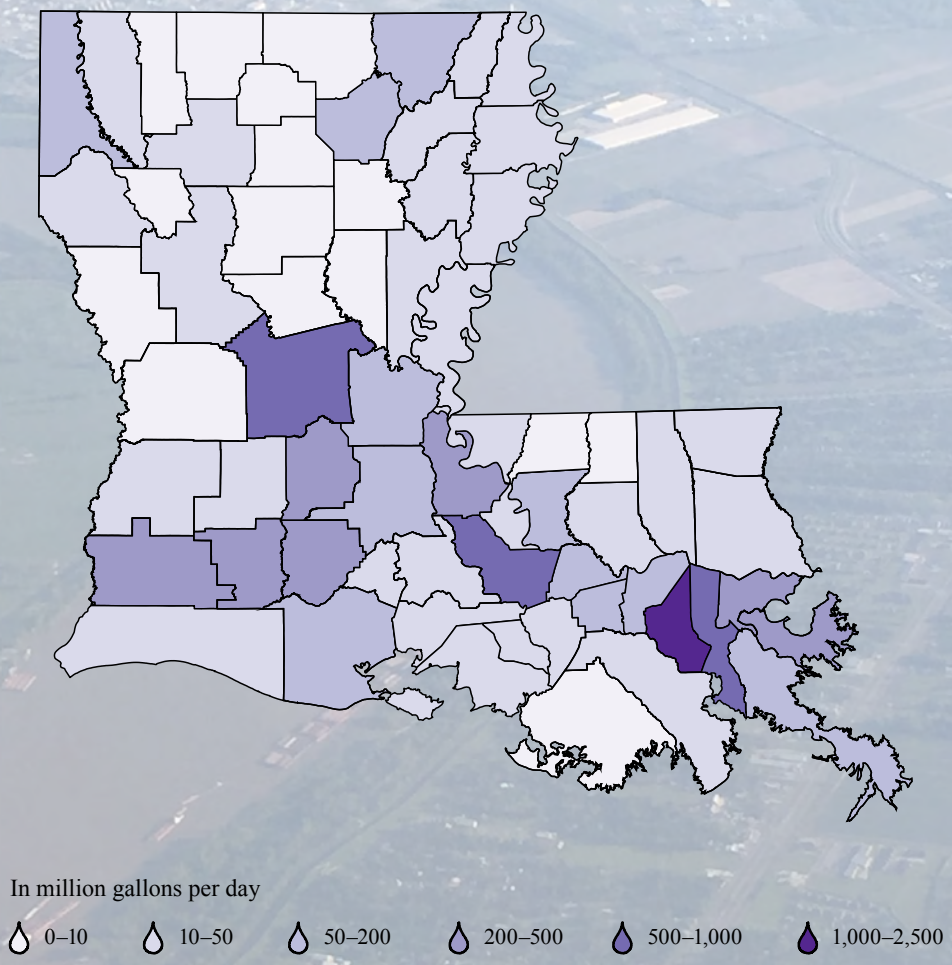
Water Use in Louisiana, 2015

DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
Water Resources Special Report No. 18



STATE OF LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
PUBLIC WORKS AND WATER RESOURCES DIVISION

In cooperation with the
U.S. GEOLOGICAL SURVEY

2018

Cover map: Choropleth map representation of total water withdrawals, by parish, 2015. Darker shades correspond to areas with larger withdrawals.
Cover photograph: Aerial view of the Mississippi River, West Baton Rouge Parish, Louisiana (photograph by Angela L. Collier, U.S. Geological Survey, 2017)

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WATER RESOURCES

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WATER USE IN LOUISIANA, 2015

By

Angela L. Collier and B. Pierre Sargent

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Conversion Factors and Abbreviated Water-quality Unit

Multiply	By	To obtain
acre	4,047	square meter
acre-foot (acre-ft)	0.00123	cubic hectometer
gallon per day (gal/d)	0.003785	cubic meter per day
mile (mi)	1.609	kilometer
million gallons per day (Mgal/d)	3,785	cubic meters per day
square mile (mi^2)	2.590	square kilometer

Abbreviated water-quality unit:
milligrams per liter (mg/L)

Water Use in Louisiana, 2015

By Angela L. Collier and B. Pierre Sargent

Abstract

In 2015, approximately 8,720 million gallons per day (Mgal/d) of water was withdrawn from groundwater and surface-water sources in Louisiana, a 2.6 percent increase from 2010. Total groundwater withdrawals were about 1,750 Mgal/d, an increase of 12 percent from 2010, and total surface-water withdrawals were about 6,970 Mgal/d, an increase of 0.44 percent from 2010 to 2015.

Total water withdrawals, in Mgal/d, in 2015 for the various categories of use were as follows: public supply—715, industry—2,155, power generation—4,265, rural domestic—39, livestock—6, rice irrigation—825, general irrigation—225, and aquaculture—490. From 2010 to 2015, Louisiana's total withdrawals for public supply decreased by 3.4 percent, industry increased by 5.7 percent, power generation decreased by 3.9 percent, rural domestic decreased by 4.1 percent, livestock decreased by 21 percent, rice irrigation increased by 20 percent, general irrigation decreased by 6.0 percent, and aquaculture increased by 58 percent.

About 48 percent (approximately 850 Mgal/d) of all groundwater withdrawn was from the Chicot aquifer system and 22 percent (approximately 385 Mgal/d) was withdrawn from the Mississippi River alluvial aquifer. Since 2010, withdrawals from the Chicot aquifer system increased by 30 percent and withdrawals from the Mississippi River alluvial aquifer decreased by 2.9 percent.

About 70 percent (4,905 Mgal/d) of all surface water withdrawn was from the Mississippi River mainstem. This value represents a 1.1-percent decrease in withdrawals from 2010 to 2015.

All water-withdrawal and water-use data presented in this report should be considered estimates. Because of rounding, totals and percentages presented in the tables, figures, and text in the report may differ slightly from totals or percentages calculated individually.

Introduction

Louisiana has a total land and water area of over 52,000 square miles (U.S. Census Bureau, 2012), and there are abundant water resources located throughout the State. Every day, large amounts of groundwater and surface water are withdrawn from natural sources and are used for public-supply, industrial, power-generation, rural-domestic, livestock, irrigation, and aquaculture purposes. Water-use data are essential to appraise the effects of present use and to plan for the future use of Louisiana's water resources. The U.S. Geological Survey (USGS), in cooperation with the Louisiana Department of Transportation and Development, has collected and published water-withdrawal and water-use information on a 5-year basis since 1960.

Purpose and Scope

The purpose of this report is to present data from a 2015 inventory of water withdrawals in Louisiana. The report presents information on withdrawals from groundwater and surface-water sources for use in public supply, industry, power generation, rural domestic, livestock, irrigation, and aquaculture for each parish in Louisiana. Included in the report are tables of water use by category, parish, aquifer or aquifer system, and surface-water basin. This report also presents trends in Louisiana water withdrawals based on data from previous 5-year water-use reports published since 1960.

Presentation of Data

The 2015 water-use data in this report are aggregated by category of use, parish, water source, aquifer, and surface-water basin. The information is presented in several formats to offer a complete description of water use in Louisiana.

The section entitled "Water Use by Category" describes the 2015 groundwater and surface-water withdrawals for public supply, industrial, power generation, rural domestic, livestock, irrigation, and aquaculture purposes. Graphical and tabular data for each parish, major aquifer, and surface-water basin in Louisiana are presented in the report. Each of Louisiana's 64 parishes (fig. 1) are presented in alphabetical order by parish name. Water-withdrawal and water-use data are also presented for the 13 major aquifers or aquifer systems, listed in order from youngest to oldest (figs. 2, 3), listed in order from shallowest to deepest, and the 10 surface-water basins (fig. 4). Additionally, the report contains sections on total water withdrawals and trends in water withdrawals and water use in Louisiana as evaluated since 1960.

Data in this report are compiled from reported and estimated water withdrawals made during the 2015 calendar year. The data are limited by the accuracy of the information reported by the individual facilities or users and by the accuracy of ancillary data and methods used to estimate withdrawals when reported withdrawals were unavailable. **All water-withdrawal and water-use data presented in this report should be considered estimates.** Water-use values presented in tables and figures have been rounded to two decimal places, and water-use values presented in the text have been rounded to two significant figures. However, all totals and percentages presented in the report were calculated by using unrounded values stored in a water-use database at the USGS office in Baton Rouge, Louisiana. Because of this rounding, totals and percentages presented in tables, figures, and text in the report may differ slightly from totals or percentages calculated by using rounded numbers in the report. Withdrawals that were less than 0.005 million gallons per day (Mgal/d) are not shown in tables or on figures, unless otherwise noted, but are included in calculations of percentages and totals. All historical withdrawal data (years 1960–1975) presented in bar charts are from previous 5-year water-use data compilations and are presented without interpretation. Historical water-use data are updated and corrected as new information becomes available. Because of this practice, water-use values from years prior to 2015 that are presented in this report may not exactly match data presented in previously published 5-year water-use reports.

Previous Reports

The previous 5-year reports that have been published are as follows: Snider and Forbes (1961), Bieber and Forbes (1966), Dial (1970), Cardwell and Walter (1979), Walter (1982), Lurry (1987), Lovelace (1991), Lovelace and Johnson (1996), Sargent (2002), Sargent (2007), and Sargent (2012). In addition, Lurry (1985), and Stuart and Lurry (1988) discussed specific information about public water supplies in Louisiana, and Lovelace (1994) discussed water requirements for crawfish farming at selected sites in south-central Louisiana. Covay and others (1992) reported on water requirements for growing rice in southwestern Louisiana, 1985–86.

Acknowledgements

This report was made possible through the assistance and cooperation of personnel at public-supply, industrial, and power-generation facilities throughout Louisiana. Special thanks are given to Doug Taylor, PE, Water Resources Programs, Louisiana Department of Transportation and Development, who assisted with collection of data from public suppliers, industries, and other facilities. Anthony Duplechin, Director, Capital Area Groundwater Conservation Commission, provided withdrawal data within the five-parish area under the commission's jurisdiction. B. Rogers Leonard, Associate Vice President and Program Leader for Plants, Soils, and Agriculture Water Resources at the Louisiana State University AgCenter, reviewed the livestock, irrigation, and aquaculture information. Gary Snellgrove, Director; Matthew Reonas; and Matthew Benoit, Environmental Division, Louisiana Department of Natural Resources Office of Conservation, assisted with the collection of water-use data associated with the extraction of natural gas. The Sabine River Compact Administration provided information for the Sabine River-Toledo Bend Reservoir System. The Louisiana Public Service Commission provided lists of power-generation companies and public water-supply facilities, including information on name changes or changes in ownership.

Additionally, special thanks are given to USGS employees, Mike Bradley, Dennis Demcheck, John Lovelace, Doug Smith, Melissa Harris, Heather Welch, and Vincent White for their assistance.

Base map modified from Official Map of Louisiana, Department of Transportation and Development,1986

Figure 1. Parishes in Louisiana.

System	Series	Stratigraphic unit	Hydrogeologic unit							
			Northern Louisiana	Central and southwestern Louisiana			Southeastern Louisiana			
			Aquifer or confining unit	Aquifer system or confining unit	Aquifer or confining unit		Aquifer system or confining unit[1]	Aquifer or confining unit[2]		
					Lake Charles area	Rice growing area		Baton Rouge area	St. Tammany, Tangipahoa, and Washington Parishes	New Orleans area and lower Mississippi River Parishes[3]
Quaternary	Holocene	Red River alluvial deposits Mississippi River alluvial deposits	Red River alluvial aquifer or surficial confining unit Mississippi River alluvial aquifer or surficial confining unit	Units absent			Mississippi River alluvial aquifer or surficial confining unit	Mississippi River alluvial aquifer or surficial confining unit	Units absent	
	?									
	Pleistocene	Northern Louisiana terrace deposits Unnamed Pleistocene deposits	Upland terrace aquifer or surficial confining unit	Chicot aquifer system or surficial confining unit	"200-foot" sand	Upper sand unit	Chicot equivalent aquifer system or surficial confining unit	Shallow sands Upland terrace aquifer "400-foot" sand "600-foot" sand	Upland terrace aquifer Upper Ponchatoula aquifer	Gramercy aquifer Norco aquifer Gonzales-New Orleans aquifer "1,200-foot" sand
					"500-foot" sand "700-foot" sand	Lower sand unit				
Tertiary	Pliocene	Fleming Formation: Blounts Creek Member	Aquifers in Pliocene-Miocene sediments are absent in this area	Evangeline aquifer or surficial confining unit			Evangeline equivalent aquifer system or surficial confining unit	"800-foot" sand "1,000-foot" sand "1,200-foot" sand "1,500-foot" sand "1,700-foot" sand	Lower Ponchatoula aquifer Kentwood aquifer Big Branch aquifer Abita aquifer Covington aquifer Slidell aquifer	
	?									
	Miocene	Fleming Formation: Castor Creek Member		Castor Creek confining unit			Unnamed confining unit			
		Fleming Formation: Williamson Creek Member Dough Hills Member Carnahan Bayou Member		Jasper aquifer system or surficial confining unit	Williamson Creek aquifer Dough Hills confining unit Carnahan Bayou aquifer		Jasper equivalent aquifer system or surficial confining unit	"2,000-foot" sand "2,400-foot" sand "2,800-foot" sand	Tchefuncte aquifer Hammond aquifer Amite aquifer Ramsay aquifer Franklinton aquifer	
		Fleming Formation: Lena Member		Lena confining unit			Unnamed confining unit			
	?									
	Oligocene	Catahoula Formation		Catahoula aquifer			Catahoula equivalent aquifer system or surficial confining unit	Catahoula aquifer		
		Vicksburg Group, undifferentiated	Vicksburg-Jackson confining unit	No freshwater occurs in deeper units						
	Eocene	Jackson Group, undifferentiated								
		Claiborne Group: Cockfield Formation	Cockfield aquifer or surficial confining unit							
		Claiborne Group: Cook Mountain Formation	Cook Mountain aquifer or surficial confining unit							
		Claiborne Group: Sparta Sand	Sparta aquifer or surficial confining unit							
		Claiborne Group: Cane River Formation	Cane River aquifer or surficial confining unit							
		Claiborne Group: Carrizo Sand	Carrizo-Wilcox aquifer or surficial confining unit							
	?									
	Paleocene	Wilcox Group, undifferentiated								
		Midway Group, Undifferentiated	Midway confining unit							

[1]The interval containing the four aquifer systems is called the Southern Hills aquifer system.
[2]Clay units separating aquifers in southeastern Louisiana are discontinuous, unnamed, and not listed herein.
[3]The interval containing the four aquifers is called the New Orleans aquifer system.

Louisiana Department of Transportation and Development–
U.S. Geological Survey Water Resources Cooperative Program

Figure 2. Hydrogeologic units in Louisiana (modified from Lovelace and Lovelace, 1995).

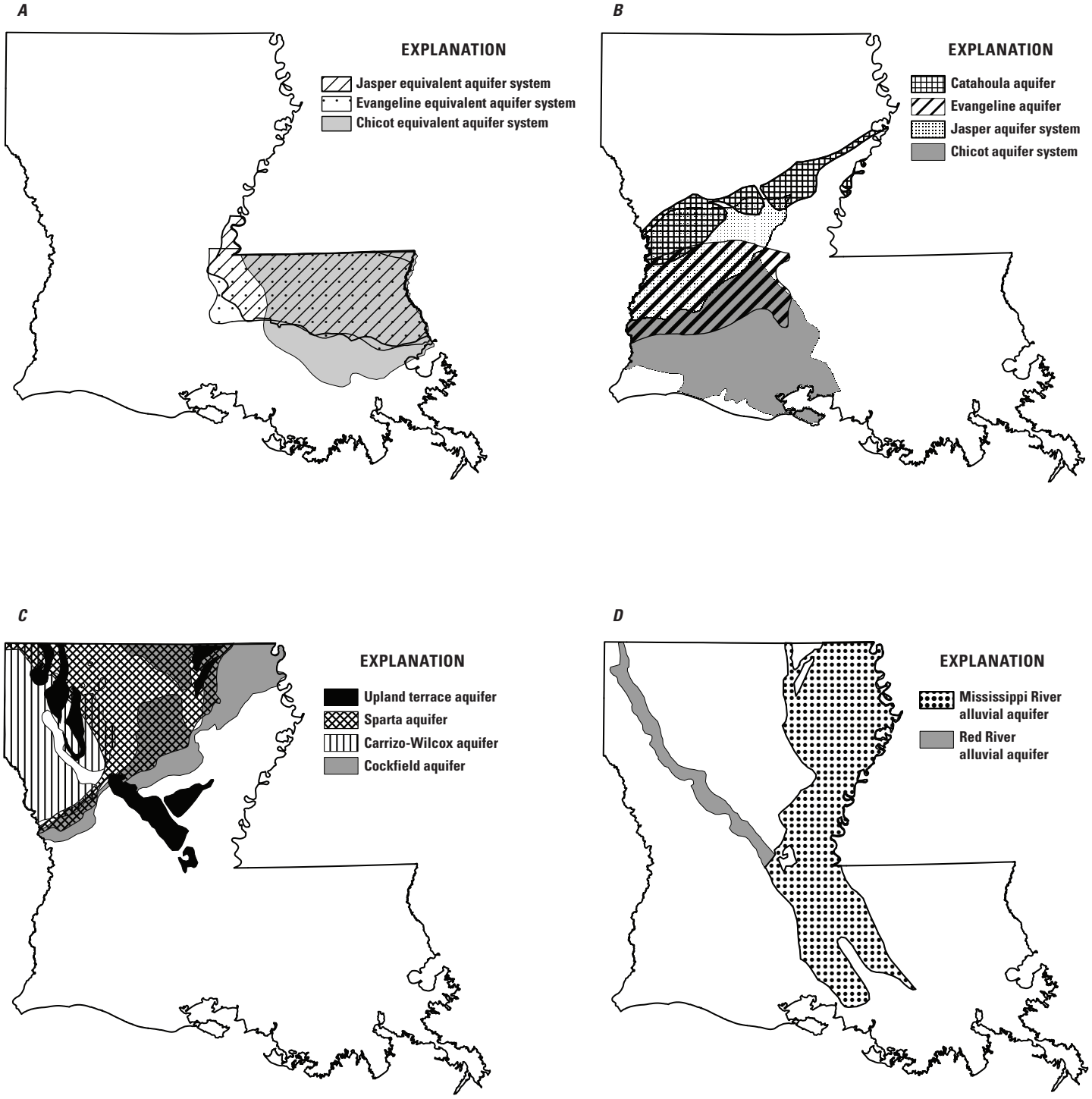


Figure 3. Approximate areal extent of Louisiana's freshwater aquifers and aquifer systems, by region: *A,* southeastern (Jasper, Evangeline, and Chicot equivalent aquifer systems); *B,* central and southwestern (Catahoula and Evangeline aquifers and Jasper and Chicot aquifer systems); *C,* northern (Upland terrace, Sparta, Carrizo-Wilcox, and Cockfield aquifers); and *D,* the Mississippi River and Red River alluvial aquifers (modified from Stuart and others, 1994).

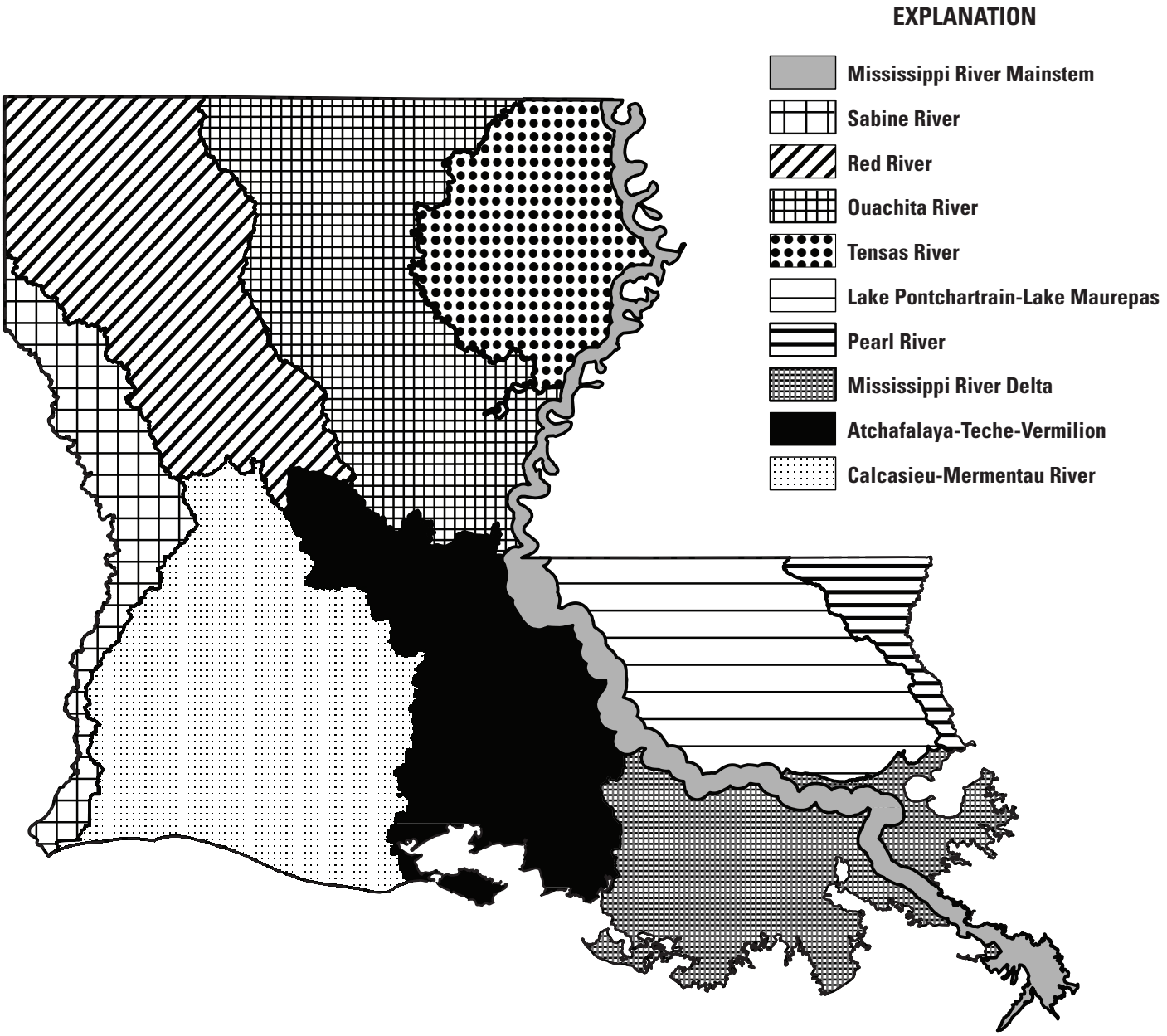


Figure 4. Major surface-water basins in Louisiana (modified from Garrison and Covay, 1994).

Data Collection and Estimation

Water-withdrawal information for public-supply, industrial, and power-generation facilities was primarily obtained directly from the facilities. The main sources for public water system information were the State of Louisiana's Department of Health's Drinking Water Watch database (Department of Health, 2017) and the U.S. Environmental Protection Agency's Safe Drinking Water Information System (U. S. Environmental Protection Agency, 2017). These sources provided contact information, identified whether the water source was groundwater or surface water, and indicated current operational status (active or inactive) for all the current water suppliers in a parish. The "2015 Louisiana Manufacturers Register," a directory that lists Louisiana manufacturers and their contact information (Garland, 2015), was the main source for industrial facilities, and the U.S. Energy Information Administration (U.S. Energy Information Administration, 2018), along with prior information acquired during previous compilations, provided the majority of the information for power-generation facilities. Hydroelectric power generation instream water use was not included in surface-water withdrawals in this report because the water was not considered withdrawn but is discussed in the section, "Water Use by Category, Power Generation." A master list of these water-use facilities was compiled into a local database at the USGS Baton Rouge, Louisiana, office.

Water withdrawals for rural domestic and livestock uses were estimated based on population data and per capita use rates. Population data were compiled from multiple sources. Parish and State population estimates for 2015 were from the U.S. Census Bureau (2016) and rural-domestic populations for each parish were based on U.S. Census Bureau's American Housing Survey (1993), which reported estimates of populations served by a public supply facility. For the purpose of this report, an average of 80 gallons per day (gal/d) per person was used to estimate withdrawals by the rural-domestic portion of the population (Lurry, 1987). In Louisiana, livestock that require substantial amounts of water included cattle, horses, swine, sheep, and poultry. Population data used for livestock estimates were from the Louisiana Cooperative Extension Service (2017). For consistency and comparability with past water-use reports, the per capita use rates for livestock from previous reports were used to estimate withdrawals for livestock. The rates used (in gal/d per head) were as follows: milk cows, 20; other cattle, 10; horses, 10; swine, 3; sheep, 2; and poultry, 0.04 (Lovelace and Johnson, 1996, p. 11).

Water withdrawals for irrigation were estimated on the basis of crop acreage in each parish and irrigation application rates. Several different sources were used to study and develop estimates of water application-rate data for crop irrigation. The sources included the U.S. Department of Agriculture's Farm and Ranch Survey for 2008 and 2013 (National Agricultural Statistics Service, 2009, 2014); data provided by Bill Branch, Professor Emeritus, Department of Biological and Agricultural Engineering, Louisiana State University; and the Louisiana State University Agricultural Extension. All crop-acreage data originated from inventories compiled by the Louisiana Cooperative Extension Service (2017) for calendar year 2015.

Water withdrawals for aquaculture were estimated on the basis of reported and estimated use. Water withdrawals at bait farms and fish hatcheries were obtained directly from the facilities. Water withdrawals for crawfish, catfish, and alligator farms were estimated for each parish by using 2015 acreage or other production data available from the Louisiana Cooperative Extension Service (2017) and application rates for crawfish and catfish were obtained from the Louisiana State University Agricultural Extension Service.

Water-use information was compiled and divided into two groups: site-specific and aggregate. The information for public supply, industrial, and power generation facilities was collected for specific sites, that is, the location of the facility and its water sources were known and recorded with the withdrawal data. The information for rural domestic, livestock, irrigation, and aquaculture withdrawals was estimated parish wide, without knowledge of the exact location of each user or source of water. For these parish-wide, aggregated withdrawals, per capita-use rates were used to estimate withdrawals for livestock and aquaculture, and water was distributed on the basis of data reported by farmers and county agents. Louisiana water-well registration inventories provided by the Louisiana Department of Natural Resources include data on the distribution of irrigation wells screened in different aquifers within a parish (Louisiana Department of Natural Resources, 2017). This information was used to distribute aggregated groundwater withdrawal data among the appropriate aquifers. Aggregated surface-water withdrawals in each parish were distributed among hydrologic basins on the basis of percent of the parish within each basin. Seasonal withdrawals, such as for irrigation and sugar cane processing, were prorated for the entire year.

All the water-use information was entered into a database at the USGS office in Baton Rouge, Louisiana. All withdrawal data in this report were retrieved from the USGS database and are expressed in millions of gallons per day (Mgal/d). Total withdrawals by use category, parish, aquifer, and surface-water basin are available online from the Louisiana Water Use Program web page (U.S. Geological Survey, 2018).

Most of the uses of water described in this report require freshwater, which, for purposes of this report, is defined as water containing less than 1,000 milligrams per liter (mg/L) of dissolved solids, or, for drinking water, less than 250 mg/L of chloride. Most of the water withdrawals described in this report were assumed to be fresh. However, in some areas of Louisiana, especially near the Gulf of Mexico, USGS historical data indicate that chloride concentrations could exceed 250 mg/L, indicating a presence of saline water (Tollett and others, 2003; Lovelace, 2007). Collection and presentation of chloride concentrations in water withdrawn was beyond the scope of this study.

Water Use By Category

Water use is defined in this report as water withdrawn or diverted from a groundwater or surface-water source to be used for public supply, industrial, power generation, rural domestic, livestock, irrigation, or aquaculture purposes. The glossary at the end of this report offers further explanation of the water-use categories that are discussed in this section.

Public Supply

Approximately 4.2 million people, 89 percent of Louisiana's total population of 4.7 million in 2015 (U.S. Census Bureau, 2016), used about 710 Mgal/d of water provided by public supply facilities (figs. 5 and 6). This water accounted for about 8.2 percent of the total water withdrawn in the State. Per capita use was 170 gal/d. Of the 710 Mgal/d, about 360 Mgal/d was withdrawn from groundwater sources, and about 350 Mgal/d was withdrawn from surface-water sources. Of the 4.2 million people receiving water from a public supplier, about 57 percent were supplied with water from a groundwater source, and about 43 percent were provided with water from a surface-water source.

All the major aquifers and aquifer systems in Louisiana were utilized as sources of water for public supply. In northern Louisiana, the chief source of groundwater was the Sparta aquifer, which provided 9.7 percent of all the groundwater used for public supply in the State. In southwestern Louisiana, the Chicot aquifer system was the major source of groundwater, providing 27 percent of the State's total groundwater used for public supply. In southeastern Louisiana, the Evangeline equivalent aquifer system provided 21 percent of the groundwater used for public supply in the State, and the Jasper equivalent aquifer system provided 18 percent.

The Mississippi River was the largest source of surface water used for public supply in the State. In 2015, about 230 Mgal/d of Mississippi River water was provided, primarily to parishes in southeastern Louisiana where groundwater supplies are limited or unavailable. This amount represents 65 percent of the total surface-water withdrawals for public supply in Louisiana. Cross Lake in the Red River basin supplied 11 percent of surface-water withdrawals for public supply, and an additional 22 other major surface-water bodies provided the remaining 23 percent of surface withdrawals. In 2015, Orleans Parish had the greatest surface-water withdrawals by public suppliers, about 140 Mgal/d. At the time, approximately 390,000 people lived in Orleans Parish, making it the third most populated parish in the State (U.S. Census Bureau, 2016).

Some public-supply facilities provide water to industrial facilities. In 2015, public-supply facilities in Louisiana reported that about 15 Mgal/d was delivered to industrial facilities in 51 parishes. The greatest amount of water delivered to industries was in Ouachita Parish, where public-supply deliveries totaled 3.5 Mgal/d. Table 1 lists the total public-supply water withdrawals delivered to industries in each parish.

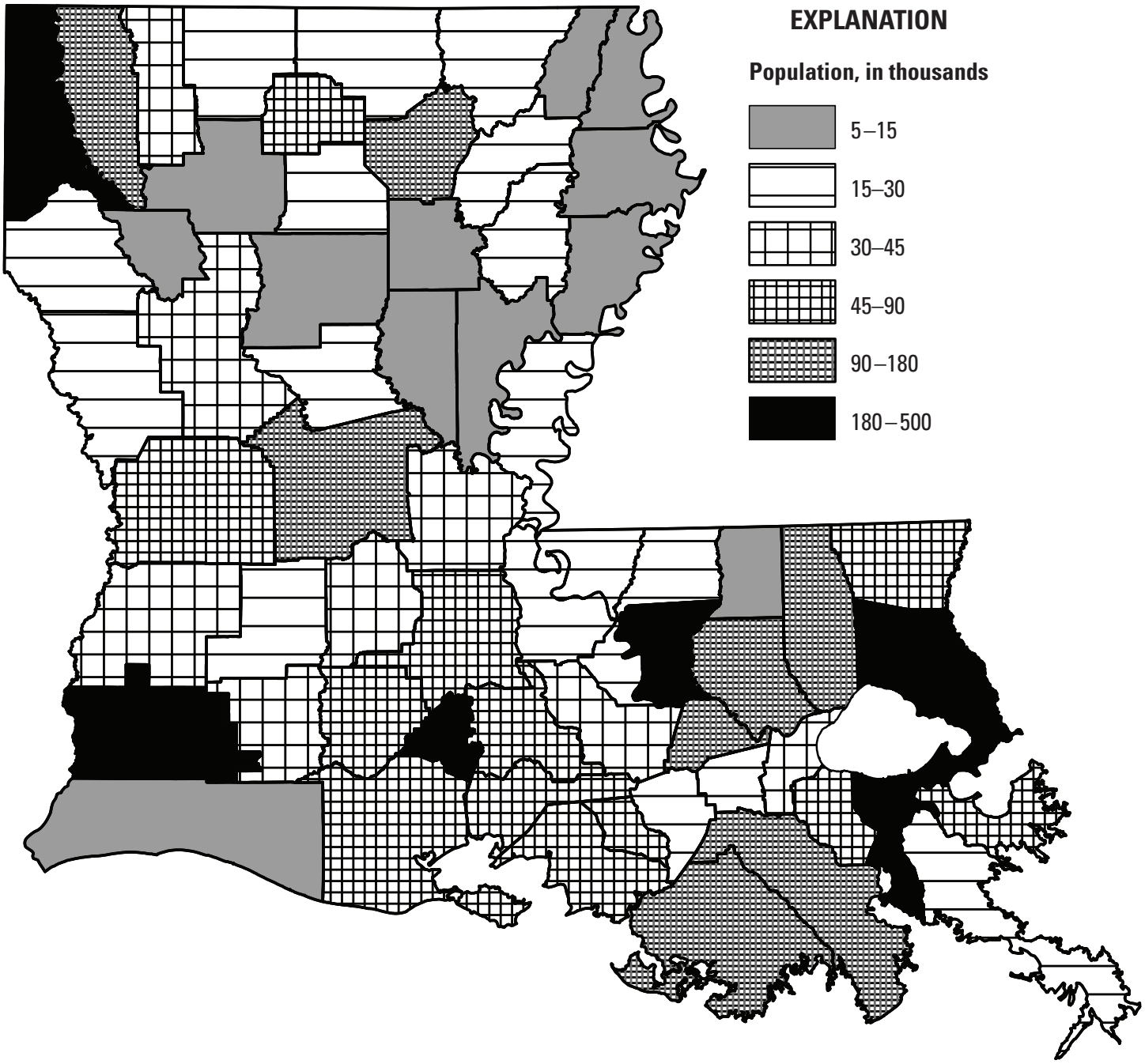


Figure 5. Louisiana population by parish, 2015 (U.S. Census Bureau, 2016).

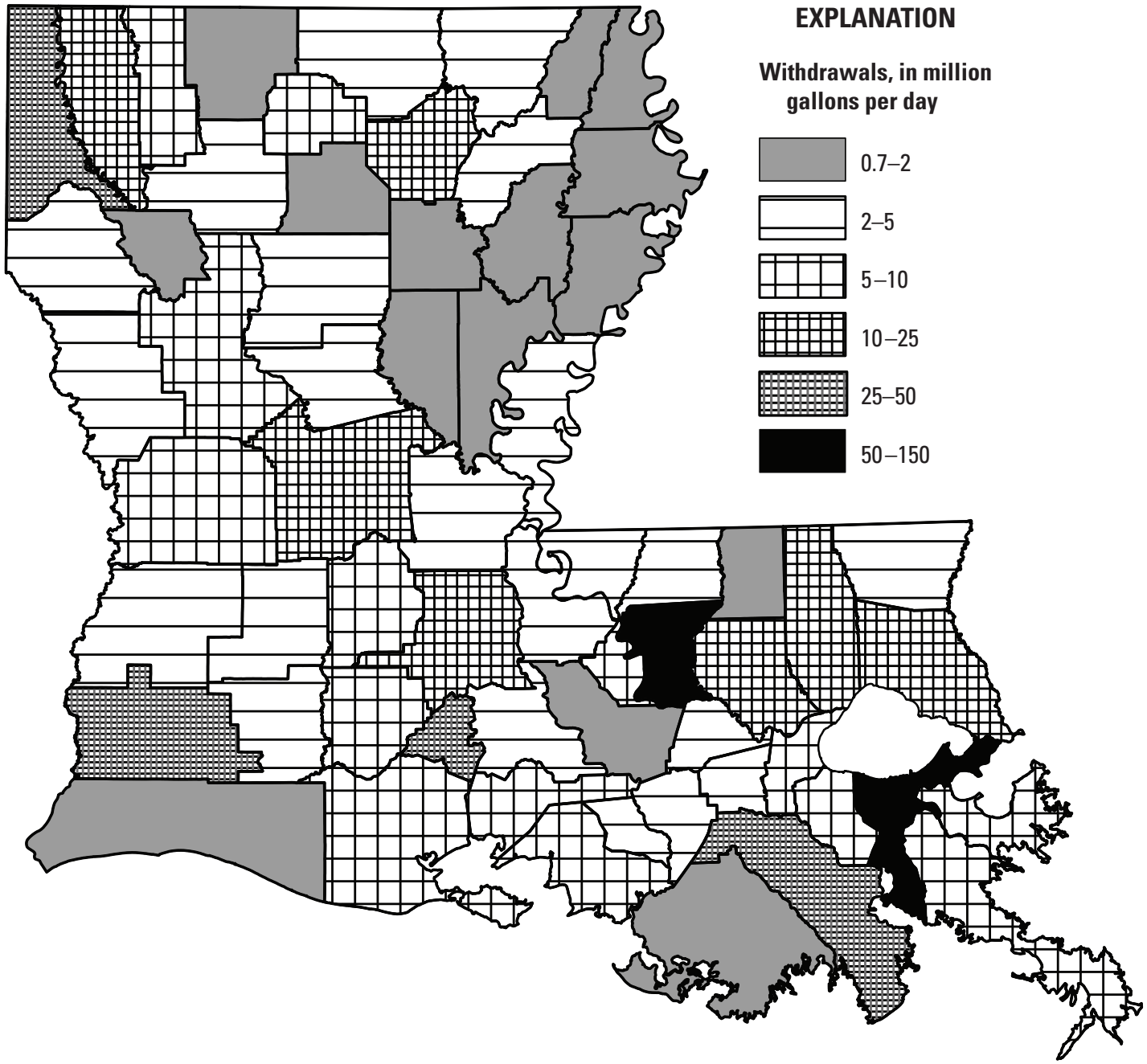


Figure 6. Public-supply water withdrawals in Louisiana by parish, 2015.

Table 1. Public-supply water withdrawals delivered to industries in Louisiana by parish, 2015.

[Withdrawals are in million gallons per day]

Parish	Withdrawals	
	Groundwater	Surface water
Acadia		
Allen	0.28	
Ascension		0.05
Assumption		0.05
Avoyelles		
Beauregard	0.15	
Bienville	0.17	
Bossier		0.52
Caddo		0.29
Calcasieu	0.61	
Caldwell		
Cameron	0.05	
Catahoula		
Claiborne	0.01	
Concordia	0.01	
De Soto		0.04
East Baton Rouge		
East Carroll		
East Feliciana	0.01	
Evangeline	0.15	
Franklin	0.01	
Grant		
Iberia		
Iberville		
Jackson	0.04	
Jefferson		0.03
Jefferson Davis		
Lafayette	2.98	
Lafourche		0.08
La Salle	0.03	
Lincoln	0.25	
Livingston	0.06	
Madison	0.03	
Morehouse		
Natchitoches		0.05
Orleans		0.23
Ouachita		3.54
Plaquemines		0.57
Pointe Coupee	0.04	
Rapides	3.05	
Red River		
Richland		
Sabine		0.08
St. Bernard		0.02
St. Charles		0.04
St. Helena		
St. James		0.05
St. John the Baptist		0.12
St. Landry	0.09	
St. Martin	0.08	
St. Mary	0.02	0.16
St. Tammany		
Tangipahoa	0.34	
Tensas		
Terrebonne		
Union	0.01	
Vermilion	0.02	
Vernon		
Washington	0.22	
Webster	0.22	
West Baton Rouge		
West Carroll		
West Feliciana		
Winn	0.02	
Total	8.96	5.92

Industry

Industrial facilities in Louisiana withdrew approximately 2,200 Mgal/d of water in 2015, about 260 Mgal/d of which was from groundwater sources and about 1,900 Mgal/d from surface-water sources. Industrial withdrawals accounted for 25 percent of all withdrawals in 2015. Chemical manufacturers withdrew approximately 1,600 Mgal/d or 73 percent of total industrial withdrawals. Most of the surface water withdrawn by industry was used for once-through cooling and was returned to its source after use. Table 2 lists 2015 withdrawals by source and Standard Industrial Classification (SIC) code for the major industrial groups.

The majority of the 260 Mgal/d of groundwater withdrawn for industrial use in 2015 was in the southern portion of the State. In southeastern Louisiana, the Chicot, Evangeline, and Jasper equivalent aquifer systems provided approximately 110 Mgal/d or 44 percent of total groundwater withdrawals. The Evangeline and Catahoula aquifers and the Chicot and Jasper aquifer systems in the central and southwestern part of the State provided 87 Mgal/d, or 34 percent of total groundwater withdrawals. In northern Louisiana, the upland terrace, Cockfield, Sparta, and Carrizo-Wilcox aquifers provided 22 Mgal/d, or 8.7 percent. The Red River and Mississippi River alluvial aquifers provided 34 Mgal/d, the remaining 13 percent, of groundwater withdrawn for industrial use.

The major sources of surface water withdrawn for industrial use include the Mississippi River, Calcasieu River, and the Sabine River Diversion Canal. Withdrawals and percentages of the total surface water withdrawn for industry by surface-water body are as follows: Mississippi River: 1,700 Mgal/d or 89 percent; Calcasieu River: 86 Mgal/d or 4.5 percent; and Sabine River Diversion Canal: 44 Mgal/d or 2.3 percent. There were 19 other major contributing surface-water bodies, none of which provided more than 1 percent of total surface water withdrawn for industrial use, which, together, provided 85 Mgal/d or the remaining 4.5 percent.

Total industrial withdrawals were the greatest in St. Charles and Iberville Parishes, with respectively 600 and 390 Mgal/d, which, combined, accounted for 46 percent of total industrial withdrawals made in 2015 (fig. 7).

Table 2. Water withdrawals in Louisiana by major industrial group, 2015.

[Withdrawals are in million gallons per day. Source of Standard Industrial Classification: Office of Management and Budget, 1987]

Standard Industrial Classification		Withdrawals		
		Groundwater	Surface water	Total
13	Oil and gas extraction	1.87	4.60	6.47
20	Food products	20.35	27.21	47.56
24	Lumber	0.54	0.06	0.60
26	Paper products	110.60	64.07	174.67
28	Chemicals	91.34	1,482.65	1,573.99
29	Petroleum refining	22.41	317.39	339.80
30	Rubber and plastics	1.63		1.63
32	Glass, clay, and concrete	1.47		1.47
33	Primary metals	1.87	0.97	2.84
34	Metal products	0.33		0.33
35	Industrial Machinery	0.03		0.03
37	Transportation equipment	1.42	0.08	1.50
38	Instrumentation	1.59		1.59
39	Miscellaneous Manufacturing	0.03		0.03
41	Local and Suburban Transit	0.15		0.15
42	Motor Freight Transportation and Warehousing	0.04		0.04
44	Water Transportation	0.57		0.57
	Total	**256.24**	**1,897.03**	**2,153.27**

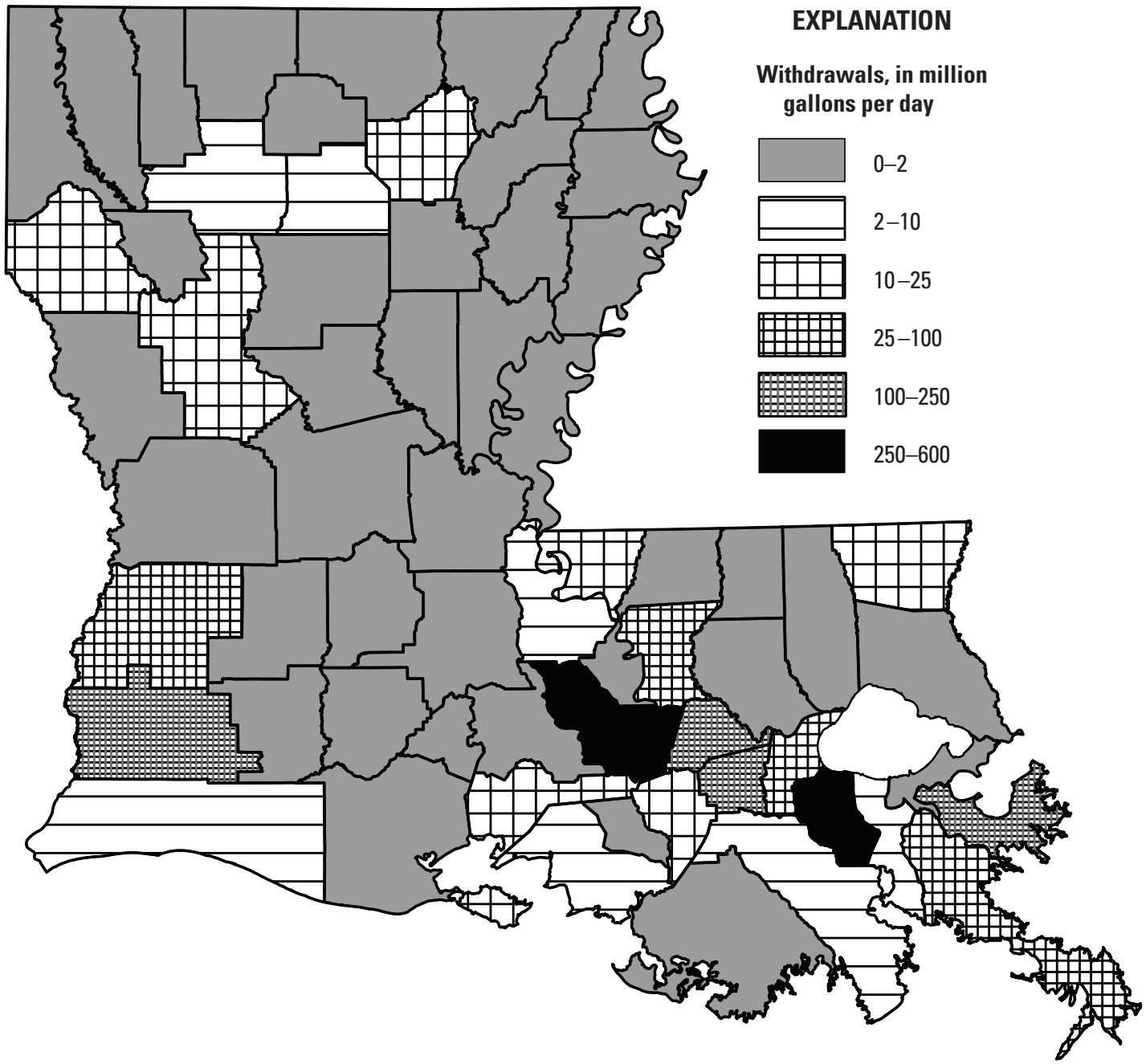


Figure 7. Industrial water withdrawals in Louisiana by parish, 2015.

Power Generation

Power-generation facilities withdrew approximately 4,300 Mgal/d, or 49 percent of the total water withdrawn in Louisiana in 2015, making it the largest percentage of use out of all water-use categories. Of the total water withdrawn for power generation, 37 Mgal/d of groundwater and 3,300 Mgal/d of surface water were withdrawn for use in fossil-fuel plants, 3.6 Mgal/d of surface water was withdrawn for use in hydroelectric plants, and 0.02 Mgal/d of groundwater and 930 Mgal/d of surface water were withdrawn for use in nuclear plants. Total withdrawals were greatest in St. Charles Parish, which withdrew solely from surface-water sources, and accounted for 1,800 Mgal/d, or 42 percent, of all withdrawals for power generation purposes in 2015 (fig. 8).

Groundwater sources provided 37 Mgal/d, or 0.87 percent, of the water withdrawn for power generation. Aquifers in southeastern Louisiana (figs. 2, 3) provided 24 Mgal/d, or 66 percent, of the groundwater used for power generation. The Chicot and Jasper aquifer systems and the Evangeline aquifer in southwestern Louisiana were the sources of 12 Mgal/d, or 32 percent, of the groundwater withdrawals for power generation. The remaining 0.98 Mgal/d, or 2.6 percent, of the groundwater withdrawals were from the other aquifers in the State.

More than 99 percent, or 4,200 Mgal/d, of the total water withdrawn for power generation in 2015 originated from surface-water sources. The Mississippi River was the source for the majority of this surface water, providing an estimated 3,000 Mgal/d, or 71 percent, of total surface-water withdrawals for power-generation purposes. Most surface water withdrawn for power-generation purposes was used for cooling and was returned to its source after use.

In 2015, 64,000 Mgal/d of water passed through Louisiana's two hydroelectric power plants. The larger of the two hydroelectric power plants, located at the Old River Control Structure in southern Concordia Parish (fig. 1) near the Louisiana-Mississippi border, uses water from the Mississippi River. In 2015, an average of 61,000 Mgal/d passed through the plant's turbines. The second hydroelectric power plant in Louisiana used water impounded in the Toledo Bend Reservoir in Sabine Parish on the Louisiana-Texas border and released the water through the turbines near Burkeville, Texas. Because the plant is located on the Louisiana-Texas border, one-half of the water used was counted in Louisiana's water-use inventory. In 2015, an average of 5,300 Mgal/d of water passed through the plant's turbines. Of this amount, 2,600 Mgal/d was counted as power-generation instream use for Louisiana. As mentioned previously, for the purpose of this report, this hydroelectric power-generation instream use was not included in the surface-water withdrawals.

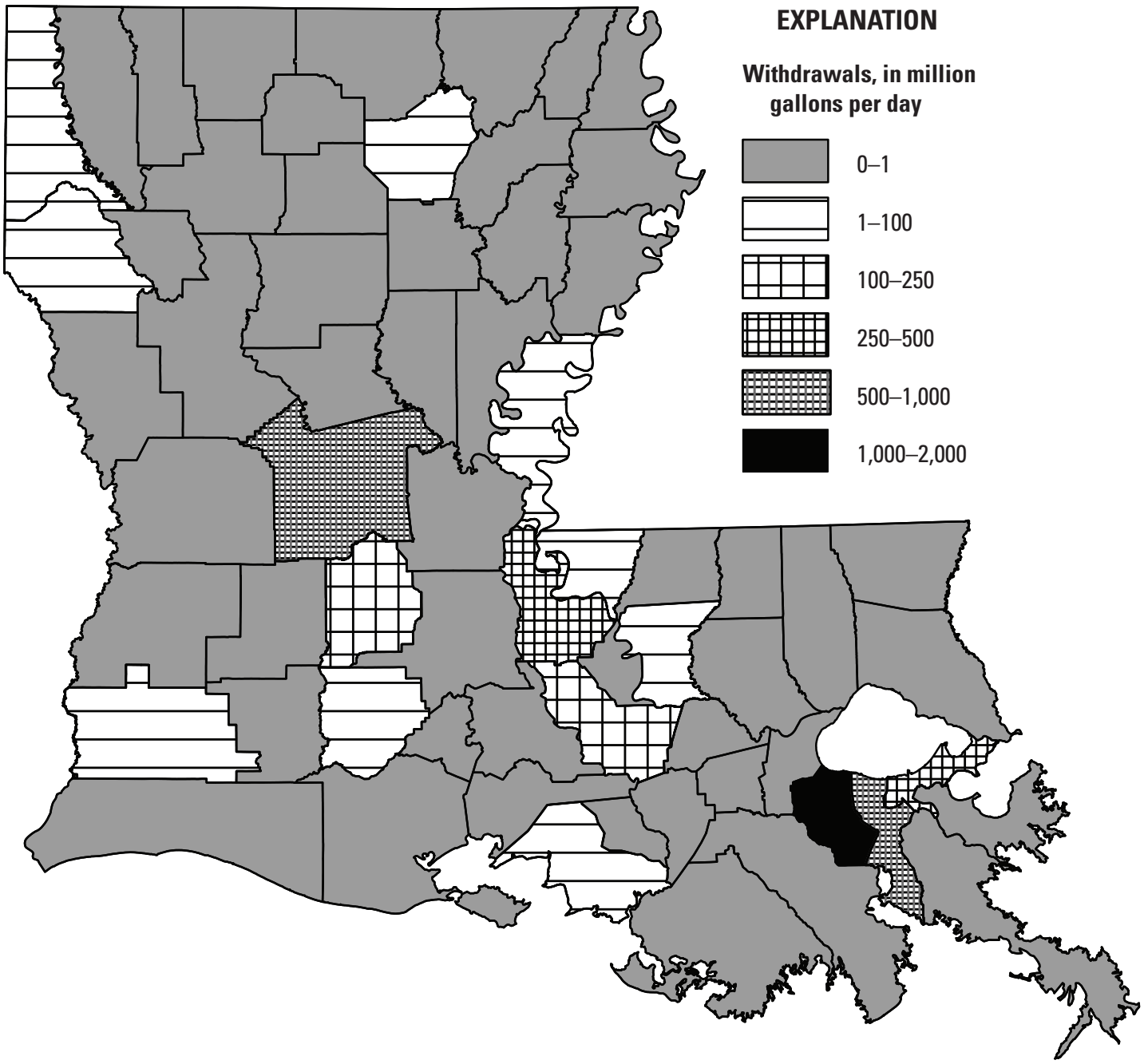


Figure 8. Power-generation water withdrawals in Louisiana by parish, 2015.

Rural Domestic

Approximately 490,000 people, or 10 percent of Louisiana's population (U.S. Census Bureau, 2016), withdrew an estimated 39 Mgal/d of groundwater from privately owned domestic wells in 2015. Rural domestic withdrawals accounted for about 0.45 percent of the total water withdrawn in the State in 2015.

It was assumed that little or no surface water was used for rural-domestic purposes in Louisiana because suitable groundwater that requires minimal treatment generally is available. Every major aquifer and aquifer system (fig. 3) was used as a source for rural-domestic water. Percentages of the total groundwater withdrawals for rural-domestic use by major and minor aquifers are as follows: major aquifers in southeastern Louisiana, 40 percent; major aquifers in the central and southwestern parts of the State, 34 percent; major aquifers in northern Louisiana, 18 percent; and minor aquifers throughout the State, 8.1 percent. St. Tammany Parish had the greatest withdrawals for rural-domestic use at 5.3 Mgal/d (fig. 9).

Livestock

In 2015, individual ranchers and farmers used approximately 6.3 Mgal/d of water for livestock operations, accounting for the smallest withdrawals of any category of use at about 0.072 percent of total water withdrawn in the State. Of the total livestock withdrawals, 3.2 Mgal/d was groundwater, and 3.1 Mgal/d was surface water.

Surface-water sources for livestock withdrawals generally included small streams, canals, and private ponds. Groundwater sources included most of the major aquifers and aquifer systems. The Chicot aquifer system provided 0.87 Mgal/d, or 27 percent; the Mississippi River alluvial aquifer provided 0.77 Mgal/d, or 24 percent; and the Chicot equivalent aquifer system provided 0.50 Mgal/d, or 16 percent, of groundwater withdrawals for livestock. The remaining 1.0 Mgal/d, or 32 percent, of withdrawals was distributed among other aquifers in amounts less than 0.5 Mgal/d. Calcasieu and Tangipahoa Parishes had the greatest livestock withdrawals, 0.39 and 0.33 Mgal/d (fig. 10).

Rice Irrigation

Farmers withdrew approximately 830 Mgal/d of water to irrigate about 410,000 acres of rice in 2015. Rice was harvested in 30 parishes, mainly in southwestern and northeastern Louisiana (Louisiana Cooperative Extension Service, 2017). All rice grown in Louisiana is assumed to be irrigated, and the average application rate in 2015 was about 2.2 acre-feet (acre-ft) per acre per year.

Of the total amount of water withdrawn for rice irrigation, about 550 Mgal/d, 66 percent, was from groundwater sources and about 280 Mgal/d, 34 percent, was from surface-water sources. The greatest source of groundwater came from the Chicot aquifer system in southwestern Louisiana, providing 410 Mgal/d, or 75 percent of total groundwater withdrawals. The Mississippi River alluvial aquifer in northeastern Louisiana provided 120 Mgal/d, or 22 percent, whereas other aquifers in the State contributed 15 Mgal/d, or 2.8 percent. Surface-water sources included streams, lakes, bayous, and canals. Bayou Queue de Tortue provided the greatest percentage of surface-water withdrawals from a single water body throughout Louisiana at 33 Mgal/d, or 12 percent. Total withdrawals for rice irrigation were greatest in Acadia Parish at about 160 Mgal/d, of which about 110 Mgal/d came from groundwater sources and about 48 Mgal/d from surface-water sources (fig. 11).

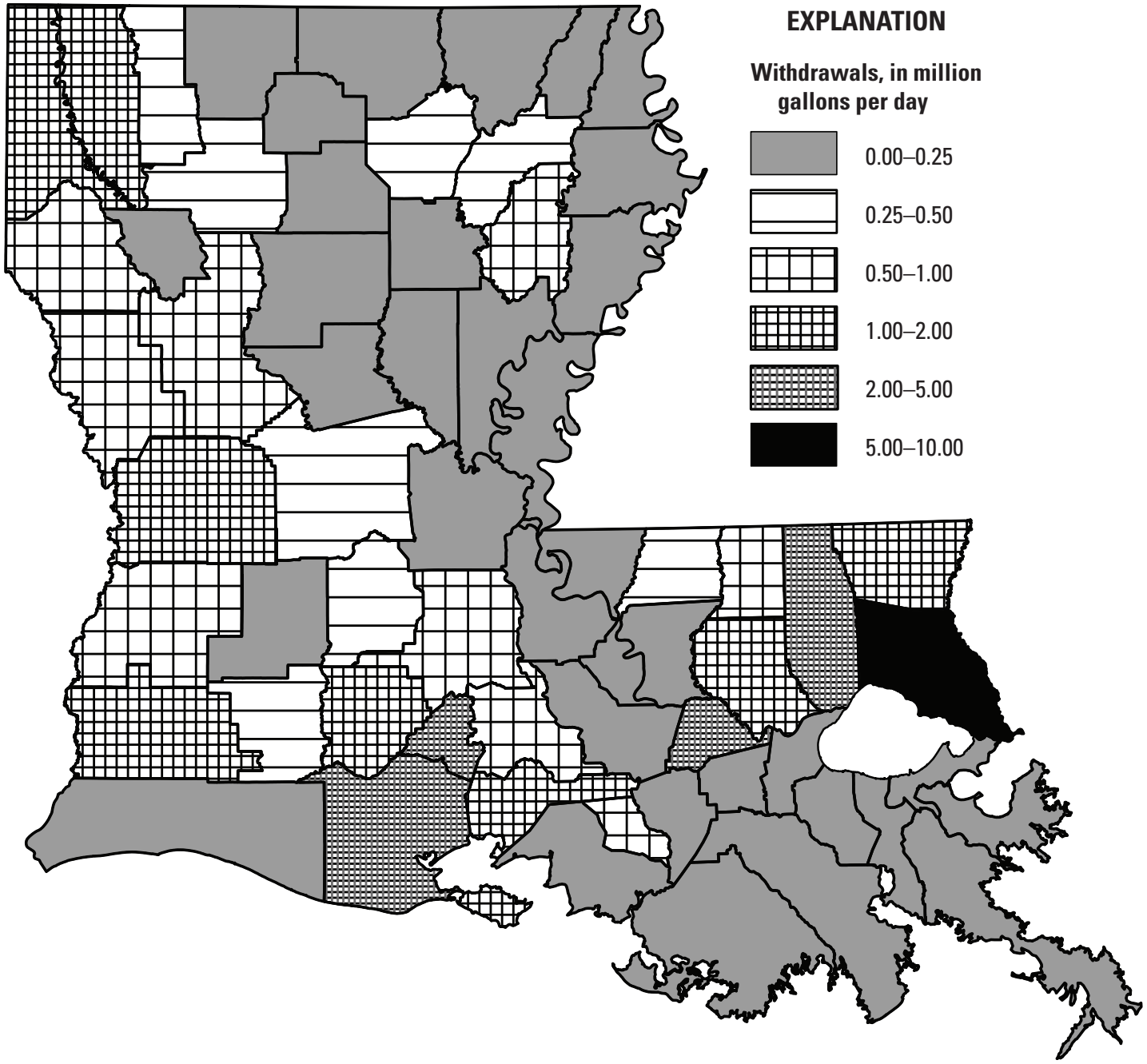


Figure 9. Rural-domestic water withdrawals in Louisiana by parish, 2015.

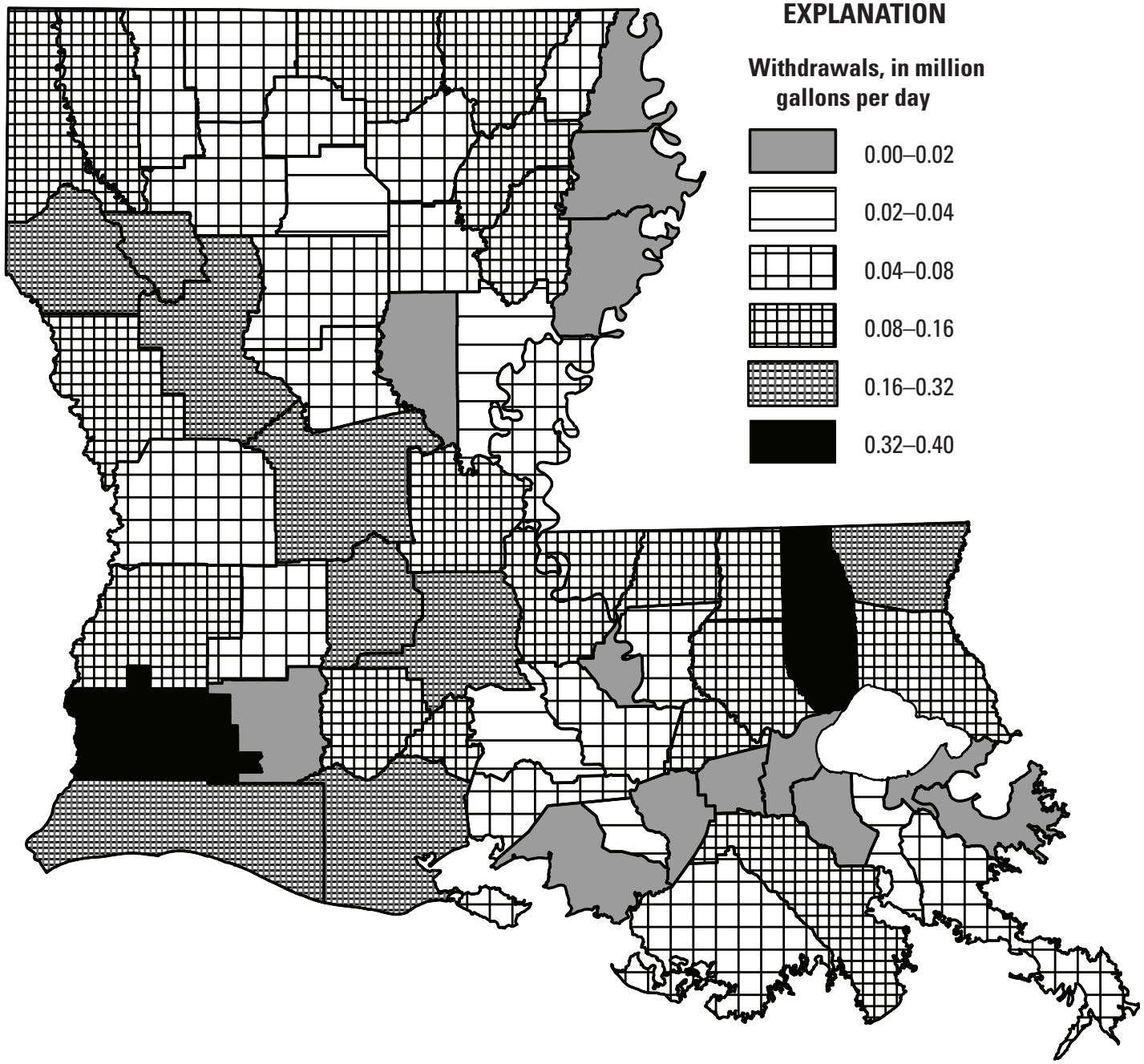


Figure 10. Livestock water withdrawals in Louisiana by parish, 2015.

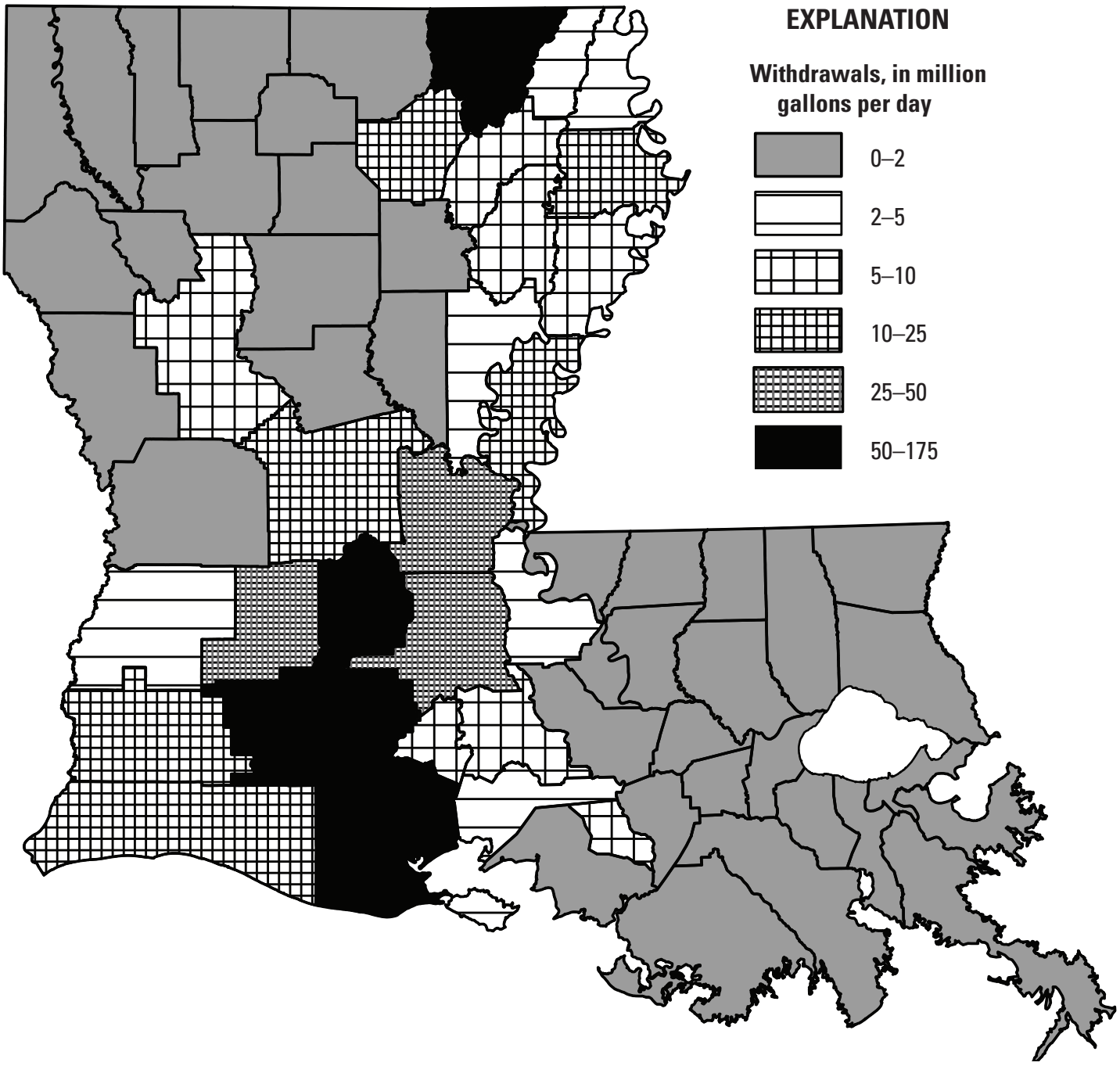


Figure 11. Rice-irrigation water withdrawals in Louisiana by parish, 2015.

General Irrigation

In 2015, farmers withdrew about 230 Mgal/d of water to irrigate approximately 560,000 acres of crops other than rice, mainly in northeastern Louisiana (fig. 12) (Louisiana Cooperative Extension Service, 2017). Crops with substantial amounts of irrigated acreage included cotton, corn, soybeans, sugar cane, sorghum, and berries, and the average application rate for these crops was about 0.52 acre-ft per acre per year.

Of the total withdrawals for general irrigation, about 170 Mgal/d, or 75 percent, was groundwater and 56 Mgal/d, or 25 percent, was surface water. The Mississippi River alluvial aquifer provided 140 Mgal/d, or 81 percent, of the total groundwater withdrawn for general irrigation; the Chicot aquifer system provided 15 Mgal/d, or 8.7 percent; and the other aquifers in the State provided 17 Mgal/d, 9.9 percent.

Aquaculture

In 2015, approximately 490 Mgal/d of water was withdrawn for aquaculture in Louisiana. Crawfish ponds demanded the vast majority of water used for aquaculture, with 99.7 percent of the water used to maintain water levels on 240,000 acres of crawfish ponds. Other uses for aquaculture included 0.10 percent on 185 acres of catfish ponds and 0.20 percent at alligator farms and other aquaculture facilities (Louisiana Cooperative Extension Service, 2017).

Of the total water withdrawn for aquaculture, about 340 Mgal/d was groundwater and about 160 Mgal/d was surface water. The Chicot aquifer system provided the greatest percentage of groundwater at 240 Mgal/d, or 72 percent, followed by the Mississippi River alluvial aquifer at 77 Mgal/d, or 23 percent; the Red River alluvial aquifer at 8.1 Mgal/d, or 2.4 percent; and other aquifers (totaled) at 7.7 Mgal/d, or 2.3 percent. Numerous streams were used as sources of surface water. Total withdrawals for aquaculture were greatest in Jefferson Davis Parish, at about 120 Mgal/d, with about 50 Mgal/d originating from groundwater sources and about 75 Mgal/d from surface-water sources (fig. 13).

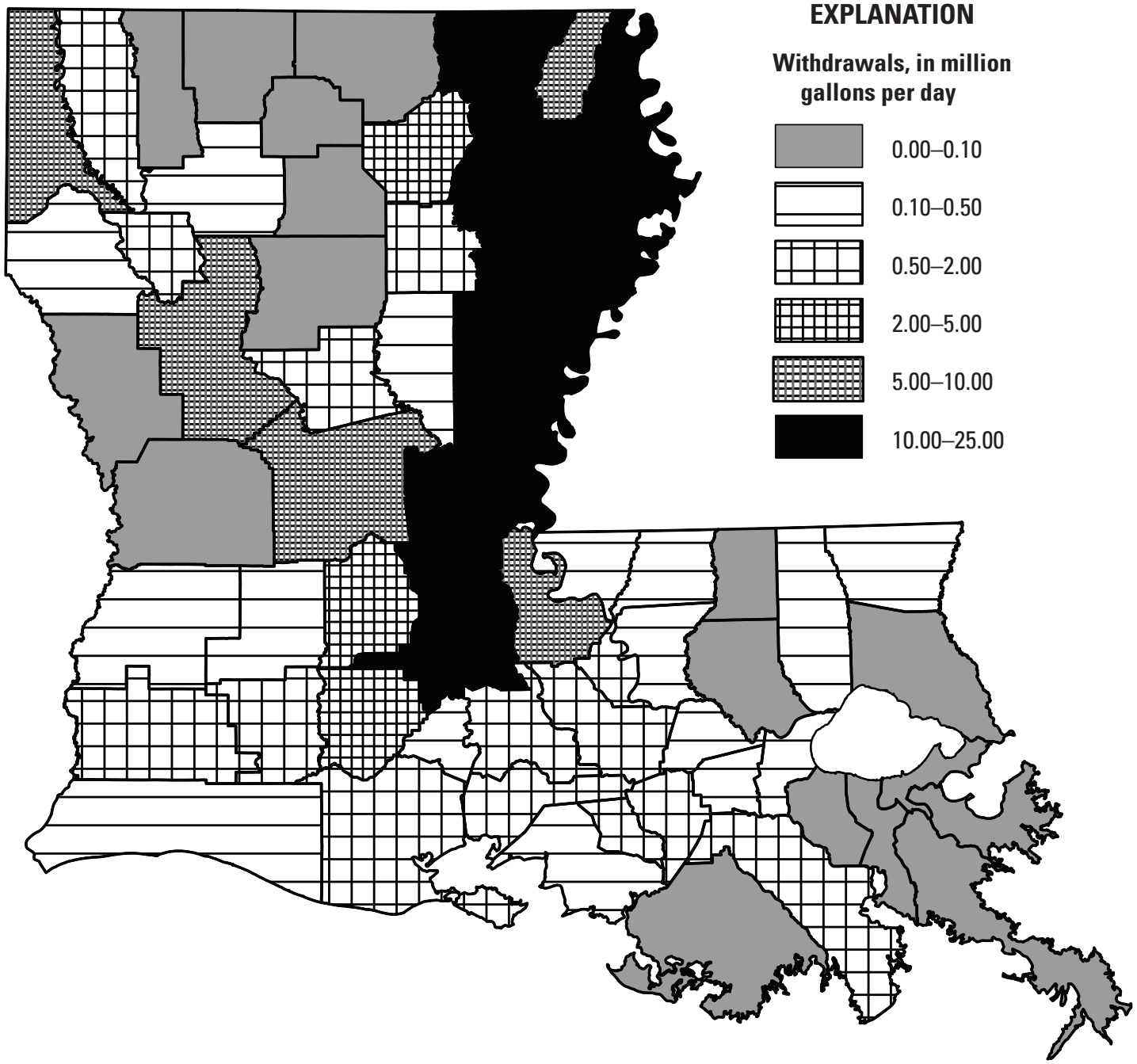


Figure 12. General-irrigation water withdrawals in Louisiana by parish, 2015.

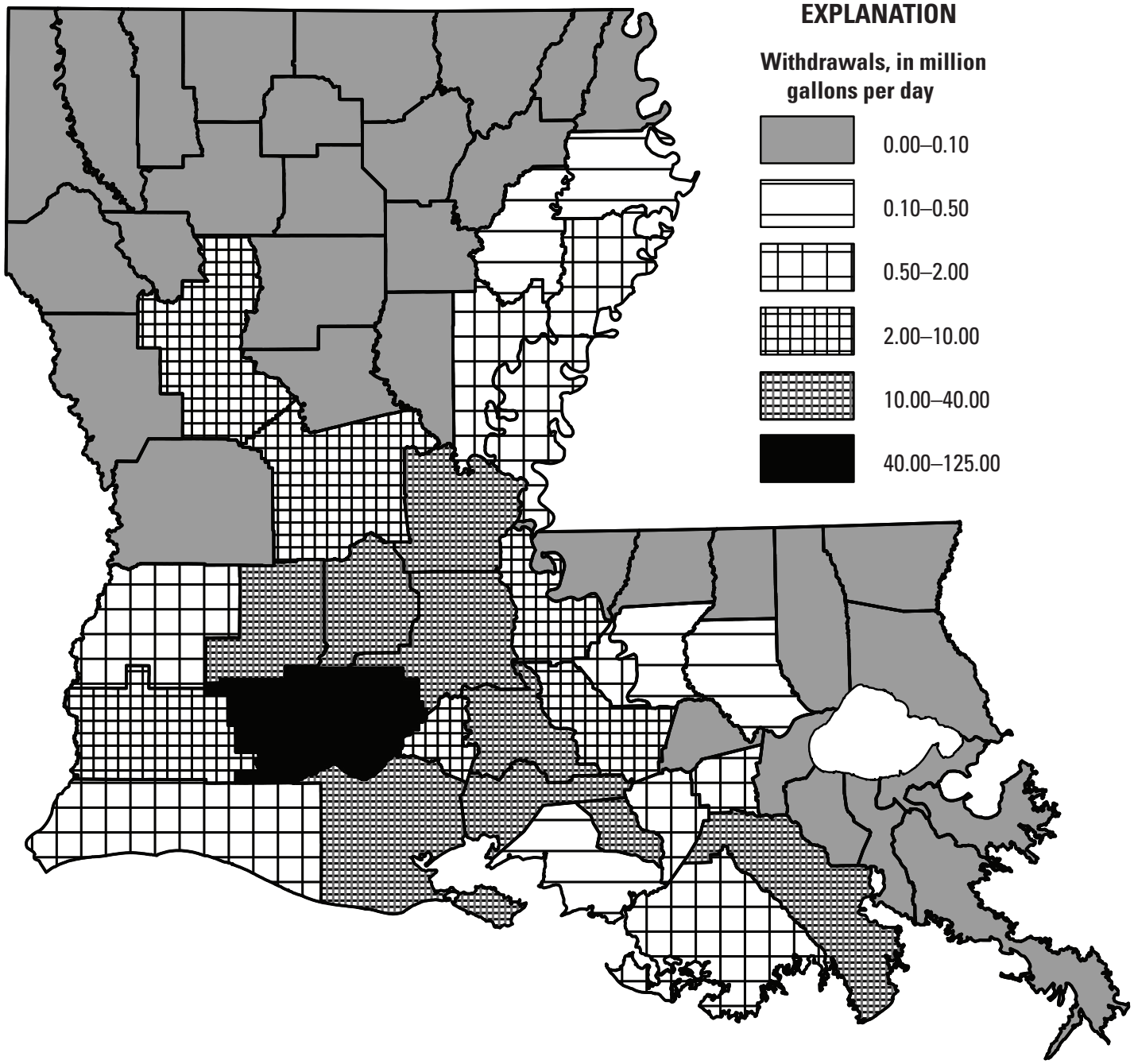


Figure 13. Aquaculture water withdrawals in Louisiana by parish, 2015.

Water Use By Parish

The one-page summaries of water-use information by parish presented in this section contain tables of estimated withdrawals by source of water and categories of use, water withdrawals by major public suppliers, and major industrial groups. Also listed are parish population, population served by public supply, per capita withdrawals, total irrigated acreage, and amount of hydroelectric instream use in the parish. The per capita withdrawal rate is the average daily total amount of all water withdrawn in the parish divided by the total parish population. Each summary page also contains a map that shows the location of the parish within the State and a bar chart presenting water-use trends since 1960. The historical data for the bar charts were from previous 5-year water-use compilations and are presented without interpretation.

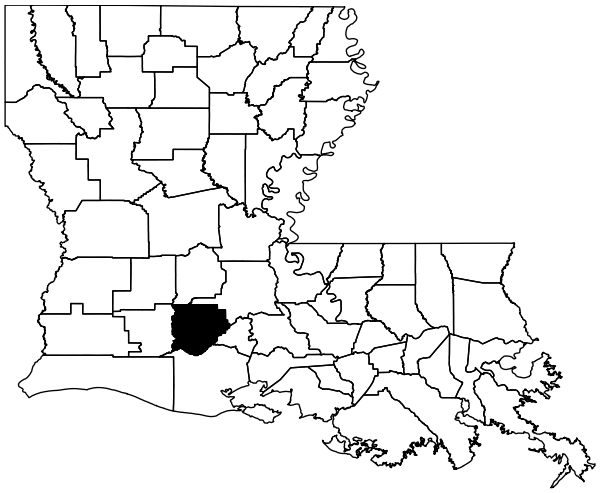
The table of withdrawals by category of use summarizes the parish's groundwater, surface-water, and total water withdrawals for each of the defined categories of use: public supply, industry, power generation, rural domestic, livestock, rice irrigation, general irrigation, and aquaculture. In these tables, withdrawals that are less than 0.005 Mgal/d but greater than 0 are shown as 0.00, and blank values indicate that there were no withdrawals in 2015. This water-use information for each of the 64 parishes in Louisiana is further summarized in table 3 at the end of this section. In addition, the water-use data by source type and parish are publicly available from Collier (2018).

The table of withdrawals by major public suppliers lists facilities in alphabetical order. For the purposes of this table, public suppliers are included only if the withdrawal was greater than or equal to 0.01 Mgal/d in 2015. Therefore, totaled withdrawals from this table may be less than the totals calculated for public supply in the table of withdrawals by category of use. Self-supplied institutions such as hospitals, prisons, and military installations, though included in the withdrawals for public supply, do not meet the strict definition of public supply and, like previous Louisiana water-use reports, are not listed in the table of major public suppliers.

The table of major industrial groups lists withdrawals by SIC code by groundwater and surface-water sources. For the purposes of this table, an industrial group is included only if the withdrawal was greater than or equal to 0.01 Mgal/d in 2015 and was used by a manufacturing sector of industry rather than a service or commercial sector. Therefore, totaled withdrawals from this table may be less than the totals calculated for industry in the table of withdrawals by category of use.

Acadia

Population: 62,577
Population served by public supply: 47,029
Per capita withdrawals (gal/d): 4,514
Acres irrigated: 85,987
Hydroelectric power instream use (Mgal/d): 0

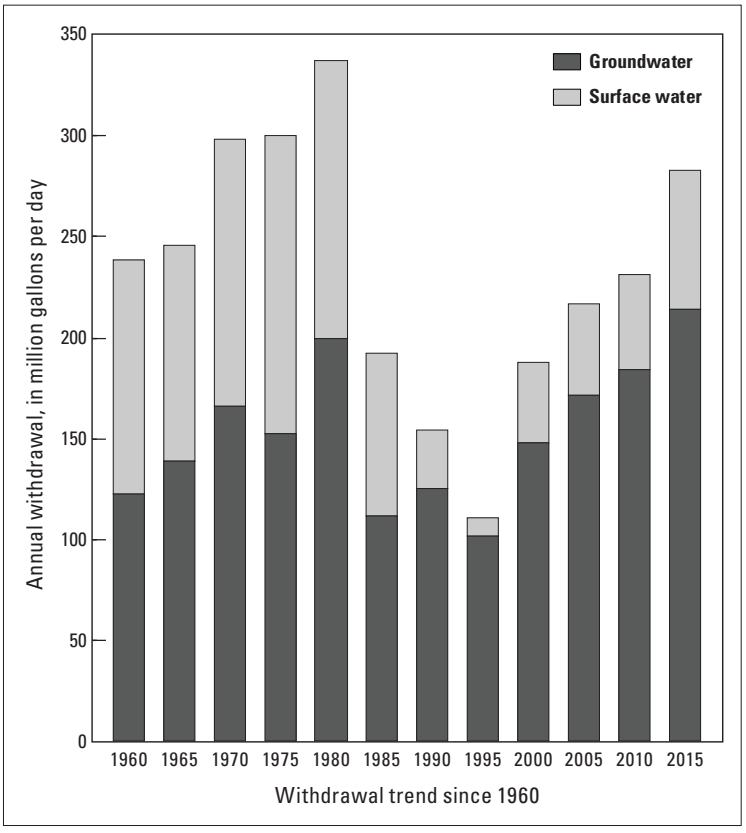


Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	5.66		5.66
Industrial	0.58		0.58
Power generation	4.49	3.43	7.92
Rural domestic	1.24		1.24
Livestock	0.11	0.01	0.12
Rice irrigation	112.46	47.65	160.11
General irrigation	1.34	1.34	2.69
Aquaculture	88.52	15.62	104.15
Total	**214.41**	**68.07**	**282.48**

Withdrawals by Major Industrial Group (Mgal/d)

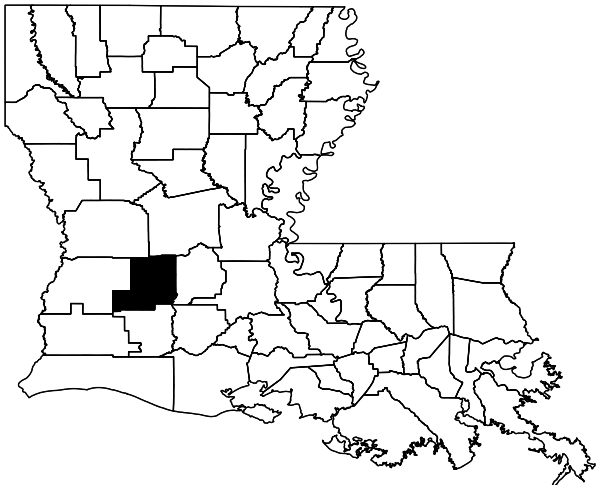
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.57	
35	Industrial machinery	0.01	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Church Point Water System	0.54	
Crowley Water System	1.88	
Egan Water Corp.	0.54	
Egan Water Corp. #2	0.31	
Iota Water System	0.17	
Mire-Branch Water Corp.	0.63	
Morse Water System	0.50	
North of Crowley Water Corp.	0.34	
Rayne Water Supply	0.90	
South Rayne Water Corp.	0.25	

Allen



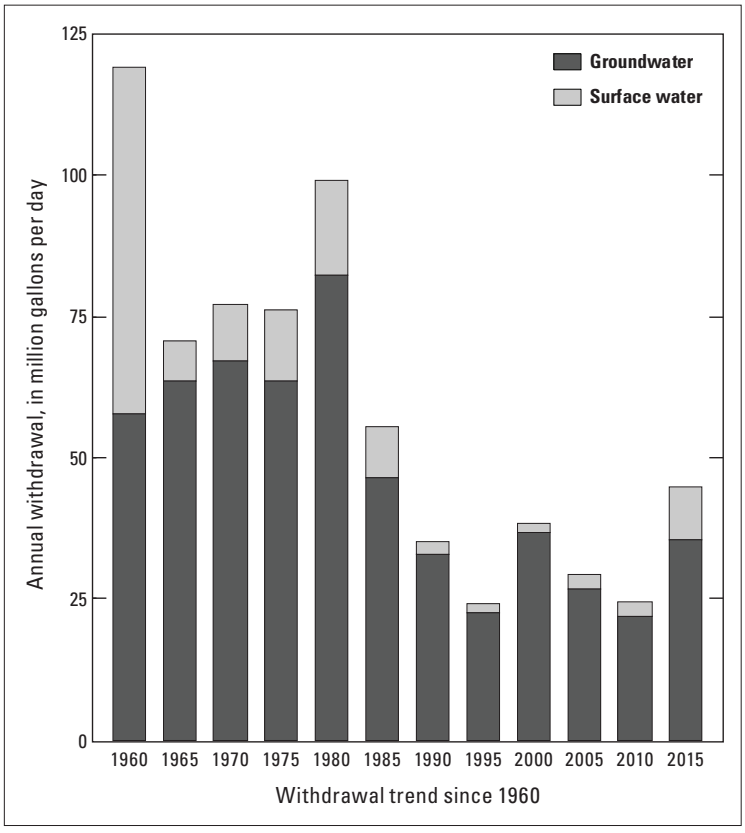
Population: 25,685
Population served by public supply: 22,502
Per capita withdrawals (gal/d): 1,747
Acres irrigated: 15,816
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply			4.24
Industrial	0.33		0.33
Power generation			
Rural domestic	0.25		0.25
Livestock	0.05	0.01	0.07
Rice irrigation	21.87	7.29	29.15
General irrigation	0.50		0.50
Aquaculture	8.27	2.04	10.31
Total	**35.52**	**9.34**	**44.86**

Withdrawals by Major Industrial Group (Mgal/d)

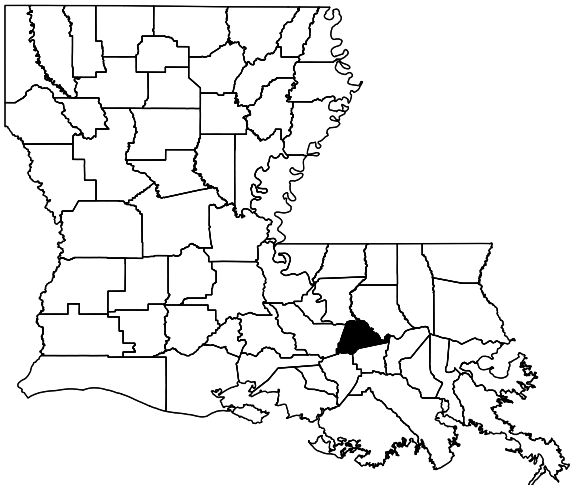
Standard industrial classification		GW	SW
26	Paper products	0.33	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Allen Parish Water District #1	0.13	
East Allen Water District	0.37	
Elizabeth Water System	0.13	
Northwest Allen Water System	0.07	
Oakdale Water System	1.67	
Oberlin Water System	0.16	
S. W. Allen Water Works District 2	1.24	
South Oakdale Water System	0.20	
West Allen Water District	0.27	

Ascension



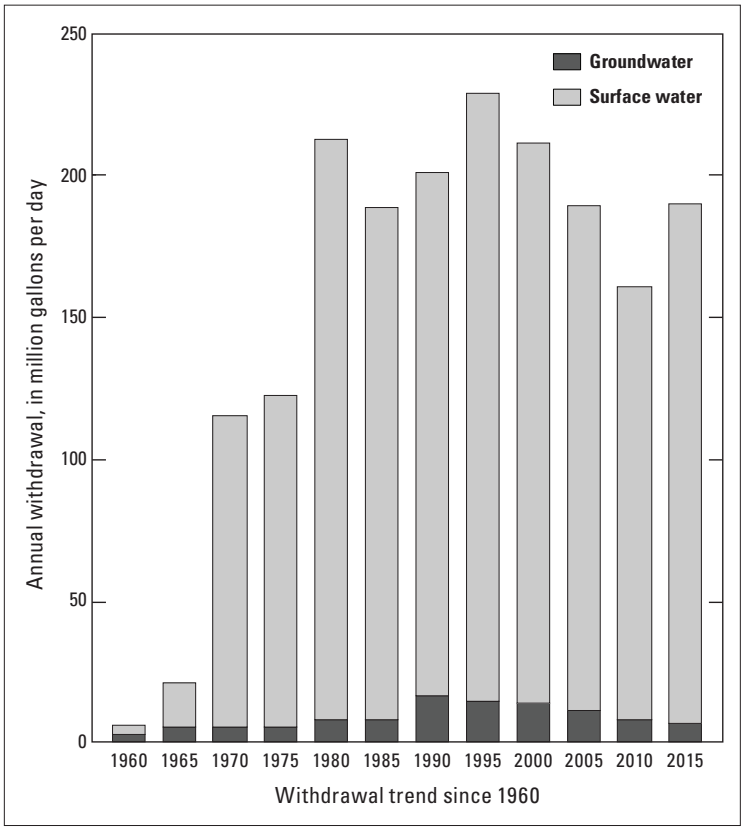
Population: 119,455
Population served by public supply: 85,890
Per capita withdrawals (gal/d): 1,581
Acres irrigated: 1,040
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.29	1.37	2.66
Industrial	1.72	181.28	183.01
Power generation			
Rural domestic	2.69		2.69
Livestock	0.07	0.02	0.09
Rice irrigation			
General irrigation	0.45		0.45
Aquaculture			
Total	**6.22**	**182.67**	**188.89**

Withdrawals by Major Industrial Group (Mgal/d)

Standard industrial classification		GW	SW
28	Chemicals	1.34	181.28
29	Petroleum refining	0.09	

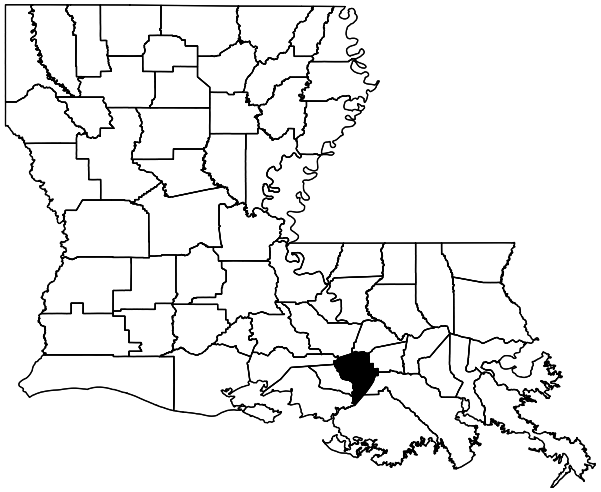


Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Gonzales Water System	1.16	
Parish Utilities of Ascension W. S.		1.37

Assumption

Population: 22,842
Population served by public supply: 22,473
Per capita withdrawals (gal/d): 942
Acres irrigated: 1,639
Hydroelectric power instream use (Mgal/d): 0

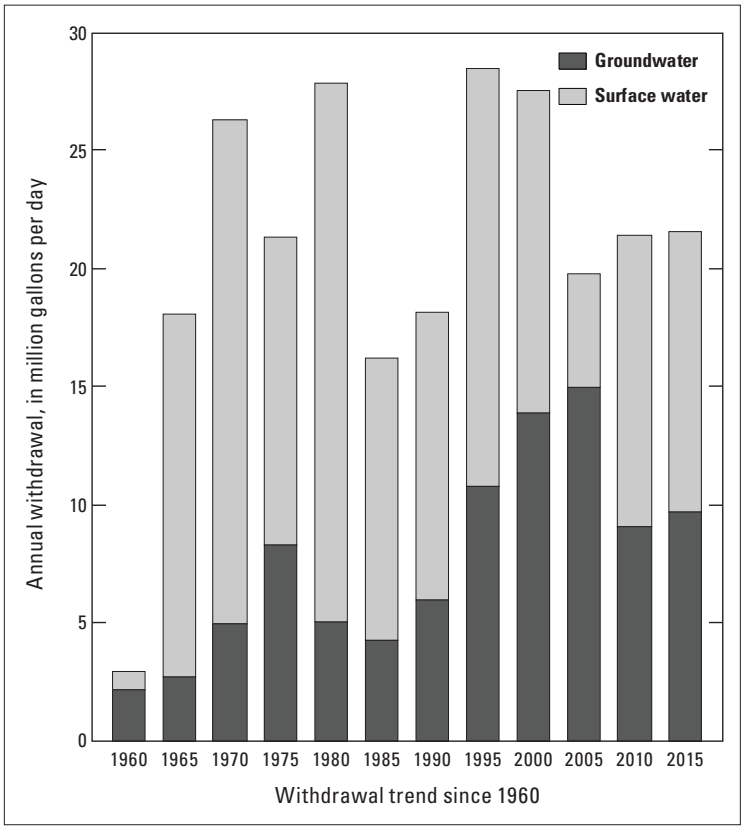


Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply		4.19	4.19
Industrial	9.23	6.52	15.75
Power generation			
Rural domestic	0.03		0.03
Livestock		0.01	0.01
Rice irrigation			
General irrigation	0.28	0.42	0.70
Aquaculture	0.17	0.67	0.83
Total	**9.70**	**11.81**	**21.51**

Withdrawals by Major Industrial Group (Mgal/d)

Standard industrial classification		GW	SW
20	Food products		6.52
28	Chemicals	9.19	

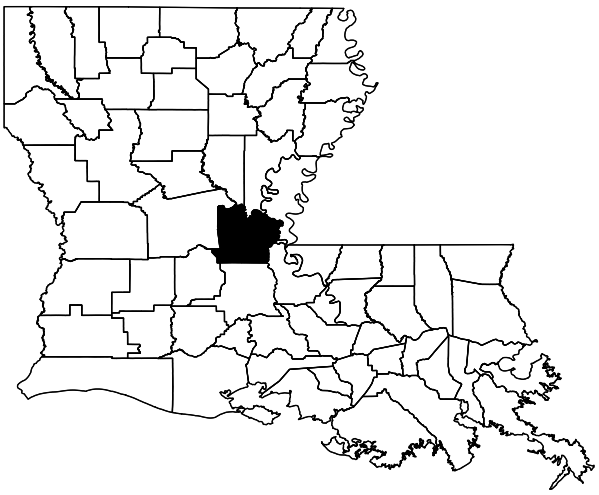


Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Assumption Parish Waterworks No. 1		4.19

Avoyelles

Population: 41,103
Population served by public supply: 38,841
Per capita withdrawals (gal/d): 1,604
Acres irrigated: 38,840
Hydroelectric power instream use (Mgal/d): 0

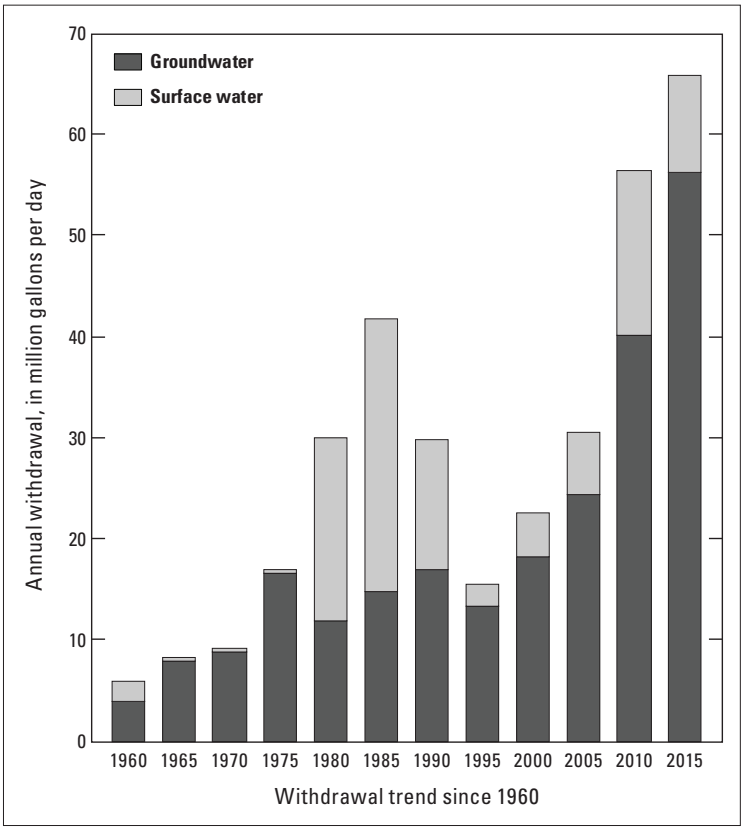


Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	4.05		4.05
Industrial	0.00		0.00
Power generation			
Rural domestic	0.18		0.18
Livestock	0.16		0.16
Rice irrigation	24.89	1.31	26.20
General irrigation	8.59	2.15	10.74
Aquaculture	18.43	6.14	24.58
Total	**56.31**	**9.60**	**65.91**

Withdrawals by Major Industrial Group (Mgal/d)

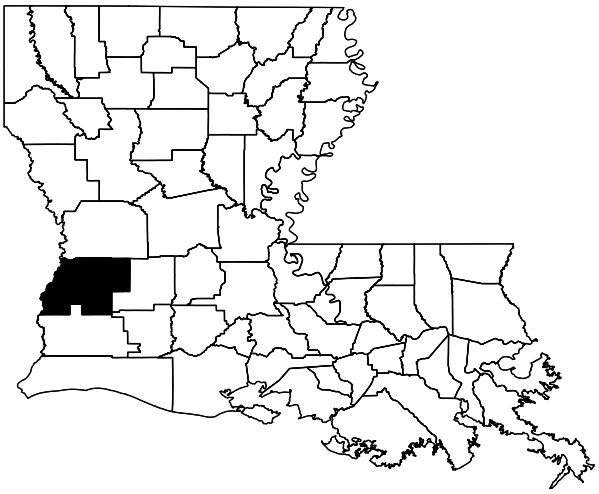
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Avoyelles W. W. Dist. # 1	0.13	
Avoyelles Ward 1 Water System	0.23	
Avoyelles Water Commission	1.10	
Brouillette Water System	0.22	
Cottonport Water System	0.46	
Evergreen Water System	0.14	
Fifth Ward Water System	0.37	
Hessmer Water System	0.28	
Mansura Water System	0.20	
Morrow Water System Inc.	0.13	
Plaucheville Water System	0.26	
Simmesport Water System	0.40	
Southwest Avoyelles W. W.	0.12	

Beauregard



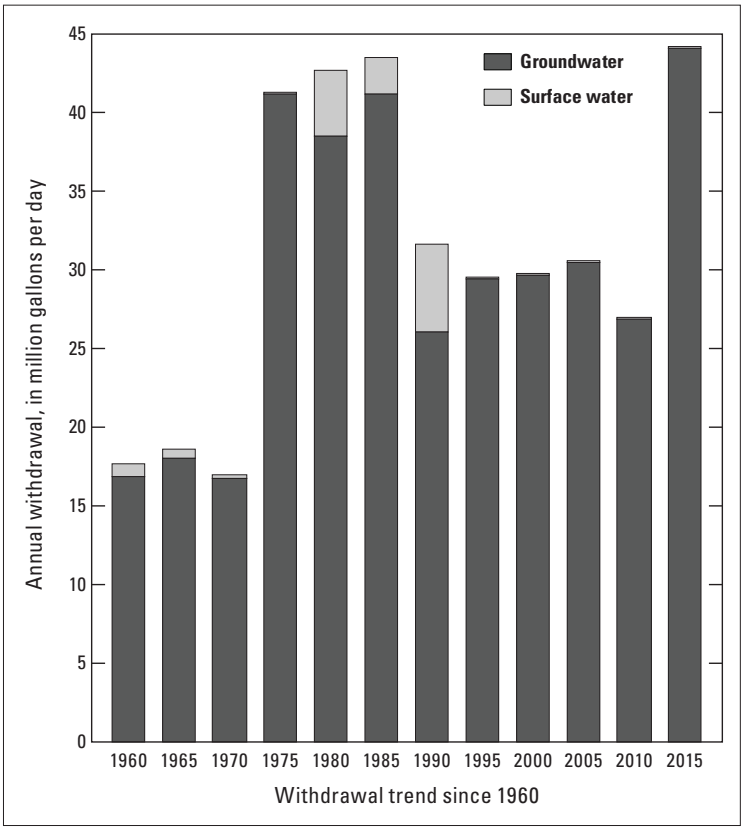
Population: 36,462
Population served by public supply: 26,359
Per capita withdrawals (gal/d): 1,210
Acres irrigated: 2,009
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	4.42		4.42
Industrial	35.04		35.04
Power generation			
Rural domestic	0.81		0.81
Livestock	0.09	0.06	0.14
Rice irrigation	2.27		2.27
General irrigation	0.32	0.04	0.36
Aquaculture	1.08		1.08
Total	**44.03**	**0.09**	**44.12**

Withdrawals by Major Industrial Group (Mgal/d)

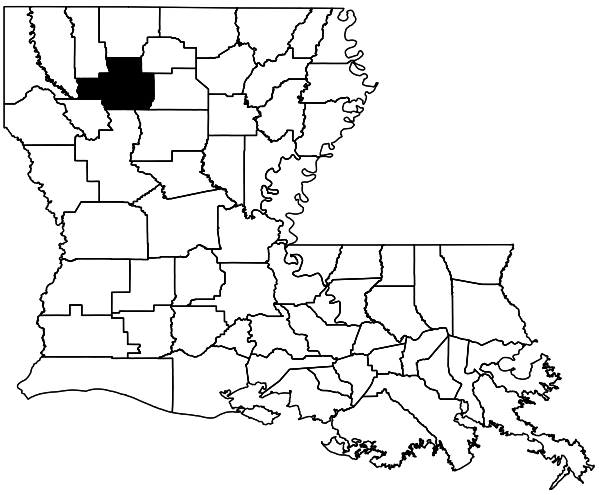
Standard industrial classification		GW	SW
26	Paper products	34.60	
28	Chemicals	0.44	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Beauregard Dist. 2 Ward 5	0.61	
DeRidder Water System	1.57	
Green Acres Water & Sewer	0.08	
Merryville Water System	0.27	
Waterworks District No. 3	1.86	
Waterworks District No. 5	0.03	

Bienville



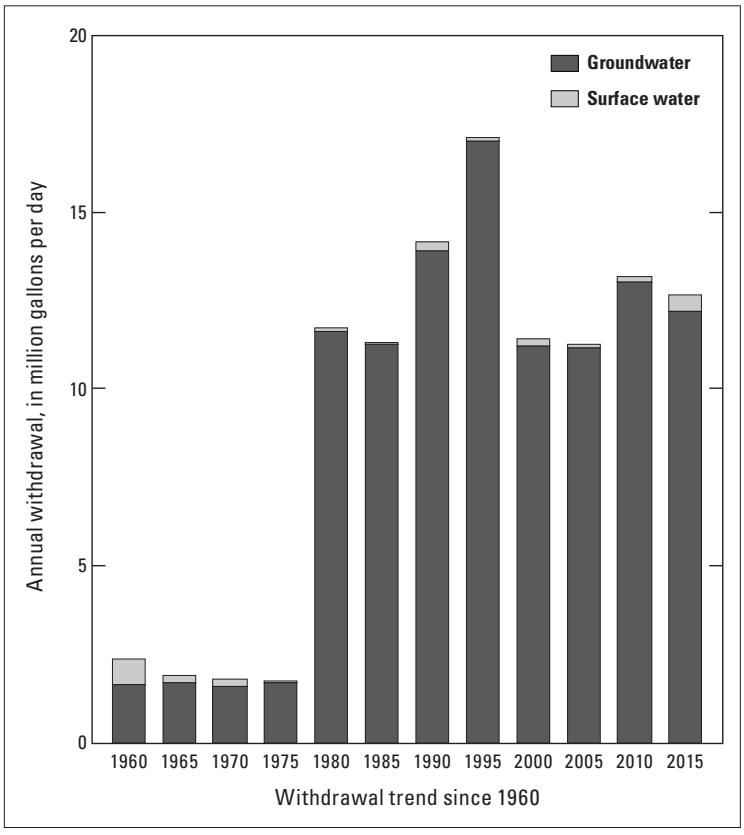
Population: 13,786
Population served by public supply: 9,718
Per capita withdrawals (gal/d): 917
Acres irrigated: 359
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	2.72		2.72
Industrial	9.13	0.25	9.38
Power generation			
Rural domestic	0.33		0.33
Livestock	0.04	0.02	0.06
Rice irrigation			
General irrigation		0.15	0.15
Aquaculture			
Total	**12.21**	**0.43**	**12.64**

Withdrawals by Major Industrial Group (Mgal/d)

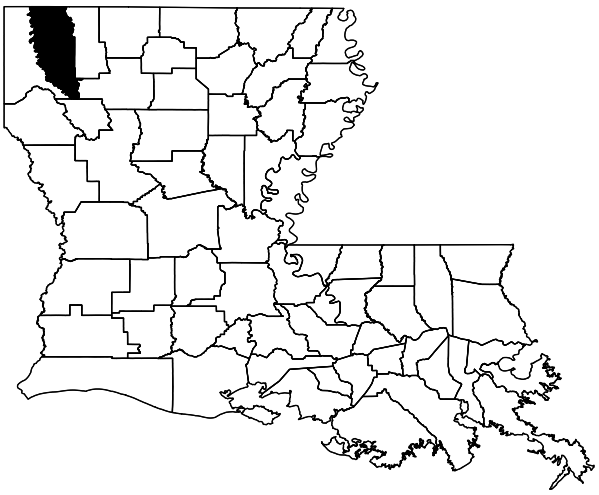
Standard Industrial classification		GW	SW
13	Oil and gas extraction		0.25
20	Food products	0.05	
26	Paper products	9.08	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Alabama Water System	0.06	
Alberta Water System	0.10	
Arcadia Water System	1.25	
Bienville Water System	0.03	
Bryceland Water System	0.02	
Castor Water System	0.02	
Cypress Water System	0.05	
Friendship Water System	0.05	
Gibsland Water System	0.39	
Jamestown-Fryeburg W. S.	0.04	
Lucky Water System	0.03	
Mill Creek Water System	0.02	
Mt. Calm Water System	0.02	
Mt. Lebanon Water System	0.03	
Mt. Olive Water System	0.08	
Old Saline Comm. Water System	0.04	
Ringgold Water System	0.30	
S. E. Bienville Water System	0.01	
Saline Water System	0.08	
Social Springs Water System	0.03	
Springhill Community Water System	0.02	
Taylor Water System	0.04	

Bossier



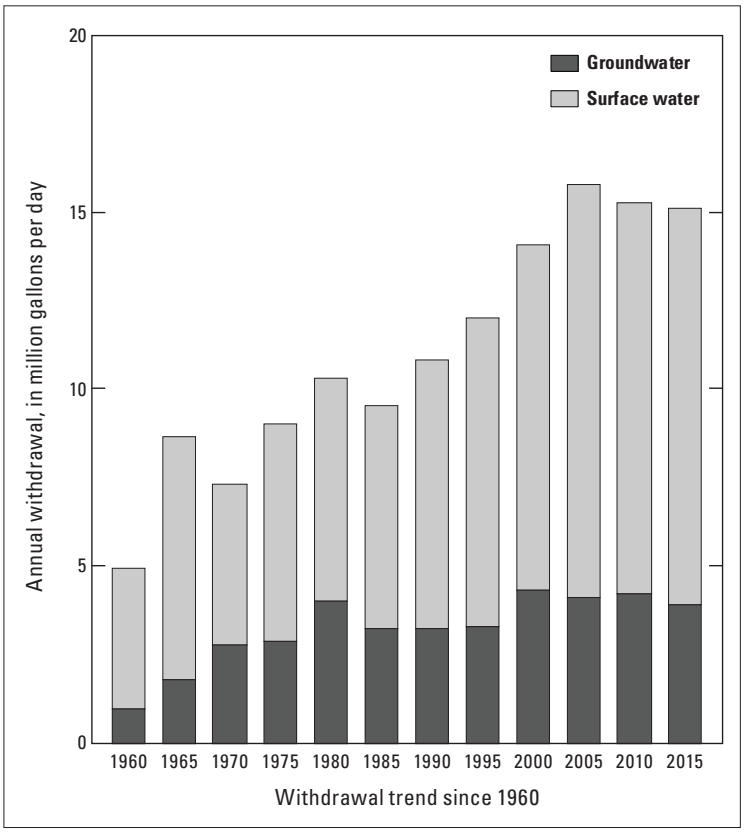
Population: 125,175
Population served by public supply: 111,342
Per capita withdrawals (gal/d): 121
Acres irrigated: 1,478
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	2.42	10.45	12.87
Industrial	0.07	0.25	0.32
Power generation			
Rural domestic	1.11		1.11
Livestock	0.11	0.03	0.14
Rice irrigation			
General irrigation	0.12	0.49	0.62
Aquaculture	0.07		0.07
Total	**3.90**	**11.22**	**15.12**

Withdrawals by Major Industrial Group (Mgal/d)

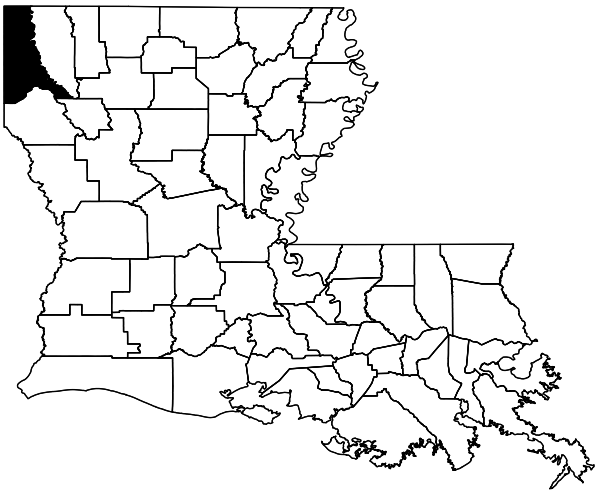
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.03	0.25



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Bellevue Water System	0.15	
Bodcau Water Works, Inc.	0.03	
Bossier City Water System		10.45
Central Bossier Water System	0.19	
Consolidated Water Works Dist. #1	0.24	
Evangeline Oaks Water System	0.01	
Haughton Water System	0.30	
Highland Water Works, LLC	0.09	
Plain Dealing Water System	0.11	
Saint Mary's Water System	0.02	
Sligo Water System, Inc.	0.29	
South Bossier Water System	0.18	
Village Water System	0.77	

Caddo



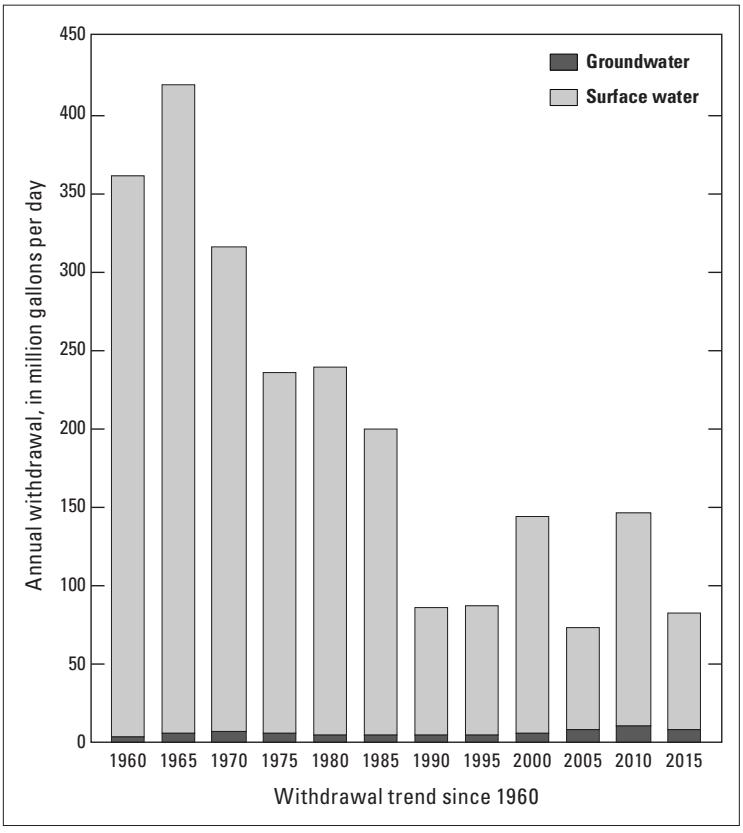
Population: 251,460
Population served by public supply: 233,081
Per capita withdrawals (gal/d): 326
Acres irrigated: 15,361
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.47	41.96	43.43
Industrial	0.03	0.87	0.90
Power generation		30.21	30.21
Rural domestic	1.47		1.47
Livestock	0.04	0.09	0.12
Rice irrigation			
General irrigation	4.57	1.14	5.72
Aquaculture	0.10		0.10
Total	**7.68**	**74.27**	**81.96**

Withdrawals by Major Industrial Group (Mgal/d)

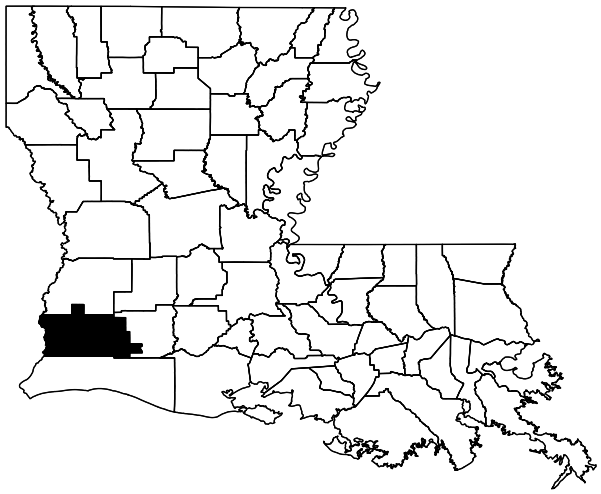
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.03	0.77
29	Petroleum refining		0.10



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Bel-Di-Gil Water System	0.10	
Blanchard Water System		1.11
Caddo Waterworks District #7	0.47	
Deep Woods Utilities	0.07	
Eagle Water Company	0.11	
East Mooringsport Water System		0.02
Evergreen Estates Water System	0.02	
Four Forks Water System	0.04	
Greenwood Water System	0.03	0.47
Hosston Mira Water System	0.04	
Ida Water System	0.01	
Oil City Water Works		0.21
Pine Hills Water Works	0.25	
Rodessa Water System	0.03	
Shreveport Water System		39.80
Vivian Water System		0.36

Calcasieu



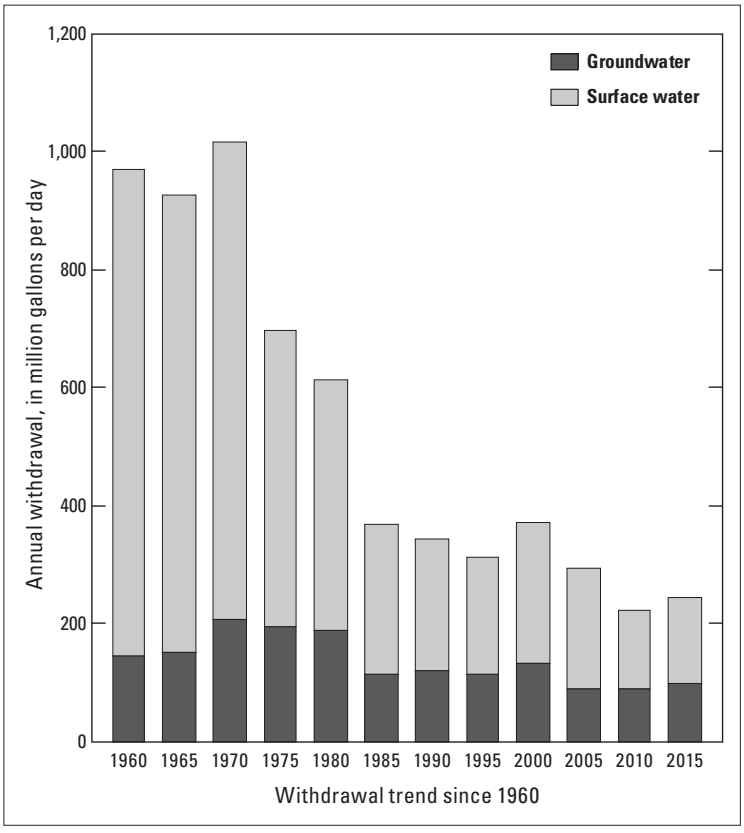
Population: 192,768
Population served by public supply: 174,221
Per capita withdrawals (gal/d): 1,225
Acres irrigated: 13,942
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	27.67		27.67
Industrial	40.60	129.68	170.28
Power generation	6.62	7.99	14.61
Rural domestic	1.97		1.97
Livestock	0.16	0.23	0.39
Rice irrigation	18.73	6.24	24.97
General irrigation	0.61		0.61
Aquaculture	1.95	1.05	3.00
Total	**98.30**	**145.19**	**243.49**

Withdrawals by Major Industrial Group (Mgal/d)

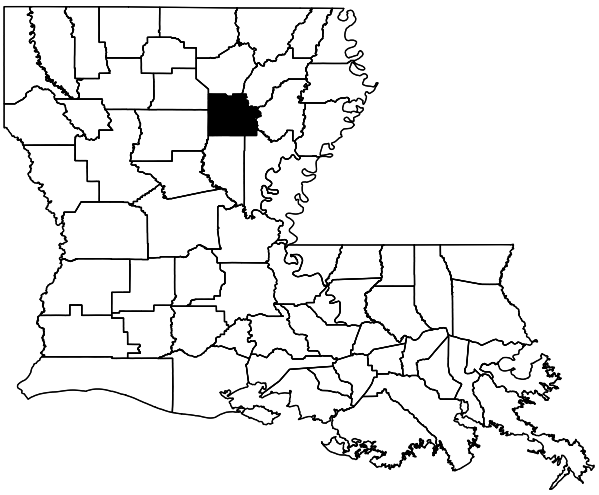
Standard industrial classification		GW	SW
13	Oil and gas extraction		0.01
24	Lumber	0.10	
28	Chemicals	25.79	111.77
29	Petroleum refining	10.97	17.89
30	Rubber and plastics	1.46	
33	Primary metals	1.81	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Calcasieu W. W. District 4	0.47	
Calcasieu W. W. District 5	0.39	
Calcasieu W. W. District 7	0.28	
Calcasieu W. W. District 8	0.80	
Calcasieu W. W. District 9	1.55	
Calcasieu W. W. Dist. 14 of Ward 5	0.19	
County Pines Subdivision W. S.	0.05	
DeQuincy Water System	0.46	
East Park Subdivision	0.01	
Garden Heights Water System	0.05	
Gulf Stream Manor Water System	0.08	
Houston River W. W. District 11	0.49	0.50
Iowa Water System	0.25	
Lake Charles Water System	12.85	
Lake Street Water Company	0.06	
Moss Bluff Water District 1	2.13	
Oak Meadows Water Works	0.03	
Parkspace Water System	0.04	
Quail Ridge Estates Water System	0.06	
Sulphur Water System	5.10	
Utilities Services of Lake Charles	0.01	
Vinton Water System	0.50	
Westlake Water System	1.41	

Caldwell



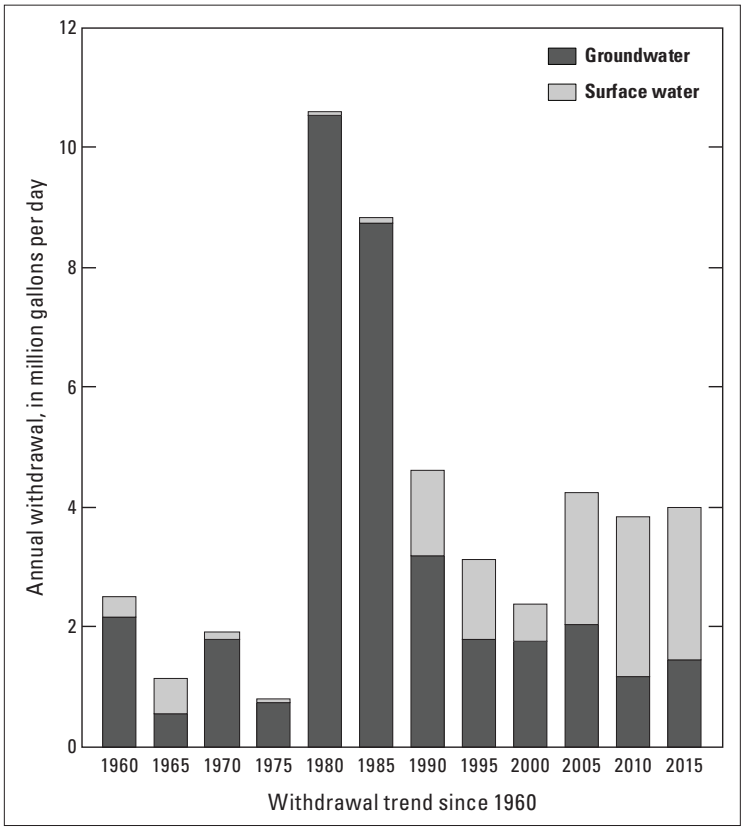
Population: 9,993
Population served by public supply: 9,237
Per capita withdrawals (gal/d): 400
Acres irrigated: 4,943
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.03		1.03
Industrial			
Power generation			
Rural domestic	0.06		0.06
Livestock	0.03	0.03	0.06
Rice irrigation	0.34	0.79	1.13
General irrigation		1.73	1.73
Aquaculture			
Total	**1.45**	**2.55**	**4.00**

Withdrawals by Major Industrial Group (Mgal/d)

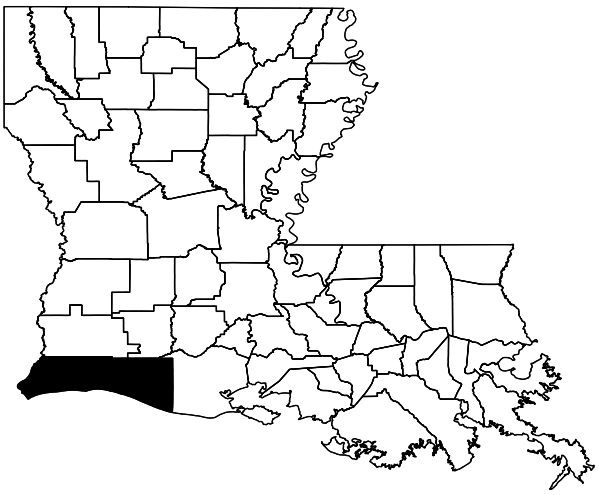
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Clarks Water System	0.10	
Columbia Heights Water Dist.	0.20	
Columbia Water System	0.08	
Cotton Plant Water System	0.04	
East Columbia Water Dist.	0.18	
Grayson Water System	0.15	
Hebert Water System	0.13	
Kelly Water System	0.07	
Vixen Water System East	0.02	
Wards 4 & 5 Water System	0.07	

Cameron



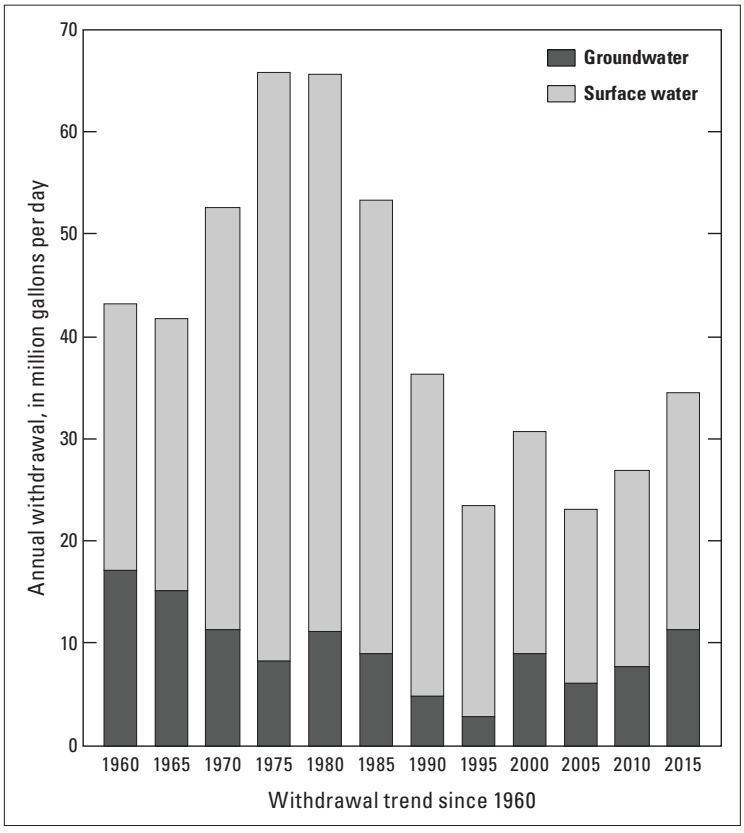
Population: 6,817
Population served by public supply: 5,899
Per capita withdrawals (gal/d): 5,076
Acres irrigated: 11,680
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.50		1.50
Industrial	0.52	8.75	9.27
Power generation			
Rural domestic	0.07		0.07
Livestock	0.04	0.13	0.17
Rice irrigation	9.02	13.52	22.54
General irrigation		0.16	0.16
Aquaculture	0.18	0.71	0.89
Total	**11.33**	**23.27**	**34.60**

Withdrawals by Major Industrial Group (Mgal/d)

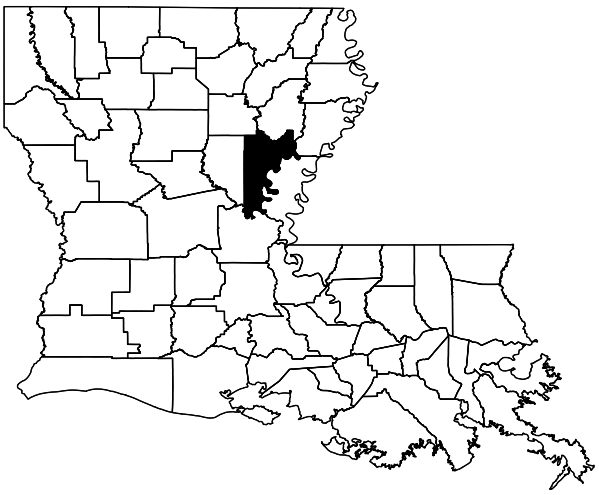
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.10	
29	Petroleum refining		8.75



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Cameron W. W. District 1	0.26	
Cameron W. W. District 2	0.40	
Cameron W. W. District 7	0.07	
Cameron W. W. District 9	0.17	
Cameron W. W. District 10	0.14	
Cameron W. W. District 11	0.46	

Catahoula



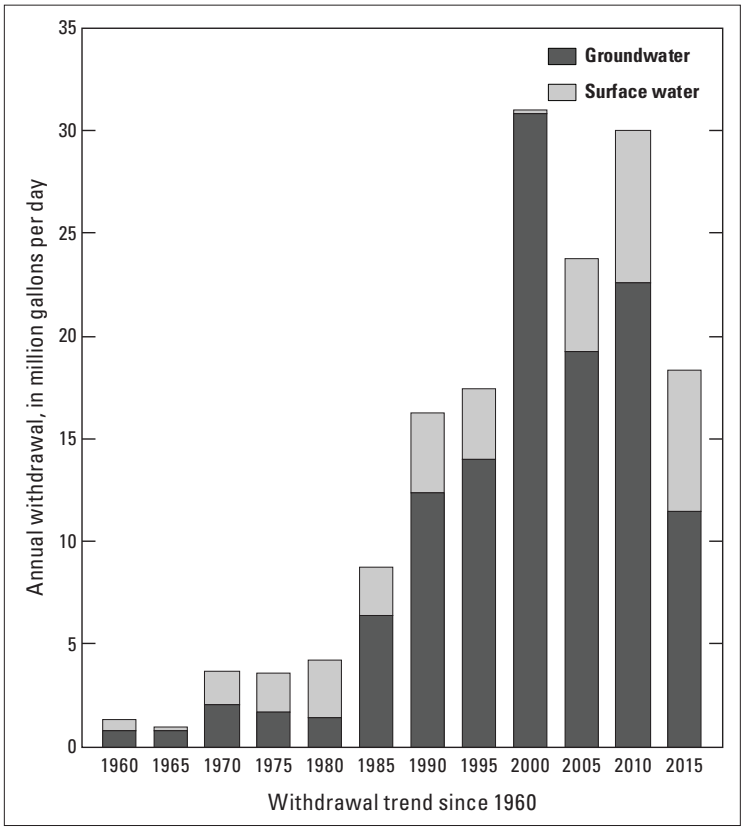
Population: 10,147
Population served by public supply: 8885
Per capita withdrawals (gal/d): 1810
Acres irrigated: 35,512
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.17		1.17
Industrial			
Power generation			
Rural domestic	0.10		0.10
Livestock	0.01	0.03	0.04
Rice irrigation	2.63		2.63
General irrigation	6.86	6.86	13.73
Aquaculture	0.70		0.70
Total	**11.47**	**6.89**	**18.36**

Withdrawals by Major Industrial Group (Mgal/d)

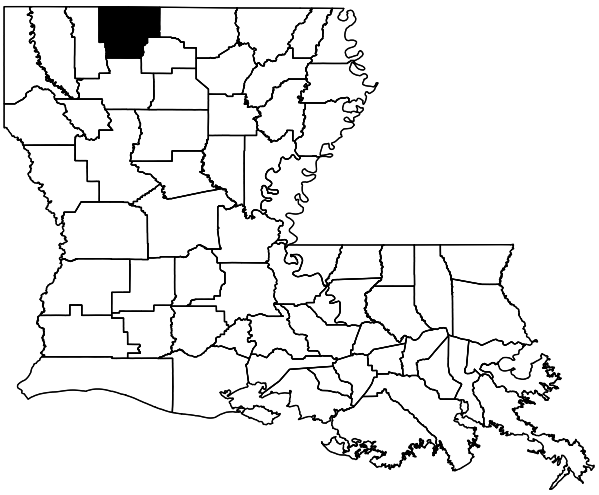
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Black River Water System	0.16	
Enterprise W. W. Dist. 1	0.09	
Harrisonburg Water System	0.09	
Jonesville Water System	0.25	
Leland Water System	0.05	
Maitland W. W. Dist.	0.04	
Manifest Rhinehart W. S.	0.15	
Sandy Lake Water System	0.22	
Sicily Island Water System	0.06	
Whitehall Water System	0.06	

Claiborne



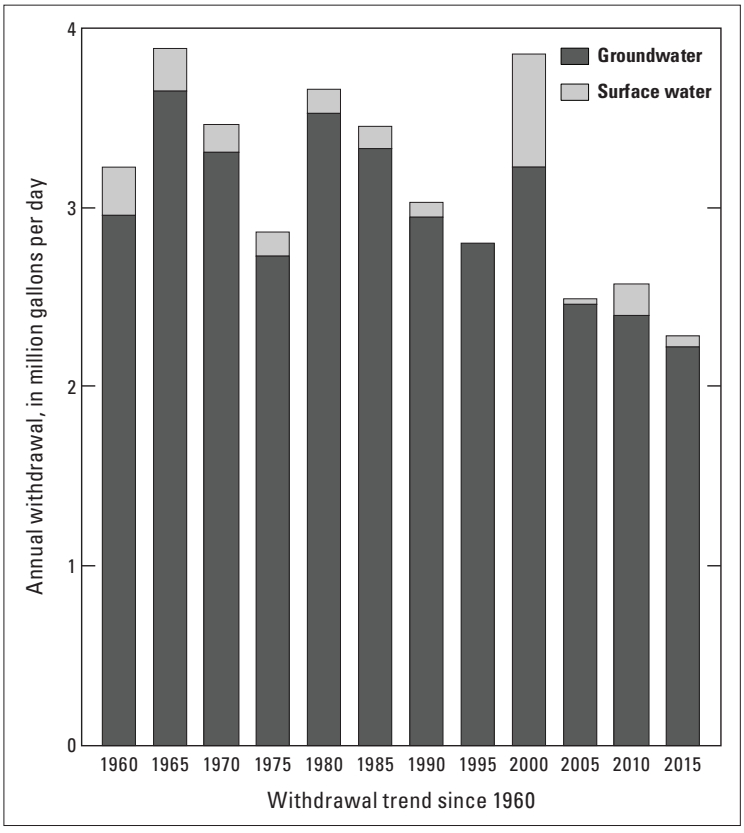
Population: 16,295
Population served by public supply: 14,232
Per capita withdrawals (gal/d): 140
Acres irrigated: 143
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.96		1.96
Industrial		0.02	0.02
Power generation			
Rural domestic	0.17		0.17
Livestock	0.04	0.04	0.08
Rice irrigation			
General irrigation	0.05		0.05
Aquaculture			
Total	**2.22**	**0.06**	**2.28**

Withdrawals by Major Industrial Group (Mgal/d)

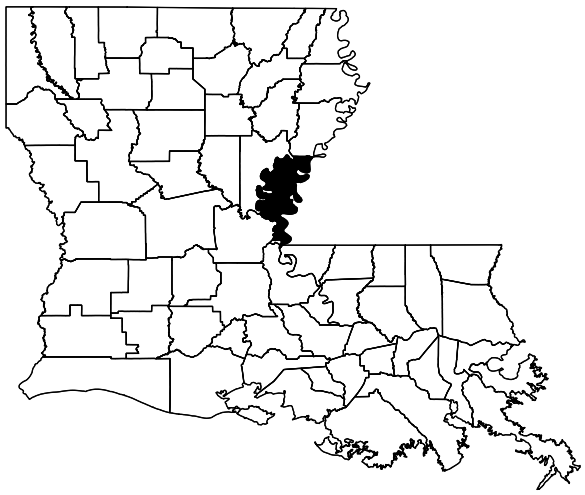
Standard industrial classification		GW	SW
13	Oil and gas extraction		0.02



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Athens Water System	0.03	
Central Claiborne Water System	0.26	
Claiborne Ward 9 Water System	0.02	
Haynesville Water System	0.45	
Homer Water System	0.63	
Junction City Water System	0.03	
Leatherman Creek Water System	0.02	
Lisbon Water System	0.03	
Middle Fork Water System	0.02	
Norton Shop Water System	0.01	
Pine Hill Water System	0.07	
South Claiborne Water System	0.13	
Summerfield Water System	0.11	

Concordia



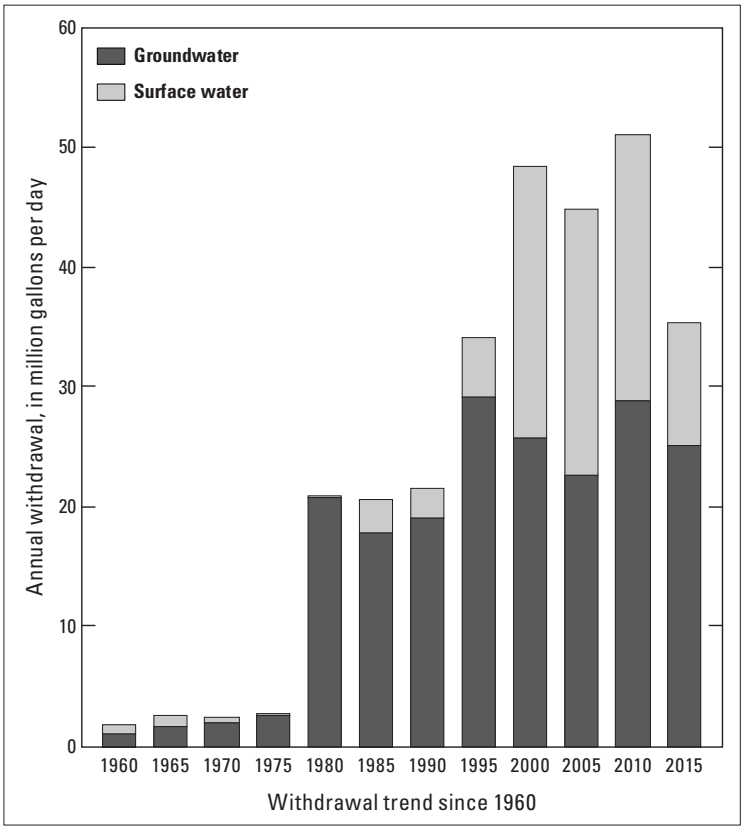
Population: 20,142
Population served by public supply: 19,353
Per capita withdrawals (gal/d): 1,754
Acres irrigated: 42,967
Hydroelectric power instream use (Mgal/d): 61,070

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	2.11	0.52	2.62
Industrial			
Power generation		3.57	3.57
Rural domestic	0.06		0.06
Livestock	0.04	0.01	0.05
Rice irrigation	8.47	4.56	13.02
General irrigation	13.49	1.50	14.99
Aquaculture	0.96	0.05	1.01
Total	**25.13**	**10.20**	**35.33**

Withdrawals by Major Industrial Group (Mgal/d)

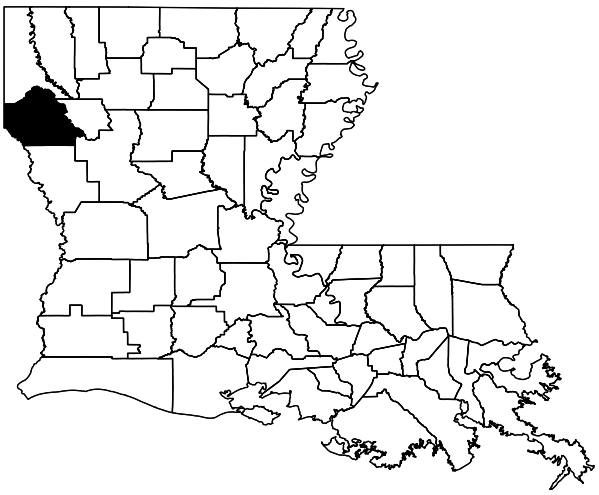
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Clayton Water System	0.10	
Concordia W. W. Dist. 1	0.76	
Ferriday Water System		0.52
Lake St. John Water Dist. No. 1	0.13	
Monterey Rural Water System	0.24	
Ridgecrest Water System	0.08	
Vidalia Water System	0.80	

De Soto



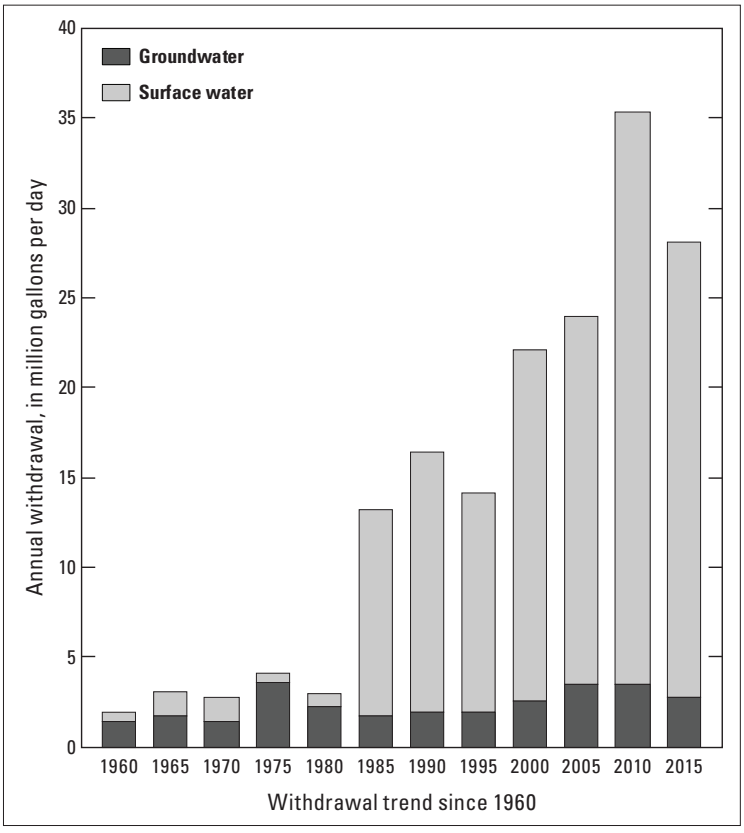
Population: 27,052
Population served by public supply: 19,538
Per capita withdrawals (gal/d): 1,039
Acres irrigated: 277
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.24	1.84	3.07
Industrial	0.76	18.22	18.98
Power generation		5.13	5.13
Rural domestic	0.60		0.60
Livestock	0.14	0.05	0.19
Rice irrigation			
General irrigation	0.01	0.12	0.13
Aquaculture			
Total	**2.75**	**25.35**	**28.10**

Withdrawals by Major Industrial Group (Mgal/d)

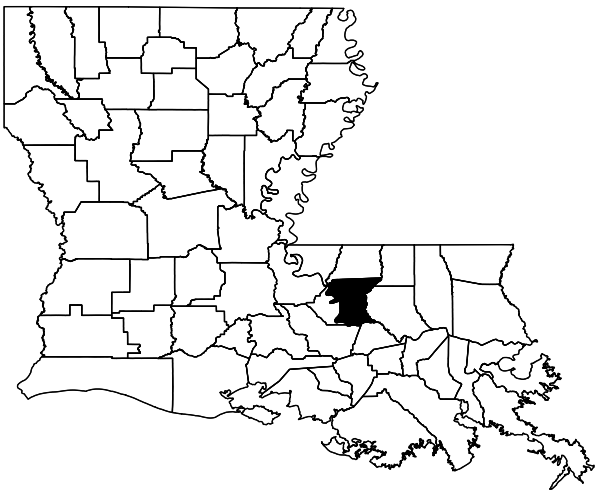
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.19	1.58
26	Paper products	0.57	16.64



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Bayou Pierre Water System	0.10	
De Soto Parish W. W. Dist.No. 1		0.44
East De Soto Water System	0.11	
Grand Cane Water System	0.07	
Keatchie Water System	0.25	
Logansport Water System		0.32
Mansfield Water System		1.07
North De Soto Water System	0.38	
Rambin-Wallace Water System	0.09	
South De Soto Water System	0.04	
South Mansfield Water System	0.20	

East Baton Rouge



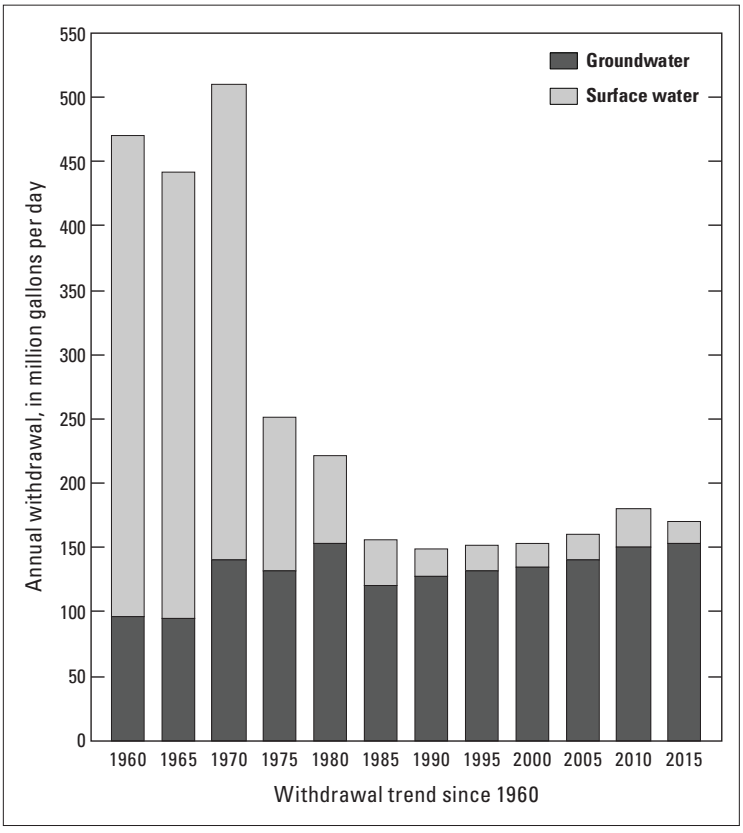
Population: 446,753
Population served by public supply: 443,769
Per capita withdrawals (gal/d): 380
Acres irrigated: 184
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	72.21		72.21
Industrial	72.59	16.68	89.27
Power generation	7.40		7.40
Rural domestic	0.24		0.24
Livestock	0.07	0.01	0.08
Rice irrigation			
General irrigation	0.39		0.39
Aquaculture	0.22		0.22
Total	**153.11**	**16.69**	**169.80**

Withdrawals by Major Industrial Group (Mgal/d)

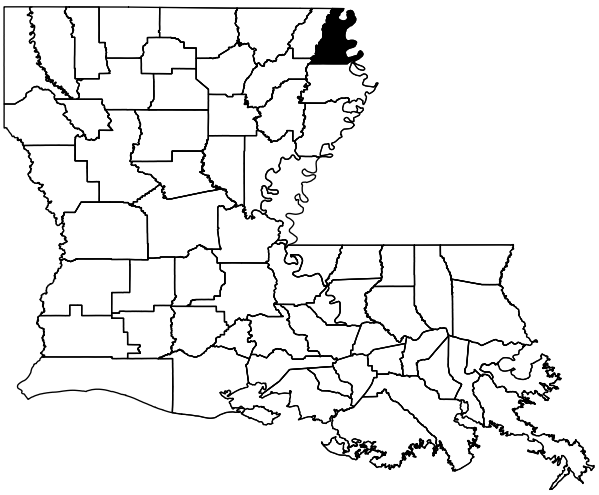
Standard industrial classification		GW	SW
20	Food products	0.46	
26	Paper products	37.58	
28	Chemicals	25.73	
29	Petroleum refining	8.55	16.68
30	Rubber and plastics	0.17	
33	Primary metals	0.07	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Baker Utilities	1.63	
Baton Rouge Water Company	56.25	
Bellingrath Water Company, Inc.	0.46	
Parish Water Company	11.42	
Red Oak Water Company	0.27	
Zachary Water System	2.08	

East Carroll



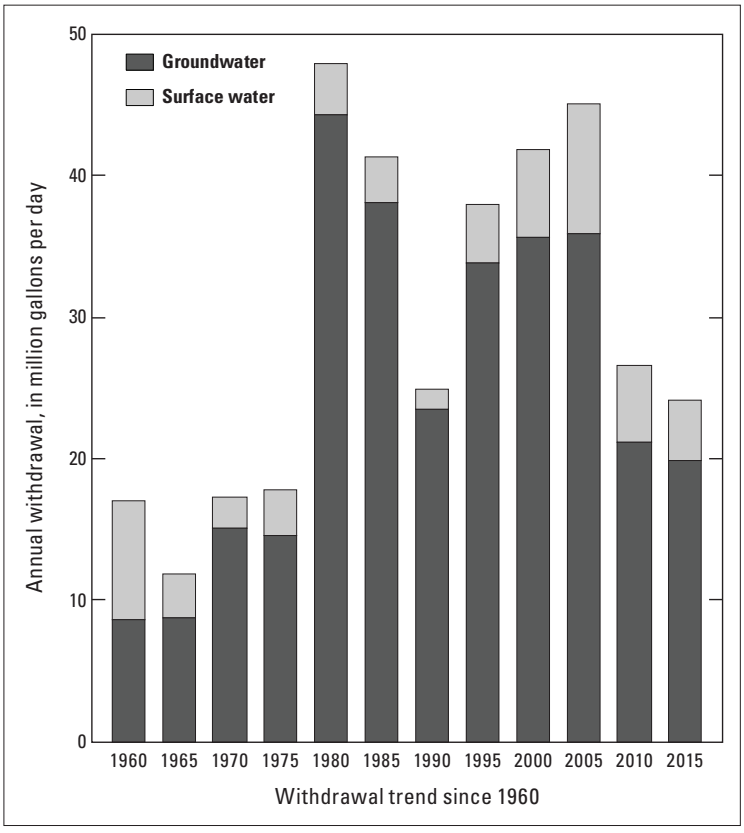
Population: 7,307
Population served by public supply: 7,125
Per capita withdrawals (gal/d): 3,301
Acres irrigated: 48,640
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	0.91		0.91
Industrial			
Power generation			
Rural domestic	0.01		0.01
Livestock	0.00	0.01	0.01
Rice irrigation	3.65	0.41	4.06
General irrigation	15.30	3.82	19.12
Aquaculture			
Total	**19.88**	**4.24**	**24.12**

Withdrawals by Major Industrial Group (Mgal/d)

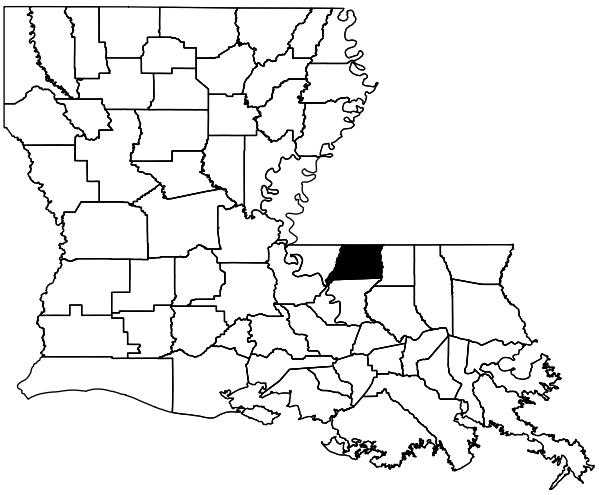
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Lake Providence Water System	0.91	

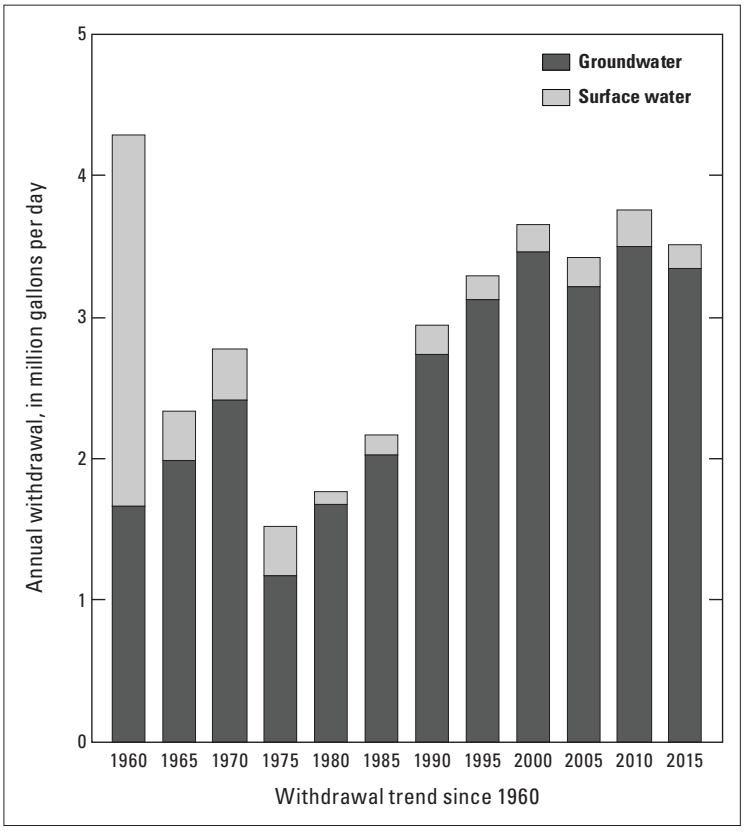
East Feliciana



Population: 19,696
Population served by public supply: 16,355
Per capita withdrawals (gal/d): 178
Acres irrigated: 611
Hydroelectric power instream use (Mgal/d): 0

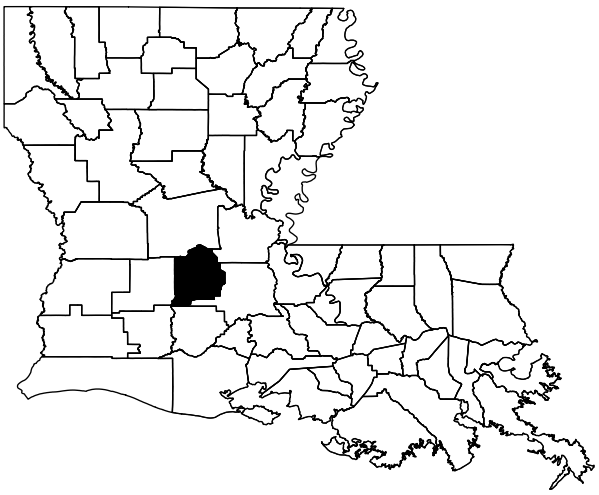
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	2.84		2.84
Industrial	0.03		0.03
Power generation			
Rural domestic	0.27		0.27
Livestock	0.01	0.10	0.12
Rice irrigation			
General irrigation	0.19	0.06	0.26
Aquaculture			
Total	**3.34**	**0.17**	**3.51**

Withdrawals by Major Industrial Group (Mgal/d)		
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Clinton Water System	0.24	
East Feliciana Rural Water System	0.83	
East Feliciana Water District #1	0.07	
East Feliciana Water District #7	0.64	
Jackson Water System	0.17	
Norwood Water System	0.04	
Slaughter Water System	0.16	

Evangeline



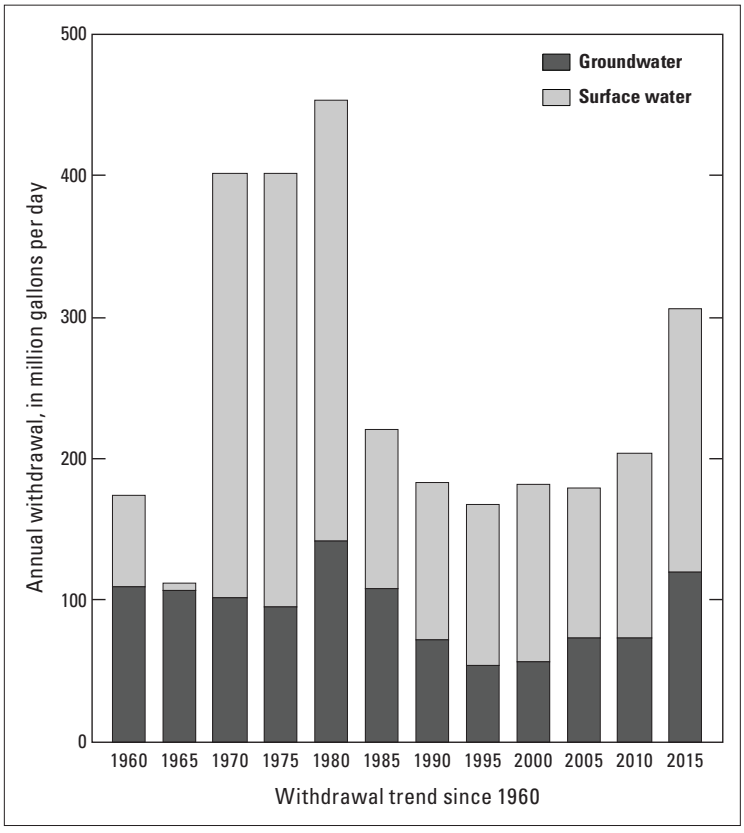
Population: 33,743
Population served by public supply: 29,531
Per capita withdrawals (gal/d): 9,054
Acres irrigated: 49,375
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	6.50		6.50
Industrial	1.95		1.95
Power generation	0.16	170.51	170.67
Rural domestic	0.34		0.34
Livestock	0.12	0.04	0.17
Rice irrigation	74.70	8.30	83.00
General irrigation	2.97	0.33	3.30
Aquaculture	33.64	5.94	39.57
Total	**120.39**	**185.11**	**305.50**

Withdrawals by Major Industrial Group (Mgal/d)

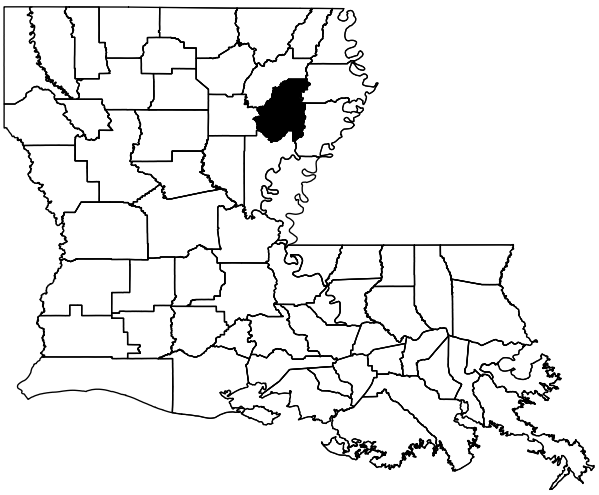
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.81	
28	Chemicals	1.09	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Bayou Des Cannes W. S.	0.66	
Chataignier Water System	0.11	
East Side Water System	0.42	
Evangeline Water Dist. 1	0.17	
Mamou Road Water Dist.	0.22	
Mamou Water System	1.12	
Point Blue Water System	0.23	
Reddell-Vidrine Water Dist.	0.18	
Savoy-Swords Water System	0.55	
Te Mamou Water Dist.	0.32	
Turkey Creek Water System	0.33	
Ville Platte Water System	2.13	
Ward 4 Water System	0.05	
Ward 5 W. W. District 1	0.04	

Franklin



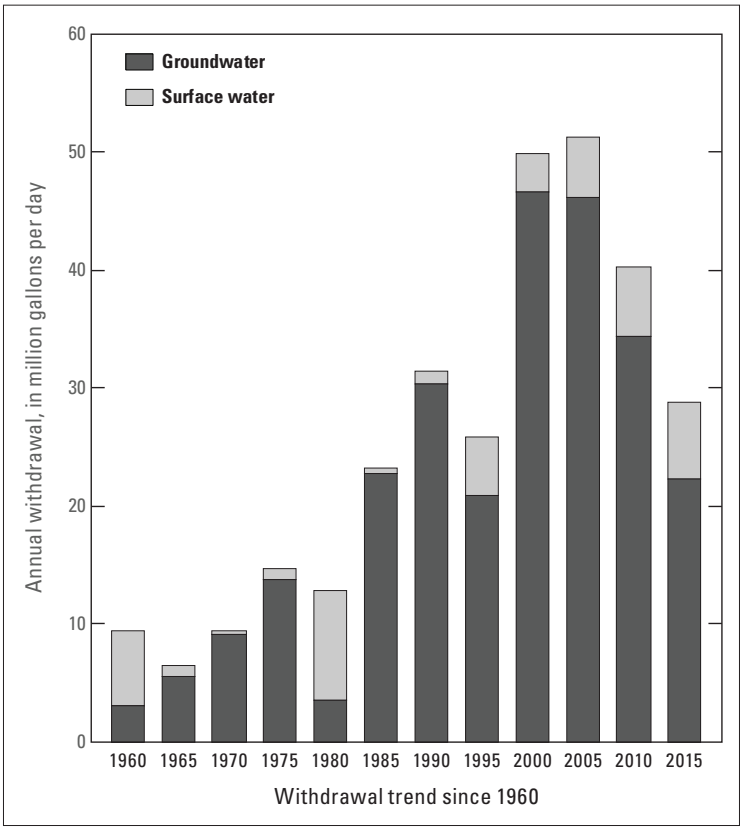
Population: 20,410
Population served by public supply: 12,443
Per capita withdrawals (gal/d): 1,415
Acres irrigated: 54,280
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.13		1.13
Industrial	0.68		0.68
Power generation			
Rural domestic	0.64		0.64
Livestock	0.14		0.14
Rice irrigation	1.15	4.60	5.75
General irrigation	18.12	2.01	20.13
Aquaculture	0.40		0.40
Total	**22.26**	**6.61**	**28.87**

Withdrawals by Major Industrial Group (Mgal/d)

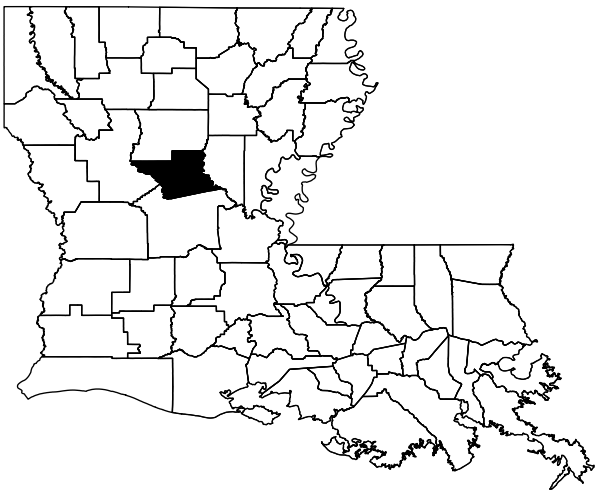
Standard industrial classification		GW	SW
20	Food products	0.15	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
N. Franklin Water Works	0.40	
Turkey Creek Water System	0.28	
West Winnsboro Water System	0.36	
Wisner Water System	0.10	

Grant



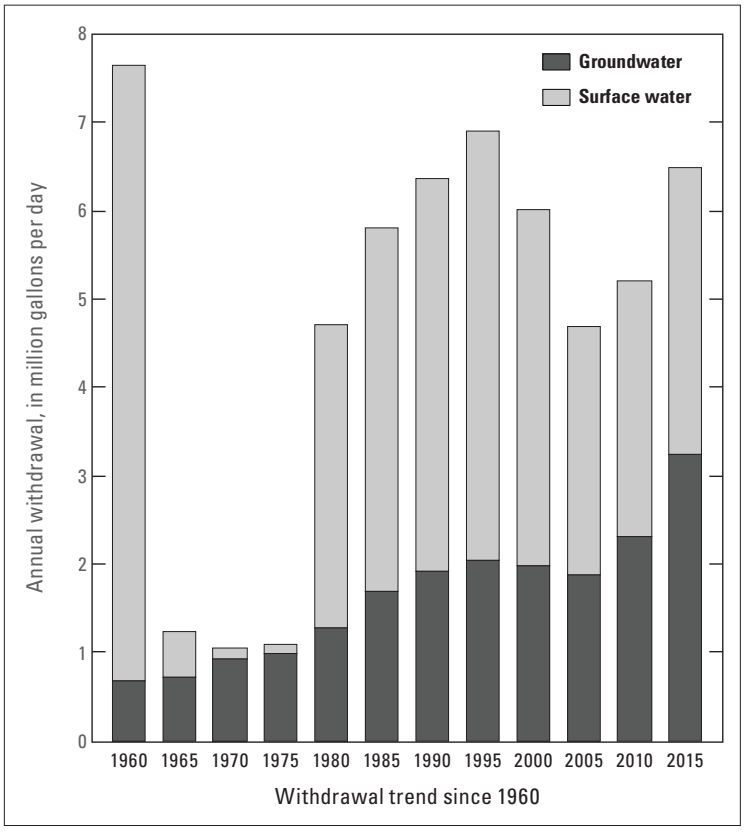
Population: 22,343
Population served by public supply: 19,585
Per capita withdrawals (gal/d): 290
Acres irrigated: 3,829
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	2.91	1.63	4.54
Industrial	0.08		0.08
Power generation			
Rural domestic	0.22		0.22
Livestock	0.02	0.03	0.05
Rice irrigation			
General irrigation		1.60	1.60
Aquaculture			
Total	**3.23**	**3.26**	**6.49**

Withdrawals by Major Industrial Group (Mgal/d)

Standard industrial classification		GW	SW
24	Lumber	0.06	
28	Chemicals	0.02	

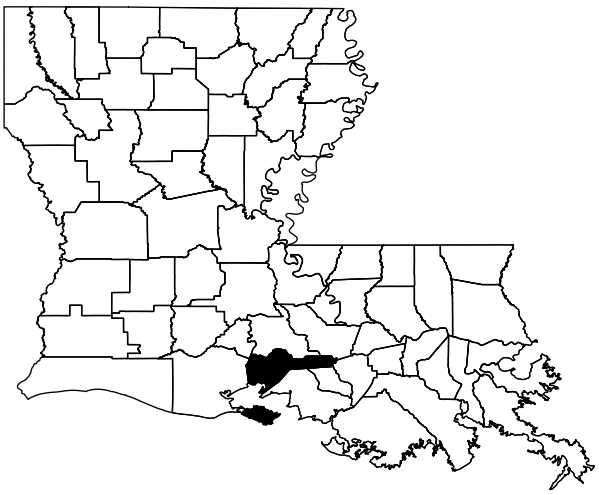


Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Central Grant Water System	0.41	
Colfax Water System	0.58	
Dry Prong Water System	0.09	
Grant Zone 2 Water System	0.08	
Jordan Hill\Red Hill W. W.	0.06	
Montgomery Water System	0.14	
Pollock Area Water System	0.28	
Pollock Water System	0.62	
Rapides Parish W. W. Dist. 3		1.63
South Grant Water Corp.	0.37	
Southeast Grant Water System	0.05	
West Grant Water Assoc.	0.23	

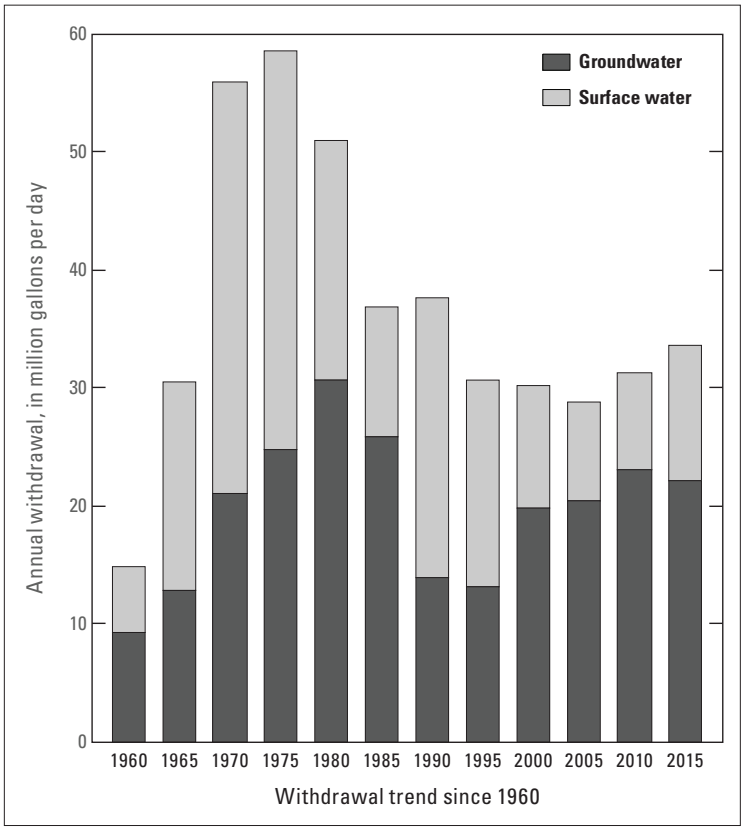
Iberia

Population: 74,103
Population served by public supply: 61,037
Per capita withdrawals (gal/d): 453
Acres irrigated: 2,384
Hydroelectric power instream use (Mgal/d): 0



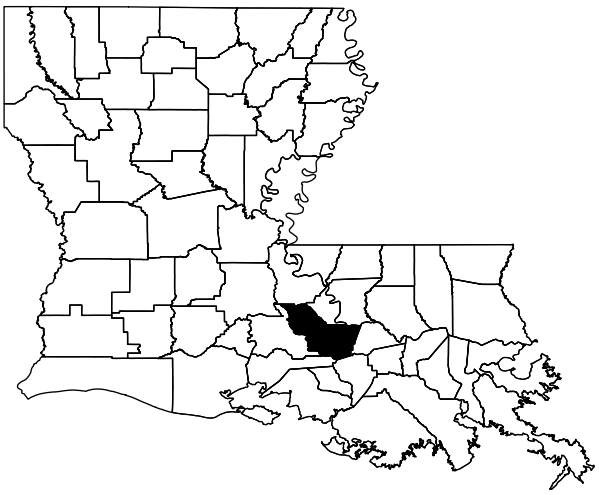
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	8.62		8.62
Industrial	3.03	7.46	10.50
Power generation			
Rural domestic	1.05		1.05
Livestock	0.04	0.01	0.05
Rice irrigation	0.25	1.85	2.11
General irrigation	0.62		0.62
Aquaculture	8.50	2.12	10.62
Total	**22.11**	**11.45**	**33.56**

Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
20	Food products	0.93	0.19
28	Chemicals	0.50	7.27
32	Glass, clay, and concrete	0.01	
38	Instrumentation	1.59	



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Bayou Teche Water Works	0.76	
Jeanerette Water System	1.25	
Loreauville Water System	0.08	
New Iberia Water System	5.64	
Water Works District #3	0.88	

Iberville



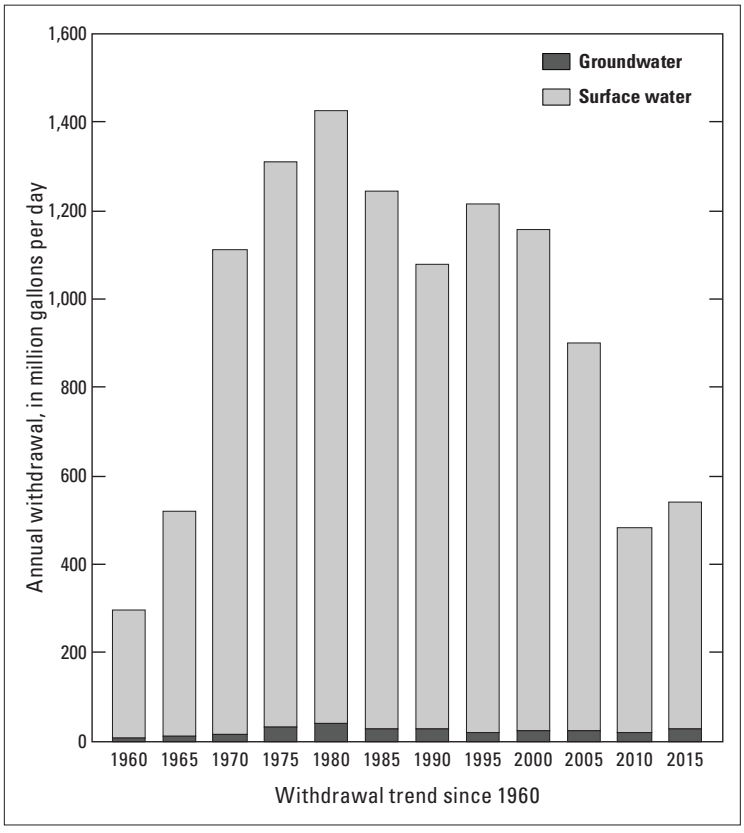
Population: 33,095
Population served by public supply: 31,163
Per capita withdrawals (gal/d): 16,362
Acres irrigated: 3,443
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.38	0.60	1.99
Industrial	24.43	365.83	390.26
Power generation	0.99	138.04	139.02
Rural domestic	0.15		0.15
Livestock	0.04	0.01	0.06
Rice irrigation			
General irrigation	0.89	0.59	1.48
Aquaculture	1.71	6.85	8.56
Total	**29.59**	**511.92**	**541.51**

Withdrawals by Major Industrial Group (Mgal/d)

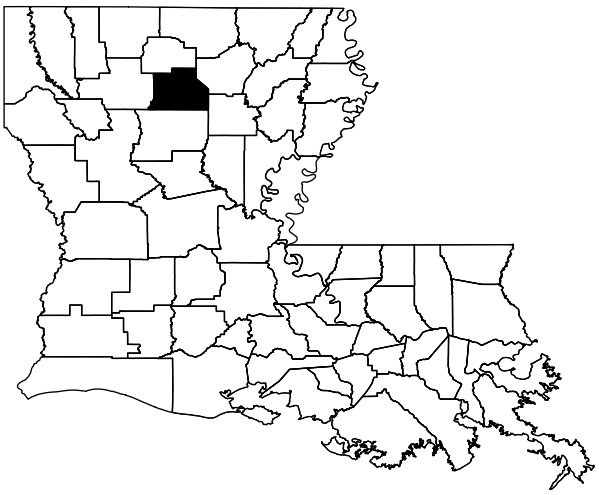
Standard industrial classification		GW	SW
13	Oil and gas extraction		0.01
20	Food products	11.61	
28	Chemicals	12.80	365.83
29	Petroleum refining	0.01	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Iberville W. W. Dist. 3	0.39	0.60
Maringouin Water System	0.39	
North Iberville Water System	0.24	
Rosedale Water System	0.06	
White Castle Water System	0.30	

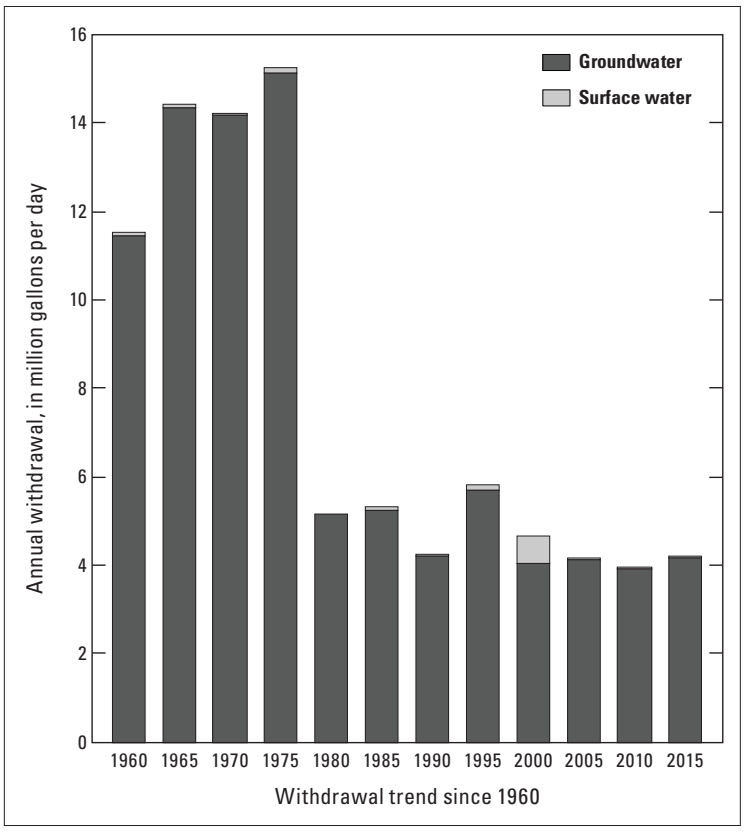
Jackson



Population: 15,858
Population served by public supply: 13,977
Per capita withdrawals (gal/d): 263
Acres irrigated:
Hydroelectric power instream use (Mgal/d): 0

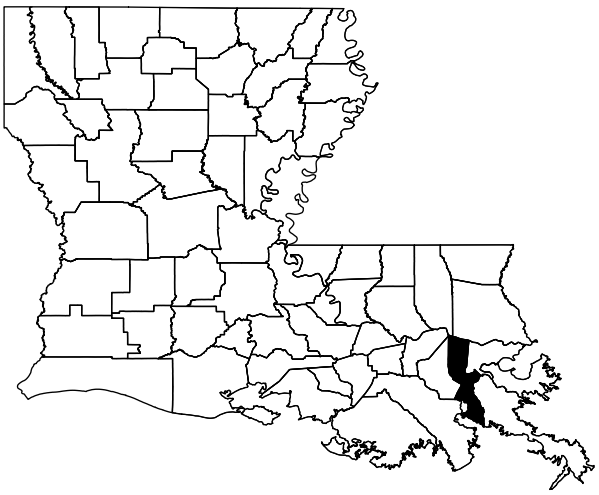
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.73		1.73
Industrial	2.27	0.00	2.27
Power generation			
Rural domestic	0.15		0.15
Livestock	0.00	0.03	0.03
Rice irrigation			
General irrigation			
Aquaculture			
Total	**4.15**	**0.03**	**4.18**

Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
26	Paper products	2.27	



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Bear Creek Water System	0.03	
Chatham Water System	0.06	
East Hodge Water System	0.07	
Eros Community Water System	0.04	
Eros Water System	0.02	
Hodge Water System	0.25	
Jonesboro Water System	0.68	
McDonald Water System	0.12	
New Hope St. Claire W. S.	0.02	
North Hodge Water System	0.03	
Punkin Center Hilltop W. S.	0.14	
Quitman Water System	0.05	
Robinson Chapel Water System	0.01	
Shady Grove Water System	0.01	
Southeast Hodge W. S.	0.01	
Spring Creek Water & Sew.	0.02	
Vixen Water System	0.01	
Walker Community Water System	0.02	
Weston Water System Inc.	0.15	

Jefferson



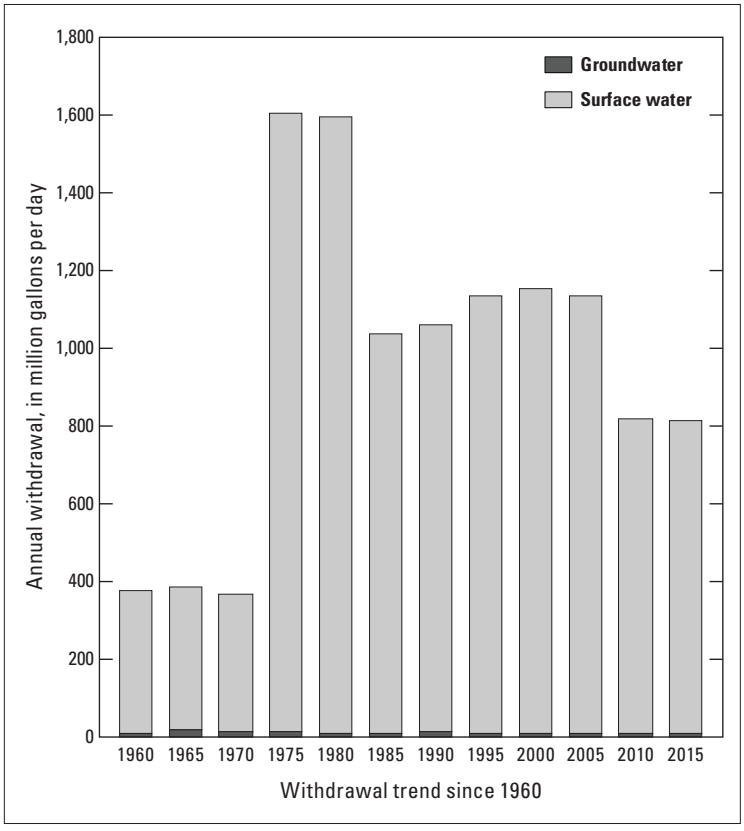
Population: 436,275
Population served by public supply: 435,86
Per capita withdrawals (gal/d): 1,864
Acres irrigated: 0
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply		61.79	61.79
Industrial	1.63	4.83	6.45
Power generation	4.79	739.98	744.77
Rural domestic	0.03		0.03
Livestock		0.04	0.04
Rice irrigation			
General irrigation	0.02	0.01	0.02
Aquaculture			
Total	**6.47**	**806.64**	**813.11**

Withdrawals by Major Industrial Group (Mgal/d)

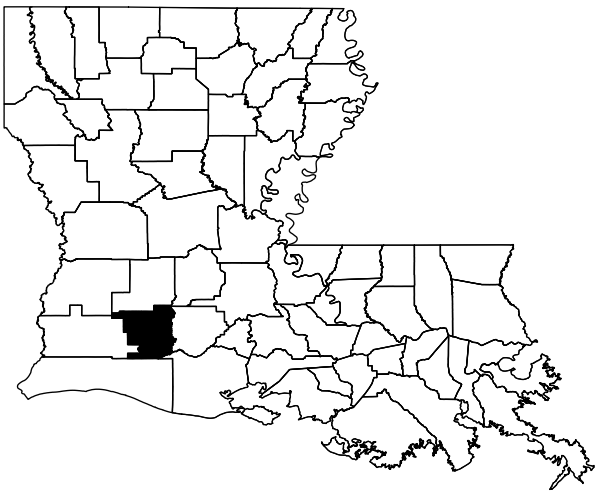
Standard industrial classification		GW	SW
20	Food products	0.21	
28	Chemicals		4.83
37	Transportation equipment	1.41	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
East Jefferson W. W. Dist. No. 1		35.44
Gretna Waterworks		3.09
West Jefferson W. W. Dist. No. 2		22.84
Westwego Water System		0.44

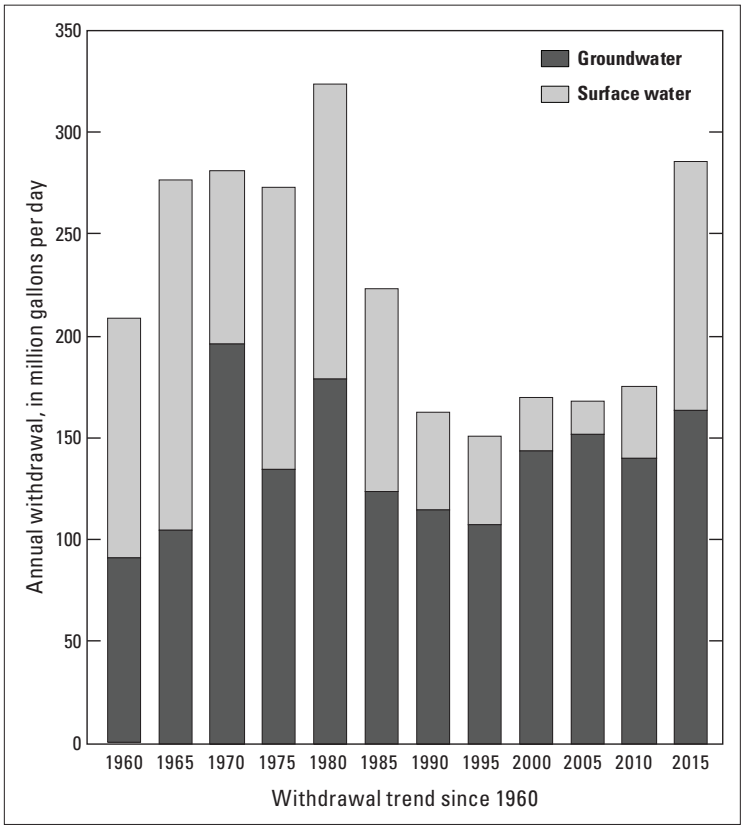
Jefferson Davis



Population: 31,439
Population served by public supply: 26,624
Per capita withdrawals (gal/d): 9,082
Acres irrigated: 81,432
Hydroelectric power instream use (Mgal/d): 0

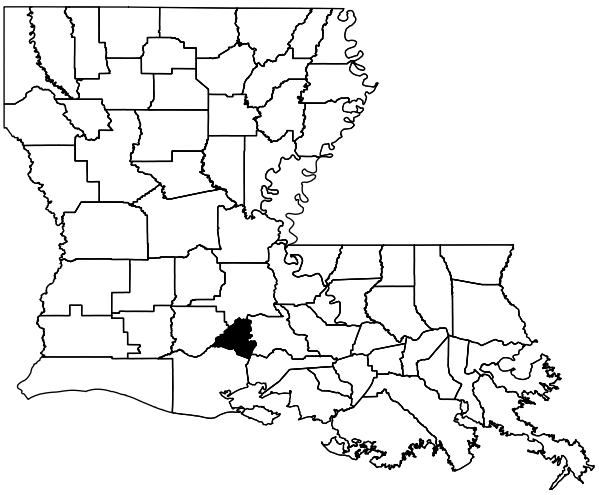
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	3.82		3.82
Industrial			
Power generation			
Rural domestic	0.39		0.39
Livestock	0.02		0.02
Rice irrigation	108.31	46.42	154.72
General irrigation	0.97	0.65	1.62
Aquaculture	49.99	74.98	124.97
Total	**163.50**	**122.05**	**285.54**

Withdrawals by Major Industrial Group (Mgal/d)		
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Fenton Water System	0.03	
Jefferson Davis Central W. W. Dist.	0.46	
Jefferson Davis W. & S. Comm.	0.64	
Jefferson Davis W. W. District 4	0.31	
Jennings Water System	1.62	
Lake Arthur Water System	0.36	
Welsh Water System	0.39	

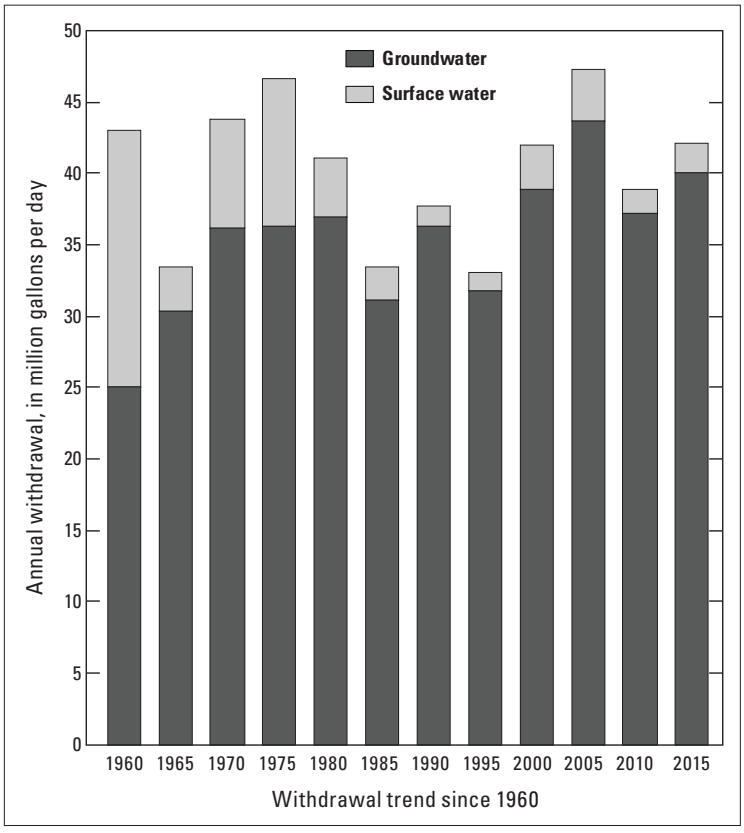
Lafayette



Population: 240,098
Population served by public supply: 206,880
Per capita withdrawals (gal/d): 175
Acres irrigated: 4,119
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	25.44		25.44
Industrial	0.01		0.01
Power generation			
Rural domestic	2.66		2.66
Livestock	0.11		0.11
Rice irrigation	4.94	1.24	6.18
General irrigation	0.37	0.06	0.43
Aquaculture	6.56	0.73	7.29
Total	**40.09**	**2.03**	**42.12**

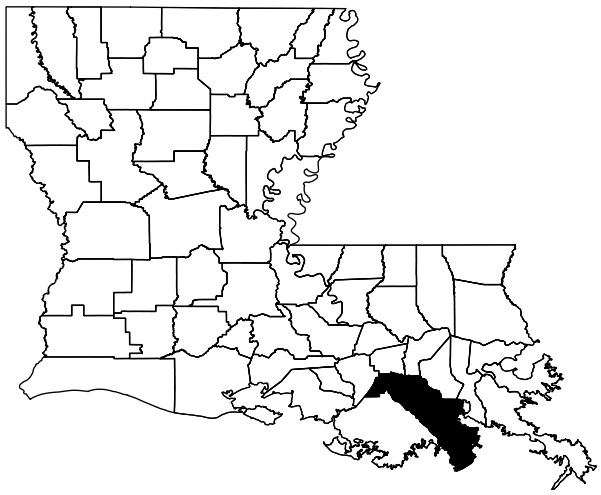
Withdrawals by Major Industrial Group (Mgal/d)		
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Broussard Water System	0.53	
Carencro Water System	0.68	
Duson Water System	0.16	
Lafayette Utilities System	23.34	
Milton Water System, Inc.	0.12	
Shady Oaks Estates Water System	0.02	
Total Environmental Solutions, Inc.	0.32	
Village Quest Subdivision W. S.	0.02	
Youngsville Water System	0.03	

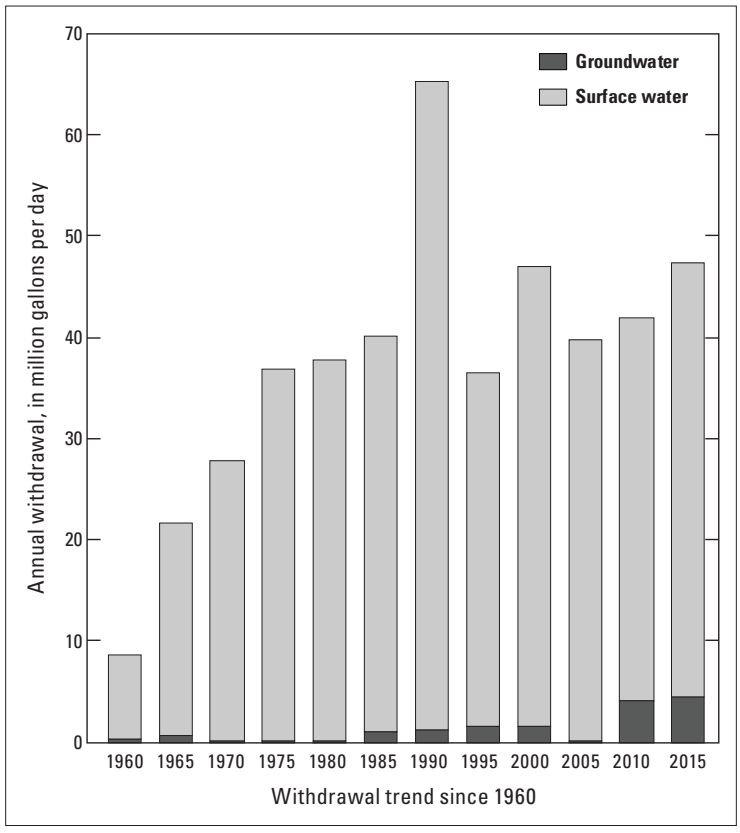
Lafourche

Population: 98,325
Population served by public supply: 98,084
Per capita withdrawals (gal/d): 483
Acres irrigated: 1,344
Hydroelectric power instream use (Mgal/d): 0



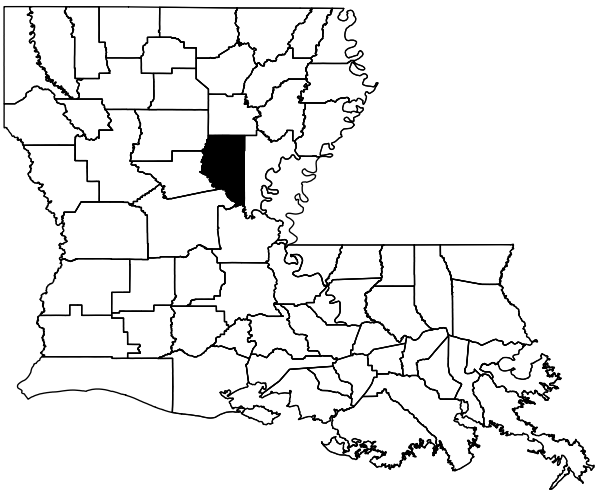
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply		25.66	25.66
Industrial	1.04	3.50	4.54
Power generation			
Rural domestic	0.02		0.02
Livestock	0.06	0.06	0.11
Rice irrigation			
General irrigation		0.58	0.58
Aquaculture	3.31	13.23	16.54
Total	**4.42**	**43.03**	**47.45**

Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
20	Food products		3.50
28	Chemicals	1.04	



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Lafourche Water Dist. No. 1		10.38
Terrebonne W. W. Dist. No. 1		12.37
Thibodaux Water System		2.91

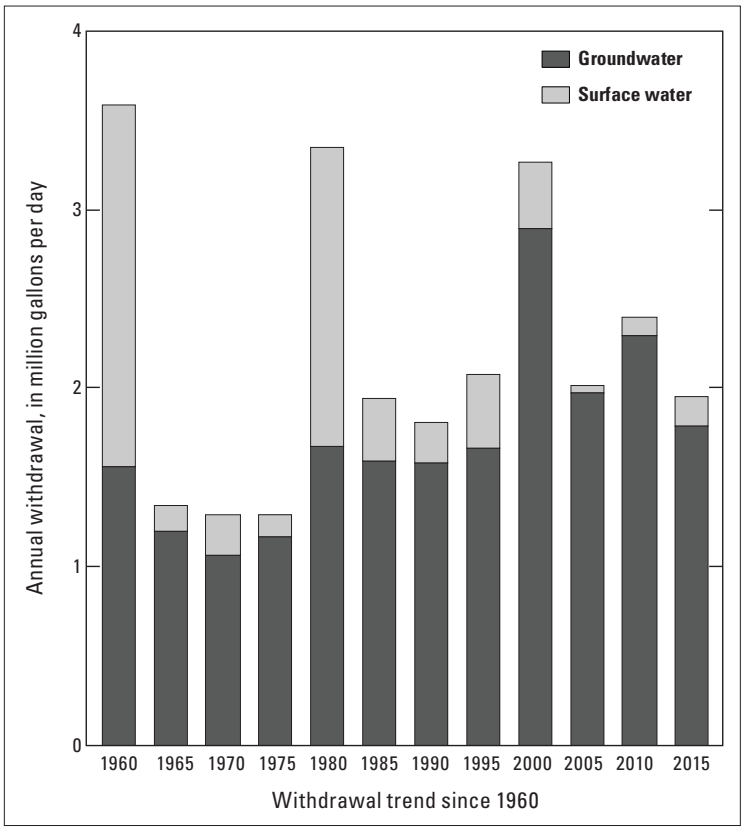
La Salle



Population: 14,974
Population served by public supply: 14,262
Per capita withdrawals (gal/d): 131
Acres irrigated: 360
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.72		1.72
Industrial		0.00	0.00
Power generation			
Rural domestic	0.06		0.06
Livestock	0.00	0.02	0.02
Rice irrigation			
General irrigation		0.15	0.15
Aquaculture			
Total	**1.79**	**0.17**	**1.95**

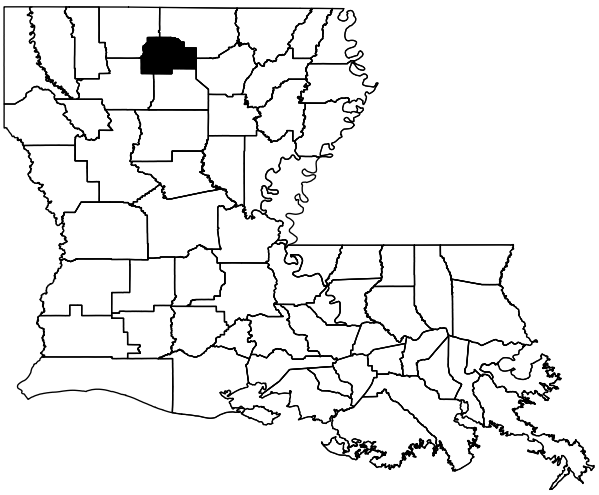
Withdrawals by Major Industrial Group (Mgal/d)		
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Belah-Fellowship Water System	0.23	
East Jena Water System	0.11	
Jena Water System	0.52	
La Salle W. W. Dist. 1	0.32	
Nebo Water System	0.06	
Olla Water System	0.20	
Rogers Community Water System	0.02	
Summerville-Rosefield Water	0.08	
Tullos Water System	0.10	
Urania Water System	0.08	

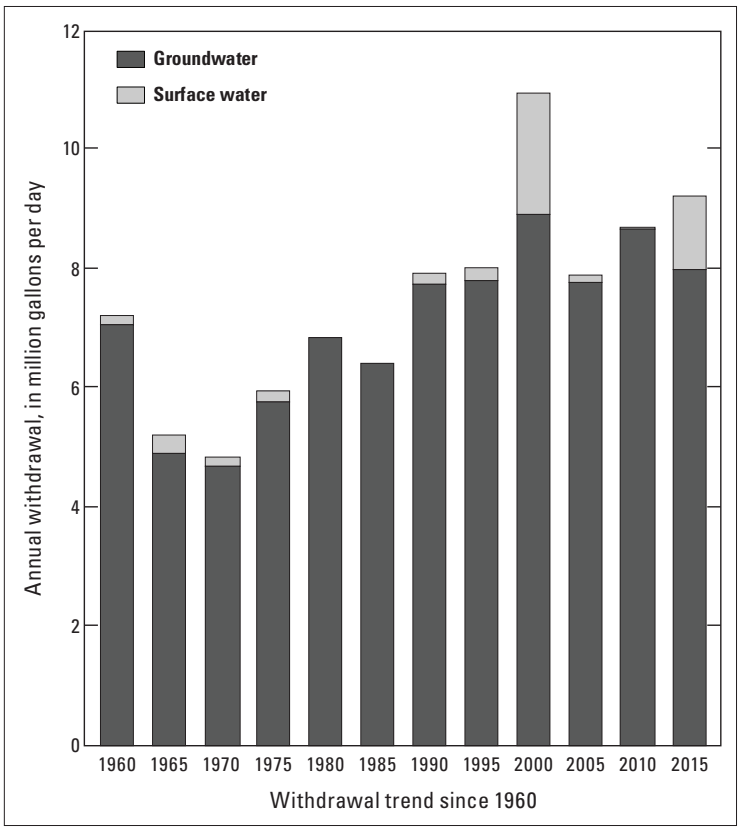
Lincoln

Population: 47,774
Population served by public supply: 45,424
Per capita withdrawals (gal/d): 194
Acres irrigated: 2
Hydroelectric power instream use (Mgal/d): 0



Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	7.20		7.20
Industrial	0.62	1.17	1.78
Power generation			
Rural domestic	0.19		0.19
Livestock	0.01	0.07	0.08
Rice irrigation			
General irrigation	0.00	0.00	0.00
Aquaculture			
Total	**8.01**	**1.24**	**9.26**

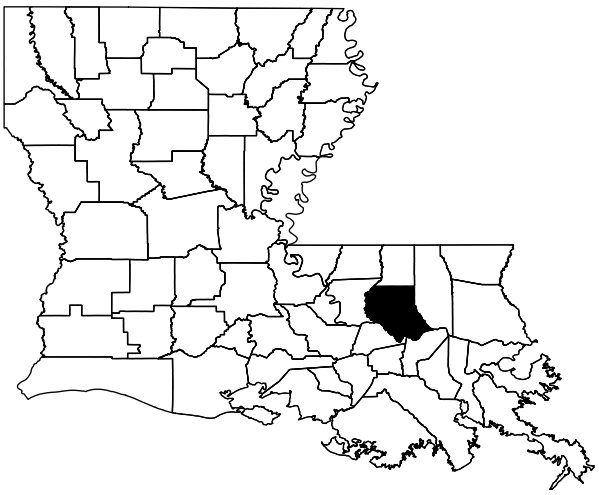
Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.04	1.17
24	Lumber	0.04	
32	Glass, clay, and concrete	0.17	



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Choudrant Water System	0.29	
Culbertson Water System	0.27	
Dubach Water System	0.06	
Fellowship Water System	0.05	
Grambling Water System	0.43	
Greater Ward 1 W. W. Dist.	0.51	
Hico Water System	0.11	
Hilly-Greenwood W. S.	0.13	
Lincoln W. W. Dist. 1	0.04	
Lincoln W. W. Dist. 3	0.32	
Mineral Springs Water System	0.09	
Mt. Olive Water Dist.	0.07	
Mt. Zion Water System	0.30	
Ruston Utilities System	4.02	
Simsboro Water System	0.12	
Wesley Chapel Water System	0.36	

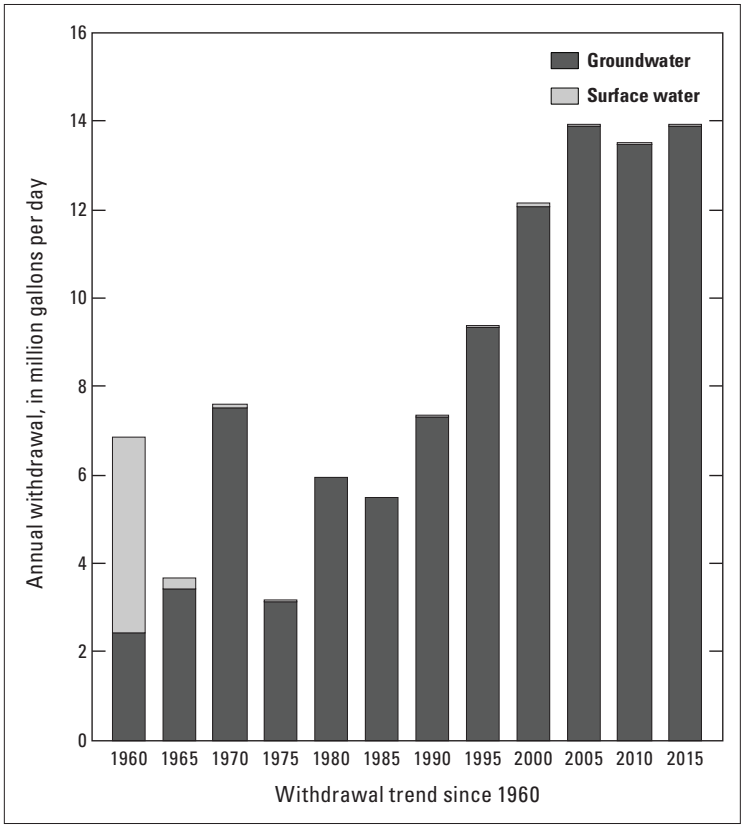
Livingston

Population: 137,788
Population served by public supply: 112,737
Per capita withdrawals (gal/d): 101
Acres irrigated: 13
Hydroelectric power instream use (Mgal/d): 0



Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	11.55		11.55
Industrial	0.01		0.01
Power generation			
Rural domestic	2.00		2.00
Livestock	0.06	0.04	0.10
Rice irrigation			
General irrigation	0.01		0.01
Aquaculture	0.26		0.26
Total	**13.89**	**0.04**	**13.93**

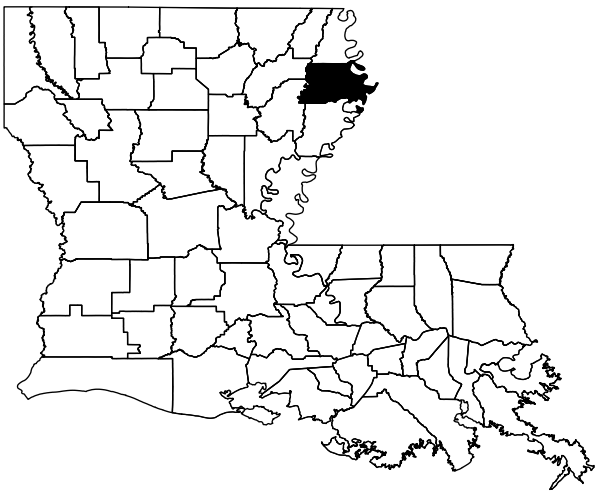
Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
20	Food products	0.01	



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Albany Water System	0.44	
Colyell Community Water Assoc.	0.21	
Denham Springs Water Dept.	2.13	
Diversion Water Co.	0.22	
Fourth Ward Water Works	0.27	
French Settlement Water System	0.24	
Head of Island Water System	0.17	
Killian Water System	0.13	
Livingston Water System	0.53	
Port Vincent Water System	0.20	
Springfield Water System	0.14	
Vincent Acres Water Co.	0.01	
Walker Water System	1.48	
Ward 2 Water District	5.31	

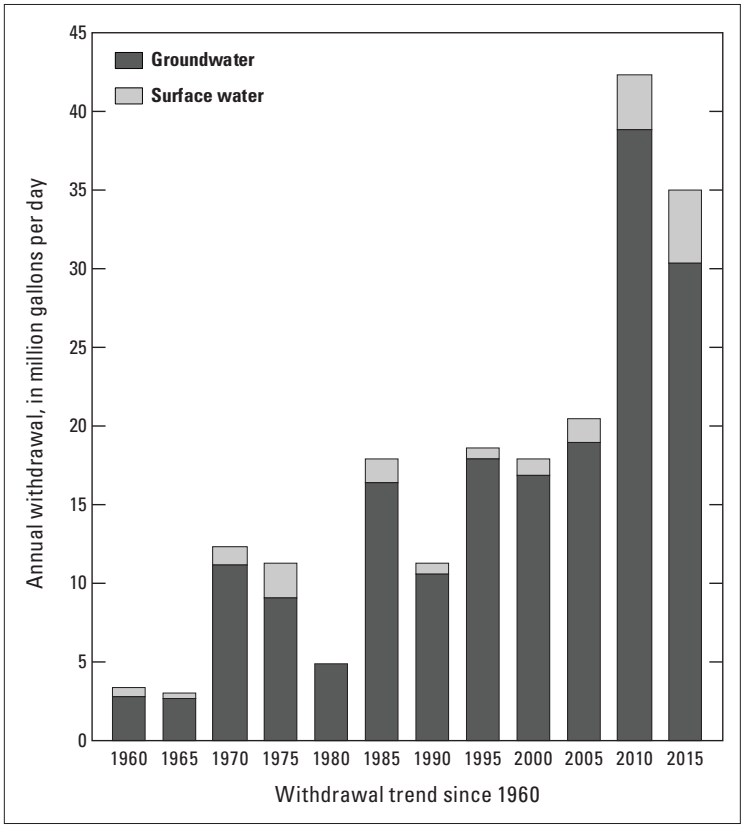
Madison

Population: 11,514
Population served by public supply: 11,275
Per capita withdrawals (gal/d): 3,041
Acres irrigated: 55,780
Hydroelectric power instream use (Mgal/d): 0



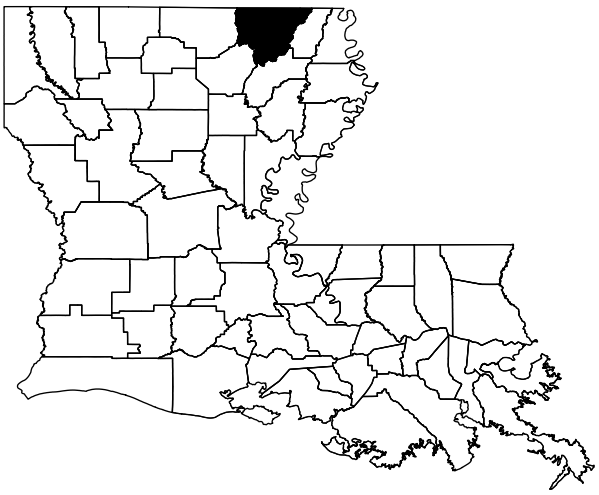
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.65		1.65
Industrial			
Power generation			
Rural domestic	0.02		0.02
Livestock	0.01	0.01	0.02
Rice irrigation	10.33	2.58	12.91
General irrigation	18.05	2.01	20.06
Aquaculture	0.29	0.07	0.36
Total	**30.35**	**4.67**	**35.02**

Withdrawals by Major Industrial Group (Mgal/d)		
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Tallulah Water Service	1.10	
Walnut Bayou Water Association	0.54	

Morehouse



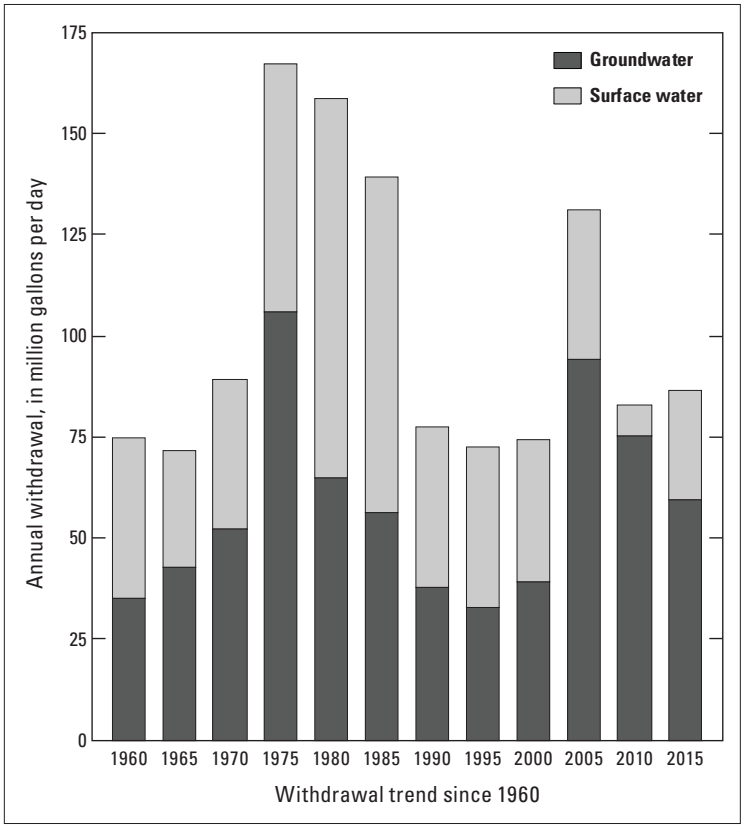
Population: 26,395
Population served by public supply: 24,391
Per capita withdrawals (gal/d): 3,295
Acres irrigated: 82,360
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	3.48		3.48
Industrial	0.04		0.04
Power generation			
Rural domestic	0.16		0.16
Livestock	0.08	0.02	0.09
Rice irrigation	37.71	25.14	62.84
General irrigation	18.32	2.04	20.36
Aquaculture			
Total	**59.78**	**27.19**	**86.97**

Withdrawals by Major Industrial Group (Mgal/d)

Standard industrial classification		GW	SW
26	Paper products	0.04	

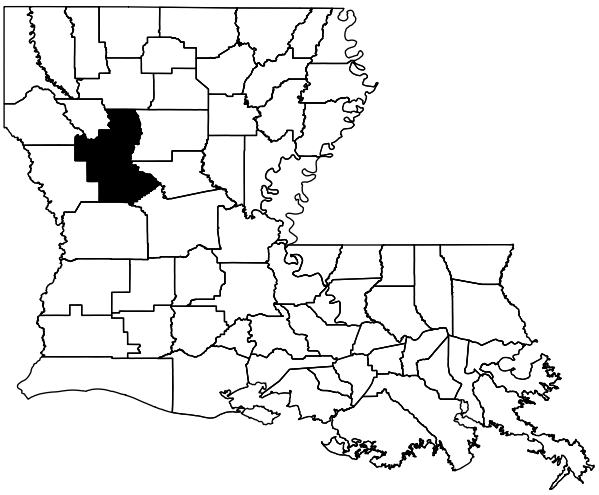


Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Bayou Bonne Idee Water System	0.11	
Beekman Water System	0.16	
Bonita Water System	0.08	
Collinston Water System	0.06	
Jones McGinty Water System	0.10	
Mer Rouge Water System	0.13	
Morehouse Central Water System	0.05	
Morehouse W. W. District 1	0.09	
Morehouse W. W. District 2	0.32	
Oak Ridge Water System	0.02	
Peoples Water Service Company	2.29	
South Bonne Idee Water System	0.01	
Ward 3 Water System	0.07	

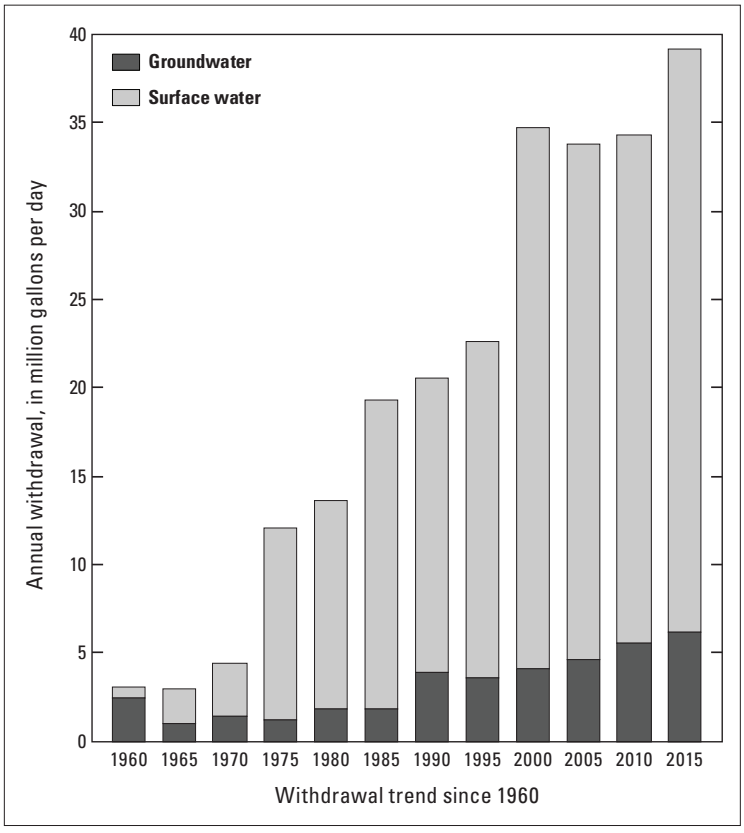
Natchitoches

Population: 39,179
Population served by public supply: 32,795
Per capita withdrawals (gal/d): 1,000
Acres irrigated: 16,816
Hydroelectric power instream use (Mgal/d): 0



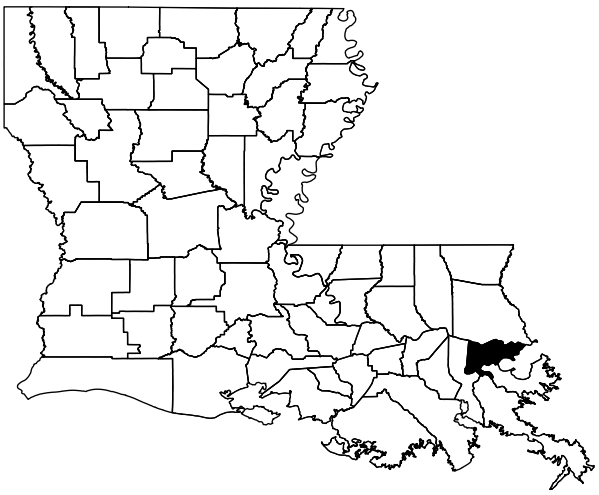
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.30	6.47	7.77
Industrial		14.34	14.34
Power generation			
Rural domestic	0.51		0.51
Livestock	0.05	0.20	0.25
Rice irrigation	0.35	6.59	6.94
General irrigation	1.04	4.18	5.22
Aquaculture	2.92	1.25	4.17
Total	**6.17**	**33.02**	**39.19**

Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
26	Paper products		14.34



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Bellwood Water System	0.06	
Campti Water System	0.17	
Chee Chee Bay Water System	0.03	
Chestnut-Readhimer Water System	0.03	
Clarence Water System	0.05	
Creston Water System	0.04	
Goldonna Water System	0.04	
Hagewood Water System	0.05	
Natchitoches Utility System		6.44
Natchitoches W. W. District 2	0.43	
Powhatan Water System	0.05	
Provencal Water System	0.22	
Robeline-Marthaville Water System	0.12	
Sandy Point 480 Water System		0.03

Orleans



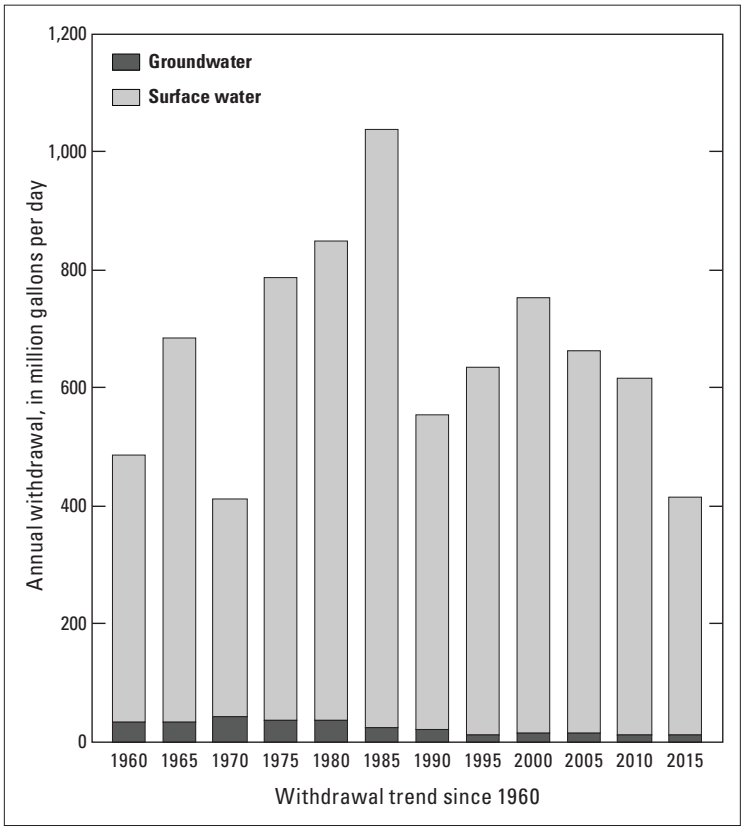
Population: 389,617
Population served by public supply: 387,032
Per capita withdrawals (gal/d): 1,063
Acres irrigated: 0
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply		140.90	140.90
Industrial	0.89		0.89
Power generation	10.87	261.19	272.06
Rural domestic	0.21		0.21
Livestock	0.00	0.01	0.01
Rice irrigation			
General irrigation	0.05		0.05
Aquaculture			
Total	**12.02**	**402.10**	**414.12**

Withdrawals by Major Industrial Group (Mgal/d)

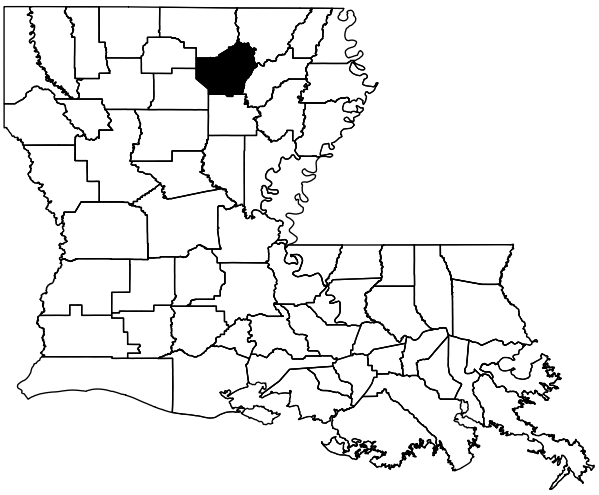
Standard industrial classification		GW	SW
28	Chemicals	0.89	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Sewage & Water Board of New Orleans		140.90

Ouachita



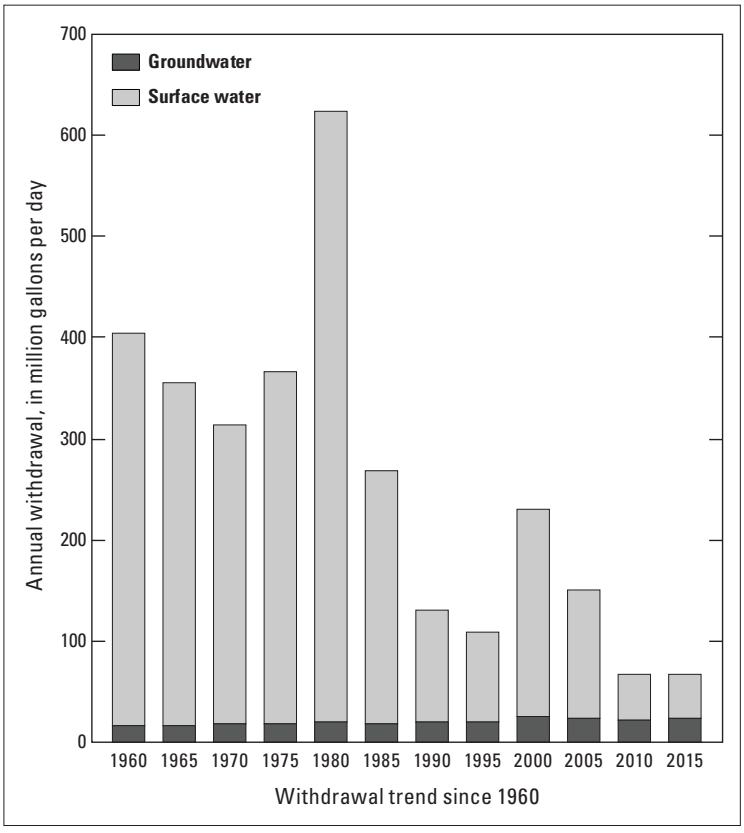
Population: 156,761
Population served by public supply: 151,973
Per capita withdrawals (gal/d): 438
Acres irrigated: 15,559
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	10.02	14.16	24.18
Industrial	8.70	14.39	23.09
Power generation		2.55	2.55
Rural domestic	0.38		0.38
Livestock		0.07	0.07
Rice irrigation	5.28	9.81	15.09
General irrigation	0.32	2.85	3.17
Aquaculture	0.01	0.05	0.06
Total	**24.71**	**43.88**	**68.59**

Withdrawals by Major Industrial Group (Mgal/d)

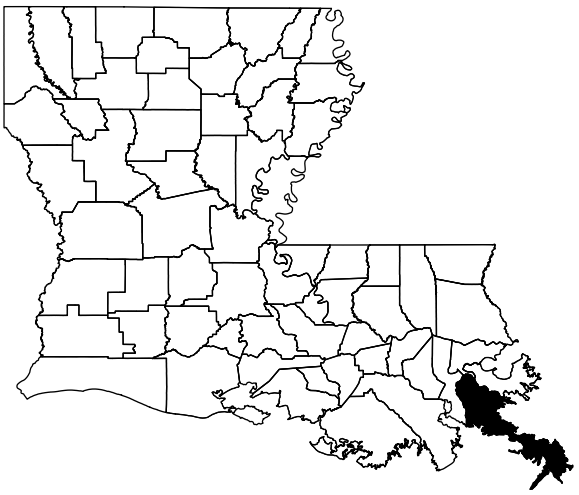
Standard industrial classification		GW	SW
26	Paper products	8.70	12.50
28	Chemicals		1.89



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Cadeville Water District	0.34	
Calhoun Water System, Inc.	0.08	
Charmingdale Subdivision W. S.	0.09	
Cheniere-Drew Water System	1.24	
Frost Town Water System	0.09	
Greater Ouachita Water Company	2.79	
Hickory Bend Water System	0.03	
Hillside Park Subdivision W. S.	0.12	
Indian Village Water System	0.12	
Kiroli - Darbonne Water System	0.39	
LWC Management Company, Inc.	0.51	
McClendon Community Water Well	0.02	
Monroe Water System		14.16
Prairie Road Water System	0.12	
Sikes Water System	0.01	
Southwest Ouachita Waterworks	0.85	
Toney Road Water System	0.01	
West Monroe Water System	3.10	
Western Utilities, Inc.	0.07	

Plaquemines



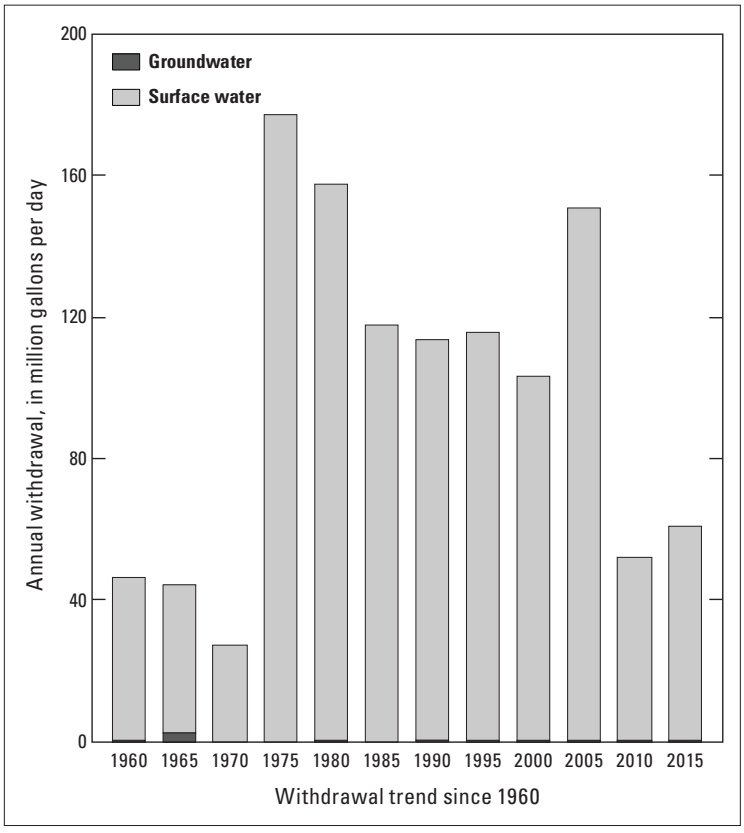
Population: 23,495
Population served by public supply: 22,881
Per capita withdrawals (gal/d): 2,592
Acres irrigated: 1
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply		7.14	7.14
Industrial		53.66	53.66
Power generation			
Rural domestic	0.05		0.05
Livestock		0.05	0.05
Rice irrigation			
General irrigation		0.00	0.00
Aquaculture			
Total	**0.05**	**60.86**	**60.91**

Withdrawals by Major Industrial Group (Mgal/d)

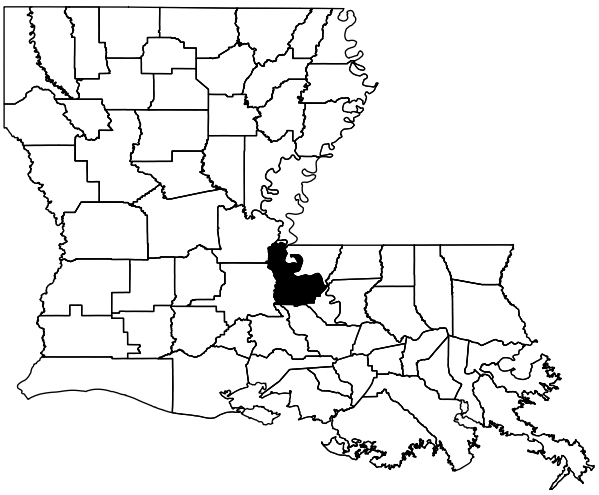
Standard industrial classification		GW	SW
28	Chemicals		20.47
29	Petroleum refining		33.19



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Plaquemines Parish Water Works		7.14

Pointe Coupee



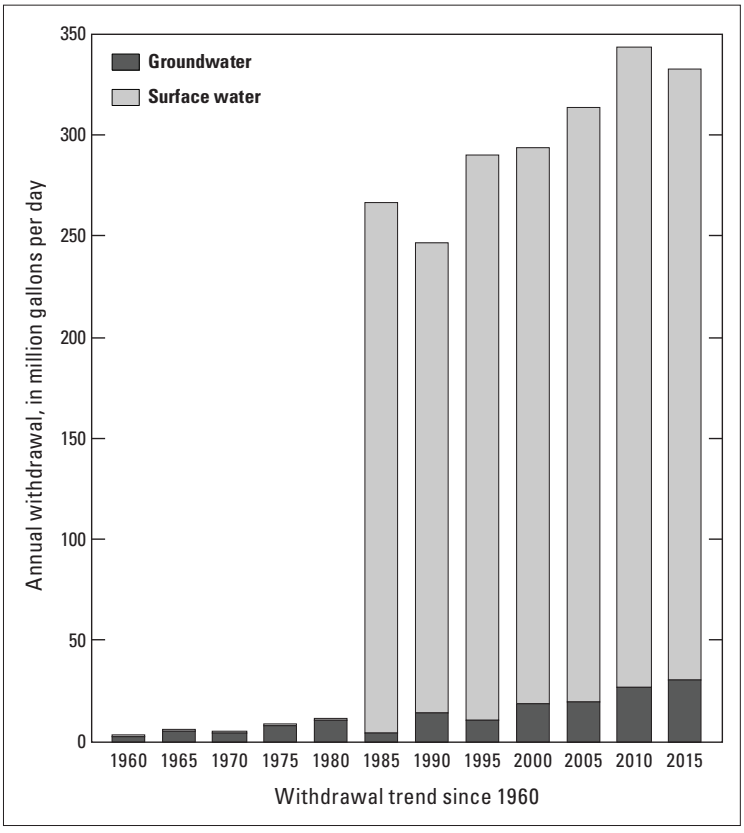
Population: 22,251
Population served by public supply: 19,412
Per capita withdrawals (gal/d): 14,947
Acres irrigated: 24,743
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public Supply	3.54		3.54
Industrial	6.23		6.23
Power Generation	1.30	300.88	302.18
Rural Domestic	0.23		0.23
Livestock	0.06	0.04	0.10
Rice Irrigation	2.78		2.78
General Irrigation	9.59		9.59
Aquaculture	6.35	1.59	7.94
Total	**30.08**	**302.50**	**332.58**

Withdrawals by Major Industrial Group (Mgal/d)

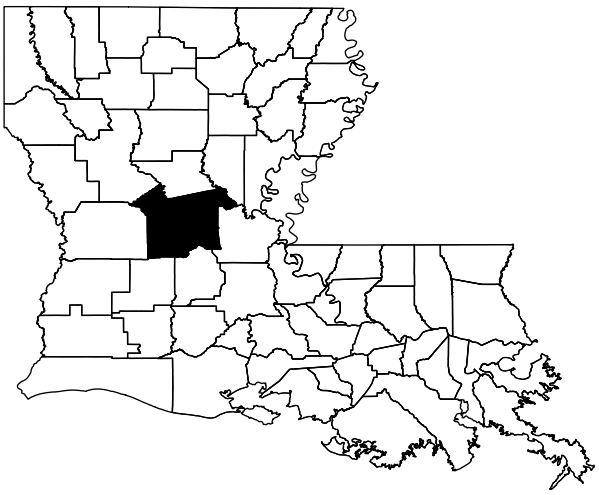
Standard industrial classification		GW	SW
20	Food products	4.95	
32	Glass, clay, and concrete	1.28	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
False River Water Company	0.38	
Fordoche Water System	0.14	
Innis Water Corporation, Inc.	0.29	
Livonia Water System	0.22	
M & S Water Supply	0.09	
Morganza Water System	0.07	
New Roads Water System	1.10	
Old River Water Company	0.01	
Pointe Coupee Water District #1	0.32	
Pointe Coupee Water District #2 Batchelor	0.49	
Pointe Coupee Water District #2 Highway 10	0.23	
Torbert-Frisco Water System	0.19	

Rapides



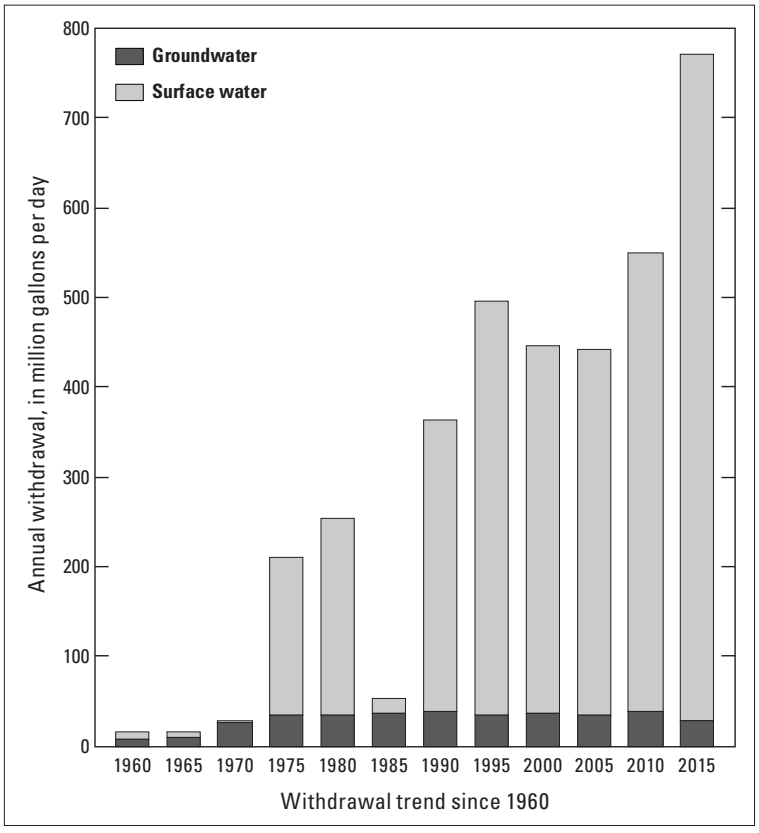
Population: 132,141
Population served by public supply: 126,552
Per capita withdrawals (gal/d): 5,833
Acres irrigated: 19,366
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	19.13		19.13
Industrial	0.00		0.00
Power generation	0.33	726.60	726.93
Rural domestic	0.45		0.45
Livestock	0.04	0.16	0.20
Rice irrigation	1.99	11.28	13.27
General irrigation	2.77	2.57	5.33
Aquaculture	2.82	2.60	5.42
Total	**27.53**	**743.20**	**770.74**

Withdrawals by Major Industrial Group (Mgal/d)

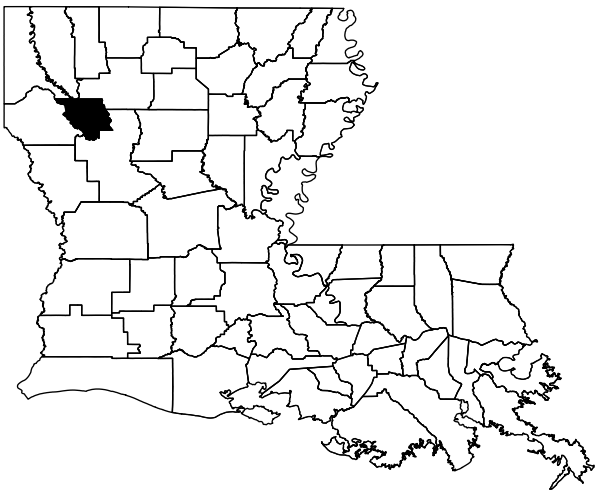
Standard industrial classification		GW	SW
41	Local and suburban transit	0.15	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Alexandria Water System	10.08	
Avoyelles W. W. District #1	0.13	
Boyce Water System	0.17	
Buckeye Water District 50	0.81	
Bunkie Water System	0.60	
Cheneyville Water System	0.11	
Elmer-Melder-Cal Water System	0.32	
Forest Hill Water System	0.36	
Gardner Community Water System	0.25	
Glenmora Town Water System	0.15	
Hammock Water System	0.05	
Hineston Water System	0.06	
Kolin-Ruby-Wise Water District	0.34	
Lecompte Water System	0.14	
Lena Water System	0.19	
McNary Water System	0.04	
Pineville Water System	2.62	
Rapides Island Water Association	0.47	
Rapides Parish W. W. District 3	1.53	
Sieper Area Water System	0.07	
Ward 6 Water Association	0.08	
Woodworth Water System	0.34	

Red River



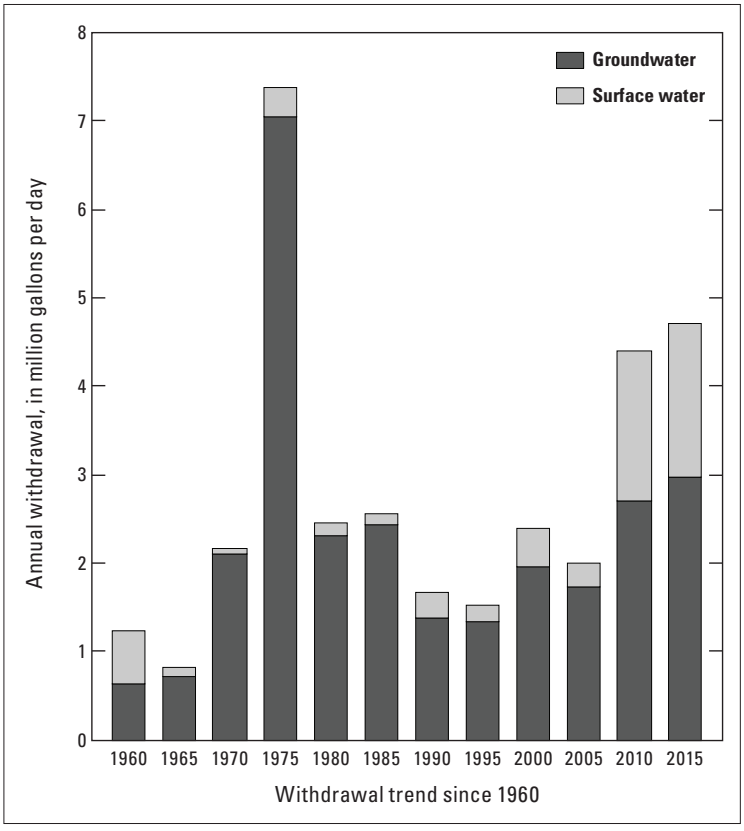
Population: 8,593
Population served by public supply: 6,083
Per capita withdrawals (gal/d): 548
Acres irrigated: 4,718
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	0.61	0.41	1.02
Industrial	0.01	0.78	0.80
Power generation			
Rural domestic	0.20		0.20
Livestock	0.08	0.12	0.20
Rice irrigation	0.74	0.08	0.83
General irrigation	1.33	0.33	1.67
Aquaculture			
Total	**2.98**	**1.73**	**4.71**

Withdrawals by Major Industrial Group (Mgal/d)

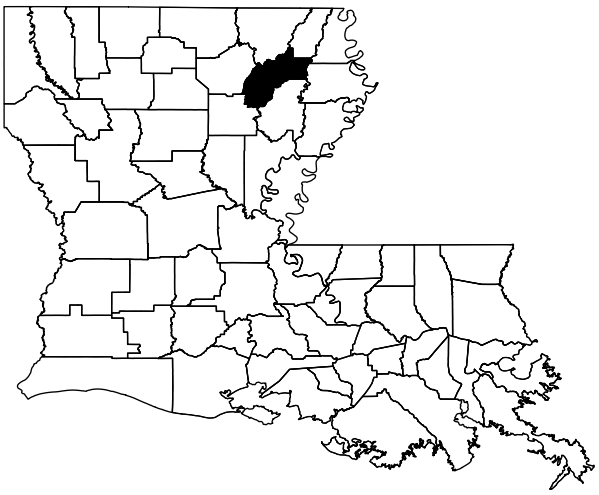
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.01	0.37
28	Chemicals		0.42



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Coushatta Water System	0.29	
East Cross Water System	0.02	
Edgefield Village Water System	0.02	
Fairview Union Water System		0.41
Halfway-Carroll Water System	0.03	
Hall Summit Water System	0.02	
Hickory Grove Water System	0.05	
Martin Water System	0.12	
Social Springs Water System	0.03	

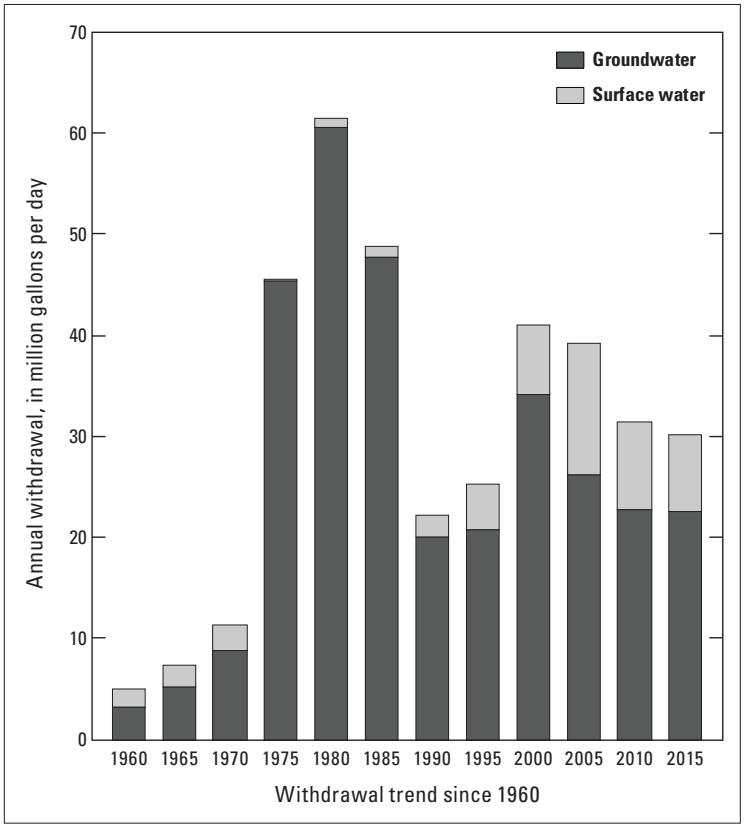
Richland



Population: 20,523
Population served by public supply: 14,634
Per capita withdrawals (gal/d): 1,470
Acres irrigated: 43,249
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	4.45		4.45
Industrial			
Power generation			
Rural domestic	0.47		0.47
Livestock	0.07	0.07	0.13
Rice irrigation	9.89		9.89
General irrigation	7.62	7.62	15.23
Aquaculture			
Total	**22.49**	**7.68**	**30.17**

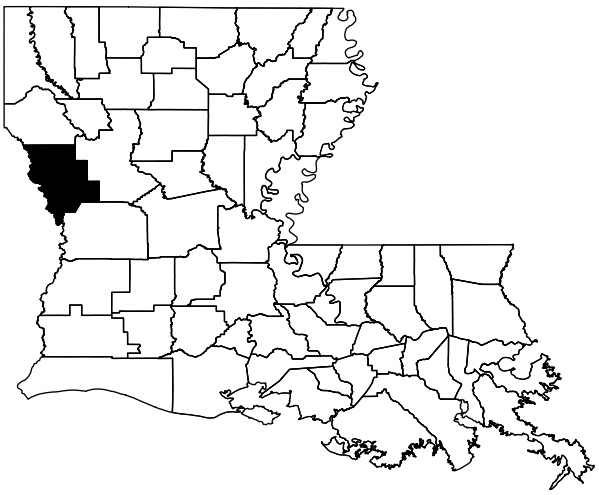
Withdrawals by Major Industrial Group (Mgal/d)		
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Archibald Water System	0.33	
Delhi Water System	1.64	
Liddieville Water System	0.11	
Mangham Water System	0.08	
N. Franklin Water Works	0.40	
Rayville Water System	0.48	
River Road Water System	0.30	
Start Water System, Inc.	0.25	
Winnsboro Water System	0.82	

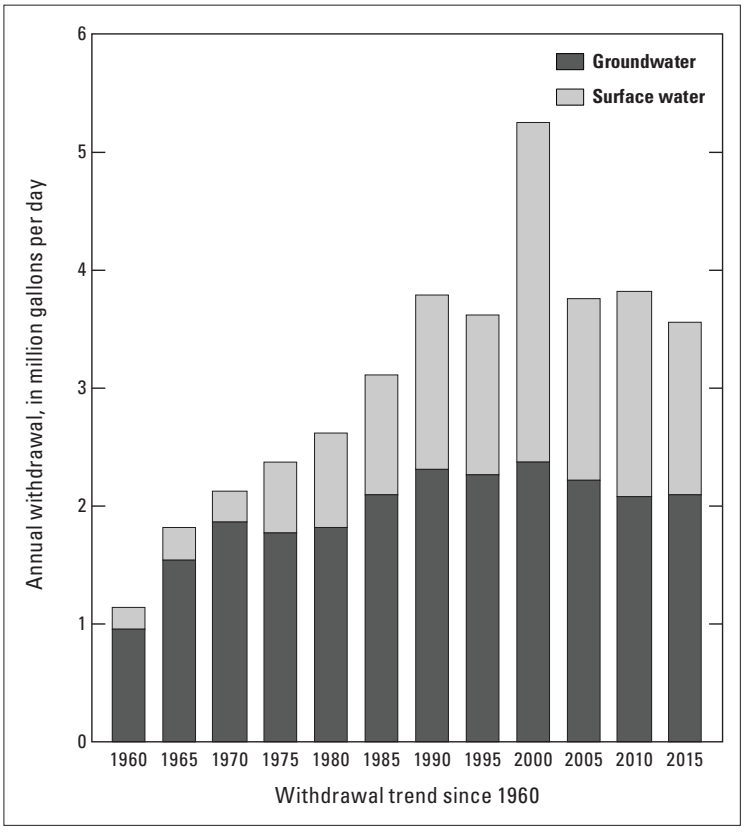
Sabine

Population: 24,186
Population served by public supply: 11,640
Per capita withdrawals (gal/d): 148
Acres irrigated: 0
Hydroelectric power instream use (Mgal/d): 2,636



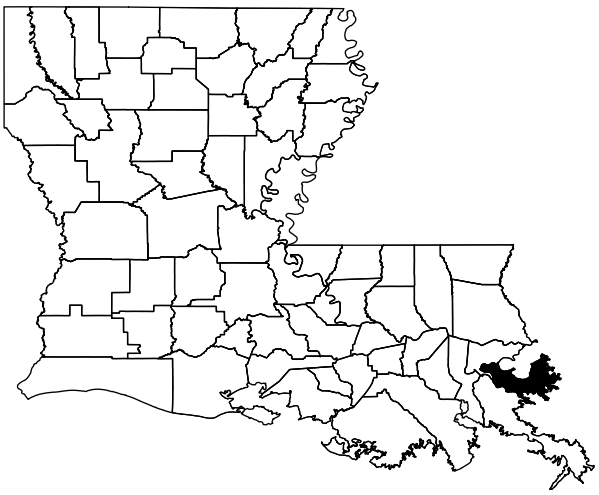
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.08	1.26	2.34
Industrial	0.00	0.14	0.14
Power generation			
Rural domestic	1.00		1.00
Livestock	0.01	0.09	0.10
Rice irrigation			
General irrigation		0.00	0.00
Aquaculture			
Total	**2.10**	**1.48**	**3.58**

Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
13	Oil and gas extraction		0.08
24	Lumber		0.06



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Belmont Waterworks, Inc.	0.33	
Converse Water System	0.04	
Ebarb W.W. Dist. 1		0.46
Fisher Water Department	0.03	
Many Water System	0.27	0.34
Noble Water System	0.04	
Pendleton Water Assoc.		0.20
Pleasant Hill Water System	0.07	
S. Toledo Bend W. W. Dist.		0.26
Union Springs Water System	0.08	
Zwolle Water Department	0.23	

St. Bernard



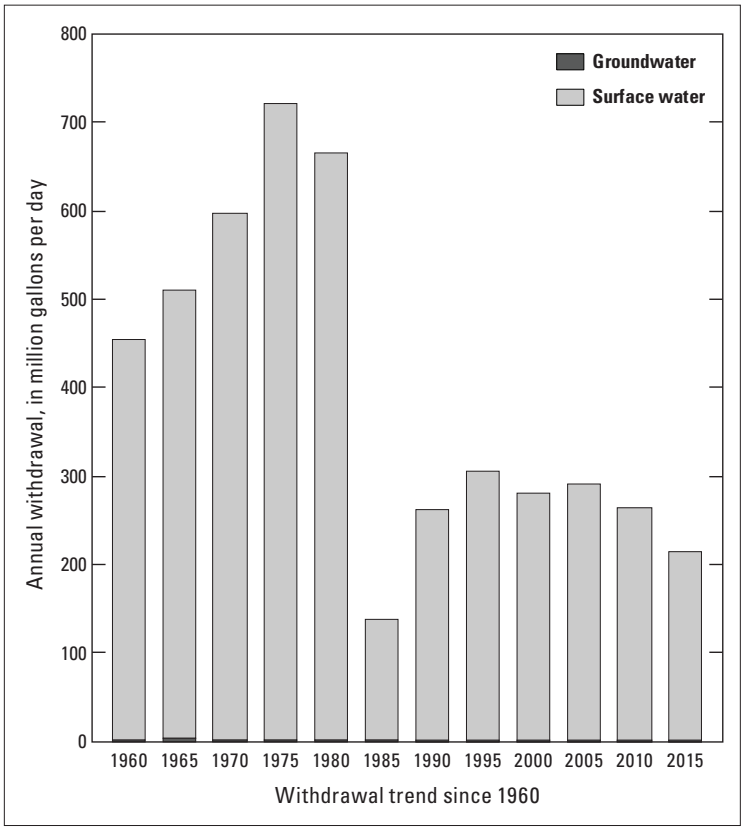
Population: 45,408
Population served by public supply: 45,289
Per capita withdrawals (gal/d): 4,714
Acres irrigated: 0
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply		7.16	7.16
Industrial		206.86	206.86
Power generation			
Rural domestic	0.01		0.01
Livestock	0.02		0.02
Rice irrigation			
General irrigation			
Aquaculture			
Total	**0.02**	**214.03**	**214.05**

Withdrawals by Major Industrial Group (Mgal/d)

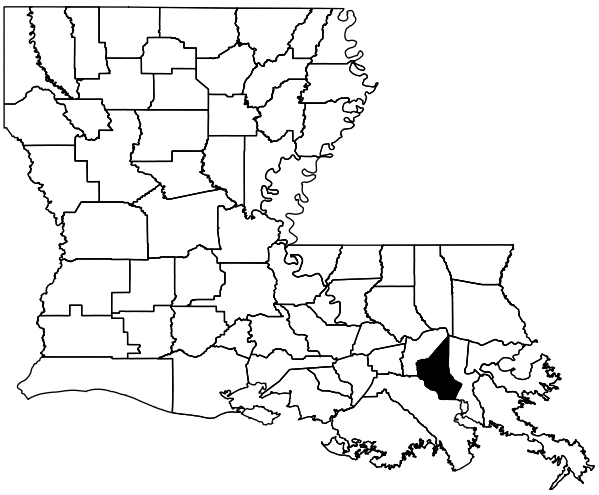
Standard industrial classification		GW	SW
20	Food products		14.07
29	Petroleum refining		192.79



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
St. Bernard Parish Water and Sewerage Commission		7.16

St. Charles



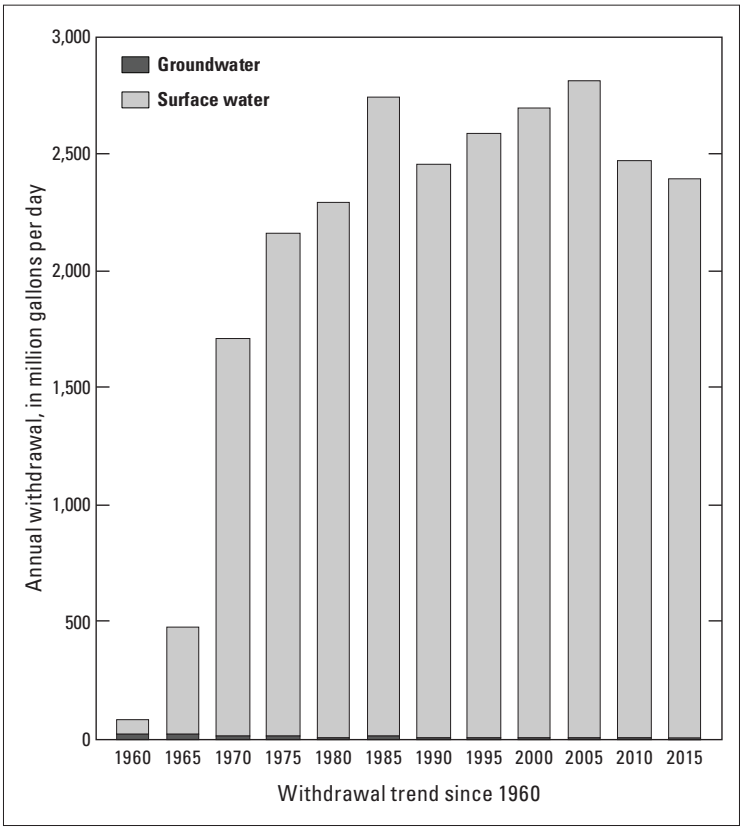
Population: 52,812
Population served by public supply: 52,573
Per capita withdrawals (gal/d): 45,409
Acres irrigated: 120
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply		9.09	9.09
Industrial	1.11	595.19	596.30
Power generation		1,792.66	1,792.66
Rural domestic	0.02		0.02
Livestock	0.00	0.02	0.02
Rice irrigation			
General irrigation	0.03	0.02	0.05
Aquaculture			
Total	**1.17**	**2,396.96**	**2,398.13**

Withdrawals by Major Industrial Group (Mgal/d)

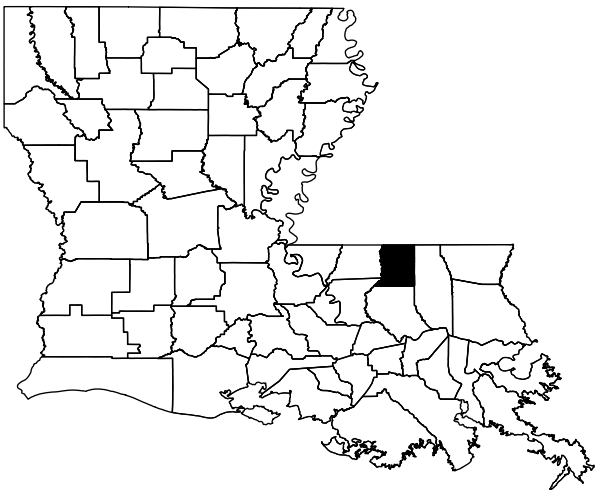
Standard industrial classification		GW	SW
28	Chemicals	0.07	565.96
29	Petroleum refining	1.05	29.23



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
St. Charles Waterworks District 1		4.86
St. Charles Waterworks District 2		4.23

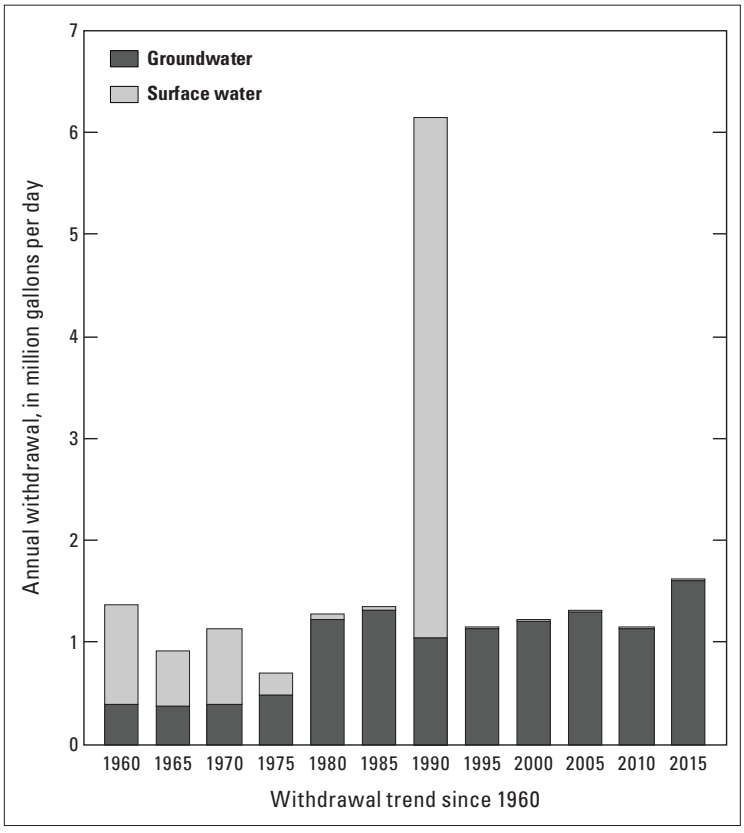
St. Helena



Population: 10,567
Population served by public supply: 4,036
Per capita withdrawals (gal/d): 153
Acres irrigated: 39
Hydroelectric power instream use (Mgal/d): 0

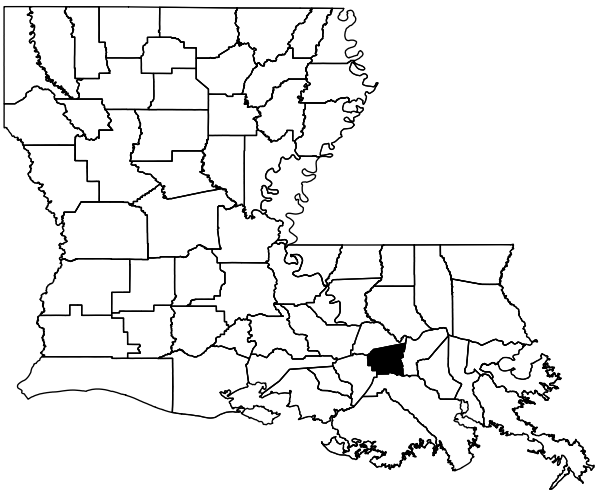
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	0.90		0.90
Industrial	0.03		0.03
Power generation			
Rural domestic	0.52		0.52
Livestock	0.13	0.01	0.15
Rice irrigation			
General irrigation	0.02		0.02
Aquaculture			
Total	**1.60**	**0.01**	**1.62**

Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
20	Food products	0.03	



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Greensburg Water System	0.13	
Montpelier Water System	0.02	
Pine Grove W. W. Assoc.	0.01	
St Helena W. W. Dist. 2	0.73	

St. James



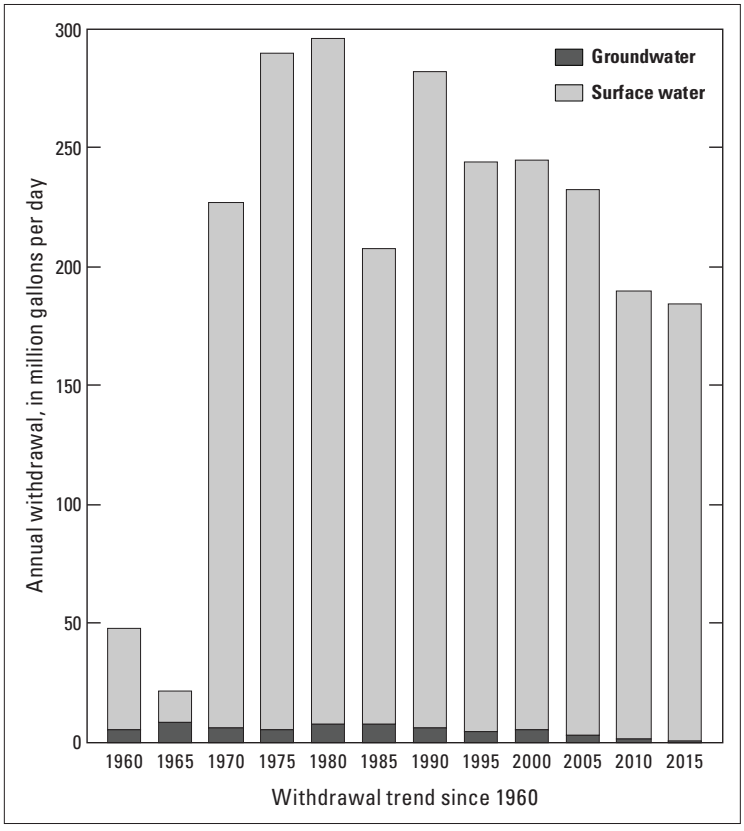
Population: 21,567
Population served by public supply: 21,391
Per capita withdrawals (gal/d): 8,536
Acres irrigated: 796
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply		4.00	4.00
Industrial		178.48	178.48
Power generation			
Rural domestic	0.01		0.01
Livestock	0.01		0.01
Rice irrigation			
General irrigation		0.34	0.34
Aquaculture		1.25	1.25
Total	**0.03**	**184.07**	**184.10**

Withdrawals by Major Industrial Group (Mgal/d)

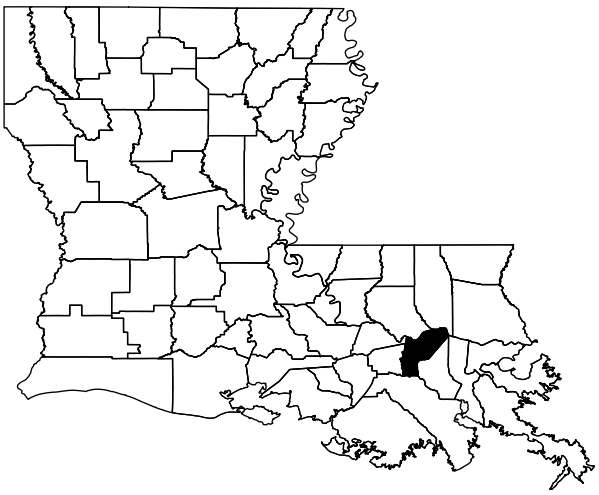
Standard Industrial classification		GW	SW
20	Food products		1.18
28	Chemicals		170.09
29	Petroleum refining		7.21



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Gramercy Water System		0.64
Lutcher Water System		0.39
St. James Parish Utilities		2.96

St. John the Baptist



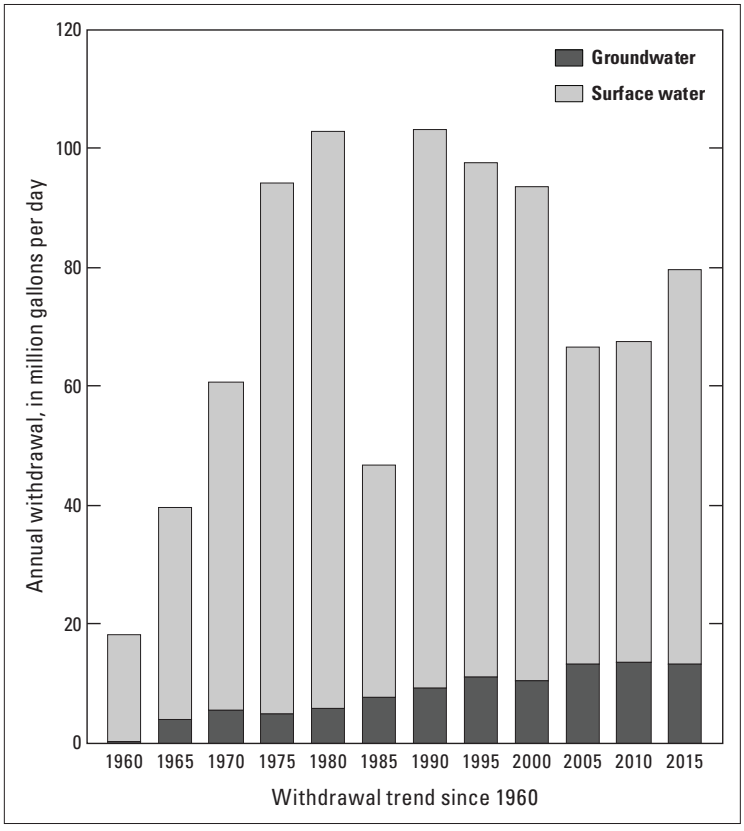
Population: 43,626
Population served by public supply: 42,639
Per capita withdrawals (gal/d): 1,828
Acres irrigated: 367
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	4.51	2.94	7.46
Industrial	8.65	63.42	72.07
Power generation			
Rural domestic	0.08		0.08
Livestock		0.01	0.01
Rice irrigation			
General irrigation		0.16	0.16
Aquaculture			
Total	**13.24**	**66.53**	**79.77**

Withdrawals by Major Industrial Group (Mgal/d)

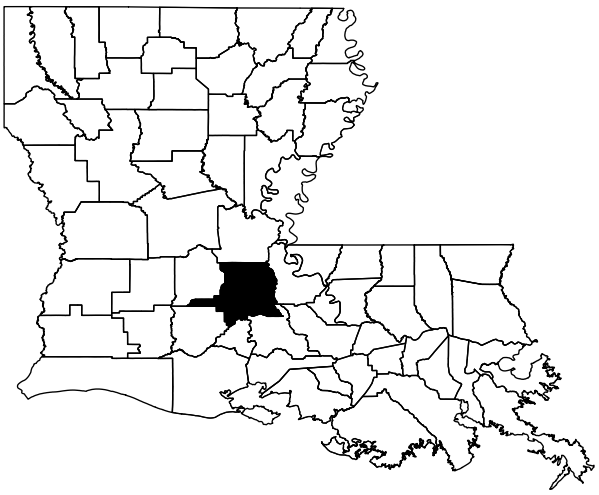
Standard industrial classification		GW	SW
28	Chemicals	8.65	50.91
29	Petroleum refining		11.55
33	Primary metals		0.97



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
St. John the Baptist Parish Utilities	4.51	2.94

St. Landry



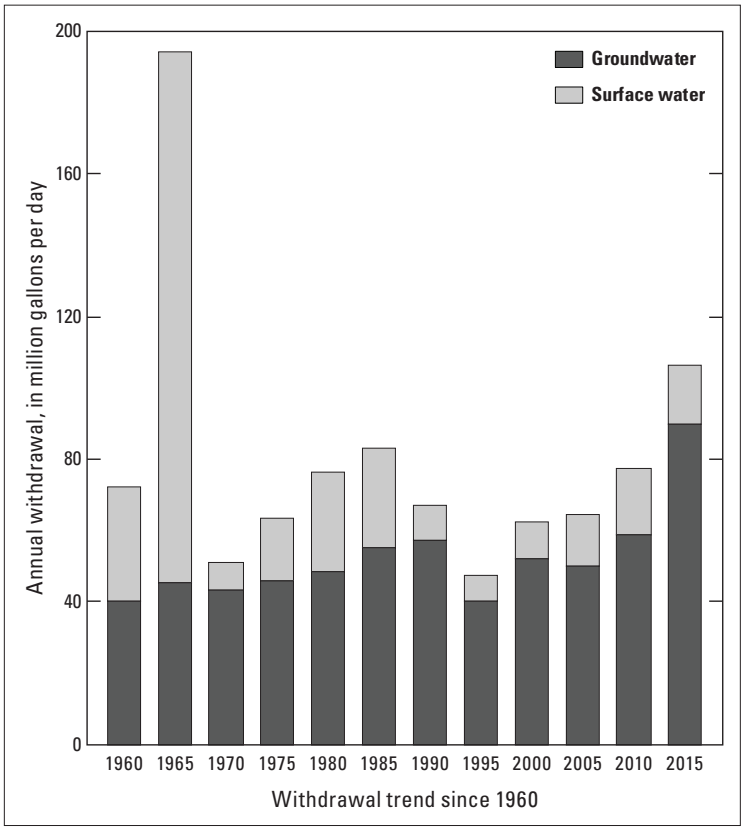
Population: 83,848
Population served by public supply: 75,753
Per capita withdrawals (gal/d): 1,270
Acres irrigated: 48,674
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	10.31		10.31
Industrial	0.99		0.99
Power generation			
Rural domestic	0.65		0.65
Livestock	0.18	0.05	0.23
Rice irrigation	37.96	6.70	44.65
General irrigation	8.87	2.22	11.09
Aquaculture	30.87	7.72	38.58
Total	**89.82**	**16.68**	**106.50**

Withdrawals by Major Industrial Group (Mgal/d)

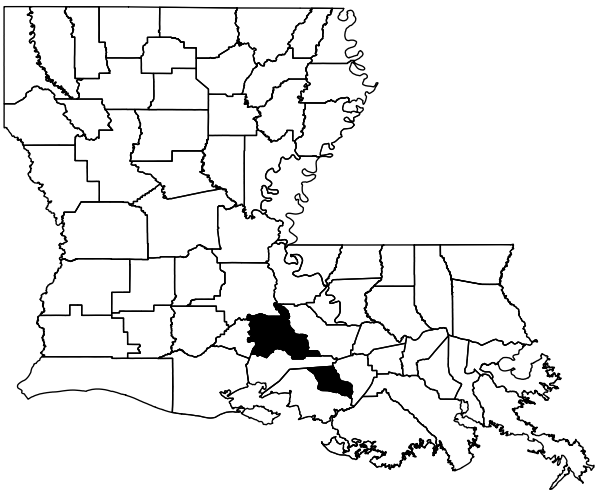
Standard industrial classification		GW	SW
20	Food products	0.01	
29	Petroleum refining	0.98	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Arnaudville Water System	0.33	
Cankton Water System	0.16	
Eunice Water System	1.63	
Grand Coteau Water System	0.09	
Grand Prairie Water System	0.06	
Greenbriar-Prairie Basse W. S.	0.09	
Krotz Springs Water Department	0.14	
Lawtell W. W. Dist. 1	0.34	
Leonville Water System	0.59	
Lewisburg-Bellevue W. S.	0.54	
Melville Water System	0.16	
Opelousas Water System	3.99	
Palmetto Water System	0.14	
Plaisance Water System	0.46	
Port Barre Water System	0.41	
Prairie Ronde Water System	0.41	
St. Landry W. W. Dist. No. 2	0.32	
Sunset Water System	0.22	
Washington Water System	0.19	

St. Martin



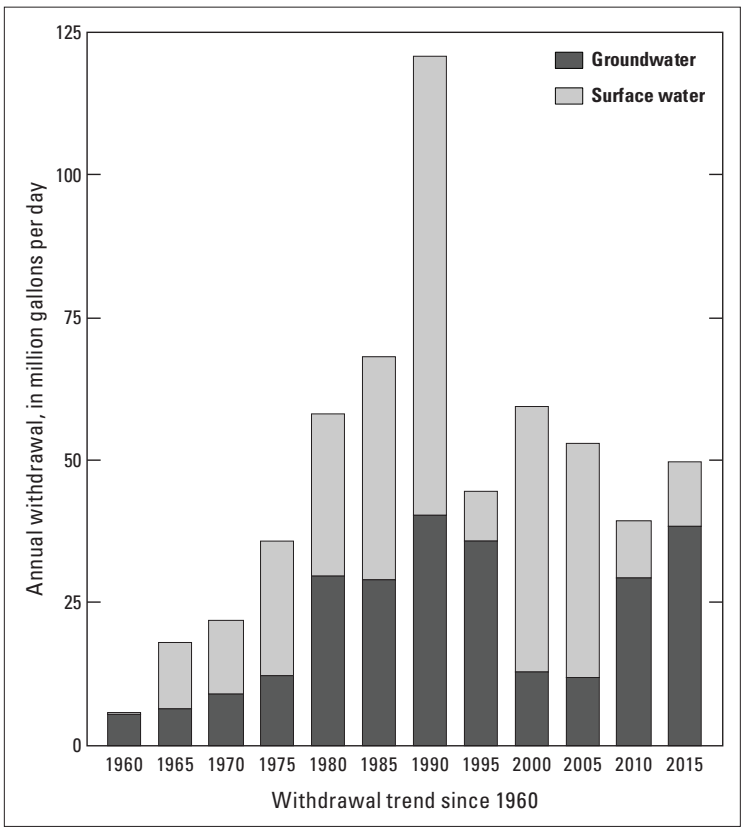
Population: 53,835
Population served by public supply: 43,727
Per capita withdrawals (gal/d): 921
Acres irrigated: 6,411
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	4.73		4.73
Industrial	0.16		0.16
Power generation			
Rural domestic	0.81		0.81
Livestock	0.03	0.01	0.04
Rice irrigation	0.58	6.69	7.27
General irrigation	0.24	0.95	1.18
Aquaculture	31.87	3.54	35.41
Total	**38.42**	**11.18**	**49.60**

Withdrawals by Major Industrial Group (Mgal/d)

Standard industrial classification		GW	SW
28	Chemicals	0.12	

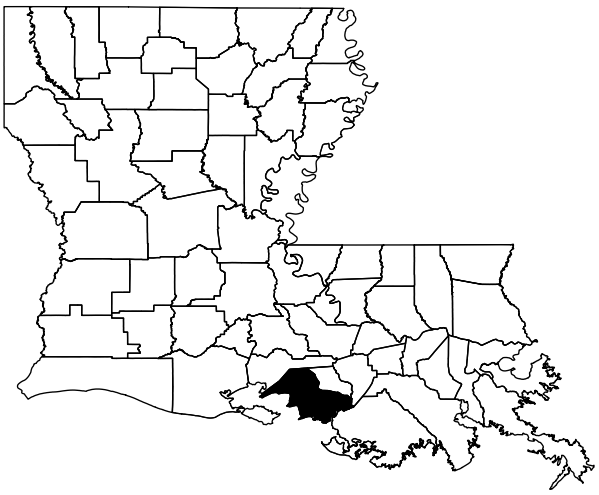


Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Breaux Bridge Water System	0.91	
Cecilia Water System	0.72	
Henderson-Nina Water System	0.46	
Parks Village Water System	1.07	
St. Martin Parish W. W. Dist. 3	0.34	
St. Martinville Water System	0.82	
Total Environmental Solutions, Inc.	0.04	
United Water System	0.29	

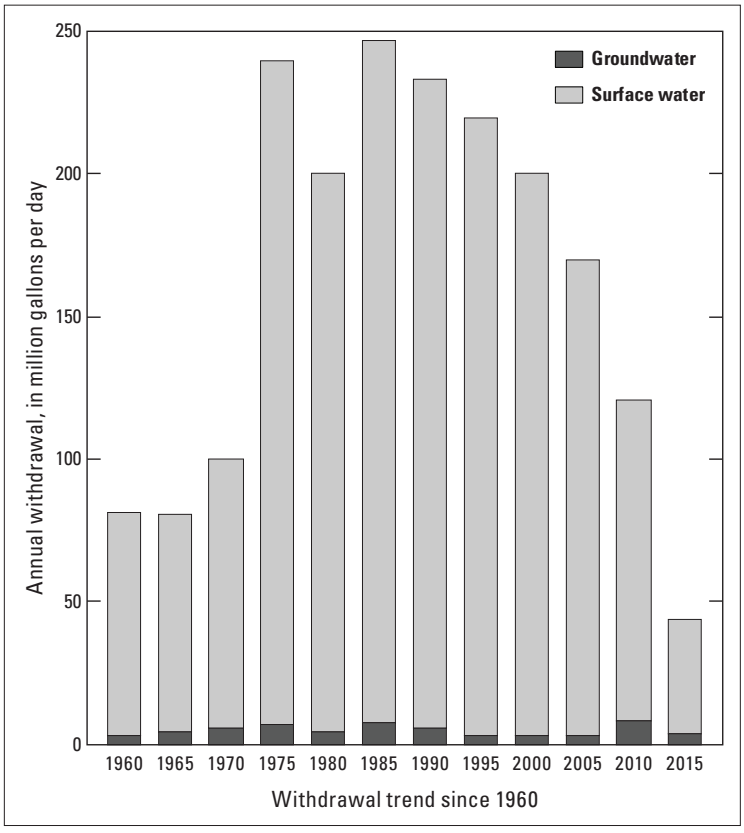
St. Mary

Population: 52,810
Population served by public supply: 51,126
Per capita withdrawals (gal/d): 833
Acres irrigated: 1,268
Hydroelectric power instream use (Mgal/d): 0



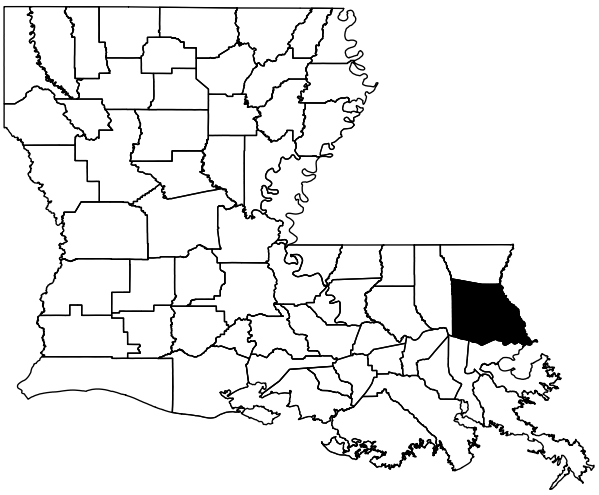
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	0.45	8.89	9.34
Industrial	2.86	3.64	6.49
Power generation	0.10	26.88	26.98
Rural domestic	0.13		0.13
Livestock		0.02	0.02
Rice irrigation		0.28	0.28
General irrigation	0.05	0.44	0.48
Aquaculture	0.28		0.28
Total	**3.87**	**40.15**	**44.01**

Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
20	Food products	0.55	1.69
28	Chemicals	2.30	1.95



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Baldwin Water System	0.29	
Berwick Bayou Vista W. W.		1.14
Franklin Water System		0.97
Glencoe Comm Water System	0.02	
Morgan City Water System		3.43
Patterson Water System		0.45
St. Mary Parish W. W. Dist. 1		0.73
St. Mary Parish W. W. Dist. 4		0.99
St. Mary Parish W. W. Dist. 5		1.18
St. Mary Parish W. W. Dist. 7	0.09	

St. Tammany



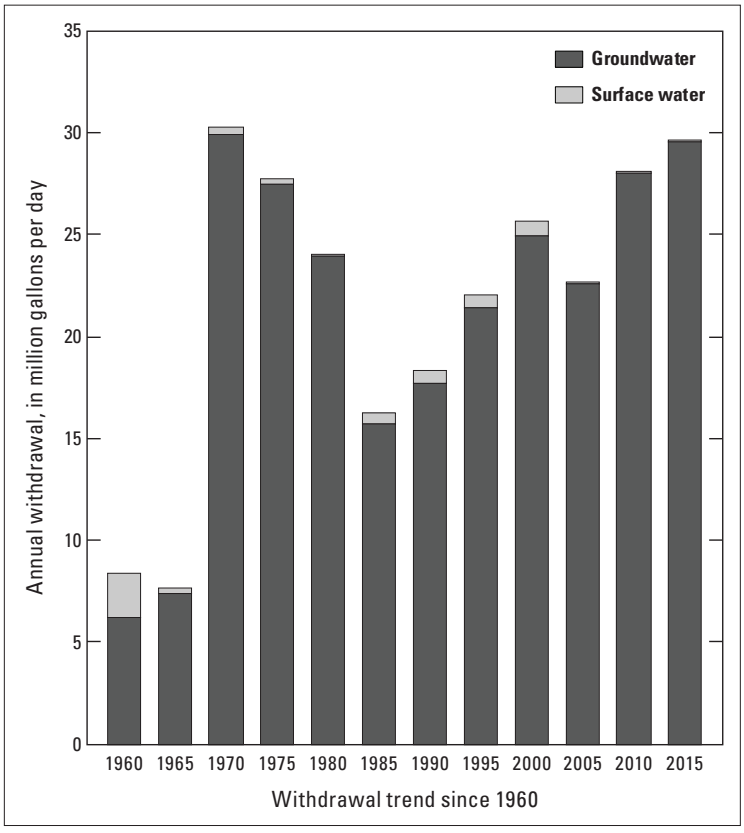
Population: 250,088
Population served by public supply: 184,080
Per capita withdrawals (gal/d): 119
Acres irrigated: 49
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	24.04		24.04
Industrial	0.05	0.08	0.13
Power generation			
Rural domestic	5.28		5.28
Livestock	0.09	0.06	0.15
Rice irrigation			
General irrigation	0.02	0.00	0.03
Aquaculture	0.08		0.08
Total	**29.56**	**0.14**	**29.71**

Withdrawals by Major Industrial Group (Mgal/d)

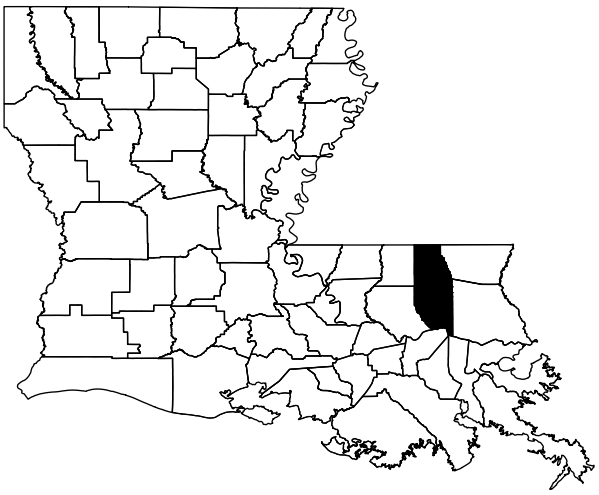
Standard industrial classification		GW	SW
20	Food products	0.03	
35	Industrial machinery	0.02	
37	Transportation equipment	0.01	0.08



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Abita Springs Water System	0.20	
Alton Water System	0.05	
Bayou Liberty Water Co.	0.78	
Beau Chene Subdivision	0.65	
Briarwood Terrace Subdivision	1.46	
Brier Lake Utilities, Inc.	0.05	
Central Park Subdivision	0.02	
Covington Dept. of Public Works	2.21	
Cross Gates Utilities Company	0.98	
Eden Isles Water Supply	0.69	
Faubourg-Coquille Water System	0.76	
Folsom Water System	0.19	
H2O Systems, Inc.	1.37	
Lakeshore Estates	0.18	
Lee Road Water Corporation	0.60	
Lewisburg Estates	0.01	
Madisonville Water System	0.08	
Mandeville Water Supply	3.28	
Pearl River Water System	0.44	
Pineland Park Subdivision	0.28	
Resolve Water System	0.48	
Slidell Water System	4.09	
St. Tammany Water Dist. 2	0.46	
St. Tammany Water Dist. 3	0.21	
Sun Water System	0.04	
Tchefuncte Club Estates	0.19	
The Meadows Water System	0.29	
Utilities Inc. of LA	2.73	

Tangipahoa



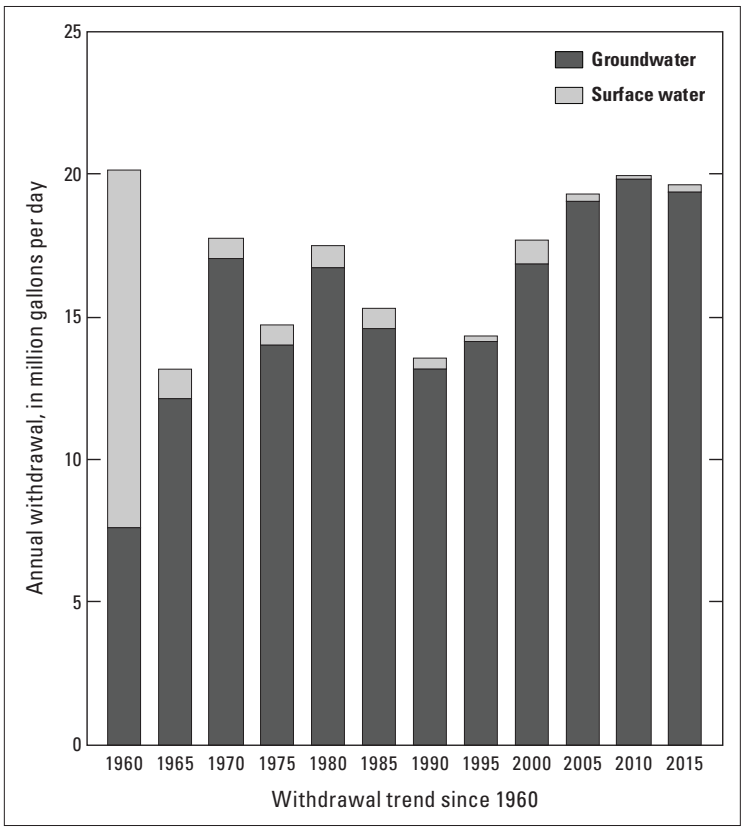
Population: 128,755
Population served by public supply: 92,989
Per capita withdrawals (gal/d): 153
Acres irrigated: 396
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	15.07		15.07
Industrial	1.09	0.08	1.17
Power generation			
Rural domestic	2.86		2.86
Livestock	0.17	0.17	0.33
Rice irrigation			
General irrigation	0.20		0.20
Aquaculture			
Total	**19.39**	**0.24**	**19.64**

Withdrawals by Major Industrial Group (Mgal/d)

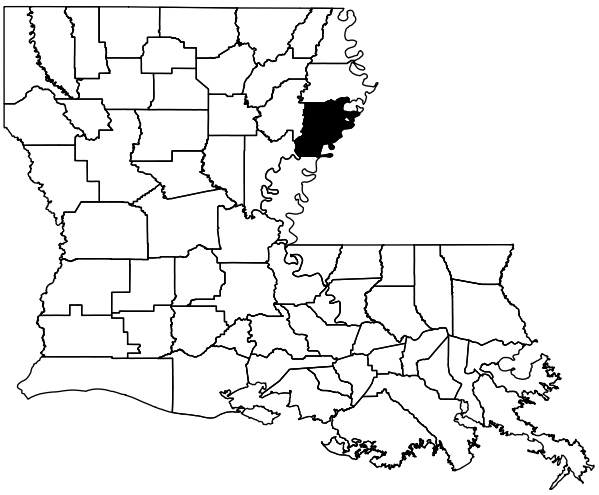
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.01	0.08
20	Food products	0.75	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Amite Water System	1.74	
Eastern Heights W. W.	0.18	
Fluker Water Works	0.03	
Hammond Water System	3.96	
Independence Water System	0.08	
Kentwood Water System	0.33	
Ponchatoula Water System	1.46	
Roseland Water System	0.12	
Springfield Water System	0.83	
Tangipahoa Village W. W.	0.05	
Tangipahoa Water District 2	5.78	
Tickfaw Water System	0.18	
Westview Water Works	0.12	

Tensas



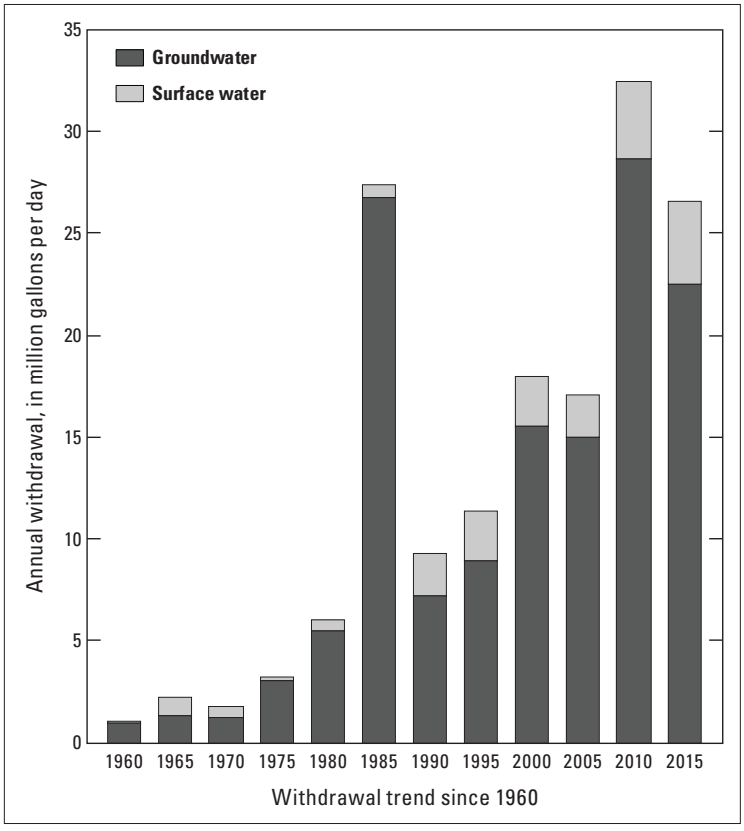
Population: 4,740
Population served by public supply: 4,508
Per capita withdrawals (gal/d): 5,600
Acres irrigated: 47,801
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	0.54	0.62	1.16
Industrial			
Power generation			
Rural domestic	0.02		0.02
Livestock	0.00	0.01	0.01
Rice irrigation	5.12	1.71	6.83
General irrigation	15.74	1.75	17.49
Aquaculture	1.04		1.04
Total	**22.47**	**4.08**	**26.54**

Withdrawals by Major Industrial Group (Mgal/d)

Standard industrial classification	GW	SW

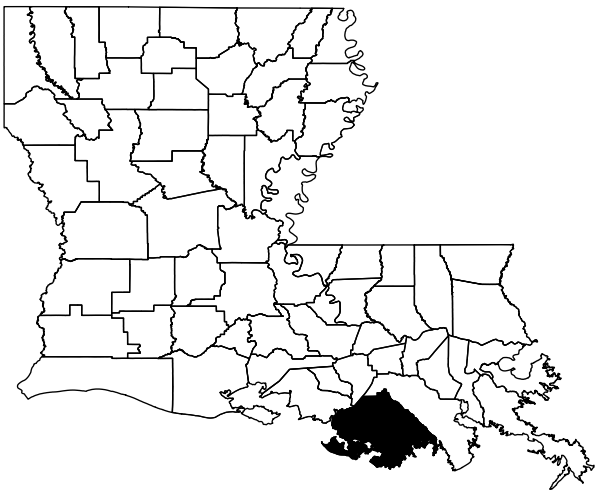


Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Lake Bruin Water System		0.04
Newellton Water System		0.19
St. Joseph Water System	0.54	
Tensas Water Distribution Assoc.		0.38

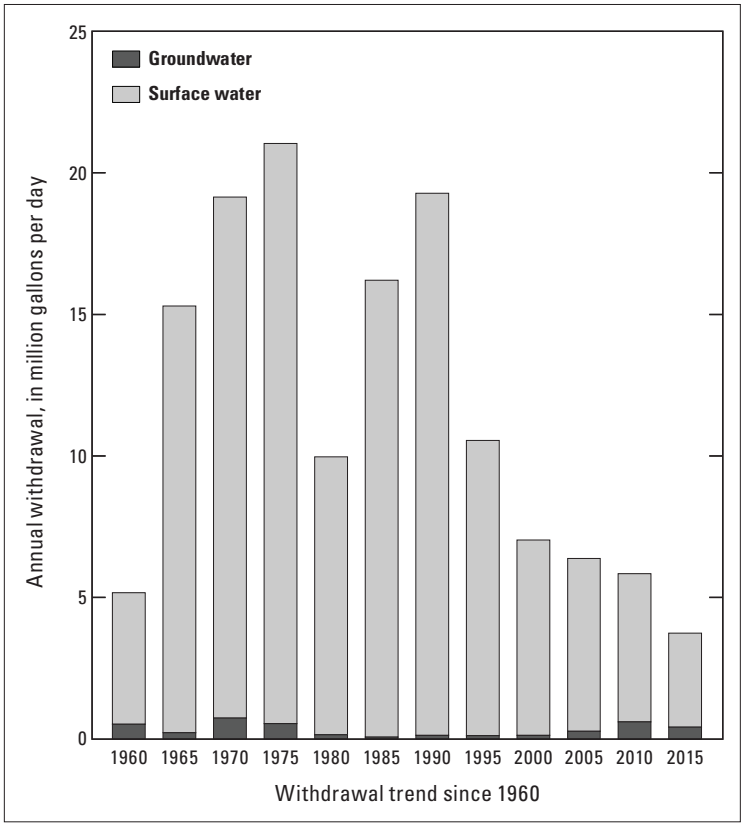
Terrebonne

Population: 113,972
Population served by public supply: 113,880
Per capita withdrawals (gal/d): 33
Acres irrigated: 131
Hydroelectric power instream use (Mgal/d): 0



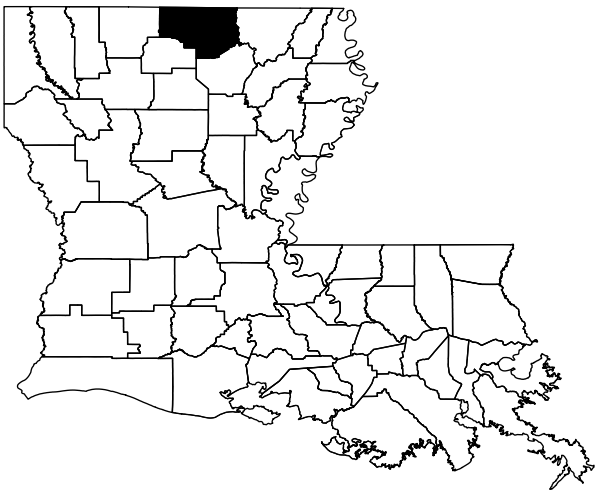
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply		1.88	1.88
Industrial			
Power generation			
Rural domestic	0.01		0.01
Livestock	0.02	0.04	0.06
Rice irrigation			
General irrigation	0.06		0.06
Aquaculture	0.35	1.39	1.73
Total	**0.43**	**3.32**	**3.74**

Withdrawals by Major Industrial Group (Mgal/d)		
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Terrebonne Parish Consolidated W.W. Dist. No. 1		1.88

Union



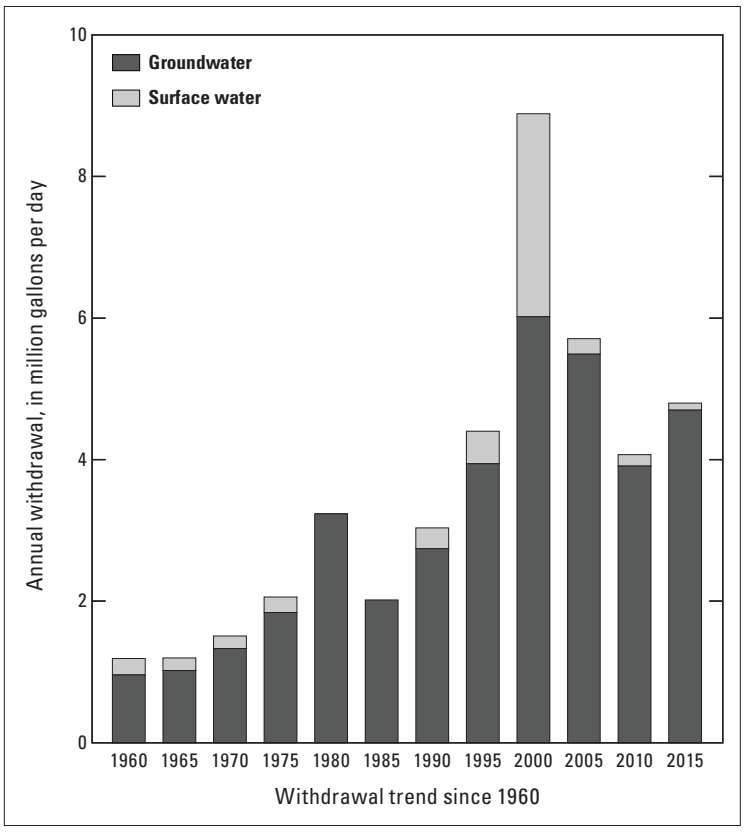
Population: 22,477
Population served by public supply: 20,065
Per capita withdrawals (gal/d): 213
Acres irrigated: 1
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	4.40		4.40
Industrial	0.09	0.00	0.09
Power generation			
Rural domestic	0.19		0.19
Livestock	0.02	0.10	0.12
Rice irrigation			
General irrigation	0.00	0.00	0.00
Aquaculture			
Total	**4.70**	**0.10**	**4.80**

Withdrawals by Major Industrial Group (Mgal/d)

Standard industrial classification		GW	SW
20	Food products	0.05	
24	Lumber	0.04	

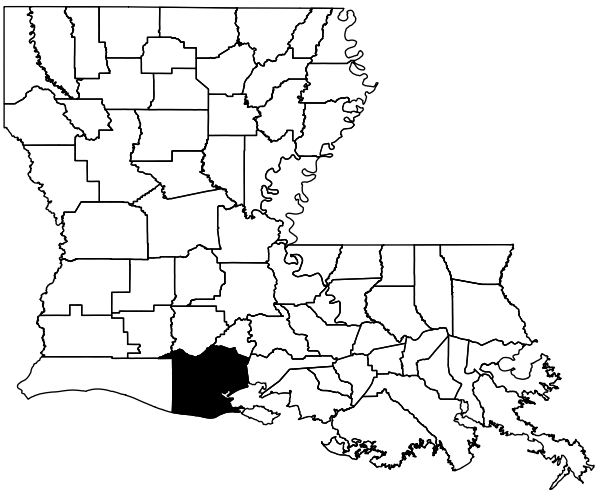


Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Bernice Water System	0.31	
Concord Water System	0.02	
Corney Water System	0.01	
Cox Ferry Water System	0.01	
D'arbonne Water System	0.67	
Downsville Water System	0.02	
Farmerville Water System	2.03	
Holmesville Water System	0.21	
Junction City Water System	0.03	
Linville-Haile Water System	0.08	
Litroe Water System	0.02	
Marion Water System	0.06	
Point Wilhite Water System	0.20	
Randolph Water System	0.02	
Rocky Branch W. W. Dist.	0.09	
Salem Water System	0.08	
Sardis Water System	0.09	
Tri-Water System, Inc.	0.12	
Union Waterworks Dist. 1	0.08	
Wards Chapel Water System	0.19	
West Sterlington Water System	0.07	

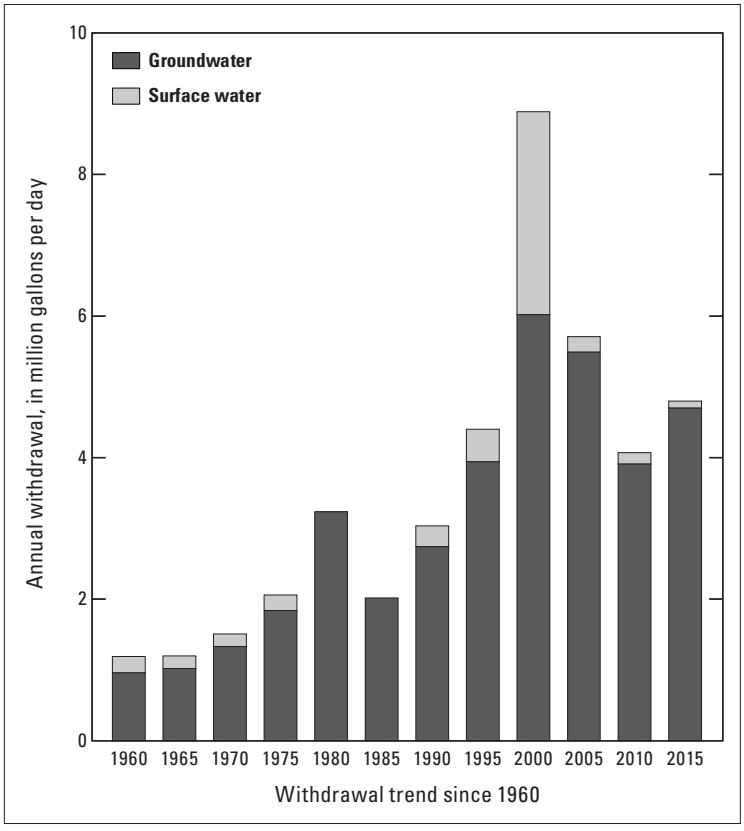
Vermilion

Population: 59,875
Population served by public supply: 32,492
Per capita withdrawals (gal/d): 2,547
Acres irrigated: 52,701
Hydroelectric power instream use (Mgal/d): 0



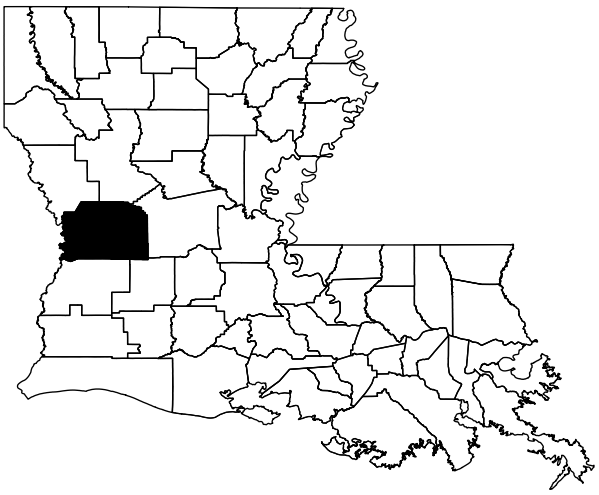
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	7.07		7.07
Industrial	0.84	0.05	0.89
Power generation			
Rural domestic	2.19		2.19
Livestock	0.05	0.21	0.26
Rice irrigation	40.53	60.80	101.33
General irrigation	0.16	0.64	0.80
Aquaculture	33.98	5.97	39.95
Total	**84.82**	**67.67**	**152.49**

Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
13	Oil and gas extraction	0.06	
20	Food products	0.57	0.05
29	Petroleum refining	0.21	



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Abbeville Water System	2.89	
Delcambre Water System	0.16	
Erath Water System	0.28	
Gueydan Water System	0.32	
Kaplan Water System	0.59	
Magnolia Plantation Water System	0.56	
Maurice Water System	0.14	
Pecan Island Waterworks District No. 3	0.09	
Southeast W. W. Dist. 2	0.62	
Vermilion W. W. Dist. 1	1.42	

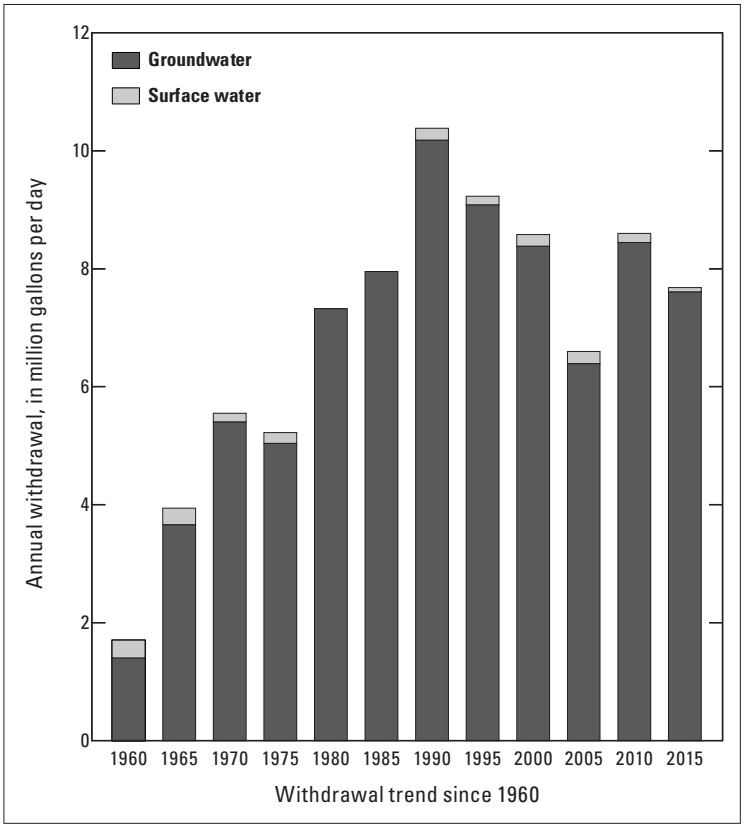
Vernon



Population: 50,803
Population served by public supply: 35,228
Per capita withdrawals (gal/d): 151
Acres irrigated: 2
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	6.32		6.32
Industrial			
Power generation			
Rural domestic	1.25		1.25
Livestock	0.01	0.08	0.08
Rice irrigation			
General irrigation		0.00	0.00
Aquaculture	0.03		0.03
Total	**7.60**	**0.08**	**7.68**

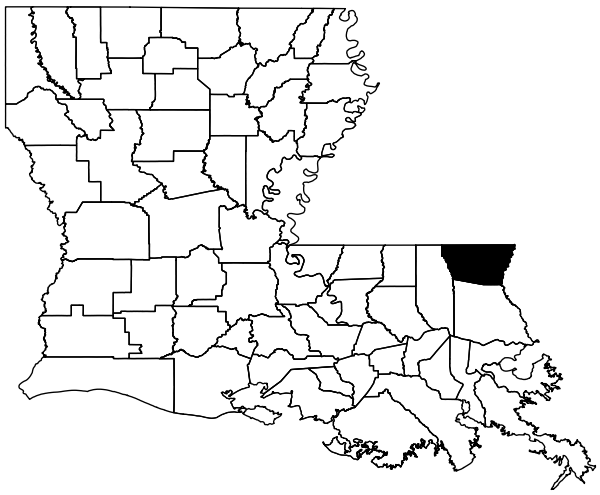
Withdrawals by Major Industrial Group (Mgal/d)		
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Anacoco Water System	0.09	
E. Central Vernon Water System	0.53	
Hornbeck Water System	0.17	
Leesville Water System	2.02	
Pitkin Water System	0.05	
Rosepine Water System	0.23	
S. Vernon W. W. Dist. 1	0.26	
Sandy Hill Water & Sewer	0.02	
Simpson Water System	0.14	
Vernon Parish Water & Sewer	0.57	
W. Vernon Parish W. W. Dist.	0.28	

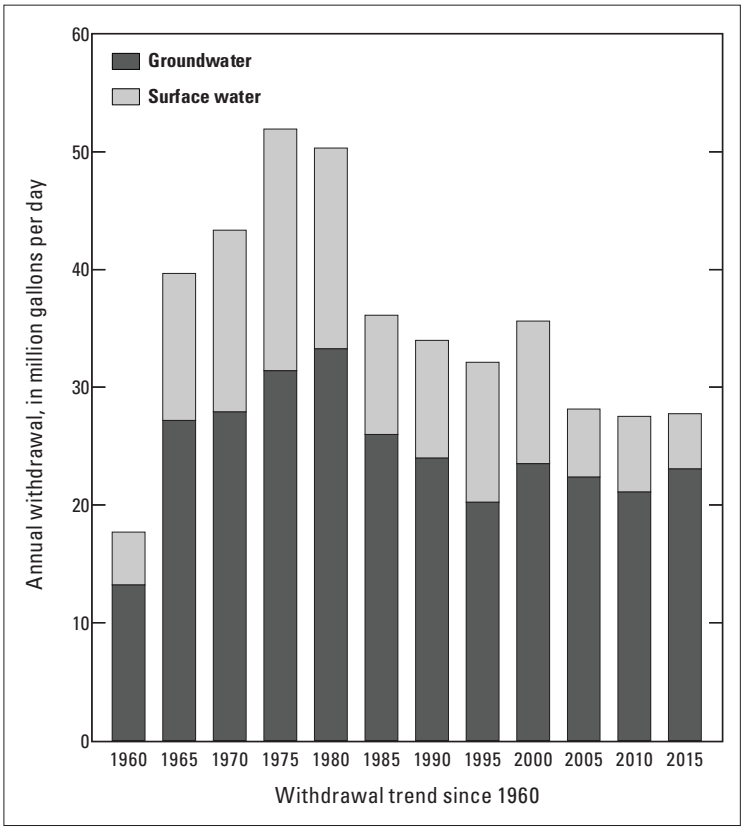
Washington

Population: 46,371
Population served by public supply: 29,392
Per capita withdrawals (gal/d): 598
Acres irrigated: 917
Hydroelectric power instream use (Mgal/d): 0



Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	4.63		4.63
Industrial	16.63	4.50	21.13
Power generation			
Rural domestic	1.36		1.36
Livestock	0.12	0.12	0.24
Rice irrigation			
General irrigation	0.31	0.08	0.38
Aquaculture			
Total	**23.05**	**4.70**	**27.74**

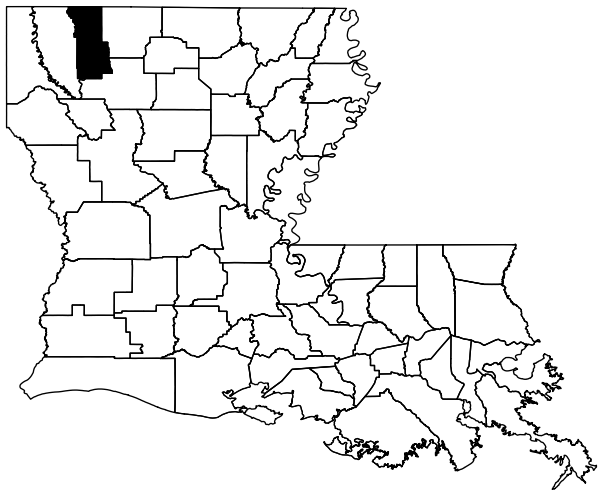
Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
26	Paper products	16.63	4.50



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Angie Water System	0.02	
Bogalusa Rural Water System	0.29	
Bogalusa Water System	2.57	
Franklinton Water System	0.90	
Mt. Hermon Water District	0.21	
Rural Franklinton Water System	0.28	
Util. Inc. of LA North Folsom Hills	0.01	
Varnado W. W. District	0.33	

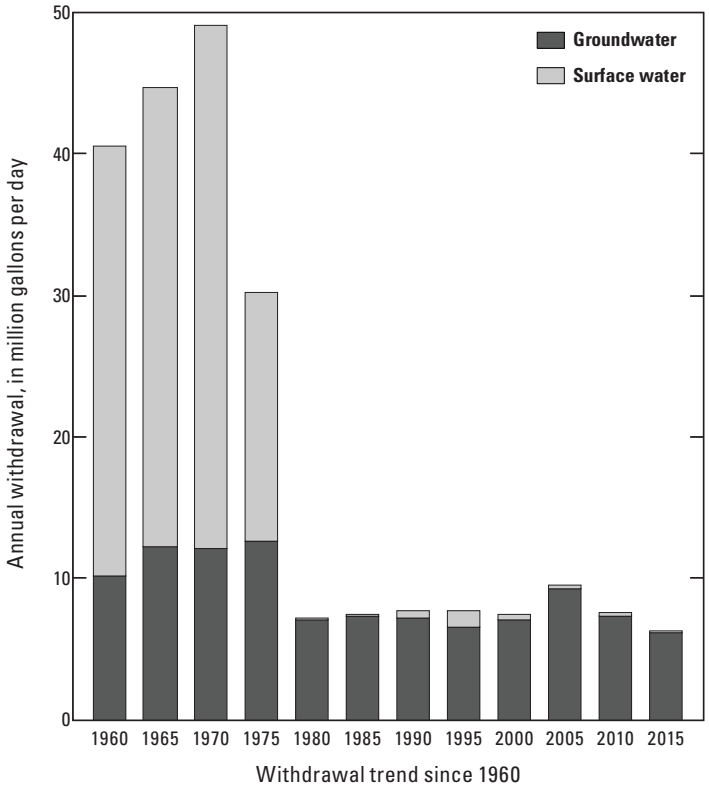
Webster

Population: 40,021
Population served by public supply: 35,509
Per capita withdrawals (gal/d): 156
Acres irrigated: 2
Hydroelectric power instream use (Mgal/d): 0



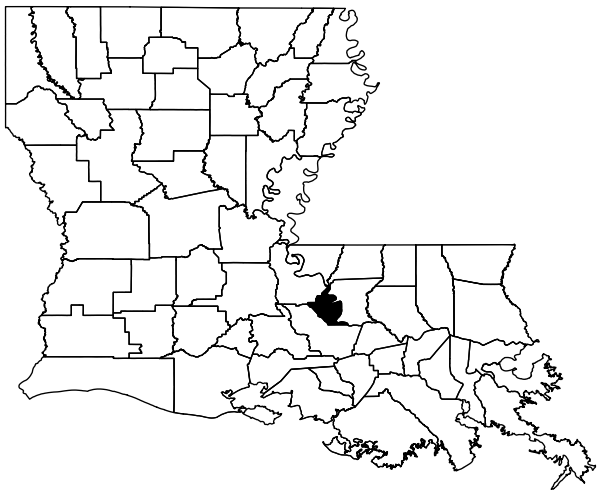
Withdrawals, in million gallons per day (Mgal/d)			
	Groundwater (GW)	Surface Water (SW)	Total
Public supply	5.39		5.39
Industrial	0.41	0.02	0.43
Power generation			
Rural domestic	0.36		0.36
Livestock	0.01	0.05	0.06
Rice irrigation			
General irrigation		0.00	0.00
Aquaculture	0.00		0.00
Total	**6.17**	**0.07**	**6.24**

Withdrawals by Major Industrial Group (Mgal/d)			
Standard industrial classification		GW	SW
13	Oil and gas extraction		0.02
29	Petroleum refining	0.40	
34	Metal products	0.33	
39	Misc. manufacturing	0.03	



Withdrawals by Major Public Supplier (Mgal/d)		
Public Supplier	GW	SW
Bistineau Water System	0.07	
Blocker Water Works Corp.	0.07	
Central Water System	0.03	
Cotton Valley Water System	0.13	
Cullen Water System	0.08	
Dixie Inn Water System	0.03	
Dixie Overland Water Works	0.12	
Dorcheat Acres Water System	0.02	
Doyline Water System	0.05	
Dubberly Water System	0.07	
Germantown Water System	0.22	
Gilark Water System	0.06	
Gilgal Water System	0.10	
Heflin Water System	0.01	
Horse Shoe Road Water System	0.02	
Jenkins Comm. Water System	0.04	
Leton Water System	0.05	
McIntyre Water System	0.04	
Midway Water Works	0.04	
Minden Water System	2.04	
Pleasant Valley Water System	0.06	
Salt Works Water System	0.04	
Sarepta Water System	0.10	
Shongaloo Water System	0.08	
Sibley Water System	0.15	
Springhill Water System	1.00	
St. James Water System	0.02	
State Line Water System	0.02	
Thomasville Water System	0.02	
Union Grove Water System	0.03	
Village Water System	0.19	

West Baton Rouge



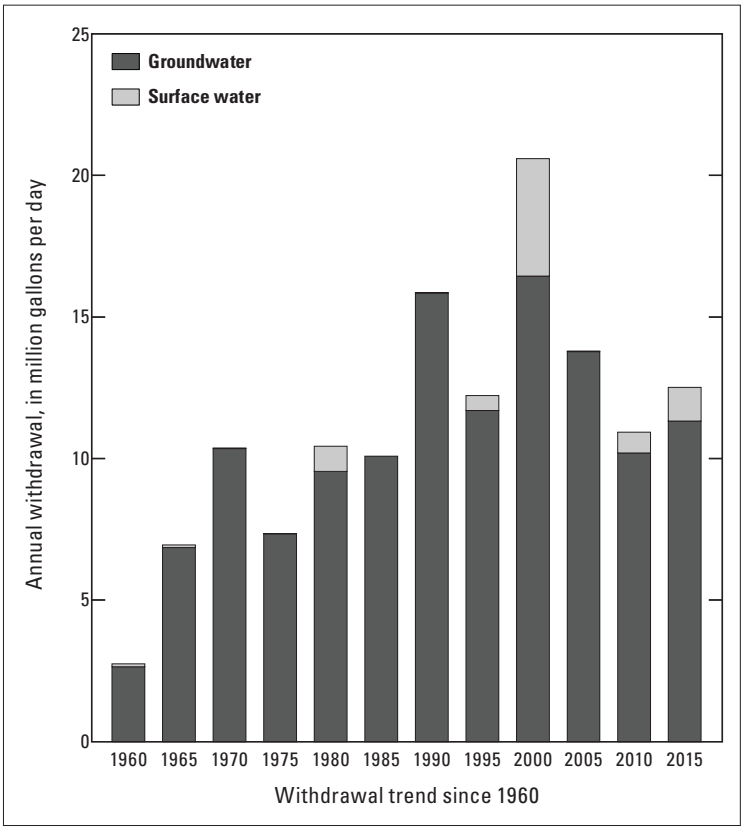
Population: 25,490
Population served by public supply: 25,012
Per capita withdrawals (gal/d): 491
Acres irrigated: 2,784
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	7.21		7.21
Industrial	1.51		1.51
Power generation			
Rural domestic	0.04		0.04
Livestock	0.01	0.00	0.01
Rice irrigation	0.51	0.51	1.01
General irrigation	0.63	0.33	0.96
Aquaculture	1.42	0.35	1.77
Total	**11.32**	**1.19**	**12.51**

Withdrawals by Major Industrial Group (Mgal/d)

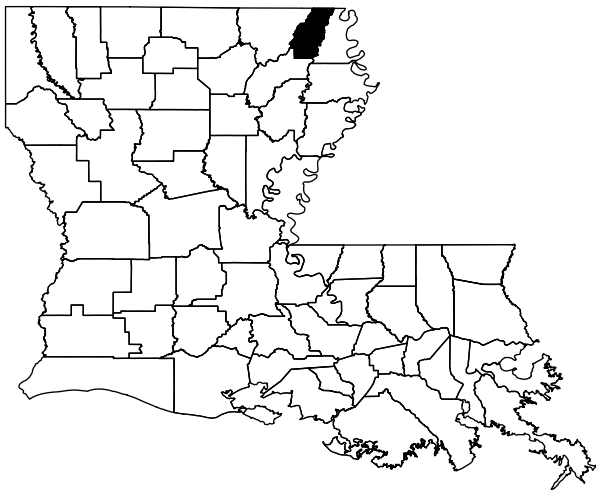
Standard industrial classification		GW	SW
28	Chemicals	1.26	
29	Petroleum refining	0.14	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Plaquemine City Light & Water	1.14	
Port Allen Water System	0.47	
W. Baton Rouge Gas & Water	0.66	
W. Baton Rouge Water Dist. 1	2.64	
W. Baton Rouge Water Dist. 2	1.22	
W. Baton Rouge Water Dist. 4	0.94	
Westport Properties	0.13	

West Carroll



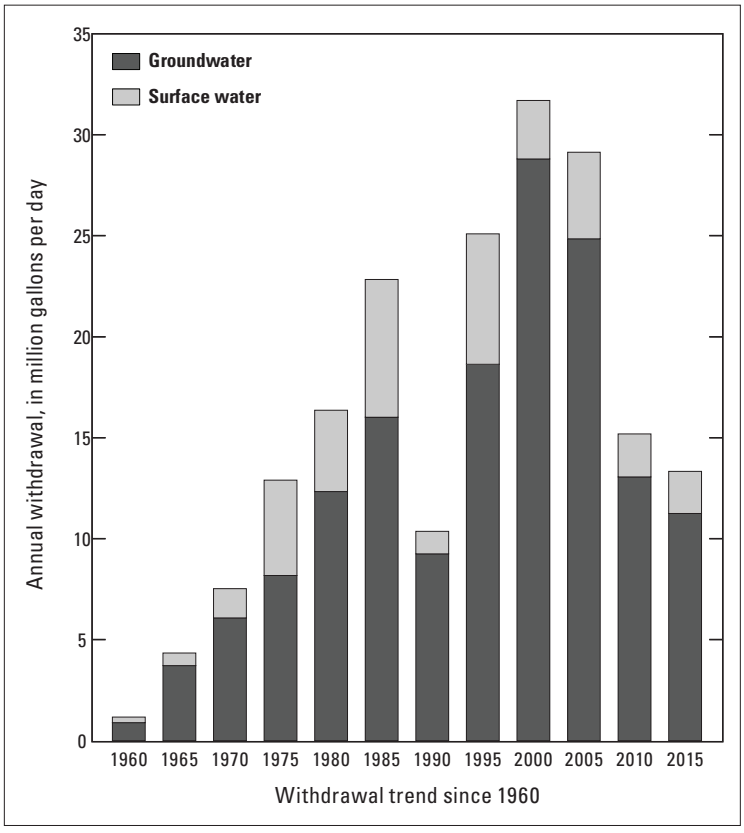
Population: 11,293
Population served by public supply: 10,404
Per capita withdrawals (gal/d): 1,180
Acres irrigated: 23,226
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	1.39		1.39
Industrial			
Power generation			
Rural domestic	0.07		0.07
Livestock	0.04	0.01	0.05
Rice irrigation	2.24	0.75	2.99
General irrigation	7.51	1.32	8.83
Aquaculture			
Total	**11.25**	**2.08**	**13.33**

Withdrawals by Major Industrial Group (Mgal/d)

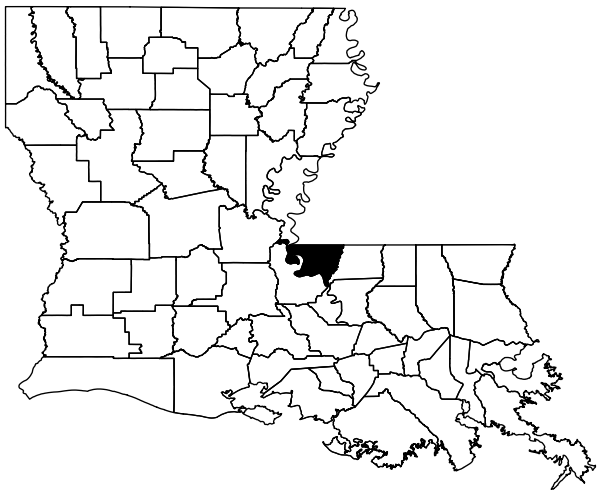
Standard industrial classification	GW	SW



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Epps Water and Sewer System	0.06	
Fiske Union Water System	0.08	
Forest Water System	0.09	
Goodwill Water System	0.10	
Monticello Water System	0.14	
N-E-W Carroll Water System	0.43	
Oak Grove Water System	0.35	
Pioneer-Darnell Water System	0.14	

West Feliciana



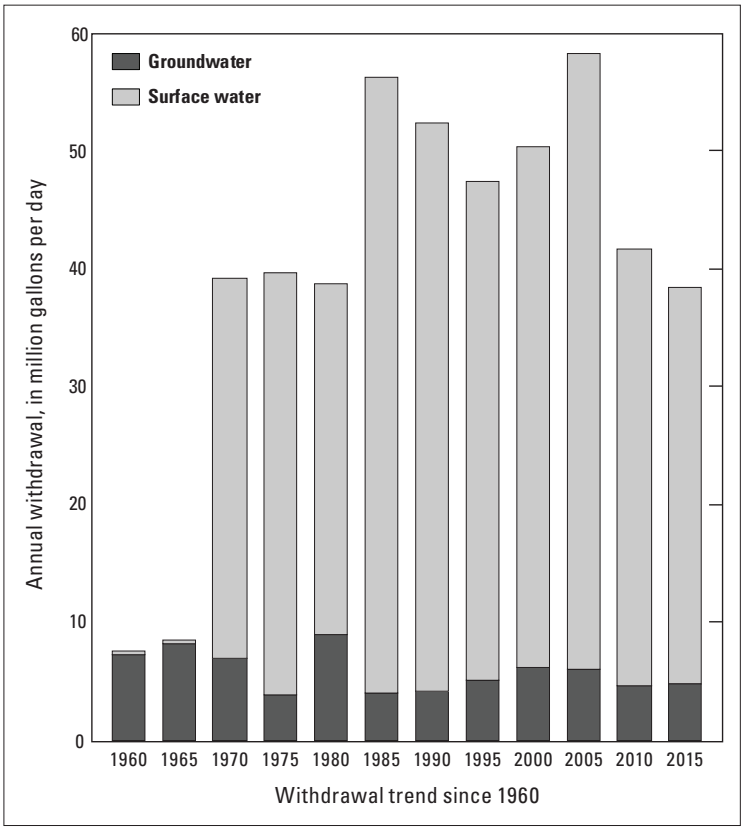
Population: 15,385
Population served by public supply: 14,872
Per capita withdrawals (gal/d): 2,497
Acres irrigated: 635
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	3.97		3.97
Industrial	0.80	16.08	16.89
Power generation	0.02	17.14	17.16
Rural domestic	0.04		0.04
Livestock	0.01	0.10	0.10
Rice irrigation			
General irrigation		0.26	0.26
Aquaculture			
Total	**4.84**	**33.58**	**38.42**

Withdrawals by Major Industrial Group (Mgal/d)

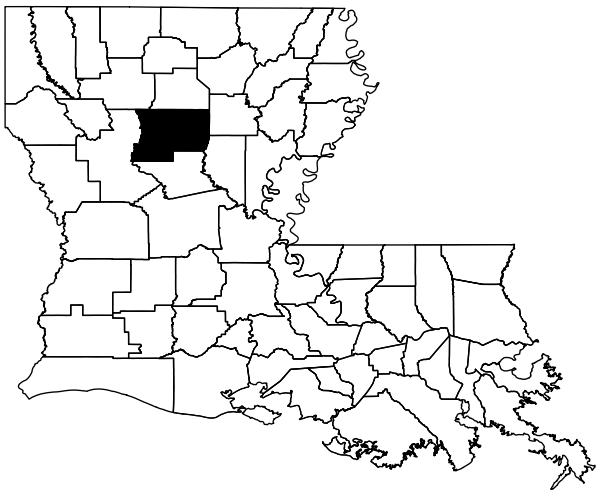
Standard industrial classification		GW	SW
26	Paper products	0.80	16.08



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
St. Francisville Water System	0.59	
W. Feliciana Water District #13	1.08	

Winn



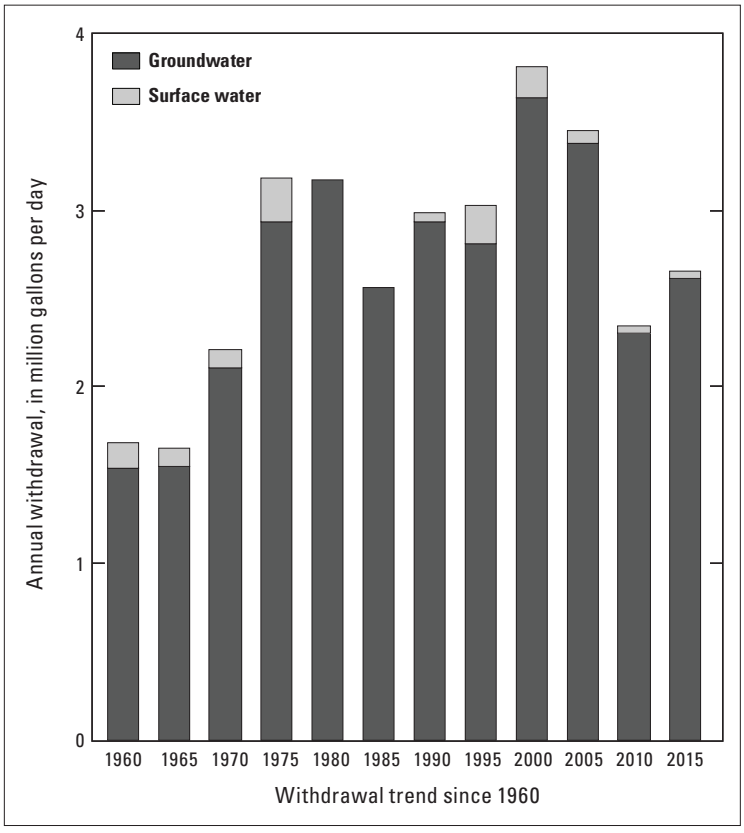
Population: 14,568
Population served by public supply: 12,050
Per capita withdrawals (gal/d): 182
Acres irrigated: 1
Hydroelectric power instream use (Mgal/d): 0

Withdrawals, in million gallons per day (Mgal/d)

	Groundwater (GW)	Surface Water (SW)	Total
Public supply	2.01		2.01
Industrial	0.39		0.39
Power generation			
Rural domestic	0.20		0.20
Livestock	0.01	0.04	0.06
Rice irrigation			
General irrigation	0.00	0.00	0.00
Aquaculture			
Total	**2.62**	**0.04**	**2.66**

Withdrawals by Major Industrial Group (Mgal/d)

Standard industrial classification		GW	SW
24	Lumber	0.28	
28	Chemicals	0.10	



Withdrawals by Major Public Supplier (Mgal/d)

Public Supplier	GW	SW
Atlanta Water System	0.07	
Backwood Village Water System	0.06	
Calvin Water System	0.03	
Dodson Water System	0.06	
Hwy. 84 West Water System	0.04	
Jordan Hill\Red Hill Waterworks	0.06	
Joyce Water Supply	0.01	
Pleasant Hill-Crossroads W. S.	0.06	
Sikes Water System	0.06	
Tannehill Water System	0.19	
West Winn Water System, Inc.	0.14	
Wheeling Water System, Inc.	0.01	
Winnfield Water System	1.22	

Table 3. Water withdrawals in Louisiana by parish, source, and principal use, 2015.

[Withdrawals are in million gallons per day (Mgal/d). Summation of numbers in columns may differ slightly from totals because of rounding. Withdrawals that were less than 0.005 Mgal/d but greater than 0 are shown as 0.00, and blank values indicate that there were no withdrawals.]

Parish	Public supply		Industrial		Power generation		Rural domestic	Livestock	
	GW	SW	GW	SW	GW	SW	GW	GW	SW
Acadia	5.66		0.58		4.49	3.43	1.24	0.11	0.01
Allen	4.24		0.33				0.25	0.05	0.01
Ascension	1.29	1.37	1.72	181.28			2.69	0.07	0.02
Assumption		4.19	9.23	6.52			0.03		0.01
Avoyelles	4.05		0.00				0.18	0.16	
Beauregard	4.42		35.04				0.81	0.09	0.06
Bienville	2.72		9.13	0.25			0.33	0.04	0.02
Bossier	2.42	10.45	0.07	0.25			1.11	0.11	0.03
Caddo	1.47	41.96	0.03	0.87		30.21	1.47	0.04	0.09
Calcasieu	27.67		40.60	129.68	6.62	7.99	1.97	0.16	0.23
Caldwell	1.03						0.06	0.03	0.03
Cameron	1.50		0.52	8.75			0.07	0.04	0.13
Catahoula	1.17						0.10	0.01	0.03
Claiborne	1.96			0.02			0.17	0.04	0.04
Concordia	2.11	0.52				3.57	0.06	0.04	0.01
De Soto	1.24	1.84	0.76	18.22		5.13	0.60	0.14	0.05
East Baton Rouge	72.21		72.59	16.68	7.40		0.24	0.07	0.01
East Carroll	0.91						0.01	0.00	0.01
East Feliciana	2.84		0.03				0.27	0.01	0.10
Evangeline	6.50		1.95		0.16	170.51	0.34	0.12	0.04
Franklin	1.13		0.68				0.64	0.14	
Grant	2.91	1.63	0.08				0.22	0.02	0.03
Iberia	8.62		3.03	7.46			1.05	0.04	0.01
Iberville	1.38	0.60	24.43	365.83	0.99	138.04	0.15	0.04	0.01
Jackson	1.73		2.27	0.00			0.15	0.00	0.03
Jefferson		61.79	1.63	4.83	4.79	739.98	0.03		0.04
Jefferson Davis	3.82						0.39	0.02	
Lafayette	25.44		0.01				2.66	0.11	
Lafourche		25.66	1.04	3.50			0.02	0.06	0.06
La Salle	1.72			0.00			0.06	0.00	0.02
Lincoln	7.20		0.62	1.17			0.19	0.01	0.07
Livingston	11.55		0.01				2.00	0.06	0.04
Madison	1.65						0.02	0.01	0.01
Morehouse	3.48		0.04				0.16	0.08	0.02
Natchitoches	1.30	6.47		14.34			0.51	0.05	0.20
Orleans		140.90	0.89		10.87	261.19	0.21	0.00	0.01
Ouachita	10.02	14.16	8.70	14.39		2.55	0.38		0.07
Plaquemines		7.14		53.66			0.05		0.05
Pointe Coupee	3.54		6.23		1.30	300.88	0.23	0.06	0.04
Rapides	19.13		0.00		0.33	726.60	0.45	0.04	0.16
Red River	0.61	0.41	0.01	0.78			0.20	0.08	0.12
Richland	4.45						0.47	0.07	0.07
Sabine	1.08	1.26	0.00	0.14			1.00	0.01	0.09
St. Bernard		7.16		206.86			0.01	0.02	
St. Charles		9.09	1.11	595.19		1,792.66	0.02	0.00	0.02
St. Helena	0.90		0.03				0.52	0.13	0.01
St. James		4.00		178.48			0.01	0.01	
St. John the Baptist	4.51	2.94	8.65	63.42			0.08		0.01
St. Landry	10.31		0.99				0.65	0.18	0.05
St. Martin	4.73		0.16				0.81	0.03	0.01
St. Mary	0.45	8.89	2.86	3.64	0.10	26.88	0.13		0.02
St. Tammany	24.04		0.05	0.08			5.28	0.09	0.06
Tangipahoa	15.07		1.09	0.08			2.86	0.17	0.17
Tensas	0.54	0.62					0.02	0.00	0.01
Terrebonne		1.88					0.01	0.02	0.04
Union	4.40		0.09	0.00			0.19	0.02	0.10
Vermilion	7.07		0.84	0.05			2.19	0.05	0.21
Vernon	6.32						1.25	0.01	0.08
Washington	4.63		16.63	4.50			1.36	0.12	0.12
Webster	5.39		0.41	0.02			0.36	0.01	0.05
West Baton Rouge	7.21		1.51				0.04	0.01	0.00
West Carroll	1.39						0.07	0.04	0.01
West Feliciana	3.97		0.80	16.08	0.02	17.14	0.04	0.01	0.10
Winn	2.01		0.39				0.20	0.01	0.04
Subtotals	**359.12**	**354.93**	**257.87**	**1,897.03**	**37.07**	**4,226.74**	**39.33**	**3.18**	**3.15**
Totals	**714.04**		**2,154.90**		**4,263.81**		**39.33**	**6.33**	

Irrigation									
Rice		General		Aquaculture		Total use			
GW	SW	GW	SW	GW	SW	GW	SW	Total	Parish
112.46	47.65	1.34	1.34	88.52	15.62	**214.41**	**68.07**	**282.48**	Acadia
21.87	7.29	0.50		8.27	2.04	**35.52**	**9.34**	**44.86**	Allen
		0.45				**6.22**	**182.67**	**188.89**	Ascension
		0.28	0.42	0.17	0.67	**9.70**	**11.81**	**21.51**	Assumption
24.89	1.31	8.59	2.15	18.43	6.14	**56.31**	**9.60**	**65.91**	Avoyelles
2.27		0.32	0.04	1.08		**44.03**	**0.09**	**44.12**	Beauregard
			0.15			**12.21**	**0.43**	**12.64**	Bienville
		0.12	0.49	0.07		**3.90**	**11.22**	**15.12**	Bossier
		4.57	1.14	0.10		**7.68**	**74.27**	**81.96**	Caddo
18.73	6.24	0.61		1.95	1.05	**98.30**	**145.19**	**243.49**	Calcasieu
0.34	0.79		1.73			**1.45**	**2.55**	**4.00**	Caldwell
9.02	13.52		0.16	0.18	0.71	**11.33**	**23.27**	**34.60**	Cameron
2.63		6.86	6.86	0.70		**11.47**	**6.89**	**18.36**	Catahoula
		0.05				**2.22**	**0.06**	**2.28**	Claiborne
8.47	4.56	13.49	1.50	0.96	0.05	**25.13**	**10.20**	**35.33**	Concordia
		0.01	0.12			**2.75**	**25.35**	**28.10**	De Soto
		0.39		0.22		**153.11**	**16.69**	**169.80**	East Baton Rouge
3.65	0.41	15.30	3.82			**19.88**	**4.24**	**24.12**	East Carroll
		0.19	0.06			**3.34**	**0.17**	**3.51**	East Feliciana
74.70	8.30	2.97	0.33	33.64	5.94	**120.39**	**185.11**	**305.50**	Evangeline
1.15	4.60	18.12	2.01	0.40		**22.26**	**6.61**	**28.87**	Franklin
			1.60			**3.23**	**3.26**	**6.49**	Grant
0.25	1.85	0.62		8.50	2.12	**22.11**	**11.45**	**33.56**	Iberia
		0.89	0.59	1.71	6.85	**29.59**	**511.92**	**541.51**	Iberville
						4.15	**0.03**	**4.18**	Jackson
		0.02	0.01			**6.47**	**806.64**	**813.11**	Jefferson
108.31	46.42	0.97	0.65	49.99	74.98	**163.50**	**122.05**	**285.54**	Jefferson Davis
4.94	1.24	0.37	0.06	6.56	0.73	**40.09**	**2.03**	**42.12**	Lafayette
			0.58	3.31	13.23	**4.42**	**43.03**	**47.45**	Lafourche
			0.15			**1.79**	**0.17**	**1.95**	La Salle
		0.00	0.00			**8.01**	**1.24**	**9.26**	Lincoln
		0.01		0.26		**13.89**	**0.04**	**13.93**	Livingston
10.33	2.58	18.05	2.01	0.29	0.07	**30.35**	**4.67**	**35.02**	Madison
37.71	25.14	18.32	2.04			**59.78**	**27.19**	**86.97**	Morehouse
0.35	6.59	1.04	4.18	2.92	1.25	**6.17**	**33.02**	**39.19**	Natchitoches
		0.05				**12.02**	**402.10**	**414.12**	Orleans
5.28	9.81	0.32	2.85	0.01	0.05	**24.71**	**43.88**	**68.59**	Ouachita
			0.00			**0.05**	**60.86**	**60.91**	Plaquemines
2.78		9.59		6.35	1.59	**30.08**	**302.50**	**332.58**	Pointe Coupee
1.99	11.28	2.77	2.57	2.82	2.60	**27.53**	**743.20**	**770.74**	Rapides
0.74	0.08	1.33	0.33			**2.98**	**1.73**	**4.71**	Red River
9.89		7.62	7.62			**22.49**	**7.68**	**30.17**	Richland
			0.00			**2.10**	**1.48**	**3.58**	Sabine
						0.02	**214.03**	**214.05**	St. Bernard
		0.03	0.02			**1.17**	**2,396.96**	**2,398.13**	St. Charles
		0.02				**1.60**	**0.01**	**1.62**	St. Helena
			0.34		1.25	**0.03**	**184.07**	**184.10**	St. James
			0.16			**13.24**	**66.53**	**79.77**	St. John the Baptist
37.96	6.70	8.87	2.22	30.87	7.72	**89.82**	**16.68**	**106.50**	St. Landry
0.58	6.69	0.24	0.95	31.87	3.54	**38.42**	**11.18**	**49.60**	St. Martin
	0.28	0.05	0.44	0.28		**3.87**	**40.15**	**44.01**	St. Mary
		0.02	0.00	0.08		**29.56**	**0.14**	**29.71**	St. Tammany
		0.20				**19.39**	**0.24**	**19.64**	Tangipahoa
5.12	1.71	15.74	1.75	1.04		**22.47**	**4.08**	**26.54**	Tensas
		0.06		0.35	1.39	**0.43**	**3.32**	**3.74**	Terrebonne
		0.00	0.00			**4.70**	**0.10**	**4.80**	Union
40.53	60.80	0.16	0.64	33.98	5.97	**84.82**	**67.67**	**152.49**	Vermilion
			0.00	0.03		**7.60**	**0.08**	**7.68**	Vernon
		0.31	0.08			**23.05**	**4.70**	**27.74**	Washington
			0.00	0.00		**6.17**	**0.07**	**6.24**	Webster
0.51	0.51	0.63	0.33	1.42	0.35	**11.32**	**1.19**	**12.51**	West Baton Rouge
2.24	0.75	7.51	1.32			**11.25**	**2.08**	**13.33**	West Carroll
			0.26			**4.84**	**33.58**	**38.42**	West Feliciana
		0.00	0.00			**2.62**	**0.04**	**2.66**	Winn
549.67	277.08	169.98	56.06	337.31	155.91	**1,753.52**	**6,970.90**	**8,724.42**	**Subtotals**
826.75		**226.04**		**493.23**		**8,724.42**			**Totals**

Water Use By Aquifer

In 2015, total groundwater withdrawals were approximately 1,800 Mgal/d, of which more than 99.9 percent was withdrawn from 13 major aquifers or aquifer systems, including the Red River alluvial aquifer, Mississippi River alluvial aquifer, upland terrace aquifer (northern Louisiana), Chicot aquifer system, Chicot equivalent aquifer system (southeastern Louisiana), Evangeline aquifer, Evangeline equivalent aquifer system (southeastern Louisiana), Jasper aquifer system, Jasper equivalent aquifer system (southeastern Louisiana), Catahoula aquifer, Cockfield aquifer, Sparta aquifer, and the Carrizo-Wilcox aquifer (fig. 3). The Chicot aquifer system supplied the most groundwater, about 850 Mgal/d, which represented 48 percent of all groundwater withdrawals. The Mississippi River alluvial aquifer supplied the second most groundwater, about 380 Mgal/d, which represented 22 percent of all groundwater withdrawals (fig. 14).

This section provides information on groundwater withdrawals for the 13 major aquifers or aquifer systems (listed above, in order, from youngest to oldest). The one-page summary for each aquifer includes a table of withdrawals by category of use and a list of withdrawals by parish. As was previously mentioned, the sum of the withdrawals by parish in these tables could be different from the total withdrawals by category of use because of rounding. A location map depicts the areal extent of freshwater in the aquifer within the State, the overlying parishes, and their associated withdrawals. Each summary page also includes a bar chart showing the withdrawal trends in each aquifer for the period 1980–2015. Water withdrawals by aquifer or aquifer system are summarized in figure 14 and by aquifer or aquifer system and parish in table 4.

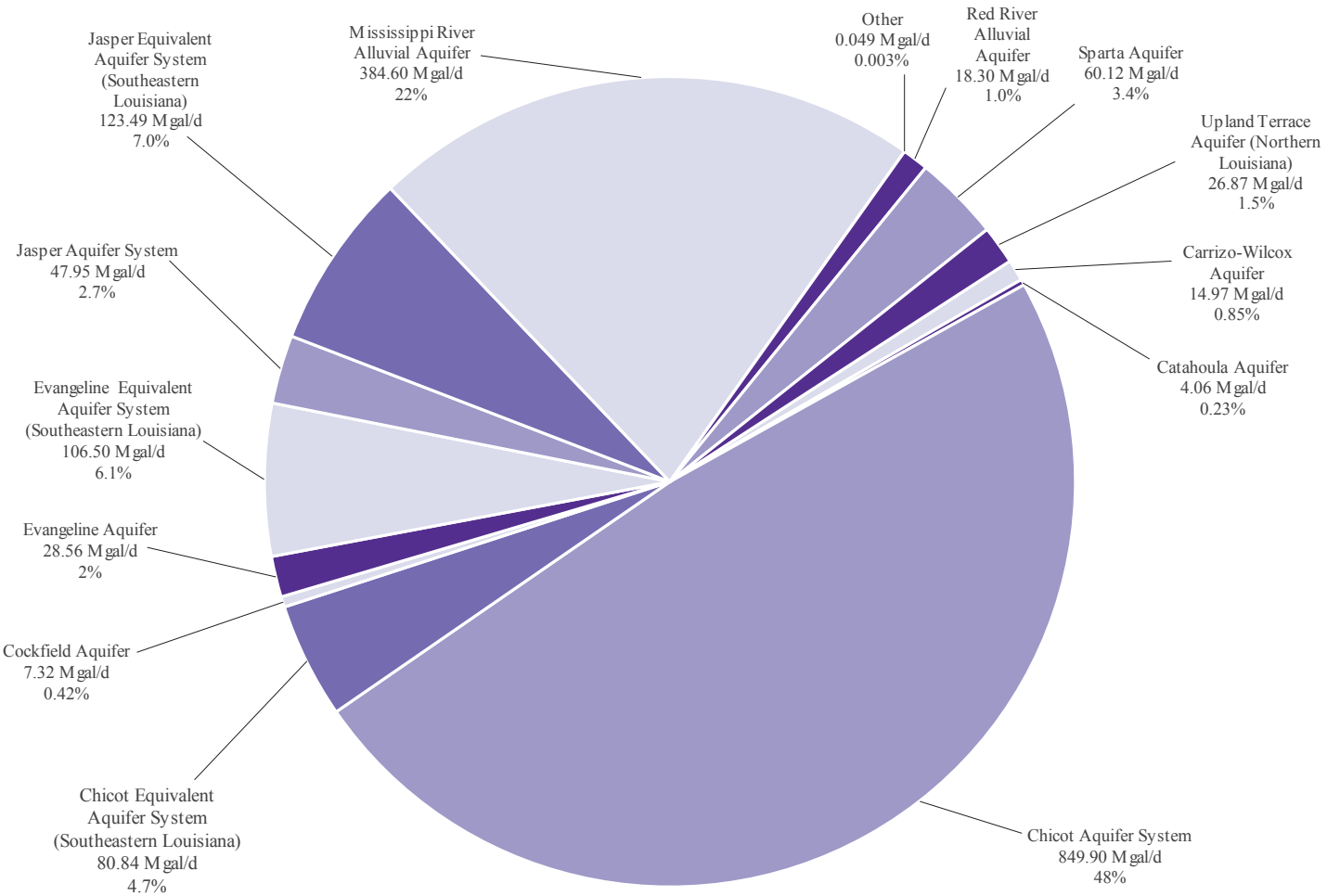
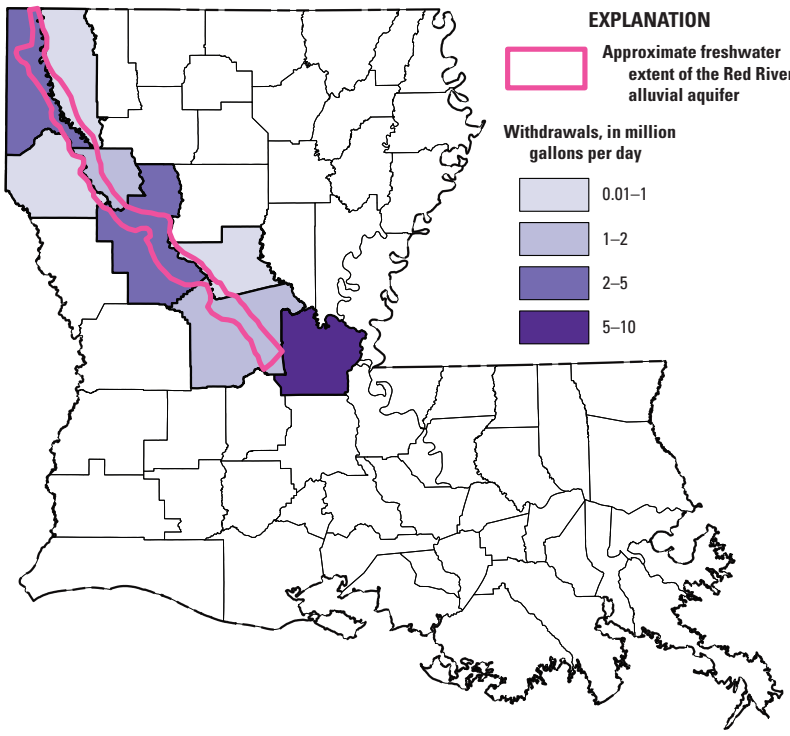
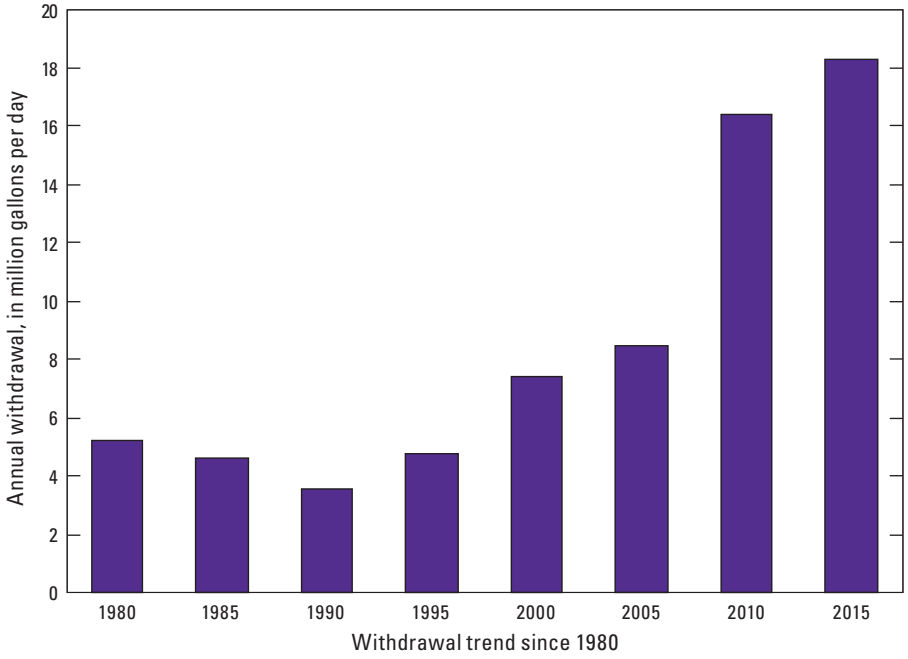


Figure 14. Groundwater withdrawals in Louisiana by aquifer or aquifer system, 2015.

Red River Alluvial Aquifer

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	0.18
Industry	0.09
Power generation	0.00
Rural domestic	0.14
Livestock	0.24
Rice irrigation	4.39
General irrigation	5.20
Aquaculture	8.06
Total	**18.30**

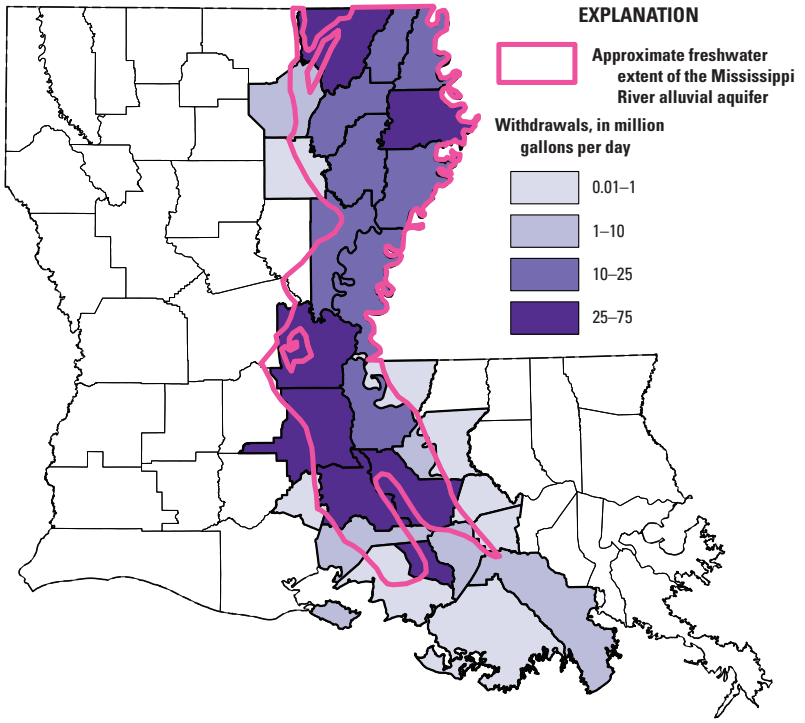


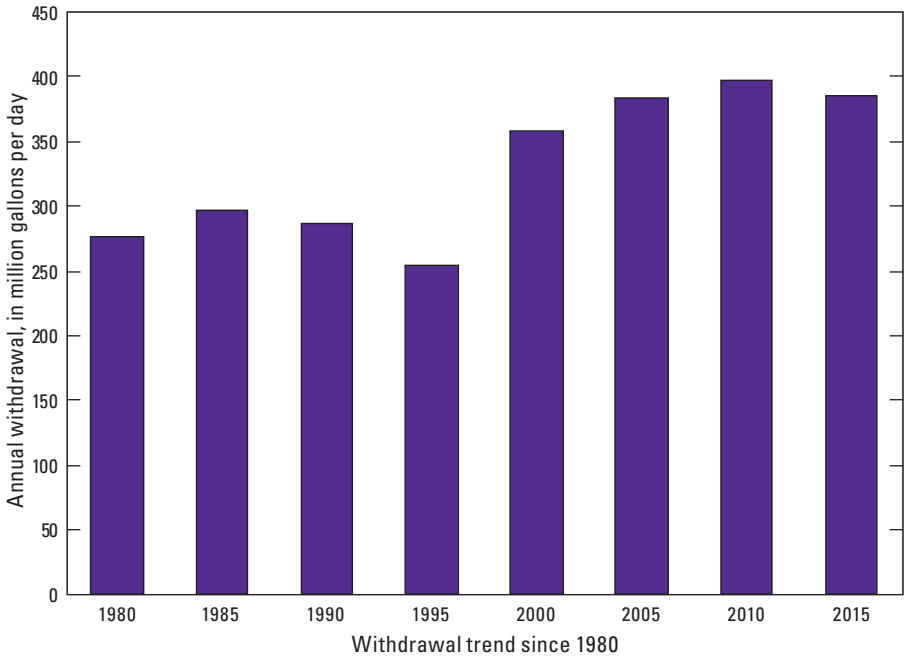


Withdrawals by Parish	
Parish	**Mgal/d**
Avoyelles	9.07
Bossier	0.28
Caddo	2.12
De Soto	0.04
Grant	0.02
Natchitoches	3.58
Rapides	1.38
Red River	1.81

Mississippi River Alluvial Aquifer

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	8.65
Industry	33.60
Power generation	0.99
Rural domestic	3.05
Livestock	0.77
Rice irrigation	121.87
General irrigation	138.39
Aquaculture	77.28
Total	**384.60**

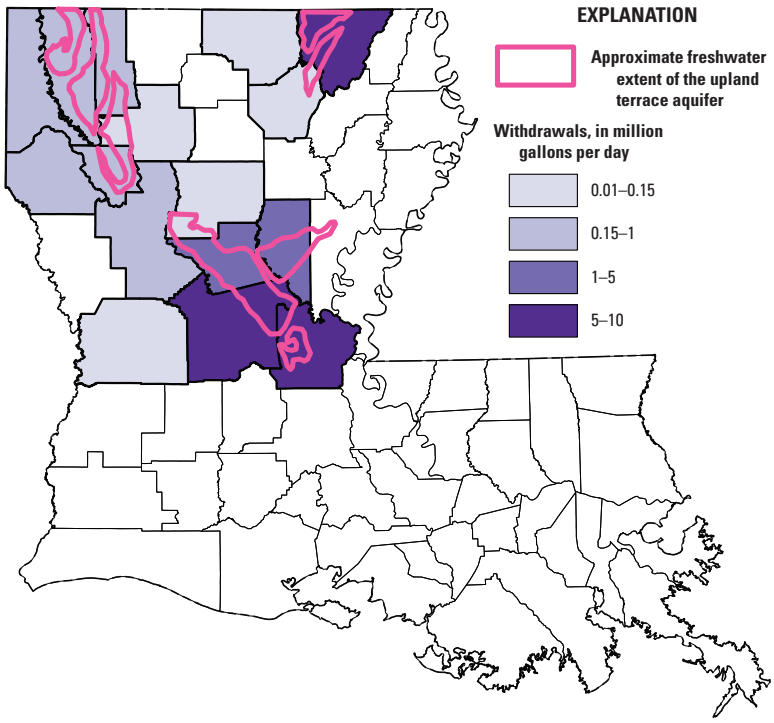


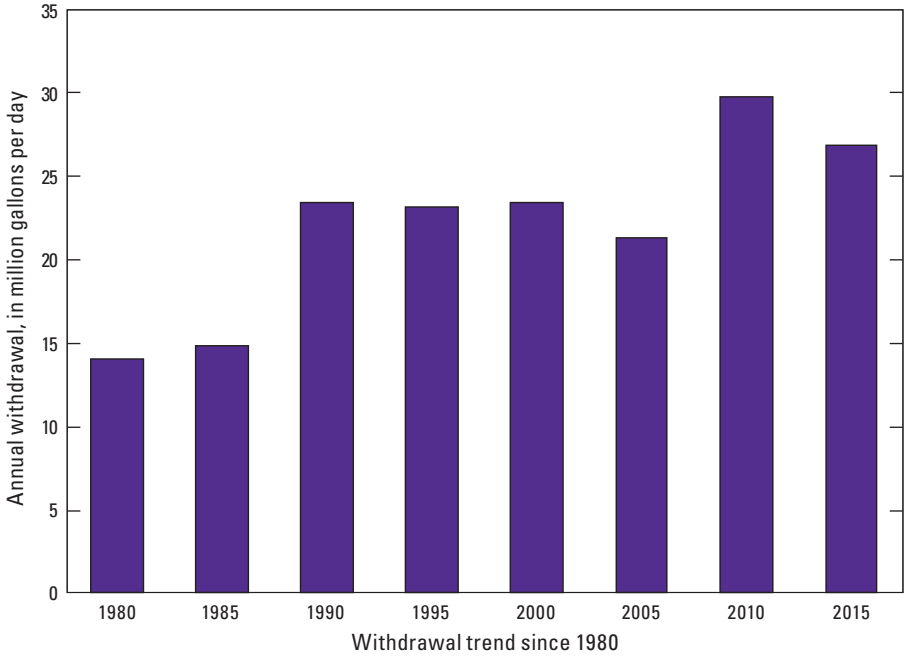


Withdrawals by Parish	
Parish	**Mgal/d**
Ascension	0.13
Assumption	7.57
Avoyelles	36.03
Caldwell	0.38
Catahoula	10.11
Concordia	22.58
East Baton Rouge	0.04
East Carroll	18.96
Franklin	22.26
Iberia	4.49
Iberville	25.44
Lafayette	0.48
Lafourche	4.42
Madison	30.35
Morehouse	52.59
Ouachita	3.60
Pointe Coupee	20.22
Richland	20.29
St. James	0.02
St. Landry	32.95
St. Martin	34.34
St. Mary	0.31
Tensas	22.47
Terrebonne	0.43
West Baton Rouge	3.84
West Carroll	10.29
West Feliciana	0.01

Upland Terrace Aquifer (Northern Louisiana)

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	11.71
Industry	0.63
Power generation	0.00
Rural domestic	0.91
Livestock	0.09
Rice irrigation	3.96
General irrigation	4.06
Aquaculture	5.49
Total	**26.86**

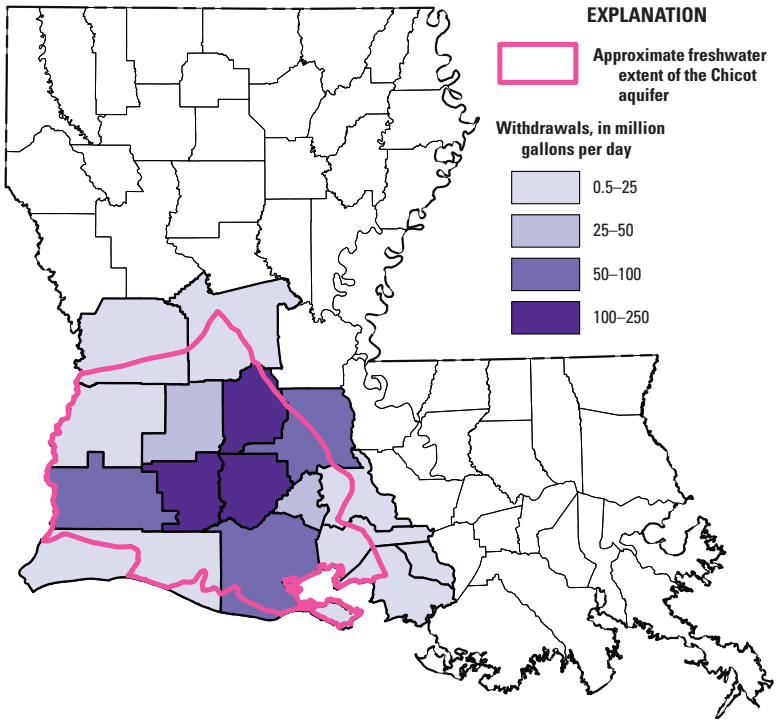


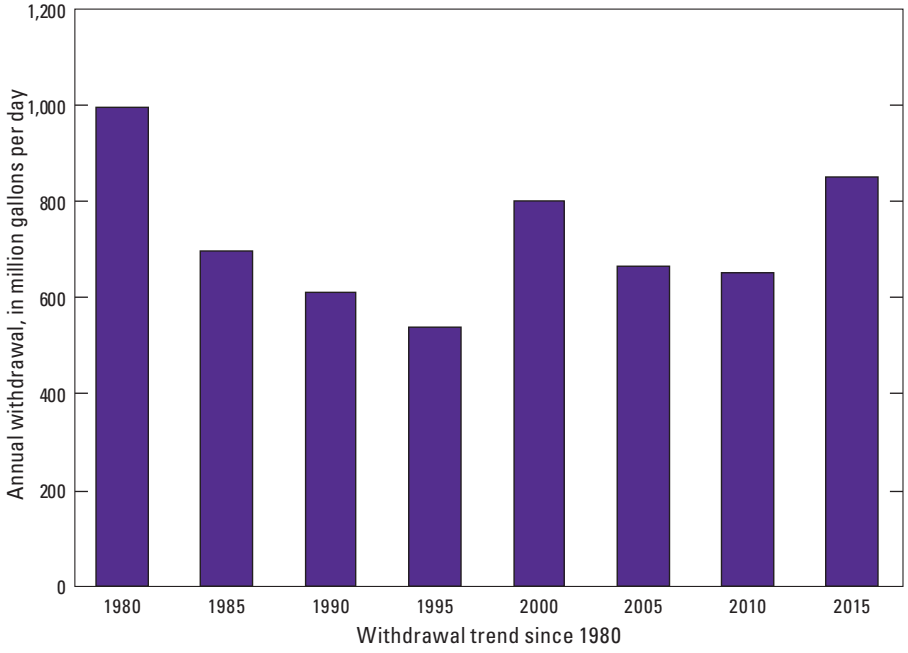


Withdrawals by Parish	
Parish	**Mgal/d**
Avoyelles	7.15
Bienville	0.03
Bossier	0.83
Caddo	0.46
De Soto	0.70
Grant	1.81
La Salle	1.29
Morehouse	6.59
Natchitoches	0.17
Ouachita	0.15
Rapides	7.06
Red River	0.26
Union	0.01
Vernon	0.06
Webster	0.25
Winn	0.04

Chicot Aquifer System

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	95.60
Industry	58.69
Power generation	11.37
Rural domestic	11.73
Livestock	0.87
Rice irrigation	412.58
General irrigation	14.74
Aquaculture	244.31
Total	**849.90**

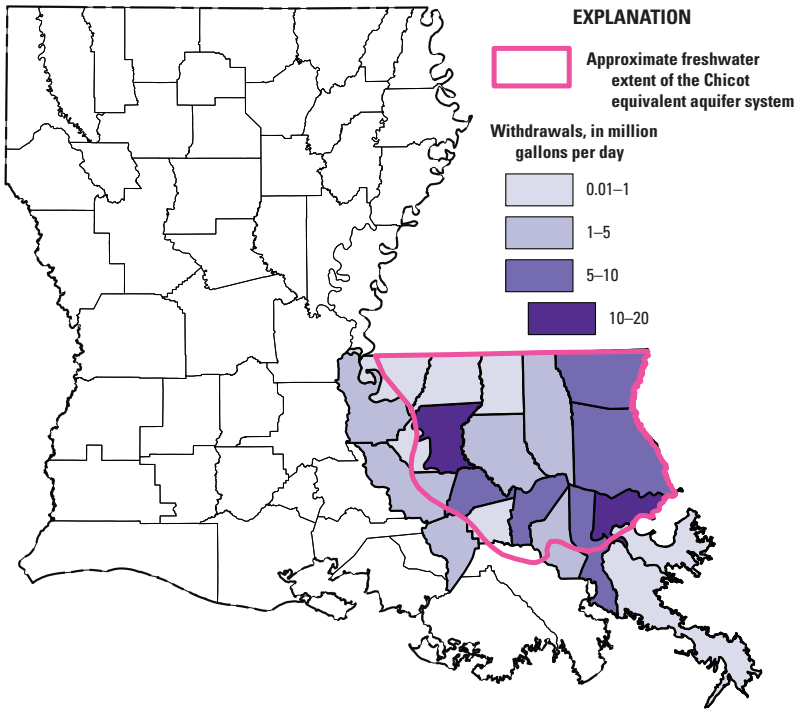


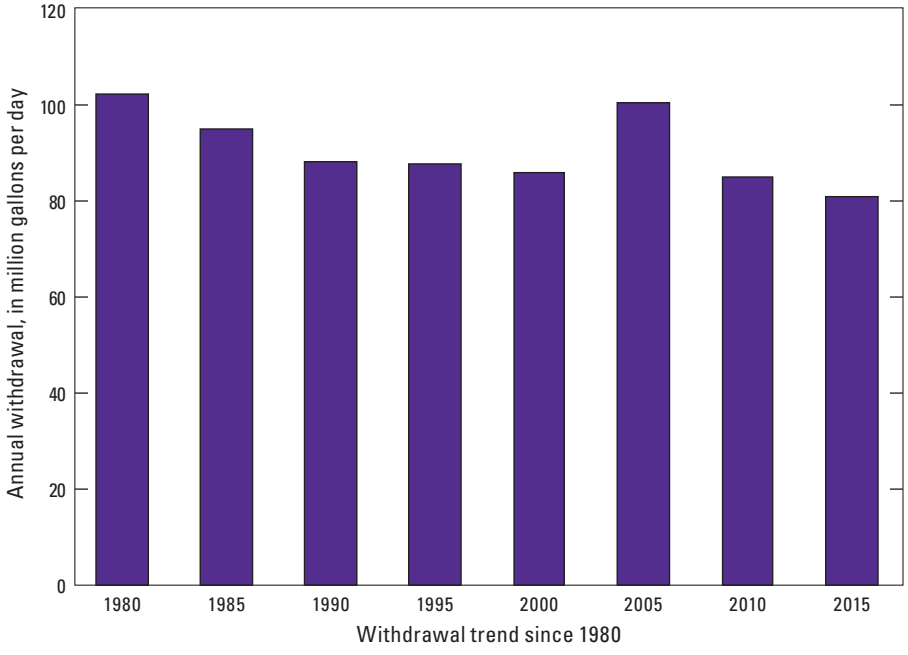


Withdrawals by Parish	
Parish	**Mgal/d**
Acadia	214.41
Allen	31.02
Beauregard	15.64
Calcasieu	97.55
Cameron	11.33
Evangeline	110.92
Iberia	17.62
Jefferson Davis	163.50
Lafayette	39.61
Rapides	0.95
St. Landry	54.35
St. Martin	4.08
St. Mary	3.56
Vermilion	84.82
Vernon	0.53

Chicot Equivalent Aquifer System (Southeastern Louisiana)

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	9.57
Industry	38.64
Power generation	15.67
Rural domestic	14.57
Livestock	0.50
Rice irrigation	0.00
General irrigation	1.52
Aquaculture	0.39
Total	**80.85**

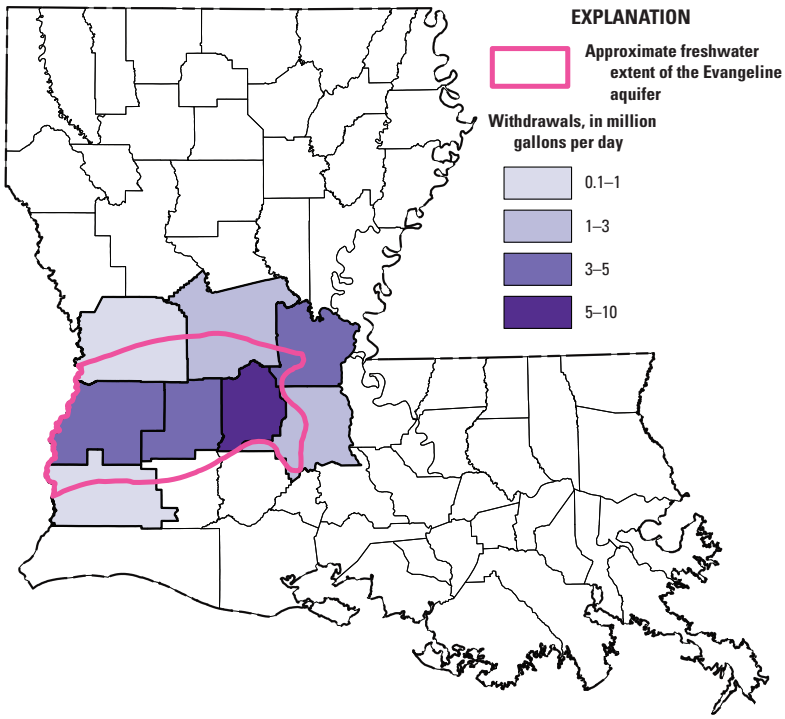


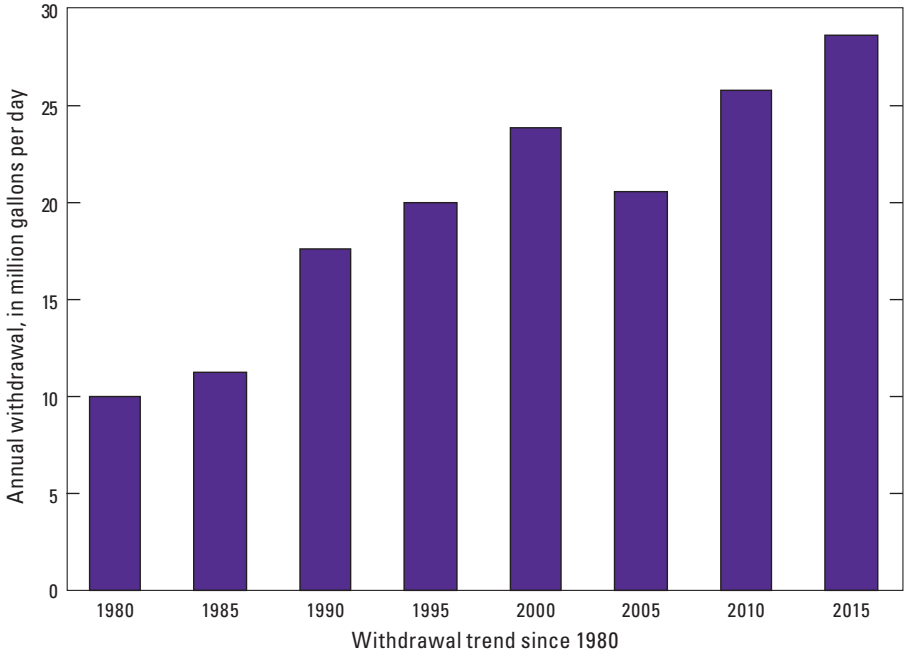


Withdrawals by Parish	
Parish	**Mgal/d**
Ascension	6.09
Assumption	2.14
East Baton Rouge	17.02
East Feliciana	0.34
Iberville	3.71
Jefferson	6.47
Livingston	2.92
Orleans	12.01
Plaquemines	0.05
Pointe Coupee	2.15
St. Bernard	0.02
St. Charles	1.17
St. Helena	0.91
St. James	0.01
St. John the Baptist	8.73
St. Tammany	5.99
Tangipahoa	3.93
Washington	7.16
West Baton Rouge	0.01
West Feliciana	0.02

Evangeline Aquifer

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	18.67
Industry	4.49
Power generation	0.00
Rural domestic	0.28
Livestock	0.05
Rice irrigation	3.97
General irrigation	0.86
Aquaculture	0.23
Total	**28.56**

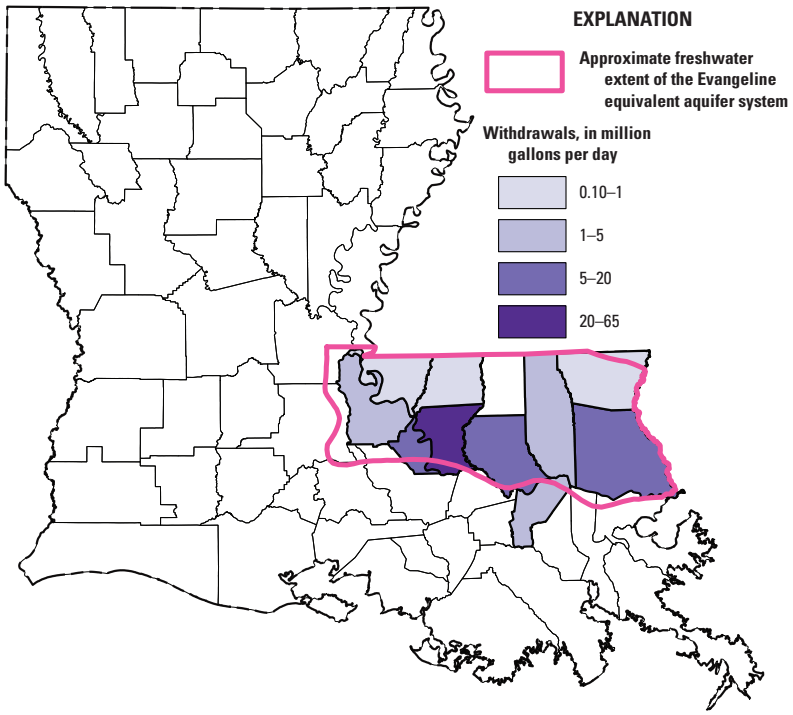


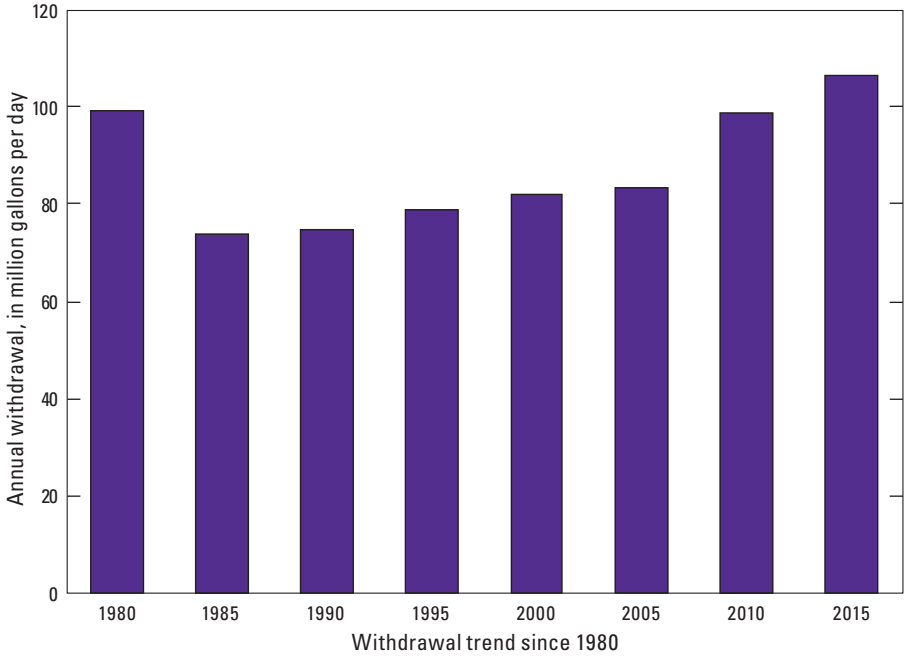


Withdrawals by Parish	
Parish	**Mgal/d**
Allen	4.50
Avoyelles	4.06
Beauregard	4.62
Calcasieu	0.74
Evangeline	9.46
Rapides	2.53
St. Landry	2.52
Vernon	0.12

Evangeline Equivalent Aquifer System (Southeastern Louisiana)

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	75.44
Industry	27.06
Power generation	1.31
Rural domestic	1.08
Livestock	0.21
Rice irrigation	0.14
General irrigation	1.23
Aquaculture	0.03
Total	**106.50**

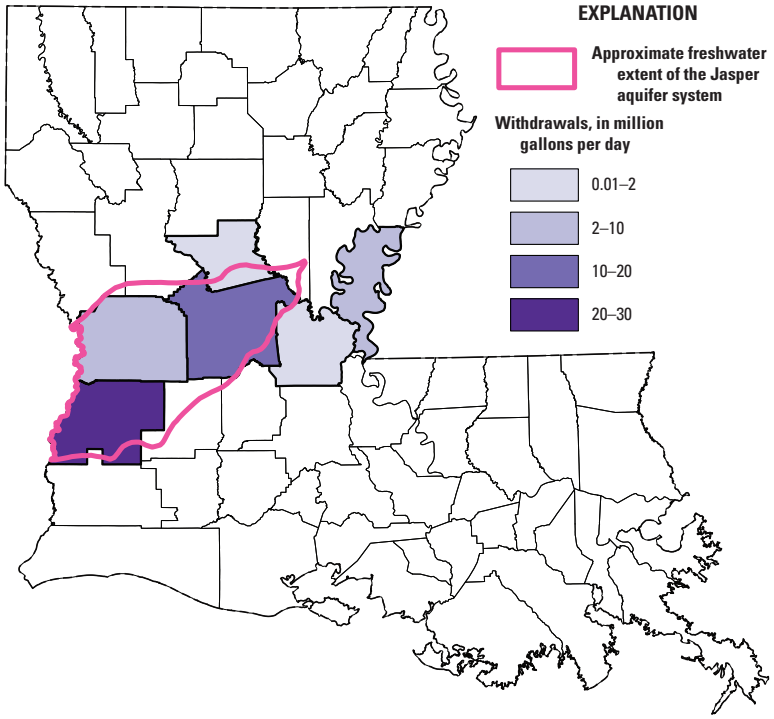


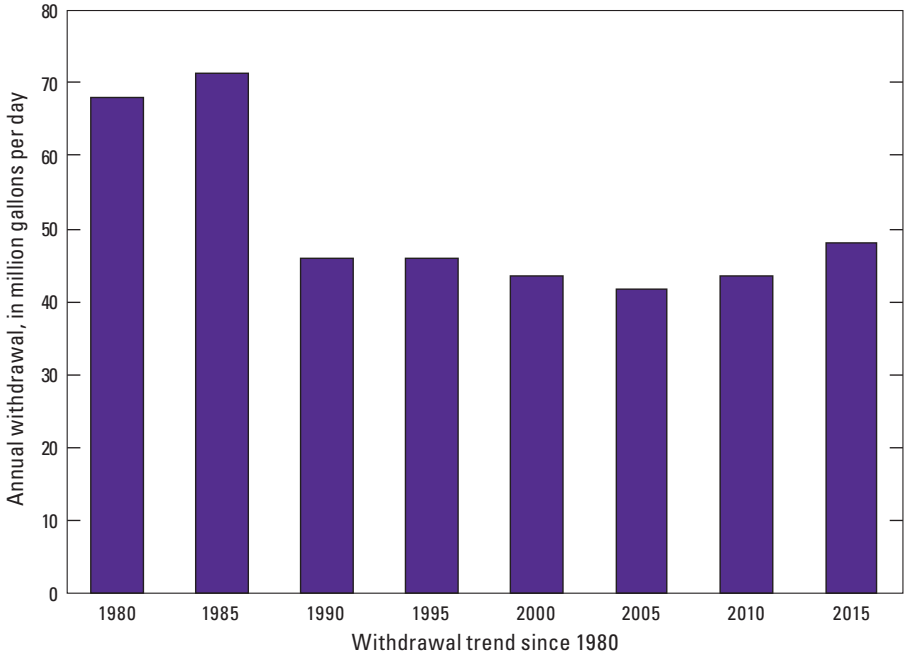


Withdrawals by Parish	
Parish	**Mgal/d**
East Baton Rouge	64.82
East Feliciana	0.25
Livingston	5.30
Pointe Coupee	3.63
St. John the Baptist	4.51
St. Tammany	16.71
Tangipahoa	3.64
Washington	0.15
West Baton Rouge	7.47
West Feliciana	0.01

Jasper Aquifer System

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	20.44
Industry	23.62
Power generation	0.33
Rural domestic	1.02
Livestock	0.03
Rice irrigation	0.58
General irrigation	0.63
Aquaculture	1.31
Total	**47.95**

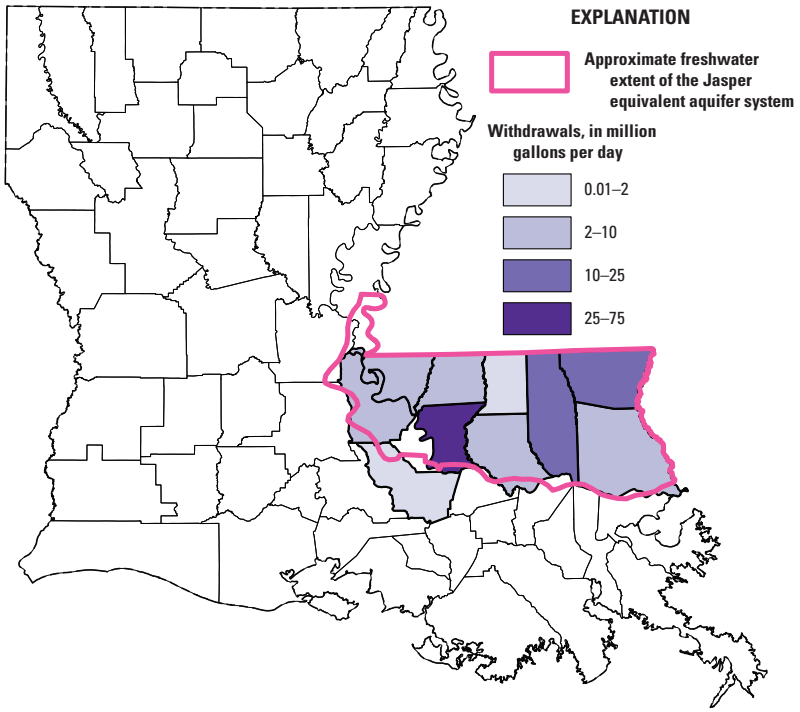


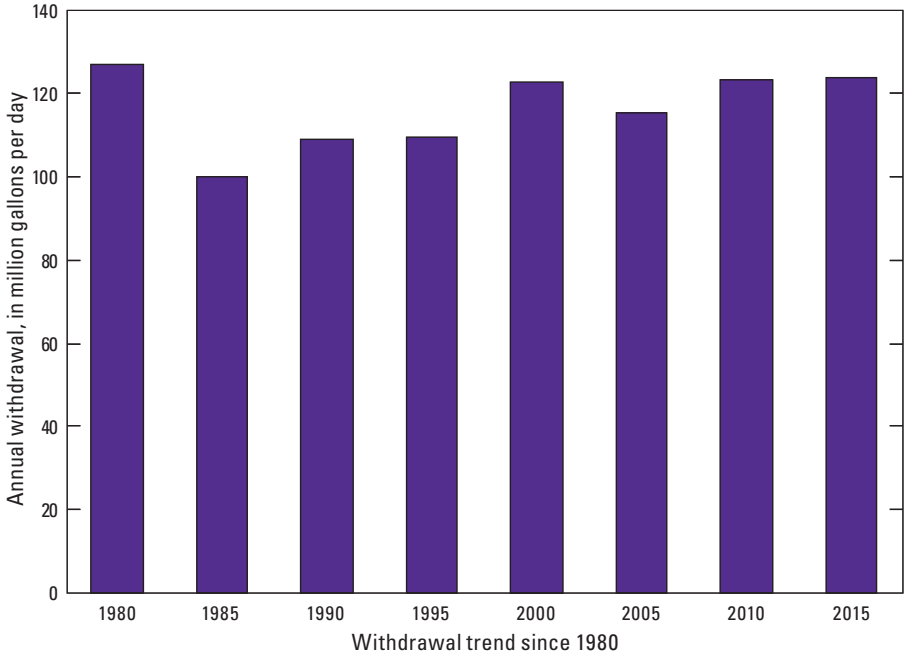


Withdrawals by Parish	
Parish	**Mgal/d**
Avoyelles	0.01
Beauregard	23.76
Concordia	2.18
Grant	0.49
Rapides	14.92
Vernon	6.59

Jasper Equivalent Aquifer System (Southeastern Louisiana)

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	66.60
Industry	49.17
Power generation	7.41
Rural domestic	0.11
Livestock	0.04
Rice irrigation	0.00
General irrigation	0.01
Aquaculture	0.14
Total	**123.49**

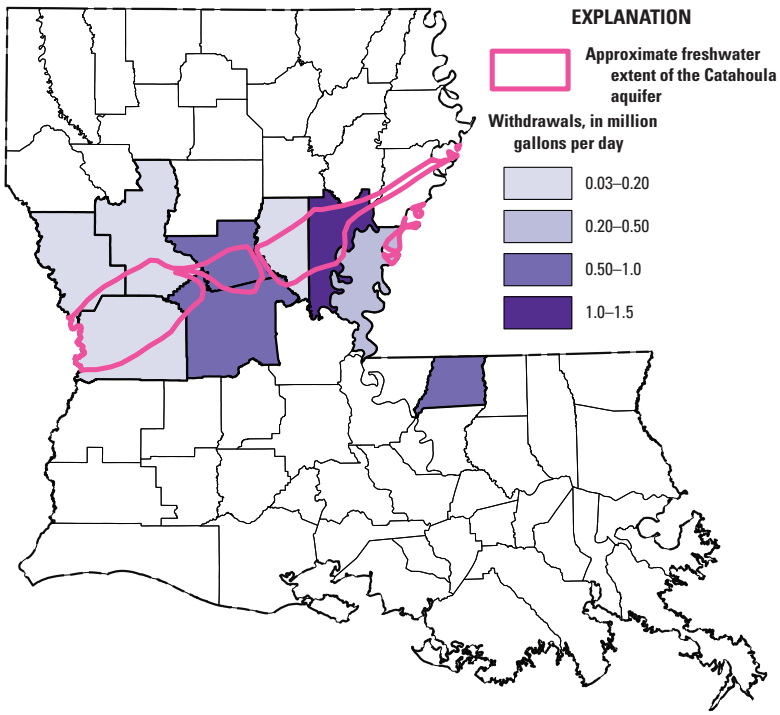


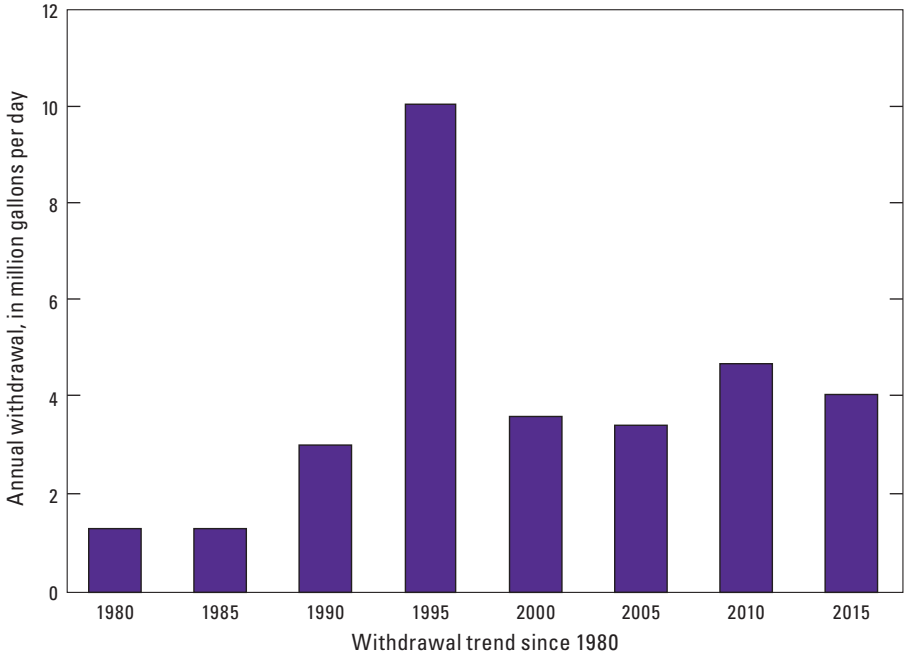


Withdrawals by Parish	
Parish	**Mgal/d**
East Baton Rouge	71.24
East Feliciana	2.15
Iberville	0.45
Livingston	5.67
Pointe Coupee	4.08
St. Helena	0.69
St. Tammany	6.87
Tangipahoa	11.82
Washington	15.73
West Feliciana	4.79

Catahoula Aquifer

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	3.61
Industry	0.06
Power generation	0.00
Rural domestic	0.23
Livestock	0.02
Rice irrigation	0.00
General irrigation	0.14
Aquaculture	0.00
Total	**4.06**

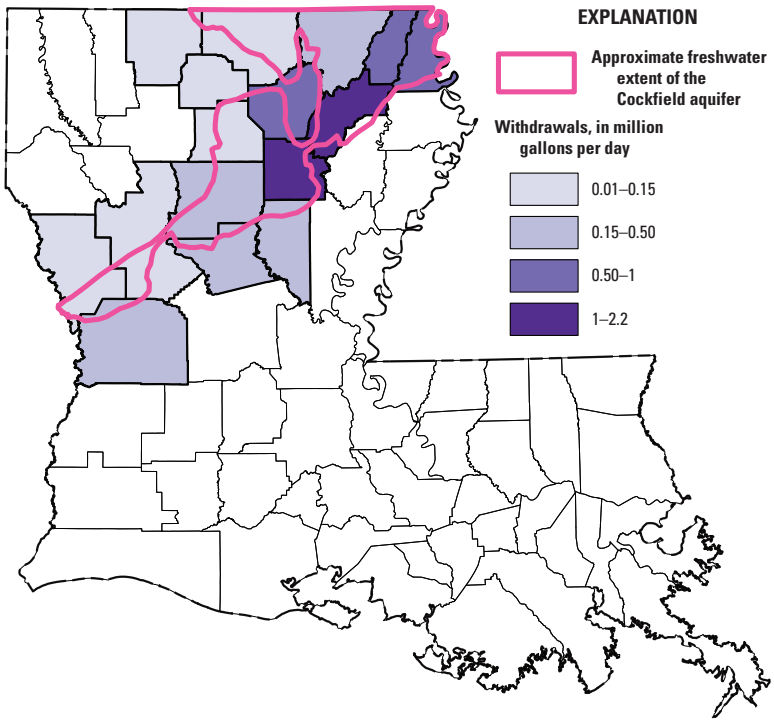


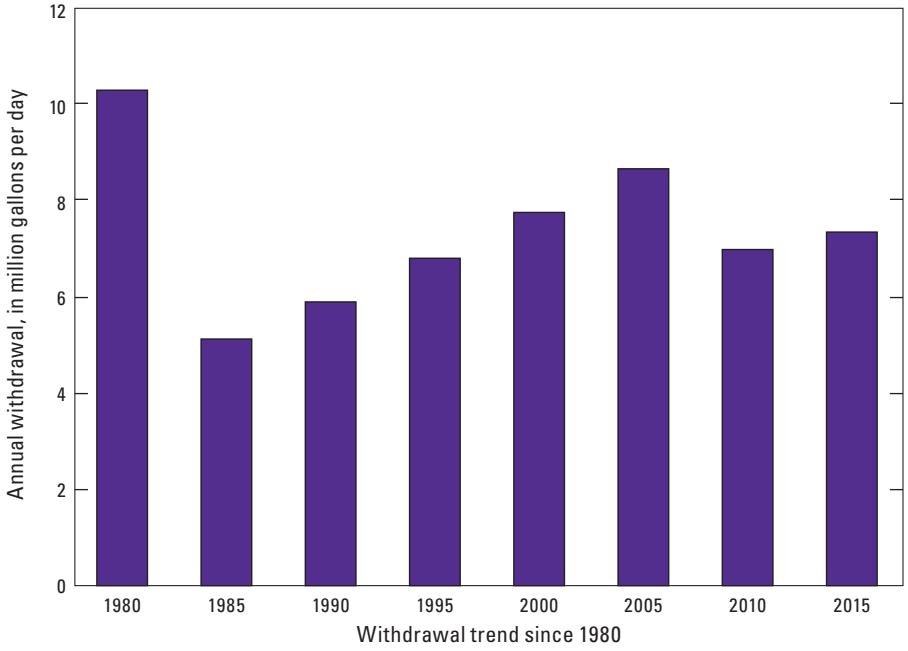


Withdrawals by Parish	
Parish	**Mgal/d**
Catahoula	1.36
Concordia	0.37
East Feliciana	0.60
Grant	0.70
La Salle	0.10
Natchitoches	0.03
Rapides	0.68
Sabine	0.08
Vernon	0.14

Cockfield Aquifer

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	6.27
Industry	0.00
Power generation	0.00
Rural domestic	0.49
Livestock	0.01
Rice irrigation	0.55
General irrigation	0.00
Aquaculture	0.00
Total	**7.32**

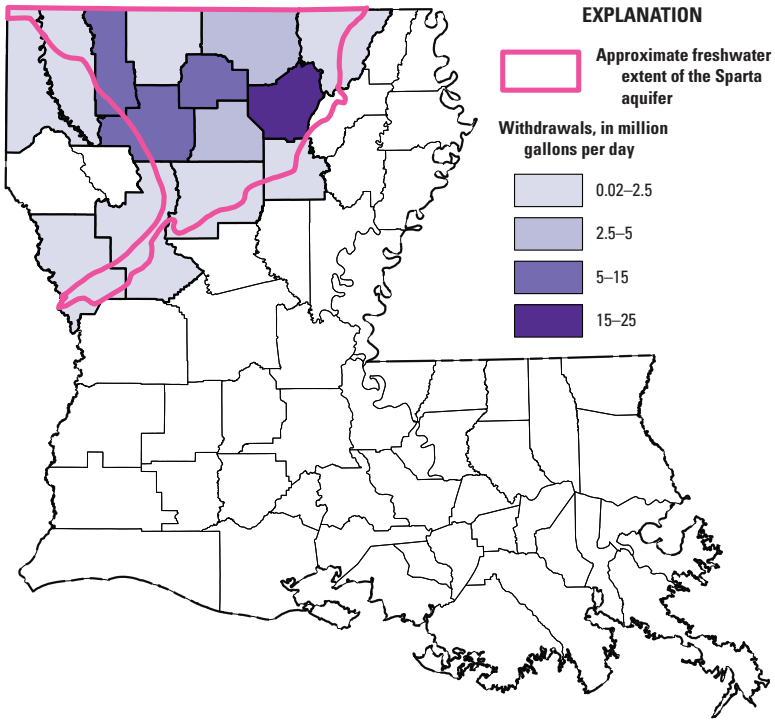


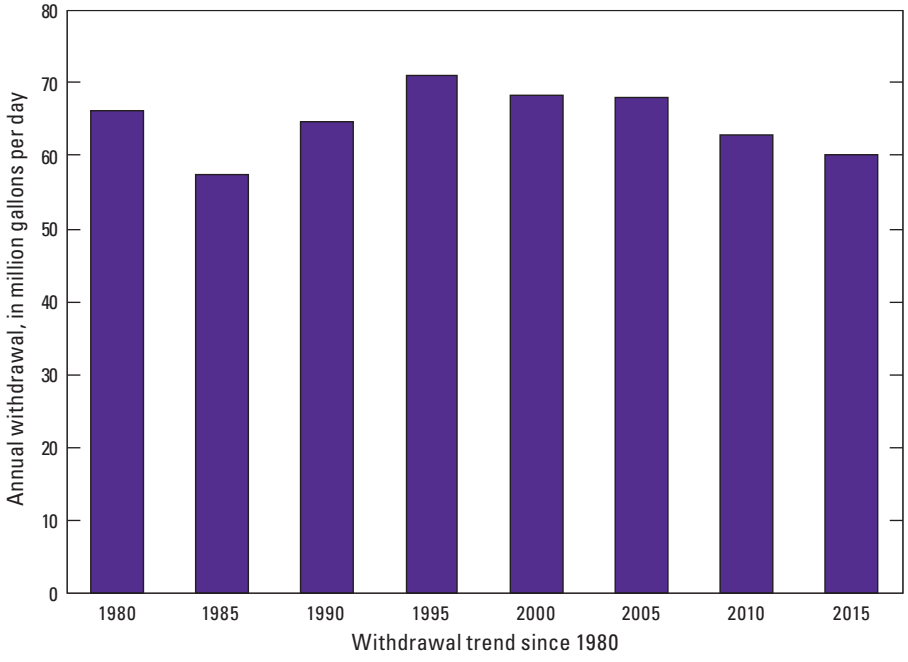


Withdrawals by Parish	
Parish	**Mgal/d**
Caldwell	1.04
Claiborne	0.01
East Carroll	0.92
Grant	0.21
Jackson	0.07
La Salle	0.40
Lincoln	0.02
Morehouse	0.31
Natchitoches	0.05
Ouachita	0.57
Richland	2.20
Sabine	0.11
Union	0.05
Vernon	0.17
West Carroll	0.96
Winn	0.23

Sparta Aquifer

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	34.72
Industry	21.62
Power generation	0.00
Rural domestic	1.47
Livestock	0.14
Rice irrigation	1.40
General irrigation	0.78
Aquaculture	0.00
Total	**60.12**

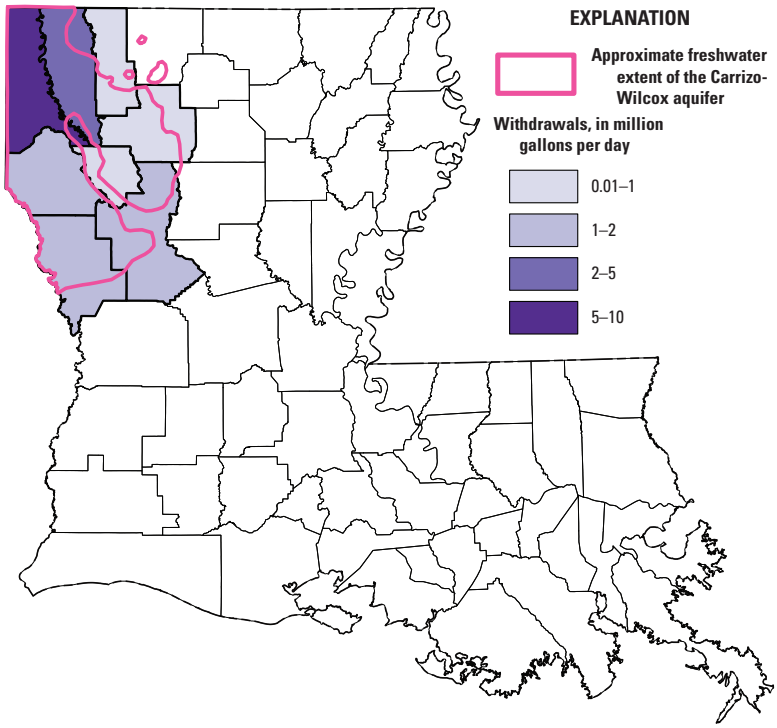


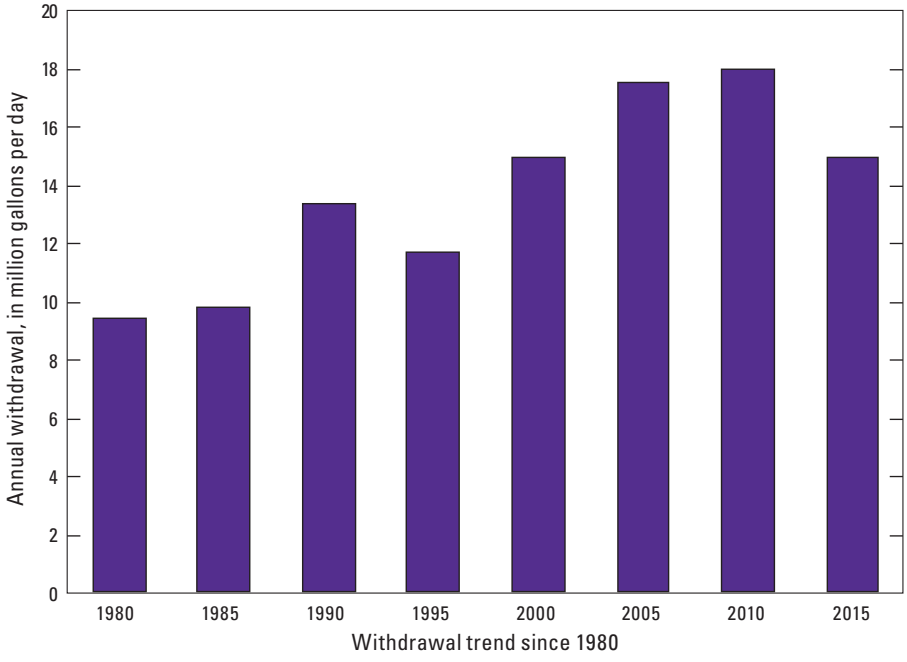


Withdrawals by Parish	
Parish	**Mgal/d**
Bienville	11.52
Bossier	0.29
Caddo	0.11
Caldwell	0.03
Claiborne	2.21
Jackson	4.07
Lincoln	8.00
Morehouse	0.29
Natchitoches	1.08
Ouachita	20.39
Sabine	0.17
Union	4.63
Webster	5.00
Winn	2.34

Carrizo-Wilcox Aquifer

Withdrawals, in million gallons per day (Mgal/d)	
Public supply	7.62
Industry	0.20
Power generation	0.00
Rural domestic	4.24
Livestock	0.19
Rice irrigation	0.24
General irrigation	2.42
Aquaculture	0.06
Total	**14.97**





Withdrawals by Parish	
Parish	**Mgal/d**
Bienville	0.67
Bossier	2.51
Caddo	5.00
De Soto	2.00
Natchitoches	1.26
Red River	0.87
Sabine	1.74
Webster	0.92

Table 4. Groundwater withdrawals in Louisiana by parish and aquifer, 2015.

[Withdrawals are in million gallons per day. Summation of numbers in columns may differ slightly from totals because of rounding.]

Parish	Red River Alluvial Aquifer	Mississippi River Alluvial Aquifer	Upland Terrace Aquifer (Northern Louisiana)	Chicot Aquifer System	Chicot Equivalent Aquifer System (Southeast Louisiana)	Evangeline Aquifer	Evangeline Equivalent Aquifer System (Southeast Louisiana)
Acadia				214.41			
Allen				31.02		4.50	
Ascension		0.13			6.09		
Assumption		7.57			2.14		
Avoyelles	9.07	36.03	7.15			4.06	
Beauregard				15.64		4.62	
Bienville			0.03				
Bossier	0.28		0.83				
Caddo	2.12		0.46				
Calcasieu				97.55		0.74	
Caldwell		0.38					
Cameron				11.33			
Catahoula		10.11					
Claiborne							
Concordia		22.58					
De Soto	0.04		0.70				
East Baton Rouge		0.04			17.02		64.82
East Carroll		18.96					
East Feliciana					0.34		0.25
Evangeline				110.92		9.46	
Franklin		22.26					
Grant	0.02		1.81				
Iberia		4.49		17.62			
Iberville		25.44			3.71		
Jackson							
Jefferson					6.47		
Jefferson Davis				163.50			
La Salle		0.48		39.61			
Lafayette		4.42					
Lafourche			1.29				
Lincoln							
Livingston					2.92		5.30
Madison		30.35					
Morehouse		52.59	6.59				
Natchitoches	3.58		0.17				
Orleans					12.01		
Ouachita		3.60	0.15				
Plaquemines					0.05		
Pointe Coupee		20.22			2.15		3.63
Rapides	1.38		7.06	0.95		2.53	
Red River	1.81		0.26				
Richland		20.29					
Sabine							
St. Bernard					0.02		
St. Charles					1.17		
St. Helena					0.91		
St. James		0.02			0.01		
St. John					8.73		4.51
St. Landry		32.95		54.35		2.52	
St. Martin		34.34		4.08			
St. Mary		0.31		3.56			
St. Tammany					5.99		16.71
Tangipahoa					3.93		3.64
Tensas		22.47					
Terrebonne		0.43					
Union			0.01				
Vermilion				84.82			
Vernon			0.06	0.53		0.12	
Washington					7.16		0.15
Webster			0.25				
West Baton Rouge		3.84			0.01		7.47
West Carroll		10.29					
West Feliciana		0.01			0.02		0.01
Winn			0.04				
Totals	**18.30**	**384.60**	**26.86**	**849.90**	**80.85**	**28.56**	**106.50**

Jasper Aquifer System	Jasper Equivalent Aquifer System (Southeast Louisiana)	Catahoula Aquifer	Cockfield Aquifer	Sparta Aquifer	Carrizo-Wilcox Aquifer	Other	Parish
							Acadia
							Allen
							Ascension
							Assumption
0.01							Avoyelles
23.76							Beauregard
				11.52	0.67		Bienville
				0.29	2.51		Bossier
				0.11	5.00		Caddo
							Calcasieu
			1.04	0.03			Caldwell
							Cameron
		1.36					Catahoula
			0.01	2.21			Claiborne
2.18		0.37					Concordia
					2.00	0.01	De Soto
	71.24						East Baton Rouge
			0.92				East Carroll
	2.15	0.60					East Feliciana
							Evangeline
							Franklin
0.49		0.70	0.21				Grant
							Iberia
	0.45						Iberville
			0.07	4.07			Jackson
							Jefferson
							Jefferson Davis
							La Salle
							Lafayette
		0.10	0.40				Lafourche
			0.02	8.00			Lincoln
	5.67						Livingston
							Madison
			0.31	0.29			Morehouse
		0.03	0.05	1.08	1.26		Natchitoches
							Orleans
			0.57	20.39			Ouachita
							Plaquemines
	4.08						Pointe Coupee
14.92		0.68					Rapides
					0.87	0.03	Red River
			2.20				Richland
		0.08	0.11	0.17	1.74		Sabine
							St. Bernard
							St. Charles
	0.69						St. Helena
							St. James
							St. John
							St. Landry
							St. Martin
							St. Mary
	6.87						St. Tammany
	11.82						Tangipahoa
							Tensas
							Terrebonne
			0.05	4.63			Union
							Vermilion
6.59		0.14	0.17				Vernon
	15.73						Washington
				5.00	0.92		Webster
							West Baton Rouge
			0.96				West Carroll
	4.79						West Feliciana
			0.23	2.34			Winn
47.95	**123.49**	**4.06**	**7.32**	**60.12**	**14.97**	**0.05**	**Totals**

Water Use By Surface-Water Basin

In 2015, total surface-water withdrawals were approximately 7,000 Mgal/d, of which more than 99.9 percent was withdrawn from the 10 major surface-water basins defined in this report. These basins include the Atchafalaya-Teche-Vermilion, Calcasieu-Mermentau River, Lake Pontchartrain-Lake Maurepas, Mississippi River Mainstem, Mississippi River Delta, Ouachita River, Pearl River, Red River, Sabine River, and Tensas River surface-water basins (fig. 4). The Mississippi River Mainstem supplied the most water, about 4,900 Mgal/d, which represented about 70 percent of all surface-water withdrawals in 2015 (fig. 15).

This section presents information on surface-water withdrawals for each of the 10 major surface-water basins in Louisiana. The one-page summaries of water-use information by surface-water basin presented in this section of the report include tables that list surface-water withdrawals by category of use, by parish, and by major water bodies within the basin. A location map depicts the surface extent of the basin within the State and the associated parishes and withdrawals (modified from Garrison and Covay, 1994). Water withdrawals by major surface-water basin are summarized in figure 15 and by basin and parish in table 5.

Some tables of withdrawals from major water bodies are incomplete because withdrawals for rice irrigation, general irrigation, livestock, and agriculture were estimated by using data that were not site specific. A large part of surface-water withdrawals for these categories was recorded as miscellaneous streams, and some water bodies that may have had substantial withdrawals may not have been included in these tables. Consequently, the sum of withdrawals from the major water bodies could be less than the total withdrawals listed in the tables of withdrawals by category because of withdrawals attributed to miscellaneous streams.

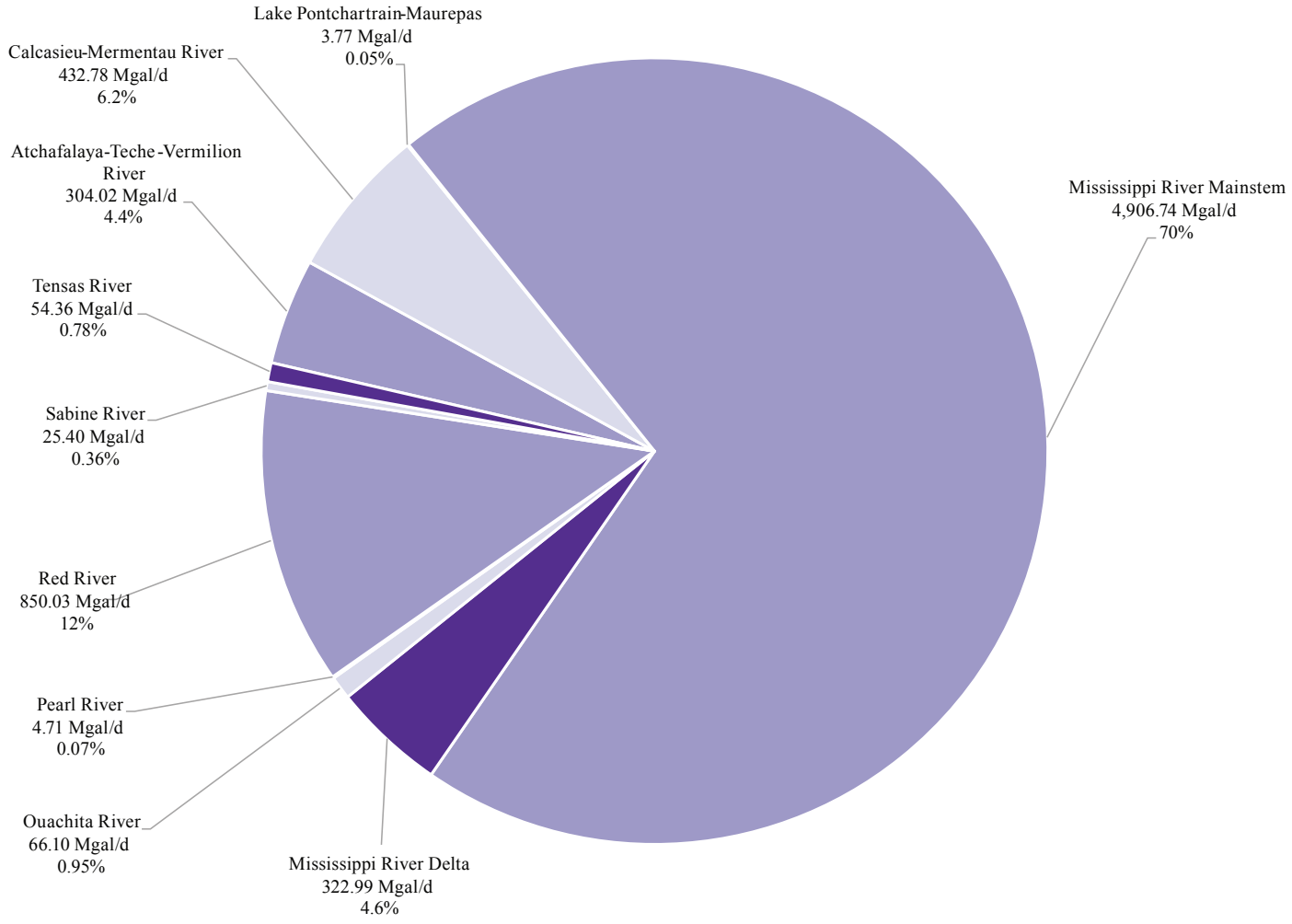
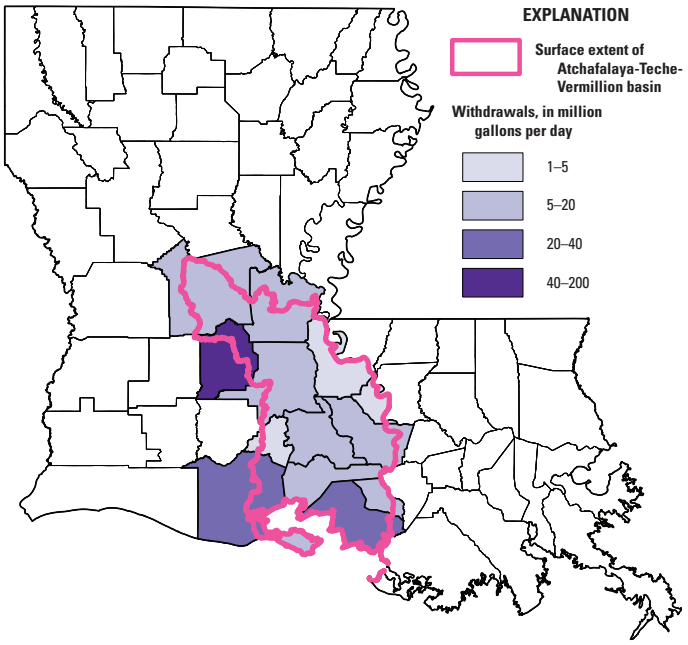


Figure 15. Surface-water withdrawals in Louisiana by surface-water basin, 2015.

Atchafalaya-Teche-Vermilion Surface-Water Basin

Withdrawals in million gallons per day (Mgal/d)	
Public supply	8.77
Industry	11.33
Power generation	197.39
Rural domestic	0.00
Livestock	0.29
Rice irrigation	48.89
General irrigation	6.60
Aquaculture	30.75
Total	**304.02**

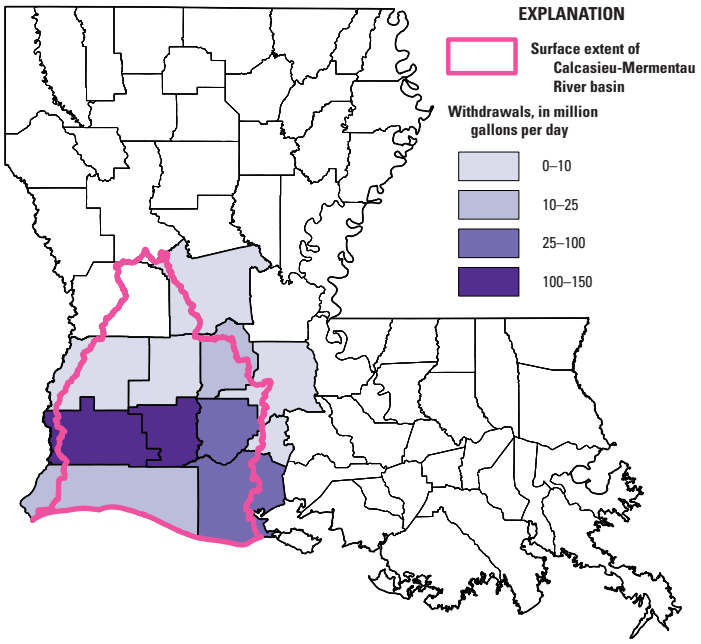


Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Alligator Bayou	1.35
Atchafalaya River	0.99
Bayou Boeuf	12.93
Bayou Cocodrie	172.17
Bayou du Lac	1.79
Bayou Portage	2.56
Bayou Robert	2.22
Bayou Teche	13.24
Charenton Canal	26.88
Chatlin Lake Canal	4.45
Intracoastal Waterway	11.65
Lower Grand River	0.60
Mississippi River	0.18
Patout Bayou	0.19
Six Mile Lake	1.18
Vermilion River	22.73

Withdrawals by Parish	
Parish	**Mgal/d**
Avoyelles	8.68
Evangeline	172.17
Iberia	11.45
Iberville	8.24
Lafayette	1.38
Pointe Coupee	1.63
Rapides	15.10
St. Landry	11.39
St. Martin	11.18
St. Mary	39.41
Vermilion	22.30
West Baton Rouge	1.10

Calcasieu-Mermentau River Surface-Water Basin

Withdrawals in million gallons per day (Mgal/d)	
Public supply	0.00
Industry	138.42
Power generation	11.42
Rural domestic	0.00
Livestock	0.70
Rice irrigation	171.19
General irrigation	3.85
Aquaculture	107.21
Total	**432.78**

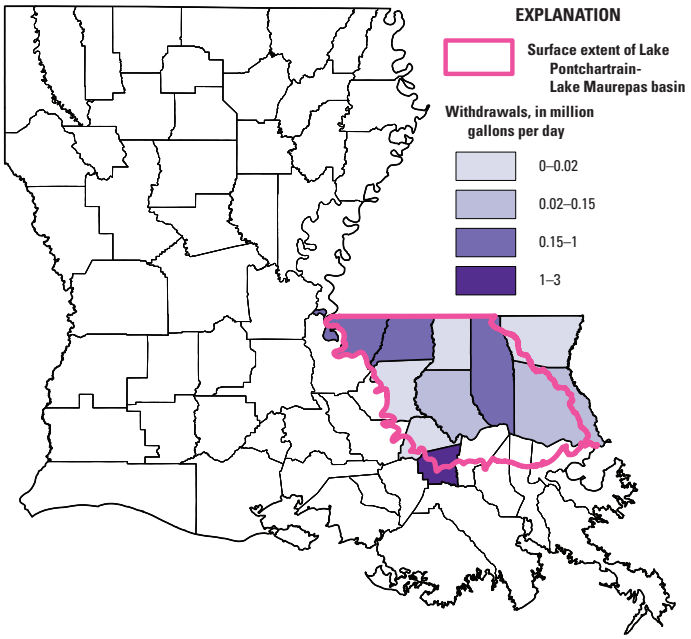


Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Bayou Blue	1.30
Bayou Chene	33.96
Bayou Choupique	1.30
Bayou Cocodrie	1.21
Bayou Des Cannes	1.68
Bayou Lacassine	23.45
Bayou Mallet	3.43
Bayou Marron	1.68
Bayou Nezpique	3.72
Bayou Plaquemine Brule	13.95
Bayou Queue de Tortue	39.35
Calcasieu River	94.74
English Bayou	0.58
Farmers Canal	0.59
Intracoastal Waterway	1.58
Lyons Point Gully	8.18
Mermentau River	36.06
Millers Lake	1.55
Old Lake	0.88
Sabine River Diversion Canal	52.62
West Bayou Grand Marais	0.03

Withdrawals by Parish	
Parish	**Mgal/d**
Acadia	68.06
Allen	9.34
Beauregard	0.08
Calcasieu	145.19
Cameron	23.27
Evangeline	12.95
Jefferson Davis	122.05
Lafayette	0.65
Rapides	0.54
St. Landry	5.29
Vermilion	45.36

Lake Pontchartrain-Lake Maurepas Surface-Water Basin

Withdrawals in million gallons per day (Mgal/d)	
Public supply	0.00
Industry	3.04
Power generation	0.00
Rural domestic	0.00
Livestock	0.47
Rice irrigation	0.00
General irrigation	0.26
Aquaculture	0.00
Total	**3.77**

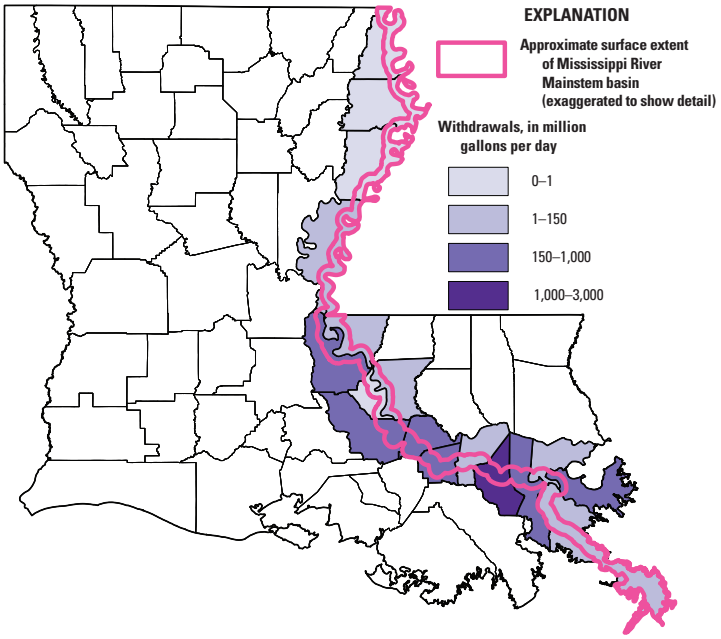


Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Mississippi River	2.89
Tchefuncte River	0.08

Withdrawals by Parish	
Parish	**Mgal/d**
Ascension	0.01
East Baton Rouge	0.01
East Feliciana	0.17
Livingston	0.04
St. Helena	0.01
St. James	2.89
St. Tammany	0.12
Tangipahoa	0.24
Washington	0.01
West Feliciana	0.27

Mississippi River Mainstem

Withdrawals in million gallons per day (Mgal/d)	
Public supply	233.54
Industry	1,679.25
Power generation	2,992.25
Rural domestic	0.00
Livestock	0.03
Rice irrigation	0.00
General irrigation	1.66
Aquaculture	0.00
Total	**4,906.74**

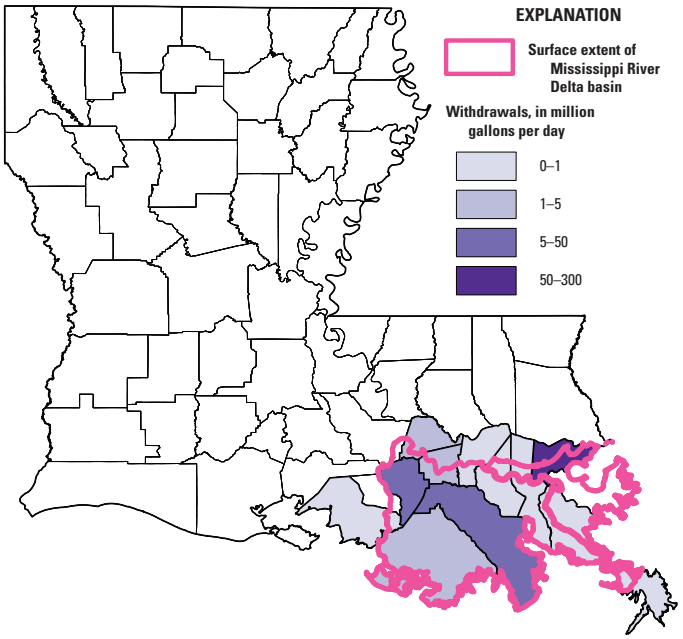


Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Marango Bend	0.52
Mississippi River	4,904.33
Tante Phine Pass	0.20

Withdrawals by Parish	
Parish	**Mgal/d**
Ascension	181.28
Concordia	4.46
East Baton Rouge	16.68
Iberville	503.68
Jefferson	806.60
Madison	0.50
Orleans	140.90
Plaquemines	60.81
Pointe Coupee	300.88
St. Bernard	214.03
St. Charles	2,396.93
St. James	179.94
St. John the Baptist	66.36
Tensas	0.28
West Baton Rouge	0.10
West Feliciana	33.31

Mississippi River Delta Surface-Water Basin

Withdrawals in million gallons per day (Mgal/d)	
Public supply	33.83
Industry	10.03
Power generation	261.19
Rural domestic	0.00
Livestock	0.23
Rice irrigation	0.00
General irrigation	1.18
Aquaculture	16.53
Total	**322.99**

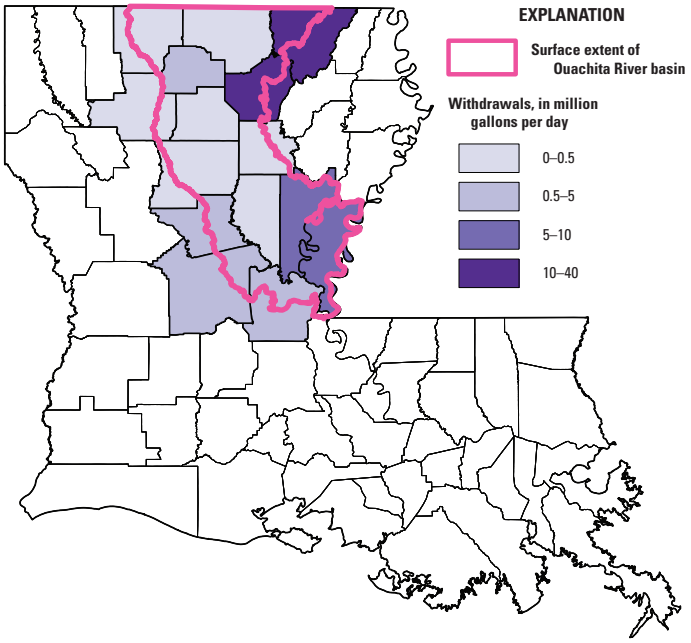


Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Bayou Black	0.37
Bayou Boeuf	0.73
Bayou Lafourche	43.23
Intracoastal Waterway	5.88
Lake Verret	2.81
Mississippi River Gulf Outlet	261.19

Withdrawals by Parish	
Parish	**Mgal/d**
Ascension	1.37
Assumption	11.81
Jefferson	0.04
Lafourche	43.03
Orleans	261.20
Plaquemines	0.05
St. Charles	0.03
St. James	1.25
St. John the Baptist	0.16
St. Mary	0.73
Terrebonne	3.32

Ouachita River Surface-Water Basin

Withdrawals in million gallons per day (Mgal/d)	
Public supply	15.68
Industry	15.56
Power generation	2.55
Rural domestic	0.00
Livestock	0.46
Rice irrigation	20.61
General irrigation	11.14
Aquaculture	0.10
Total	**66.10**

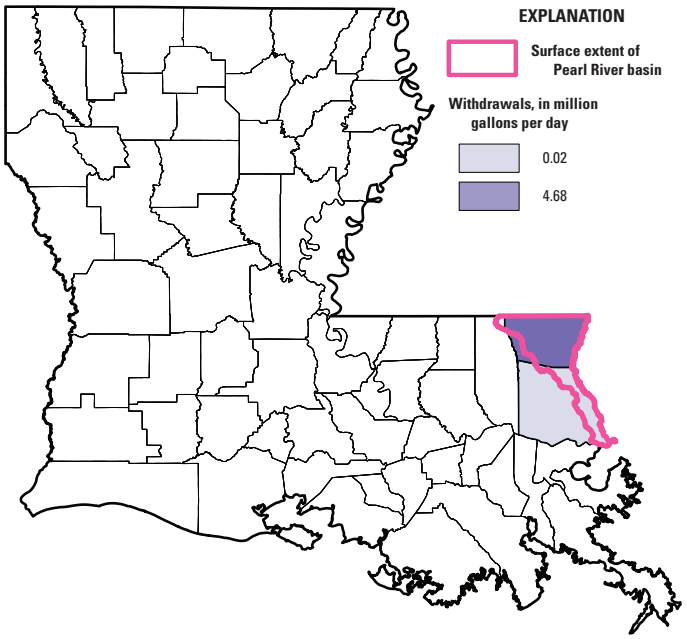


Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Bayou Bartholomew	2.55
Bayou Cocodrie	3.36
Bayou de Siard	14.05
Big Creek	1.63
Cross Bayou	1.24
Falgon Creek	0.83
Lower Ouachita	3.24
Ouachita River	27.92

Withdrawals by Parish	
Parish	**Mgal/d**
Avoyelles	0.92
Bienville	0.01
Caldwell	0.25
Catahoula	6.00
Claiborne	0.06
Concordia	5.74
Grant	2.49
Jackson	0.03
La Salle	0.17
Lincoln	1.21
Morehouse	13.43
Ouachita	35.06
Rapides	0.59
Union	0.10
Winn	0.04

Pearl River Surface-Water Basin

Withdrawals in million gallons per day (Mgal/d)	
Public supply	0.00
Industry	4.50
Power generation	0.00
Rural domestic	0.00
Rice irrigation	0.00
General irrigation	0.08
Livestock	0.13
Aquaculture	0.00
Total	**4.71**

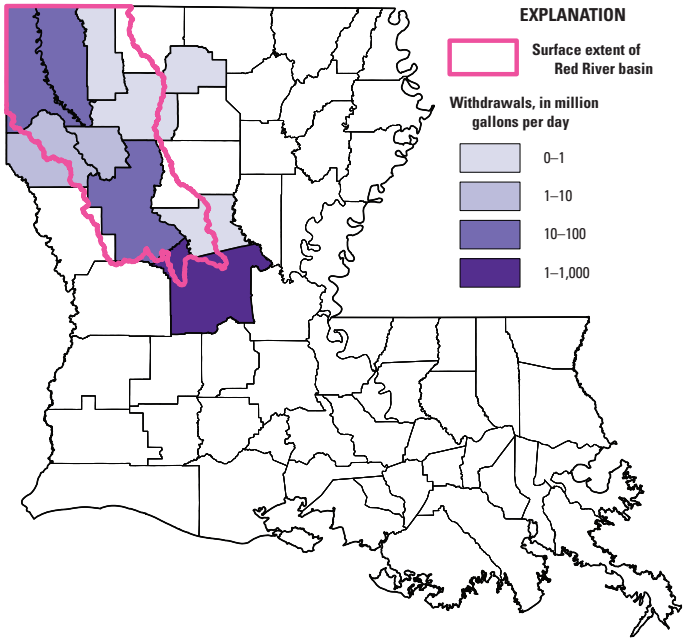


Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Bogue Lusa Creek	4.50

Withdrawals by Parish	
Parish	**Mgal/d**
St. Tammany	0.02
Washington	4.68

Red River Surface-Water Basin

Withdrawals in million gallons per day (Mgal/d)	
Public supply	59.29
Industry	17.97
Power generation	756.81
Rural domestic	0.00
Rice irrigation	6.67
General irrigation	7.51
Livestock	0.53
Aquaculture	1.25
Total	**850.03**

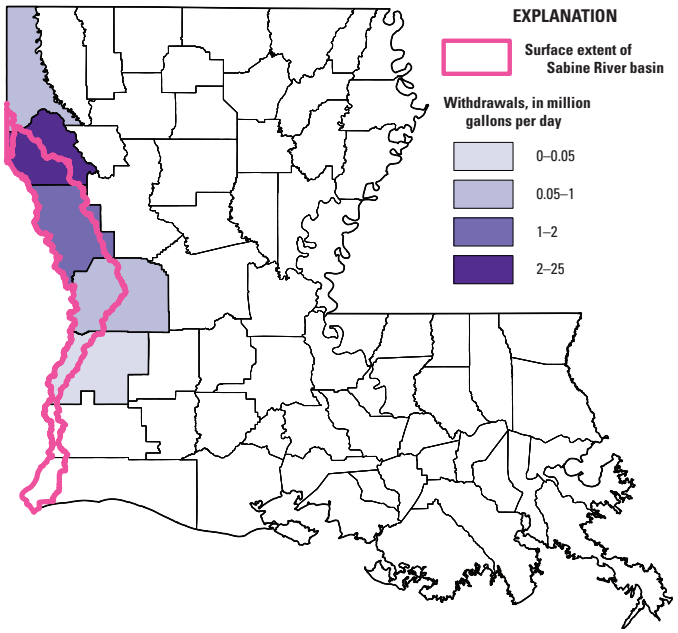


Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Bayou Grand Cane	0.03
Bayou Pierre	3.80
Black Lake	0.03
Caddo Lake	30.39
Cane River	1.42
Cross Lake	39.80
Grand Bayou Reservoir	0.41
Lake Rodemacher	726.60
Little River	2.59
Old River	0.29
Red River	25.29
Sibley Lake	6.44
Twelve Mile Bayou	2.09

Withdrawals by Parish	
Parish	**Mgal/d**
Bienville	0.42
Bossier	11.22
Caddo	74.21
De Soto	1.57
Grant	0.77
Lincoln	0.04
Natchitoches	33.02
Rapides	726.98
Red River	1.73
Webster	0.07

Sabine River Surface-Water Basin

Withdrawals in million gallons per day (Mgal/d)	
Public supply	3.09
Industry	16.93
Power generation	5.13
Rural domestic	0.00
Livestock	0.18
Rice irrigation	0.00
General irrigation	0.07
Aquaculture	0.00
Total	**25.40**

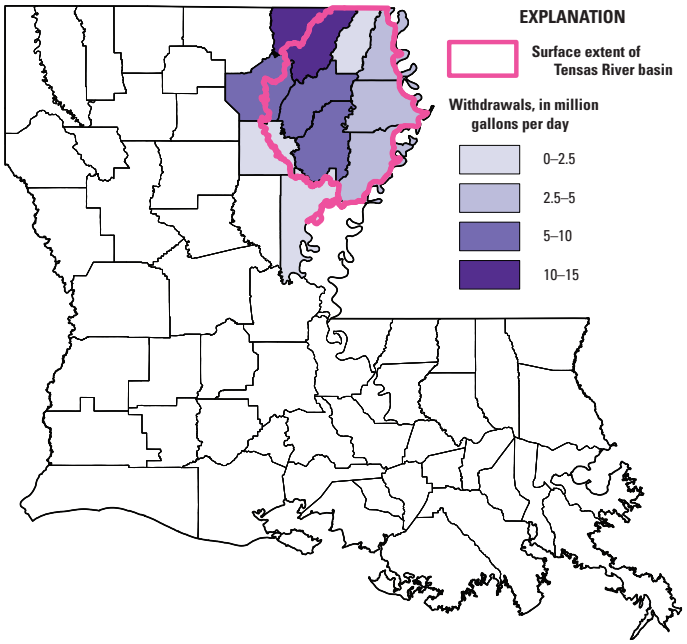


Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Toledo Bend Reservoir	25.02

Withdrawals by Parish	
Parish	**Mgal/d**
Beauregard	0.01
Caddo	0.06
De Soto	23.78
Sabine	1.48
Vernon	0.08

Tensas River Surface-Water Basin

Withdrawals in million gallons per day (Mgal/d)	
Public supply	0.73
Industry	0.00
Power generation	0.00
Rural domestic	0.00
Livestock	0.12
Rice irrigation	29.72
General irrigation	23.71
Aquaculture	0.07
Total	**54.36**



Withdrawals by Major Water Body	
Water Body	**Mgal/d**
Bayou Boeuf	3.95
Bayou Despair	0.50
Bayou Galion	0.12
Bayou Macon	7.48
Big Creek	1.75
Big Cypress Creek	9.00
Boeuf River	6.53
Hill Bayou	0.10
Jack Falls Bayou	0.05
Joes Bayou	1.15
Lake Bruin	1.35
Lake Lafourche River	0.14
Little Long Lake	0.23
Tensas River	2.44

Withdrawals by Parish	
Parish	**Mgal/d**
Caldwell	2.30
Catahoula	0.89
East Carroll	4.24
Franklin	6.61
Madison	4.17
Morehouse	13.76
Ouachita	8.82
Richland	7.68
Tensas	3.80
West Carroll	2.08

Table 5. Surface-water withdrawals in Louisiana by parish and surface-water basin, 2015.

[Withdrawals are in million gallons per day. Summation of numbers in columns may differ slightly from totals because of rounding.]

Parish	Atchafalaya-Teche-Vermilion	Calcasieu-Mermentau River	Lake Pontchartrain-Lake Maurepas	Mississippi River Mainstem	Mississippi River Delta	Ouachita River	Pearl River	Red River	Sabine River	Tensas River
Acadia		68.06								
Allen		9.34								
Ascension			0.01	181.28	1.37					
Assumption					11.81					
Avoyelles	8.68					0.92				
Beauregard		0.08							0.01	
Bienville						0.01		0.42		
Bossier								11.22		
Caddo								74.21	0.06	
Calcasieu		145.19								
Caldwell						0.25				2.30
Cameron		23.27								
Catahoula						6.00				0.89
Claiborne						0.06				
Concordia				4.46		5.74				
De Soto								1.57	23.78	
East Baton Rouge			0.01	16.68						
East Carroll										4.24
East Feliciana			0.17							
Evangeline	172.17	12.95								
Franklin										6.61
Grant						2.49		0.77		
Iberia	11.45									
Iberville	8.24			503.68						
Jackson						0.03				
Jefferson				806.60	0.04					
Jefferson Davis		122.05								
La Salle	1.38	0.65								
Lafayette					43.03					
Lafourche						0.17				
Lincoln						1.21		0.04		
Livingston			0.04							
Madison				0.50						4.17
Morehouse						13.43				13.76
Natchitoches								33.02		
Orleans				140.90	261.20					
Ouachita						35.06				8.82
Plaquemines				60.81	0.05					
Pointe Coupee	1.63			300.88						
Rapides	15.1	0.54				0.59		726.98		
Red River								1.73		
Richland										7.68
Sabine									1.48	
St. Bernard				214.03						
St. Charles				2,396.93	0.03					
St. Helena			0.01							
St. James			2.89	179.94	1.25					
St. John				66.36	0.16					
St. Landry	11.39	5.29								
St. Martin	11.18									
St. Mary	39.41				0.73					
St. Tammany			0.12				0.02			
Tangipahoa			0.24							
Tensas				0.28						3.80
Terrebonne					3.32					
Union						0.10				
Vermilion	22.3	45.36								
Vernon									0.08	
Washington			0.01				4.68			
Webster								0.07		
West Baton Rouge	1.1			0.10						
West Carroll										2.08
West Feliciana			0.27	33.31						
Winn						0.04				
Totals	**304.02**	**432.78**	**3.77**	**4,906.74**	**322.99**	**66.10**	**4.71**	**850.03**	**25.40**	**54.36**

Total Water Use

Total withdrawals from groundwater and surface-water sources in 2015 were approximately 8,700 Mgal/d (fig. 16). Of this total, about 1,800 Mgal/d was from groundwater and about 7,000 Mgal/d was from surface water (table 3). Withdrawals for power generation accounted for about 49 percent of the total, industry 25 percent, irrigation (rice and general irrigation combined) 12 percent, public supply 8.2 percent, aquaculture 5.6 percent, and rural domestic and livestock combined accounted for the approximated remainder of 0.52 percent (figs. 17-19). Figures 20 and 21 respectively show the distribution of groundwater and surface-water withdrawals by parish.

About 48 percent (850 Mgal/d) of all groundwater was withdrawn from the Chicot aquifer system, and about 22 percent (380 Mgal/d) was withdrawn from the Mississippi River alluvial aquifer (table 4). About 70 percent (or 4,900 Mgal/d) of all surface water withdrawn in Louisiana was withdrawn from the Mississippi River Mainstem (table 5).

In 2015, St. Charles Parish had the greatest total withdrawals, at about 2,400 Mgal/d. Acadia Parish had the greatest groundwater withdrawals in the State at about 210 Mgal/d, of which over 93 percent was used for rice irrigation and aquaculture purposes. In addition to having the greatest total withdrawals, St. Charles was also the parish with the greatest surface-water withdrawals in the State, with more than 99.9 percent of total withdrawals in the parish coming from surface-water sources. More than 96 percent of withdrawals in St. Charles Parish were made for power generation and industrial purposes (table 3).

Louisiana

Population: 4,670,724
Population served by public supply: 4,179,142
Per capita withdrawals (gal/d): 1,867
Acres irrigated: 970,922
Hydroelectric power instream use (Mgal/d): 63,700

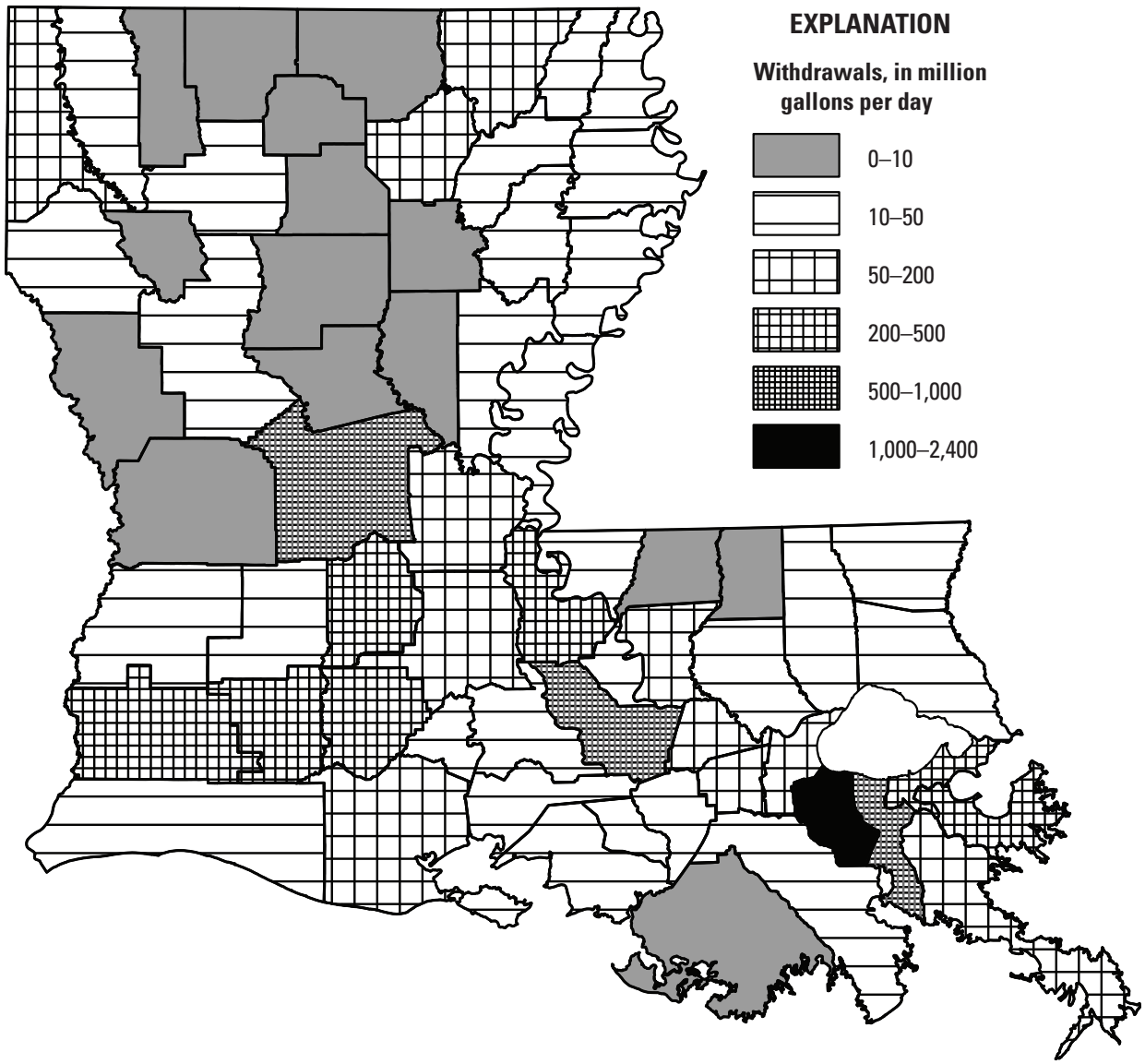


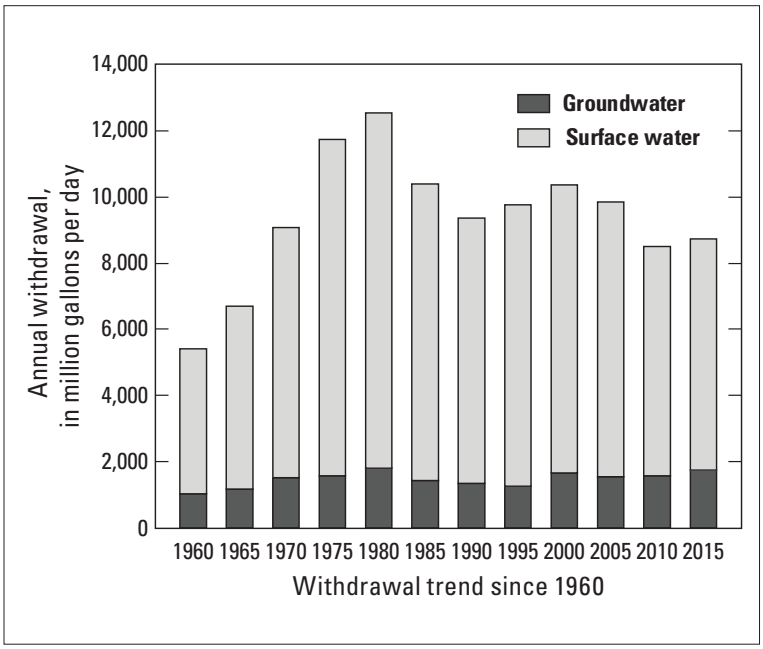
Figure 16. Summary of total water withdrawals in Louisiana by parish, 2015.

Withdrawals, in million gallons per day (Mgal/d)

	Ground-water (GW)	Surface Water (SW)	Total
Public supply	359.12	354.93	714.04
Industry	257.87	1,897.03	2,154.90
Power generation	37.07	4,226.74	4,263.81
Rural domestic	39.33		39.33
Livestock	3.18	3.15	6.33
Rice Irrigation	549.67	277.08	826.75
General irrigation	169.98	56.06	226.04
Aquaculture	337.31	155.91	493.23
Total	**1,753.52**	**6,970.90**	**8,724.42**

Withdrawals in Louisiana by Major Industrial Group (Mgal/d)

	Standard Industrial Classification	Withdrawals		
		GW	SW	Total
13	Oil and gas extraction	1.87	4.60	6.47
20	Food products	20.35	27.21	47.56
24	Lumber	0.54	0.06	0.60
26	Paper products	110.60	64.07	174.67
28	Chemicals	91.34	1,482.65	1,573.99
29	Petroleum refining	22.41	317.39	339.80
30	Rubber and plastics	1.63		1.63
32	Glass, clay, and concrete	1.47		1.47
33	Primary metals	1.87	0.97	2.84
34	Metal products	0.33		0.33
35	Industrial machinery	0.03		0.03
37	Transportation equipment	1.42	0.08	1.50
38	Instrumentation	1.59		1.59
39	Miscellaneous manufacturing	0.03		0.03
41	Local and suburban transit	0.15		0.15
42	Motor freight transportation and warehousing	0.04		0.04
44	Water transportation	0.57		0.57
	Total	**256.24**	**1,897.03**	**2,153.27**



Withdrawals by Top 25 Public Suppliers (Mgal/d)

Public Suppliers	GW	SW
Alexandria Water System	10.08	
Assumption Parish Waterworks No. 1		4.19
Baton Rouge Water Company	56.25	
Bossier City Water System		10.45
East Jefferson W. W. Dist. No. 1		35.44
Lafayette Utilities System	23.34	
Lafourche Water Dist. No. 1		10.38
Lake Charles Water System	12.85	
Monroe Water System		14.16
Natchitoches Utility System		6.44
New Iberia Water System	5.64	
Parish Water Company	11.42	
Plaquemines Parish Water Works		7.14
Sewage & Water Board of New Orleans		140.90
Shreveport Water System		39.80
Slidell Water System	4.09	
St. Bernard Parish Water and Sewerage Commission		7.16
St. Charles Waterworks District 1		4.86
St. Charles Waterworks District 2		4.23
St. John the Baptist Parish Utilities	4.51	2.94
Sulphur Water System	5.10	
Tangipahoa Water District 2	5.78	
Terrebonne Parish Consolidated W.W. Dist. No. 1		14.26
Ward 2 Water District	5.31	
West Jefferson W. W. Dist. No. 2		22.84

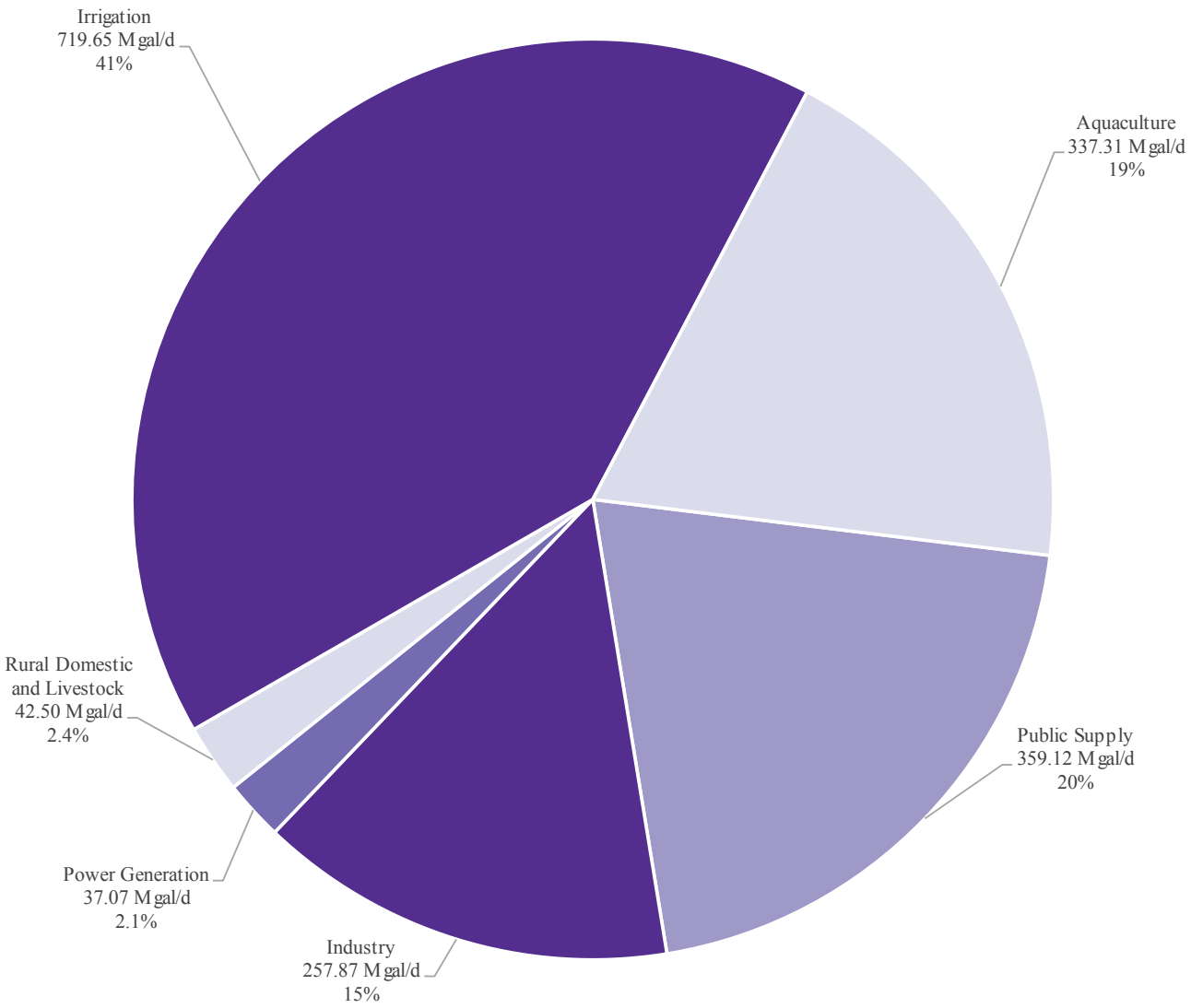


Figure 17. Groundwater withdrawals in Louisiana by water-use category, 2015.

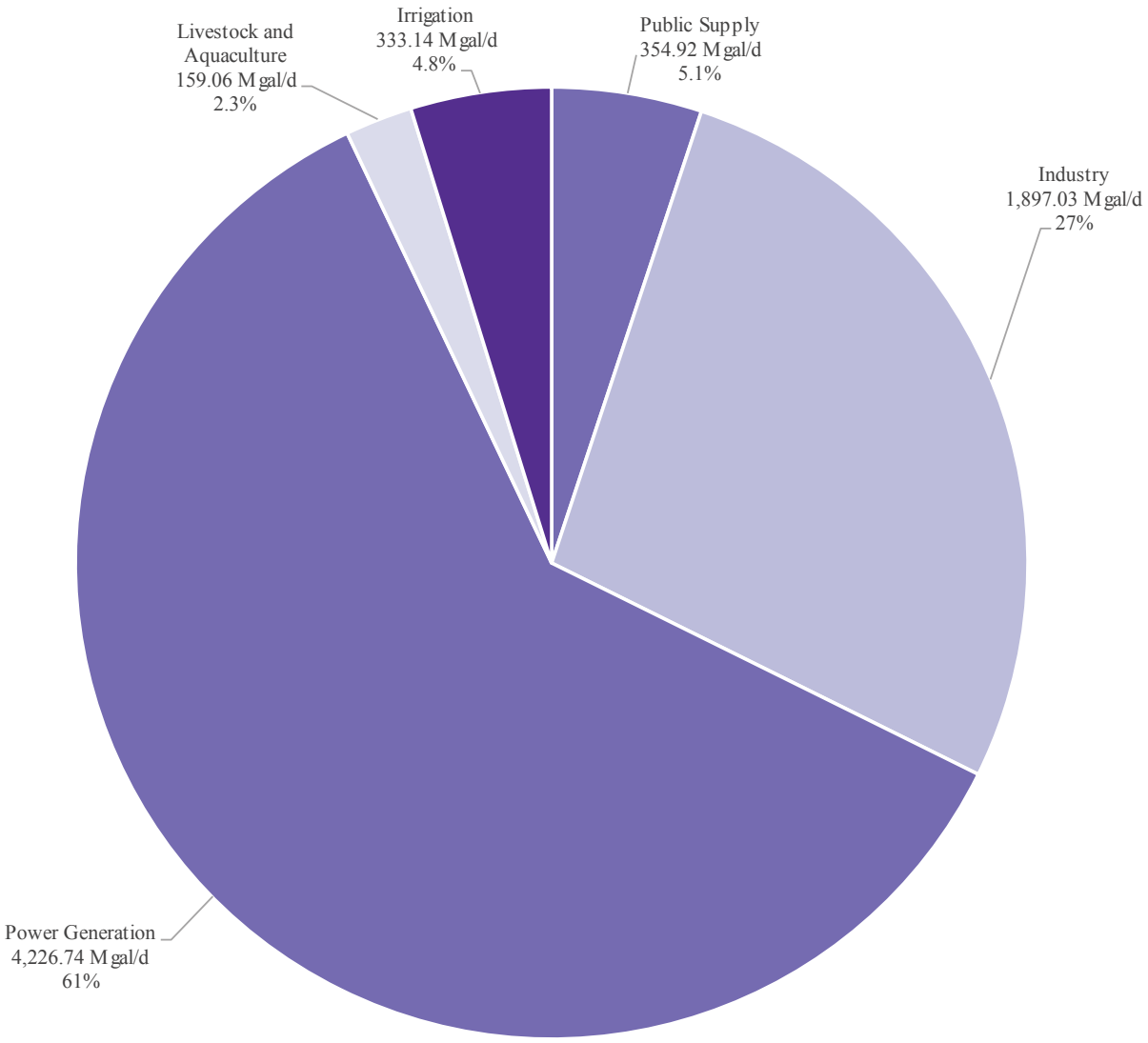


Figure 18. Surface-water withdrawals in Louisiana by water-use category, 2015.

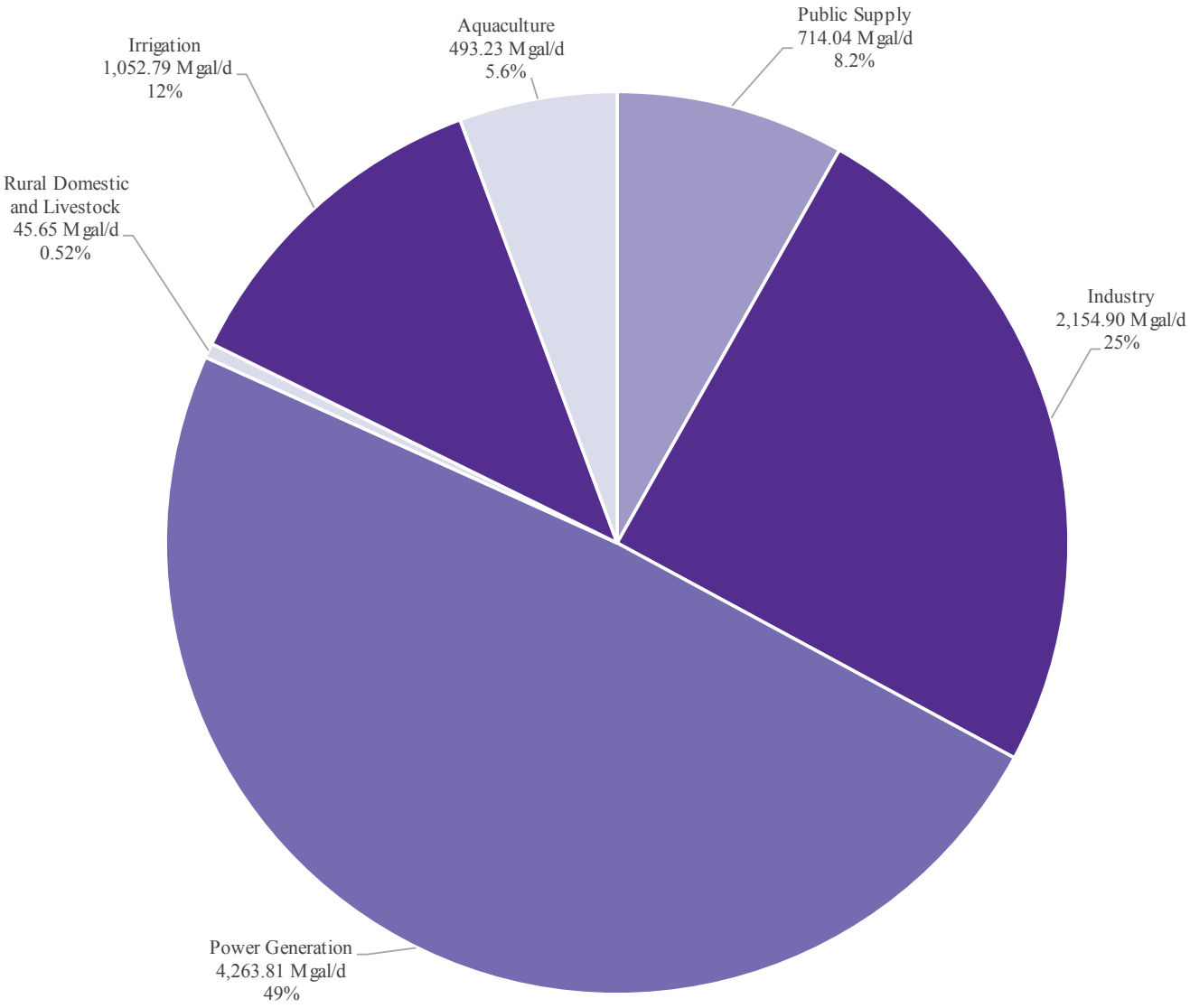


Figure 19. Total water withdrawals in Louisiana by water-use category, 2015.

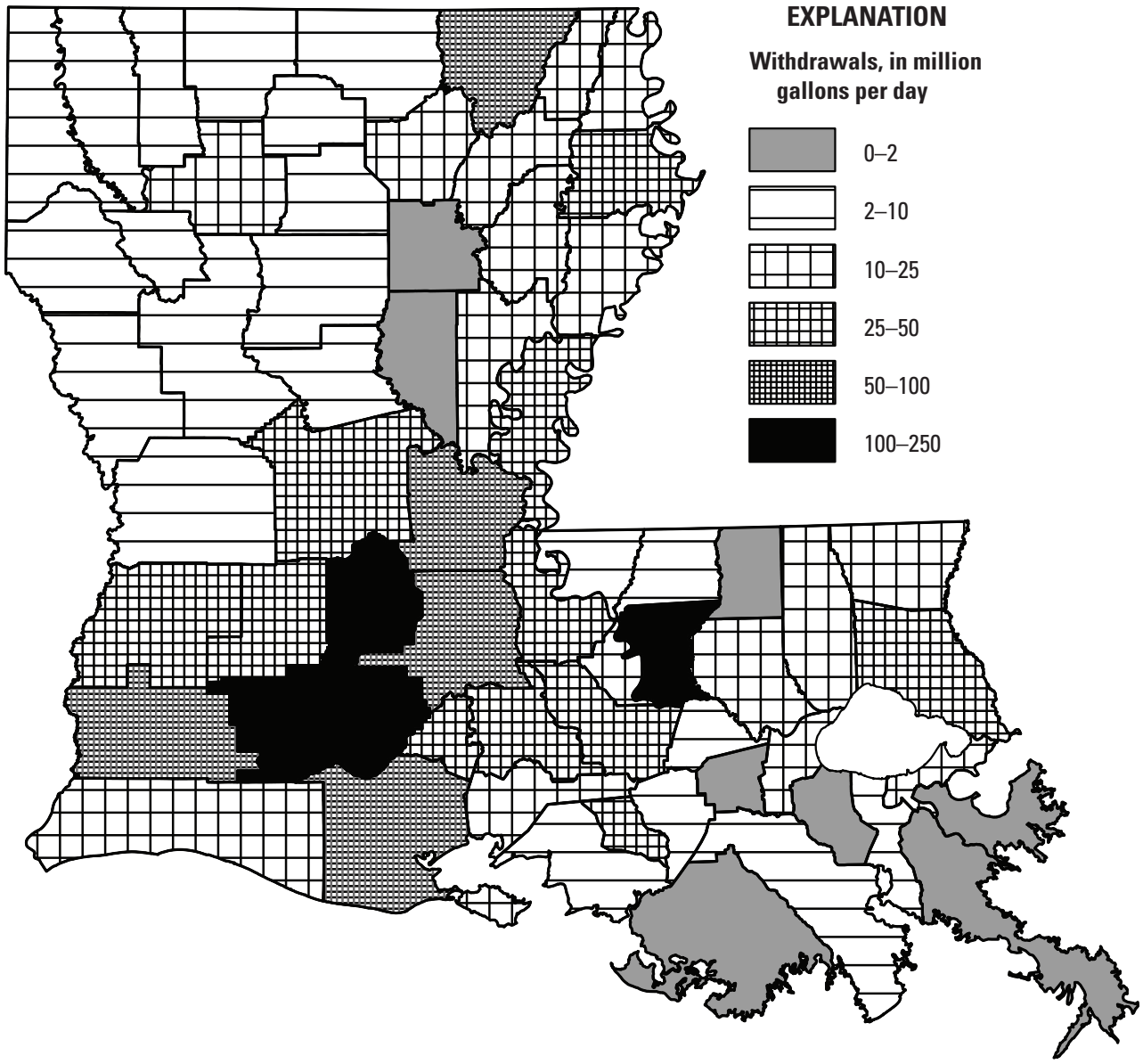


Figure 20. Groundwater withdrawals in Louisiana by parish, 2015.

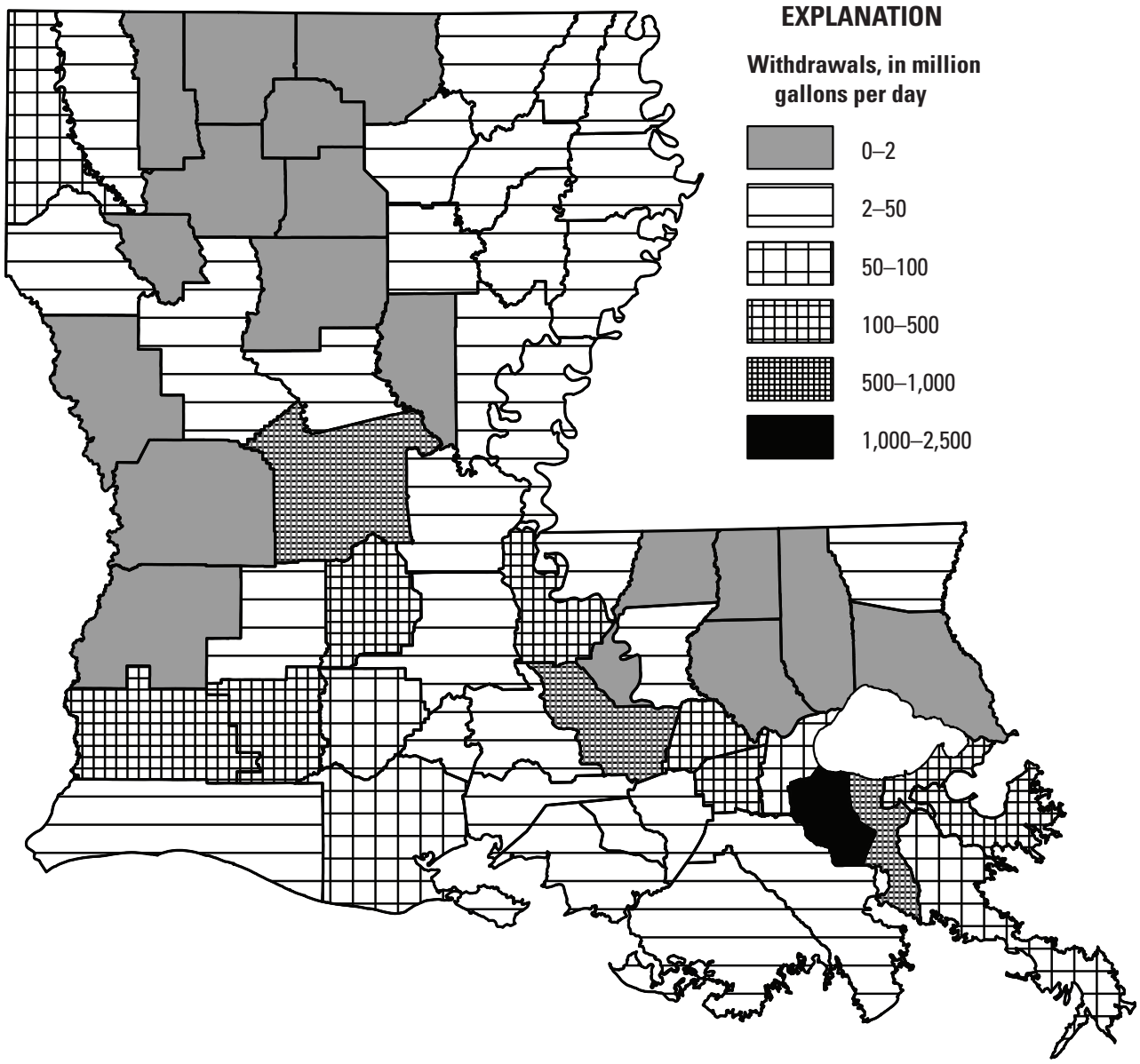


Figure 21. Surface-water withdrawals in Louisiana by parish, 2015.

Water Use Trends

Since 1960, Louisiana's population has increased by 43 percent, and from 2010 to 2015, the State's population increased by 3.0 percent (fig. 22) (U.S. Census Bureau, 1961, 2016). Since 2010, Orleans, Lafayette, St. Tammany, Ascension, and Livingston Parishes had the largest increases in population, and Caddo, St. John the Baptist, St. Mary, Morehouse, and Vernon Parishes had the largest declines in population.

Total public-supply withdrawals decreased by approximately 3.4 percent from 2010 to 2015 (fig. 23) despite the 3.0 percent increase in population. Congruently, both the total groundwater withdrawals and surface-water withdrawals for public supply decreased by 3.4 percent. Public-supply withdrawals decreased in 38 of Louisiana's 64 parishes between 2010 and 2015. The median change in public supply withdrawals by parish was a decrease of 0.06 Mgal/d; that is, the change for half of the parishes was greater than a 0.06 Mgal/d decrease, and the change for the other half was less than the 0.06 Mgal/d decrease. Orleans Parish had the greatest decrease at 8.2 Mgal/d, and Lafourche Parish had the greatest increase in total public-supply withdrawals at 3.0 Mgal/d. Since 1960, public-supply withdrawals have increased by 170 percent.

Total industrial withdrawals increased by 5.7 percent since 2010 (fig. 24). Industrial withdrawals from groundwater sources increased by 8.2 percent, and industrial withdrawals from surface-water sources increased by 5.3 percent. From 2010 to 2015, 24 of the 56 parishes (43 percent) that had water withdrawals for industrial purposes had an increase in withdrawals; however, the median difference in withdrawals during this period was a decrease of 0.01 Mgal/d. St. Bernard Parish had the greatest decrease at 48 Mgal/d whereas St. Charles Parish had the greatest increase at 89 Mgal/d. Since 1960, total industrial withdrawals in Louisiana have decreased by 47 percent.

Groundwater withdrawals for power generation decreased by 8.0 percent from 2010 to 2015, and surface-water withdrawals decreased by 3.8 percent, resulting in an overall decrease of 3.9 percent for power-generation withdrawals from 2010 to 2015. Thirteen of the 18 parishes (72 percent) that had water withdrawals for power generation showed a decrease in withdrawals from 2010 to 2015, and the median change in withdrawals for the parishes that generated power was a decrease of 2.4 Mgal/d. The parish with the greatest decrease in withdrawals was Orleans Parish, at 190 Mgal/d, and Rapides Parish had the greatest increase, at 230 Mgal/d. Total withdrawals for power generation in Louisiana have increased by 90 percent since power generation withdrawals were first reported in the 1965 water-use report (fig. 25).

Rural-domestic withdrawals in Louisiana decreased by 4.1 percent from 2010 to 2015 (fig. 26). Forty-five of the 64 parishes (70 percent) had a decrease in rural-domestic water use from 2010 to 2015, and the median change in water withdrawals for rural-domestic use was a decrease of 0.01 Mgal/d. St. Tammany Parish had the greatest decrease at 1.1 Mgal/d, and Livingston Parish had the greatest increase at 0.60 Mgal/d. The small decrease in total rural domestic withdrawals from 2010 to 2015 is consistent with and may be due, in part, to the continued expansion of public suppliers into rural areas and a subsequent shift from the use of private domestic wells to public supplies. Since 1960, groundwater withdrawals for rural-domestic use have decreased by 3.2 percent.

Groundwater withdrawals for livestock decreased by 24 percent, surface water withdrawals decreased by 18 percent, and total withdrawals for livestock decreased by 21 percent from 2010 to 2015. Withdrawals for livestock decreased in 40 of 64 parishes (62 percent) from 2010 to 2015, and the median change was a decrease of 0.02 Mgal/d. Caddo Parish had the greatest decrease, 0.20 Mgal/d, and Rapides Parish had the greatest increase at 0.07 Mgal/d. Withdrawals for livestock in Louisiana have decreased by 76 percent since 1960 (fig. 27).

From 2010 to 2015, total withdrawals for rice irrigation increased by 20 percent despite an 11-percent decrease in rice-harvest acreage (Louisiana Cooperative Extension Service, 2010, 2017). Groundwater withdrawals for rice irrigation increased by 13 percent, and for the same period, surface-water withdrawals for rice irrigation increased by 37 percent (fig. 28). Twenty-one of the 31 parishes (68 percent) that had water withdrawals for rice irrigation showed an increase in withdrawals from 2010 to 2015, and the median change in withdrawals for these parishes was an increase of 0.99 Mgal/d. Vermilion Parish had the greatest increase at 39 Mgal/d and Catahoula Parish had the greatest decrease at 9.2 Mgal/d. Total withdrawals for rice irrigation in Louisiana have decreased by 14 percent from 1960 to 2015.

Total withdrawals for general irrigation decreased by 6.0 percent from 2010 to 2015. During the same period, groundwater withdrawals for general irrigation decreased by 7.4 percent, and surface-water withdrawals decreased by 1.6 percent. From 2010 to 2015, water withdrawals decreased in 24 of the 63 parishes in Louisiana (38 percent) that had general irrigation withdrawals, yet the median change in general irrigation water use was an increase of 0.02 Mgal/d. Madison Parish had the greatest decrease, at 11 Mgal/d, and East Carroll Parish had the greatest increase, at 5.8 Mgal/d. General-irrigation withdrawals in Louisiana have increased by 720 percent since 1960 (fig. 29).

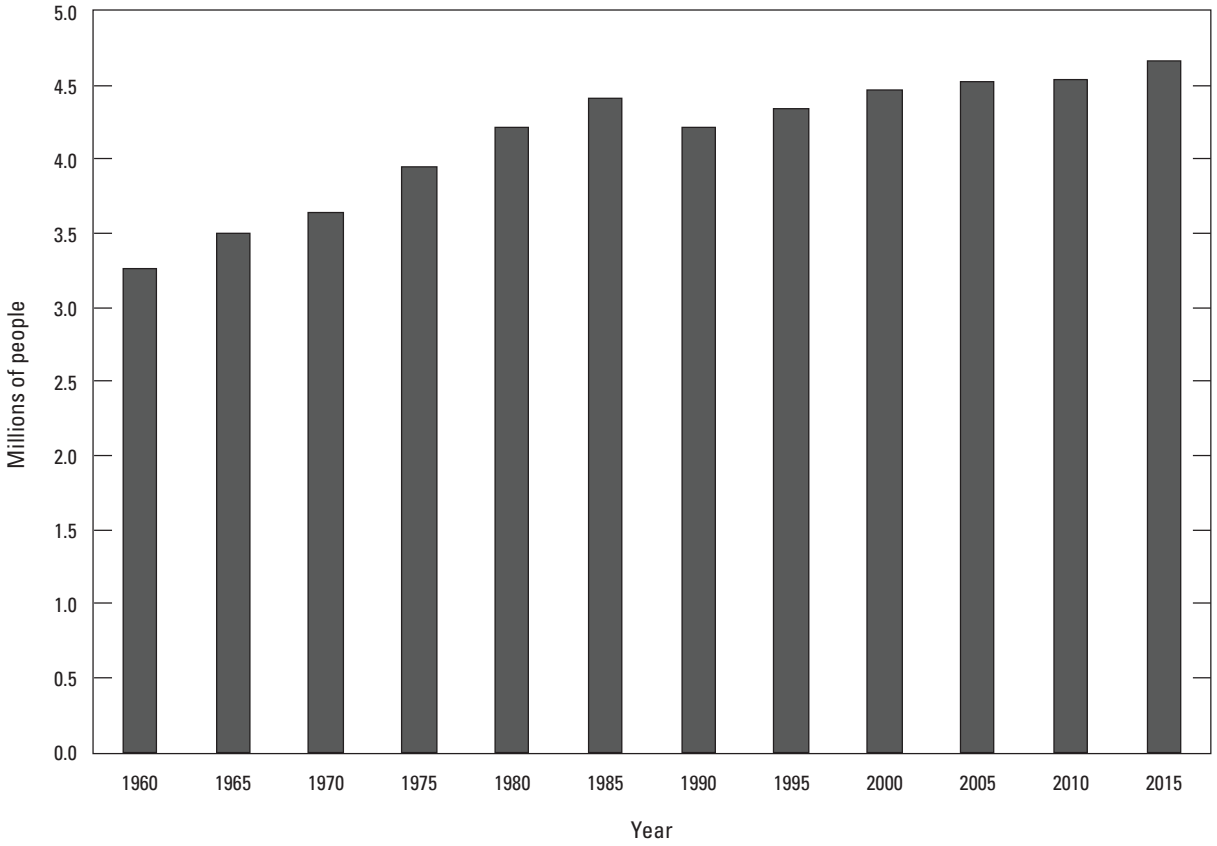


Figure 22. Total population in Louisiana, 1960–2015 (Forstall, 1996; U.S. Census Bureau, 2017).

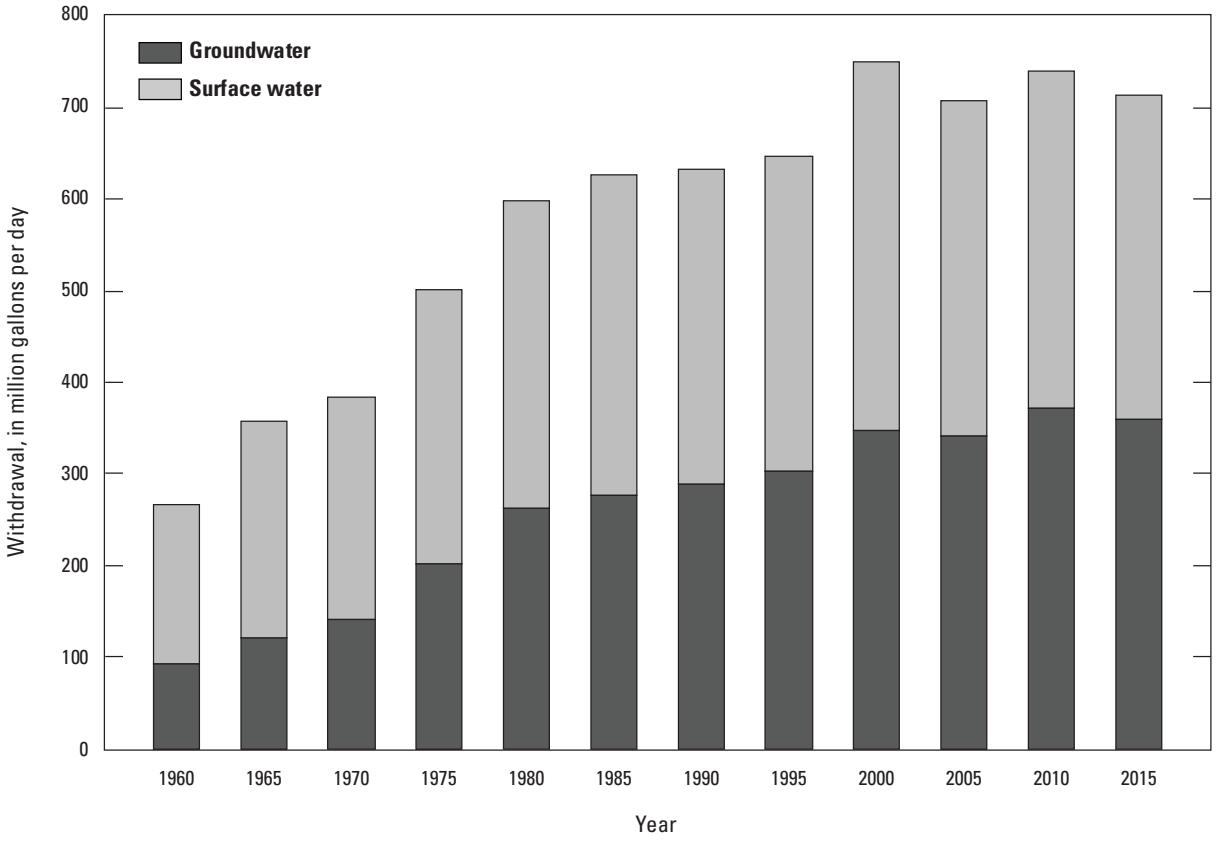


Figure 23. Public-supply water withdrawals in Louisiana, 1960–2015.

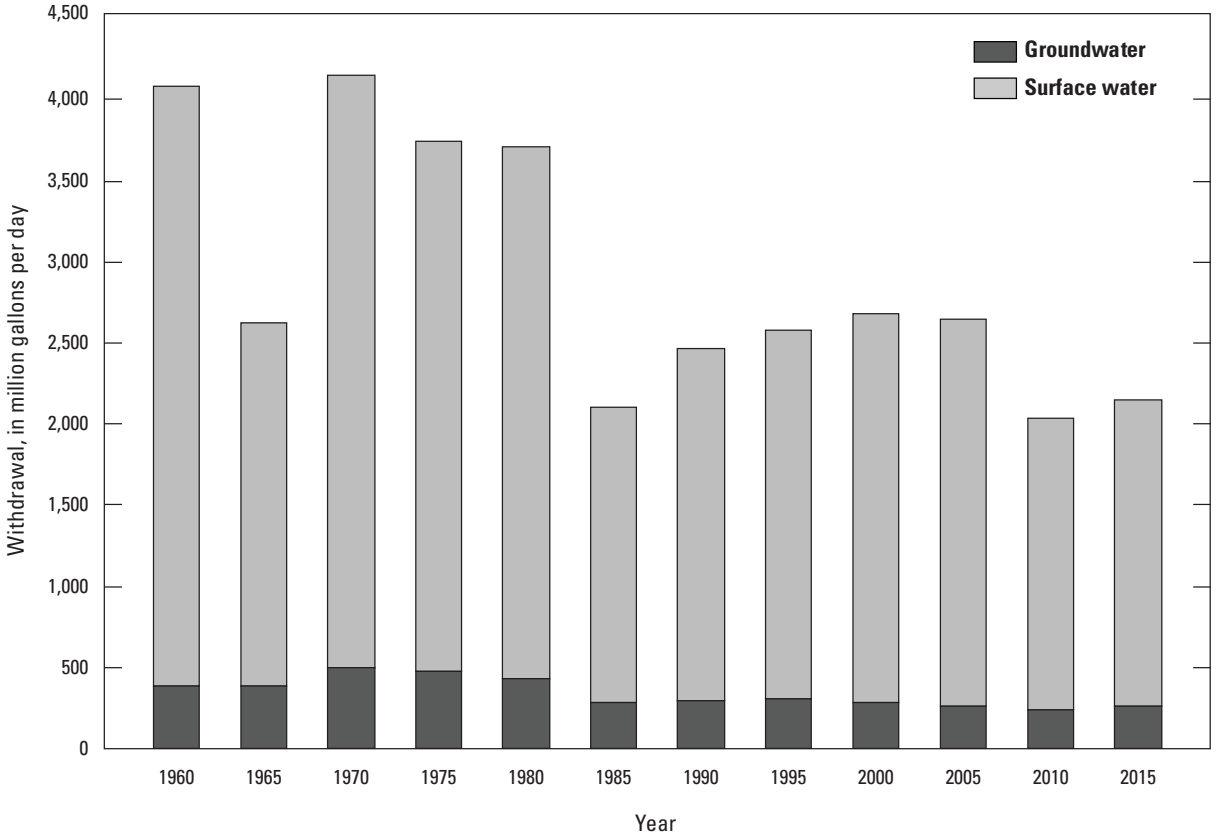


Figure 24. Industrial water withdrawals in Louisiana, 1960–2015.

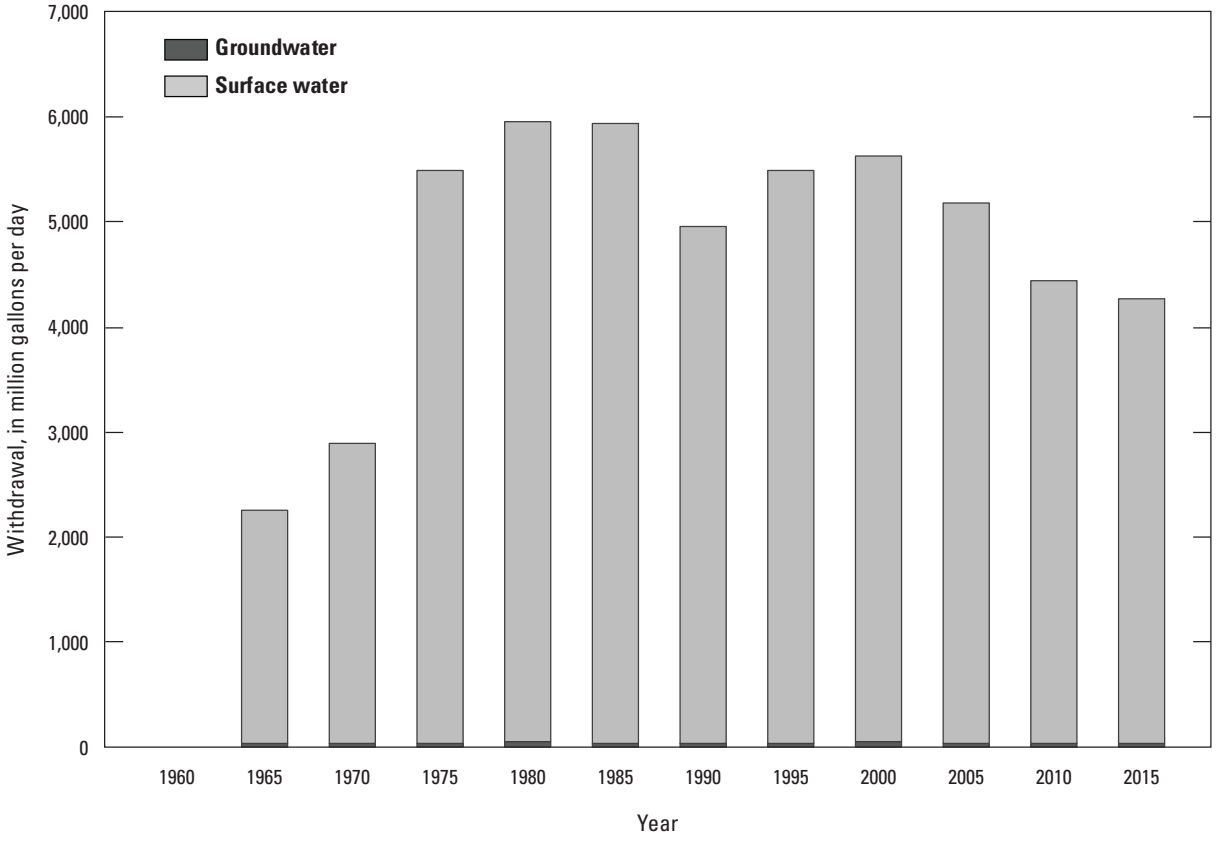


Figure 25. Power-generation water withdrawals in Louisiana, 1965–2015.

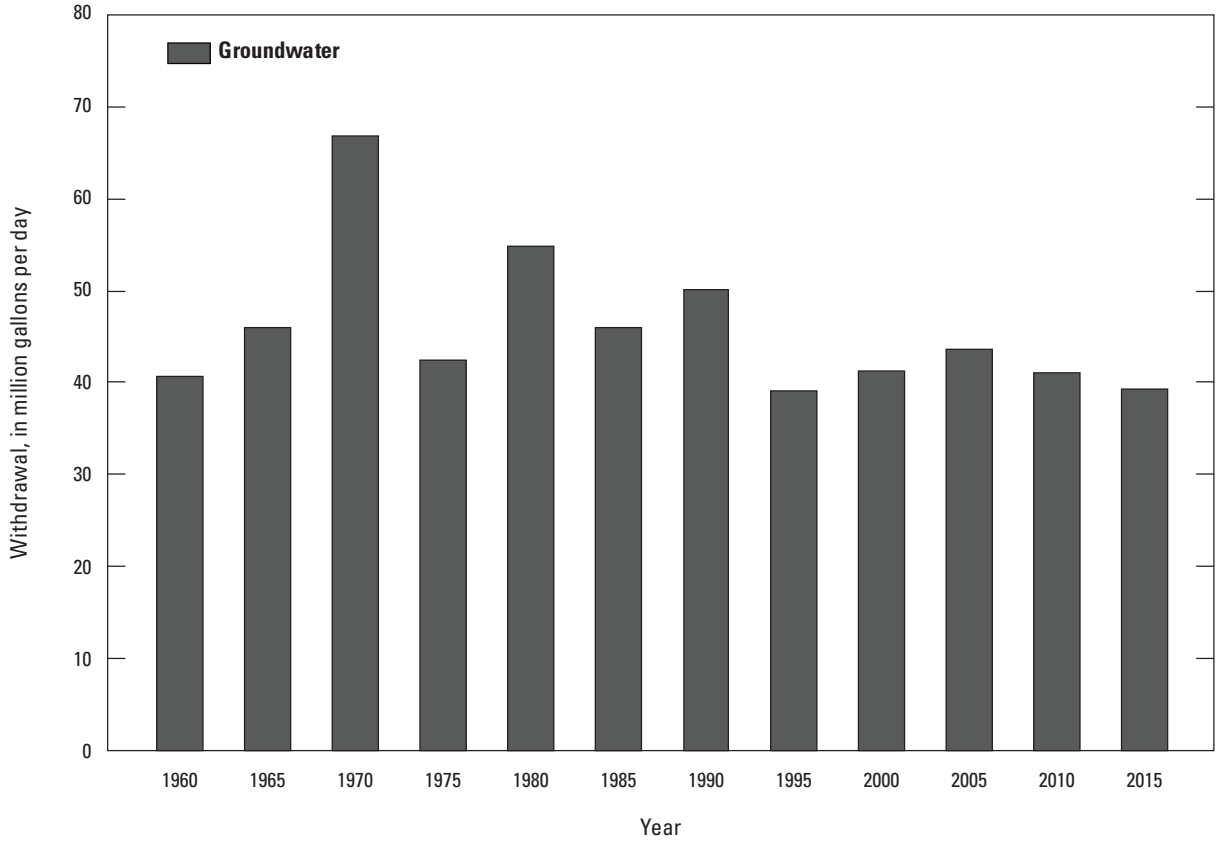


Figure 26. Rural-domestic water withdrawals in Louisiana, 1960–2015.

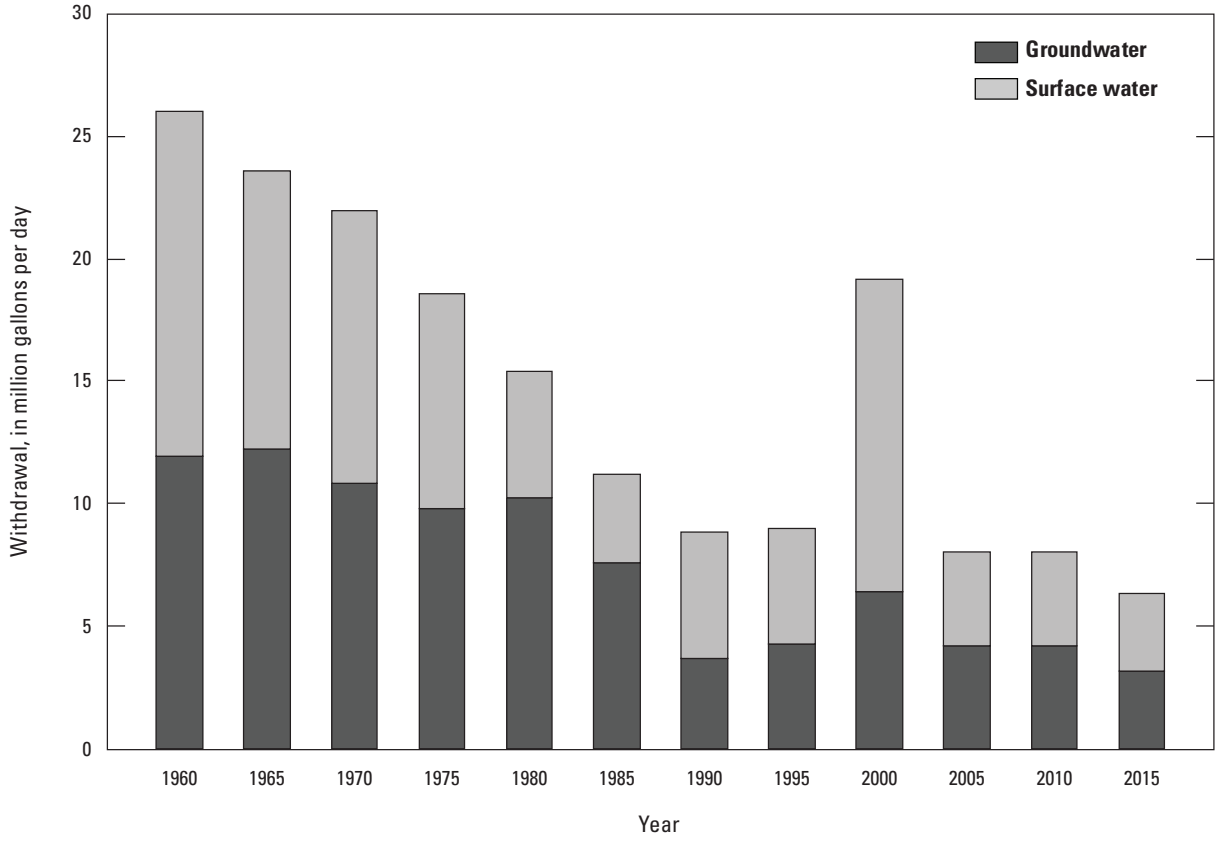


Figure 27. Livestock water withdrawals in Louisiana, 1960–2015.

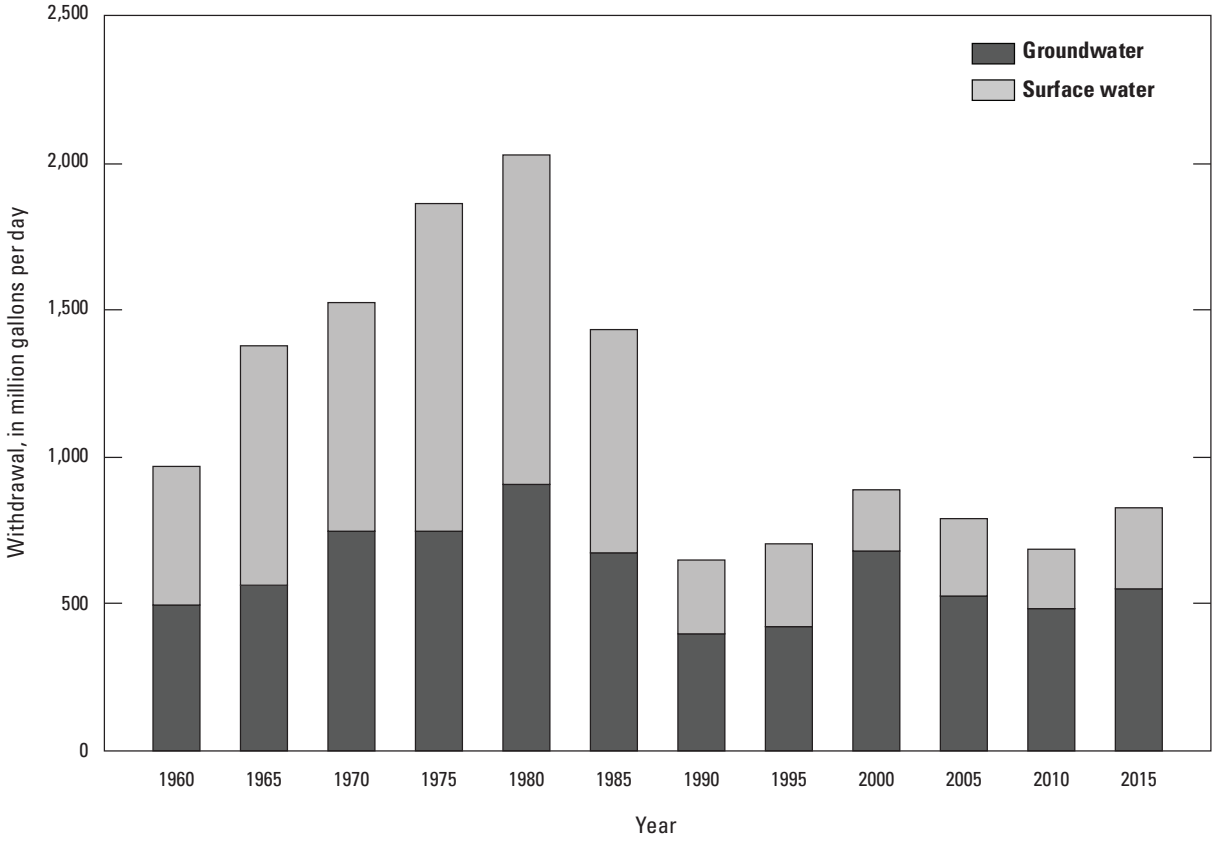


Figure 28. Rice-irrigation water withdrawals in Louisiana, 1960–2015.

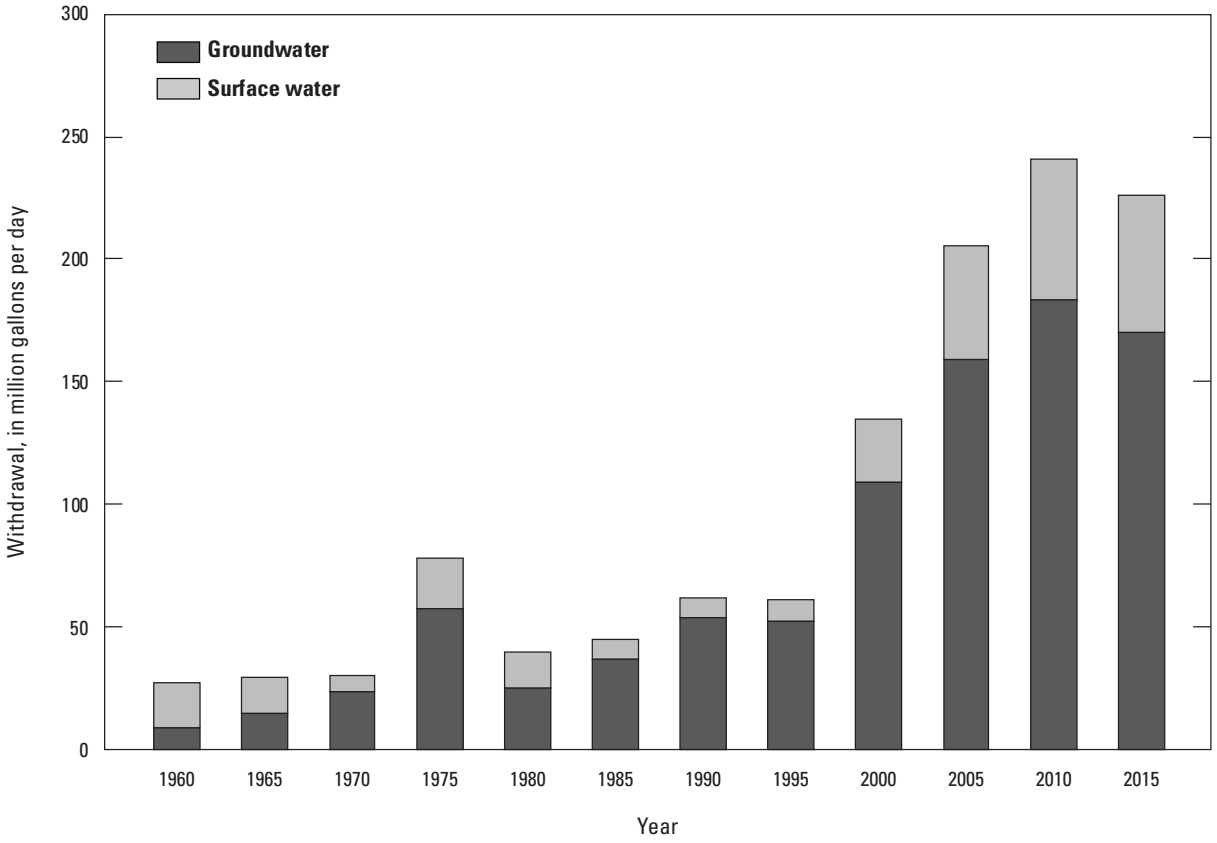


Figure 29. General-irrigation water withdrawals in Louisiana, 1960–2015.

From 2010 to 2015, total withdrawals for aquaculture in Louisiana increased by 58 percent. During the same period, groundwater withdrawals increased by 71 percent, and surface-water withdrawals increased by 37 percent. From 2010 to 2015, withdrawals increased in 25 of the 41 parishes (61 percent) that had aquaculture withdrawals and the median change in aquaculture withdrawals for these parishes was an increase of 0.07 Mgal/d. Jefferson Davis Parish had the greatest increase, at 90 Mgal/d and St. James Parish had the greatest decrease, at 10 Mgal/d. Total withdrawals for aquaculture in Louisiana have increased by 220 percent since aquaculture withdrawals were first reported in the 1980 water-use report (fig. 30).

Total groundwater withdrawals for all water-use categories increased by 190 Mgal/d (12 percent) from 2010 to 2015 (fig. 31). Since 2010, withdrawals from the Chicot aquifer system increased by 30 percent, and withdrawals from the Mississippi River alluvial aquifer decreased by 2.9 percent.

Total surface-water withdrawals increased by 0.44 percent from 2010 to 2015 (fig. 32). The Mississippi River Mainstem had the greatest withdrawals of any surface-water basin in 2015 at 4,900 Mgal/d, or 70 percent of all surface-water, and it had a decrease of just 1.1 percent from 2010.

Figure 33 shows increases and decreases of total water withdrawals in Louisiana since 1960. Withdrawals of both ground and surface water increased steadily from 1960 to 1980. For that period, total groundwater withdrawals increased by 73 percent, total surface-water withdrawals increased by 140 percent, and total water withdrawals in Louisiana increased by 130 percent (from 5,400 to 12,000 Mgal/d). From 1980 to 2015, total groundwater withdrawals decreased by 1.8 percent, total surface-water withdrawals decreased by 35 percent, and total water withdrawals decreased by 30 percent (about 3,800 Mgal/d). As indicated in figure 33, from 2010 to 2015, total water withdrawals in Louisiana increased by 2.6 percent. Overall, since 1960, groundwater withdrawals have increased by 70 percent, surface-water withdrawals have increased by 59 percent, and total water withdrawals have increased by 61 percent.

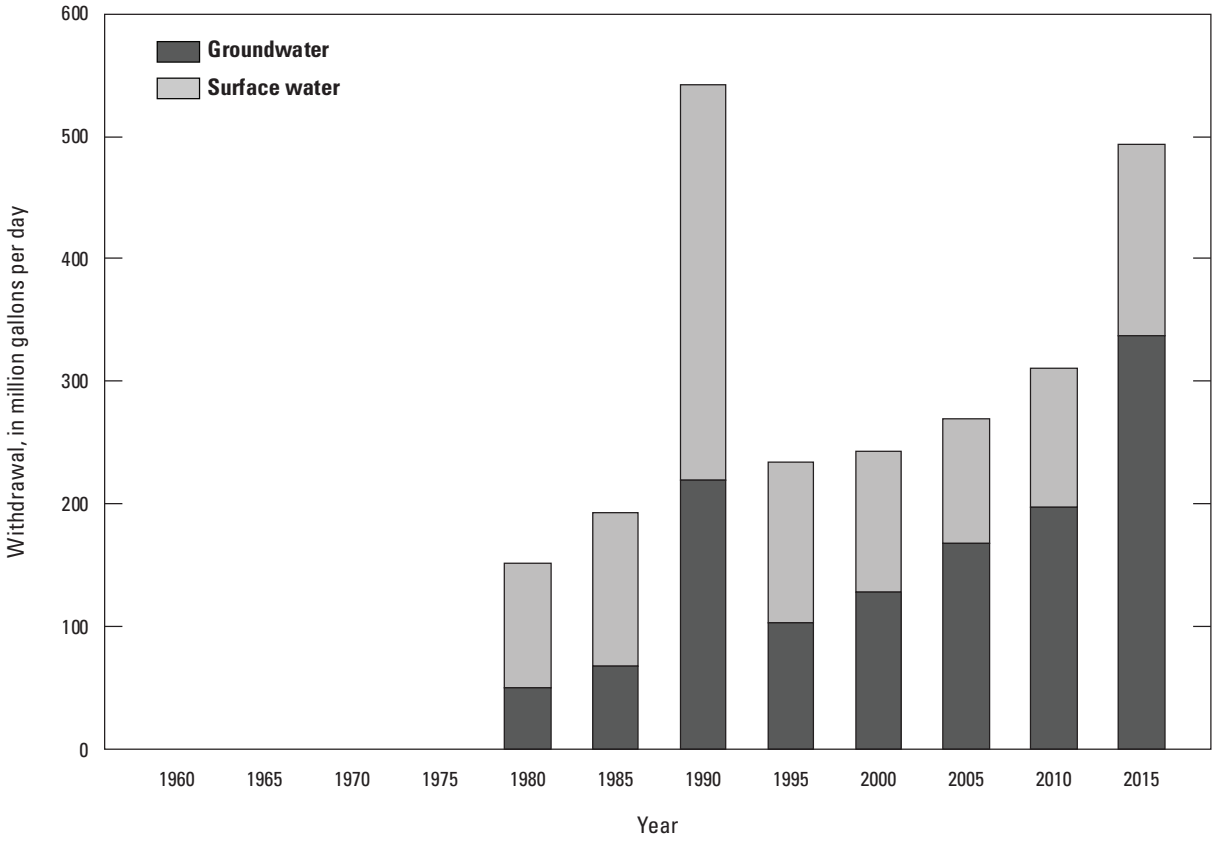


Figure 30. Aquaculture water withdrawals in Louisiana, 1980–2015.

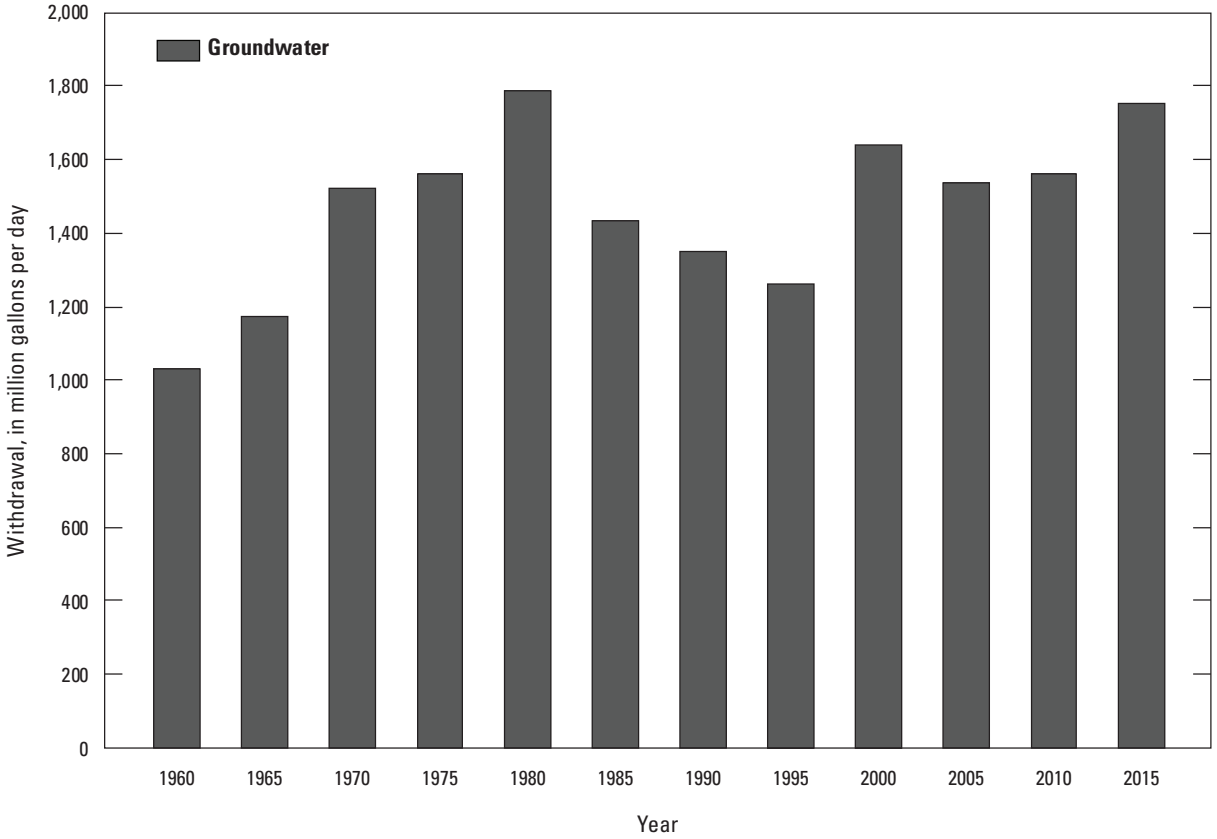


Figure 31. Groundwater withdrawals in Louisiana, 1960–2015.

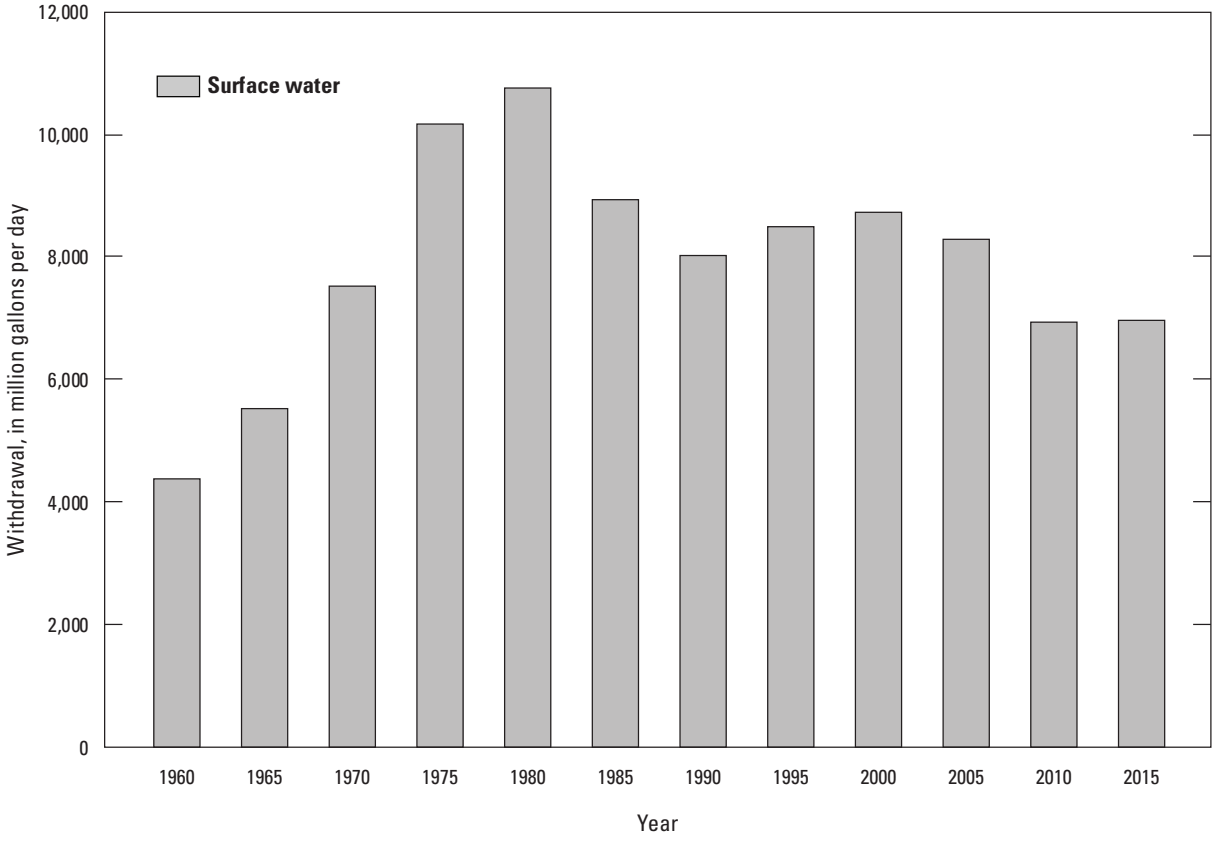


Figure 32. Surface-water withdrawals in Louisiana, 1960–2015.

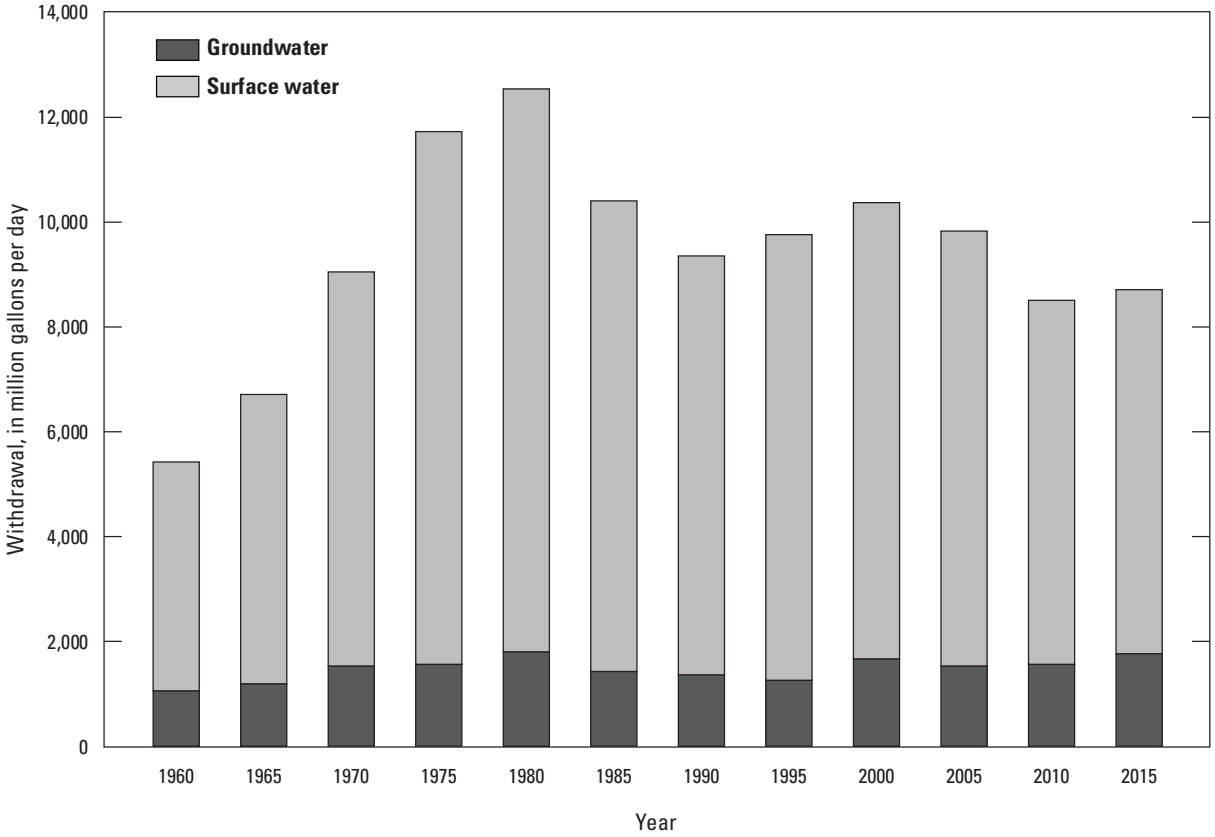


Figure 33. Total water withdrawals in Louisiana, 1960–2015.

Summary

In 2015, public water suppliers in Louisiana withdrew approximately 710 million gallons per day (Mgal/d) of water, 360 Mgal/d from groundwater sources and 350 Mgal/d from surface-water sources, to supply approximately 4.2 million Louisiana residents. From 2010 to 2015, groundwater withdrawals, surface-water withdrawals, and total water withdrawals for public supply use uniformly decreased by 3.4 percent.

Industry in Louisiana withdrew approximately 2,200 Mgal/d of water, 260 Mgal/d from groundwater sources and 1,900 Mgal/d from surface-water sources. Industrial withdrawals in 2015 accounted for 25 percent of all withdrawals. Since 2010, industrial groundwater use increased by 8.2 percent and surface-water use increased by 5.3 percent, resulting in an overall increase of 5.7 percent in withdrawals.

Power-generation facilities withdrew approximately 4,300 Mgal/d, which accounted for more than 49 percent of all water withdrawn in 2015. Of the 4,300 Mgal/d, only 0.87 percent (approximately 37 Mgal/d) came from groundwater sources, whereas more than 99 percent (4,200 Mgal/d) originated from surface-water sources. The Mississippi River provided 71 percent (3,000 Mgal/d) of the surface water withdrawn for power generation use. Groundwater withdrawals for power generation decreased by 8.0 percent from 2010 to 2015. Surface-water withdrawals decreased by 3.8 percent, resulting in an overall decrease of 3.9 percent for power-generation withdrawals from 2010 to 2015.

In 2015, an average of 61,000 Mgal/d of Mississippi River water passed through the turbines of the hydroelectric power plant at the Old River Control Structure in southern Concordia Parish. For the hydroelectric power plant at the Toledo Bend Reservoir in Sabine Parish near Burkeville, Texas, an average of 5,300 Mgal/d of water passed through its turbines, 2,600 Mgal/d of which was counted as power-generation instream use for Louisiana in 2015. Hydroelectric power-generation instream use was not included in surface-water withdrawals in this report because the water was not considered to be withdrawn.

Approximately 490,000 people, or about 10 percent of Louisiana's total population, using privately owned domestic wells, withdrew an estimated 39 Mgal/d of groundwater for domestic use in 2015. Rural-domestic withdrawals decreased by 4.1 percent from 2010 to 2015. The small decrease is consistent with the continued expansion of public suppliers into rural areas and the resultant shift from the use of private domestic wells to public supplies.

Withdrawals for livestock were approximately 6.3 Mgal/d of water in 2015. Of this total, 3.2 Mgal/d was groundwater and 3.1 Mgal/d was surface water. Groundwater used for livestock decreased by 24 percent and surface water decreased by 18 percent with a total decrease of 21 percent in withdrawals for livestock from 2010 to 2015.

Rice farmers withdrew approximately 830 Mgal/d of water to irrigate their fields in 2015. Of this total, 550 Mgal/d was groundwater and 280 Mgal/d was surface water. The Chicot aquifer system in southwestern Louisiana provided 75 percent of the groundwater used for rice irrigation. Groundwater withdrawal for rice irrigation increased by 13 percent and surface-water withdrawal increased by 37 percent from 2010 to 2015. Although rice-harvest acreage decreased by 11 percent, total withdrawals for rice irrigation increased 20 percent from 2010 to 2015.

Farmers also withdrew approximately 170 Mgal/d of groundwater and 56 Mgal/d of surface water to irrigate crops other than rice in 2015. Groundwater withdrawals for these crops decreased by 7.4 percent and surface-water withdrawals decreased by 1.6 percent from 2010 to 2015. Total withdrawals for general irrigation (about 230 Mgal/d) decreased by 6.0 percent from 2010 to 2015.

Water withdrawn for aquaculture in Louisiana was approximately 490 Mgal/d in 2015. Of this total, 340 Mgal/d was groundwater and 160 Mgal/d was surface water. Since 2010, groundwater withdrawals have increased by 71 percent and surface-water withdrawals have increased by 37 percent. Total withdrawals for aquaculture increased by 58 percent from 2010 to 2015.

Total withdrawals in 2015 were approximately 8,700 Mgal/d. Total groundwater withdrawals were 1,800 Mgal/d, and total surface-water withdrawals were 7,000 Mgal/d. In 2015, about 48 percent (850 Mgal/d) of all groundwater withdrawn was from the Chicot aquifer system, and about, 22 percent (380 Mgal/d) was withdrawn from the Mississippi River alluvial aquifer. Approximately 70 percent (4,900 Mgal/d) of all surface water withdrawn was from the Mississippi River Mainstem.

From 2010 to 2015, groundwater withdrawals from the Chicot aquifer system increased by 30 percent and withdrawals from the Mississippi River alluvial aquifer decreased by 2.9 percent, resulting in a 12-percent increase in total groundwater withdrawals. During the same time, there was 1.1-percent decrease in surface water withdrawals from the mainstem of the Mississippi River and total surface-water withdrawals increased by 0.44 percent. Since 2010, total withdrawals for all water-use categories increased by 2.6 percent.

All water-withdrawal and water-use data presented in this report should be considered estimates. Due to rounding, totals and percentages presented in the tables, figures, and text in the report may differ slightly from totals or percentages calculated individually.

Glossary

Alluvial aquifer—A water-bearing deposit of unconsolidated material (sand and gravel) left behind by a river or other flowing water (Kleiss and others, 2000).

Aquaculture water use—Water used in the production of organisms that live in water within a confined space and under controlled feeding, sanitation, and harvesting procedures, and establishments primarily engaged in hatching fish and in operating fishing preserves (Maupin and others, 2014). In Louisiana, this use is primarily for fish, crawfish, and alligator farming. Instream fish farming is not included in this category.

Aquifer—A body of rock that contains sufficient saturated permeable material to conduct groundwater and to yield significant quantities of water to wells and springs (Jackson, 1997).

Aquifer system—A heterogeneous body of intercalated permeable and less permeable material that acts as a water-yielding hydraulic unit of regional extent (Jackson, 1997).

Application rate—Rate at which water is applied to a given area. Usually expressed in units of depth per time (Dickens and others, 2011).

Cooling system—An equipment system that provides water for cooling purposes, such as to condensers at power plants or at factories. May include water intakes, outlets, cooling towers, ponds, canals, pumps, and pipes. Generally very little water is consumed. Types include once-through and closed-loop cooling (Maupin and others, 2014).

Freshwater—Water containing less than 1,000 milligrams per liter of dissolved solids; generally water with more than 500 milligrams per liter is undesirable 0.005 for drinking and for many industrial uses (Maupin and others, 2014).

Groundwater—In the broadest sense, all subsurface water; that part of the subsurface water that is in the saturated zone, including underground streams (U.S. Geological Survey, 2017).

Hydroelectric power generation water use—The use of water in the generation of electricity at plants where the turbine generators are driven by falling water. Hydroelectric water use is most commonly an instream use (Bradley, 2017).

Industry water use—Water used for fabrication, processing, washing, and cooling. Includes industries such as chemical and allied products, food, mining, paper and allied products, petroleum refining, and steel (Maupin et al., 2014).

Instream use—Water that is used, but not withdrawn, from a surface-water source for such purposes as hydroelectric power generation, navigation, water-quality improvement, fish propagation, and recreation. Instream use is not included in surface-water totals of this report. (Maupin and others, 2014).

Irrigation water use—Any withdrawal made for the use of water application to vegetation. This use includes application to field crops such as rice, corn, cotton, fruit crops, nurseries, and special applications such as the watering of golf courses and sporting fields (Lovelace, 1991).

Livestock water use—Water used for use watering, feedlots, dairy operations, and other livestock production needs of cattle, horses, sheep, swine, poultry, and other animals (Lovelace, 1991; Maupin and others, 2014).

Miscellaneous streams—Refers to surface-water sources from which water is withdrawn for aggregated use categories—livestock, irrigation, and aquaculture—when specific water-body sources were not identified. The term "miscellaneous streams" also is used to indicate sources such as streams, lakes, bayous, and canals for which withdrawals would be insignificant if listed individually (Lovelace, 1991).

Once-through cooling—Cooling system in which the water is withdrawn from a source, circulated through the heat exchangers, and then returned to a body of water at a higher temperature (Maupin and others, 2014). Little water, if any, used in this process is consumed (Lovelace, 1991).

Per capita use—The average amount of water used per person during a standard time period, generally per day (Solley and others, 1998).

Power-generation water use—Water used for thermoelectric power-generation purposes such as cooling, sanitation, washing, and steam generation. Use of water for hydroelectric power generation is considered an instream use and not a withdrawal. Therefore, hydroelectric power-generation use is not included in surface-water withdrawal summaries in this report but is reported as an instream use (Lovelace, 1991).

Public-supply deliveries—Amount of water withdrawn and delivered from a public supplier to users for domestic, commercial, industry, thermoelectric-power, of public-use purposes (U.S. Geological Survey, 2017).

Public-supply water use—Water withdrawn and delivered to a group of users by public or private water suppliers. For this report, a public water supply is defined as one that serves at least 25 people or 15 connections year round. The water is used for a variety of purposes such as domestic, commercial, industrial, or public water needs (Lovelace, 1991).

Rural-domestic water use—Water used by a person or family for personal home use, such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and outdoor purposes such as watering lawns and gardens. These users are often in rural areas where public supplies are unavailable (Lovelace, 1991; Maupin and others, 2014).

Saline water—Water that contains 1,000 milligrams per liter or more of dissolved solids (Maupin and others, 2014).

Standard Industrial Classification (SIC) code—A standard used by Federal agencies for the classification of establishments by type of activity. In 1987, a SIC revision was promulgated by the U.S. Office of Management and Budget to facilitate comparisons of economic statistics by the various government agencies. This SIC version was used as the reference for industrial classification in this report (Office of Management and Budget, 1987; Lovelace, 1991).

Surface water—An open body of water such as a lake, river, or stream (Solley and others, 1998).

Surface-water basin—The land area drained by a river or stream. Also referred to as "drainage basin" or "watershed" (U.S. Geological Survey, 2017).

Water use—Water withdrawn or diverted from a groundwater or surface-water source for a specific purpose, such as for public supply, industry, power generation, rural domestic, livestock, irrigation, or aquaculture purposes (Lovelace, 1991; Maupin and others, 2014).

Water withdrawal—Water removed from a groundwater or surface-water source for use (Maupin and others, 2014).

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