

GENERAL DISCUSSION

Sources of Water Supply

The Irrigation Census of 1940 grouped the various sources of water supply into (a) primary sources, i.e., sources from which the principal part or all of the water is obtained for irrigation of the land involved, and (b) supplemental sources, i.e., sources from which a part of the supply of water is obtained to supplement an inadequate "primary" supply. These two groups are, in turn, segregated into the various surface and underground sources.

Water diverted from streams by gravity and/or pumped, and used alone or in connection with water from wells, continues to be the major supply of irrigation water. For detailed breakdown of sources of water supply related to areas, costs, etc., see tables 8 to 11.

The total area reported entirely irrigated from streams was 16,054,903 acres in 1939, comparable to 14,952,049 acres in 1929, or an increase of 7.4 percent. The area reported as irrigated entirely from wells, either pumped or flowing, was 2,570,392 acres in 1939, comparable to 2,117,012 acres in 1929, or an increase of 21.4 percent. However, areas irrigated entirely from flowing wells decreased 14.4 percent, and that from wells, pumped and flowing increased 24.0 percent, indicating additional wells originally flowing are being pumped. This transition is particularly apparent in the States of Utah, New Mexico, and Louisiana. The area reported as irrigated from all sources other than entirely from streams or entirely from wells was 2,378,444 acres in 1939, comparable to 2,478,483 acres in 1929, or a decrease of 4.0 percent.

Areas irrigated entirely from stream diversions increased from 1929 to 1939 in 13 States, and decreased in 6 States. The greatest increases were reported in Wyoming, 267,163 acres, or 22.6 percent; Oregon, 223,880 acres, or 30.3 percent; California, 208,597 acres, or 9.3 percent; Nevada, 186,359 acres, or 47.2 percent; and Montana, 169,747 acres, or 11.4 percent.

The greatest decreases were reported in Colorado, 130,362 acres, or 4.1 percent; and Arizona, 51,053, or 29.9 percent. Areas irrigated entirely from wells, increased in 15 States and decreased in 4 States. The greatest increases were reported in Texas, 204,240 acres, or 326.1 percent; Nebraska, 57,582 acres, or 245.5 percent; and California, 54,342 acres, or 3.7 percent. The greatest decreases were reported in Louisiana, 39,009 acres, or 22.2 percent; and Utah, 3,717 acres, or 18.9 percent.

Areas irrigated entirely from streams, gravity and wells, pumped, 1,252,329 acres in 1939, increased in 14 States and decreased in Idaho, 32,859 acres, or 45.0 percent; and Montana, 1,198 acres, or 44.5 percent. In 1939, the States of North Dakota, Oklahoma, and South Dakota reported no lands irrigated from this source. The net increase for 16 States reporting was 87,980 acres, or 7.6 percent; areas irrigated entirely from springs, 210,373 acres in 1939, decreased 3.2 percent in the 10 years. Of the total acreage irrigated from springs in 1939, Nevada irrigated 54,945 acres; Utah, 35,898 acres; and California, 28,538 acres; representing changes of -11.4 percent, -27.6 percent, and +18.9 percent, respectively.

The 1940 Census of Irrigation segregated the statistics of all enterprises delivering supplemental water to primary enterprises and related the areas served to sources of water supply, i.e., from streams, pumped; wells, pumped or flowing; and streams, gravity or storage, a summary of which is shown in table 3, section C, of this volume.

The 1930 Census of Irrigation segregated statistics only for those enterprises delivering supplemental water from pumped streams, pumped wells, and flowing wells. Therefore, since the major portion of supplemental water is supplied from streams, gravity and storage facilities which were not included in the 1930 Census, the figures shown in table 11 under supplemental water should not be considered comparable between the two Census periods.

TABLE 8.—AREA RECEIVING ENTIRE WATER SUPPLY FROM STREAMS, BY TYPE OF DIVERSION, BY STATES: 1939, 1929, AND 1919
(For the 17 western States and Arkansas and Louisiana)

STATE	TOTAL				STREAMS, GRAVITY				STREAMS, PUMPED				STREAMS, GRAVITY AND PUMPED			
	1939	1929	1919	In-crease or de-crease 1929-1939	1939	1929	1919	In-crease or de-crease 1929-1939	1939	1929	1919	In-crease or de-crease 1929-1939	1939	1929	1919	In-crease or de-crease 1929-1939
	Acres	Acres	Acres		Percent	Acres	Acres		Acres	Percent	Acres		Acres	Acres	Percent	
Total (19 States)	16,054,903	14,952,049	15,955,165	7.4	13,063,955	12,980,575	14,527,060	0.6	1,724,800	1,715,380	1,226,510	0.7	1,266,148	258,094	199,595	390.6
Arizona	119,744	170,797	196,455	-29.9	71,075	162,621	189,782	-56.3	1,055	8,123	6,671	-87.0	47,614	53	-----	(1)
Arkansas	6,960	1,502	6,129	363.4	-----	-----	120	-----	6,733	1,502	6,009	348.3	227	-----	-----	-----
California	2,463,809	2,254,712	2,920,396	9.3	1,741,575	1,699,599	2,564,445	2.5	470,538	469,944	295,673	0.1	251,196	85,169	60,278	194.9
Colorado	3,039,197	3,169,559	3,050,964	-4.1	3,010,172	3,138,986	3,028,787	-4.1	4,691	27,765	12,747	-83.1	24,334	2,828	9,430	760.5
Idaho	2,087,857	2,029,016	2,384,010	3.4	1,628,663	1,848,760	2,274,959	-11.9	294,402	105,362	107,181	184.8	174,792	76,894	1,870	127.3
Kansas	49,194	56,412	32,137	-12.8	40,902	53,196	30,807	-23.1	8,279	3,216	730	157.4	13	-----	600	-----
Louisiana	249,514	259,001	271,152	-3.7	494	1,611	10,226	-89.3	247,190	257,390	248,306	-4.0	1,930	-----	12,620	-----
Montana	1,657,498	1,487,751	1,550,827	11.4	1,475,894	1,392,161	1,515,212	6.0	55,925	38,620	15,743	-7.0	145,679	56,970	19,872	155.7
Nebraska	511,489	503,655	437,532	1.6	488,499	501,195	435,567	-2.5	10,176	2,458	1,115	314.0	12,814	-----	850	-----
Nevada	581,595	395,236	470,179	47.2	578,163	394,415	466,812	46.6	652	821	2,647	-20.6	2,780	-----	720	-----
New Mexico	417,700	456,955	454,368	-4.4	343,684	430,099	432,478	-20.1	3,887	6,856	1,890	-43.3	70,129	-----	-----	-----
North Dakota	21,432	8,253	11,499	159.7	18,573	6,584	9,030	182.1	2,359	1,669	2,469	41.3	500	-----	-----	-----
Oklahoma	2,794	675	2,710	315.9	1,631	355	2,522	359.4	1,165	320	188	265.4	-----	-----	-----	-----
Oregon	965,449	739,589	851,183	30.3	786,058	674,396	786,354	16.6	45,008	50,537	64,576	-10.9	132,382	14,656	253	804.5
South Dakota	57,061	65,916	95,360	-13.4	20,445	65,855	92,491	-69.0	1,723	61	869	(1)	34,913	-----	-----	-----
Texas	728,678	696,146	495,670	4.2	191,124	168,246	75,982	13.6	525,547	527,700	421,538	-0.4	12,007	3,200	350	275.2
Utah	1,071,609	1,040,577	1,116,130	3.0	906,968	962,568	1,105,691	-5.8	13,445	63,809	10,389	-78.9	151,206	14,200	50	964.8
Washington	585,388	450,067	471,145	25.6	329,397	306,185	352,199	7.6	44,167	139,738	26,244	-68.4	191,824	4,144	92,702	(1)
Wyoming	1,450,415	1,185,252	1,157,121	22.6	1,450,647	1,173,763	1,155,596	21.9	7,860	9,489	1,525	-17.2	11,908	-----	-----	-----

¹Percent not shown when more than 1,000.