PUMPAGE OF WATER IN LOUISIANA, 1970

Water Resources Pamphlet No. 26

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DEPARTMENT OF CONSERVATION
LOUISIANA GEOLOGICAL SURVEY
and
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Baton Rouge, La.
July 1970

STATE OF LOUISIANA

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In cooperation with the

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Don C. Dial
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CONTENTS

ILLUSTRATIONS

PUMPAGE OF WATER IN LOUISIANA, 1970

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INTRODUCTION

This report is the result of a survey of water use in Louisiana for 1970. Its purpose is to present basic information relating to surface- and ground-water pumpage. The information is applicable to many uses for which basic water data are needed. Table 1 summarizes surface- and ground-water pumpage by parish and category. The categories are public supply, industrial, thermoelectric, rural, and irrigation. Parish locations are shown on the map of Louisiana (fig. 1). Pumpage values in table 1 are shown to the nearest 0.01 mgd (million gallons per day) for consistency, but generally are not accurate to that degree. The total by source is rounded to the nearest million gallons per day and total by category is rounded to the nearest 10 mgd. The data in table 1 were collected in the last half of 1969 and in early 1970. Thus, the pumpage values are indicative of conditions at the beginning of 1970. Total pumpage values for the calendar year 1970 are expected to be slightly higher because the trend in most categories is upward.

Total pumpage for all uses in 1970 is 9.1 billion gallons per day. The 1970 pumpage shows a 35-percent increase over 1965 and 61 percent over 1960. Largest increases are in the industrial and thermoelectric categories. Pumpage trends in public supply, industrial, irrigation, and thermoelectric categories are shown in figure 2.

A national water-use inventory was conducted in 1950 by the U. S. Geological Survey. Since that time, water use has been inventoried at 5-year intervals. The State water-use

Figure 1. Location of parishes

survey is conducted by the U. S. Geological Survey in cooperation with the Louisiana Department of Public Works. Louisiana pumpage for 1960 and 1965 has been published in State reports (Snider and Forbes, 1961; Bieber and Forbes, 1966).

The writer wishes to express his thanks to the many people who contributed information. The list includes businesses, industries, and offices of the Federal, State, and

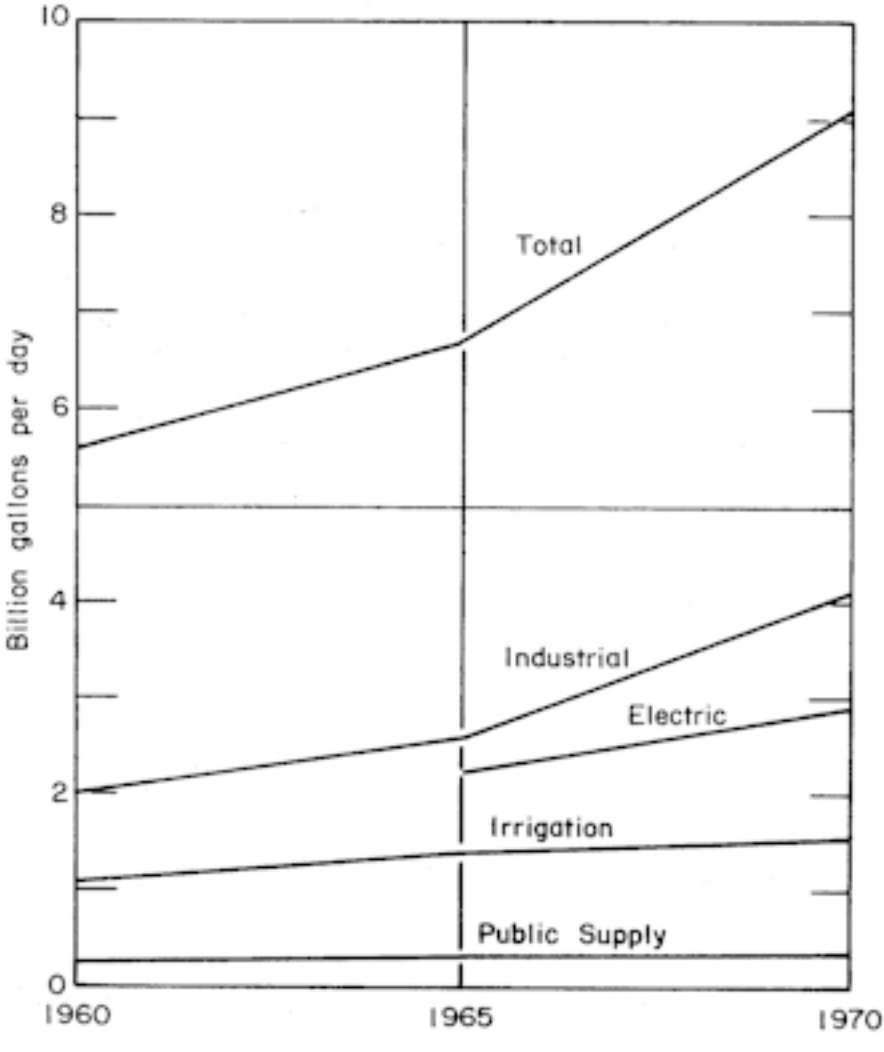

Figure 2. Pumpage trends by category

and parish governments. It also includes officials of municipalities, water companies, and waterworks districts as well as a host of individuals.

WATER USE

Water use is defined as withdrawal of water from its source for some purpose. Some water may be withdrawn more than once, such as from the Mississippi River where industries withdraw water for cooling and return it to the river. This water is counted each time it is withdrawn. On the other hand, water recirculated through cooling towers or other recycling systems and water used for irrigation is mostly consumed and is counted only once. The values in table 1 represent the average daily pumpage throughout the year. Thus, seasonal pumpage for some industries, such as sugarmills and canneries, and for the irrigation of crops is prorated for the entire year. Pumpage of saline water is included in table 1; however, it accounts for less than 1 percent of the total pumpage. Salt-water disposal and waterflooding operations by oil companies are not considered as water use.

Public Supply

Public-supply use includes water pumped by privately owned and municipally owned systems and waterworks districts. It includes residential and commercial use and unbilled water used in firefighting and line flushing. Leakage losses in the distribution lines are also included in the total pumpage.

Industrial

This category includes self-supplied businesses and industries. Also included are self-supplied military bases, schools, hospitals, and other public institutions. Industrial

pumpage has grown rapidly since 1965 and leads all categories in rate of growth (fig. 2). The rapid increase is due to expansion of existing industries and addition of new ones.

Water used in fish farming is classified as industrial use. This fast-growing business uses an estimated 16 mgd, of which most is ground water. Water used in crawfish farming is not included because data on source of water and amount used is not available. A recent estimate by the Louisiana Wildlife and Fisheries Commission (May 1970) indicated that 14,000 acres were being used for crawfish farming.

Thermoelectric

Thermoelectric power plants pump large amounts of water for condensation of steam. Ninety-nine percent of the pumpage is surface water that is used once and returned to the source. Ground water is recirculated in some plants. Total pumpage for power generation increased 28 percent from 1965 to 1970.

Rural

Rural-domestic pumpage applies to the population not supplied by a public water supply. Except locally where cisterns are used, ground water is the only source of rural supplies. Cistern water is an important source of supply in rural coastal areas but is not counted as either surface or ground water.

In the Florida Parishes, rural-domestic pumpage is abnormally high because water flowing to waste from artesian wells is included. Although technically the water is not used, it is being withdrawn from productive aquifers and is potentially usable. Waste flow is estimated to be 30 mgd.

Per capita consumption in rural areas is estimated at 50 gpd (gallons per day) per person for homes with indoor plumbing, 10 gpd per person for homes with no indoor plumbing, and 30 gpd per person in parishes where the number of homes with indoor plumbing is not known. A value of 90 gpd per person is used in southwest Louisiana where higher rural consumption is indicated.

Water consumption by livestock is computed as the product of head count and daily water requirements of each type of animal. Livestock counts and estimates of surface- and ground-water consumption were obtained from county agents.

Irrigation

Irrigation pumpage is shown for rice, which uses 98 percent of the total, and other crops, which use 2 percent. Since 1965, ground-water pumpage has increased and surface-water pumpage has decreased slightly. However, irrigation pumpage is variable from year to year as it depends on weather conditions and acreage allotments. The values in table 1 are based on the 1969 crop year when less water was used for irrigation than during the 1968 crop year. Irrigation pumpage in the 13 rice-growing parishes in southwest Louisiana decreased 29 percent from 1968 to 1969.

TABLE 1. PUMPAGE OF WATER (MILLION GALLONS PER DAY) IN LOUISIANA BY PARISH, SOURCE, AND PRINCIPAL USE

PARISH	PUBLIC SUPPLIES		INDUSTRIAL		THERMOELECTRIC		RURAL			IRRIGATION				TOTAL		
							Domestic	Livestock		Rice		Other				
	Ground	Surface	Ground	Surface	Ground	Surface	Ground	Ground	Surface	Ground	Surface	Ground	Surface	Ground	Surface	Total
Acadia	3.26	0	11.18	0.73	0	0	1.57	.14	.31	149.77	131.06	0	0	165.92	132.10	298.02
Allen	1.00	0	9.92	.36	0	0	.62	.07	.17	55.67	9.32	0	0	67.28	9.85	77.13
Ascension	.50	.73	3.35	108.53	0	0	.66	.13	.01	0	0	.38	0	5.02	109.27	114.29
Assumption	0	.62	4.92	20.72	0	0	.02	.00	.02	0	0	0	0	4.94	21.36	26.30
Avoyelles	1.59	0	.53	.14	0	0	.48	.56	.24	5.58	0	0	0	8.74	.38	9.12
Beauregard	1.70	0	3.64	0	0	0	.85	.10	.23	10.45	0	0	0	16.74	.23	16.97
Bienville	.56	0	.58	.02	0	0	.33	.10	.15	0	0	.01	.03	1.58	.20	1.78
Bossier	.43	4.02	1.26	.09	0	0	.70	.21	.44	0	0	.20	0	2.80	4.55	7.35
Caddo	1.30	24.90	1.14	1.19	0	283.00	1.54	.05	.46	0	0	2.73	.20	6.76	309.75	316.51
Calcasieu	12.91	0	120.28	642.09	5.44	0	2.66	.12	.29	65.74	167.42	0	0	207.15	809.80	1,016.95
Caldwell	.35	0	.08	0	0	0	.16	.03	.15	1.07	0	.11	.42	1.80	.57	2.37
Cameron	.70	0	4.83	11.75	0	0	.49	.16	.34	5.10	29.32	0	0	11.28	41.41	52.69
Catahoula	.35	0	.05	1.50	0	0	.37	.14	.14	.80	0	.36	0	2.07	1.64	3.71
Claiborne	1.08	0	1.80	0	0	0	.28	.15	.15	0	0	0	0	3.31	.15	3.46
Concordia	1.53	0	.10	.43	0	0	.14	.22	.06	0	0	0	0	1.99	.49	2.48
DeSoto	.75	.96	.13	.02	0	0	.33	.19	.43	0	0	0	0	1.40	1.41	2.81
East Baton Rouge	32.40	0	99.59	361.53	7.48	7.63	.35	.28	.28	0	0	.35	.05	140.45	369.49	509.94
East Carroll	.40	0	.66	0	0	0	.30	.07	.01	12.50	2.19	1.18	0	15.11	2.20	17.31
East Feliciana	.35	0	1.55	0	0	0	.49	.02	.37	0	0	0	0	2.41	.37	2.78
Evangeline	1.72	0	4.09	0	0	288.00	1.17	.11	.27	94.76	12.08	0	0	101.85	300.35	402.20
Franklin	.76	0	1.64	0	0	0	.82	.32	.18	1.61	0	4.01	.13	9.16	.31	9.47
Grant	.24	.02	.15	0	0	0	.44	.10	.10	0	0	0	0	.93	.12	1.05
Iberia	4.70	0	8.91	26.09	0	0	1.44	.16	.04	5.84	8.74	0	0	21.05	34.87	55.92
Iberville	.59	0	11.49	525.11	1.30	572.00	.28	.07	.13	0	0	0	0	13.73	1,097.24	1,110.97
Jackson	.95	0	13.03	0	0	0	.14	.05	.03	0	0	0	0	14.17	.03	14.20
Jefferson	0	39.30	8.21	26.07	2.02	288.00	.25	.01	.01	0	0	.18	0	10.67	353.35	364.05
Jefferson Davis	1.78	0	1.60	0	0	0	.34	.11	.26	192.64	84.50	0	0	196.47	84.76	281.23
Lafayette	8.54	0	2.96	0	0	0	2.22	.21	.42	22.26	7.17	0	0	36.19	7.59	43.78
Lafourche	0	5.20	0	22.23	0	0	[a]0	.06	.25	0	0	0	0	.06	27.68	27.74
LaSalle	.71	0	.14	.10	0	0	.20	.01	.13	0	0	0	0	1.06	.23	1.29
Lincoln	2.66	0	1.71	0	0	0	.25	.04	.10	0	0	.04	.07	4.70	.17	4.87

Livingston	1.28	0	[b] 1.21	0	0	0	[b] 3.84	.24	.08	0	0	[b] .94	0	7.51	.08	7.59
Madison	.74	0	4.00	0	0	0	.20	.13	.02	5.31	0	.73	1.20	11.11	1.22	12.33
Morehouse	1.94	0	20.12	27.19	0	0	.29	.15	.02	23.43	9.38	6.40	.50	52.33	37.09	89.42
Natchitoches	.11	2.50	0	0	0	0	.59	.62	.26	0	0	.06	.30	1.38	3.06	4.44
Orleans	.01	127.37	23.65	1.78	19.44	240.00	.23	0	--	0	0	.07	.02	43.40	369.17	412.57
Ouachita	3.10	7.73	15.21	10.52	.14	272.00	.41	.08	.08	0	2.95	0	1.52	18.94	294.80	313.74
Plaquemines	0	3.58	0	23.84	0	0	[a] 0	0	.02	0	0	0	.03	0	27.47	27.47
Pointe Coupee	.88	0	2.27	0	0	0	.14	.22	.51	1.02	0	0	0	4.53	.51	5.04
Rapides	10.52	2.06	14.48	0	0	0	.77	.41	.14	0	0	.01	.14	26.19	2.34	28.53
Red River	.23	0	.01	0	0	0	.23	.25	.06	0	0	1.38	0	2.10	.06	2.16
Richland	.64	.26	2.52	0	0	0	.80	.20	.13	2.93	1.25	1.81	.78	8.90	2.42	11.32
Sabine	.66	0	.12	.05	0	0	.32	.77	.21	0	0	0	0	1.87	.26	2.13
St. Bernard	0	6.09	1.63	590.59	0	0	[a] 0	0	0	0	0	0	0	1.63	596.68	598.31
St. Charles	0	2.95	14.07	837.46	0	857.00	.05	.03	.03	0	0	0	0	14.15	1,697.44	1,711.59
St. Helena	.09	0	0	0	0	0	.28	.02	.29	0	0	0	.45	.39	.74	1.13
St. James	0	.99	5.36	220.00	0	0	.14	.06	.01	0	0	.02	.45	5.58	221.45	227.03
St. John the Baptist	.07	1.35	5.25	53.73	0	0	.09	.01	.01	0	0	.07	0	5.49	55.09	60.58
St. Landry	5.09	0	1.42	0	0	0	3.25	.24	.43	33.54	7.00	0	0	43.54	7.43	50.97
St. Martin	1.12	0	4.09	4.63	0	0	1.73	.08	.16	1.89	8.07	0	0	8.91	12.86	21.77
St. Mary	.09	5.31	5.21	42.27	0	39.95	0.20	.01	.02	0	7.00	0	0	5.51	94.55	100.06
St. Tammany	5.08	0	3.64	.08	0	0	[b] 20.90	.08	.19	0	0	.22	.15	29.92	.42	30.34
Tangipahoa	5.90	0	1.61	0	0	0	[b] 6.85	.93	.62	0	0	1.78	.09	17.07	.71	17.78
Tensas	.61	.01	.00	0	0	0	.27	.26	.00	0	.44	.09	.06	1.23	.51	1.74
Terrebonne	0	6.76	.74	11.56	0	0	[a] 0	0	.08	0	0	0	0	.74	18.40	19.14
Union	.70	0	.02	0	0	0	.48	.13	.18	0	0	0	0	1.33	.18	1.51
Vermilion	2.85	0	4.73	1.18	0	0	1.06	.20	.53	53.65	287.18	0	0	62.49	288.89	351.38
Vernon	1.24	0	3.28	0	0	0	.60	.24	.15	0	0	.04	0	5.40	.15	5.55
Washington	7.07	0	18.52	14.99	0	0	[b] 1.66	.55	.34	0	0	.11	.11	27.91	15.44	43.35
Webster	3.01	0	8.61	36.92	0	0	.18	.34	.05	0	0	0	0	12.14	36.97	49.11
West Baton Rouge	2.27	0	7.64	0	0	0	.19	.08	.02	0	0	.17	0	10.35	.02	10.37
West Carroll	.26	0	.58	0	0	0	.54	.16	.04	4.22	1.41	.32	.00	6.08	1.45	7.53
West Feliciana	.22	0	6.35	32.00	0	0	.33	.03	.24	0	0	0	0	6.93	32.24	39.17
Winn	1.29	0	.53	.04	0	0	.20	.09	.06	0	0	0	0	2.11	.10	2.21
Total by source	141	243	496	3,657	36	2,847	67	11	11	750	776	24	7	1,525	7,542	9,066
Total by category	390		4,150		2,880		70	20		1,530		30		9,060		

a Supplied by cisterns. b Includes estimate of water flowing to waste

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