,047	12.6	76	2,295	7	6,885	14	221	14	14,560	20
Jordan River and Utah Lake and tributaries	256	49	6,580	981	855	59	289,442	34.7	523	26,899	9	3,475	18	6,035	42	638,840	56
Jordan River direct	13	1	1,412	169	52	1	8	0.5	2	60			4	1,632	14	545,000	82
Spanish Fork River	16	4	1,312	134	268	2	250,750		1	40							
Hobble Creek	24		83	36	18	2	3		4	260							

TABLE 21.—IRRIGATION WORKS FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN, 1930—Continued

DRAINAGE BASIN (See definitions in Introduction)	DAMS		MAIN CANALS			RESERVOIRS			FLOWING WELLS		PUMPED WELLS		PUMPING PLANTS			
	Diversion	Storage	Capacity	Length	Lateral canals, length	Number	Capacity	Pipe lines, length	Number	Capacity	Number	Capacity	Number	Engine or motor capacity	Pumps: Number	Pumps: Capacity	Average lift
Great Basin Drainage—Continued																	
Tributaries of Great Salt Lake—Continued.																	
Jordan River and Utah Lake and tributaries—Continued.	*No.*	*No.*	*Sec.-ft.*	*Miles*	*Miles*		*Acre-ft.*	*Miles*		*G.p.m.*		*G. p. m.*		*H. p.*		*G. p. m.*	*Feet*
Provo River	101	13	1,731	268	176	22	14,013	0.4	0	130			2	1,370	5	23,400	145
American Fork River	6		210	38	72	1	3		2	225	1	500	2	215	6	4,325	65
Little Cottonwood Creek	21	2	395	48	67	1	500	12.0									
Big Cottonwood Creek	10		189	38	43	1	10	1.3									
Other tributaries	65	29	1,248	250	159	20	23,255	20.5	508	26,194	8	2,975	10	2,818	17	66,115	25
Independent streams	2,694	280	33,252	5,977	1,982	693	1,543,281	1,488.8	1,450	118,775	3,043	1,497,778	2,930	60,867	3,005	2,585,984	71
Sevier River and tributaries	184	51	6,088	974	513	47	511,227	5.1	100	10,423	3	2,170	8	122	5	5,770	27
Sevier River direct	50	12	3,427	449	300	9	386,860		64	6,188			3	45	1	1,500	10
San Pitch River	49	14	1,091	267	137	14	7,508	0.1	1	900	1	1,000	2	25	1	1,100	40
Otter Creek	12	2	534	32	6	3	63,800										
Other tributaries	73	23	1,036	226	70	21	53,059	5.0	41	3,335	2	1,170	3	52	3	3,170	20
Beaver River	57	7	794	149	89	5	31,905	1.7	9	81	90	32,962	89	528	89	33,412	28
Coal Creek	14	1	467	39	53	4	50		1	35	13	6,989	12	179	12	7,139	38
Deep Creek (Utah)	1	1	37	37		2	1										
Grouse Creek	12	2	26	33	2	2	462										
Humboldt River and tributaries	618	13	5,253	1,198	105	21	105,611	15.3	4	65	28	13,035	28	627	29	11,770	31
Humboldt River direct	105	6	2,570	202	53	8	59,060	1.8	4	65	26	12,960	26	623	27	11,695	25
East Fork of Humboldt River	1		5	5				0.5									
La Moille Creek	78		275	107		1	487	0.5									
North Fork of Humboldt River	51		83	41													
South Fork of Humboldt River	30	1	587	287	13	2	2,150										
Pine Creek	23	2	76	71		3	4	1.5									
Reese River	27		57	23		1	200	0.2									
Little Humboldt River	27	1	260	41		1	50	1.0									
Other tributaries	276	3	1,340	421	39	5	43,060	3.8			2	75	2	4	2	75	94
Truckee River and tributaries	65	5	3,137	225	125	2	1,100	0.7	3	81	2	1,125	3	47	3	1,350	20
Truckee River direct	31		2,939	181	125			0.6			1	225	2	22	2	450	10
Steamboat Creek	3	2	45	5		1	1,000										
Other tributaries	31	3	153	39		1	100	0.1	3	81	1	900	1	25	1	900	40
Carson River and tributaries	52	14	4,272	229	448	16	296,013	21.3	34	244	13	18,910	31	1,130	32	73,465	31
Carson River direct	43	12	748	133	3	12	2,905	8.2	13	220	12	18,825	23	770	24	36,330	33
Tributaries	9	2	3,524	96	445	4	294,008	13.1	21	24	1	85	8	360	8	37,135	22
Walker River and tributaries	58	2	1,698	305	20	3	92,002	2.7	10	576							
Walker River direct	53	2	1,633	209	20	2	92,000	0.2	10	576							
Tributaries [1]	5		65	6		1	2	2.5									
Steptoe Creek	63	13	68	66	3	26	56	5.8	2	33	16	6,268	13	242	16	6,338	22
Long Valley Creek	1		9	2				0.8									
Tributaries of Mono Lake	6	6	184	25	20	6	42,801										
Susan River	54	7	775	50	32	9	32,476	3.0			2	4,750	2	145	2	5,500	50
Mohave River	7	7	143	29	4	75	179	106.8	17	7,664	240	133,557	231	3,203	233	120,776	44
Owens River	18	9	654	153	27	20	24,620	29.0	9	295	41	44,260	41	1,802	32	944,750	85
San Jacinto River	11	8	201	80	43	60	23,312	445.8	3	500	443	208,108	426	9,060	436	243,830	79
Quinn River	65	2	306	74		2	1,003	4.4			4	850	3	51	3	1,700	43
Deep Creek (Oregon)	12		5	3													
Donner and Blitzen River	4		304	42	17												
Silvies River	102	4	622	91	7						6	2,460	6	66	7	2,950	23
Other independent streams	1,290	128	8,209	2,173	474	393	370,563	846.4	1,255	98,778	2,142	1,022,274	2,037	43,575	2,106	1,121,234	77
Columbia River and tributaries	6,247	414	115,083	14,932	11,987	353	6,316,670	1,616.2	293	62,451	1,668	464,026	3,251	77,271	3,434	3,593,854	47
Columbia River direct	2	1	205	45	6	1	50	148.4	1	300	11	11,325	219	6,625	228	215,538	78
Kootenai River	85	6	266	93	13	3	6,503	4.9					4	11	4	4,650	15
Clark Fork and tributaries	403	58	7,112	1,959	1,430	53	159,601	35.8	37	3,798	17	5,903	40	329	41	20,755	29
Clark Fork direct	15	3	507	80	53	2	3,500	2.8			7	1,200	5	53	5	1,030	30
Big Blackfoot River	78	1	751	228	44	1	40	0.8	1	125			2	26	2	1,702	42
Bitter Root River	67	18	2,088	631	332	14	46,453	2.9									
Flathead River	87	17	1,115	253	836	18	104,828	21.8	36	3,673			18	160	18	11,160	23
Other tributaries	156	19	2,051	767	174	18	4,720	7.5			10	4,703	15	90	16	5,963	35
Colville River	18	2	61	28	5			2.4			3	975	3	15	3	975	36
Spokane River	6	3	289	21	4	3	1,607	98.5			80	74,059	95	3,822	105	72,534	77
Okanogan River and tributaries	10	12	602	89	106	11	43,085	52.7	1	50	196	27,970	326	4,079	335	104,329	45
Okanogan River direct			1	2				22.1			12	2,633	121	2,325	126	57,827	44
Tributaries	10	12	601	87	106	11	43,085	30.6	1	50	184	25,337	205	1,754	209	46,502	45
Methow River	41	10	1,014	185	7	8	4,374	8.8			2	800	21	220	22	7,404	67
Entiat River	5	1	62	32	2			0.9			1	30	16	93	16	1,920	64
Wenatchee River	42	10	686	160	27	9	6,203	62.1	1	10	71	6,728	236	1,853	240	34,451	66
Crab Creek	7	3	260	5		1	70	2.2			14	7,835	17	161	17	10,947	20
Yakima River and tributaries	126	8	10,155	736	1,559	8	620,487	380.6	4	3,350	58	21,708	152	7,498	169	237,533	38
Yakima River direct	21	6	7,294	403	1,468	7	628,437	371.0			8	1,465	88	6,510	103	206,020	24
Naches River	25		923	135	34			6.2			2	580	2	24	2	580	9
Ahtanum Creek	10		605	41	11			0.3			5	1,990	9	93	9	2,321	39
Other tributaries	61	2	1,333	157	46	1	1,050	3.1	4	3,350	43	17,733	53	871	55	28,612	86
Snake River and tributaries [2]	3,605	198	79,204	8,774	7,416	100	5,178,689	273.0	193	23,613	217	62,046	697	38,179	783	2,157,163	20
Snake River direct	23	6	16,679	786	3,045	4	1,802,180	36.2			4	2,500	185	31,197	261	1,684,413	43
South Fork and tributaries	252	7	8,730	790	536	5	848,587	2.0					1	5	1	600	6
South Fork direct	102	4	7,061	371	462	2	847,200						1	5	1	600	6
Gros Ventre River	1		91	32	17												
Little Gros Ventre River	4		332	20	4												
Salt River	62	1	753	101	24	1	800	2.0									
Other tributaries	83	2	493	176	29	2	587										
Henrys Fork	93	4	10,700	415	208	3	82,888	1.0	20	2,828	23	3,886	44	326	44	18,695	21
Blackfoot River	55	2	2,232	120	337	3	450,250	3.0			1	3	1	2	1	3	80
Port Neuf River	136	14	1,072	363	55	11	23,846	5.5			1	900	4	25	4	2,230	24
Raft River	51	1	413	96	3	3	367	0.7									
Goose Creek	20	2	532	51	86	1	74,000										
Salmon Falls River	41	1	1,207	152	195	1	182,450										
Little Wood River	12	1	627	80	12	2	17,000				1	900	1	5	1	900	10
Big Wood River	43	3	2,240	268	639	3	211,900	20.6					2	60	2	2,100	28
Bruneau River	122	2	686	102	14	4	5,235	0.5	24	7,378			2	451	3	32,130	30
Owyhee River	360	24	1,409	340	86	24	306,951	1.6	1	10	1	20	76	560	78	36,924	18
Boise River	78	7	13,570	554	1,372	6	466,395	47.9	6	613	8	7,050	30	387	31	21,270	17
Malheur River	331	11	2,042	348	72	10	234,323	4.3	2	280	1	25	12	652	12	20,420	25

[1] Including East Walker and West Walker Rivers.

[2] Not including "Independent streams in Snake River Basin."

TABLE 21.—IRRIGATION WORKS FOR THE 19 IRRIGATION STATES, BY DRAINAGE BASIN, 1930—Continued

DRAINAGE BASIN (See definitions in Introduction)	DAMS		MAIN CANALS		Lateral canals, length	RESERVOIRS		Pipe lines, length	FLOWING WELLS		PUMPED WELLS		PUMPING PLANTS				
	Diversion	Storage	Capacity	Length		Number	Capacity		Number	Capacity	Number	Capacity	Number	Engine or motor capacity	Pumps: Number	Pumps: Capacity	Average lift
Columbia River and tributaries—Con.																	
Snake River and tributaries[1]—Continued.	*No.*	*No.*	*Sec.-ft.*	*Miles*	*Miles*		*Acre-ft.*	*Miles*		*G.p.m.*		*G. p. m.*		*H. p.*		*G. p. m.*	*Feet*
Payette River	153	20	4,757	504	128	24	101,125	14.5			3	645	96	1,975	101	170,191	32
Weiser River	135	7	873	274	64	8	73,100	7.0	3	16			3	264	4	14,000	35
Burnt River	184	9	458	259	9	5	104,120	1.1	1	75	1	150	1	2	1	150	14
Powder River	342	22	2,722	866	143	19	3,314	6.7	3	1,150	30	10,020	32	377	33	14,025	25
Pine Creek	52	5	343	129	15	3	2,664	0.1									
Immaha River	70		212	67	8												
Salmon River	548	9	3,594	1,203	147	10	4,304	6.1					1	6	1	300	20
Grande Ronde River	176	10	1,551	271	52	5	41,766				58	20,144	67	367	67	23,504	18
Clearwater River	13	4	194	27		3	9,000	50.9			19	2,229	33	791	34	15,024	34
Asotin Creek	1	1	1	1		1	80	12.5					1	150	1	1,000	400
Palouse River	12		23	19	4			7.1	7	1,300	5	680	11	103	11	5,126	26
Other tributaries	303	20	1,722	593	126	32	42,645	42.8	126	9,963	61	12,894	87	430	85	74,187	22
Independent streams in Snake River Basin	266	10	5,960	548	166	10	70,884	3.1	19	8,550	12	8,190	17	1,270	21	173,840	19
Camas Creek	37	2	2,970	90	51	1	6,400		15	5,400			8	1,160	12	105,550	13
Beaver Creek	9	1	33	17	7												
Medicine Lodge Creek	35		44	10													
Little Lost River	27		145	48													
Big Lost River	110	5	2,462	265	82	4	40,013	1.6					2	8	2	100	15
Other	48	2	306	118	26	5	15,471	1.5	4	3,150	12	8,190	7	102	7	8,190	26
Walla Walla River	126	1	652	205	25	2	2	20.5	18	10,725	264	56,042	322	1,613	329	66,550	26
Klickitat River	3		37	16	1			0.7			1	33	5	60	5	908	24
White Salmon River	11	1	169	25	10			1.0									
Umatilla River	179	6	1,804	317	99	3	52,412	43.4			11	2,460	26	268	27	13,700	25
Willow Creek	117	1	171	101				0.1			2	2	2	4	2	2	65
John Day River	712	6	952	661	28	5	1,609	1.9					30	385	30	40,420	19
Deschutes River	224	10	4,166	556	857	8	148,829	12.4			1	13	26	823	26	36,331	27
Hood River	30	3	432	71	137			44.4					3	3	3	271	32
Willamette River	68	15	72	30	2	3	1,010	43.6	4	150	187	40,367	292	2,032	311	160,749	22
Other tributaries of Columbia River	150	45	740	259	78	31	12,252	337.6	15	11,905	400	103,869	550	5,873	576	169,251	67
Other independent streams in Columbia River Basin	5	4	12	10		4	3	30.3			115	33,611	143	2,049	141	63,483	71
Pacific Ocean streams other than Colorado and Columbia Rivers	1,880	412	75,862	8,079	9,432	1,519	3,513,549	13,416.5	256	37,568	44,129	22,928,853	44,411	773,142	45,637	31,181,033	52
Dungeness River	4		414	53	40			1.3									
Rogue River and tributaries	339	14	1,710	707	422	11	45,924	10.0	1	2	13	6,202	70	4,501	70	73,224	30
Rogue River direct	8	2	322	85	52	1	5	5.4			1	1,800	30	4,132	31	49,645	36
Little Butte Creek	30	2	172	114	202	2	21,000	2.1			2	540	3	7	3	550	38
Bear Creek	46	3	327	117	52	3	24,225	0.6			6	3,780	17	79	16	6,510	16
Evans Creek	13		49	16									5	63	5	1,150	43
Applegate River	110	6	461	186	15	5	694	1.3			1	75	8	175	8	12,825	38
Illinois River	90	1	237	106				0.3									
Other tributaries	42		142	83	101			0.3	1	2	3	97	7	45	7	2,544	23
Klamath River and tributaries	472	20	5,900	1,271	427	32	1,110,362	21.1	28	241	14	21,442	98	6,522	123	508,985	33
Klamath River direct	411	10	2,965	812	152	23	549,250	17.7	3	200	14	21,442	59	3,342	60	233,843	36
Lost River	13	3	1,008	217	219	2	560,000	2.2					26	2,480	38	207,742	33
Sprague River	9	0	327	35	3	6	1,002	0.5									
Other tributaries	39	1	1,600	207	53	1	44	0.7	25	41			13	700	16	67,400	19
Russian River	13	10	47	21	17	0	207	47.6			188	79,472	249	2,193	267	144,027	27
Sacramento River and tributaries	599	140	19,097	2,492	2,325	176	949,274	796.1	39	3,630	5,460	2,932,411	6,147	104,346	6,289	8,309,204	30
Sacramento River direct	4		8,033	465	971	3	121	75.5			147	142,430	810	38,207	872	4,996,652	17
Pit River	194	32	2,125	318	54	40	132,588	1.6	14	1,185	4	252	45	449	46	46,760	13
Cow Creek	14	1	152	42	9	1	5				2	700	8	71	8	1,545	15
Cottonwood Creek	15	3	131	55	33	3	5,544	1.5			8	1,123	14	76	14	3,183	31
Battle Creek	48		172	80	5	1	300	1.0			2	1,900	2	35	2	1,900	43
Stony Creek	26	5	607	67	110	4	101,211	4.1			48	25,950	51	516	51	28,415	17
Feather River	141	50	4,591	565	459	60	177,780	287.1	12	368	1,621	938,678	1,623	21,946	1,655	1,229,391	28
Yuba River	20	11	1,045	275	307	9	91,530	17.1			11	1,900	13	54	13	2,205	16
Cache Creek	3	2	670	117	110	1	420,000	10.0			410	291,733	277	5,175	288	302,383	27
American River	33	17	356	265	39	25	14,517	135.2	4	102	364	111,215	430	4,524	440	193,128	20
Other tributaries	101	13	1,200	243	138	29	5,678	263.0	9	1,975	2,833	1,416,530	2,874	33,203	2,900	1,503,642	36
San Joaquin River and tributaries[2]	177	78	45,150	2,593	5,881	703	1,150,077	3,748.0	33	10,770	25,364	13,310,491	25,436	342,489	25,900	15,063,081	43
San Joaquin River direct	3	1	8,210	367	944	3	90,033	91.3	2	1,800	85	108,050	289	23,994	415	1,540,190	28
Kern River	23	2	4,737	253	920	393	209,721	509.4	19	1,475	1,549	893,789	1,535	29,610	1,561	920,800	61
Tulare Lake			80	17	56			4.5			68	48,735	67	2,591	71	49,235	111
Tule River	10		643	90	38	113	333	209.5			1,341	565,316	1,348	19,004	1,374	576,241	73
Kaweah River	25	1	2,805	237	329	34	3,157	621.4			4,644	1,884,312	4,555	54,656	4,604	1,895,946	68
Kings River	27	1	15,757	1,078	1,006	22	109	1,063.8	2	950	10,887	5,698,807	10,782	116,216	10,921	5,489,446	32
Fresno River	6	1	209	18	91	2	4	15.5			266	162,675	267	4,008	267	158,865	41
Merced River	11	4	5,919	35	1,225	6	289,005	174.6			448	337,607	415	5,930	431	365,202	23
Tuolumne River	20	13	4,396	121	399	7	365,498	419.9	2	3,000	188	200,712	172	3,285	173	190,421	23
Stanislaus River	7	27	1,573	143	765	25	164,178	50.9	2	162	45	27,528	69	1,199	70	84,184	22
Calaveras River	16	12	23	43		9	3,665	46.5	1	3,000	222	168,311	255	4,606	256	182,821	46
Mokelumne River	21	11	454	99	96	13	3,983	252.1	4	58	2,084	1,117,397	2,122	23,324	2,179	1,272,765	33
Cosumnes River	6	2	77	64	12	1	1,200	20.2			404	219,665	414	4,385	418	233,754	43
Other tributaries	2	3	207	28		75	19,191	268.4	1	325	3,133	1,877,587	3,146	49,681	3,160	2,097,103	41
Independent streams in San Joaquin River Basin						20	739	74.1			307	176,956	304	6,108	306	171,530	110
Tributaries of San Francisco Bay other than Sacramento and San Joaquin Rivers	24	11	317	25	10	43	8,217	422.5	9	1,085	3,100	1,068,327	3,114	61,205	3,193	1,212,738	102
Coyote Creek	8		2	2		4	11	109.1	4	766	916	407,333	912	20,185	916	431,214	99
Guadalupe River	7		168	14	6	1	1	110.8	1	200	557	268,582	558	16,111	562	288,402	112
Other tributaries	9	11	157	9	4	38	8,205	202.6	4	119	1,627	392,412	1,644	24,909	1,715	493,122	99
Pajaro River	26	13	29	22	5	23	736	151.5	18	4,200	1,189	566,306	1,129	19,884	1,157	594,032	64
Salinas River	8	2	771	123	86	33	128	361.9	20	4,010	1,145	955,015	767	24,246	785	974,404	47
Santa Maria River		2	12	11	4	3	13	112.9	1	744	210	249,285	189	7,359	194	252,409	75
Santa Ynez River	11	13	21	9		18	257	109.8	6	1,550	212	120,725	158	3,511	164	137,660	30
Santa Clara River	18	1	101	29	11	18	88	496.7	1	50	550	451,019	545	19,109	584	455,338	78
Los Angeles River	4	8	484	253		48	95,718	1,261.4	1	45	391	254,608	376	14,048	393	258,982	76
San Gabriel River	10	3	308	65	100	60	15,125	905.0			869	541,385	869	31,622	908	571,516	77
Santa Ana River	22	17	826	200	38	132	79,082	2,814.1	90	10,542	2,379	1,526,546	2,280	89,251	2,467	1,609,257	82
San Diego River	3	2	27	33	3	10	18,039	312.5			453	83,812	311	2,634	324	73,430	62
Other Pacific Ocean streams	150	78	648	172	57	165	39,563	1,770.0	9	699	2,205	584,761	2,359	33,214	2,513	771,216	70

[1] Not including "Independent streams in Snake River Basin."

[2] Not including "Independent streams in San Joaquin River Basin."

TABLE 22.—PUMPING EQUIPMENT FOR THE 19 IRRIGATION STATES, BY KIND OF POWER AND PUMP: 1930 AND 1920

ITEM	ENGINES OR MOTORS: Capacity 1930	Capacity 1920	Proportion of total 1930	Proportion of total 1920	Increase [1] 1920–1930	PUMPS: Number 1930	Number 1920	Proportion of total 1930	Proportion of total 1920	Increase [1] 1920–1930	Capacity 1930	Capacity 1920	Proportion of total 1930	Proportion of total 1920	Increase [1] 1920–1930	Average lift 1930	Average lift 1920
KIND OF POWER																	
Total	*H. p.* 1,283,419	*H. p.* 748,971	*P. ct.* 100.0	*P. ct.* 100.0	*P. ct.* 71.4	61,445	33,804	*P. ct.* 100.0	*P. ct.* 100.0	*P. ct.* 81.8	*G. p. m.* 57,244,859	*G. p. m.* 36,275,005	*P. ct.* 100.0	*P. ct.* 100.0	*P. ct.* 57.8	*Feet* 51	*Feet* 41
Electricity	876,166	280,018	68.3	38.6	203.2	44,165	12,743	71.9	37.7	246.6	37,365,179	13,311,435	65.3	36.7	180.7	57	50
Internal combustion	265,736	259,613	20.7	34.7	2.4	13,012	15,691	21.2	46.4	−17.1	10,891,855	10,461,857	19.0	28.8	4.1	37	35
Steam	37,458	106,568	2.9	14.2	−64.9	332	1,862	0.5	5.5	−82.2	2,827,471	7,520,435	4.9	20.7	−62.4	36	36
Water	12,058	8,093	0.9	1.1	49.0	205	166	0.3	0.5	23.5	400,504	212,346	0.7	0.6	88.6	28	40
Wind	827	10,708	(2)	1.4	−92.3	337	287	0.5	0.9	17.4	17,116	247,445	(2)	0.7	−93.1	50	44
Electricity and—																	
Internal combustion	52,721		4.1			2,587		4.2			2,823,259		4.9			42	
Steam	18,175		1.4			84		0.1			1,515,995		2.6			93	
Wind	1,190		0.1			176		0.3			30,780		0.1			56	
Water	187		(2)			13		(2)			17,051		(2)			80	
Internal combustion and—																	
Steam	8,861		0.7			54		0.1			887,125		1.6			37	
Water	82		(2)			7		(2)			2,800		(2)			27	
Wind	2,019	74,911	0.2	10.0	21.7	203	3,055	0.5	9.0	11.1	58,707	4,515,487	0.1	12.5	27.2	43	46
Steam and water	30		(2)			2		(2)			550		(2)			20	
Water and wind	10		(2)			2		(2)			900		(2)			20	
Electricity, internal combustion, and—																	
Steam	6,820		0.5			50		0.1			364,200		0.6			76	
Wind	268		(2)			28		(2)			8,097		(2)			32	
Not reported	811		(2)			98		0.2			23,570		(2)			60	
KIND OF PUMP																	
Centrifugal	726,301	581,274	56.6	77.6	24.9	34,803	26,019	56.6	77.0	33.8	38,193,371	29,250,062	66.7	80.6	30.6	36	33
Turbine	302,291	24,360	23.6	3.3	-------	13,370	677	21.8	2.0	-------	8,655,509	625,728	15.1	1.5	-------	75	84
Rotary	118,856	36,716	9.3	4.9	223.7	4,816	1,305	7.8	3.9	269.0	3,806,528	2,089,211	6.7	5.8	82.2	63	42
Reciprocating	5,338	32,344	0.4	4.3	−83.5	647	2,729	1.1	8.1	−76.3	133,639	735,362	0.2	2.0	−81.8	80	94
Air lift	1,627	10,072	0.1	1.3	−83.8	85	319	0.1	0.9	−73.4	25,556	304,105	(2)	0.8	−91.6	71	58
Plunger	17,803		1.4			2,867		4.7			272,174		0.5			101	
Screw	8,732		0.7			33		0.1			1,330,253		2.3			16	
Water wheel	285		(2)			117		0.2			25,996		(2)			32	
Bucket	117		(2)			7		(2)			7,050		(2)			13	
Scoop wheel	45		(2)			3		(2)			13,950		(2)			4	
Centrifugal and—																	
Turbine	46,531		3.6			2,287		3.7			1,683,037		2.9			53	
Rotary	12,737		1.0			507		0.8			869,464		1.5			49	
Plunger	3,579		0.3			380		0.6			77,555		0.1			65	
Reciprocating	8,106		0.6			222		0.4			126,704		0.2			86	
Screw	5,288		0.4			30		(2)			794,600		1.4			11	
Air lift	308		(2)			44		0.1			11,355		(2)			33	
Bucket	76		(2)			6		(2)			5,800		(2)			16	
Water wheel	67		(2)			6		(2)			2,710		(2)			22	
Not reported	3,486		0.3			86		0.1			28,402		(2)			148	
Turbine and—																	
Rotary	2,360		0.2			54		0.1			41,116		0.1			85	
Plunger	6,809		0.5			477		0.8			94,241		0.2			104	
Reciprocating	1,227		0.1			43		0.1			14,512		(2)			164	
Screw	125		(2)			4		(2)			2,520		(2)			100	
Air lift	482		(2)			24		(2)			6,595		(2)			85	
Not reported	307		(2)			25		(2)			7,435		(2)			130	
Rotary and—	763	64,175		8.6	101.0	81	2,755	0.1	8.1	180.4	13,485	3,370,537	(2)	9.3	90.8	79	57
Plunger	1,550		0.1			37		0.1			20,079		(2)			133	
Reciprocating	45		(2)			2		(2)			1,368		(2)			70	
Screw	35		(2)			3		(2)			306		(2)			221	
Air lift	2		(2)			2		(2)			30		(2)			12	
Not reported																	
Plunger and—	20		(2)			2		(2)			200		(2)			50	
Air lift	10		(2)			2		(2)			900		(2)			20	
Water wheel	39		(2)			11		(2)			406		(2)			63	
Not reported	90		(2)			2		(2)			275		(2)			140	
Air lift and bucket																	
Centrifugal, turbine, and—	45		(2)			3		(2)			1,700		(2)			40	
Rotary	660		(2)			49		0.1			12,680		(2)			138	
Plunger	28		(2)			3		(2)			600		(2)			60	
Reciprocating	3,025		0.2			10		(2)			810,000		1.4			6	
Screw	137		(2)			13		(2)			3,222		(2)			37	
Air lift																	
Centrifugal, rotary, and—	66		(2)			11		(2)			1,840		(2)			70	
Plunger	12		(2)			3		(2)			300		(2)			20	
Reciprocating																	
Turbine, plunger, and not reported	513		(2)			11		(2)			41,200		0.1			81	
Not reported	3,763		0.3			251		0.4			99,896		0.2			72	
STATE																	
Arizona	57,633	22,014	4.5	2.9	161.8	1,364	1,001	2.2	3.0	36.3	2,125,293	1,048,030	3.7	2.9	102.8	46	44
Arkansas	66,980	58,332	5.2	7.8	14.8	1,206	1,121	2.0	3.3	7.6	1,775,788	1,654,097	3.1	4.6	7.4	68	50
California	820,767	386,200	64.0	51.6	112.5	47,904	24,134	78.1	71.4	98.9	33,240,589	16,773,692	58.1	46.2	98.2	53	41
Colorado	11,204	8,635	0.9	1.2	29.8	540	435	0.9	1.3	24.1	437,250	299,726	0.8	0.8	45.9	25	23
Idaho	33,754	28,364	2.6	3.8	19.0	465	232	0.8	0.7	100.4	2,113,513	1,397,681	3.7	3.9	51.2	32	20
Kansas	6,221	6,946	0.5	0.9	−10.4	312	288	0.5	0.8	8.3	393,526	297,975	0.7	0.8	32.1	26	30
Louisiana	86,413	85,628	6.7	11.4	0.9	2,000	1,941	3.2	5.7	3.0	5,914,799	4,968,686	10.3	13.7	19.0	37	32
Montana	9,095	10,341	0.7	1.4	−12.0	233	299	0.4	0.9	−22.1	523,494	453,231	0.9	1.2	15.5	22	20
Nebraska	10,991	959	0.8	0.1	-------	636	54	1.0	0.2	-------	536,752	73,686	0.9	0.2	628.4	29	24
Nevada	2,671	409	0.2	(2)	553.1	173	72	0.3	0.2	140.3	115,648	35,266	0.2	0.1	227.9	31	22
New Mexico	14,483	8,488	1.1	1.1	70.6	738	491	1.2	1.4	50.3	555,063	304,780	1.0	0.8	82.1	40	40
North Dakota	216	2,068	(2)	0.3	−89.6	13	10	(2)	(2)	30.0	24,900	51,250	(2)	0.1	−51.4	24	38
Oklahoma	229	184	(2)	(2)	24.5	30	26	(2)	0.1	15.4	8,855	7,068	(2)	(2)	15.5	33	59
Oregon	21,257	13,760	1.6	1.8	54.4	1,157	614	1.9	1.8	88.4	1,022,213	600,015	1.8	1.7	70.4	27	28
South Dakota	92	498	(2)	(2)	−81.5	8	25	(2)	0.1	−68.0	4,027	23,320	(2)	(2)	−82.7	27	21
Texas	95,933	80,511	7.5	10.7	19.2	2,028	1,641	3.3	4.8	23.6	6,491,999	6,825,998	11.3	18.8	−4.8	55	45
Utah	11,381	11,392	0.9	1.5	−0.1	460	291	0.7	0.9	58.1	877,942	783,588	1.5	2.2	12.0	36	25
Washington	33,187	22,029	2.6	3.1	44.7	2,023	1,059	3.3	3.1	91.0	993,303	636,552	1.7	1.8	56.0	59	60
Wyoming	912	1,304	0.1	0.2	−30.1	65	70	0.1	0.2	−7.1	86,905	39,725	0.2	0.1	118.8	21	31

[1] A minus sign (−) denotes decrease. Per cent not shown when more than 1,000.

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

STATE TABLE I.—FARMS, AREA, INVESTMENT IN IRRIGATION ENTERPRISES, AND IRRIGATION WORKS, 1930 AND 1920; AREAS IRRIGATED, 1929 AND 1919; TENURE OF FARM OPERATORS AND VALUE OF FARMS, 1930; AND COST OF MAINTENANCE AND OPERATION, 1929; FOR THE 19 IRRIGATION STATES

	ITEM (See definitions in Introduction)	TOTAL (19 States)	Arizona	Arkansas	California	Colorado	Idaho
	FARMS AND FARM OPERATORS						
1	All farms—1930—number	2,062,813	14,173	242,334	135,676	59,956	41,074
2	Irrigated farms—1930—number	265,147	8,523	1,096	85,784	31,288	27,953
	Operated by—						
3	Owners and managers—number	203,825	6,750	625	71,911	20,060	20,486
4	Tenants—number	61,322	1,773	471	13,873	11,228	7,467
5	Irrigated farms—1920—number	222,789	6,605	1,166	67,391	28,756	25,283
6	Increase,[1] 1920–1930—per cent	19.0	29.0	−6.0	27.3	8.8	10.6
	FARM AREA AND TOTAL LAND AREA						
7	Approximate land area—1930—acres	1,223,989,120	72,838,400	33,616,000	99,617,280	66,341,120	53,346,560
8	Land in all farms—1930—acres	568,693,705	10,526,627	16,052,962	30,442,581	28,876,171	9,346,908
9	Land in irrigated farms—1930—acres	78,339,222	2,983,784	363,549	12,018,804	10,390,299	4,851,440
10	Average, per farm—acres	295.5	350.1	331.7	140.1	332.1	173.6
11	Operated by owners and managers—acres	66,612,767	2,652,388	219,101	10,169,705	8,034,879	3,955,944
12	Average, per farm—acres	326.8	392.9	350.6	141.4	400.5	193.1
13	Operated by tenants—acres	11,726,455	331,396	144,448	1,849,159	2,355,420	895,496
14	Average, per farm—acres	191.2	186.9	306.7	133.3	209.8	119.9
15	Area irrigated—1929—acres	19,547,544	575,590	151,787	4,746,632	3,393,610	2,181,250
16	1919—acres	19,191,716	467,565	143,946	4,219,040	3,348,385	2,488,806
17	Increase,[1] 1919–1929—per cent	1.9	23.1	5.4	12.5	1.4	−12.4
18	Area enterprises were capable of supplying with water—1930—acres	26,101,890	824,152	209,942	6,815,250	4,078,712	2,617,021
19	1920—acres	26,020,477	627,303	179,013	5,894,466	3,855,348	3,092,810
20	Increase,[1] 1920–1930—per cent	0.3	31.4	17.3	15.6	5.8	−15.4
21	Irrigable area in enterprises—1930—acres	30,599,470	1,085,627	225,992	8,075,895	4,528,251	2,814,048
22	Total area in enterprises—1920—acres	35,890,821	813,153	246,480	7,805,207	5,220,588	3,780,048
23	Area in enterprises available, or to be available, for settlement—1930—acres	1,081,598	104,693	----------	158,687	88,731	79,972
	IRRIGATION WORKS						
24	Enterprises—1930—number	[2] 75,551	1,270	1,043	38,117	6,509	3,222
25	1920—number	63,208	1,388	944	24,115	6,534	3,029
26	Main canals—1930—length, miles	75,375	1,732	46	7,588	15,355	7,077
27	1920—length, miles	103,177	1,709	68	14,437	19,022	11,144
28	1930—capacity, sec.-ft.	547,314	13,697	1,845	84,944	123,652	76,763
29	1920—capacity, sec.-ft.	631,079	11,707	1,205	115,237	119,558	86,273
30	Laterals—1930—length, miles	51,427	2,242	5	11,014	6,026	7,207
31	1920—length, miles	56,687	1,599	18	12,947	8,571	6,154
32	Reservoirs—1930—number	5,122	378	10	1,769	765	155
33	1920—number	7,538	340	16	3,030	979	249
34	1930—capacity, ac.-ft.	24,508,590	3,410,975	7,342	3,225,675	1,924,982	3,645,373
35	1920—capacity, ac.-ft.	21,246,436	1,510,856	20	1,091,394	2,406,372	3,493,511
36	Wells, flowing—1930—number	4,811	215	----------	449	621	220
37	1920—number	4,606	310	----------	1,415	476	142
38	1930—capacity, g. p. m.	609,367	13,772	----------	65,768	39,644	30,108
39	1920—capacity, g. p. m.	935,057	14,547	----------	287,187	20,139	15,133
40	Wells, pumped—1930—number	56,729	1,308	1,190	46,737	654	121
41	1920—number	32,094	999	1,089	25,401	527	53
42	1930—capacity, g. p. m.	32,467,120	1,832,352	1,641,448	24,266,167	237,903	34,601
43	1920—capacity, g. p. m.	16,396,549	1,042,590	1,470,147	10,608,476	210,094	17,749
44	Pumping plants—1930—number	59,344	1,378	1,184	46,729	516	393
45	1920—number	29,468	744	1,041	21,561	406	143
46	1930—engine capacity, h. p.	1,283,419	57,633	66,980	820,767	11,204	33,754
47	1920—engine capacity, h. p.	748,971	22,014	58,332	386,200	8,635	28,364
48	1930—pump capacity, g. p. m.	57,244,859	2,125,293	1,775,788	33,240,589	437,250	2,113,513
49	1920—pump capacity, g. p. m.	36,275,005	1,048,030	1,654,097	16,773,692	299,726	1,397,681
50	1930—average lift, feet	51	46	68	53	25	32
51	1920—average lift, feet	41	44	50	41	23	29
	VALUES OF FARMS, 1930						
52	Land and buildings, all farms—dollars	20,101,278,254	184,230,656	547,828,250	3,419,470,764	629,346,675	417,249,572
53	Land and buildings, irrigated farms—dollars	4,629,781,819	149,154,077	16,002,854	2,438,289,524	386,053,889	289,343,666
	Operated by—						
54	Owners and managers—dollars	3,736,423,785	119,493,080	10,101,159	2,074,125,516	242,084,080	214,018,772
55	Tenants—dollars	893,358,034	29,660,997	5,901,695	364,164,008	143,969,809	75,324,894
56	Average, land and buildings, per farm—dollars	17,461.19	17,500.19	14,601.14	28,423.59	12,338.72	10,351.08
57	per acre—dollars	59.10	49.99	44.02	202.87	37.16	59.64
58	Land (excluding buildings)—dollars	3,942,266,249	131,238,561	12,989,124	2,145,451,026	309,265,986	233,067,280
59	Buildings (including dwellings)—dollars	687,515,570	17,915,516	3,013,730	292,838,498	76,787,903	56,276,386
60	Implements and machinery, irrigated farms—dollars	257,110,965	8,136,633	2,414,628	96,785,492	28,127,021	27,305,368
61	Average, per farm—dollars	969.69	954.67	2,203.13	1,128.25	898.97	976.83
62	per acre—dollars	3.28	2.73	6.04	8.05	2.71	5.03
	INVESTMENT IN IRRIGATION ENTERPRISES						
63	Investment to Jan. 1, 1930—dollars	1,032,755,790	73,328,197	6,830,648	450,967,979	87,603,240	84,500,354
64	1920—dollars	697,657,328	33,498,094	7,183,322	194,886,388	88,302,442	91,501,009
65	Increase,[1] 1920–1930—per cent	48.0	118.9	−4.8	131.4	−0.8	−7.7
66	Average, per acre, based on area enterprises were capable of supplying with water, 1930—dollars	39.57	88.97	32.56	66.17	21.48	32.29
67	1920—dollars	26.81	53.40	40.13	33.06	22.90	29.59
68	Estimated final investment in existing enterprises, 1930—dollars	1,155,108,210	91,913,550	6,844,092	465,930,535	91,845,804	101,350,250
69	1920—dollars	819,778,005	34,615,064	7,283,522	225,799,123	95,198,423	97,019,717
70	Increase,[1] 1920–1930—per cent	40.9	165.5	−6.0	106.3	−3.5	4.5
71	Average, per acre, based on estimated final investment and irrigable area, 1930—dollars	37.75	84.66	30.28	57.69	20.28	36.02
72	Average, per acre, based on estimated final investment and total area, 1920—dollars	22.84	42.57	29.55	28.93	18.24	25.67
	COST OF MAINTENANCE AND OPERATION, 1929						
73	Irrigated area for which cost was reported—acres	18,690,184	561,605	147,921	4,538,579	3,235,629	2,109,087
74	Average, per acre, based on area reporting—dollars	2.77	4.57	7.03	6.10	0.85	1.44

[1] A minus sign (−) denotes decrease.
[2] Includes 34 interstate projects counted in this table as 68 independent enterprises; corresponding figures for 1920 not available. For actual number of enterprises see Tables 4 and 12.

STATE TABLE I.—FARMS, AREA, INVESTMENT IN IRRIGATION ENTERPRISES, AND IRRIGATION WORKS, 1930 AND 1920; AREAS IRRIGATED, 1929 AND 1919; TENURE OF FARM OPERATORS AND VALUE OF FARMS, 1930; AND COST OF MAINTENANCE AND OPERATION, 1929; FOR THE 19 IRRIGATION STATES—Con.

	ITEM (See definitions in Introduction)	Kansas	Louisiana	Montana	Nebraska	Nevada	New Mexico	North Dakota
	FARMS AND FARM OPERATORS							
1	All farms—1930—number	166,042	161,445	47,495	129,458	3,442	31,404	77,975
2	Irrigated farms—1930—number	683	5,588	11,025	4,602	3,031	14,347	113
	Operated by—							
3	Owners and managers—number	391	3,049	8,701	2,276	2,656	11,477	85
4	Tenants—number	292	2,539	3,224	2,326	375	2,870	28
5	Irrigated farms—1920—number	504	6,471	10,807	3,021	2,718	11,390	340
6	Increase,[1] 1920–1930—per cent	35.5	−13.6	10.3	52.3	11.5	26.0	−66.8
	FARM AREA AND TOTAL LAND AREA							
7	Approximate land area—1930—acres	52,335,360	29,061,760	93,523,840	49,157,120	70,285,440	78,401,920	44,917,120
8	Land in all farms—1930—acres	46,975,047	9,355,437	44,659,152	44,708,565	4,080,906	30,822,034	38,657,894
9	Land in irrigated farms—1930—acres	311,174	892,604	12,032,619	1,648,339	3,102,085	5,024,868	56,654
10	Average, per farm—acres	455.6	159.7	1,090.0	358.2	1,023.5	350.2	501.4
11	Operated by owners and managers—acres	215,351	552,863	10,404,023	1,080,501	2,868,819	4,701,640	49,707
12	Average, per farm—acres	550.8	181.3	1,206.1	474.7	1,070.4	409.7	534.8
13	Operated by tenants—acres	95,823	339,741	1,538,596	567,838	233,266	323,228	6,947
14	Average, per farm—acres	328.2	133.8	477.2	244.1	648.7	112.6	248.1
15	Area irrigated—1929—acres	71,200	450,901	1,594,912	532,617	486,648	527,033	9,392
16	1919—acres	47,312	454,882	1,081,729	442,090	501,447	538,377	12,072
17	Increase,[1] 1919–1929—per cent	50.7	−0.9	−5.2	20.3	−13.3	−2.1	−22.2
18	Area enterprises were capable of supplying with water—1930—acres	83,583	795,165	2,270,000	703,641	736,240	656,669	24,006
19	1920—acres	67,853	728,742	2,753,498	562,468	704,708	696,119	34,235
20	Increase,[1] 1920–1930—per cent	23.2	9.1	−17.3	25.1	4.5	−5.7	−29.9
21	Irrigable area in enterprises—1930—acres	95,719	850,401	2,622,423	763,030	983,717	741,245	24,860
22	Total area in enterprises—1920—acres	102,562	851,211	4,320,148	766,708	1,382,036	961,879	57,476
23	Area in enterprises available, or to be available, for settlement—1930—acres	----------	15,440	53,576	10,113	92,026	42,811	----------
	IRRIGATION WORKS							
24	Enterprises—1930—number	300	2,352	4,461	721	1,245	1,965	23
25	1920—number	209	1,373	6,035	470	1,015	2,391	30
26	Main canals—1930—length, miles	196	1,318	10,577	1,432	3,341	3,405	18
27	1920—length, miles	271	1,584	16,411	1,780	3,123	4,469	58
28	1930—capacity, sec.-ft	2,079	11,386	53,253	13,108	16,986	17,479	1,072
29	1920—capacity, sec.-ft	1,667	11,889	94,420	11,665	10,554	23,432	836
30	Laterals—1930—length, miles	89	908	5,380	2,033	814	1,061	69
31	1920—length, miles	147	1,659	6,085	1,545	1,245	1,403	93
32	Reservoirs—1930—number	19	85	282	40	209	240	8
33	1920—number	36	74	468	59	134	328	9
34	1930—capacity, ac.-ft	66,203	13,909	857,067	199,185	529,360	2,945,220	1,466
35	1920—capacity, ac.-ft	391	7,632	1,571,720	197,890	504,428	2,960,718	1,110
36	Wells, flowing—1930—number	1	807	10	----------	274	340	----------
37	1920—number	6	9	41	----------	123	556	----------
38	1930—capacity, g. p. m	75	31,961	4,100	----------	10,131	223,257	----------
39	1920—capacity, g. p. m	500	6,255	4,608	----------	21,942	376,222	----------
40	Wells, pumped—1930—number	772	1,389	49	537	147	680	----------
41	1920—number	710	812	22	34	129	461	----------
42	1930—capacity, g. p. m	323,500	1,958,811	18,053	428,058	54,162	481,898	----------
43	1920—capacity, g. p. m	266,797	1,607,637	11,085	24,701	6,708	205,618	----------
44	Pumping plants—1930—number	281	1,790	108	610	157	702	13
45	1920—number	198	1,250	253	51	64	472	4
46	1930—engine capacity, h. p	6,221	80,413	9,005	10,991	2,071	14,483	216
47	1920—engine capacity, h. p	6,946	85,628	10,341	950	400	8,488	2,068
48	1930—pump capacity, g. p. m	393,526	5,914,709	523,494	536,752	115,648	555,063	24,900
49	1920—pump capacity, g. p. m	297,975	4,968,680	453,231	73,686	35,266	304,789	51,250
50	1930—average lift, feet	26	37	22	29	31	40	24
51	1920—average lift, feet	30	32	20	24	22	40	38
	VALUES OF FARMS, 1930							
52	Land and buildings, all farms—dollars	2,281,101,631	418,191,773	527,610,002	2,495,203,071	64,111,000	207,850,492	951,225,446
53	Land and buildings, irrigated farms—dollars	12,204,425	45,496,283	190,057,936	85,097,442	59,950,787	87,868,916	1,304,150
	Operated by—							
54	Owners and managers—dollars	8,085,175	29,532,898	151,420,935	46,944,404	53,688,915	69,372,388	1,086,400
55	Tenants—dollars	4,209,250	15,963,385	38,637,001	38,153,038	6,267,872	18,496,528	217,750
56	Average, land and buildings, per farm—dollars	18,000.62	8,141.78	15,937.77	18,491.40	19,781.19	6,124.55	11,541.15
57	per acre—dollars	39.51	50.97	15.80	51.63	19.33	17.49	23.02
58	Land (excluding buildings)—dollars	10,108,835	37,467,305	156,067,215	70,533,599	50,145,484	73,630,223	948,396
59	Buildings (including dwellings)—dollars	2,185,590	8,028,888	33,990,721	14,563,843	9,811,303	14,238,693	355,754
60	Implements and machinery, irrigated farms—dollars	800,644	5,170,041	14,969,479	6,676,201	4,041,264	5,201,569	148,185
61	Average, per farm—dollars	1,172.25	926.08	1,255.30	1,450.74	1,333.31	368.83	1,311.37
62	per acre—dollars	2.57	5.80	1.24	4.05	1.30	1.05	2.62
	INVESTMENT IN IRRIGATION ENTERPRISES							
63	Investment to Jan. 1, 1930—dollars	1,685,652	15,744,743	50,310,204	21,386,319	15,457,931	19,834,380	1,267,314
64	1920—dollars	2,067,381	14,063,181	52,143,363	13,909,185	14,754,280	18,210,412	1,857,118
65	Increase,[1] 1920–1930—per cent	−18.5	12.0	−3.5	53.8	4.8	8.9	−31.8
66	Average, per acre, based on area enterprises were capable of supplying with water, 1930—dollars	20.17	19.80	22.11	30.39	21.00	30.20	52.79
67	1920—dollars	30.47	19.30	18.94	24.73	20.94	26.16	54.25
68	Estimated final investment in existing enterprises, 1930—dollars	1,723,872	15,771,003	58,489,575	21,465,772	18,480,003	21,942,450	1,343,911
69	1920—dollars	2,195,981	14,264,178	70,079,028	18,030,154	22,048,747	26,440,646	2,072,766
70	Increase,[1] 1920–1930—per cent	−21.5	10.6	−16.5	19.1	−18.4	7.3	−35.2
71	Average, per acre, based on estimated final investment and irrigable area, 1930—dollars	18.01	18.55	22.30	28.13	18.80	29.60	54.06
72	Average, per acre, based on estimated final investment and total area, 1920—dollars	21.41	16.76	16.19	23.51	16.30	21.25	36.06
	COST OF MAINTENANCE AND OPERATION, 1929							
73	Irrigated area for which cost was reported—acres	64,983	431,337	1,476,854	524,260	474,422	493,229	8,773
74	Average, per acre, based on area reporting—dollars	1.53	4.09	0.87	1.54	0.91	2.15	1.97

[1] A minus sign (−) denotes decrease.

STATE TABLE I.—FARMS, AREA, INVESTMENT IN IRRIGATION ENTERPRISES, AND IRRIGATION WORKS, 1930 AND 1920; AREAS IRRIGATED, 1929 AND 1919; TENURE OF FARM OPERATORS AND VALUE OF FARMS, 1930; AND COST OF MAINTENANCE AND OPERATION, 1929; FOR THE 19 IRRIGATION STATES—Con.

	ITEM (See definitions in Introduction)	Oklahoma	Oregon	South Dakota	Texas	Utah	Washington	Wyoming
	FARMS AND FARM OPERATORS							
1	All farms—1930—number	203,866	55,153	83,157	495,489	27,159	70,904	16,011
2	Irrigated farms—1930—number	99	11,387	763	10,861	23,847	15,949	7,308
	Operated by—							
3	Owners and managers—number	69	9,339	453	6,056	20,886	13,129	5,426
4	Tenants—number	30	2,048	310	4,805	2,961	2,820	1,882
5	Irrigated farms—1920—number	73	9,154	1,198	5,974	22,218	13,271	6,449
6	Increase,[1] 1920–1930—per cent	35.6	24.4	−36.3	81.8	7.3	20.2	13.3
	FARM AREA AND TOTAL LAND AREA							
7	Approximate land area—1930—acres	44,424,960	61,188,480	49,195,520	167,934,720	52,597,760	42,775,040	62,430,720
8	Land in all farms—1930—acres	33,790,817	16,548,678	36,470,083	124,707,130	5,613,101	13,533,778	23,525,234
9	Land in irrigated farms—1930—acres	57,367	6,306,825	379,270	1,899,240	4,137,021	1,923,337	9,959,883
10	Average, per farm—acres	579.5	553.9	497.1	174.9	173.5	120.6	1,362.9
11	Operated by owners and managers—acres	52,107	5,606,140	267,826	1,475,014	3,779,080	1,639,945	8,807,734
12	Average, per farm—acres	755.2	600.3	591.2	243.6	180.9	124.9	1,623.2
13	Operated by tenants—acres	5,260	700,685	111,444	424,226	357,941	283,392	1,152,149
14	Average, per farm—acres	175.3	342.1	359.5	88.3	120.9	100.5	612.2
15	Area irrigated—1929—acres	1,573	898,713	67,107	798,917	1,324,125	499,283	1,236,155
16	1919—acres	2,969	986,162	100,682	586,120	1,371,651	529,899	1,207,982
17	Increase,[1] 1919–1929—per cent	−47.0	−8.9	−33.3	36.3	−3.5	−5.8	2.3
18	Area enterprises were capable of supplying with water—1930—acres	7,331	1,158,210	109,550	1,177,415	1,542,475	631,511	1,655,008
19	1920—acres	9,072	1,344,046	150,914	1,150,542	1,700,550	637,151	1,831,039
20	Increase,[1] 1920–1930—per cent	−24.2	−13.8	−27.4	2.3	−9.3	−0.9	−9.6
21	Irrigable area in enterprises—1930—acres	7,344	1,478,128	122,510	1,566,876	1,739,869	915,379	1,958,147
22	Total area in enterprises—1920—acres	11,742	1,925,987	188,382	1,687,447	2,359,244	836,795	2,594,608
23	Area in enterprises available, or to be available, for settlement—1930—acres		330,475	5,000	80,323	199,449	195,041	164,301
	IRRIGATION WORKS							
24	Enterprises—1930—number	77	4,066	121	1,728	2,714	2,986	2,631
25	1920—number	33	4,710	292	1,371	2,403	2,692	3,564
26	Main canals—1930—length, miles	23	5,839	354	1,043	5,614	1,774	8,043
27	1920—length, miles	38	7,115	653	1,524	6,343	3,851	9,517
28	1930—capacity, sec.-ft.	77	25,006	1,095	21,626	30,648	14,987	35,811
29	1920—capacity, sec.-ft.	344	28,897	5,427	23,261	29,447	16,242	39,009
30	Laterals—1930—length, miles	1	2,338	728	3,236	3,623	1,861	2,732
31	1920—length, miles	19	1,956	605	2,949	5,334	1,764	2,534
32	Reservoirs—1930—number	7	120	5	325	413	78	214
33	1920—number	8	266	119	368	476	205	374
34	1930—capacity, ac.-ft.	293	1,698,428	203,124	935,085	1,093,252	699,807	3,051,745
35	1920—capacity, ac.-ft.	52	1,905,037	212,264	392,999	1,000,505	477,789	2,911,748
36	Wells, flowing—1930—number		59	13	61	1,063	42	6
37	1920—number	1	65	4	135	1,256	60	7
38	1930—capacity, g. p. m.		6,535	4,825	36,020	104,670	27,290	2,205
39	1920—capacity, g. p. m.	100	11,968	2,750	62,364	96,371	14,925	46
40	Wells, pumped—1930—number	18	558	1	1,102	346	1,019	11
41	1920—number	19	208	1	901	192	520	16
42	1930—capacity, g. p. m.	2,715	136,669	375	614,395	120,333	306,800	8,280
43	1920—capacity, g. p. m.	3,643	47,026	800	538,565	39,059	227,744	8,020
44	Pumping plants—1930—number	25	1,091	8	1,828	420	1,951	61
45	1920—number	22	573	25	1,369	250	975	57
46	1930—engine capacity, h. p.	229	21,257	92	95,933	11,381	33,187	912
47	1920—engine capacity, h. p.	184	13,769	498	80,511	11,392	22,929	1,304
48	1930—pump capacity, g. p. m.	8,855	1,022,213	4,027	6,494,999	877,942	993,303	86,905
49	1920—pump capacity, g. p. m.	7,668	600,045	23,320	6,825,998	783,588	636,552	30,725
50	1930—average lift, feet	33	27	27	55	36	59	21
51	1920—average lift, feet	59	28	21	45	25	60	31
	VALUES OF FARMS, 1930							
52	Land and buildings, all farms—dollars	1,242,723,526	630,827,927	1,285,153,538	3,597,406,986	221,223,172	773,662,602	206,852,171
53	Land and buildings, irrigated farms—dollars	1,071,866	160,937,926	10,520,455	180,145,521	199,983,735	195,394,180	120,208,187
	Operated by—							
54	Owners and managers—dollars	1,356,220	136,987,981	6,417,810	129,362,009	176,941,680	168,250,045	97,153,418
55	Tenants—dollars	315,646	23,949,945	4,102,645	50,783,512	23,042,055	27,144,135	23,054,769
56	Average, land and buildings, per farm—dollars	16,887.54	14,133.48	13,788.28	16,586.46	8,386.12	12,251.19	16,448.85
57	per acre—dollars	29.14	25.52	27.74	94.85	48.34	101.59	12.07
58	Land (excluding buildings)—dollars	1,215,461	130,246,175	8,312,305	159,716,101	157,832,148	154,326,847	99,704,088
59	Buildings (including dwellings)—dollars	456,405	30,691,751	2,208,150	20,429,420	42,151,587	41,067,333	20,504,099
60	Implements and machinery, irrigated farms—dollars	99,517	10,081,075	1,055,845	9,995,783	12,274,514	13,343,847	9,483,860
61	Average, per farm—dollars	1,005.22	964.35	1,383.81	920.34	514.72	836.66	1,297.74
62	per acre—dollars	1.73	1.74	2.78	5.26	2.97	6.94	0.95
	INVESTMENT IN IRRIGATION ENTERPRISES							
63	Investment to Jan. 1, 1930—dollars	100,099	38,754,548	4,502,117	49,022,164	35,669,819	40,561,895	35,153,187
64	1920—dollars	151,325	28,929,151	5,405,248	35,072,739	32,037,351	29,299,011	34,320,328
65	Increase,[1] 1920–1930—per cent	5.8	34.0	−17.0	39.8	11.3	38.4	2.4
66	Average, per acre, based on area enterprises were capable of supplying with water, 1930—dollars	21.84	33.46	41.10	41.64	23.13	64.23	21.24
67	1920—dollars	15.65	21.52	36.21	30.48	18.84	45.98	18.75
68	Estimated final investment in existing enterprises, 1930—dollars	167,909	60,039,939	5,174,417	59,555,624	37,857,011	53,232,477	41,970,416
69	1920—dollars	162,775	41,585,742	5,500,748	39,860,871	33,935,641	37,684,591	51,500,288
70	Increase,[1] 1920–1930—per cent	3.2	44.4	−5.9	49.4	11.9	41.3	−18.5
71	Average, per acre, based on estimated final investment and irrigable area, 1930—dollars	22.86	40.62	42.24	38.01	21.76	58.15	21.43
72	Average, per acre, based on estimated final investment and total area, 1920—dollars	13.86	21.59	29.20	23.62	14.34	45.03	20.08
	COST OF MAINTENANCE AND OPERATION, 1929							
73	Irrigated area for which cost was reported—acres	935	863,085	65,783	772,160	1,301,098	487,977	1,131,867
74	Average, per acre, based on area reporting—dollars	7.62	1.41	1.33	4.74	1.00	4.14	0.84

[1] A minus sign (−) denotes decrease.