

## CENSUS OF IRRIGATION: 1940

TABLE 21.—ENTERPRISES USING PUMPED WATER—INVESTMENT, 1940, 1930, AND 1920; AND COST

(For the 17 western States)

ITEM (For definitions and explanations, see text)		TOTAL	Arizona	Arkansas	California	Colorado
Total investment, entire supply pumped and part supply pumped-----	1940--dollars-----	512,390,046	76,688,203	5,733,495	243,573,872	7,643,065
	1930--dollars-----	<sup>1</sup> 413,456,976	52,877,571	6,824,598	<sup>1</sup> 235,767,965	6,452,510
	1920--dollars-----	178,519,476	21,087,181	7,143,223	85,276,671	3,486,853
ENTIRE SUPPLY PUMPED						
Investment, total-----	1940--dollars-----	241,970,954	13,091,794	5,688,745	138,963,467	1,447,748
	1930--dollars-----	<sup>1</sup> 242,782,577	10,206,959	6,773,348	<sup>1</sup> 135,252,088	6,001,642
	1920--dollars-----	158,274,490	3,959,591	7,134,723	70,414,827	2,893,707
Average, per acre-----	1940--dollars-----	36.23	61.96	19.98	45.09	16.99
	1930--dollars-----	<sup>1</sup> 44.79	63.25	32.76	<sup>1</sup> 53.93	90.06
	1920--dollars-----	35.88	56.94	40.52	45.32	77.19
Pumped from-- Streams-- Investment-----	1940--dollars-----	81,236,358	38,096	145,077	19,458,731	142,190
	1930--dollars-----	102,027,681	1,459,527	30,675	31,603,584	5,451,389
	1920--dollars-----	59,271,070	521,852	96,450	16,267,561	2,490,900
Average, per acre-----	1940--dollars-----	29.42	19.53	13.25	23.91	17.03
	1930--dollars-----	37.67	117.89	17.86	38.63	112.79
	1920--dollars-----	27.97	55.53	14.65	33.83	122.97
Maintenance and operation cost per acre-----	1939--dollars-----	3.81	2.93	5.07	3.18	1.79
	1929--dollars-----	4.30	9.83	6.27	4.47	3.89
	1919--dollars-----	6.50	8.12	7.06	5.10	9.49
Wells-- Investment-----	1940--dollars-----	139,675,087	9,594,076	5,414,533	104,729,374	1,300,983
	1930--dollars-----	<sup>1</sup> 131,426,464	8,747,182	6,640,773	<sup>1</sup> 100,421,609	474,053
	1920--dollars-----	76,741,804	3,417,339	7,028,773	54,057,185	375,277
Average, per acre-----	1940--dollars-----	38.56	47.68	20.19	50.58	16.99
	1930--dollars-----	<sup>1</sup> 53.30	58.70	33.23	<sup>1</sup> 61.00	30.66
	1920--dollars-----	45.82	57.16	41.70	50.60	23.37
Maintenance and operation cost per acre-----	1939--dollars-----	6.92	7.98	5.53	8.41	3.87
	1929--dollars-----	9.17	10.76	7.04	10.05	5.36
	1919--dollars-----	10.07	13.15	14.06	10.40	4.54
Lakes-- Investment-----	1940--dollars-----	1,865,165	2,530	2,725	49,938	1,575
	1930--dollars-----	3,591,977	-----	1,900	494,070	15,100
	1920--dollars-----	2,261,616	400	9,500	90,081	27,530
Average, per acre-----	1940--dollars-----	26.52	5.26	7.55	2.12	11.41
	1930--dollars-----	26.43	-----	9.50	109.21	31.95
	1920--dollars-----	37.84	80.00	10.00	20.34	23.51
Maintenance and operation cost per acre-----	1939--dollars-----	3.40	6.45	5.67	0.73	4.37
	1929--dollars-----	3.93	-----	3.49	3.97	3.21
	1919--dollars-----	5.20	10.00	11.78	1.66	3.21
Other sources-- Investment-----	1940--dollars-----	19,194,344	3,457,092	121,410	14,725,424	( <sup>2</sup> )
	1930--dollars-----	5,736,455	250	100,000	2,732,825	63,100
	1920--dollars-----	-----	-----	-----	-----	-----
Average, per acre-----	1940--dollars-----	85.27	451.08	21.25	84.48	( <sup>2</sup> )
	1930--dollars-----	52.11	250.00	20.00	70.24	25.88
	1920--dollars-----	-----	-----	-----	-----	-----
Maintenance and operation cost per acre-----	1939--dollars-----	6.18	9.96	4.09	6.61	( <sup>2</sup> )
	1929--dollars-----	7.22	100.00	8.00	7.09	1.28

<sup>1</sup> Revised.<sup>2</sup> Data are included only in totals because less than 3 enterprises reported in the 1940 Census.

# GENERAL DISCUSSION

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OF MAINTENANCE AND OPERATION, 1939, 1929, AND 1919; BY SOURCE OF SUPPLY AND BY STATES  
and Arkansas and Louisiana)

Idaho	Kansas	Louisiana	Montana	Nebraska	Nevada	New Mexico	North Dakota	Oklahoma	Oregon	South Dakota	Texas	Utah	Washington	Wyoming
24,265,186	1,517,280	10,927,812	17,450,115	4,129,888	808,297	13,417,215	286,412	202,352	21,638,955	4,944,393	43,756,279	7,969,053	27,195,198	553,000
14,518,484	856,726	15,505,080	8,860,390	707,372	650,144	2,009,411	10,340	25,395	9,857,113	11,423	31,133,165	7,513,654	21,782,541	295,204
5,906,728	868,267	15,504,957	2,540,087	86,566	335,187	1,524,688	552,007	51,285	2,970,495	96,340	22,649,707	1,496,839	8,815,281	127,144
8,915,204	1,243,788	10,823,142	2,016,691	2,229,585	87,984	2,427,197	229,282	202,352	2,421,921	122,161	43,352,390	1,787,045	6,613,858	311,600
6,255,156	763,606	15,446,414	2,419,277	699,042	200,851	1,652,607	10,340	25,395	4,967,426	11,423	30,644,803	6,112,809	15,048,157	293,254
5,678,828	763,725	15,062,362	824,751	62,851	159,800	961,525	552,007	51,285	2,952,695	93,340	22,391,970	1,451,168	4,694,483	110,374
28.08	15.60	18.21	33.88	15.11	25.85	21.78	34.06	48.96	31.21	30.92	30.92	45.01	83.60	21.22
55.95	35.05	19.60	39.21	18.77	24.21	37.28	5.67	27.28	49.61	46.43	54.31	43.50	80.61	19.27
40.20	34.46	19.87	24.92	17.38	43.70	36.88	44.89	108.42	34.60	29.07	24.92	29.91	63.12	30.69
8,265,470	167,340	6,297,829	1,957,853	219,587	10,635	83,892	226,162	67,378	1,824,836	103,110	36,391,597	834,571	4,781,231	222,773
5,218,180	178,378	8,831,806	2,208,928	71,933	45,000	334,111	10,340	9,870	4,468,284	11,423	26,286,985	4,355,987	11,170,037	283,444
5,108,912	22,142	7,538,954	900,216	59,581	119,900	36,520	552,007	4,210	2,807,806	93,340	19,432,010	733,077	2,605,718	99,914
27.30	13.58	14.98	33.64	11.27	13.21	14.21	53.87	24.96	30.44	28.19	38.08	52.36	93.53	20.37
45.58	45.98	17.04	45.23	15.11	45.86	33.18	5.67	15.53	53.43	46.43	32.80	66.70	71.63	19.06
58.85	14.37	16.78	24.49	16.04	44.82	12.46	44.89	11.86	34.61	29.07	23.70	44.23	52.59	28.98
1.92	5.60	4.05	3.47	3.33	1.88	2.08	3.45	2.96	4.14	4.73	4.99	2.57	8.81	1.82
4.52	3.43	5.66	2.36	3.85	7.01	2.01	1.59	3.00	5.72	8.17	4.96	1.29	3.84	1.58
3.43	7.57	7.76	5.65	2.86	1.76	1.30	12.21	3.74	3.09	4.03	7.55	5.16	11.16	9.91
132,851	1,015,070	4,159,554	34,741	1,989,248	56,249	2,312,580	5,120	87,265	499,877	6,000	6,437,794	345,889	1,468,048	88,075
87,248	804,328	6,013,185	14,259	616,939	142,761	1,312,396	---	12,225	246,833	---	3,879,881	418,916	1,785,628	8,250
24,985	741,583	5,366,948	16,285	23,250	19,800	925,003	---	47,075	118,306	---	2,783,260	153,091	1,633,134	10,460
15.42	15.89	18.88	35.45	15.73	37.68	22.46	58.87	76.33	42.34	53.57	15.01	29.43	63.03	23.71
19.64	33.44	25.05	49.34	19.95	20.19	38.75	---	185.23	59.06	---	47.15	34.64	82.24	28.95
48.61	36.14	25.59	106.44	20.25	37.98	39.97	---	398.94	48.93	---	39.24	11.83	81.91	70.68
2.71	3.33	3.48	4.64	3.49	8.21	4.27	7.26	6.48	6.42	14.55	3.10	3.71	10.34	4.66
2.30	5.69	4.45	9.38	4.03	4.82	6.44	---	14.30	10.72	---	8.50	3.58	15.43	34.76
5.55	6.96	5.95	5.41	5.16	12.10	7.51	---	40.78	8.04	---	11.07	2.08	12.71	7.79
512,045	2,375	125,515	22,997	4,325	---	( <sup>2</sup> )	---	7,509	59,040	---	168,872	606,585	298,284	( <sup>2</sup> )
720,528	---	46,750	194,880	5,000	---	500	---	1,000	185,600	---	51,737	1,517,256	558,096	1,560
544,981	---	356,960	8,250	---	---	---	---	---	26,583	---	176,700	565,000	455,631	---
89.38	30.45	10.30	74.67	7.34	---	( <sup>2</sup> )	---	79.04	13.50	---	24.48	50.48	86.91	( <sup>2</sup> )
18.64	---	25.15	18.94	9.26	---	7.69	---	28.57	17.92	---	20.19	21.04	150.15	23.64
59.20	---	35.20	45.65	---	---	---	---	---	14.88	---	22.38	29.74	114.51	---
4.36	5.26	4.49	4.34	4.90	---	( <sup>2</sup> )	---	9.58	1.73	---	2.41	12.07	15.65	( <sup>2</sup> )
8.51	---	2.97	4.52	5.88	---	5.00	---	---	2.16	---	3.69	2.60	19.73	4.17
6.72	---	9.17	11.07	---	---	---	---	---	2.52	---	6.32	3.58	13.05	---
6,860	59,005	240,464	( <sup>2</sup> )	16,425	21,100	80,825	---	( <sup>2</sup> )	38,168	( <sup>2</sup> )	354,127	---	66,295	---
207,200	2,900	554,675	1,210	5,170	15,070	5,600	---	2,500	66,709	---	426,200	20,650	1,534,396	---
15.01	17.26	16.15	( <sup>2</sup> )	15.82	19.06	11.88	---	( <sup>2</sup> )	26.00	( <sup>2</sup> )	33.20	---	52.16	---
13.09	9.90	17.38	43.21	17.89	66.01	16.87	---	12.50	33.70	---	62.45	38.96	288.58	---
3.80	4.72	2.62	( <sup>2</sup> )	3.77	1.16	0.80	---	( <sup>2</sup> )	5.43	( <sup>2</sup> )	3.79	---	12.68	---
2.87	0.85	8.20	6.96	6.74	3.21	7.32	---	5.00	3.07	---	10.57	5.69	14.26	---

## CENSUS OF IRRIGATION: 1940

TABLE 21.—ENTERPRISES USING PUMPED WATER—INVESTMENT, 1940, 1930, AND 1920; AND COST OF

(For the 17 western States)

ITEM (For definitions and explanations, see text)	TOTAL	Arizona	Arkansas	California	Colorado
PART OF SUPPLY PUMPED					
Investment, total-----1940—dollars	270,419,092	65,606,409	49,750	104,610,405	8,595,317
-----1930—dollars	170,674,399	42,670,612	51,250	100,515,777	450,888
-----1920—dollars	40,244,986	17,147,590	8,500	14,861,844	595,146
Average, per acre-----1940—dollars	80.61	125.23	40.48	73.29	119.24
-----1930—dollars	67.44	106.58	19.02	66.85	35.94
-----1920—dollars	60.05	71.02	28.35	78.42	22.60
Supplied from—					
Streams, gravity and pumped—					
Investment-----1940—dollars	138,541,602	8,195,261	( <sup>2</sup> )	34,584,451	3,270,498
-----1930—dollars	20,823,588	2,550	-----	9,730,362	90,360
-----1920—dollars	9,406,594	-----	-----	5,084,058	397,392
Average, per acre-----1940—dollars	77.15	144.81	( <sup>2</sup> )	76.13	90.23
-----1930—dollars	47.63	38.45	-----	48.42	29.80
-----1920—dollars	39.57	-----	-----	49.02	41.72
Maintenance and operation cost per acre-----1939—dollars	2.25	2.48	( <sup>2</sup> )	3.18	3.29
-----1929—dollars	4.41	5.49	-----	8.25	2.72
-----1919—dollars	2.35	-----	-----	1.93	2.54
Wells, pumped and flowing—					
Investment-----1940—dollars	1,855,316	34,487	-----	1,313,926	11,650
-----1930—dollars	1,548,810	28,750	-----	1,153,841	-----
-----1920—dollars	2,497,049	54,700	-----	1,776,156	5,300
Average, per acre-----1940—dollars	74.66	75.46	-----	194.45	12.89
-----1930—dollars	74.58	65.64	-----	100.84	-----
-----1920—dollars	58.47	68.46	-----	65.02	35.12
Maintenance and operation cost per acre-----1939—dollars	7.96	5.15	-----	20.81	0.35
-----1929—dollars	9.27	10.64	-----	13.47	-----
-----1919—dollars	8.04	13.64	-----	7.65	4.78
Streams, gravity and wells, pumped—					
Investment-----1940—dollars	111,874,661	54,903,401	7,200	55,040,258	209,787
-----1930—dollars	99,836,110	57,553,267	-----	60,683,254	212,058
-----1920—dollars	28,341,345	17,092,890	8,500	10,001,850	190,454
Average, per acre-----1940—dollars	72.94	119.59	9.88	56.96	12.72
-----1930—dollars	66.29	104.64	-----	59.53	22.55
-----1920—dollars	72.71	71.03	28.35	100.74	11.50
Maintenance and operation cost per acre-----1939—dollars	5.56	4.69	1.36	3.24	1.80
-----1929—dollars	4.46	5.06	-----	5.29	1.74
-----1919—dollars	5.97	2.70	30.15	15.62	0.75
Other combinations—					
Investment-----1940—dollars	-----	-----	-----	-----	-----
-----1930—dollars	37,811,165	5,027,245	51,250	19,437,761	26,100
Average, per acre-----1940—dollars	-----	-----	-----	-----	-----
-----1930—dollars	66.89	163.71	19.02	72.42	31.07
Maintenance and operation cost per acre-----1939—dollars	-----	-----	-----	-----	-----
-----1929—dollars	4.33	7.73	4.09	6.05	2.38
Supplemental from pumped streams—					
Investment-----1940—dollars	1,622,648	( <sup>2</sup> )	( <sup>2</sup> )	515,449	956,433
-----1930—dollars	927,158	10,200	-----	70,681	67,000
Average, per acre-----1940—dollars	45.89	( <sup>2</sup> )	( <sup>2</sup> )	46.85	82.43
-----1930—dollars	28.28	104.08	-----	17.47	123.62
Maintenance and operation cost per acre-----1939—dollars	4.84	( <sup>2</sup> )	( <sup>2</sup> )	7.85	4.84
-----1929—dollars	6.27	14.65	-----	5.59	6.15
Supplemental from pumped wells—					
Investment-----1940—dollars	16,524,863	472,510	14,500	13,156,321	1,947,019
-----1930—dollars	9,627,568	48,600	-----	9,459,878	55,350
Average, per acre-----1940—dollars	23.83	22.03	11.92	27.17	15.44
-----1930—dollars	29.92	30.47	-----	30.03	24.83
Maintenance and operation cost per acre-----1939—dollars	3.86	3.59	4.69	4.35	5.06
-----1929—dollars	5.91	2.44	-----	5.97	5.17
Other mixed <sup>3</sup> —					
Investment-----1940—dollars	14,200,902	294,173	29,000	4,872,453	469,591
Average, per acre-----1940—dollars	43.57	41.43	25.97	68.99	23.45
Maintenance and operation cost per acre-----1940—dollars	2.44	5.53	2.25	6.07	1.02

<sup>2</sup> Data included only in totals because less than 3 enterprises reported in the 1940 Census.<sup>3</sup> May include data for enterprises having unsegregated pumped or partially pumped sources and not included in above classifications or totals.

# GENERAL DISCUSSION

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MAINTENANCE AND OPERATION, 1939, 1929, AND 1919; BY SOURCE OF SUPPLY AND BY STATES—Continued  
and Arkansas and Louisiana)

Idaho	Kansas	Louisiana	Montana	Nebraska	Nevada	New Mexico	North Dakota	Oklahoma	Oregon	South Dakota	Texas	Utah	Washington	Wyoming
15,349,962	273,492	104,870	15,433,422	1,900,301	220,313	10,990,018	57,130		19,217,034	4,822,232	383,889	6,182,008	20,581,340	241,400
8,285,328	73,120	58,876	4,441,113	8,330	449,313	356,804			4,889,887		486,362	1,200,625	6,734,384	1,950
227,900	104,532	442,095	1,615,318	23,735	195,397	563,165			17,800	3,000	257,737	45,671	4,120,798	16,770
63.89	81.76	14.04	87.11	59.08	16.33	86.08	96.83		111.48	65.39	19.29	31.95	90.34	17.06
40.12	91.40	49.10	38.89	26.44	19.63	43.45			53.66		54.02	27.34	54.75	10.43
47.20	27.85	10.53	47.83	17.32	22.17	62.32			25.14	3.00	53.63	65.81	40.68	26.45
14,225,602	( <sup>2</sup> )	26,950	15,406,871	1,515,810	27,103	10,411,418	57,130		18,977,045	4,822,232	281,287	6,046,221	20,513,648	150,200
5,663,215			4,374,096						347,967		229,067	105,650	280,321	
168,200	50,000	172,000	1,612,318	18,700	8,000				3,700		60,000	5,100	3,827,148	
72.07	( <sup>2</sup> )	10.11	87.48	57.63	9.36	94.07	96.83		114.13	65.39	17.92	32.83	90.46	11.65
62.78			41.88						23.77		48.74	7.44	56.30	
37.63	58.82	6.21	47.99	16.40	11.11				14.07		100.00	25.50	39.97	
1.82	( <sup>2</sup> )	2.70	1.31	2.08	0.25	3.74	3.40		2.50	1.46	6.08	1.09	2.08	0.14
2.80			1.91						1.54		8.00	1.73	8.24	
* 8.30	20.00	6.06	1.77	1.04	0.76				2.55		8.57		1.99	
6,800	( <sup>2</sup> )	21,169			22,927	401,119					26,395	11,265		4,000
28,500		17,326			10,760	251,863						20,870	36,900	
	4,000	22,500			5,500	388,165			2,600		163,057	18,571	56,500	
16.23	( <sup>2</sup> )	53.87			63.69	29.27					20.98	26.32		66.67
445.51		78.75			56.93	36.61						40.29	36.28	
	66.67	16.98			78.57	52.09			7.65		47.57	71.15	37.82	
4.27	( <sup>2</sup> )	5.94			1.67	2.69					1.90	2.58		
16.80		3.90			5.26	3.00						3.49	2.91	
		4.19			61.77	8.99			18.00		16.69	9.48	1.86	
1,018,895	15,622	39,850	15,411	85,477	98,398	73,933			183,680		62,360	64,948	30,100	25,391
1,098,605	30,010		25,267	2,330	119,903	86,301			32,292		43,887	3,500	43,856	1,600
59,700	50,532	247,595	3,000	5,035	181,887	175,000			11,500	3,000	34,680	22,000	237,150	16,770
24.01	4.91	9.07	9.42	14.57	9.61	22.41			30.11		21.11	7.34	28.80	21.14
12.20	37.51		5.59	33.29	7.03	92.50			27.89		51.03	175.00	45.42	11.43
166.76	17.86	19.05	17.65	21.89	22.67	110.48			109.52	3.00	44.58	94.42	58.28	26.45
1.73	1.00	4.31	0.75	1.38	0.55	2.89			2.48		3.54	0.81	5.30	1.67
1.55	10.12		1.11	2.86	2.29	1.13			5.58		8.84	19.00	8.86	0.52
1.00	1.55	10.69	6.67	3.00	1.57	39.77			17.89		16.83	2.84	20.70	1.20
1,277,300		28,550	41,750	6,000	318,650	13,640			4,278,278		213,400	1,047,800	6,043,091	350
48.90		29.28	7.99	24.49	56.40	34.27			56.80		61.30	35.90	52.08	7.45
2.22		5.89	0.72	1.67	4.22	4.19			1.45		5.66	2.99	3.08	0.85
9,317		( <sup>2</sup> )	10,940	30,370		( <sup>2</sup> )			15,062		12,147	( <sup>2</sup> )	7,204	61,509
210,208		10,000				5,000			229,690		2,008	1,505	320,866	
15.40		( <sup>2</sup> )	28.27	8.90		( <sup>2</sup> )			6.14		5.07	( <sup>2</sup> )	45.02	21.73
22.71		10.00				250.00			20.74		1.18	12.75	65.04	
1.90		( <sup>2</sup> )	2.03	2.65		( <sup>2</sup> )			0.64		2.50	( <sup>2</sup> )	6.61	4.94
6.11						38.15			2.48		7.87	5.60	13.55	
89,348	256,095	15,273	200	268,644	71,885	102,068			41,247		( <sup>2</sup> )	57,365	30,388	( <sup>2</sup> )
5,500	43,110	2,800							1,460			21,500	9,370	
27.05	13.53	3.83	100.00	11.31	118.82	17.67			46.19		( <sup>2</sup> )	25.41	35.58	( <sup>2</sup> )
42.97	37.10	4.31							2.58			26.35	59.68	
2.70	2.21	1.55	15.00	1.44	1.96	2.01			6.73		( <sup>2</sup> )	2.21	4.64	( <sup>2</sup> )
8.62	2.40	3.50							0.29			2.09	8.09	
1,403,443	17,400	252,535	279,255	57,617	207,591	1,378,932		5,600	917,211	10,352	411,305	332,197	2,549,048	713,239
21.74	60.42	21.76	21.20	8.52	8.42	43.67		36.36	47.62	25.75	32.78	15.96	161.78	131.89
1.63	4.75	3.39	0.95	0.94	0.25	0.65		6.78	1.57	2.17	2.03	1.26	5.79	0.97