

Prepared in cooperation with the  
Georgia Department of Natural Resources, Environmental Protection Division

# Water Use in Georgia by County for 2005; and Water-Use Trends, 1980–2005

Scientific Investigations Report 2009–5002

**Cover:**

The city of Albany has a very complete system of water-works which cost about \$80,000. The water is pumped directly from the wells to the water-tower, from which it is distributed through the city by hydrostatic pressure. This plant furnishes to the city, daily, about 25,000 gallons of water, which is used for all purposes.

S.W. McCallie  
Assistant Geologist  
A Preliminary Report on the Artesian-Well System of Georgia  
Bulletin No. 7, 1898

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By Julia L. Fanning and Victoria P. Trent

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Environmental Protection Division

Scientific Investigations Report 2009–5002

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## Conversion Factors

<b>Multiply</b>	<b>By</b>	<b>To obtain</b>
Area		
acre	4,047	square meter (m <sup>2</sup> )
acre	0.00156	square mile (mi <sup>2</sup> )
square mile (mi <sup>2</sup> )	2.59	square kilometer (km <sup>2</sup> )
Volume		
acre-foot (acre-ft)	0.325851	million gallons (Mgal)
gallons per day (gal/d)	3.785	liters per day (L/d)
million gallons per day (Mgal/d)	0.003785	million cubic meters per day (Mm <sup>3</sup> /d)
Energy		
gigawatthour (GWh)	1,000	megawatthour (mWh)
gigawatthour (GWh)	1,000,000	kilowatthour (kWh)

Horizontal coordinate information is referenced to the North American Datum of 1983 (NAD 83).

# Water Use in Georgia by County for 2005; and Water-Use Trends, 1980–2005

By Julia L. Fanning and Victoria P. Trent<sup>1</sup>

## Abstract

Water use for 2005 for each county in Georgia was estimated using data obtained from various Federal and State agencies and local sources. Total consumptive water use also was estimated for each county in Georgia for 2005. Estimates of offstream water use include the categories of public supply, domestic, commercial, industrial, mining, irrigation, livestock, and thermoelectric power. The only category of instream use estimated was hydroelectric-power generation.

Total offstream water use from ground- and surface-water sources was about 5,471 million gallons per day (Mgal/d) in 2005. Surface water used in the process of thermoelectric-power generation was the largest volume of water withdrawn with withdrawals of 2,717 Mgal/d in 2005. Estimated instream water use for hydroelectric-power generation was 54,096 Mgal/d. Withdrawals for irrigation totaled 752 Mgal/d with 65 percent supplied by ground-water sources. Surface water provided 78 percent of the 1,180 Mgal/d withdrawn for public supply. Many counties in the northern Piedmont physiographic province of Georgia, an area of dense population, had a large percentage of withdrawals from surface-water sources. In contrast, in the southern Coastal Plain physiographic province part of the State, many counties had more withdrawals from ground-water sources.

As part of the Georgia Water-Use Program, statewide water-use estimates have been compiled every 5 years since 1980. During this period, water use was greatest in 1980 at 6,725 Mgal/d. Water use decreased by 31 percent to 5,353 Mgal/d in 1990 then increased to 6,487 Mgal/d in 2000.

By 2005, water withdrawals had decreased to an estimated 5,471 Mgal/d primarily because of a decline in withdrawals for thermoelectric-power generation and a decline in demands as 2005 was a normal year for precipitation compared to 2000, which was in drought. Throughout the period 1980–2005, water withdrawn for thermoelectric-power generation made up the largest volume of offstream water use in Georgia. Total withdrawals for thermoelectric-power generation decreased about 24 percent in 2005 compared to 2000, due to the decommissioning of three power plants in the State. In addition, several plants operated by Georgia Power Company were retooled during this period to increase water conservation. Public-supply use steadily increased from 1980 to 2000, concurrent with increasing population in the State; however, in 2005, there was a slight decrease in public-supply use. Conversely, industrial water use decreased during the period 1980–2005. Water withdrawals for irrigation during 1980–2005 followed changing hydrologic conditions, increasing during drier years (1980 and 2000) and decreasing during normal or wetter years. Withdrawals for the categories of domestic and commercial use remained about the same during 1980–2005. Livestock and mining use increased in 2005 compared to the 2000 estimates because of changes in estimation techniques.

Consumptive water use was determined for each category of use and compiled for each county. Estimation techniques vary for each water-use category. While consumptive use varied for each county in 2005, from about 1 percent to nearly 100 percent of total withdrawals, consumptive-use estimates for the entire State totaled 1,310 Mgal/d, about 24 percent of total withdrawals.

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<sup>1</sup>Georgia Environmental Protection Division, Atlanta, Georgia

## Introduction

Knowledge of the quantity of water withdrawn from available water resources and how that water is used is necessary for resource management. Estimates of how much water is consumed and, therefore, no longer available for immediate use, helps quantify the amount of water available to downstream users. In addition to water withdrawal and consumption, determining water-use trends can provide a basis for estimating future needs. By examining historical patterns and current practices, local and State managers can make more realistic projections of water needs.

To provide water withdrawal and consumptive-use estimates needed for water management, the U.S. Geological Survey (USGS)—in cooperation with the Georgia Department of Natural Resources, Environmental Protection Division (GaEPD)—developed the Georgia Water-Use Program (GWUP) in 1979 (Fanning, 1985). This ongoing program focuses on collecting, compiling, and disseminating water-use information for the State. These data are stored in a central database known as the Georgia Water-Use Data System (GWUDS) maintained by the USGS.

The report for 2005 is the seventh in a series of reports describing water use by county in Georgia. Previous reports published as part of the GWUP include summaries for 1980 (Pierce and others, 1982); 1985 (Turlington and others, 1987); 1987 (Trent and others, 1990); 1990 (Fanning and others, 1992); 1995 (Fanning, 1997); and 2000 (Fanning, 2003). This report is the first in the series to include county summaries of consumptive water use. The report also summarizes surface-water use by basin and ground-water use by aquifer.

## Purpose and Scope

This report presents water-use estimates in Georgia for selected water-use categories and estimated consumptive use during 2005. Water-use trends during the period 1980–2005 are also presented. Water-use estimates are reported by county, major river basin, and principal aquifer. Data are presented in tabular form, with maps showing locations of major water users in 2005 and graphs showing 25-year water-use trends.

## Water Resources of Georgia

Water resources in Georgia are abundant and have been developed extensively. Climate, geology, and landforms control the distribution of Georgia's water resources. Georgia is a "headwaters" State, with most of the rivers beginning in northern Georgia and increasing in size downstream. Surface water is the primary source of water in northern Georgia; obtaining ground water from the underlying fractured crystalline rock in this area is more difficult than in the Coastal Plain physiographic province because of the complex geology of the area. Most ground-water withdrawals are in the Coastal Plain physiographic province of Georgia where aquifers are well defined and highly productive.

The major river basins in Georgia are the Savannah, Ogeechee, Altamaha, Satilla and St. Marys, Suwannee, Ochlockonee, Apalachicola, Mobile, and Tennessee (fig. 1). The major ground-water sources include the Floridan aquifer system, Claiborne aquifer, Clayton aquifer, Cretaceous aquifer system, crystalline-rock aquifers, and Paleozoic-rock aquifers (fig. 2).

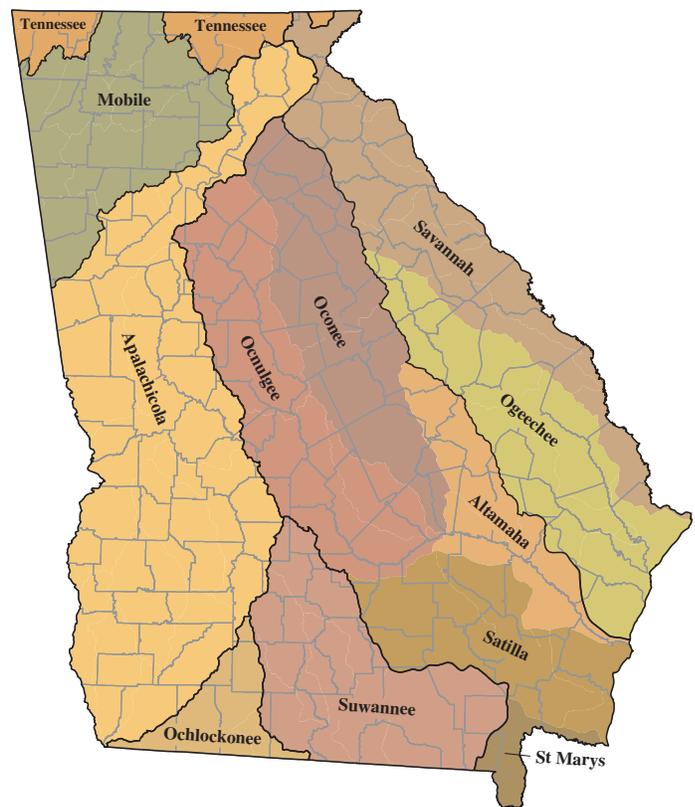
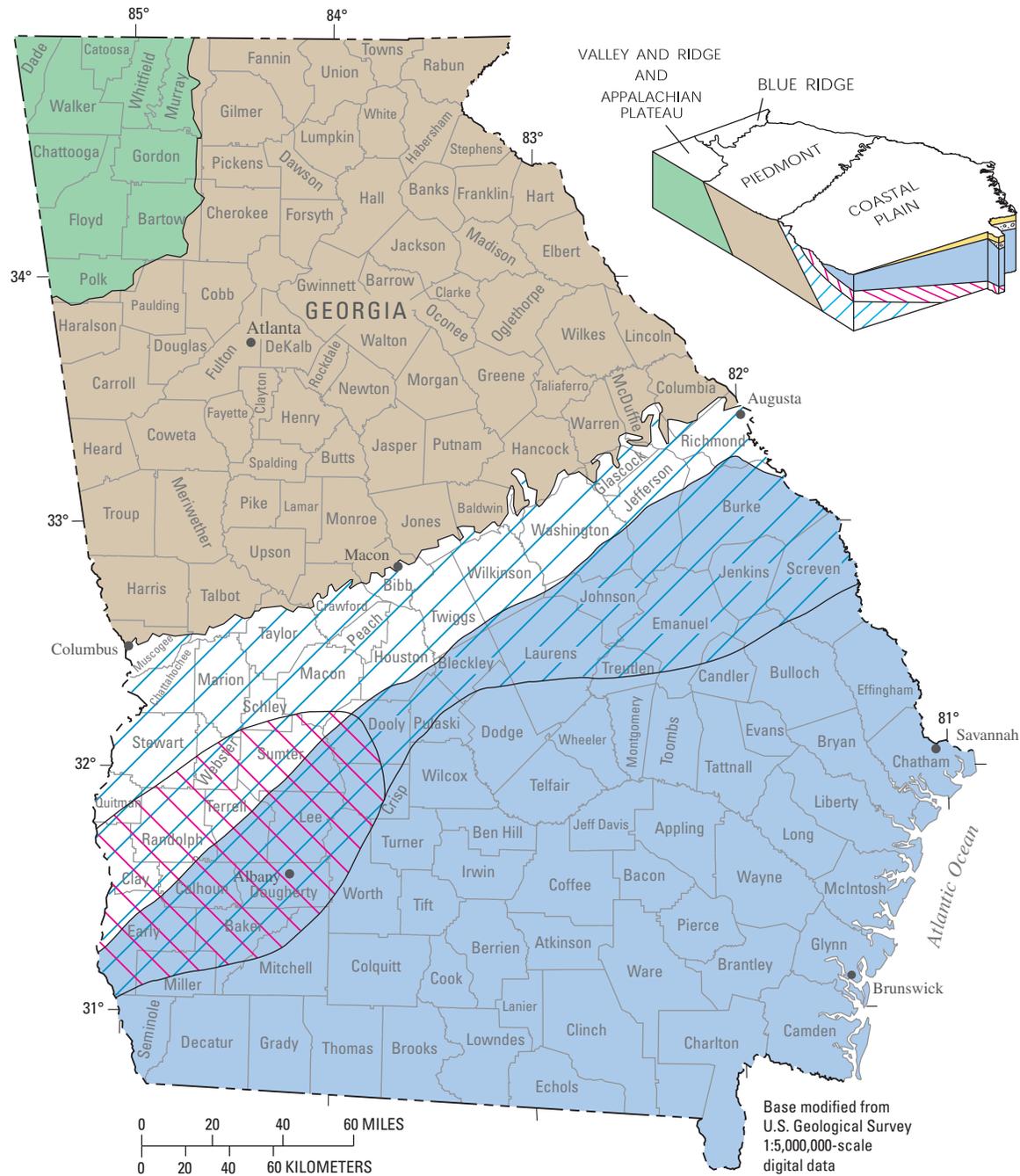


Figure 1. Major river basins in Georgia.



**EXPLANATION**

- |   |  |
|---|--|
| <b>Coastal Plain aquifers</b>   | <b>Piedmont and Blue Ridge aquifers</b>                  |
| Surficial aquifer system—Not a principal aquifer. Shown on block only | Crystalline-rock aquifers                                |
| Floridan aquifer system   | <b>Valley and Ridge and Appalachian Plateau aquifers</b> |
| Claiborne and Clayton aquifers  | Paleozoic-rock aquifers                                  |
| Cretaceous aquifer system   |  |

**Figure 2.** Area of use of principal aquifers and physiographic provinces in Georgia (modified from U.S. Geological Survey, 2006).

## Water Use in Georgia, 2005

Water use is subdivided according to offstream and instream use. Offstream use is defined as water withdrawn or diverted from a ground- or surface-water source and transported to the place of use. Offstream water-use categories include public supply, domestic, commercial, industrial, mining, irrigation, livestock, and thermoelectric power. Instream use is that which occurs within a stream channel for such purposes as hydroelectric-power generation, navigation, water-quality improvement, fish propagation, and recreation (Solley and others, 1988).

Georgia law (the Georgia Ground-Water Use Act of 1972 and the Georgia Water Supply Act of 1978) requires any water user who withdraws more than 100,000 gallons per day (gal/d) on a monthly average to obtain a withdrawal permit from the GaEPD. Permit holders generally must report their withdrawals by month. Agricultural permit holders initially were exempt from reporting, and the agricultural water-use reporting system is not yet complete. The GWUP collects the reported information under the withdrawal permit system and the drinking-water permit system and stores the data in GWUDS (table 1).

An estimated 5,471 Mgal/d were withdrawn for off-stream uses throughout Georgia in 2005 (fig. 3). An estimated 4,291 Mgal/d were withdrawn from surface-water sources (78 percent), and of that amount, 63 percent was for thermoelectric-power generation (fig. 4). Estimated ground-water withdrawals (fig. 3, table 2), which include water obtained from springs, were 1,180 Mgal/d in 2005, mostly for irrigation (nearly 41 percent) and industrial and mining uses (nearly 24 percent). The greatest offstream use (60 Mgal/d or greater) occurred in counties where thermoelectric-power plants are located. Exceptions include Cobb, DeKalb, Fulton, and Gwinnett Counties, located in the Metropolitan Atlanta area, where large amounts of water are used for public supply; and Early, Glynn, and Wayne Counties, where large amounts of water are withdrawn for industrial use. The percentage of county water withdrawals by ground- and surface-water sources provides an indication of the relative importance of these resources in each county (fig. 5). The only instream use summarized by the GWUP for this report is for hydroelectric-power generation. In 2005, an estimated 54,096 Mgal/d was used to generate hydroelectric power.

**Table 1.** Water-use data sources for Georgia, 2005.

[GaEPD, Georgia Environmental Protection Division; WPB, Water Protection Branch; USGS, U.S. Geological Survey]

Water-use category	Data source	Type of data
Public supply	Permit files, GaEPD, WPB, water withdrawal permitting	Withdrawals by permitted users
	Mail survey of operators of large municipal systems	Population served, interconnection of systems
	Drinking Water Program, GaEPD, WPB, water withdrawal permitting	Population served by small public suppliers (subdivisions and mobile home parks)
Domestic	U.S. Bureau of the Census, 2005	County and city populations
Commercial	Permit files; GaEPD, WPB, water withdrawal permitting	Withdrawals by permitted users
Industrial	Permit files; GaEPD, WPB, water withdrawal permitting	Withdrawals by permitted users
Mining	J.K. Lovelace, USGS, written commun., 2006 (estimated from)	Withdrawal estimates by county
	USGS Minerals Information Team data	
Livestock and aquaculture	J.K. Lovelace, USGS, written commun., 2006 (estimated from)	Withdrawal estimates by county
	National Agricultural Statistics Service data	
Irrigation	Cooperative Extension Service, 2004 irrigation survey	Withdrawal estimates and irrigated acreage by county
	Permit files	Withdrawals by permitted users
	GaEPD, WPB, water withdrawal permitting	Withdrawals by permitted users
Thermoelectric power	University of Georgia, 1999 golf survey	Acreage, water application rates
	Permit files; GaEPD WPB, water withdrawal permitting	Withdrawals by thermoelectric-power plants generation
Hydroelectric-power generation	Power companies, plant owners	Instream use by power plants

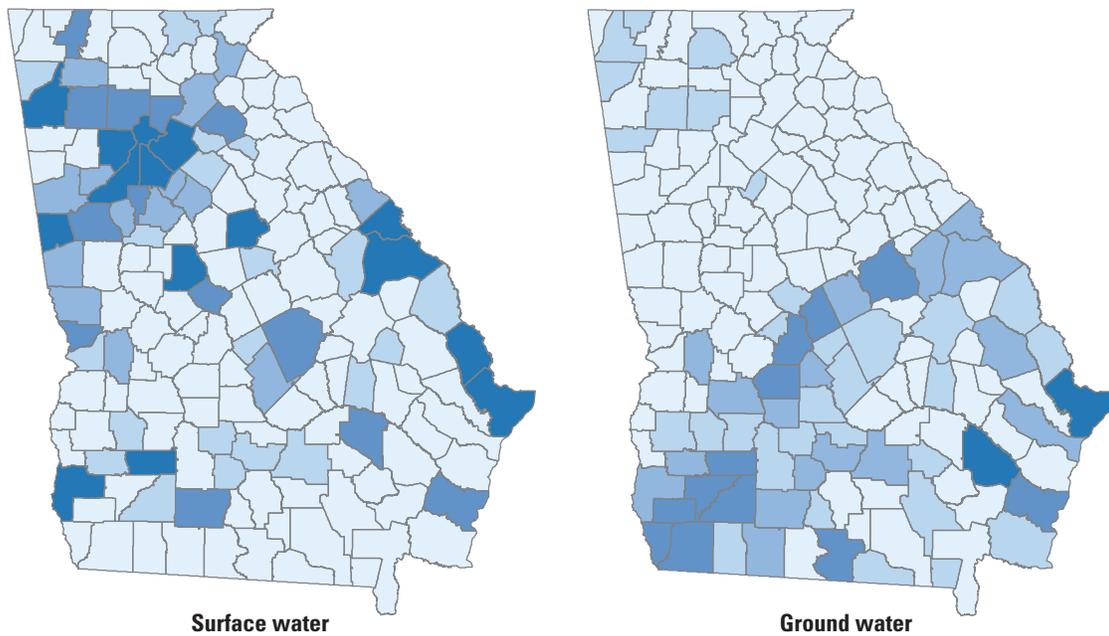
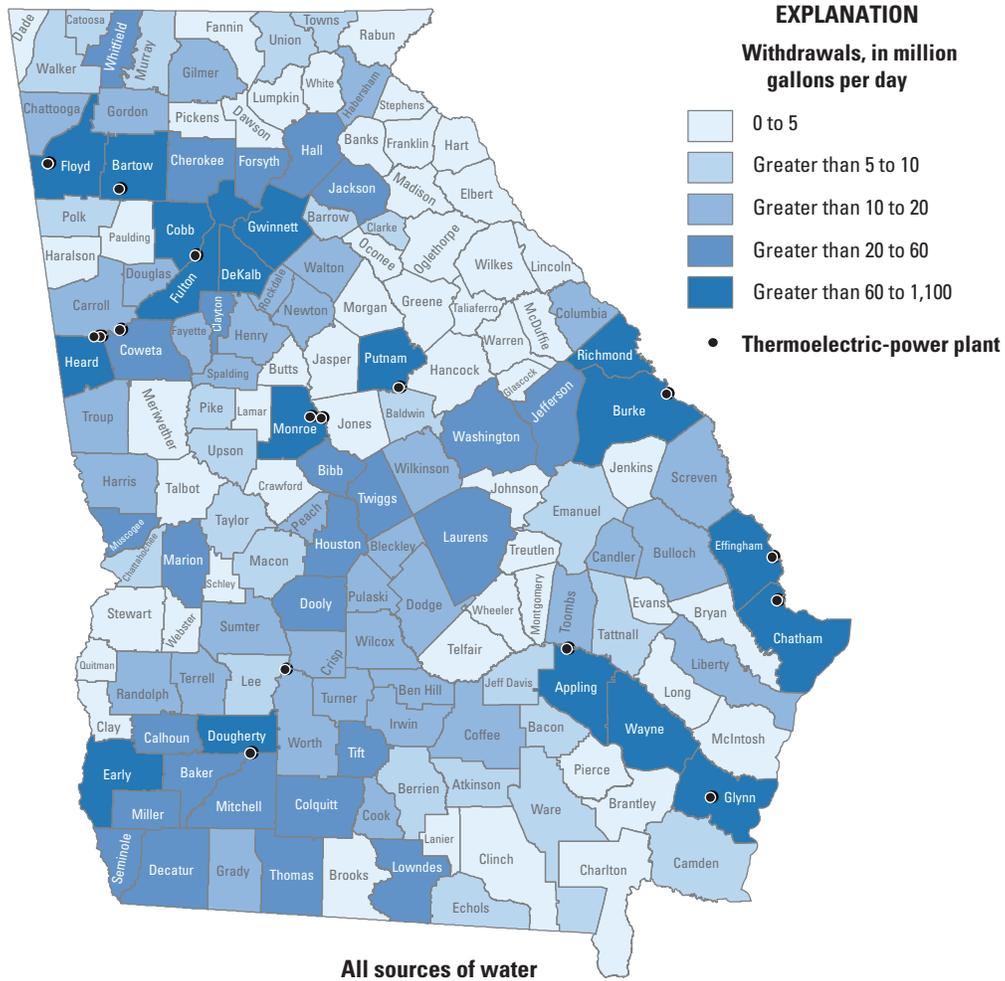


Figure 3. Water withdrawals by county and source in Georgia, 2005.

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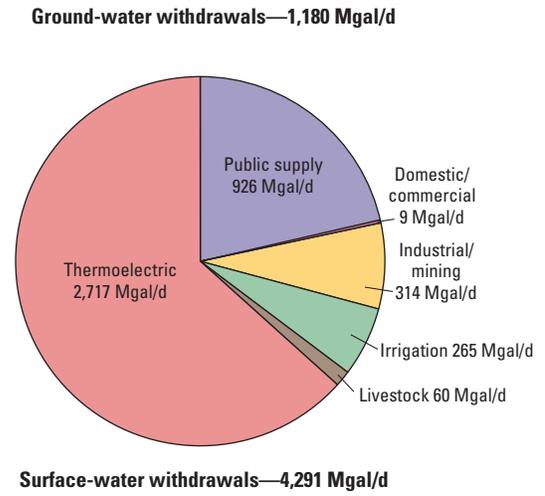
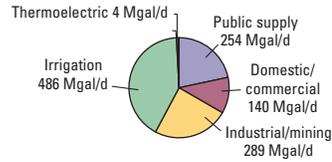
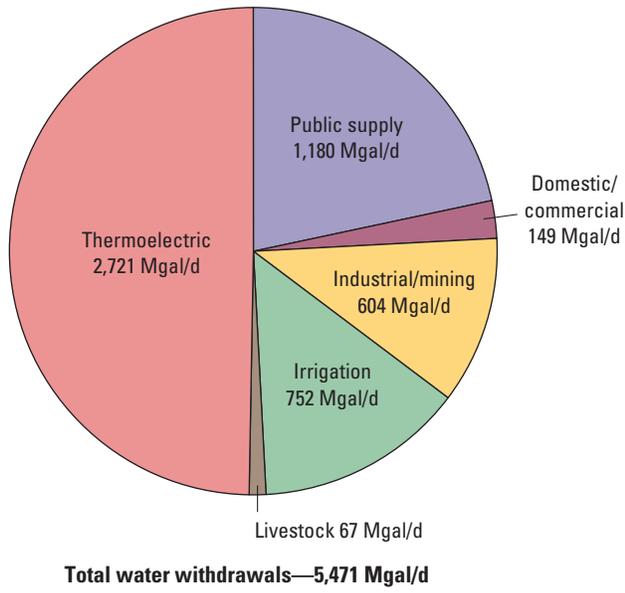


Figure 4. Water withdrawals by category and source in Georgia, 2005.

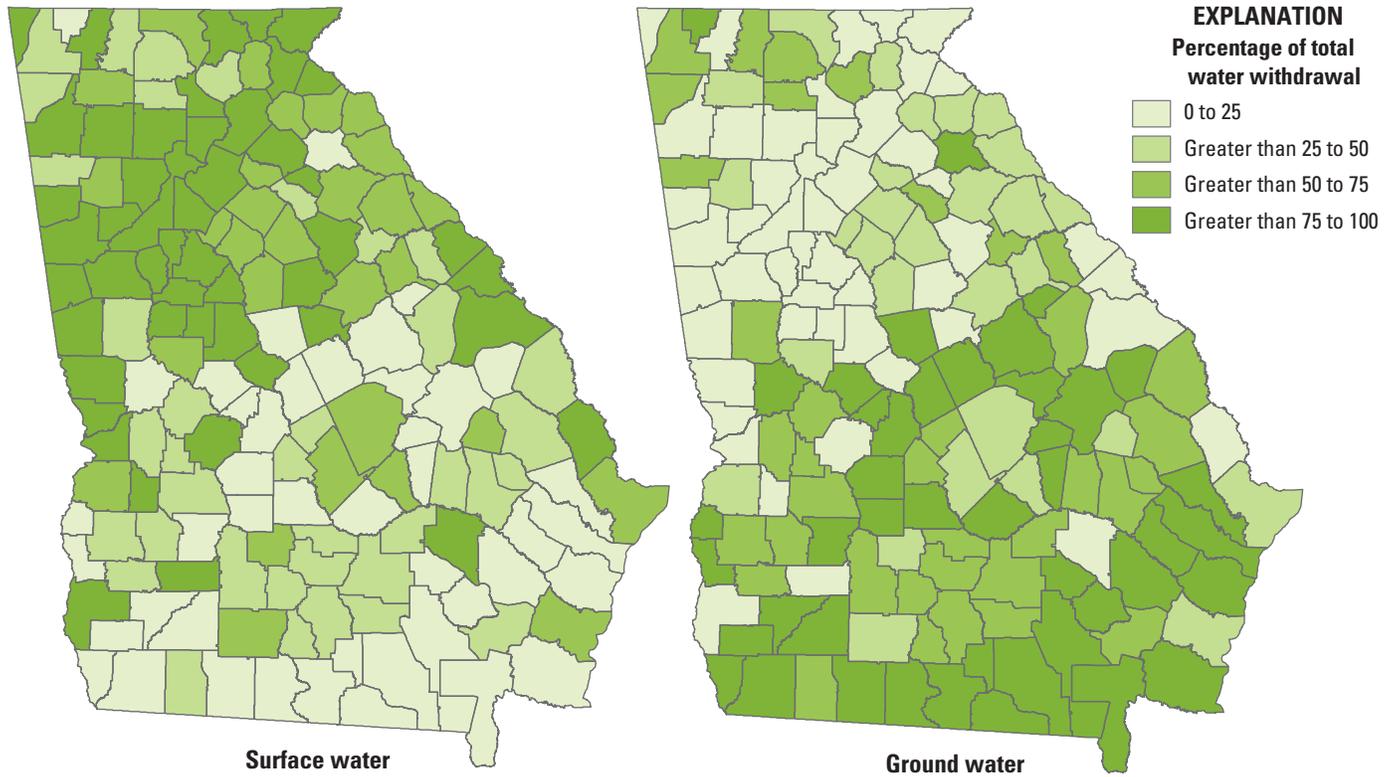


Figure 5. Percentage of total water withdrawal by county and source in Georgia, 2005.

**Table 2.** Water use by source and category in Georgia, 2005.

Population: 9,072,576

Population served by public supply: 7,472,550

Acres irrigated: 1,514,620

Hydroelectric use (million gallons per day): 54,095.63

	Withdrawals, in million gallons per day									
	Public supply	Domestic	Commercial	Industrial	Mining	Irrigation	Livestock	Aqua-culture	Thermo-electric	Totals
Ground water	254.17	119.68	19.85	240.16	48.93	486.36	2.15	4.98	3.76	1,180.04
Surface water	925.68	0.00	9.20	314.00	0.47	265.28	26.29	33.44	2,717.07	4,291.43
<b>Total</b>	<b>1,179.85</b>	<b>119.68</b>	<b>29.05</b>	<b>554.16</b>	<b>49.40</b>	<b>751.64</b>	<b>28.44</b>	<b>38.42</b>	<b>2,720.83</b>	<b>5,471.47</b>

In general, surface-water resources provide the largest percentage of water withdrawal for counties in the northern half of the State, whereas ground water provides the greatest percentage for counties in the southern half of the State. There are exceptions. For several northern Georgia counties, more than 50 percent of the total county withdrawal is obtained from ground water, with ground-water withdrawals exceeding 75 percent in the relatively low water-usage counties of Catoosa, Madison, and Murray. Similarly, there are several southern Georgia counties where surface water provides more than 50 percent of the total withdrawal primarily because of thermoelectric-power plants, with percentages exceeding 75 percent in Appling, Burke, Dougherty, Early, Effingham, Macon, Richmond, and Webster Counties.

This report provides summaries of water use during 2005 in a variety of formats. The total statewide water withdrawals for 2005 by ground- and surface-water sources for public supply, domestic and commercial, industrial and mining, irrigation, livestock, aquaculture, and thermoelectric power are shown in table 2. Industrial water use by major Standard Industrial Classification (SIC) code (Executive Office of the President, Office of Management and Budget, 1987; Appendix A) is listed in table 3. Surface-water withdrawal estimates by major river basin are listed in table 4; and ground-water withdrawals by principal aquifer in the State are listed in table 5. Water withdrawal totals by category and consumptive-use totals for each county are listed in table 6. County summaries of water use are given in Appendix B, including ground- and surface-water withdrawals by water-use category, major public-supply systems, industrial use by SIC code, trend graphs, and a map of withdrawal locations. Small public-water suppliers (subdivisions, mobile home parks, and small towns) and military bases are not listed individually in Appendix B, but the withdrawal for each is included in the county totals.

In this report, water withdrawals are mostly reported according to the county in which the water is used; however,

in some counties, water supply is derived from sources located in an adjacent county. For example, Gwinnett County derives most of its water supply from Lake Sidney Lanier in Hall County. For this reason, Appendix C presents withdrawals according to the location of the water source. Thus, the total withdrawal for Gwinnett County listed in table 6 is 94.2 Mgal/d, whereas the total withdrawal listed in Appendix C is 2.9 Mgal/d. The smaller amount listed in Appendix C indicates supplies are derived from sources outside of the county. Other counties in which water is obtained from sources in adjacent counties for 2005 include Banks, Bartow, Bibb, Clayton, Cobb, Douglas, Fulton, Henry, Jackson, Jones, Meriwether, Pike, Spalding, and Talbot.

**Table 3.** Industrial water use by major Standard Industrial Classification code in Georgia, 2005.

[SIC, Standard Industrial Classification]

SIC	Withdrawals, in million gallons per day	
	Ground water	Surface water
14—Mining	48.93	0.47
20—Food	9.61	1.94
22—Textiles	8.85	6.19
23—Apparel	0.15	2.16
26—Paper	76.27	276.65
28—Chemicals	80.31	18.08
29—Petroleum	0.37	0.09
30—Rubber	0.57	0.01
32—Stone, clay	60.80	7.44
33—Primary metals	0.03	0.25
34—Fabricated metal products	1.10	0.00
36—Electrical machinery	0.42	0.00

## 8 Water Use in Georgia by County for 2005; and Water-Use Trends, 1980–2005

**Table 4.** Surface-water use by category, by major river basin, in Georgia, 2005.

[Figures may not sum to totals because of independent rounding]

Major river basin (fig. 1)	Withdrawals, in million gallons per day						Totals
	Public supply	Domestic and commercial	Industrial and mining	Irrigation	Livestock	Thermoelectric	
Savannah and Ogeechee	98.66	1.94	104.72	36.95	8.15	317.58	568.00
Altamaha and Satilla and St. Marys	133.00	0.06	52.88	75.28	8.03	1,245.53	1,514.78
Savannah	0.00	0.00	0.00	47.33	1.18	0.00	48.51
Ochlockonee	0.00	0.00	0.54	16.40	0.34	0.00	17.28
Apalachicola	525.75	6.90	121.84	75.92	16.06	580.04	1,326.51
Mobile	154.78	0.30	32.49	11.31	16.18	573.92	788.98
Tennessee	13.50	0.00	2.00	2.09	9.79	0.00	27.38
<b>Total</b>	<b>925.68</b>	<b>9.20</b>	<b>314.47</b>	<b>265.28</b>	<b>59.73</b>	<b>2,717.07</b>	<b>4,291.43</b>

**Table 5.** Ground-water use by category, by principal aquifer, in Georgia, 2005.

[Figures may not sum to totals because of independent rounding]

Aquifer (fig. 2)	Withdrawals, in million gallons per day						Totals
	Public supply	Domestic and commercial	Industrial and mining	Irrigation	Livestock	Thermoelectric	
Floridan aquifer system	135.53	49.61	168.07	297.68	4.08	2.71	657.68
Claiborne aquifer	18.14	6.07	2.65	59.99	1.15	0.85	88.85
Clayton aquifer	9.22	1.64	6.87	51.94	0.16	0.18	70.01
Cretaceous aquifer system	47.18	9.52	80.70	66.92	0.81	0.00	205.13
Crystalline-rock aquifers	18.26	66.42	15.42	7.80	0.29	0.02	108.21
Paleozoic-rock aquifers	25.84	6.27	15.37	2.03	0.64	0.00	50.15
<b>Total</b>	<b>254.17</b>	<b>139.53</b>	<b>289.09</b>	<b>486.36</b>	<b>7.13</b>	<b>3.76</b>	<b>1,180.04</b>

**Table 6.** Water use and consumptive use by county in Georgia, 2005.

County	Withdrawals, in million gallons per day						Totals	Consumptive use
	Public supply	Domestic and commercial	Industrial and mining	Irrigation	Livestock	Thermo-electric		
Appling	0.93	0.85	0.00	3.09	0.38	57.77	63.02	39.60
Atkinson	0.42	0.32	0.15	6.70	0.28	0.00	7.87	7.13
Bacon	0.76	0.52	0.25	4.68	0.21	0.00	6.42	5.15
Baker	0.11	0.25	0.00	33.31	0.72	0.00	34.39	34.09
Baldwin	6.75	0.04	0.23	0.53	0.08	0.00	7.63	1.64
Banks	0.69	0.93	0.00	0.15	0.69	0.00	2.46	1.12
Barrow	5.01	2.10	0.54	0.63	0.33	0.00	8.61	2.66
Bartow	17.82	0.75	3.93	1.57	0.37	38.92	63.36	32.34
Ben Hill	3.06	0.27	0.00	7.26	0.09	0.00	10.68	7.86
Berrien	0.99	0.69	0.08	3.99	1.11	0.00	6.86	5.44
Bibb	25.53	1.85	15.57	1.06	0.06	0.00	44.07	11.10
Bleckley	0.21	0.58	0.00	12.78	0.05	0.00	13.62	12.97
Brantley	0.20	1.00	1.44	0.11	0.08	0.00	2.83	0.61
Brooks	0.96	0.83	0.13	2.40	0.27	0.00	4.59	3.03
Bryan	1.73	0.82	0.00	0.59	0.01	0.00	3.15	1.06
Bulloch	4.01	1.37	0.03	11.65	0.23	0.00	17.29	12.95
Burke	1.11	1.12	0.05	15.94	0.24	65.36	83.82	59.45
Butts	2.93	0.32	0.00	0.21	0.04	0.00	3.50	0.37
Calhoun	0.78	0.06	0.00	26.11	0.08	0.00	27.03	26.33
Camden	4.06	2.01	0.07	1.38	0.06	0.00	7.58	2.54
Candler	0.46	0.45	0.00	10.01	0.21	0.00	11.13	10.38
Carroll	11.68	1.69	0.34	0.00	0.71	0.00	14.42	2.48
Catoosa	4.68	0.71	0.05	1.05	0.20	0.00	6.69	2.20
Charlton	0.73	0.48	0.00	0.01	0.02	0.00	1.24	0.22
Chatham	33.52	5.06	41.98	2.35	0.01	161.18	244.10	17.46
Chattahoochee	1.03	6.24	0.00	0.15	0.01	0.00	7.43	1.45
Chattooga	3.36	0.29	7.32	0.07	1.24	0.00	12.28	2.95
Cherokee	18.94	5.18	2.52	2.38	0.33	0.00	29.35	7.23
Clarke	6.53	0.02	0.00	0.93	0.09	0.00	7.57	1.98
Clay	0.26	0.11	0.00	0.26	0.03	0.00	0.66	0.36
Clayton	29.96	1.94	0.38	0.88	0.01	0.00	33.17	6.87
Clinch	0.49	0.28	0.04	0.31	0.76	0.00	1.88	1.22
Cobb	91.36	1.00	1.17	2.93	0.03	362.58	459.07	17.29
Coffee	4.68	1.63	0.00	9.15	0.67	0.00	16.13	11.22
Colquitt	3.84	1.47	0.33	30.76	0.35	0.00	36.75	32.09
Columbia	12.55	0.98	0.89	1.13	0.03	0.00	15.58	4.29
Cook	2.09	0.54	0.17	8.28	0.05	0.00	11.13	9.01
Coweta	8.19	0.52	0.28	2.33	0.11	31.08	42.51	21.44
Crawford	0.28	0.76	0.44	3.22	0.17	0.00	4.87	4.00
Crisp	2.10	0.36	0.07	16.20	0.07	0.00	18.80	16.71

**10 Water Use in Georgia by County for 2005; and Water-Use Trends, 1980–2005**

**Table 6.** Water use and consumptive use by county in Georgia, 2005.—Continued

County	Withdrawals, in million gallons per day						Totals	Consumptive use
	Public supply	Domestic and commercial	Industrial and mining	Irrigation	Livestock	Thermo-electric		
Dade	2.35	0.00	0.00	0.46	0.09	0.00	2.90	0.95
Dawson	1.60	0.48	0.00	0.39	0.24	0.00	2.71	0.97
Decatur	2.87	1.45	1.14	36.64	0.23	0.00	42.33	37.96
DeKalb	83.05	3.05	0.97	1.77	0.00	0.00	88.84	19.73
Dodge	0.72	0.92	0.00	17.44	0.85	0.00	19.93	18.57
Dooly	2.21	0.30	0.00	23.59	0.19	0.00	26.29	24.19
Dougherty	13.73	0.90	13.62	10.97	0.03	120.14	159.39	15.52
Douglas	12.39	2.92	0.94	1.77	0.03	0.00	18.05	5.44
Early	0.90	0.45	107.56	14.81	0.18	0.00	123.90	23.17
Echols	0.05	0.27	0.00	5.95	0.01	0.00	6.28	6.02
Effingham	36.29	1.62	17.84	0.52	0.07	94.53	150.87	5.13
Elbert	1.84	0.80	0.04	0.45	0.27	0.00	3.40	1.15
Emanuel	2.03	0.76	0.98	2.70	0.19	0.00	6.66	3.57
Evans	0.56	0.42	1.55	1.58	0.13	0.00	4.24	2.12
Fannin	1.78	0.76	0.00	0.05	0.18	0.00	2.77	0.69
Fayette	11.12	1.74	0.60	1.29	0.04	0.00	14.79	4.25
Floyd	13.39	0.47	26.88	3.47	10.08	535.00	589.29	18.49
Forsyth	17.13	3.15	1.15	0.24	6.85	0.00	28.52	11.45
Franklin	1.93	0.83	0.00	0.26	1.14	0.00	4.16	1.89
Fulton	154.29	1.64	1.34	4.41	0.06	0.00	161.74	25.20
Gilmer	3.22	1.13	5.78	0.17	0.64	0.00	10.94	2.64
Glascocock	0.08	0.12	0.05	0.04	0.04	0.00	0.33	0.12
Glynn	9.85	4.37	64.51	0.00	0.04	36.96	115.73	7.90
Gordon	12.71	0.93	0.09	0.73	0.65	0.00	15.11	3.55
Grady	1.85	0.86	0.35	7.08	0.22	0.00	10.36	7.83
Greene	1.45	0.29	0.16	1.74	0.27	0.00	3.91	2.47
Gwinnett	87.90	0.00	1.21	5.04	0.05	0.00	94.20	20.99
Habersham	5.90	1.32	0.15	0.50	5.33	0.00	13.20	7.22
Hall	18.37	2.29	1.48	0.77	0.80	0.00	23.71	5.45
Hancock	1.02	0.26	0.12	0.04	0.04	0.00	1.48	0.42
Haralson	2.36	0.02	0.00	0.85	0.13	0.00	3.36	1.17
Harris	7.38	0.87	2.40	0.74	0.07	1.20	12.66	3.14
Hart	1.31	1.18	0.11	0.53	0.65	0.00	3.78	1.57
Heard	1.06	0.23	0.09	0.00	0.18	64.33	65.89	22.97
Henry	16.91	0.76	0.63	0.27	0.10	0.00	18.67	3.86
Houston	20.61	1.12	2.74	5.63	0.14	0.00	30.24	10.39
Irwin	0.57	0.47	0.00	16.45	0.08	0.00	17.57	16.71
Jackson	20.04	0.20	0.69	0.57	1.00	0.00	22.50	2.12
Jasper	0.55	1.04	0.78	0.22	0.20	0.00	2.79	0.92
Jeff Davis	0.44	0.51	0.33	4.08	0.22	0.00	5.58	4.52

**Table 6.** Water use and consumptive use by county in Georgia, 2005.—Continued

County	Withdrawals, in million gallons per day						Totals	Consumptive use
	Public supply	Domestic and commercial	Industrial and mining	Irrigation	Livestock	Thermo-electric		
Jefferson	1.51	0.60	7.58	9.40	1.43	0.00	20.52	12.10
Jenkins	0.42	0.34	0.00	3.95	0.18	0.00	4.89	4.34
Johnson	0.52	0.50	0.00	1.74	0.28	0.00	3.04	2.20
Jones	1.12	1.08	1.70	0.25	0.10	0.00	4.25	2.43
Lamar	1.31	0.68	0.00	0.73	0.18	0.00	2.90	1.24
Lanier	0.45	0.35	0.12	1.23	0.02	0.00	2.17	1.51
Laurens	3.94	1.64	16.90	7.50	0.14	0.00	30.12	9.86
Lee	1.82	1.19	0.13	4.28	0.14	0.00	7.56	5.06
Liberty	4.84	2.48	8.26	0.20	0.01	0.00	15.79	2.14
Lincoln	0.39	0.18	0.00	0.27	0.07	0.00	0.91	0.45
Long	1.49	0.58	0.46	0.40	0.05	0.00	2.98	1.26
Lowndes	10.59	1.65	9.04	9.36	0.08	0.00	30.72	12.36
Lumpkin	1.21	1.49	0.14	0.18	0.22	0.00	3.24	1.00
McDuffie	2.61	0.67	0.00	2.43	0.14	0.00	5.85	3.19
McIntosh	0.73	0.21	0.00	0.15	0.00	0.00	1.09	0.31
Macon	1.59	0.44	10.57	18.26	0.61	0.00	31.47	19.95
Madison	0.42	1.64	0.30	0.34	0.86	0.00	3.56	1.65
Marion	1.91	0.49	0.29	0.49	0.09	0.00	3.27	1.18
Meriwether	1.41	1.08	0.09	0.78	0.22	0.00	3.58	1.44
Miller	0.69	0.28	0.00	21.01	0.11	0.00	22.09	21.29
Mitchell	3.87	1.09	0.03	33.99	0.69	0.00	39.67	35.64
Monroe	1.43	1.17	0.70	0.15	0.33	59.02	62.80	35.65
Montgomery	0.48	0.26	0.01	1.65	0.06	0.00	2.46	1.84
Morgan	1.45	0.71	0.14	0.11	0.51	0.00	2.92	1.33
Murray	3.42	1.84	0.04	0.78	0.21	0.00	6.29	1.70
Muscogee	32.22	0.00	0.47	1.18	0.02	0.00	33.89	7.16
Newton	11.25	2.03	0.32	0.94	0.10	0.00	14.64	2.32
Oconee	0.31	0.89	0.00	0.49	0.32	0.00	2.01	1.02
Oglethorpe	0.22	0.84	0.00	0.34	0.59	0.00	1.99	1.12
Paulding	3.11	1.19	0.24	0.11	0.10	0.00	4.75	1.17
Peach	2.16	0.58	0.00	7.82	0.07	0.00	10.63	8.40
Pickens	2.17	0.55	1.46	0.36	0.32	0.00	4.86	1.68
Pierce	0.59	0.92	0.02	1.86	0.10	0.00	3.49	2.23
Pike	4.49	0.94	0.00	0.29	0.20	0.00	5.92	1.39
Polk	5.96	0.36	1.64	0.73	0.17	0.00	8.86	2.45
Pulaski	0.85	0.29	0.65	14.91	0.04	0.00	16.74	15.19
Putnam	1.21	0.59	0.07	2.89	0.39	1,092.00	1,097.15	6.33
Quitman	0.14	0.04	0.00	0.02	0.01	0.00	0.21	0.06
Rabun	1.97	0.33	1.75	0.58	0.07	0.00	4.70	1.33
Randolph	0.96	0.15	0.06	9.20	0.05	0.00	10.42	9.44

12 Water Use in Georgia by County for 2005; and Water-Use Trends, 1980–2005

Table 6. Water use and consumptive use by county in Georgia, 2005.—Continued

County	Withdrawals, in million gallons per day						Totals	Consumptive use
	Public supply	Domestic and commercial	Industrial and mining	Irrigation	Livestock	Thermo-electric		
Richmond	43.13	2.44	69.28	2.99	0.03	0.00	117.87	19.24
Rockdale	12.54	4.97	0.15	0.31	0.02	0.00	17.99	3.19
Schley	0.63	0.05	0.00	0.28	0.08	0.00	1.04	0.49
Screven	1.02	0.68	1.73	10.79	0.11	0.00	14.33	11.41
Seminole	0.63	0.39	0.00	38.30	0.12	0.00	39.44	38.62
Spalding	8.07	0.87	0.21	0.81	0.07	0.00	10.03	2.57
Stephens	3.97	0.19	0.11	0.07	0.23	0.00	4.57	1.32
Stewart	0.22	0.04	0.00	0.78	0.06	0.00	1.10	0.88
Sumter	3.05	0.87	0.71	9.10	0.23	0.00	13.96	10.32
Talbot	0.18	0.14	0.91	0.00	0.14	0.00	1.37	1.14
Taliaferro	0.05	0.08	0.00	0.00	0.06	0.00	0.19	0.08
Tattnall	1.12	1.80	0.09	5.40	0.57	0.00	8.98	6.60
Taylor	0.78	0.31	2.56	1.46	0.15	0.00	5.26	2.76
Telfair	1.27	0.31	0.09	3.02	0.06	0.00	4.75	3.37
Terrell	1.48	0.24	0.00	14.40	0.08	0.00	16.20	14.82
Thomas	5.55	0.92	3.04	10.40	0.23	0.00	20.14	14.64
Tift	4.99	1.00	0.00	19.89	0.10	0.00	25.98	20.77
Toombs	2.67	0.68	0.04	7.53	0.16	0.00	11.08	8.34
Towns	2.11	0.05	0.05	0.33	4.04	0.00	6.58	4.68
Treutlen	0.40	0.27	0.00	0.85	0.02	0.00	1.54	0.99
Troup	10.33	0.89	0.27	1.05	0.09	0.00	12.63	2.75
Turner	0.88	0.24	0.00	14.61	0.14	0.00	15.87	14.96
Twiggs	0.30	0.59	19.89	1.40	0.02	0.00	22.20	8.77
Union	1.91	0.52	0.10	0.15	5.40	0.00	8.08	6.03
Upson	2.86	1.16	0.23	0.50	0.28	0.00	5.03	1.40
Walker	7.61	0.02	1.23	0.71	0.35	0.00	9.92	2.53
Walton	5.20	2.61	0.00	2.68	0.26	0.00	10.75	3.93
Ware	3.44	1.27	0.00	2.01	0.13	0.00	6.85	3.02
Warren	0.39	0.20	2.17	1.74	0.10	0.00	4.60	3.19
Washington	3.24	0.70	26.06	5.59	0.14	0.00	35.73	16.63
Wayne	2.09	1.21	59.23	2.60	0.09	0.00	65.22	10.39
Webster	0.17	0.08	0.00	2.64	0.05	0.00	2.94	2.73
Wheeler	0.31	0.34	0.00	4.17	0.03	0.00	4.85	4.31
White	1.89	1.10	0.01	0.29	0.37	0.00	3.66	1.19
Whitfield	35.38	0.07	0.22	0.51	0.71	0.00	36.89	5.89
Wilcox	0.69	0.28	0.00	11.42	0.19	0.00	12.58	11.78
Wilkes	1.20	0.40	0.00	0.02	0.32	0.00	1.94	0.60
Wilkinson	0.93	0.23	17.27	0.08	0.02	0.00	18.53	6.02
Worth	1.34	0.89	0.00	10.66	0.14	0.76	13.79	11.18
<b>Totals</b>	<b>1,179.85</b>	<b>148.73</b>	<b>603.56</b>	<b>751.64</b>	<b>66.86</b>	<b>2,720.83</b>	<b>5,471.47</b>	<b>1,310.21</b>

## Public Supply

Public-supply water use is water that is withdrawn by public and private water suppliers and delivered for a variety of uses, including domestic, commercial, industrial, and other uses. Small communities and subdivisions are considered to be public-supply systems if at least 25 people are served or if there are a minimum of 15 hookups or water connections (Hutson and others, 2004).

Data for public-supply water use generally were provided by the GaEPD, Watershed Protection Branch. Additional information was obtained from city managers and operators (table 1). In previous years, the GWUP conducted a survey of the largest public water-supply users in the State for this report. In 2005, however, the survey was expanded to include all permitted public-supply water users in the State. Data were obtained on the population served; the number of connections for each system; and the percentage of water delivered to wholesale, residential, commercial, and industrial customers.

Estimated public-supply withdrawal during 2005 was about 1,180 Mgal/d, of which surface water accounted for about 78 percent (926 Mgal/d), and ground water accounted for about 22 percent (254 Mgal/d) (table 2). The largest public suppliers are located in counties in the Metropolitan Atlanta area in northern Georgia, where population is greatest. Thus, surface water is the principal water source. Several counties in the area reported a decline in withdrawals in 2005, collectively totaling more than 20 Mgal/d. The decrease in 2005 has been attributed to conservation measures at public-supply systems, better reporting by public-supply systems as more systems are metered, and a decrease in outdoor water use (2000 was a drought year and outdoor use, primarily lawn watering, was above normal as compared to 2005 when precipitation was normal, and outdoor uses were lower).

## Domestic and Commercial

Domestic water use is water used for normal household purposes, such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, washing cars, and watering lawns and gardens. In Georgia, most water for domestic use is provided by public suppliers; however, some households, generally in rural areas, are supplied by individual water systems, primarily wells. These households are termed self-supplied domestic water users. Because self-supplied domestic water use generally is not metered, the GWUP conducted a survey in 1983 in the Athens, Georgia, area and estimated per capita water use was 75 gal/d. Withdrawals by self-supplied domestic users were estimated by subtracting estimates of the number of persons served by public-supply systems from the total county population obtained from the U.S. Bureau of the Census, 2005, and multiplied by 75 (gal/d).

Commercial users include restaurants, hotels, retail stores, and other businesses, government and military facilities, prisons, schools, hospitals, office parks, and other institutions, and recreational facilities. Golf course irrigation is also included as a commercial use. In Georgia, there are very few commercial users large enough to require a GaEPD permit, so reported commercial water-use data are minimal, and these data were combined with estimates for smaller users.

Domestic and commercial water use was estimated to be 149 Mgal/d in 2005 (table 2), of which 120 Mgal/d was for self-supplied domestic use, and 29 Mgal/d was for commercial use. The estimated self-supplied population was 1,600,026. Statewide, an estimated 18 percent of the population is self-supplied, and this water is assumed to be from ground water (wells and springs). Sixty-eight percent of commercial water use was from ground-water sources, and 32 percent was from surface-water sources.

## Industrial and Mining

Industrial water use includes fabrication, processing, washing, and cooling for facilities that manufacture products, including steel, chemical and allied products, paper and allied paper products, mining, and petroleum refining. The largest industrial water users in Georgia are pulp and paper mills concentrated along the coast, the textile industries concentrated in northwestern Georgia, chemical manufacturers, and the mining and mineral industries.

Mining water use is water used for the extraction of minerals, including water used for quarrying, milling, and other typical preparations at a mine site. Granite, clay, marble, and other materials are mined extensively in the State, but these mining operations, other than clay, do not require large quantities of water. Mining water-use estimates were provided by the USGS National Water-Use Program from mine production data for 2004 from the USGS Minerals Information Team and the Energy Information Administration and commodity-specific coefficients (J.K. Lovelace, U.S. Geological Survey, written commun., 2007). The total mining withdrawal estimate was allocated between ground and surface water using the ratio by county for mining withdrawals for 2000 (Fanning, 2003).

Industrial and mining water-use estimates totaled 603 Mgal/d (table 2) during 2005. Self-supplied industries in Georgia used about 554 Mgal/d of water in 2005, of which 43 percent was from ground water, and 57 percent was from surface water. The industrial water-use estimate was determined from withdrawals reported to the GaEPD for 2005. There was a decrease in industrial water withdrawals between 2000 and 2005, mostly because of the closure of a major pulp and paper company in Camden County, Georgia. During 2005, the estimated mining withdrawal was about 49 Mgal/d. Nearly, 99 percent of the withdrawals for mining were from ground-water sources, and 1 percent were from surface-water sources.

## Irrigation

Irrigation water use is water used for crops, large nurseries, athletic fields, and golf courses. Estimates of irrigation water use are based on a 2004 irrigation survey conducted by the University of Georgia, Cooperative Extension Service (Kerry Harrison, Cooperative Extension Service, written commun., 2004). County extension agents were asked to provide data on crop acreage, water application rates by crop for each county, and percentages of ground- and surface-water use. Withdrawal data for permitted users were provided by GaEPD. Withdrawals for golf irrigation were estimated using water application rates provided by the University of Georgia (Gil Landy and Clint Waltz, University of Georgia, written commun., 1999). In this report, the 2004 irrigation data were used because 2005 data were not available.

Estimated total irrigation water use in 2004 was about 752 Mgal/d (65 percent from ground water and 35 percent from surface water; table 2), a decrease of about 338 Mgal/d from the 2000 estimate. This 30-percent decrease results from decreased irrigation as compared to irrigation during the drought in 2000. Most irrigation occurs in the Coastal Plain physiographic province, with the largest withdrawal in the southwestern part of the State. Irrigation withdrawal accounts for more than 95 percent of total water use in some counties in southwestern Georgia. Irrigation is the largest category of ground-water use in Georgia, accounting for 41 percent of all ground water withdrawn.

## Livestock

Livestock water use is water used for livestock watering, feed lots, dairy operation, and farm operation for poultry, horses, cattle, hogs, and catfish and trout farms. Estimates of water use for livestock were compiled by animal type (cattle, hogs, horses, and several kinds of poultry) and by pond acreage for catfish and trout farming. Livestock water-use estimates were provided by the USGS National Water-Use Program from U.S. Department of Agriculture, National Agricultural Statistics Service livestock population estimates, and animal specific (J.K. Lovelace, U.S. Geological Survey, written commun., 2007). Coefficients were the same as those used for the 2000 estimate of water use in Georgia (Fanning, 2003). The total withdrawal estimate was allocated between ground and surface water, using the county ratio for livestock withdrawals for 2000 (Fanning, 2003).

In this report, the livestock category also includes aquaculture, which is the farming of organisms that live in water, such as fish, shellfish, and algae. In 2005, aquaculture in Georgia included catfish and trout farms. Aquaculture water use was estimated using data for commercial and non-commercial aquaculture operations (J.K. Lovelace, U.S. Geological Survey, written commun., 2007).

Livestock water use in 2005 was estimated to be about 67 Mgal/d (table 2), with 28 Mgal/d for livestock animals and 38 Mgal/d for catfish and trout farms. About 89 percent of all livestock withdrawals were from surface-water sources, and only 11 percent were from ground-water sources.

## Thermoelectric-Power Generation

Thermoelectric-power water use is water used in the generation of thermoelectric power, mainly for cooling purposes. Thermoelectric-power water use includes 13 plants that operate on fossil fuels, such as oil, coal, or natural gas, and 2 nuclear-powered plants. Data were obtained from the GaEPD Water Resources Management Program, which collects data on the amount of water treated for potable use and for boiler makeup. Also, plant operators were contacted directly for additional information on cooling water and other water uses at each power plant. Estimated thermoelectric-power water use during 2005 was about 2,721 Mgal/d (table 2), a decrease of 589 Mgal/d from 2000. Three thermoelectric-power plants—Arkwright (Bibb County), Atkinson (Cobb County), and Riverside (Chatham County)—have closed since 2000. Plant Yates, a facility in Coweta County, converted from once-through cooling to a closed cooling system with cooling towers in 2004.

## Hydroelectric-Power Generation

Instream water use for hydroelectric-power generation is the largest water-use category for Georgia, with an estimated 54,096 Mgal/d used in 2005 (table 2). Hydroelectric-power water use is instream water used for the generation of electricity at plants where turbine generators are driven by falling water. Data on the number of gallons used by each plant to generate one megawatt-hour of electricity was obtained from plant operators and multiplied by the monthly power generation to estimate the water used at each plant in 2005. Hydroelectric-power water use for 2005 increased 41 percent over use in 2000, a year of drought.

## Consumptive Water Use, 2005

The distinction between the amount of water withdrawn for use and the amount of water consumed during use is important for water planning and management. Consumptive water use is the part of water withdrawn that is evaporated, transpired, incorporated into products or crops, consumed by humans or livestock, or otherwise removed from the immediate water environment (Hutson and others, 2004, p. 44). For many withdrawals, data on the amount withdrawn that was returned to the immediate water environment (either a ground- or surface-water system) are not available. Water sales and purchases and interbasin transfers make it difficult to relate withdrawals to return flows. For example, an industrial facility might withdraw some water from wells and purchase additional water from a public supplier. Some of the total water used at that facility then might be returned directly to a stream (if it was noncontact cooling water) and some might be treated at a public or private waste treatment plant and the treated wastewater returned to a stream. Because of the difficulties in obtaining and compiling data on the amount of water returned to the environment for each withdrawal, consumptive use was estimated from the withdrawal amounts and consumptive-use coefficients by water-use category. Although estimates derived using coefficients can provide insight into consumptive water use, the results are not as accurate as metered data on withdrawals and return flows.

The consumptive-use coefficients vary for each of the water-use categories. Because public supply delivered water to domestic, commercial, industrial, and thermoelectric-power users, consumptive use is estimated for those use categories and not for public supply. The total water used in the categories is the sum of water withdrawn (self-supplied water) and water delivered from public suppliers. For domestic water use, consumptive use was estimated at 18 percent of the total use (Atlanta Regional Commission, written commun., 2007). The consumptive-use coefficient for commercial use was developed by the GWUP and supported by calculations using withdrawal and discharge data for some commercial users and estimated to be 18 percent.

For industrial and mining use, consumptive-use coefficients were determined by industry type and type of mining activity. For example, the estimated consumptive-use coefficient for the pulp and paper industry is 7 percent for 2005, whereas for the textile industry the coefficient is 13 percent. Although the coefficient is less, more water actually is consumed by pulp and paper industries than by textile industries in Georgia because of the larger amount of water being withdrawn for production.

In this report, irrigation and livestock water uses are considered to be 100 percent consumed; that is, all of the water withdrawn was evaporated or transpired, incorporated into crops, or consumed by livestock. Irrigation in Georgia uses sprinkler and micro-irrigation methods, which do not have the large nonconsumptive amounts of water as do flood irrigation methods. Consumptive-use coefficients for thermoelectric power ranged from 0 to nearly 70 percent, and is determined by the type of plant cooling (once-through cooling or cooling towers or ponds). Consumptive use is negligible for instream hydroelectric-power generation.

Estimated consumptive use by county for 2005 is listed in table 6. Total consumptive use was estimated to be about 1,310 Mgal/d or 24 percent of total withdrawals in the State.

## Water-Use Trends, 1980–2005

Since 1980, the GWUP has compiled and published statewide water-use estimates by category at 5-year intervals. National water-use compilations began in 1950. However, during the period 1950–2005, water-use estimates were not always comparable. Category definition and estimation techniques have been the most consistent since 1980 because of efforts of the National Water-Use Information Program (NWUIP). In Georgia, total estimated water use for 1980 was 6,725 Mgal/d (Pierce and others, 1982). By 1990, total estimated water use had declined about 31 percent to 5,353 Mgal/d. Statewide water use increased in 1995 and 2000 to reach 6,487 Mgal/d. In 2005, estimated water use was 5,471 Mgal/d, a decrease of 1,015 Mgal/d (about 19 percent) since 2000 (fig. 6).

Statewide public-supply water use steadily increased from 1980 to 2000, corresponding to an increase in population (from 4,189,000 to 8,186,450) during the same period; however, water use slightly decreased from 2000 to 2005 (fig. 7). Commercial, domestic, and livestock uses remained about the same for the period 1980–2005. Industrial water use fluctuated during the period 1980–2005, mostly because of improved water efficiency, water recycling, and conservation measures at industrial plants and changes in the number and type of industrial facilities. Major decreases in industrial water use in Glynn and Camden Counties were likely caused by chemical and paper plant closings and more efficient water-use practices at the remaining plants.

Irrigation water use declined from 1980 to 1985 and again to 1990, increased from 1995 to 2000, and decreased markedly from 2000 to 2005. Estimated irrigation withdrawal was 30 percent lower in 2005 than in 2000 because

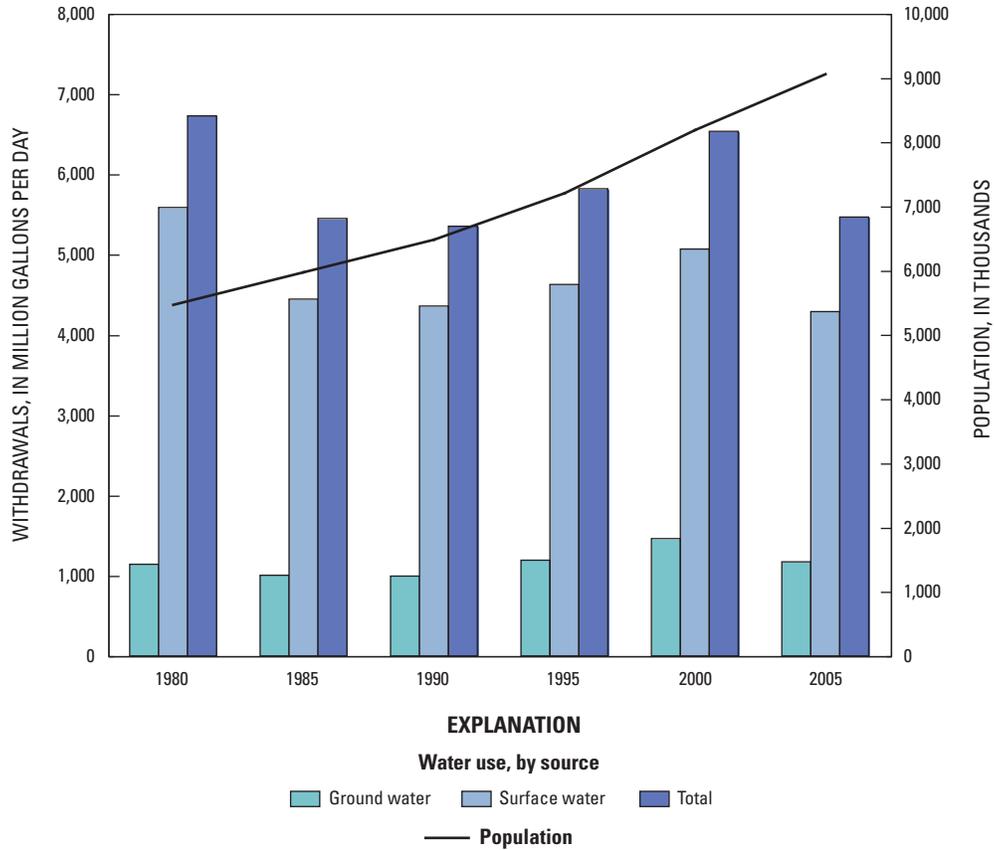


Figure 6. Population and water-use trends by source in Georgia, 1980–2005.

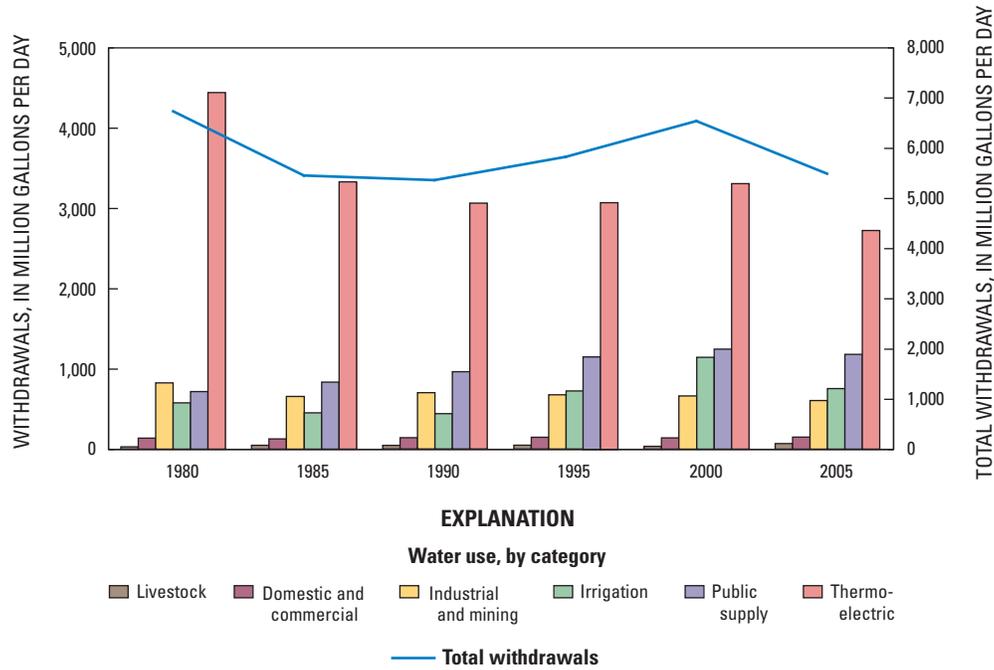


Figure 7. Trends in total water use by category in Georgia, 1980–2005.

of decreased irrigation demands resulting from the greater amount of rainfall in 2005, which relieved the prolonged drought that began in 1998 and continued through 2002 (Georgia Department of Natural Resources, 2000). The total number of acres irrigated in the State increased by nearly 32 percent between 1995 and 2005.

Thermoelectric-power water continues to be the largest of any offstream category in Georgia. Thermoelectric-power withdrawal peaked in 1980, dropped sharply in 1985, and declined again in 1990 before increasing in 1995 and 2000. This rising trend was reversed in 2005 when thermoelectric power decreased by 24 percent from 2000 because of the decommissioning of three power plants and retrofitting cooling towers at several other plants.

Instream hydroelectric-power generation requires the use of significant amounts of water. From 1980 to 1995, hydroelectric-power water use was increasing. However, because hydroelectric-power water use is dependent on the availability of surface-water flow, low-flow conditions related to drought in 1995 and 2000 resulted in a 19,000 Mgal/d decrease in usage. In 2005, water used for hydroelectric-power generation rose significantly to 54,096 Mgal/d, an increase of 22,206 Mgal/d (59 percent) from 2000, because of the increased surface-water flow.

The GWUP has been compiling and disseminating water-use information on water users in the State for more than 25 years. While these data have been useful to managers making policy decisions for the water resources in Georgia, continued monitoring of water-use information is necessary. The GWUP is working to develop a site-specific database of reported information to improve data aggregation techniques, provide better quality assurance, and improve trend data. An Internet-based system capable of online interactive updating and reporting of water withdrawal by permitted user would allow for more timely data collection and data accuracy. Additionally, the site-specific database could be improved further to be aligned with other databases and could incorporate metered irrigation data. Also, data on public supply and industrial discharges in the State could be added. Other considerations, such as the reduction in permit limits from 100,000 gal/d to 10,000 gal/d, which has been adopted in some adjoining States, would improve the available data for smaller industrial and mining users and some small public suppliers.

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## Appendix A. Standard Industrial Classification (SIC) Codes

Industrial water use is given by industry type, classified by Standard Industrial Classification (SIC) Code. A brief description of the codes used in this publication is given below.

**14–Mining and quarrying of nonmetallic minerals, except fuels.** This major group includes establishments engaged in mining or quarrying, developing mines, or exploring for non-metallic minerals, except fuels. Also included are certain well and brine operations, and primary preparation plants, such as those engaged in crushing, grinding, washing, or other concentration.

**20–Food and kindred products.** This major group includes establishments manufacturing or processing foods and beverages for human consumption, and certain related products, such as manufactured ice, chewing gum, vegetable and animal fats and oils, and prepared feeds for animals and fowls.

**22–Textile mill products.** This major group includes establishments engaged in performing any of the following operations: (1) preparation of fiber and subsequent manufacturing of yarn, thread, braids, twine, and cordage; (2) manufacturing broad woven fabric, narrow woven fabric, knit fabric and carpets and rugs from yarn; (3) dyeing and finishing fiber, yarn, fabric, and knit apparel; (4) coating, waterproofing, or otherwise treating fabric; (5) the integrated manufacture of knit apparel and other finished articles from yarn; and (6) the manufacture of felt goods, lace goods, non-woven fabrics and miscellaneous textiles.

**23–Apparel and other finished products made from fabrics and similar materials.** This major group, known as the cutting-up and needle trades, includes establishments producing clothing and fabricating products by cutting and sewing purchased woven or knit textile fabrics and related materials such as leather, rubberized fabrics, plastics, and furs.

**24–Lumber and wood products, except furniture.** This major group includes logging camps engaged in cutting timber and pulpwood; merchant sawmills, lathe mills, shingle mills, cooperage stock mills, planing mills, and pulpwood mills and veneer mills engaged in producing lumber and wood basic materials; and establishments engaged in manufacturing finished articles made entirely or mainly of wood or wood substitutes.

**26–Paper and allied products.** This major group includes the manufacture of pulps from wood and other cellulose fibers, and from rags; the manufacture of paper and paperboard; and the manufacture of paper and paperboard into converted products such as paper coated off the paper machine, paper bags, paper boxes, and envelopes.

**28–Chemicals and allied products.** This major group includes establishments producing basic chemicals, and establishments manufacturing products by predominantly chemical processes. Establishments classified in this major group manufacture three

general classes of products: (1) basic chemicals such as acids, alkalies, salts, and organic chemicals; (2) chemical products to be used in further manufacture such as synthetic fibers, plastics materials, dry colors, and pigments; and (3) finished chemical products to be used for ultimate consumption such as drugs, cosmetics, and soaps, or to be used as materials or supplies in other industries such as paints, fertilizers, and explosives.

**29–Petroleum refining and related industries.** This major group includes establishments primarily engaged in petroleum refining, manufacturing paving and roofing materials, and compounding lubricating oils and greases from purchased materials.

**30–Rubber and miscellaneous plastics products.** This major group includes establishments manufacturing from natural, synthetic, or reclaimed rubber, gutta percha, balata, or gutta siak, rubber products such as tires, rubber footwear, mechanical rubber goods, heels and soles, flooring, and rubber sundries.

**32–Stone, clay, glass, and concrete products.** This major group includes establishments engaged in manufacturing flat glass and other glass products, cement, structural clay products, pottery, concrete and gypsum products, cut stone, abrasive and asbestos products, etc., from materials taken principally from the earth in the form of stone, clay, and sand.

**33–Primary metal industries.** This major group includes establishments engaged in the smelting and refining of ferrous and nonferrous metals from ore, pig, or scrap; in the rolling, drawing, and alloying of ferrous and non-ferrous metals; in the manufacture of castings and other basic products of ferrous and nonferrous metals; and in the manufacture of nails, spikes, and insulated wire and cable.

**34–Fabricated metal products, except machinery and transportation equipment.** This major group includes establishments engaged in fabricating ferrous and nonferrous metal products such as metal cans, tinware, hand tools, cutlery, general hardware, non-electric heating apparatus, fabricated structural metal products, metal forging, metal stamping, ordnance (except vehicles and guided missiles), and a variety of metal and wire products not elsewhere classified.

**35–Machinery, except electrical.** This major group includes establishments engaged in manufacturing machinery and equipment, other than electrical equipment (Major Group 36) and transportation equipment (Major Group 37).

**36–Electrical and electronic machinery, equipment, and supplies.** This major group includes establishments engaged in manufacturing machinery, apparatus, and supplies for the generation, storage, transmission, transformation, and utilization of electrical energy.



## **Appendix B. Ground- and Surface-Water Use in Georgia, by County 2005, and Trends for 1980–2005**

The following tables list ground- and surface-water withdrawals by water-use category. Also listed is information about:

- major public suppliers,
- major industrial groups,
- county populations,
- population served by public supply, and
- acres irrigated.

Trend graphs and maps showing ground- and surface-water system locations are included.

## APPLING COUNTY

Population: 17,954  
 Population served by public supply: 6,660  
 Acres irrigated: 7,110  
 Hydroelectric use (Mgal/d): 0.00



2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

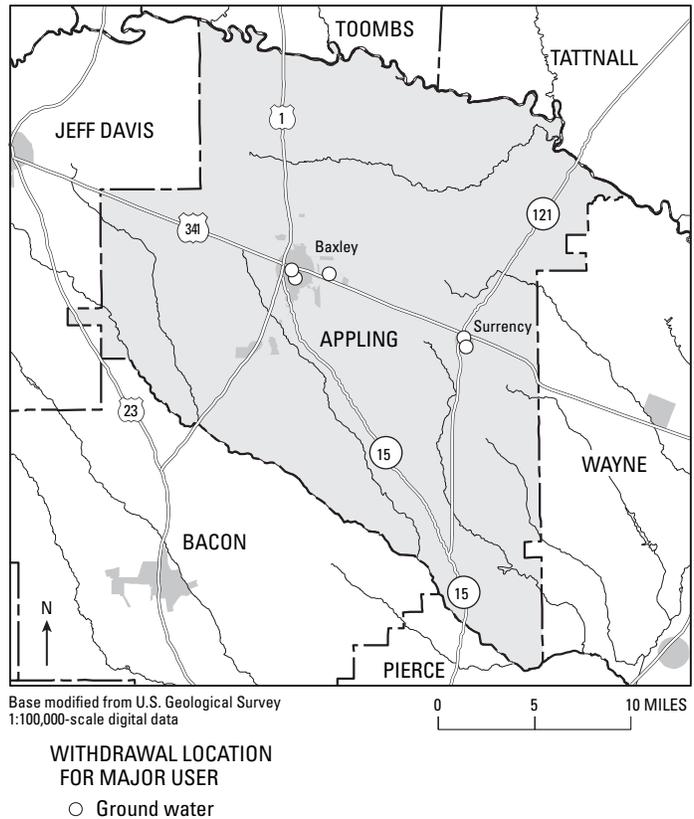
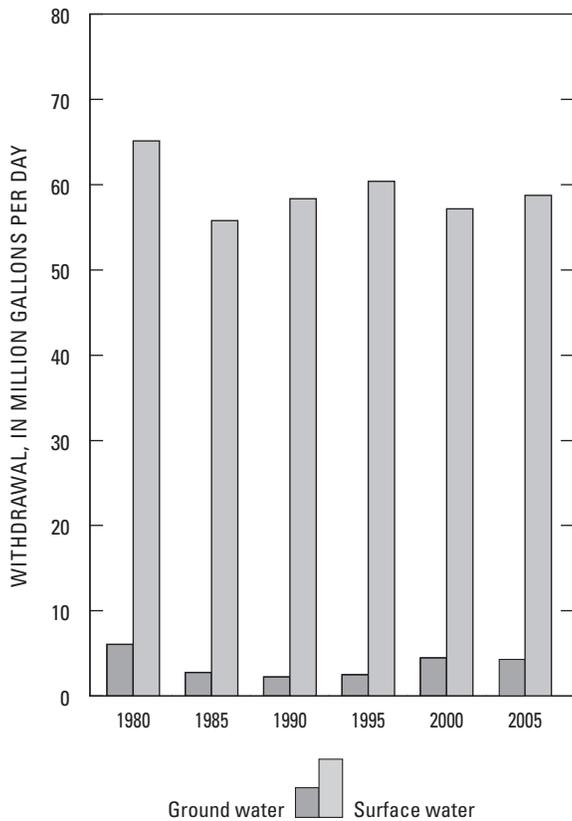
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.93	0.85	0.00	2.24	0.07	0.18	4.27
Surface Water	0.00	0.00	0.00	0.85	0.31	57.59	58.75
TOTALS	0.93	0.85	0.00	3.09	0.38	57.77	63.02

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
City of Baxley	0.87	0.00
City of Surrency	0.04	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



# ATKINSON COUNTY

Population: 8,030  
 Population served by public supply: 3,750  
 Acres irrigated: 9,330  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

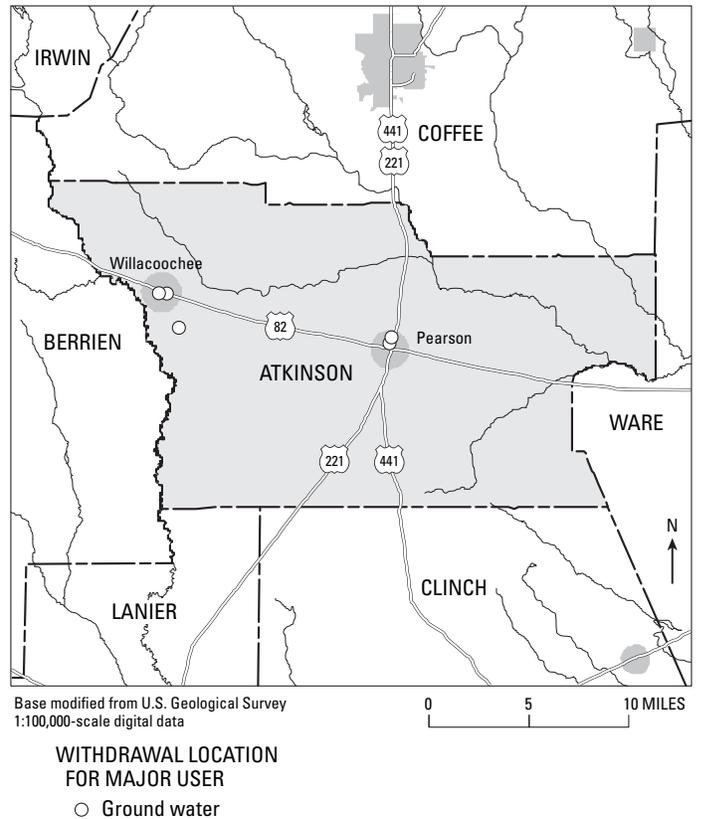
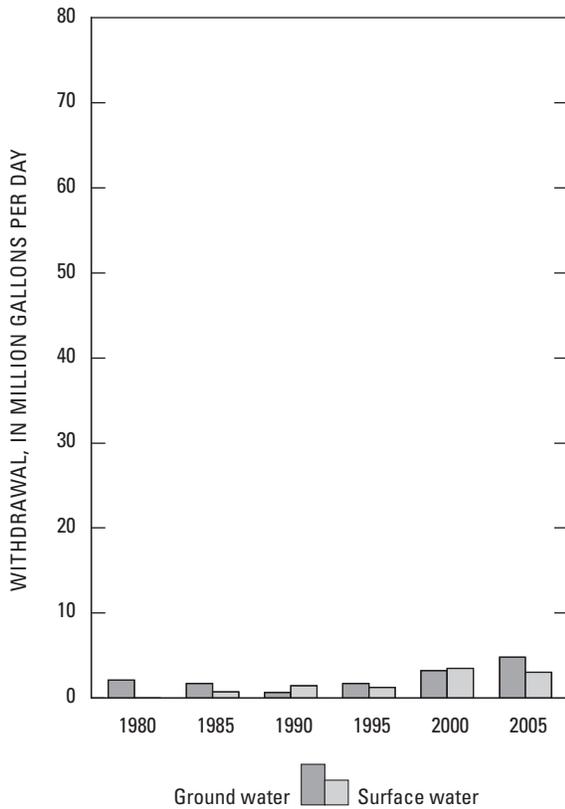
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.42	0.32	0.15	3.89	0.04	0.00	4.82
Surface Water	0.00	0.00	0.00	2.81	0.24	0.00	3.05
<b>TOTALS</b>	<b>0.42</b>	<b>0.32</b>	<b>0.15</b>	<b>6.70</b>	<b>0.28</b>	<b>0.00</b>	<b>7.87</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Pearson	0.22	0.00
Town of Willacoochee	0.19	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



## BACON COUNTY

Population: 10,379  
 Population served by public supply: 3,380  
 Acres irrigated: 7,990  
 Hydroelectric use (Mgal/d): 0.00



### 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

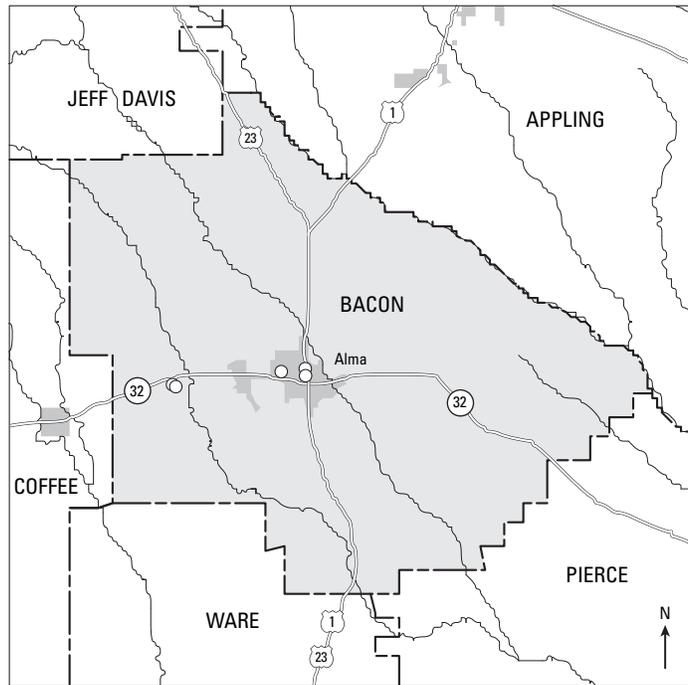
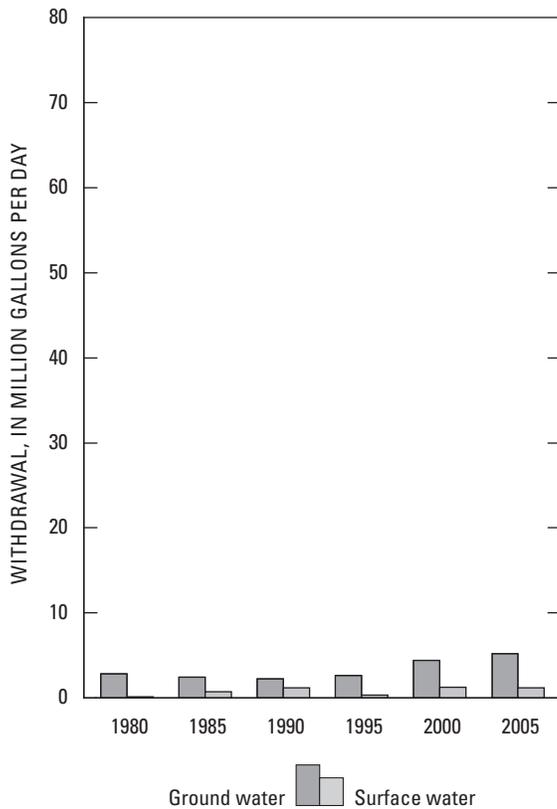
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.76	0.52	0.25	3.68	0.02	0.00	5.23
Surface Water	0.00	0.00	0.00	1.00	0.19	0.00	1.19
<b>TOTALS</b>	<b>0.76</b>	<b>0.52</b>	<b>0.25</b>	<b>4.68</b>	<b>0.21</b>	<b>0.00</b>	<b>6.42</b>

#### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Alma	0.75	0.00

#### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
22 - Textiles	0.24	0.00



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

WITHDRAWAL LOCATION FOR MAJOR USER  
 ○ Ground water

# BAKER COUNTY

Population: 4,154  
 Population served by public supply: 850  
 Acres irrigated: 49,580  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

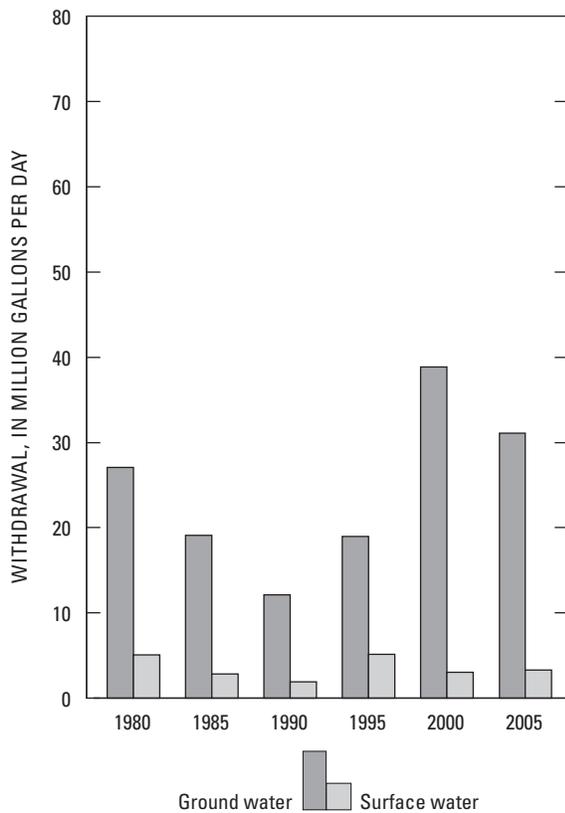
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.11	0.25	0.00	30.75	0.00	0.00	31.11
Surface Water	0.00	0.00	0.00	2.56	0.72	0.00	3.28
<b>TOTALS</b>	<b>0.11</b>	<b>0.25</b>	<b>0.00</b>	<b>33.31</b>	<b>0.72</b>	<b>0.00</b>	<b>34.39</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Newton	0.11	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

WITHDRAWAL LOCATION FOR MAJOR USER  
 ○ Ground water

## BALDWIN COUNTY

Population: 45,230  
 Population served by public supply: 44,750  
 Acres irrigated: 400  
 Hydroelectric use (Mgal/d): 1,692.16



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

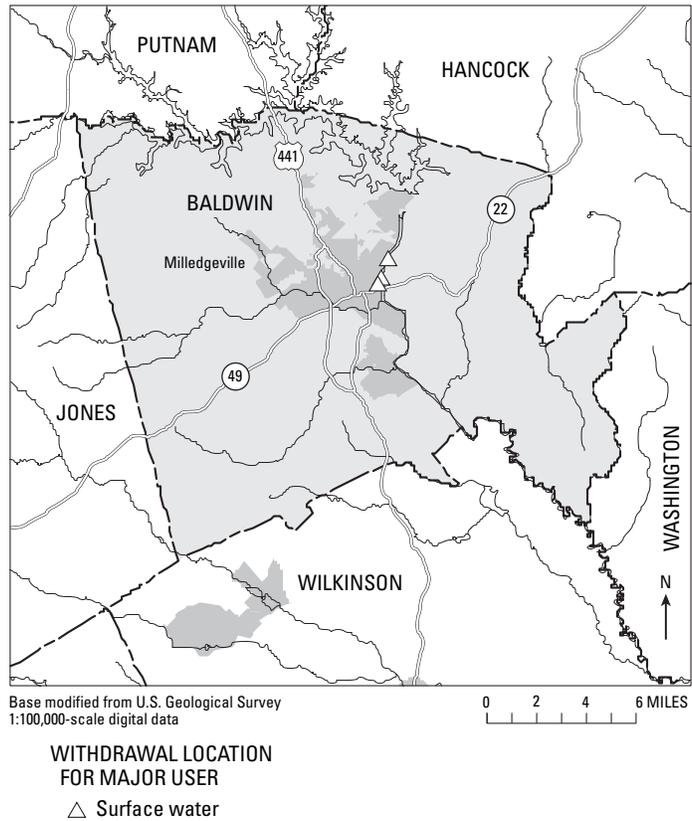
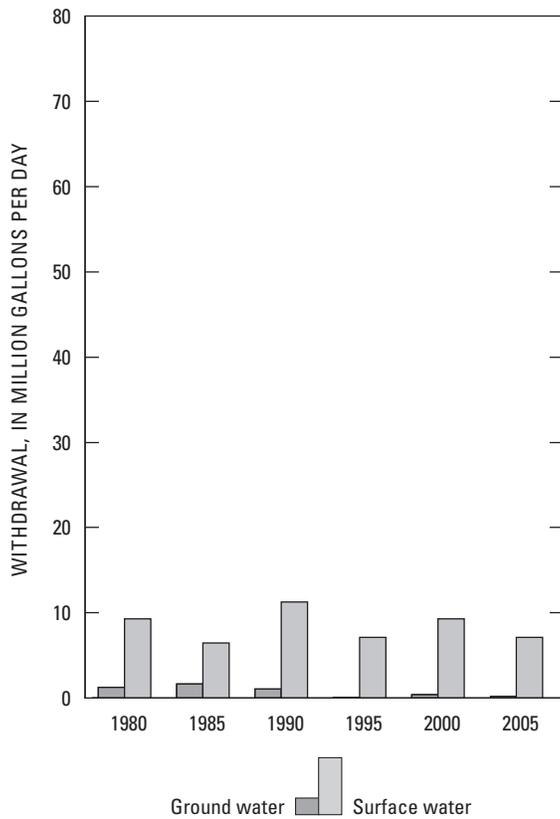
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.00	0.04	0.23	0.24	0.00	0.00	0.51
Surface Water	6.75	0.00	0.00	0.29	0.08	0.00	7.12
<b>TOTALS</b>	<b>6.75</b>	<b>0.04</b>	<b>0.23</b>	<b>0.53</b>	<b>0.08</b>	<b>0.00</b>	<b>7.63</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
City of Milledgeville	0.00	6.75

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



# BANKS COUNTY

Population: 16,055  
 Population served by public supply: 6,850  
 Acres irrigated: 100  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

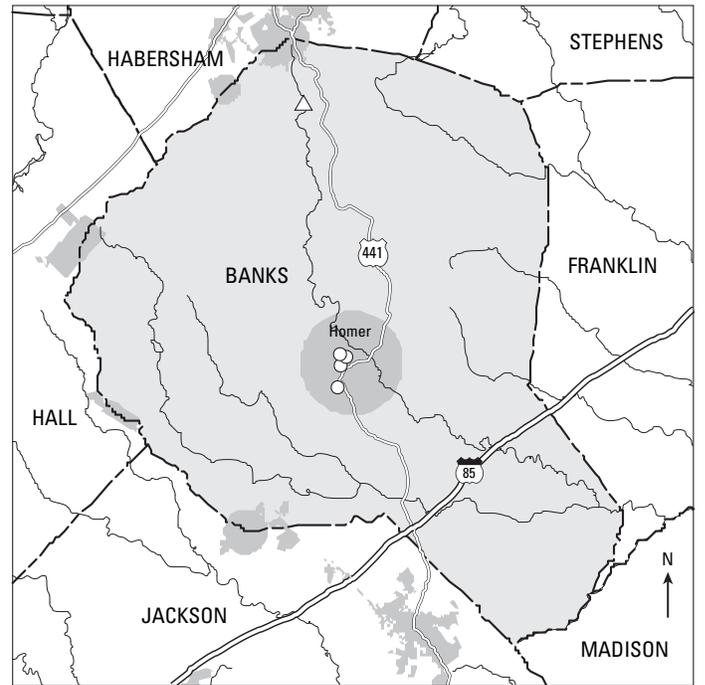
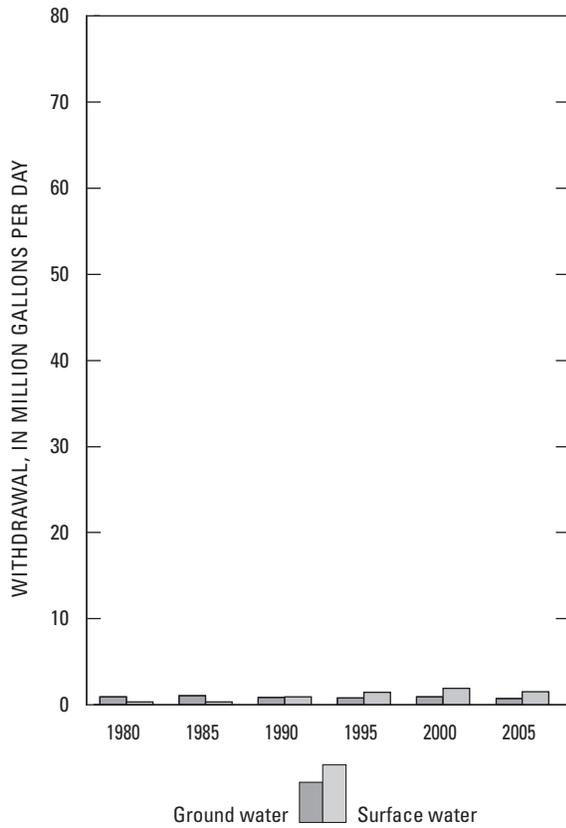
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.07	0.69	0.00	0.00	0.00	0.00	0.76
Surface Water	0.62	0.24	0.00	0.15	0.69	0.00	1.70
TOTALS	0.69	0.93	0.00	0.15	0.69	0.00	2.46

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Banks County Board of Commissioners	0.00	0.62
Town of Homer	0.07	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



Base modified from U.S. Geological Survey 1:100,000-scale digital data

### WITHDRAWAL LOCATION FOR MAJOR USER

- Ground water
- △ Surface water

## BARROW COUNTY

Population: 59,954  
 Population served by public supply: 31,890  
 Acres irrigated: 670  
 Hydroelectric use (Mgal/d): 0.00



### 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

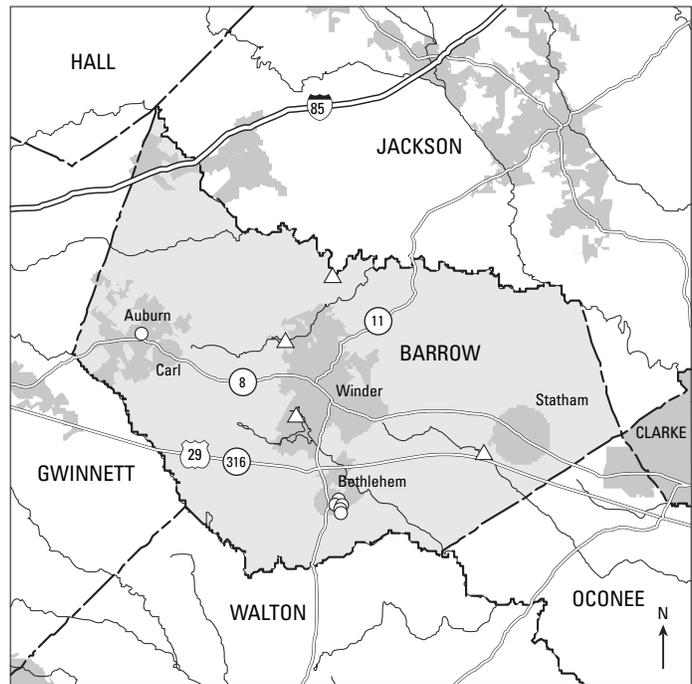
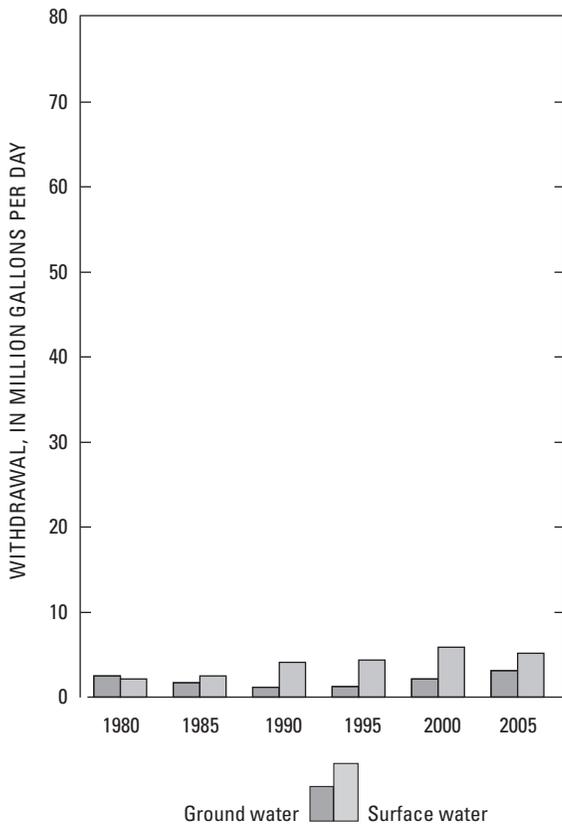
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.57	2.10	0.54	0.29	0.00	0.00	3.50
Surface Water	4.44	0.00	0.00	0.34	0.33	0.00	5.11
TOTALS	5.01	2.10	0.54	0.63	0.33	0.00	8.61

#### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Town of Auburn	0.52	0.00
City of Statham	0.00	0.19
City of Winder	0.00	4.24

#### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
20 - Food	0.27	0.00



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

0 2 4 6 MILES

#### WITHDRAWAL LOCATION FOR MAJOR USER

- Ground water
- △ Surface water

# BARTOW COUNTY

Population: 89,229  
 Population served by public supply: 79,290  
 Acres irrigated: 1,560  
 Hydroelectric use (Mgal/d): 1,201.30



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

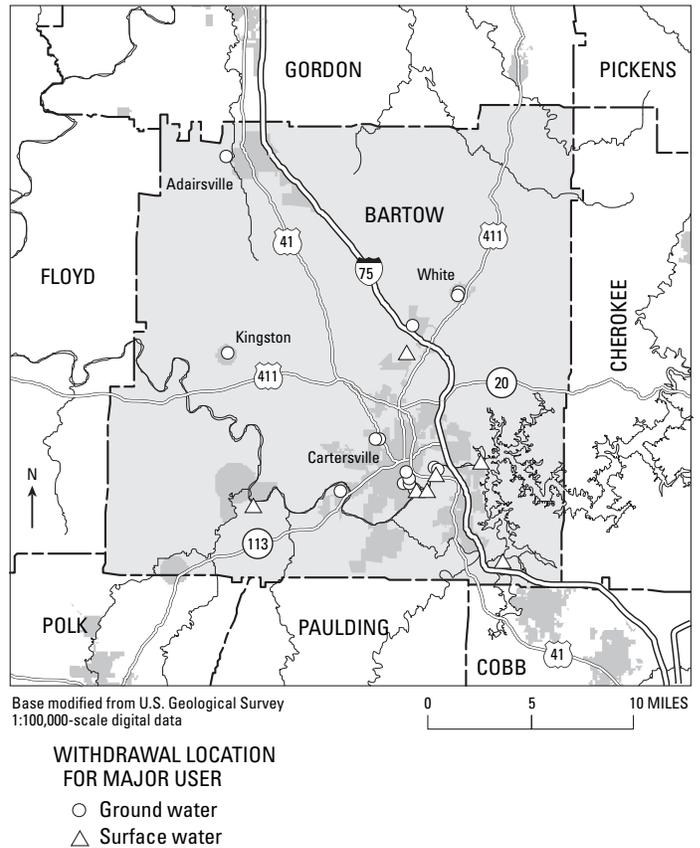
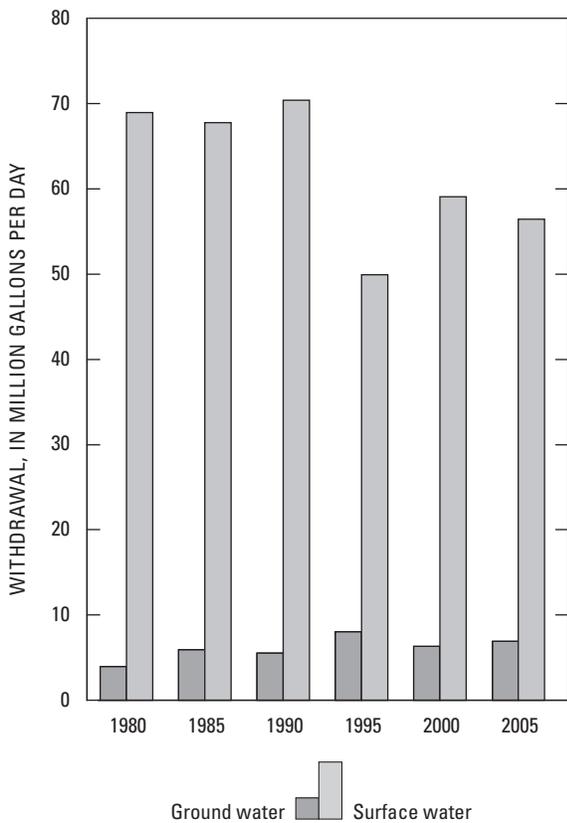
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	4.31	0.75	2.10	0.00	0.02	0.00	7.18
Surface Water	13.51	0.00	1.83	1.57	0.35	38.92	56.18
<b>TOTALS</b>	<b>17.82</b>	<b>0.75</b>	<b>3.93</b>	<b>1.57</b>	<b>0.37</b>	<b>38.92</b>	<b>63.36</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Adairsville	2.68	0.00
Bartow County Water System	0.54	0.00
City of Cartersville	0.00	13.26
City of Kingston	0.95	0.00
Town of White	0.10	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
28 - Chemicals	1.24	1.67
33 - Primary metals	0.00	0.16



## BEN HILL COUNTY

Population: 17,316  
 Population served by public supply: 13,670  
 Acres irrigated: 16,300  
 Hydroelectric use (Mgal/d): 0.00



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

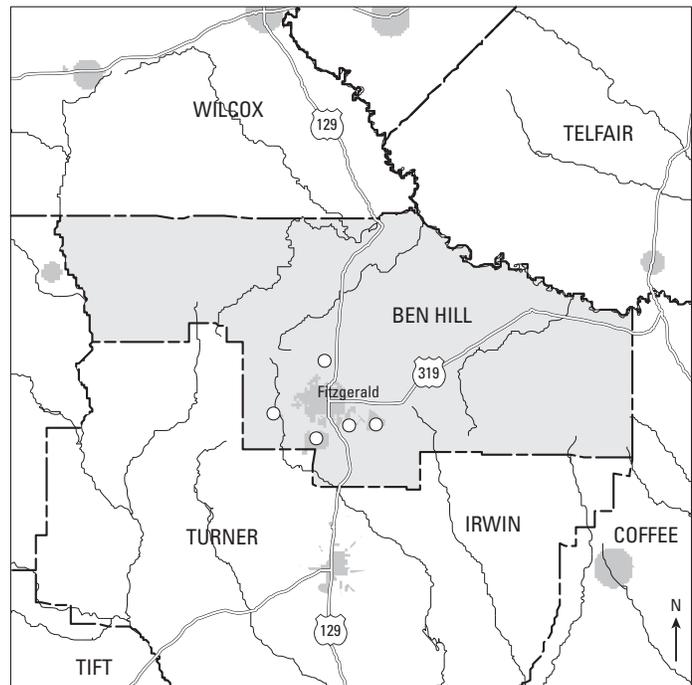
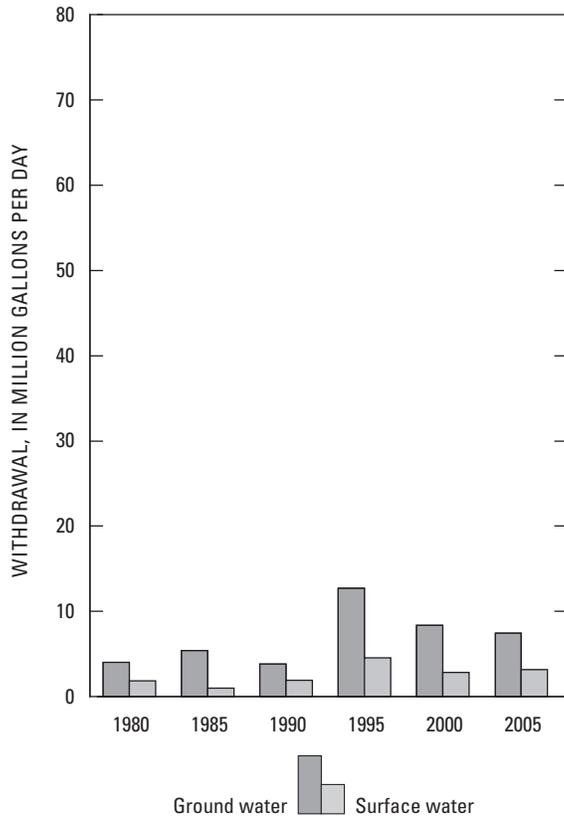
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	3.06	0.27	0.00	4.13	0.02	0.00	7.48
Surface Water	0.00	0.00	0.00	3.13	0.07	0.00	3.20
<b>TOTALS</b>	<b>3.06</b>	<b>0.27</b>	<b>0.00</b>	<b>7.26</b>	<b>0.09</b>	<b>0.00</b>	<b>10.68</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Fitzgerald Water/Light	3.06	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

**WITHDRAWAL LOCATION FOR MAJOR USER**  
 ○ Ground water

# BERRIEN COUNTY

Population: 16,708  
 Population served by public supply: 7,540  
 Acres irrigated: 36,310  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

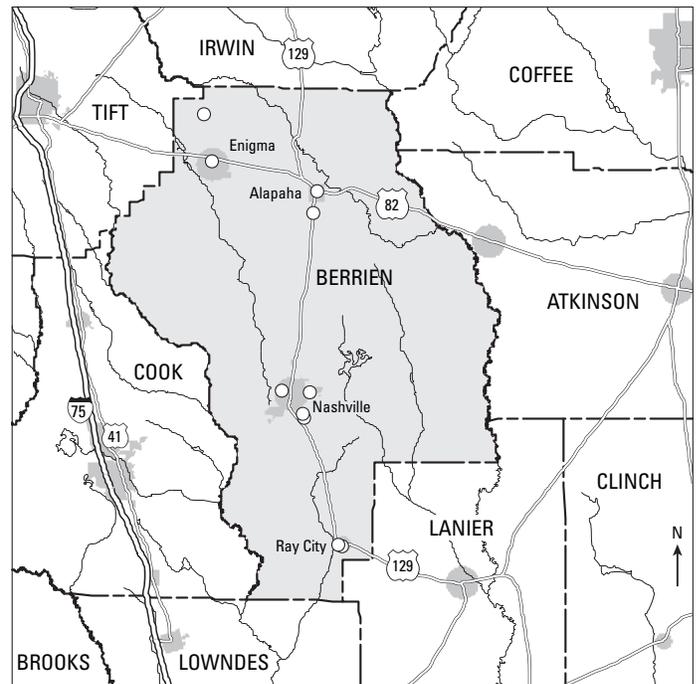
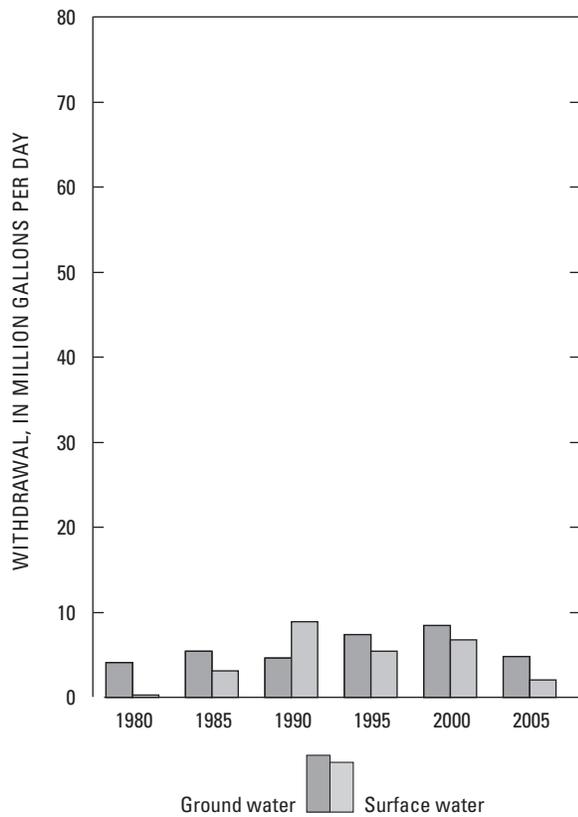
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.99	0.69	0.08	2.07	0.97	0.00	4.80
Surface Water	0.00	0.00	0.00	1.92	0.14	0.00	2.06
TOTALS	0.99	0.69	0.08	3.99	1.11	0.00	6.86

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Town of Alapaha	0.06	0.00
Town of Enigma	0.08	0.00
City of Nashville	0.78	0.00
City of Ray City	0.06	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
22 - Textiles	0.04	0.00



Base modified from U.S. Geological Survey 1:100,000-scale digital data

WITHDRAWAL LOCATION FOR MAJOR USER  
 ○ Ground water

### BIBB COUNTY

Population: 154,918  
 Population served by public supply: 130,280  
 Acres irrigated: 790  
 Hydroelectric use (Mgal/d): 0.00



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

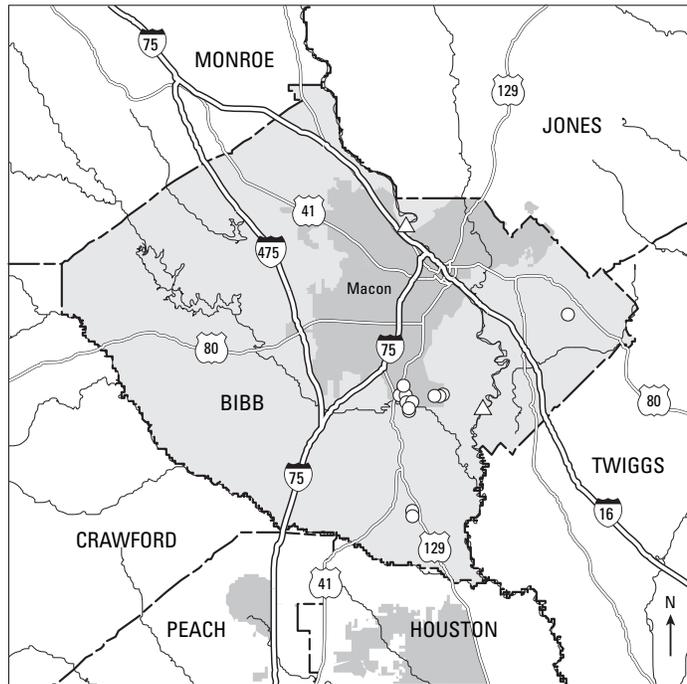
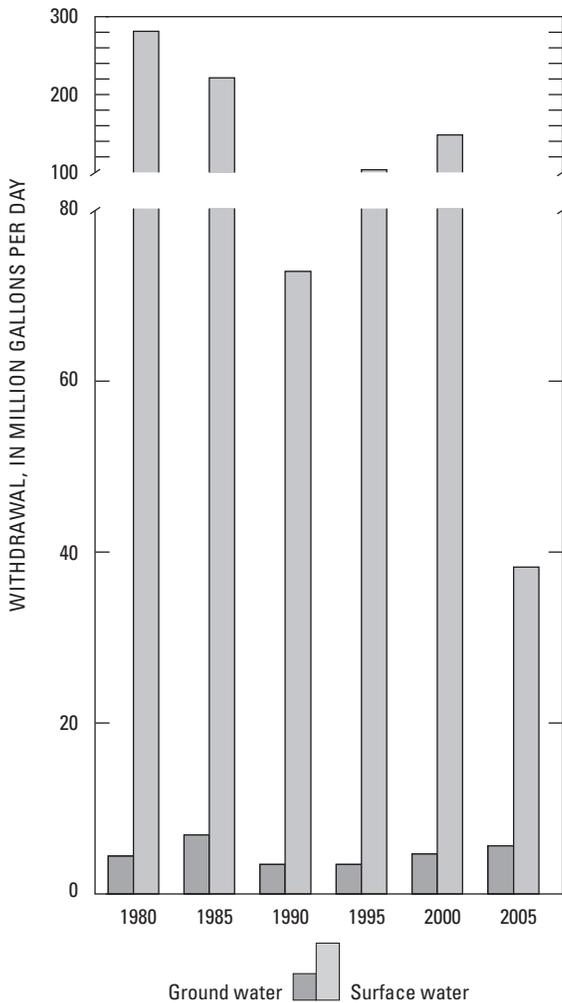
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.14	1.85	3.12	1.06	0.01	0.00	6.18
Surface Water	25.39	0.00	12.45	0.00	0.05	0.00	37.89
<b>TOTALS</b>	<b>25.53</b>	<b>1.85</b>	<b>15.57</b>	<b>1.06</b>	<b>0.06</b>	<b>0.00</b>	<b>44.07</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Macon Water Authority	0.00	25.39

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
26 - Paper	0.64	12.43
32 - Stone, clay	1.17	0



Base modified from U.S. Geological Survey 1:100,000-scale digital data

**WITHDRAWAL LOCATION FOR MAJOR USER**  
 ○ Ground water  
 △ Surface water

# BLECKLEY COUNTY

Population: 12,141  
 Population served by public supply: 5,380  
 Acres irrigated: 12,850  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

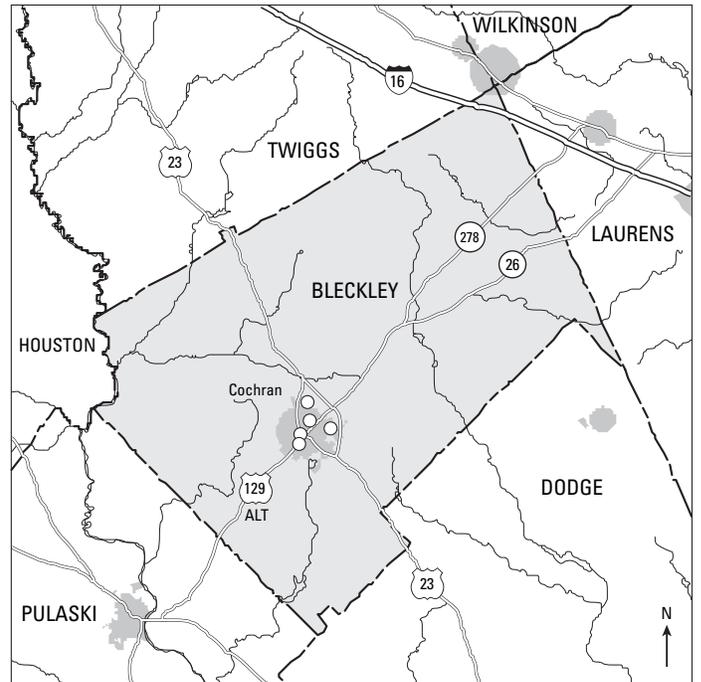
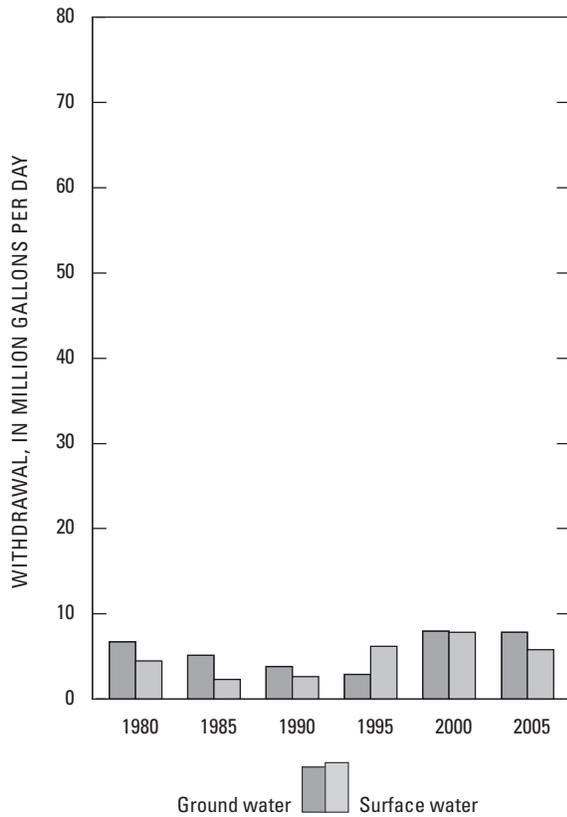
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.21	0.58	0.00	7.04	0.01	0.00	7.84
Surface Water	0.00	0.00	0.00	5.74	0.04	0.00	5.78
TOTALS	0.21	0.58	0.00	12.78	0.05	0.00	13.62

### Withdrawals by Major Public Suppliers (Mgal/d):

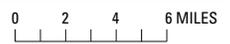
Name	GW	SW
City of Cochran	0.21	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



Base modified from U.S. Geological Survey 1:100,000-scale digital data



### WITHDRAWAL LOCATION FOR MAJOR USER

○ Ground water

## BRANTLEY COUNTY

Population: 15,491  
 Population served by public supply: 2,160  
 Acres irrigated: 300  
 Hydroelectric use (Mgal/d): 0.00



2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

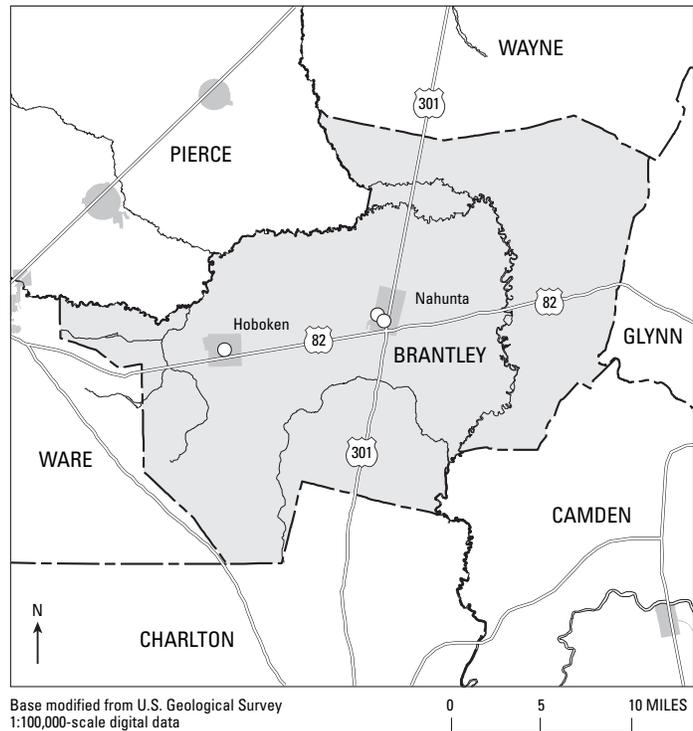
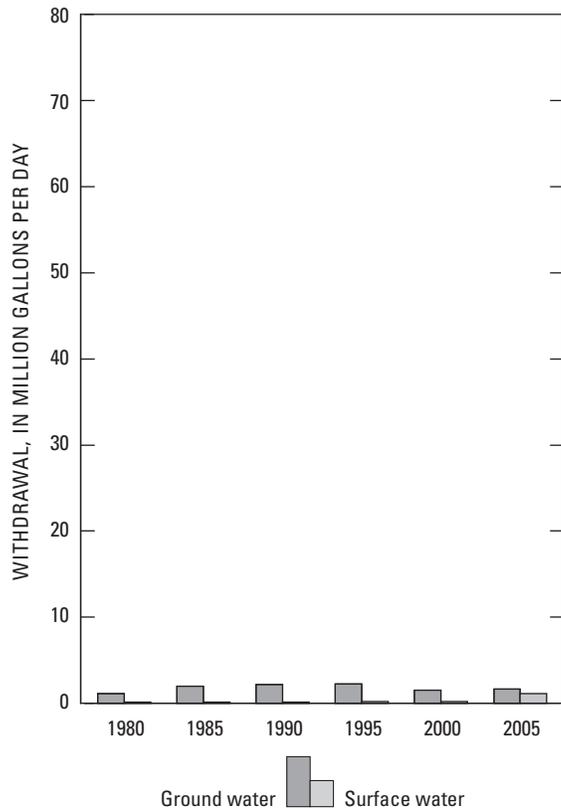
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.20	1.00	0.42	0.05	0.01	0.00	1.68
Surface Water	0.00	0.00	1.02	0.06	0.07	0.00	1.15
TOTALS	0.20	1.00	1.44	0.11	0.08	0.00	2.83

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
City of Hoboken	0.04	0.00
City of Nahunta	0.12	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



Base modified from U.S. Geological Survey 1:100,000-scale digital data

WITHDRAWAL LOCATION FOR MAJOR USER  
 ○ Ground water

# BROOKS COUNTY

Population: 16,327  
 Population served by public supply: 6,990  
 Acres irrigated: 8,330  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

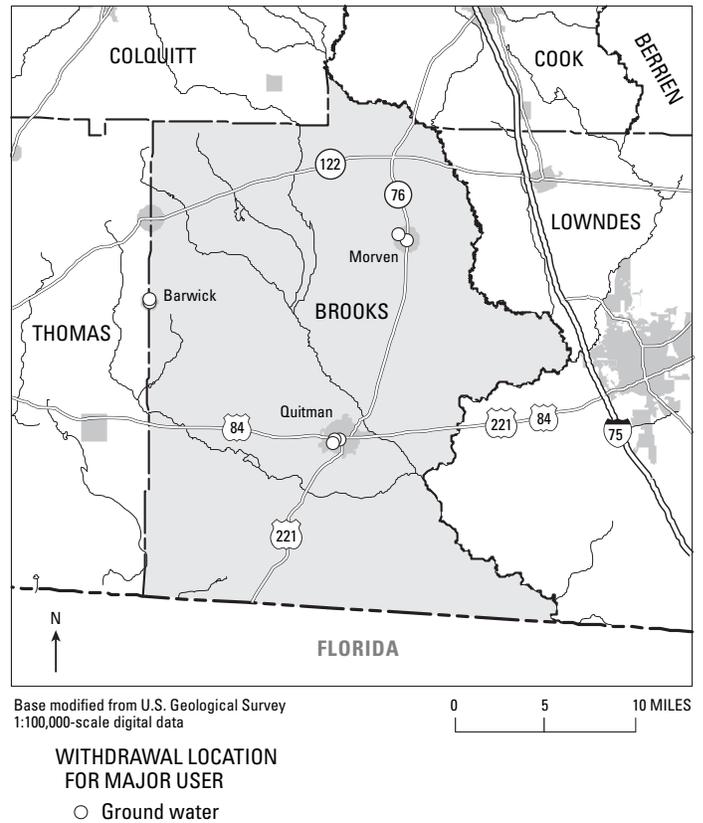
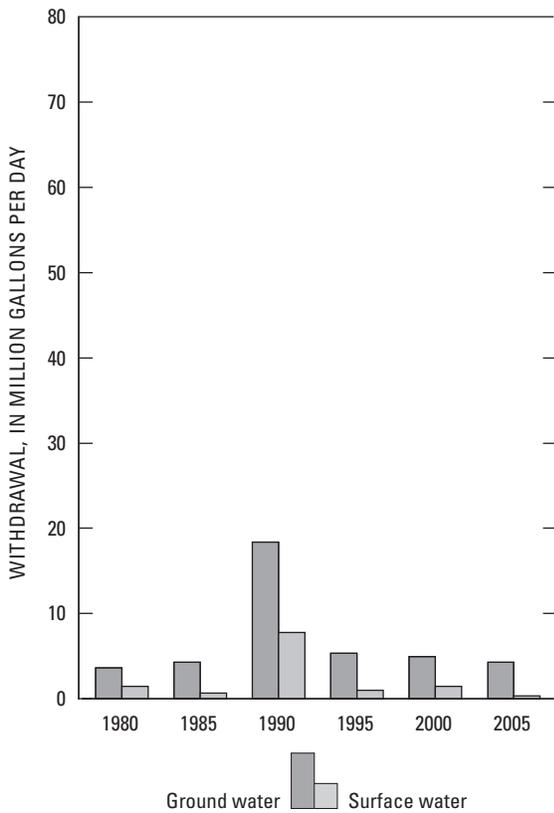
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.96	0.83	0.13	2.29	0.05	0.00	4.26
Surface Water	0.00	0.00	0.00	0.11	0.22	0.00	0.33
<b>TOTALS</b>	<b>0.96</b>	<b>0.83</b>	<b>0.13</b>	<b>2.40</b>	<b>0.27</b>	<b>0.00</b>	<b>4.59</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Town of Barwick	0.03	0.00
City of Morven	0.05	0.00
City of Quitman	0.78	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



## BRYAN COUNTY

Population: 28,549  
 Population served by public supply: 18,280  
 Acres irrigated: 400  
 Hydroelectric use (Mgal/d): 0.00



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

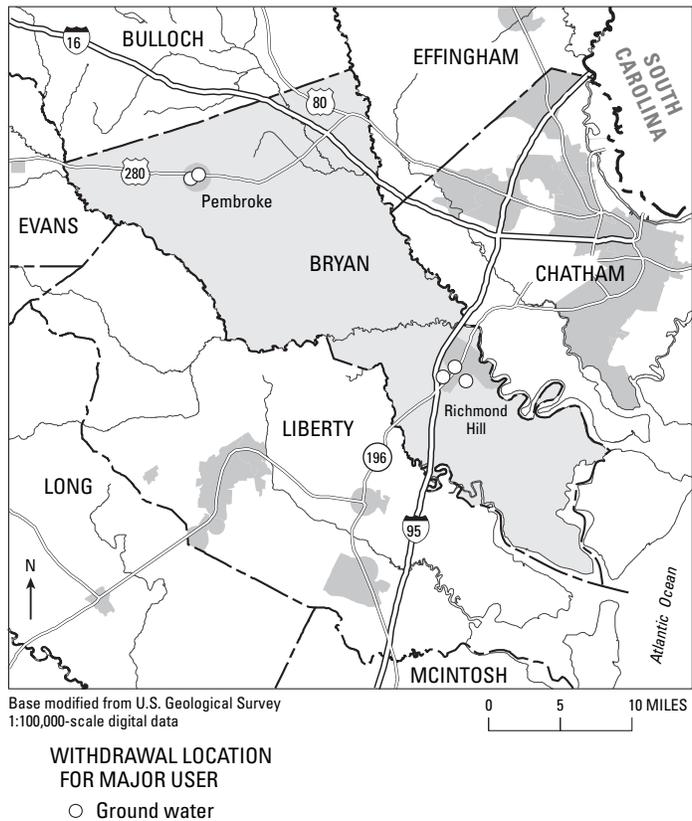
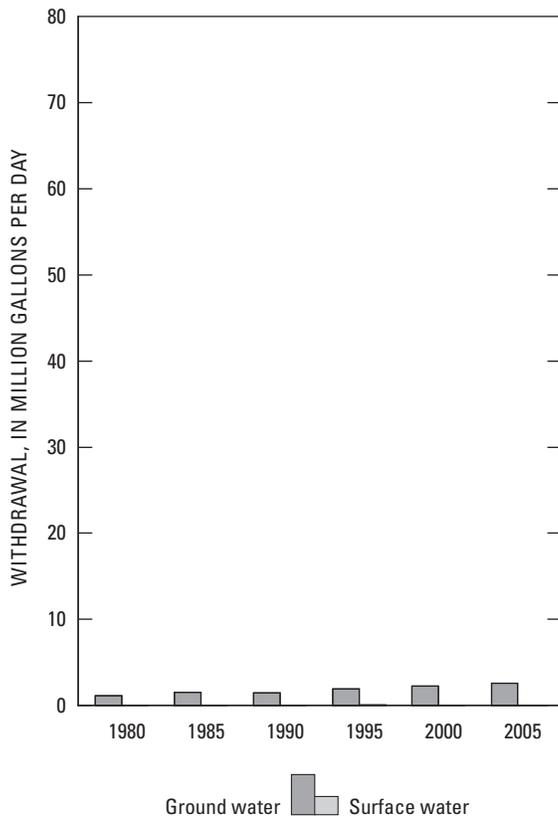
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	1.73	0.82	0.00	0.59	0.00	0.00	3.14
Surface Water	0.00	0.00	0.00	0.00	0.01	0.00	0.01
<b>TOTALS</b>	<b>1.73</b>	<b>0.82</b>	<b>0.00</b>	<b>0.59</b>	<b>0.01</b>	<b>0.00</b>	<b>3.15</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
City of Pembroke	0.23	0.00
City of Richmond Hill	1.06	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



# BULLOCH COUNTY

Population: 61,454  
 Population served by public supply: 48,470  
 Acres irrigated: 22,270  
 Hydroelectric use (Mgal/d): 0.00



### 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

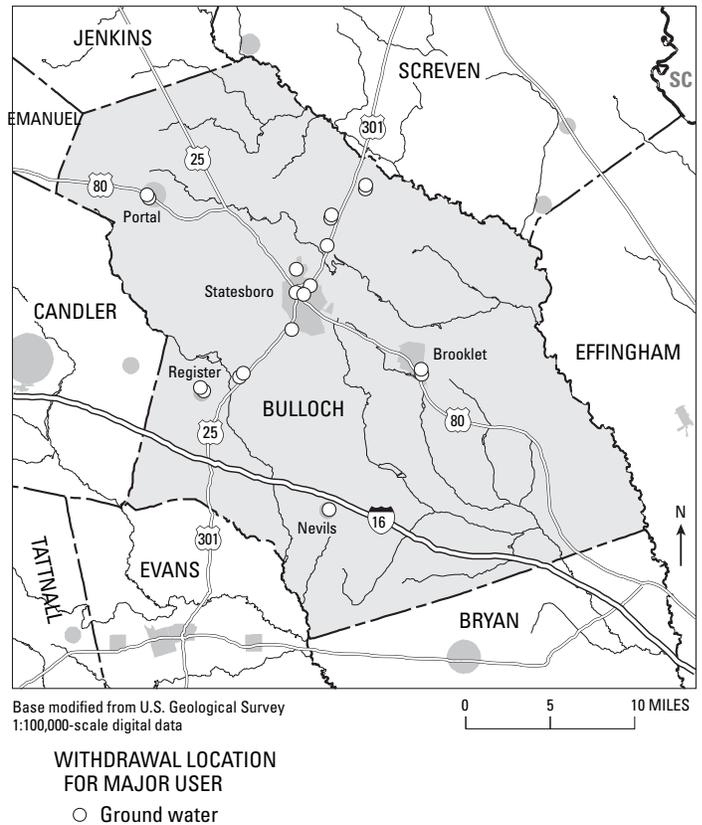
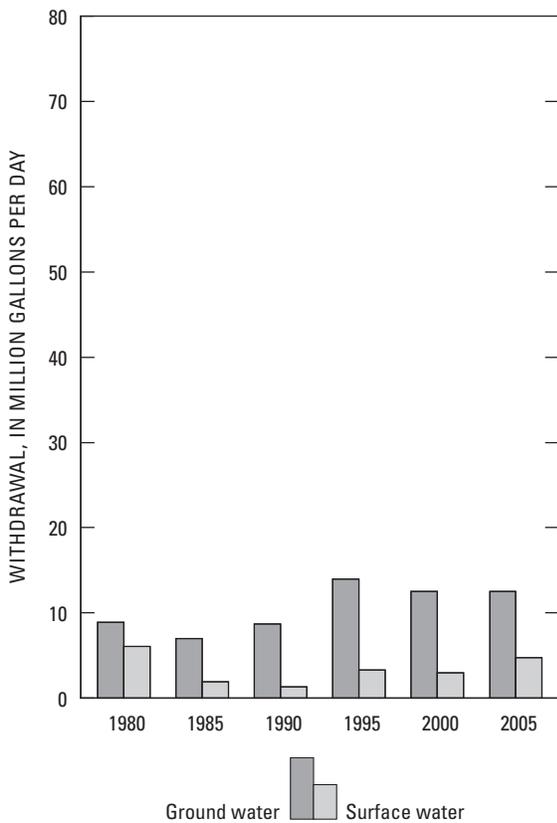
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	4.01	1.37	0.03	7.07	0.07	0.00	12.55
Surface Water	0.00	0.00	0.00	4.58	0.16	0.00	4.74
TOTALS	4.01	1.37	0.03	11.65	0.23	0.00	17.29

#### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Town of Brooklet	0.12	0.00
Nevils Water Association	0.04	0.00
Town of Portal	0.07	0.00
Register Water System	0.02	0.00
City of Statesboro	2.93	0.00

#### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
33 - Primary metals	0.03	0.00



## BURKE COUNTY

Population: 23,299  
 Population served by public supply: 8,390  
 Acres irrigated: 28,300  
 Hydroelectric use (Mgal/d): 0.00



### 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

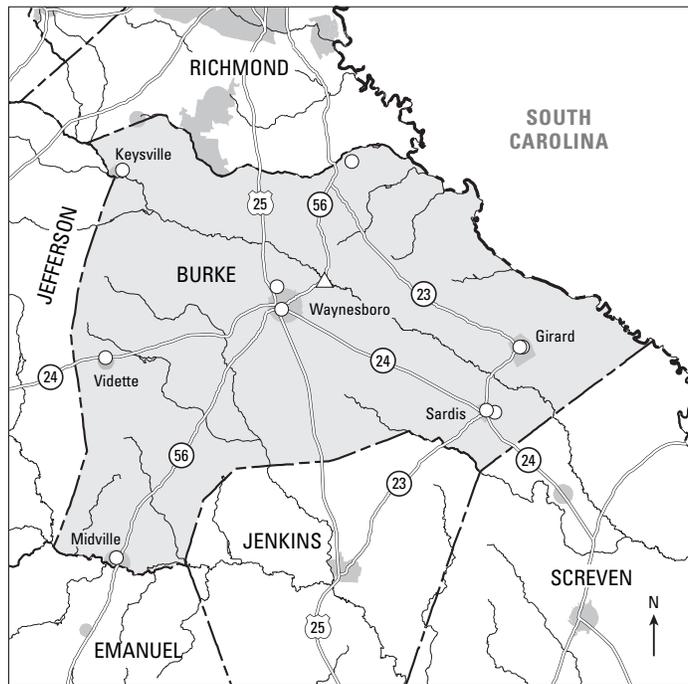
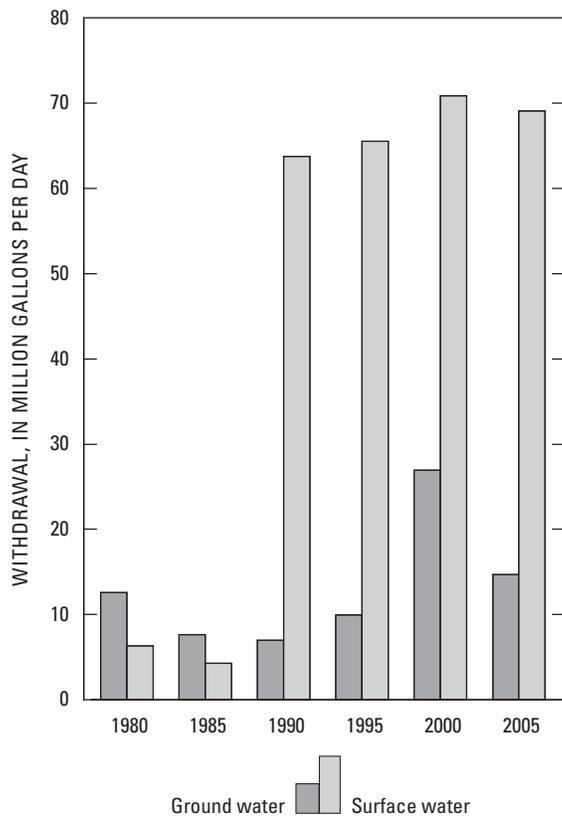
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.97	1.12	0.05	11.66	0.05	0.85	14.70
Surface Water	0.14	0.00	0.00	4.28	0.19	64.51	69.12
<b>TOTALS</b>	<b>1.11</b>	<b>1.12</b>	<b>0.05</b>	<b>15.94</b>	<b>0.24</b>	<b>65.36</b>	<b>83.82</b>

#### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Town of Girard	0.02	0.00
City of Midville	0.06	0.00
Town of Sardis	0.07	0.00
City of Vidette	0.01	0.00
City of Waynesboro	0.79	0.14

#### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
26 - Paper	0.05	0.00



Base modified from U.S. Geological Survey 1:100,000-scale digital data

0 5 10 MILES

#### WITHDRAWAL LOCATION FOR MAJOR USER

- Ground water
- △ Surface water

# BUTTS COUNTY

Population: 21,045  
 Population served by public supply: 16,840  
 Acres irrigated: 210  
 Hydroelectric use (Mgal/d): 1,070.95



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

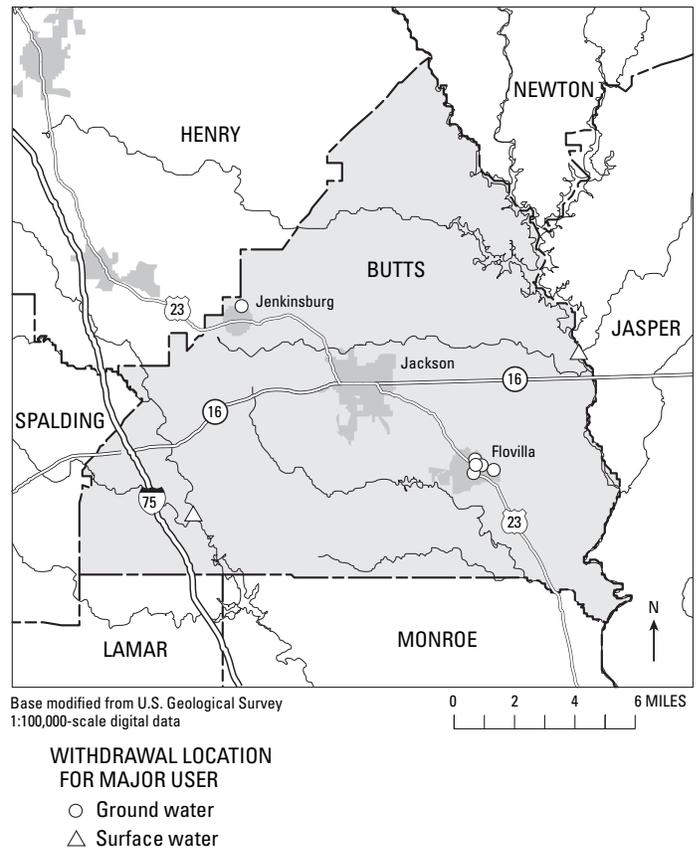
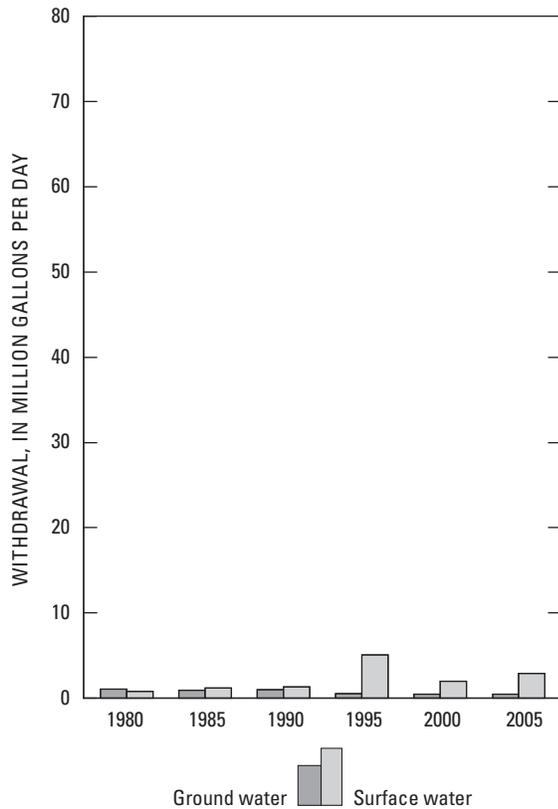
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.14	0.32	0.00	0.00	0.00	0.00	0.46
Surface Water	2.79	0.00	0.00	0.21	0.04	0.00	3.04
<b>TOTALS</b>	<b>2.93</b>	<b>0.32</b>	<b>0.00</b>	<b>0.21</b>	<b>0.04</b>	<b>0.00</b>	<b>3.50</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Butts County Water & Sewer Authority	0.00	2.50
City of Jackson	0.09	0.00
City of Flovilla	0.00	0.29
Town of Jenkinsburg	0.02	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



## CALHOUN COUNTY

Population: 5,972  
 Population served by public supply: 5,170  
 Acres irrigated: 48,880  
 Hydroelectric use (Mgal/d): 0.00



### 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

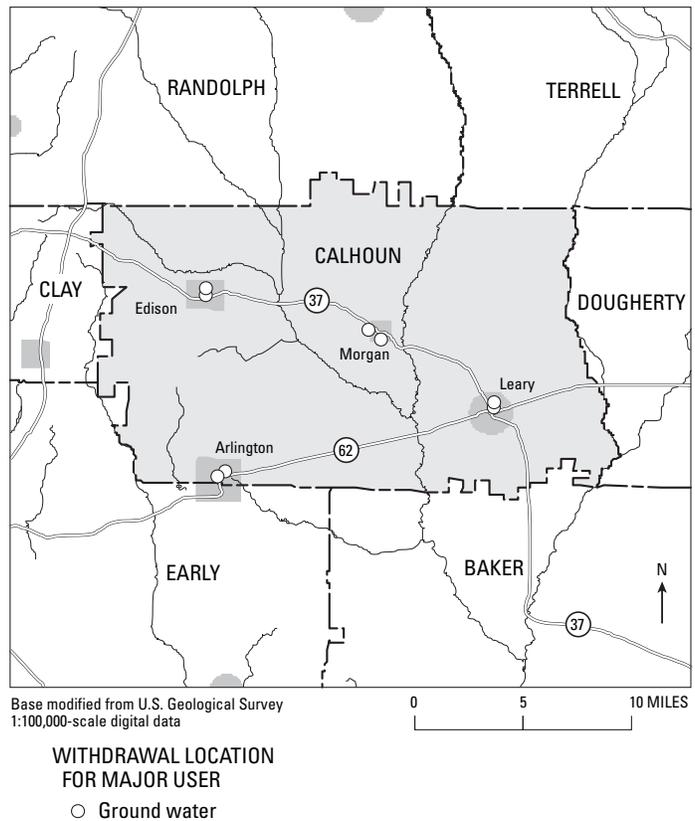
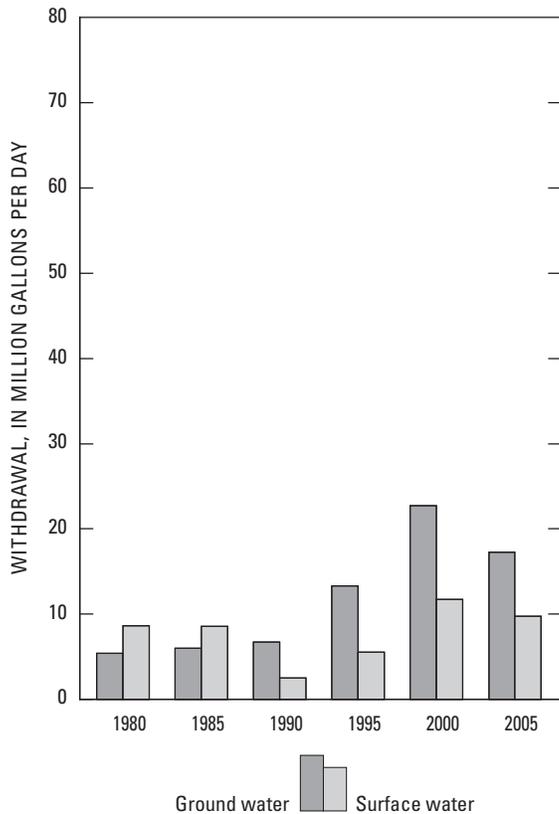
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.78	0.06	0.00	16.39	0.02	0.00	17.25
Surface Water	0.00	0.00	0.00	9.72	0.06	0.00	9.78
<b>TOTALS</b>	<b>0.78</b>	<b>0.06</b>	<b>0.00</b>	<b>26.11</b>	<b>0.08</b>	<b>0.00</b>	<b>27.03</b>

#### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Arlington	0.29	0.00
City of Edison	0.18	0.00
City of Leary	0.08	0.00
City of Morgan	0.23	0.00

#### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



# CAMDEN COUNTY

Population: 45,759  
 Population served by public supply: 31,170  
 Acres irrigated: 690  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

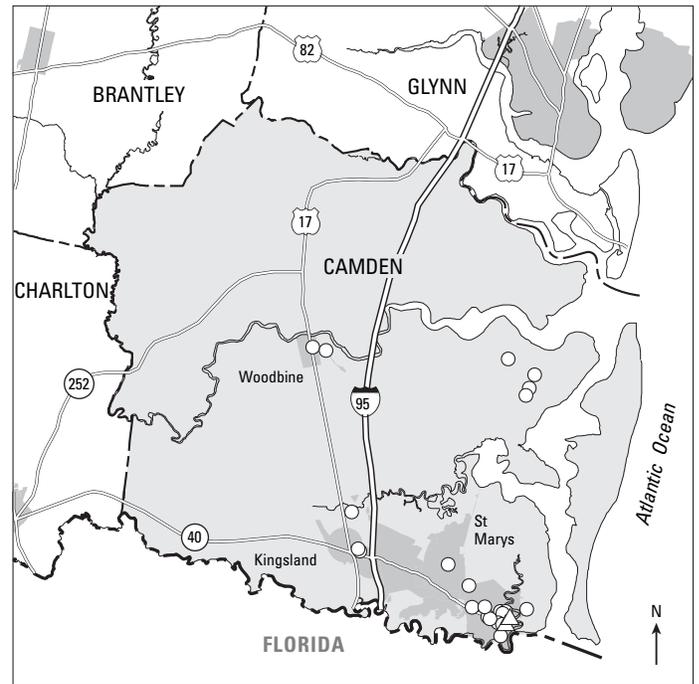
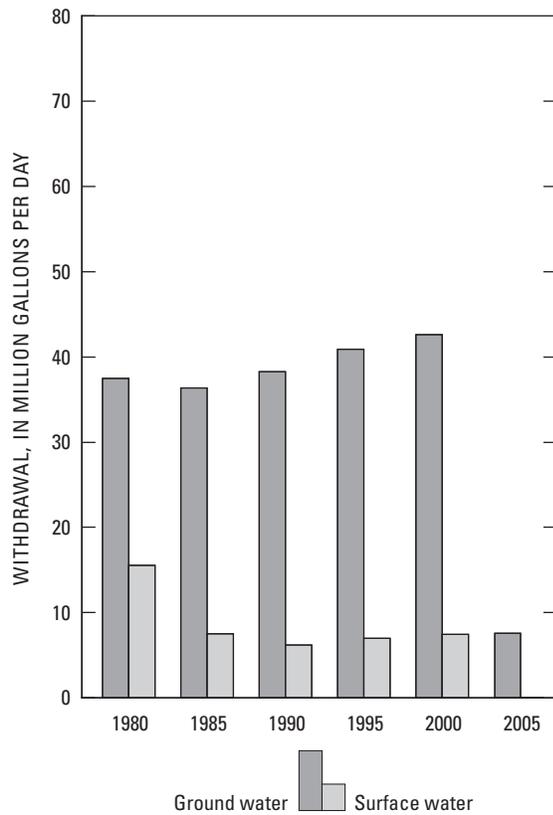
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	4.06	2.01	0.07	1.38	0.05	0.00	7.57
Surface Water	0.00	0.00	0.00	0.00	0.01	0.00	0.01
<b>TOTALS</b>	<b>4.06</b>	<b>2.01</b>	<b>0.07</b>	<b>1.38</b>	<b>0.06</b>	<b>0.00</b>	<b>7.58</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Kingsland	1.45	0.00
City of St. Marys	1.48	0.00
City of Woodbine	0.14	0.00
USN Base Support	0.96	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
26 - Paper	0.01	0.00
28 - Chemicals	0.06	0.00



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

0 5 10 MILES

### WITHDRAWAL LOCATION FOR MAJOR USER

- Ground water
- △ Surface water

## CANDLER COUNTY

Population: 10,321  
 Population served by public supply: 4,380  
 Acres irrigated: 16,900  
 Hydroelectric use (Mgal/d): 0.00



2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

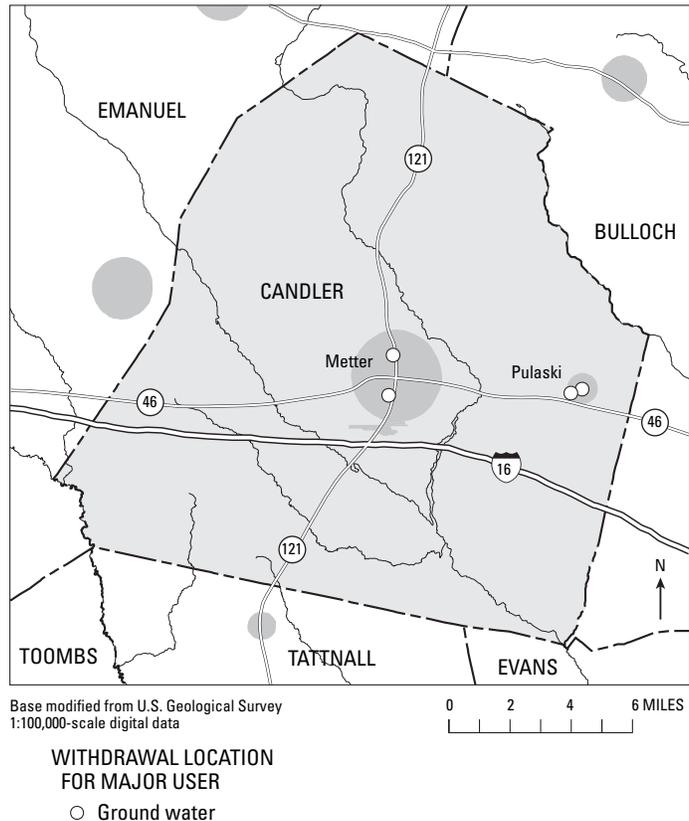
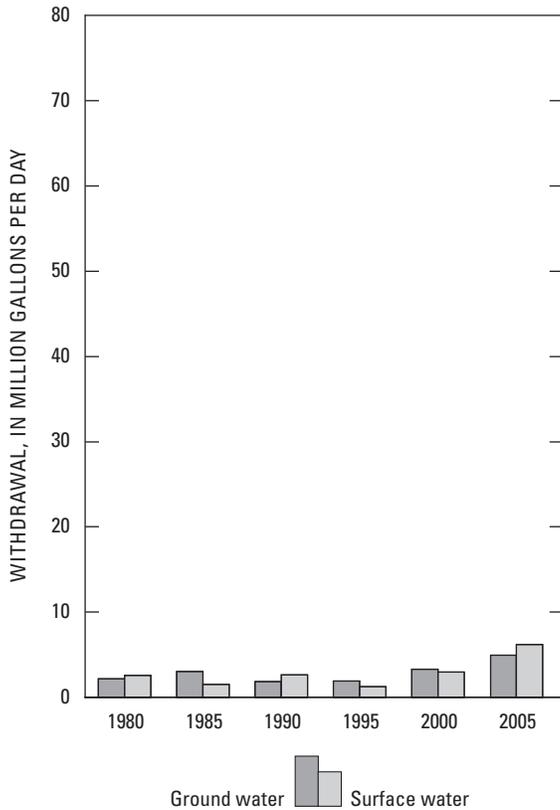
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.46	0.45	0.00	4.03	0.02	0.00	4.96
Surface Water	0.00	0.00	0.00	5.98	0.19	0.00	6.17
<b>TOTALS</b>	<b>0.46</b>	<b>0.45</b>	<b>0.00</b>	<b>10.01</b>	<b>0.21</b>	<b>0.00</b>	<b>11.13</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
City of Metter	0.44	0.00
Town of Pulaski	0.02	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

# CARROLL COUNTY

Population: 105,453  
 Population served by public supply: 82,870  
 Acres irrigated: 440  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

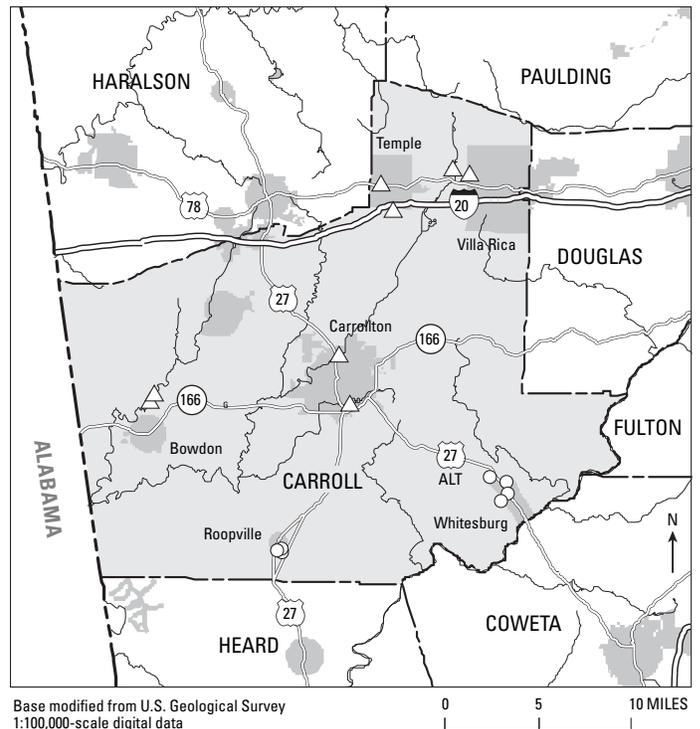
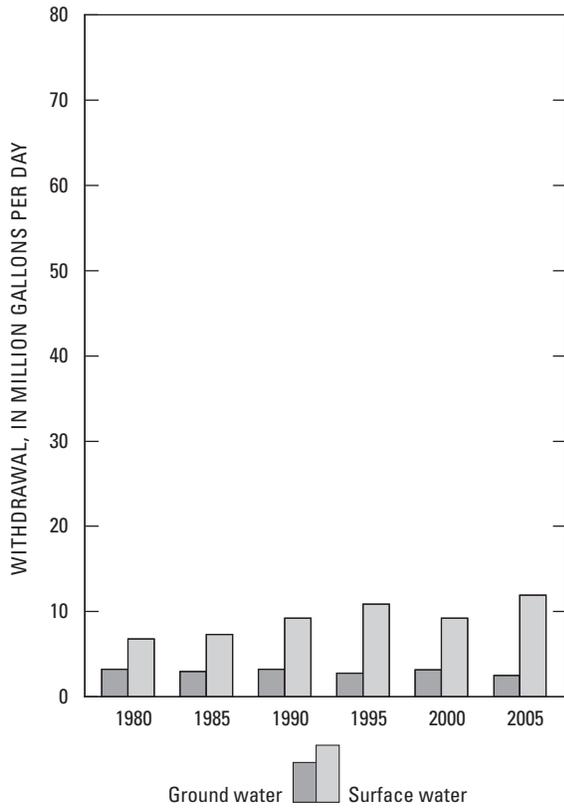
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.63	1.69	0.25	0.00	0.02	0.00	2.59
Surface Water	11.05	0.00	0.09	0.00	0.69	0.00	11.83
TOTALS	11.68	1.69	0.34	0.00	0.71	0.00	14.42

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Bowdon	0.00	0.75
City of Carrollton	0.00	5.37
City of Mount Zion	0.08	0.00
Town of Roopville	0.02	0.00
City of Temple	0.00	0.26
City of Villa Rica	0.05	0.58
Town of Whitesburg	0.07	0.00
Carroll County Water System	0.40	4.08

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
33 - Primary metals	0.00	0.09



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

### WITHDRAWAL LOCATION FOR MAJOR USER

- Ground water
- △ Surface water

### CATOOSA COUNTY

Population: 60,813  
 Population served by public supply: 51,340  
 Acres irrigated: 690  
 Hydroelectric use (Mgal/d): 0.00



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

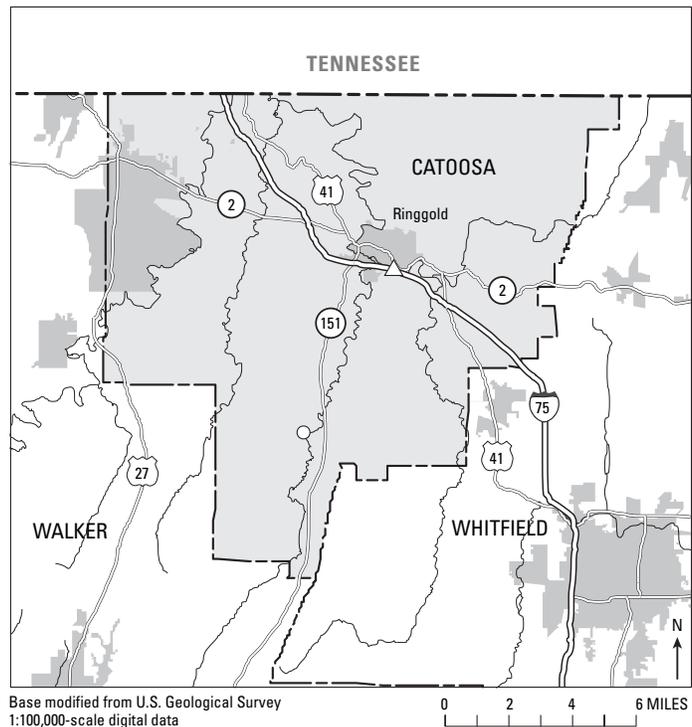
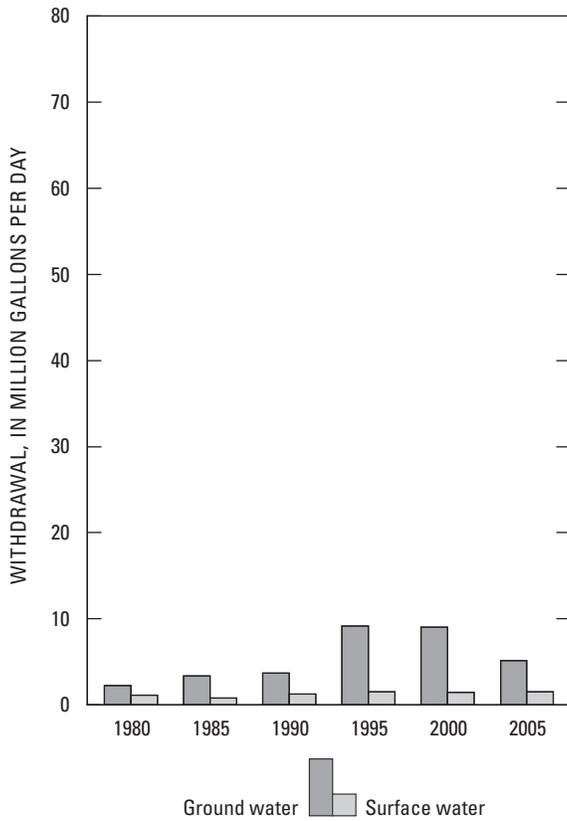
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	4.12	0.71	0.05	0.26	0.02	0.00	5.16
Surface Water	0.56	0.00	0.00	0.79	0.18	0.00	1.53
<b>TOTALS</b>	<b>4.68</b>	<b>0.71</b>	<b>0.05</b>	<b>1.05</b>	<b>0.20</b>	<b>0.00</b>	<b>6.69</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Catoosa County Water System	4.12	0.00
City of Ringgold	0.00	0.56

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

**WITHDRAWAL LOCATION FOR MAJOR USER**  
 ○ Ground water  
 △ Surface water

# CHARLTON COUNTY

Population: 10,790  
 Population served by public supply: 4,460  
 Acres irrigated: 120  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

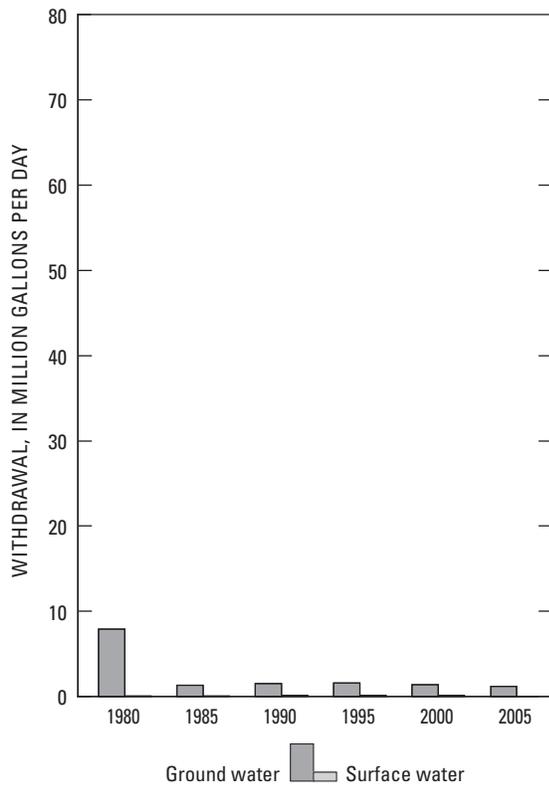
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.73	0.48	0.00	0.00	0.00	0.00	1.21
Surface Water	0.00	0.00	0.00	0.01	0.02	0.00	0.03
<b>TOTALS</b>	<b>0.73</b>	<b>0.48</b>	<b>0.00</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>1.24</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Folkston	0.72	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



Base modified from U.S. Geological Survey 1:100,000-scale digital data



WITHDRAWAL LOCATION FOR MAJOR USER  
 ○ Ground water

## CHATHAM COUNTY

Population: 238,410  
 Population served by public supply: 208,610  
 Acres irrigated: 1,580  
 Hydroelectric use (Mgal/d): 0.00



2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	33.52	5.06	21.44	2.35	0.00	2.60	64.97
Surface Water	0.00	0.00	20.54	0.00	0.01	158.58	179.13
TOTALS	33.52	5.06	41.98	2.35*	0.01	161.18	244.10

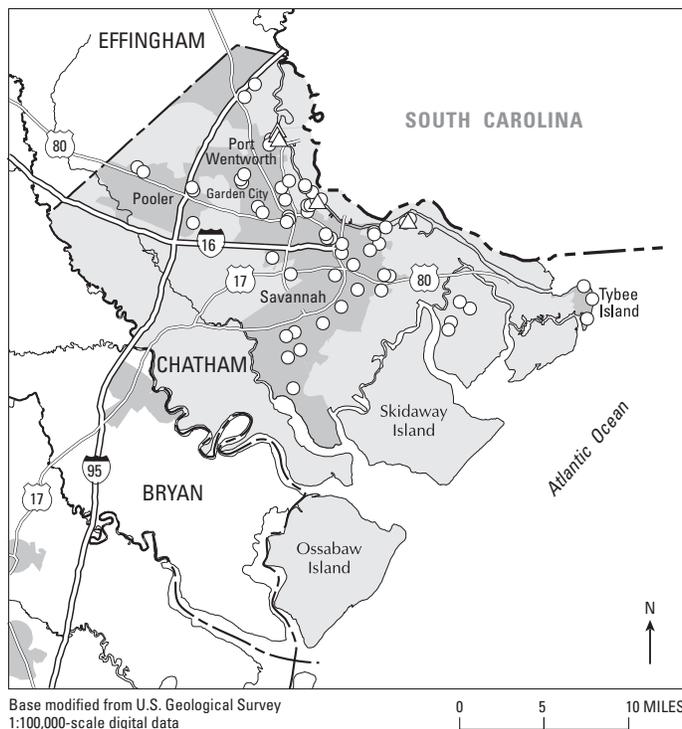
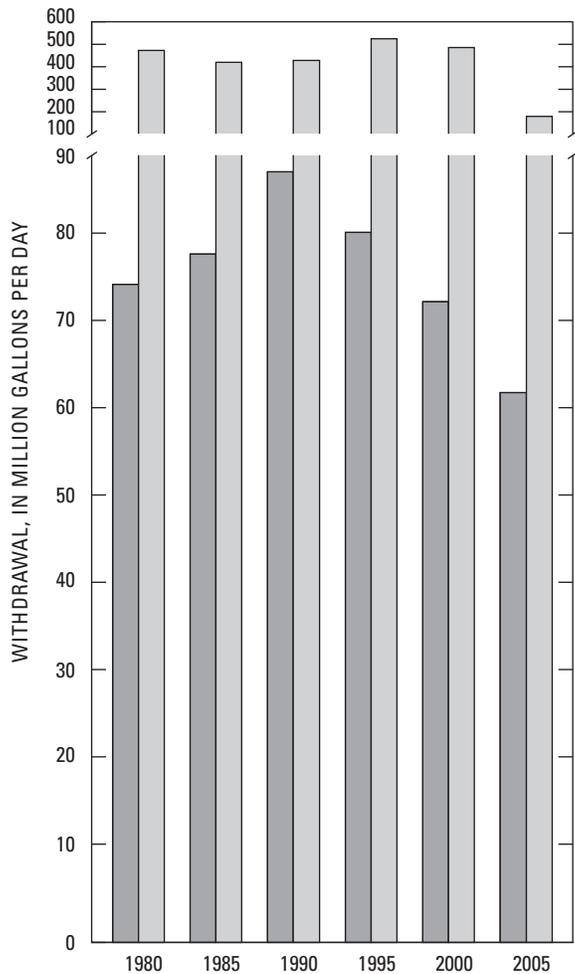
### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Garden City	1.16	0.00
Hunter Army Airfield	0.78	0.00
Town of Pooler	0.63	0.00
City of Port Wentworth	0.29	0.00
City of Savannah	23.98	0.00
Skidaway Island Utilities	1.60	0.00
City of Tybee Island	0.86	0.00
City of Savannah–Glen Robin	0.64	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
20 - Food	0.44	0.00
26 - Paper	16.53	14.09
28 - Chemicals	3.95	6.46
29 - Petroleum	0.37	0.00

\*Some irrigation withdrawals included in commercial category



### WITHDRAWAL LOCATION FOR MAJOR USER

- Ground water
- △ Surface water



# CHATTAHOOCHEE COUNTY

Population: 14,679  
 Population served by public supply: 14,390  
 Acres irrigated: 100  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

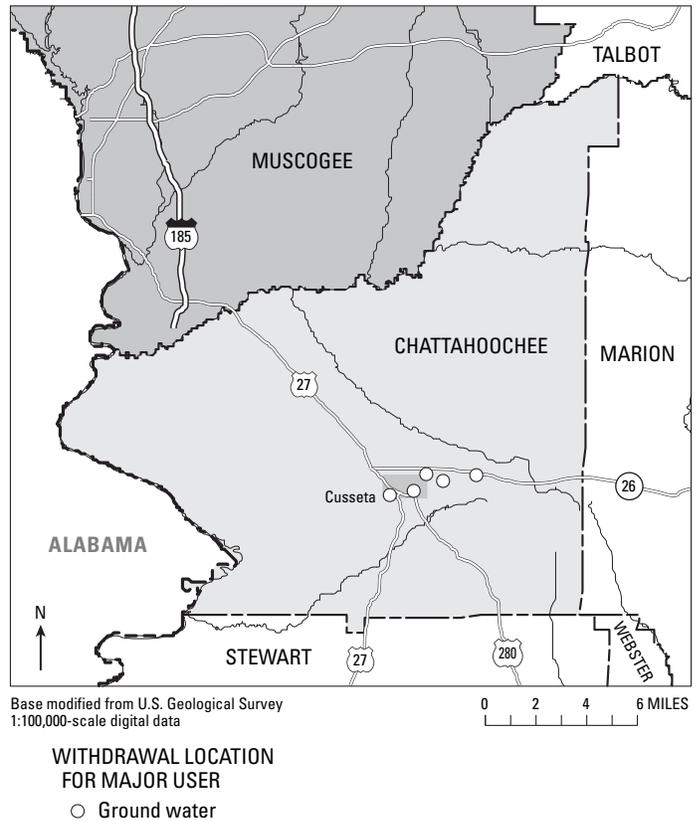
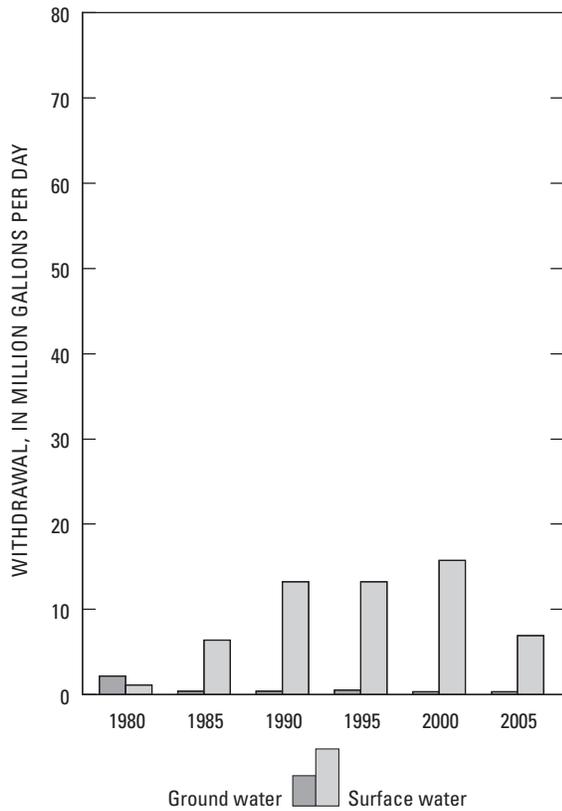
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.34	0.02	0.00	0.15	0.00	0.00	0.51
Surface Water	0.69	6.22	0.00	0.00	0.01	0.00	6.92
<b>TOTALS</b>	<b>1.03</b>	<b>6.24</b>	<b>0.00</b>	<b>0.15</b>	<b>0.01</b>	<b>0.00</b>	<b>7.43</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Chattahoocchee County Water System	0.34	0.00
City of Cusseta	0.00	0.69

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



## CHATTOOGA COUNTY

Population: 26,570  
 Population served by public supply: 22,720  
 Acres irrigated: 50  
 Hydroelectric use (Mgal/d): 0.00



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

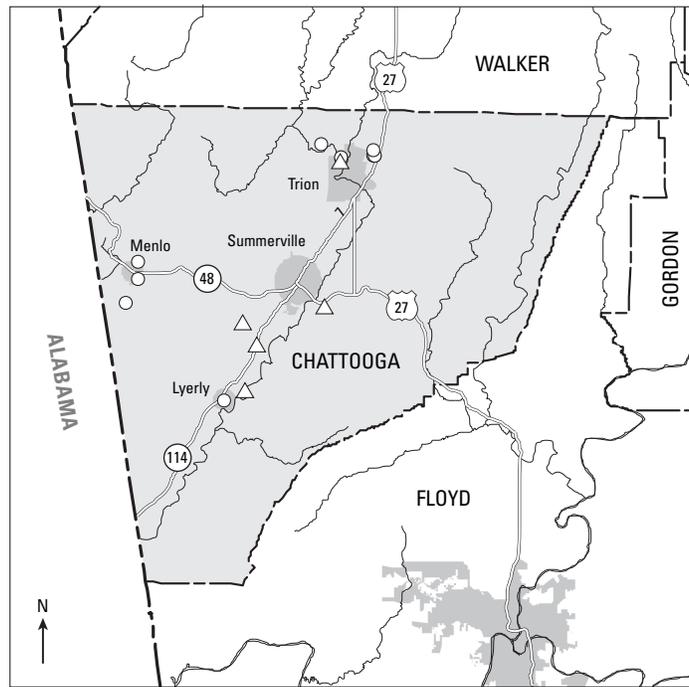
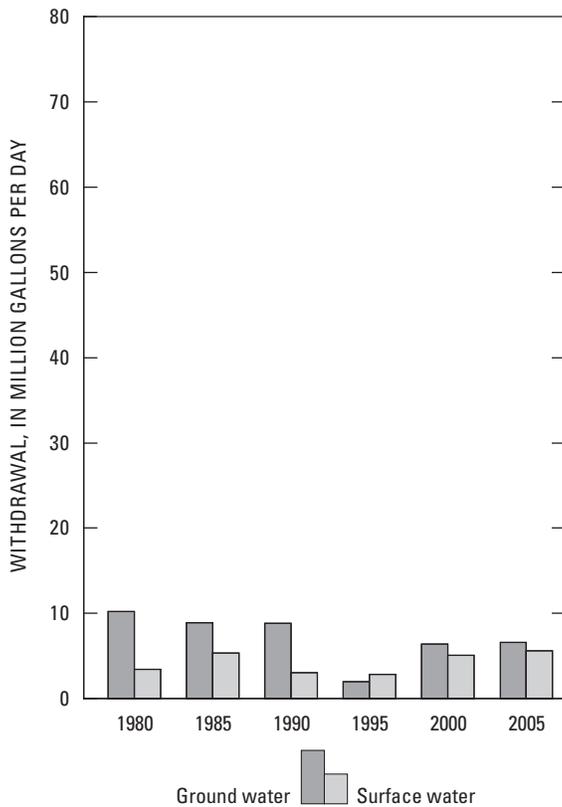
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	1.31	0.29	4.58	0.00	0.39	0.00	6.57
Surface Water	2.05	0.00	2.74	0.07	0.85	0.00	5.71
<b>TOTALS</b>	<b>3.36</b>	<b>0.29</b>	<b>7.32</b>	<b>0.07</b>	<b>1.24</b>	<b>0.00</b>	<b>12.28</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Chattooga County Water System	0.51	0.00
Town of Lyerly	0.15	0.00
Town of Menlo	0.05	0.00
City of Summerville	0.00	2.05
City of Summerville Lowe Spring	0.45	0.00
Town of Trion	0.15	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
22 - Textiles	4.58	2.74



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

**WITHDRAWAL LOCATION FOR MAJOR USER**

- Ground water
- △ Surface water

0 2 4 6 MILES

# CHEROKEE COUNTY

Population: 184,211  
 Population served by public supply: 115,320  
 Acres irrigated: 1,330  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

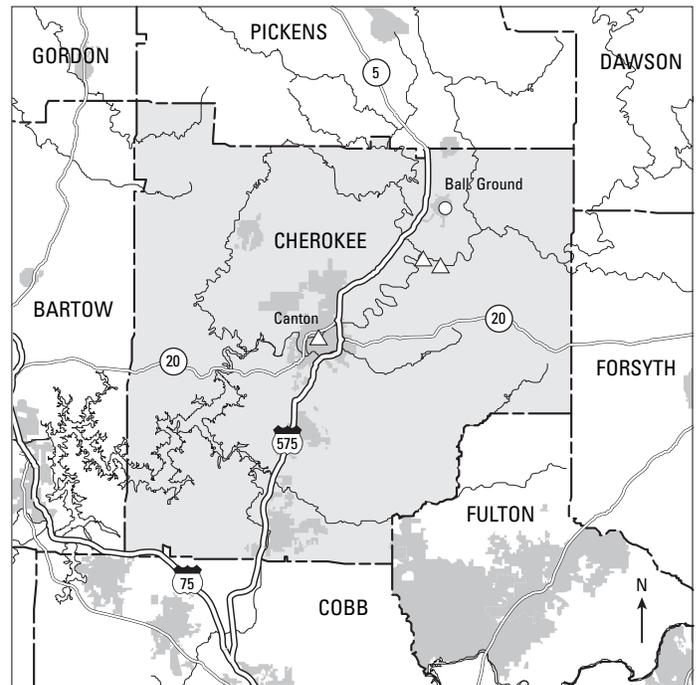
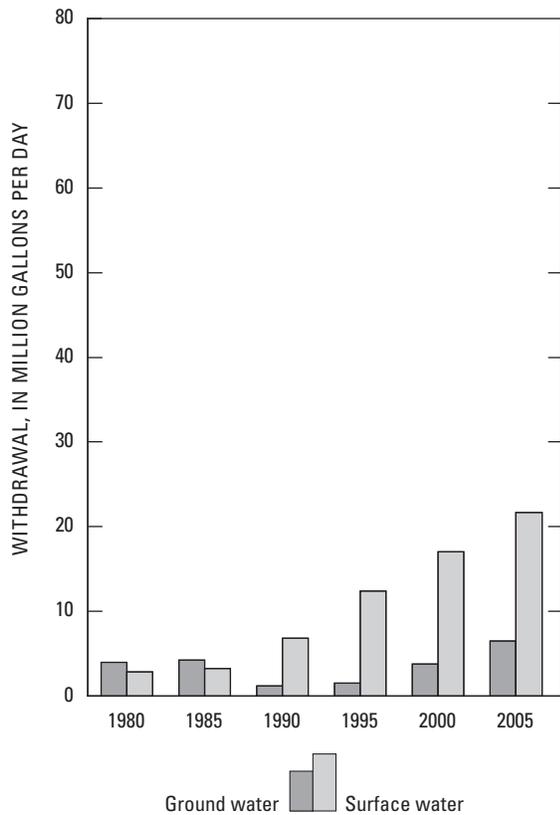
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.30	5.18	0.57	0.60	0.02	0.00	6.67
Surface Water	18.64	0.00	1.95	1.78	0.31	0.00	22.68
TOTALS	18.94	5.18	2.52	2.38	0.33	0.00	29.35

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Ball Ground	0.14	0.00
City of Canton	0.00	2.83
Cherokee County Water System	0.00	15.81

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
20 - Food	0.01	1.94



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

### WITHDRAWAL LOCATION FOR MAJOR USER

- Ground water
- △ Surface water

## CLARKE COUNTY

Population: 104,439  
 Population served by public supply: 104,220  
 Acres irrigated: 760  
 Hydroelectric use (Mgal/d): 77.67



2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

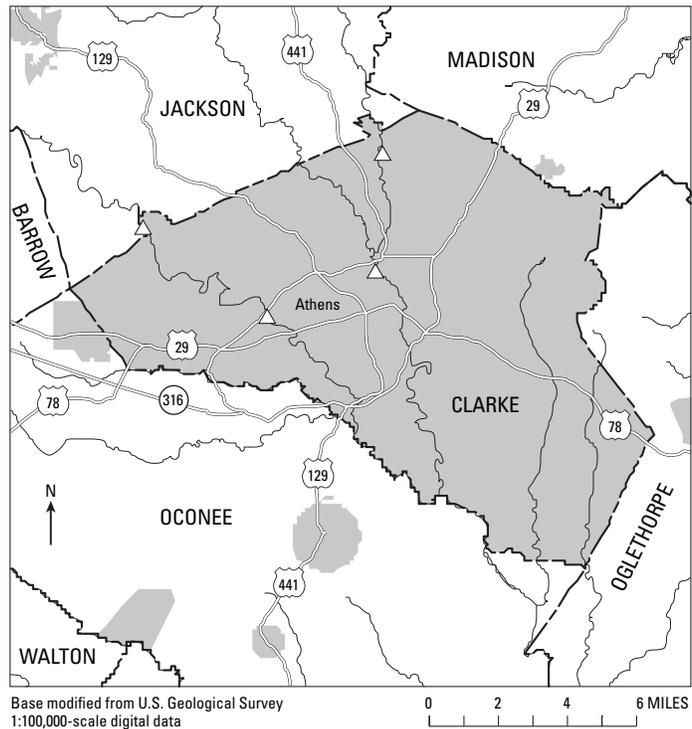
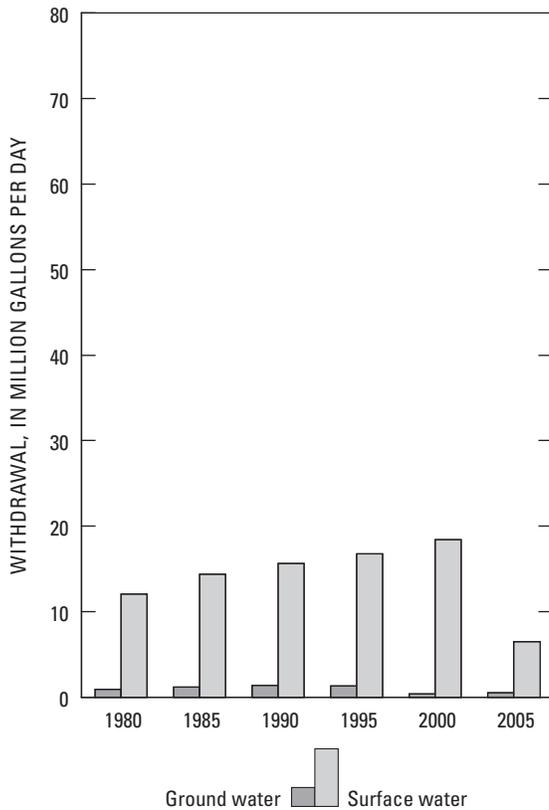
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.24	0.02	0.00	0.24	0.00	0.00	0.50
Surface Water	6.29	0.00	0.00	0.69	0.09	0.00	7.07
TOTALS	6.53	0.02	0.00	0.93	0.09	0.00	7.57

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Athens–Clarke County Public Utility	0.00	6.29

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



Base modified from U.S. Geological Survey 1:100,000-scale digital data

WITHDRAWAL LOCATION FOR MAJOR USER  
 △ Surface water

# CLAY COUNTY

Population: 3,242  
 Population served by public supply: 1,840  
 Acres irrigated: 420  
 Hydroelectric use (Mgal/d): 5,439.48



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

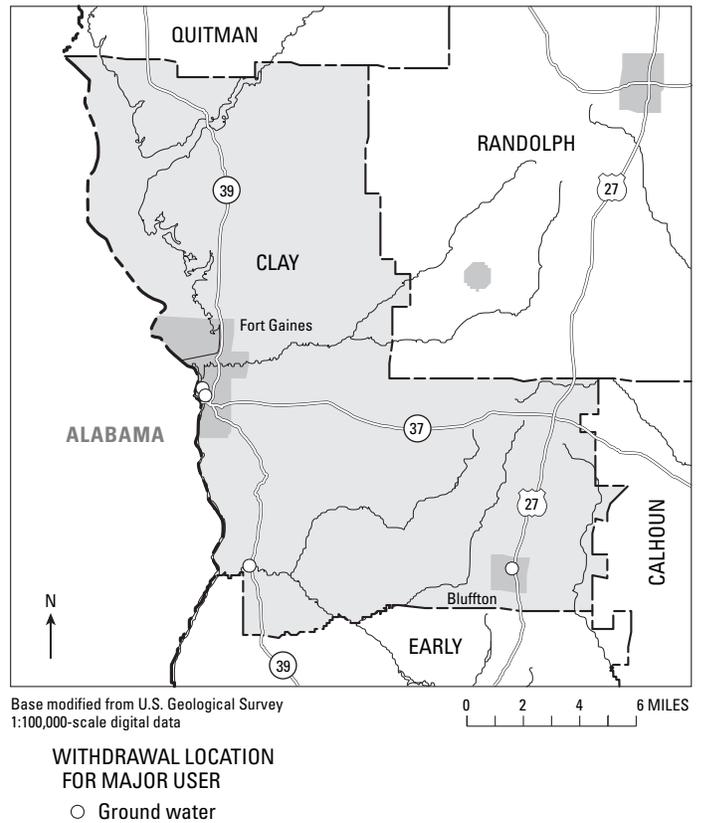
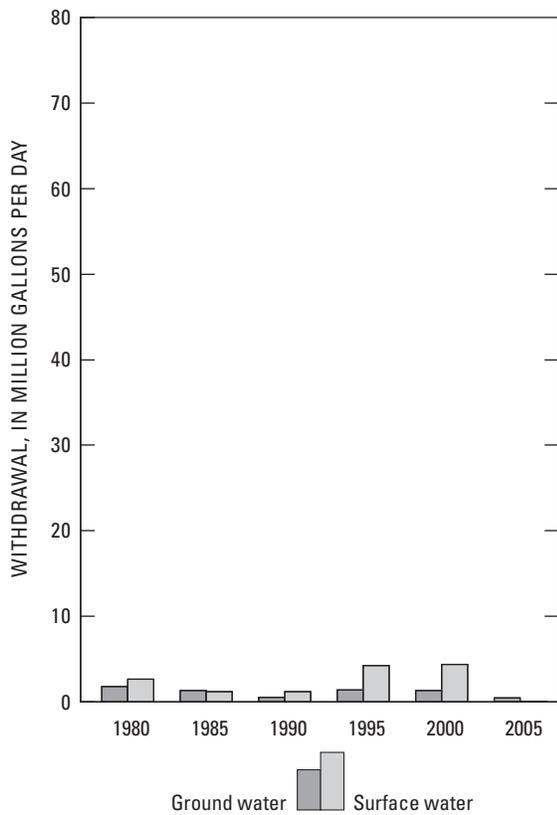
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.26	0.11	0.00	0.20	0.01	0.00	0.58
Surface Water	0.00	0.00	0.00	0.06	0.02	0.00	0.08
<b>TOTALS</b>	<b>0.26</b>	<b>0.11</b>	<b>0.00</b>	<b>0.26</b>	<b>0.03</b>	<b>0.00</b>	<b>0.66</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Town of Bluffton	0.01	0.00
City of Fort Gaines	0.24	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



### CLAYTON COUNTY

Population: 267,966  
 Population served by public supply: 258,980  
 Acres irrigated: 590  
 Hydroelectric use (Mgal/d): 0.00



2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

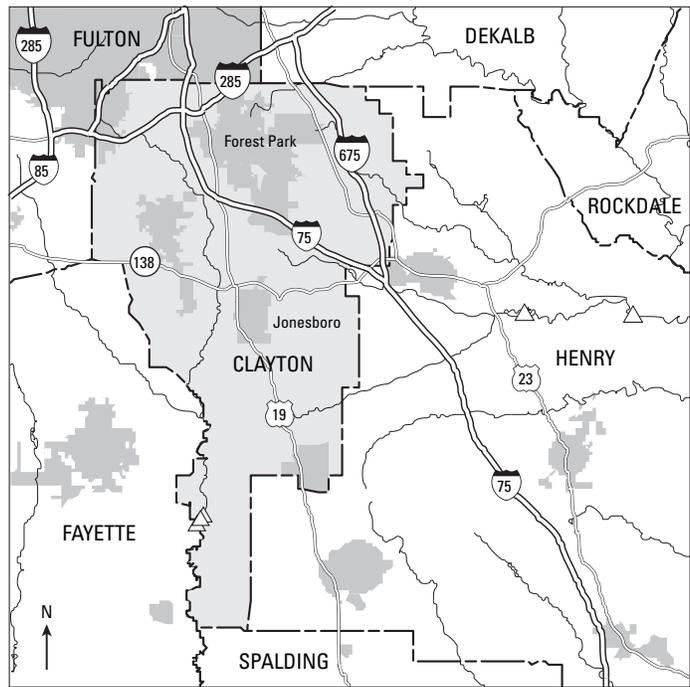
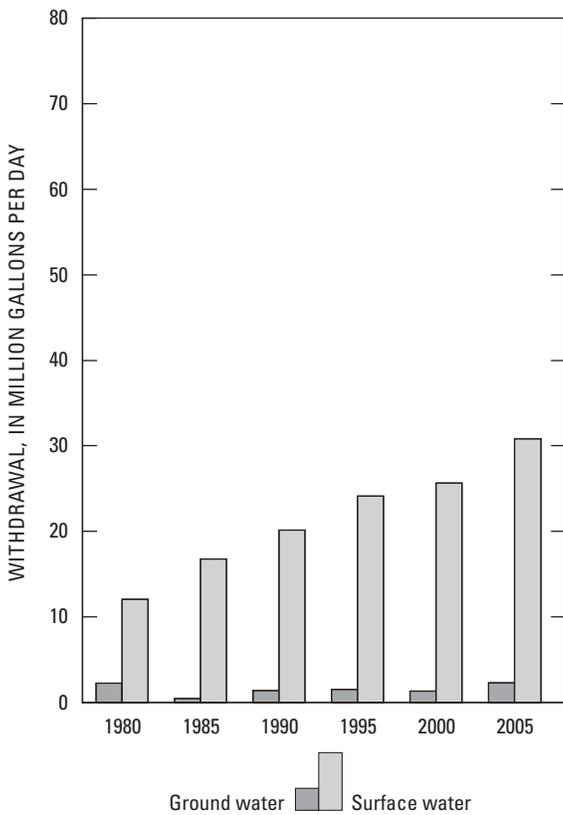
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.02	1.94	0.37	0.00	0.00	0.00	2.33
Surface Water	29.94	0.00	0.01	0.88	0.01	0.00	30.84
TOTALS	29.96	1.94	0.38	0.88	0.01	0.00	33.17

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Clayton County Water Authority—Shoal Creek	0.01	13.66
Clayton County Water Authority (water source located in Henry County)	0.00	16.28

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



Base modified from U.S. Geological Survey 1:100,000-scale digital data

WITHDRAWAL LOCATION FOR MAJOR USER  
 △ Surface water

# CLINCH COUNTY

Population: 6,996  
 Population served by public supply: 3,310  
 Acres irrigated: 980  
 Hydroelectric use (Mgal/d): 0.00



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

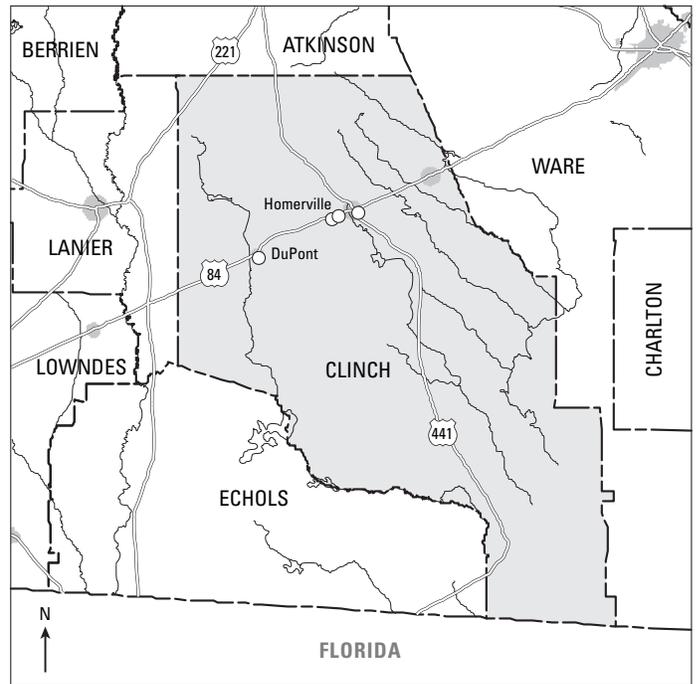
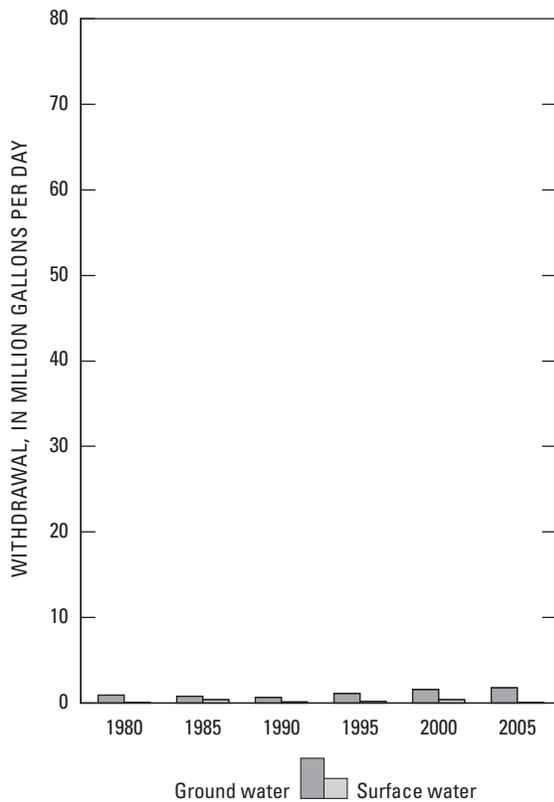
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.49	0.28	0.04	0.25	0.74	0.00	1.80
Surface Water	0.00	0.00	0.00	0.06	0.02	0.00	0.08
<b>TOTALS</b>	<b>0.49</b>	<b>0.28</b>	<b>0.04</b>	<b>0.31</b>	<b>0.76</b>	<b>0.00</b>	<b>1.88</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Town of DuPont	0.01	0.00
City of Homerville	0.48	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



Base modified from U.S. Geological Survey 1:100,000-scale digital data

**WITHDRAWAL LOCATION FOR MAJOR USER**

○ Ground water

## COBB COUNTY

Population: 663,818  
 Population served by public supply: 650,540  
 Acres irrigated: 2,100  
 Hydroelectric use (Mgal/d): 0.00



### 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

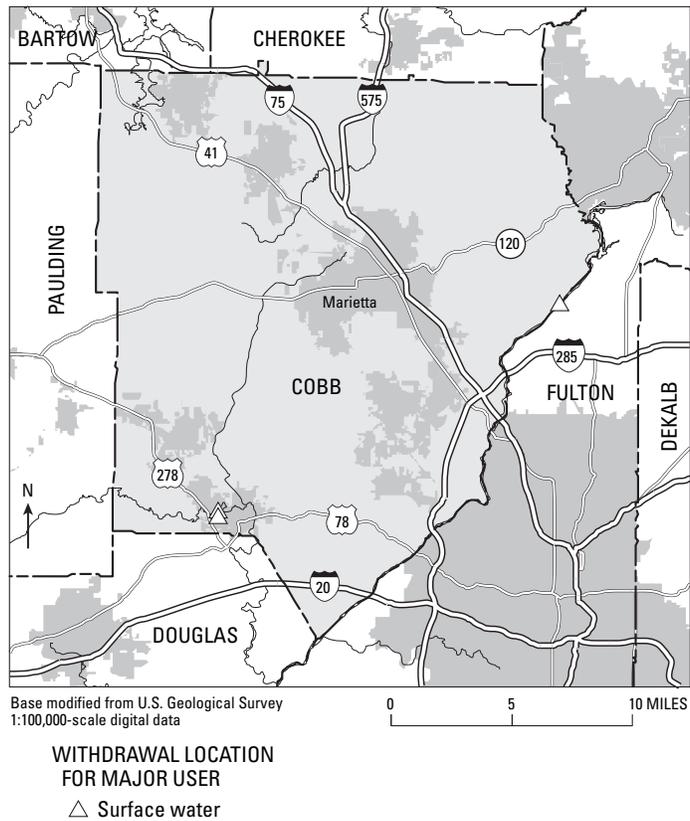
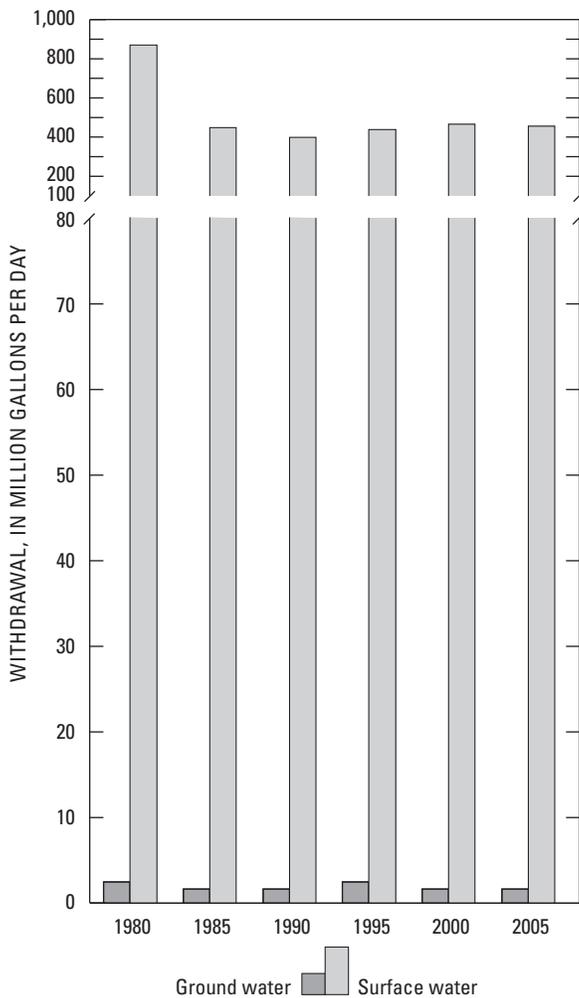
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.00	1.00	0.80	0.02	0.01	0.00	1.83
Surface Water	91.36	0.00	0.37	2.91	0.02	362.58	457.24
<b>TOTALS</b>	<b>91.36</b>	<b>1.00</b>	<b>1.17</b>	<b>2.93</b>	<b>0.03</b>	<b>362.58</b>	<b>459.07</b>

#### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Cobb County–Marietta Water Authority	0.00	46.95
Cobb County–Marietta Water Authority (water source located in Bartow County)	0.00	44.42

#### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
26 - Paper	0.00	0.36



# COFFEE COUNTY

Population: 39,674  
 Population served by public supply: 17,900  
 Acres irrigated: 22,690  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

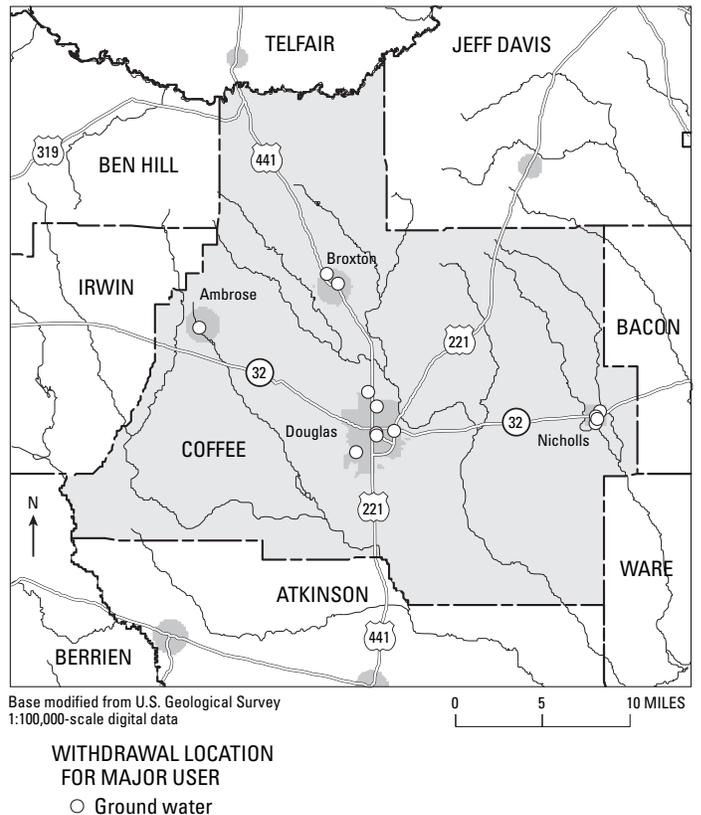
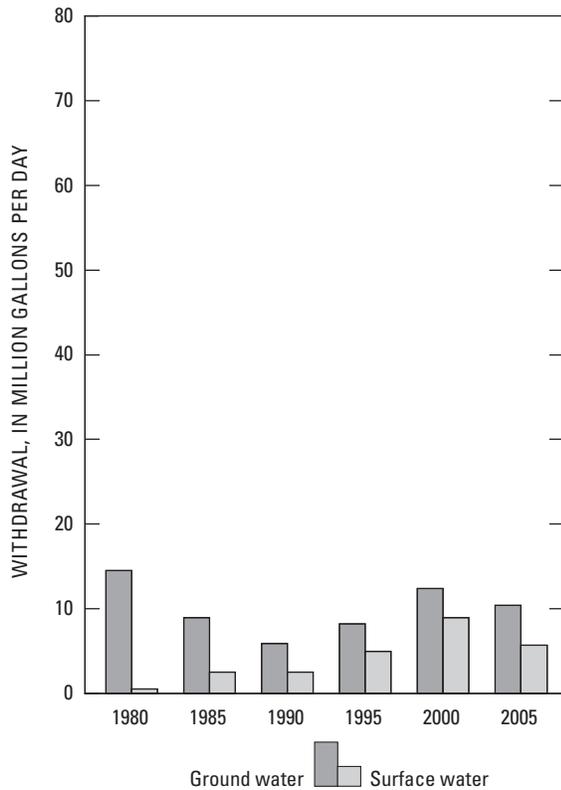
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	4.68	1.63	0.00	4.05	0.07	0.00	10.43
Surface Water	0.00	0.00	0.00	5.10	0.60	0.00	5.70
TOTALS	4.68	1.63	0.00	9.15	0.67	0.00	16.13

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
City of Ambrose	0.03	0.00
City of Broxton	0.00	0.00
City of Douglas	4.04	0.00
City of Nicholls	0.29	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



## COLQUITT COUNTY

Population: 43,915  
 Population served by public supply: 24,260  
 Acres irrigated: 46,100  
 Hydroelectric use (Mgal/d): 0.00



### 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

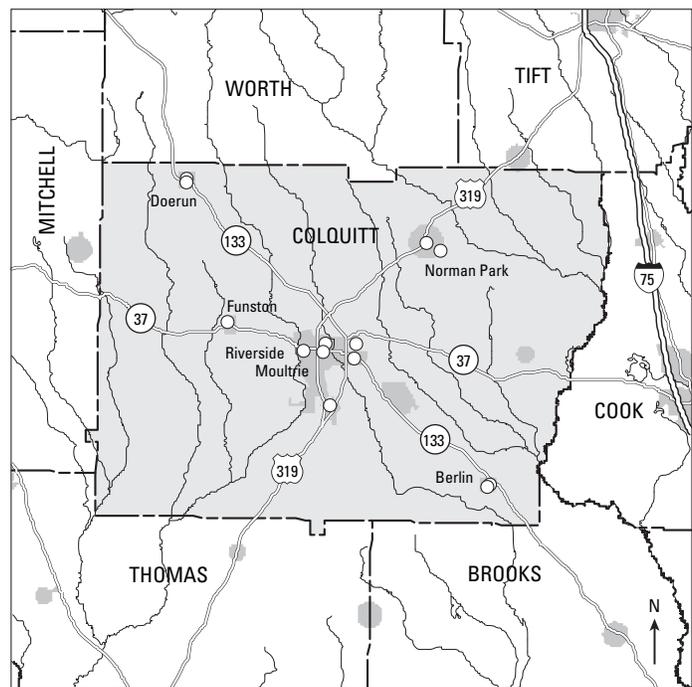
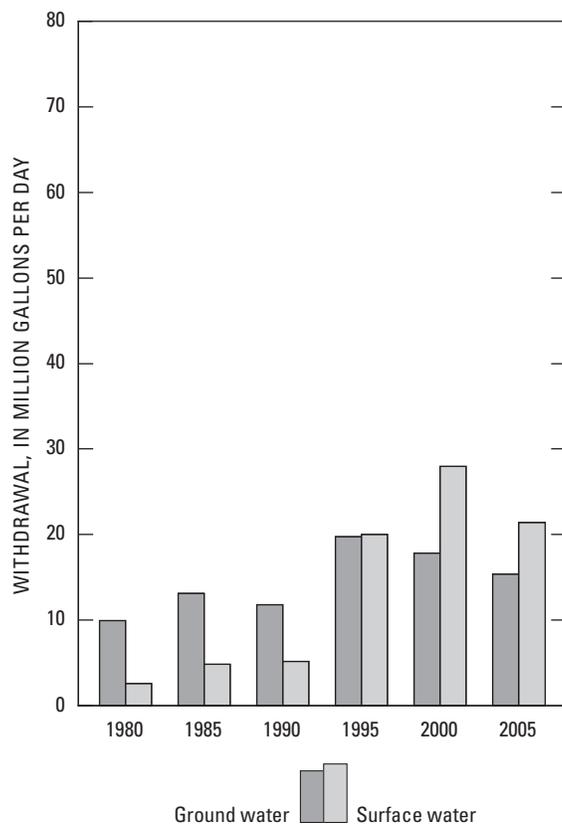
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	3.84	1.47	0.33	9.65	0.07	0.00	15.36
Surface Water	0.00	0.00	0.00	21.11	0.28	0.00	21.39
<b>TOTALS</b>	<b>3.84</b>	<b>1.47</b>	<b>0.33</b>	<b>30.76</b>	<b>0.35</b>	<b>0.00</b>	<b>36.75</b>

#### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Town of Berlin	0.04	0.00
City of Doerun	0.08	0.00
City of Ellenton	0.03	0.00
Town of Funston	0.03	0.00
City of Moultrie	3.33	0.00
Town of Norman Park	0.00	0.00
Town of Riverside	0.07	0.00

#### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
20 - Food	0.32	0.00



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

WITHDRAWAL LOCATION FOR MAJOR USER  
 ○ Ground water

# COLUMBIA COUNTY

Population: 103,812  
 Population served by public supply: 90,710  
 Acres irrigated: 480  
 Hydroelectric use (Mgal/d): 3,855.20



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

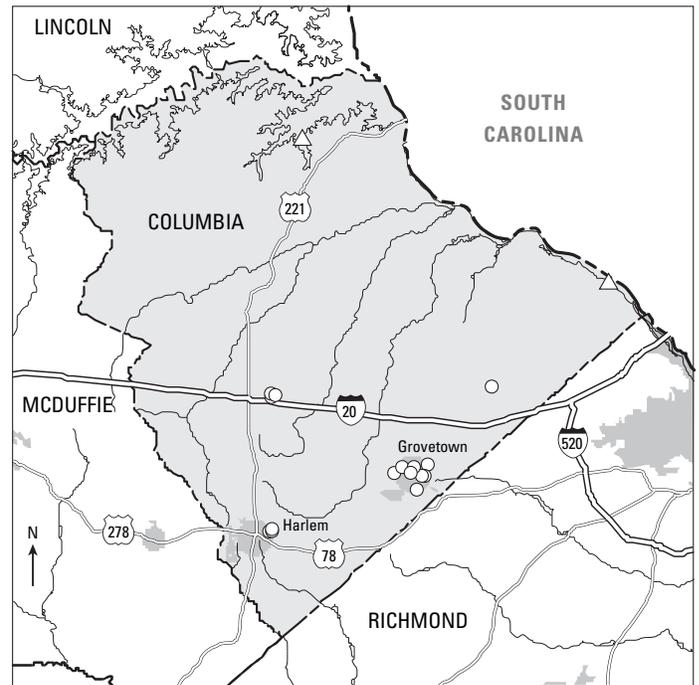
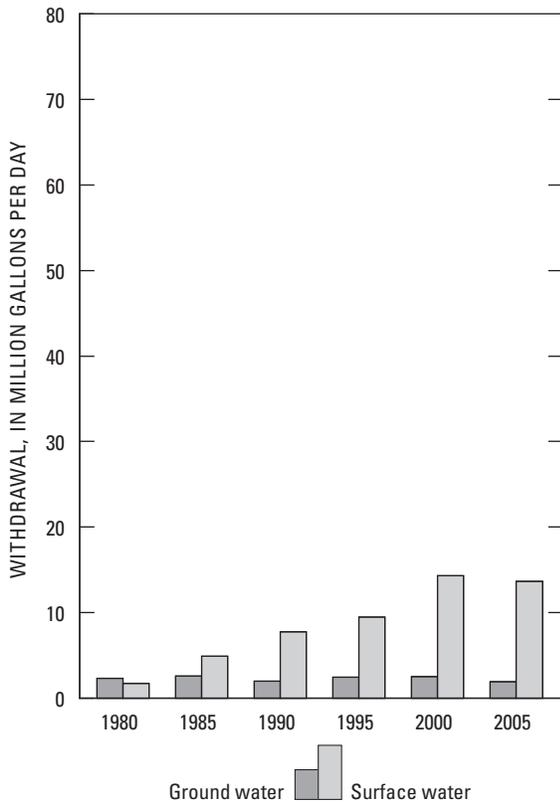
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.18	0.98	0.88	0.13	0.00	0.00	2.17
Surface Water	12.37	0.00	0.01	1.00	0.03	0.00	13.41
TOTALS	12.55	0.98	0.89	1.13	0.03	0.00	15.58

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Columbia County Water System	0.00	12.37
City of Grovetown	0.13	0.00
City of Harlem	0.02	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
20 - Food	0.07	0.00



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

0 2 4 6 MILES

WITHDRAWAL LOCATION FOR MAJOR USER  
 ○ Ground water  
 △ Surface water

## COOK COUNTY

Population: 16,366  
 Population served by public supply: 9,110  
 Acres irrigated: 18,150  
 Hydroelectric use (Mgal/d): 0.00



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

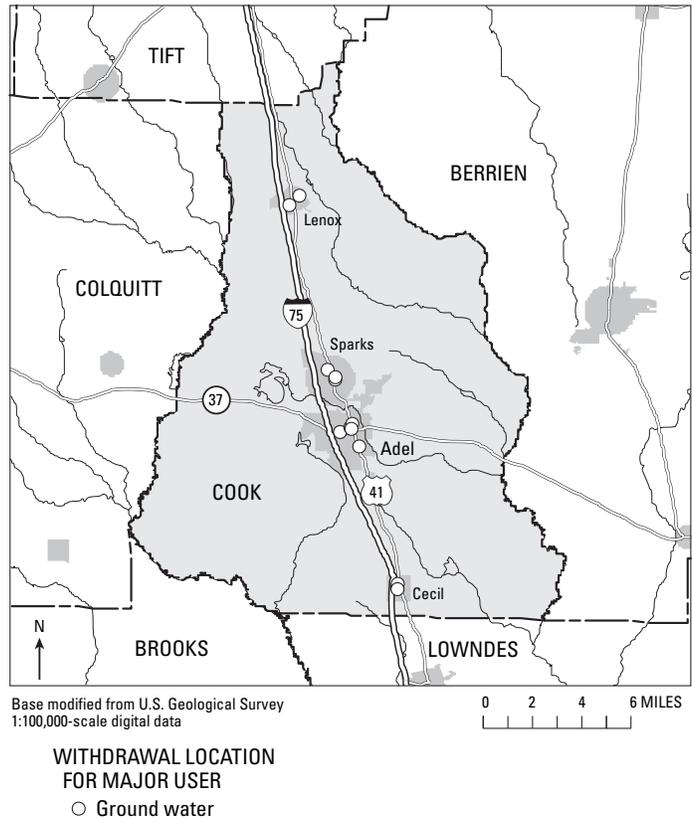
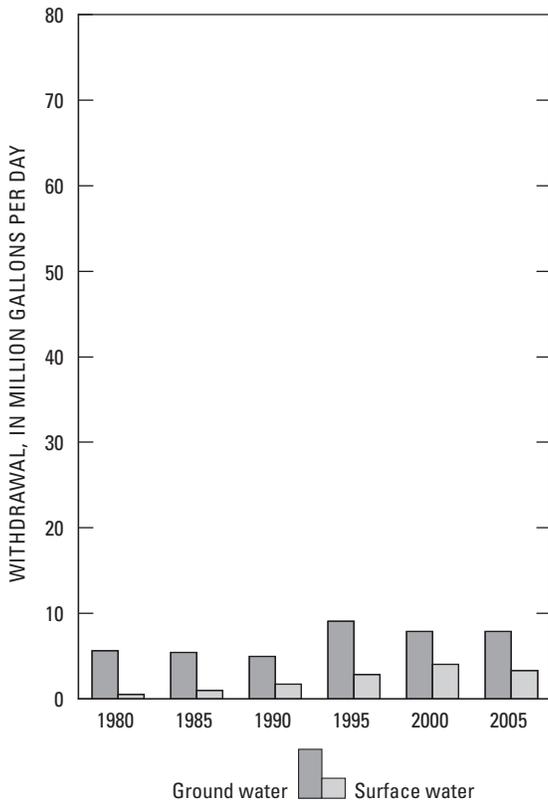
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	2.09	0.54	0.17	5.10	0.01	0.00	7.91
Surface Water	0.00	0.00	0.00	3.18	0.04	0.00	3.22
<b>TOTALS</b>	<b>2.09</b>	<b>0.54</b>	<b>0.17</b>	<b>8.28</b>	<b>0.05</b>	<b>0.00</b>	<b>11.13</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
City of Adel	1.53	0.00
Town of Cecil	0.03	0.00
Town of Lenox	0.08	0.00
Town of Sparks	0.38	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



# COWETA COUNTY

Population: 109,903  
 Population served by public supply: 104,330  
 Acres irrigated: 1,180  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

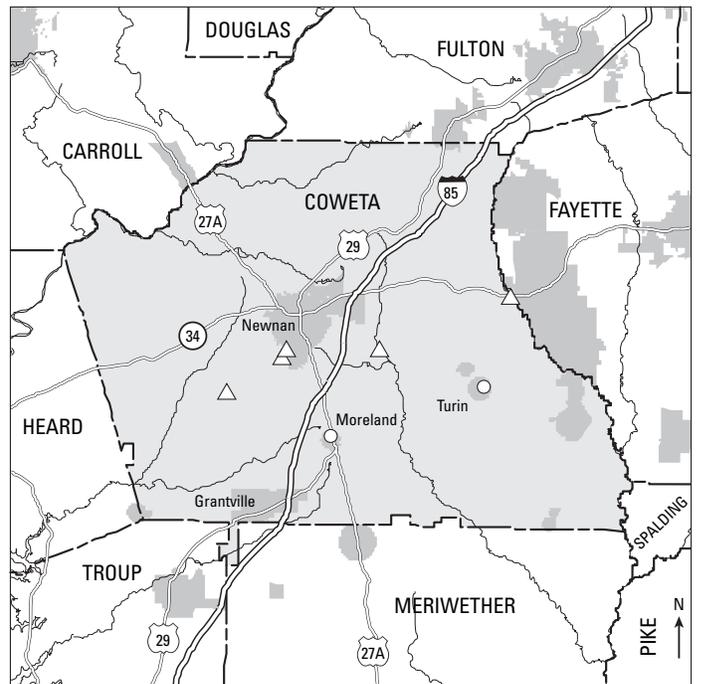
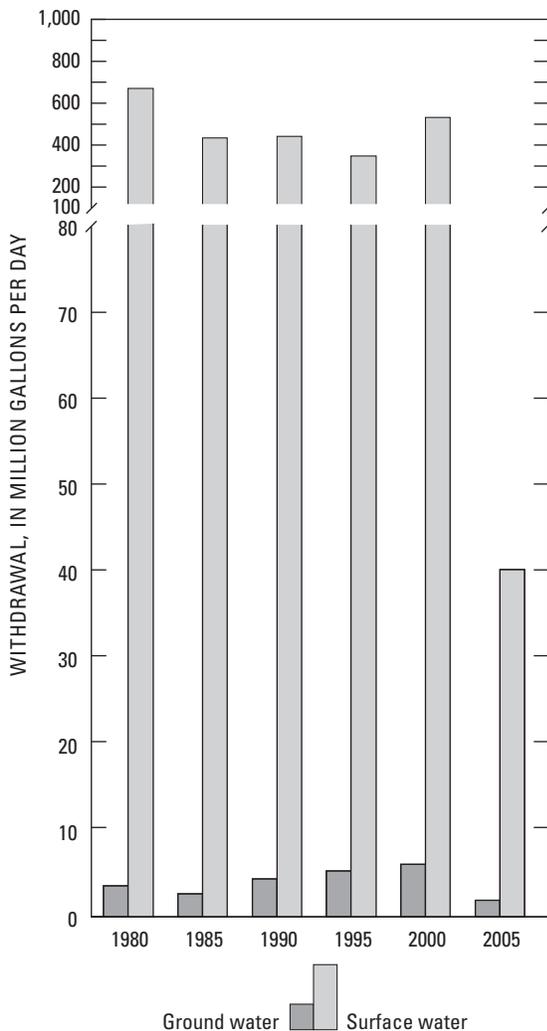
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	1.04	0.52	0.28	0.00	0.00	0.00	1.84
Surface Water	7.15	0.00	0.00	2.33	0.11	31.08	40.67
<b>TOTALS</b>	<b>8.19</b>	<b>0.52</b>	<b>0.28</b>	<b>2.33</b>	<b>0.11</b>	<b>31.08</b>	<b>42.51</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Town of Moreland	0.03	0.00
City of Newnan	0.00	6.92
Town of Turin	0.04	0.00
Coweta County Water System	0.69	0.00
City of Senoia	0.00	0.23

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

### WITHDRAWAL LOCATION FOR MAJOR USER

- Ground water
- △ Surface water



## CRAWFORD COUNTY

Population: 12,874  
 Population served by public supply: 2,760  
 Acres irrigated: 3,170  
 Hydroelectric use (Mgal/d): 0.00



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

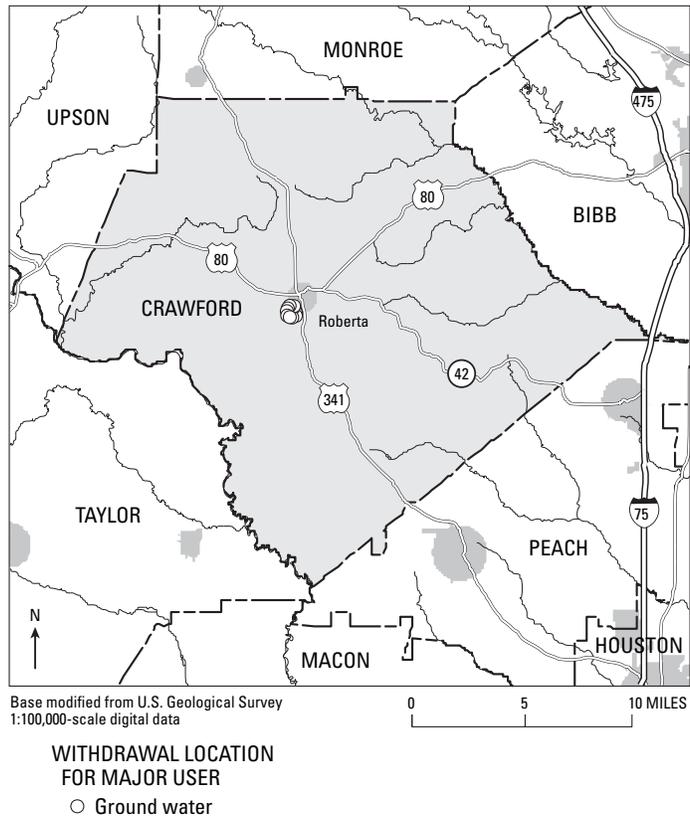
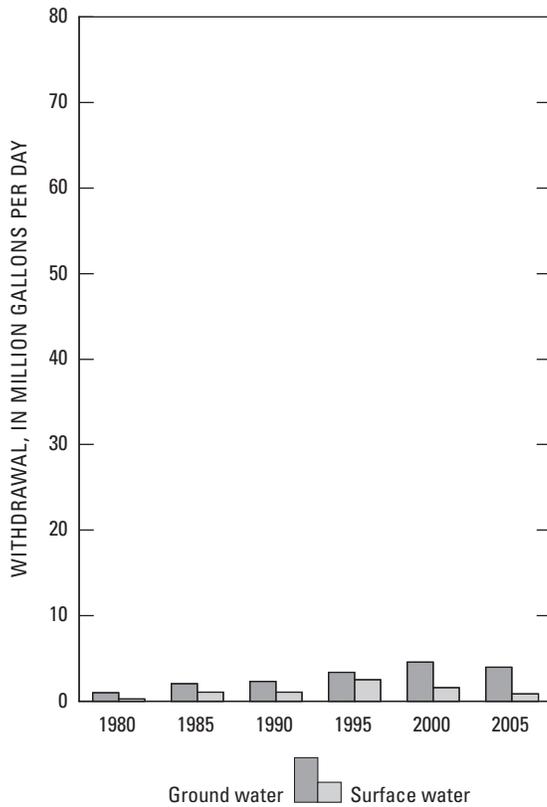
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.28	0.76	0.43	2.65	0.00	0.00	4.12
Surface Water	0.00	0.00	0.01	0.57	0.17	0.00	0.75
<b>TOTALS</b>	<b>0.28</b>	<b>0.76</b>	<b>0.44</b>	<b>3.22</b>	<b>0.17</b>	<b>0.00</b>	<b>4.87</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
City of Roberta	0.16	0.00
Crawford County Board of Commissioners	0.12	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



# CRISP COUNTY

Population: 22,017  
 Population served by public supply: 17,170  
 Acres irrigated: 29,070  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

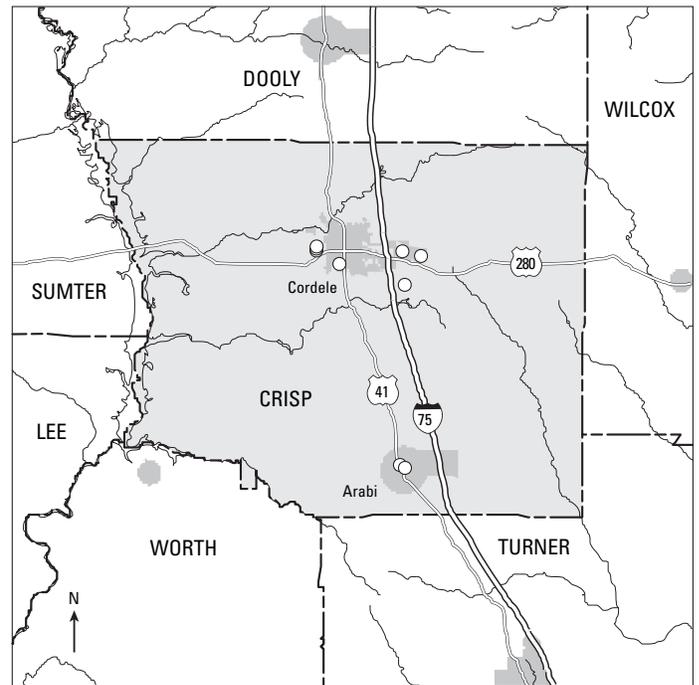
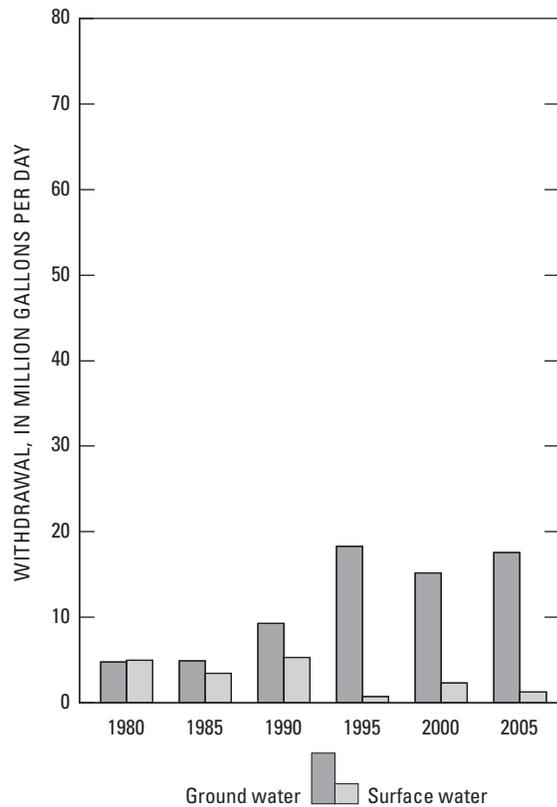
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	2.10	0.36	0.07	15.00	0.02	0.00	17.55
Surface Water	0.00	0.00	0.00	1.20	0.05	0.00	1.25
<b>TOTALS</b>	<b>2.10</b>	<b>0.36</b>	<b>0.07</b>	<b>16.20</b>	<b>0.07</b>	<b>0.00</b>	<b>18.80</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Town of Arabi	0.02	0.00
City of Cordele	1.79	0.00
Crisp County Waterworks	0.21	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
26 - Paper	0.07	0.00



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

WITHDRAWAL LOCATION FOR MAJOR USER  
 ○ Ground water

## DADE COUNTY

Population: 16,040  
 Population served by public supply: 16,000  
 Acres irrigated: 320  
 Hydroelectric use (Mgal/d): 0.00



2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

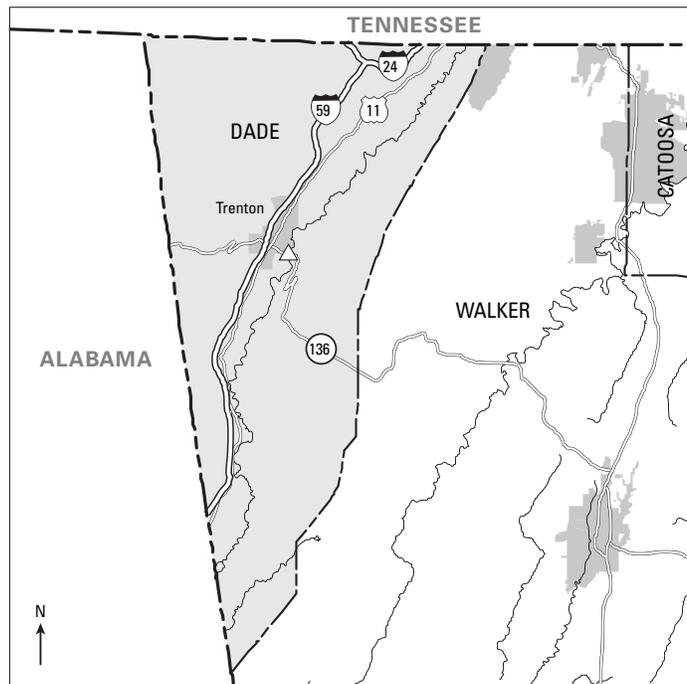
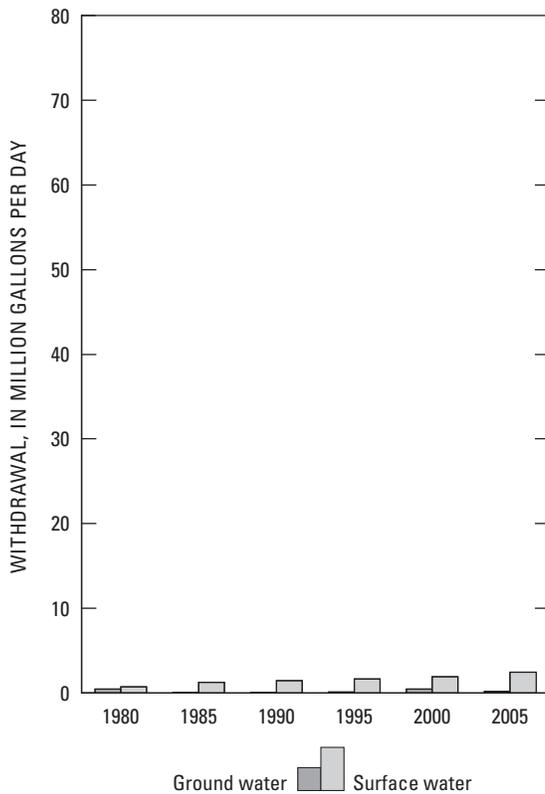
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.00	0.00	0.00	0.15	0.01	0.00	0.16
Surface Water	2.35	0.00	0.00	0.31	0.08	0.00	2.74
TOTALS	2.35	0.00	0.00	0.46	0.09	0.00	2.90

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Dade Water System	0.00	2.35

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

WITHDRAWAL LOCATION FOR MAJOR USER  
 △ Surface water

# DAWSON COUNTY

Population: 19,731  
 Population served by public supply: 13,340  
 Acres irrigated: 290  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

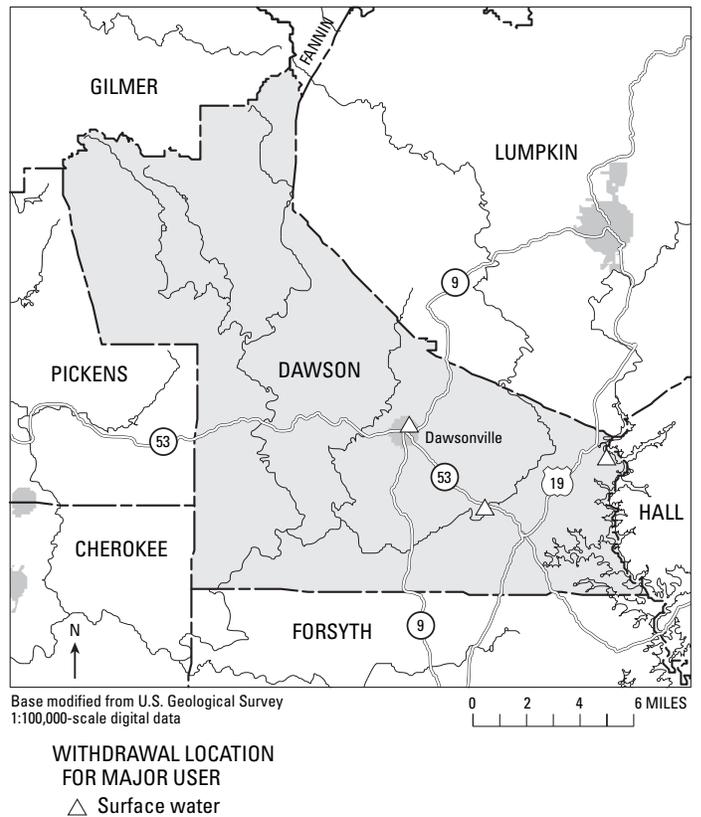
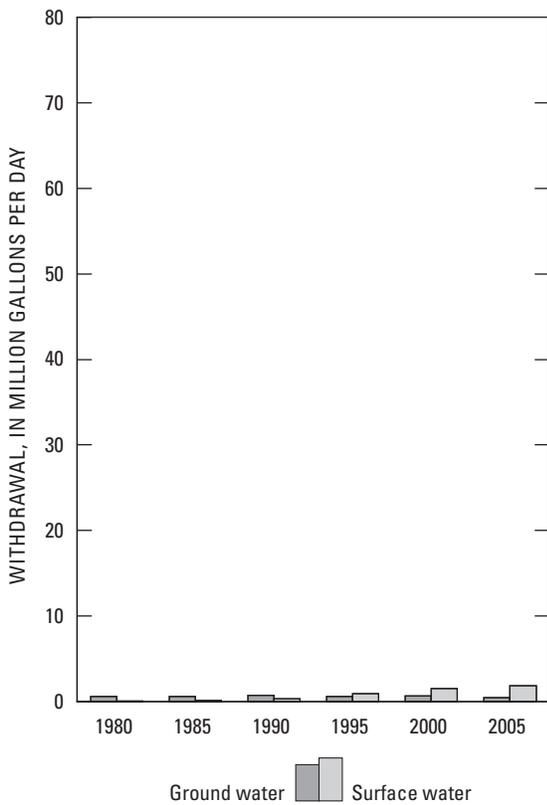
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.00	0.48	0.00	0.00	0.00	0.00	0.48
Surface Water	1.60	0.00	0.00	0.39	0.24	0.00	2.23
<b>TOTALS</b>	<b>1.60</b>	<b>0.48</b>	<b>0.00</b>	<b>0.39</b>	<b>0.24</b>	<b>0.00</b>	<b>2.71</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Etowah Water & Sewer Authority	0.00	1.50
Town of Dawsonville	0.00	0.10

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



## DECATUR COUNTY

Population: 28,618  
 Population served by public supply: 14,390  
 Acres irrigated: 65,000  
 Hydroelectric use (Mgal/d): 0.00



2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

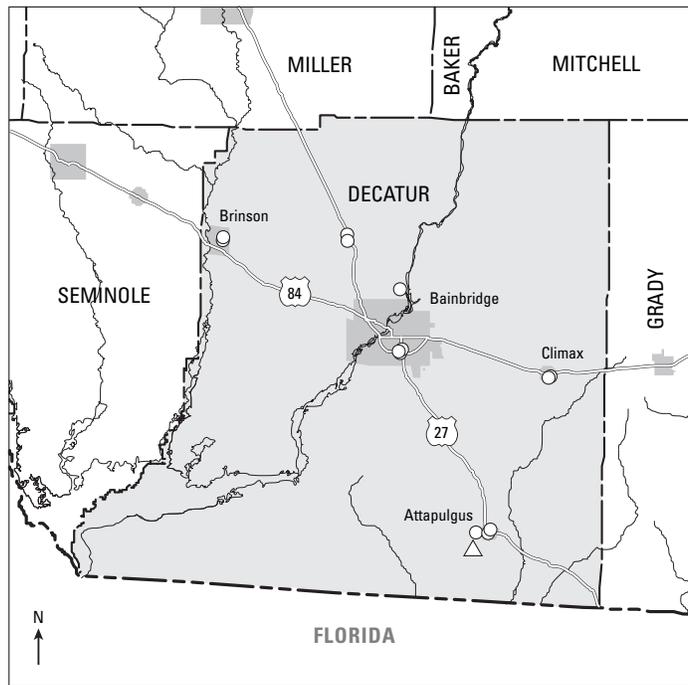
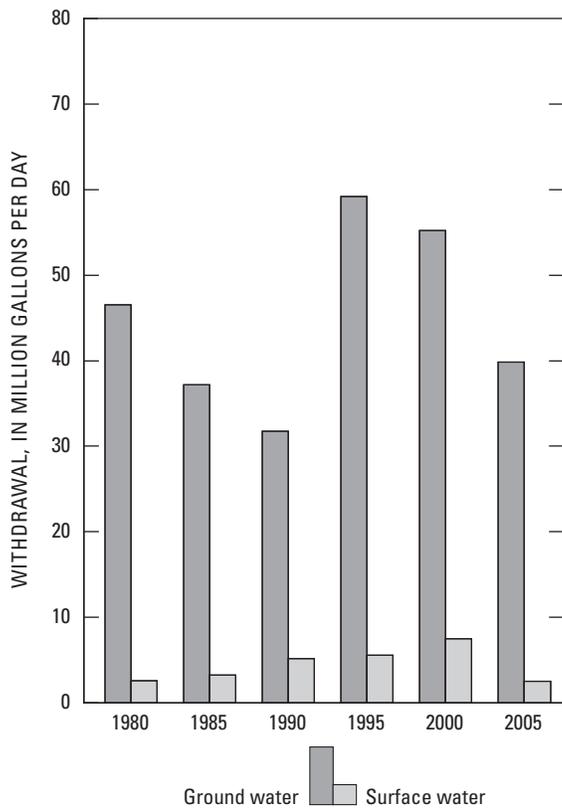
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	2.87	1.45	0.60	34.79	0.16	0.00	39.87
Surface Water	0.00	0.00	0.54	1.85	0.07	0.00	2.46
TOTALS	2.87	1.45	1.14	36.64	0.23	0.00	42.33

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Town of Attapulugus	0.06	0.00
City of Bainbridge	2.69	0.00
Town of Brinson	0.02	0.00
Town of Climax	0.03	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
22 - Textiles	0.30	0.00
32 - Stone, clay	0.05	0.54



Base modified from U.S. Geological Survey 1:100,000-scale digital data

**WITHDRAWAL LOCATION FOR MAJOR USER**

- Ground water
- △ Surface water

# DEKALB COUNTY

Population: 677,959  
 Population served by public supply: 637,280  
 Acres irrigated: 1,180  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

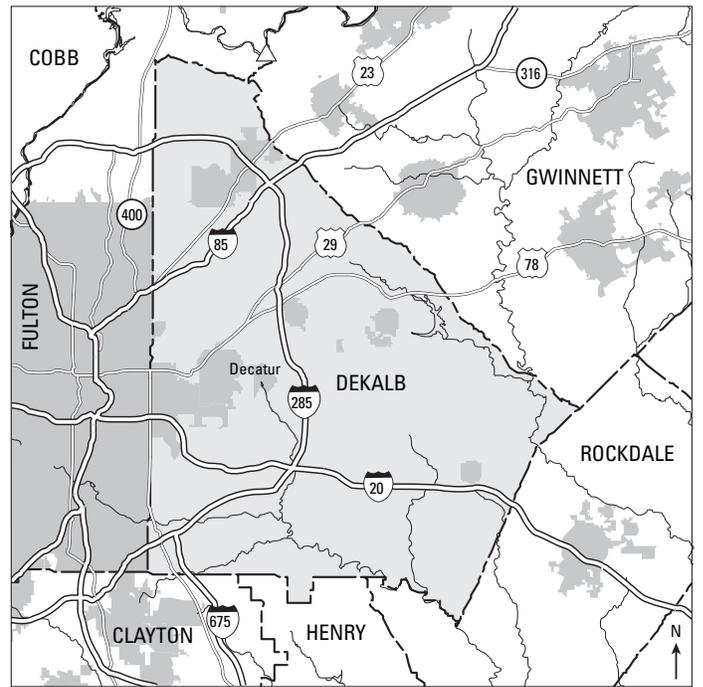
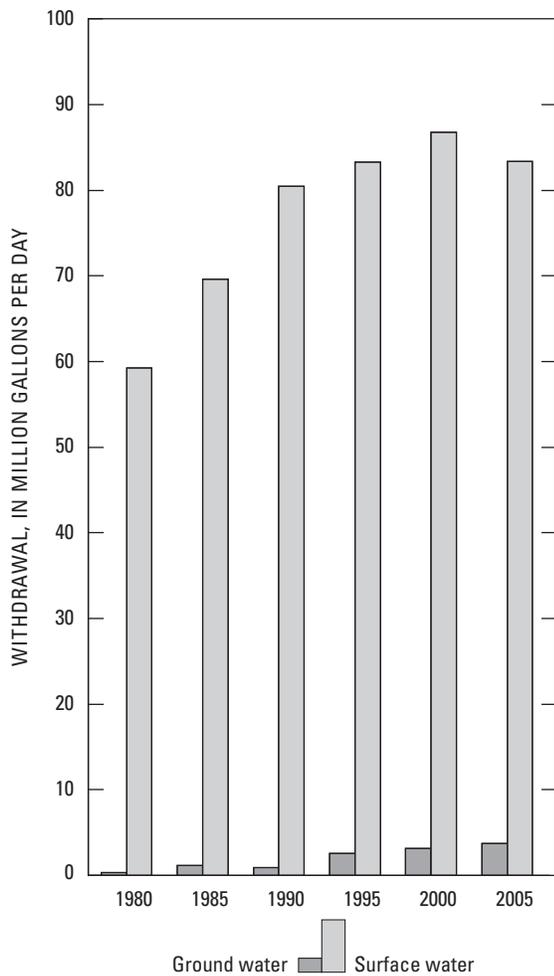
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.00	3.05	0.96	0.00	0.00	0.00	4.01
Surface Water	83.05	0.00	0.01	1.77	0.00	0.00	84.83
<b>TOTALS</b>	<b>83.05</b>	<b>3.05</b>	<b>0.97</b>	<b>1.77</b>	<b>0.00</b>	<b>0.00</b>	<b>88.84</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
DeKalb County Water System	0.00	83.05

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



Base modified from U.S. Geological Survey  
 1:100,000-scale digital data

### WITHDRAWAL LOCATION FOR MAJOR USER

△ Surface water

## DODGE COUNTY

Population: 19,574  
 Population served by public supply: 7,330  
 Acres irrigated: 22,530  
 Hydroelectric use (Mgal/d): 0.00



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

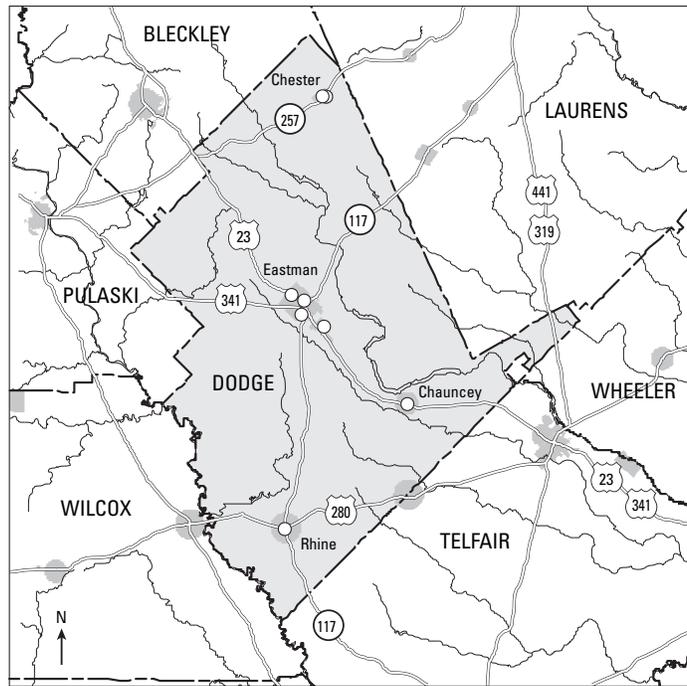
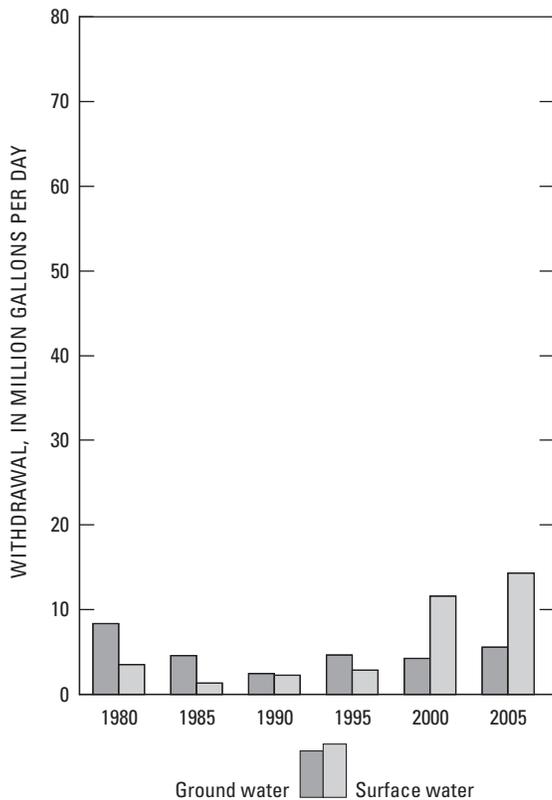
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.72	0.92	0.00	3.20	0.75	0.00	5.59
Surface Water	0.00	0.00	0.00	14.24	0.10	0.00	14.34
<b>TOTALS</b>	<b>0.72</b>	<b>0.92</b>	<b>0.00</b>	<b>17.44</b>	<b>0.85</b>	<b>0.00</b>	<b>19.93</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
Town of Chauncey	0.03	0.00
Town of Chester	0.08	0.00
City of Eastman	0.58	0.00
Town of Rhine	0.03	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
None		



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**WITHDRAWAL LOCATION FOR MAJOR USER**

○ Ground water

# DOOLY COUNTY

Population: 11,749  
 Population served by public supply: 7,740  
 Acres irrigated: 44,500  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

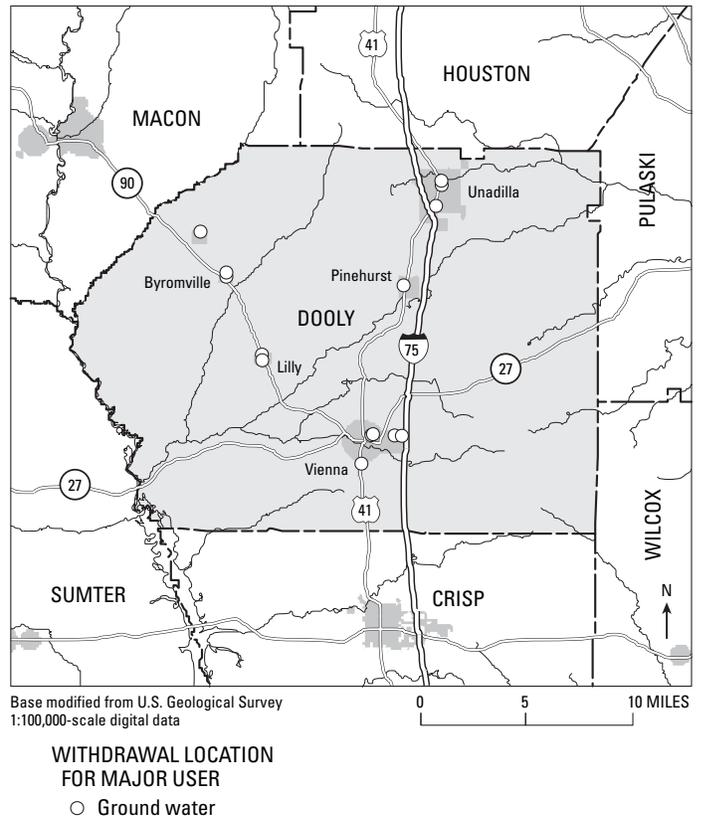
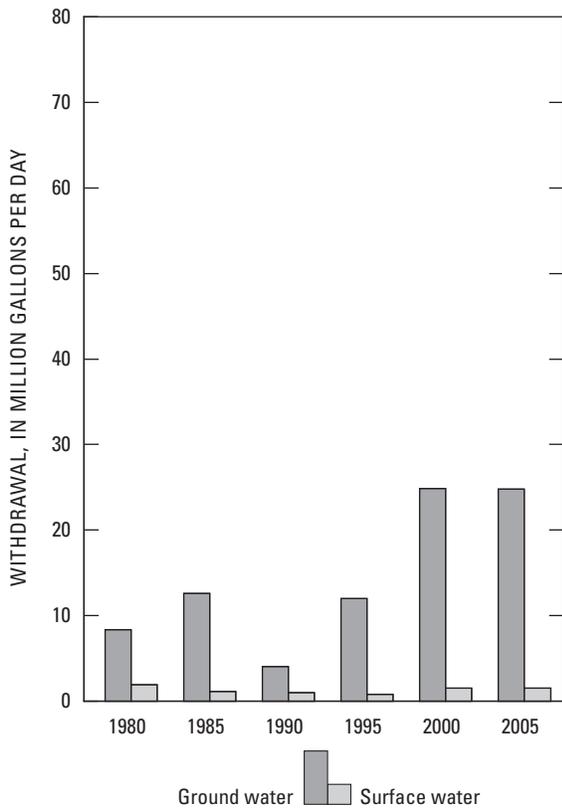
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	2.21	0.30	0.00	22.25	0.03	0.00	24.79
Surface Water	0.00	0.00	0.00	1.34	0.16	0.00	1.50
TOTALS	2.21	0.30	0.00	23.59	0.19	0.00	26.29

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Town of Byromville	0.03	0.00
Town of Lilly	0.02	0.00
City of Pinehurst	0.03	0.00
City of Unadilla	0.52	0.00
City of Vienna	1.59	0.00

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		



## DOUGHERTY COUNTY

Population: 94,882  
 Population served by public supply: 91,170  
 Acres irrigated: 23,350  
 Hydroelectric use (Mgal/d): 1,000.32



**2005 WITHDRAWALS, IN MILLION GALLONS PER DAY**

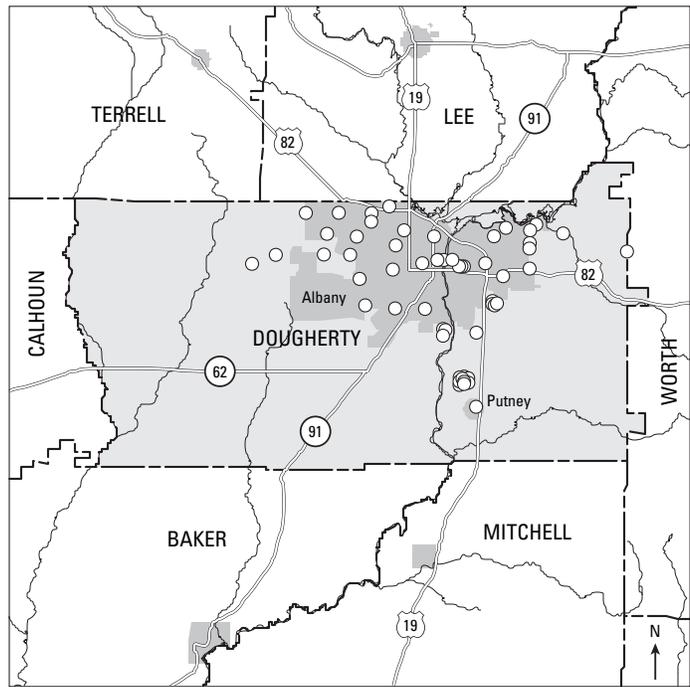
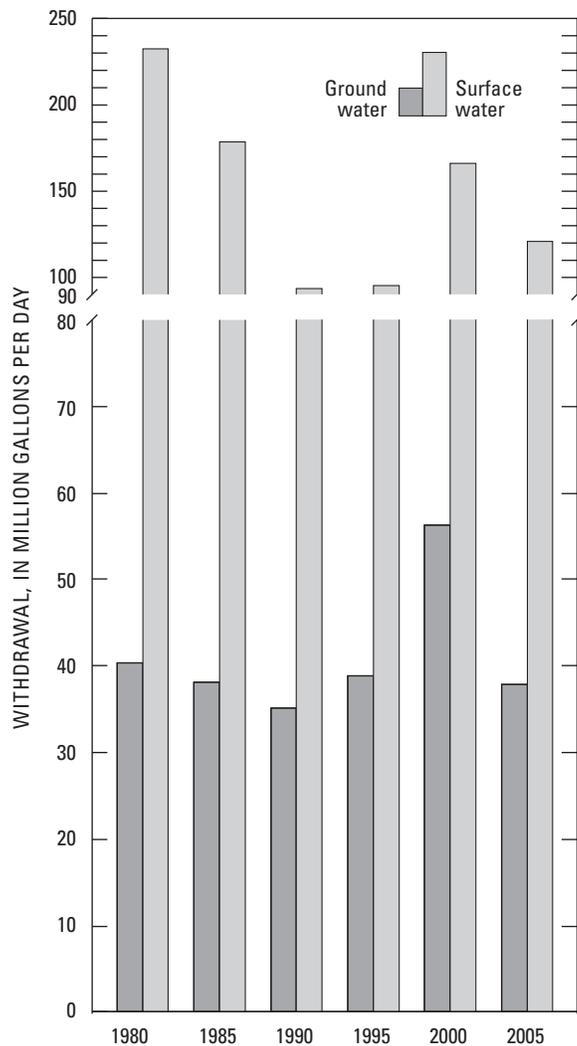
	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	13.73	0.90	13.62	9.48	0.02	0.05	37.80
Surface Water	0.00	0.00	0.00	1.49	0.01	120.09	121.59
<b>TOTALS</b>	<b>13.73</b>	<b>0.90</b>	<b>13.62</b>	<b>10.97</b>	<b>0.03</b>	<b>120.14</b>	<b>159.39</b>

**Withdrawals by Major Public Suppliers (Mgal/d):**

Name	GW	SW
City of Albany	13.33	0.00
Putney Water System	0.02	0.00

**Withdrawals by Major Industrial Groups (Mgal/d):**

SIC	GW	SW
20 - Food	2.19	0.00
26 - Paper	6.64	0.00
28 - Chemicals	4.61	0.00
30 - Rubber	0.10	0.00
32 - Stone, clay	0.04	0.00



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 1:100,000-scale digital data

**WITHDRAWAL LOCATION FOR MAJOR USER**

- Ground water

# DOUGLAS COUNTY

Population: 112,760  
 Population served by public supply: 73,820  
 Acres irrigated: 1,500  
 Hydroelectric use (Mgal/d): 0.00



## 2005 WITHDRAWALS, IN MILLION GALLONS PER DAY

	Public Supply	Domestic & Commercial	Industrial & Mining	Irrigation	Livestock	Thermo-electric	Totals
Ground Water	0.06	2.92	0.93	0.00	0.01	0.00	3.92
Surface Water	12.33	0.00	0.01	1.77	0.02	0.00	14.13
<b>TOTALS</b>	<b>12.39</b>	<b>2.92</b>	<b>0.94</b>	<b>1.77</b>	<b>0.03</b>	<b>0.00</b>	<b>18.05</b>

### Withdrawals by Major Public Suppliers (Mgal/d):

Name	GW	SW
Douglasville–Douglas County Water & Sewer Authority	0.00	12.33

### Withdrawals by Major Industrial Groups (Mgal/d):

SIC	GW	SW
None		

