WATER USE IN GEORGIA, 1980-89

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REFERENCE: Proceedings of the 1991 Georgia Water Resources Conference, held March 19 and 20, 1991 at The University of Georgia. Kathryn J. Hatcher, Editor, Institute of Natural Resources, The University of Georgia, Athens, Georgia.

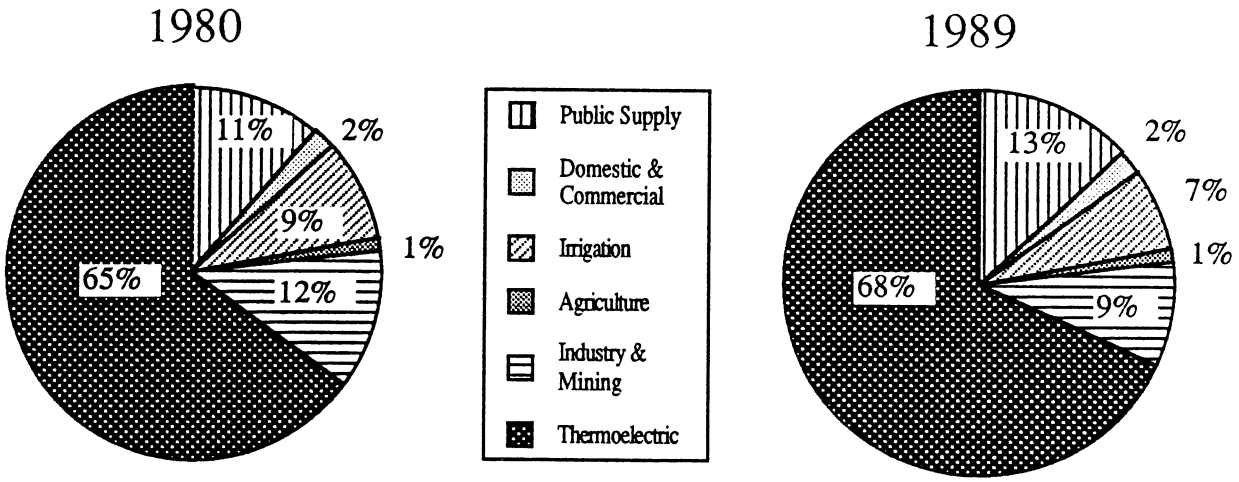
INTRODUCTION

The Georgia Water-Use Program compiles annual data on the principal water users in the State which include the following categories: public supply, industrial, irrigation, thermoelectric and hydroelectric use. Data also are collected for other water-use categories such as domestic, livestock, and commercial use. From these data, estimates of annual water use are made and tabulated for each county by category for both ground-water and surface-water sources.

WATER USE, 1980-89

Water use in Georgia during the eighties was affected by population increase, drought, and changes in water-use practices. From 1980 to 1989, the population increased 18 percent to 6.44 million people. Total offstream withdrawals increased from about 6,724 million gallons per day (Mgal/d) in 1980 to 7,038 Mgal/d in 1989. Instream water use for hydropower production decreased from 55,300 Mgal/d to 46,240 Mgal/d during the same 10-year period. The statewide offstream withdrawal for 1980 and 1989 is shown in Figure 1.

Water use in terms of category and source of supply varies across the State, depending on such things as available water sources, agricultural practices, population, and industrial/commercial-user needs. In northern Georgia, densely populated areas such as metropolitan Atlanta, depend heavily on surface water to supply water needs. Southern Georgia, much less densely populated and predominantly an agricultural area, relies on readily available ground water. The contrast in the 1989 water-use patterns between northern and southern Georgia can be seen in Figure 2. In Figure 3 the amount of water withdrawn for irrigation in southern Georgia is shown by county.



GW 1,140 Mgal/d
SW 5,584 Mgal/d
TOTAL 6,724 Mgal/d

Hydroelectric Use 54,900 Mgal/d

GW 941 Mgal/d
SW 6,097 Mgal/d
TOTAL 7,038 Mgal/d

Hydroelectric Use 46,240 Mgal/d

Figure 1. Total offstream withdrawals for 1980 and 1989.

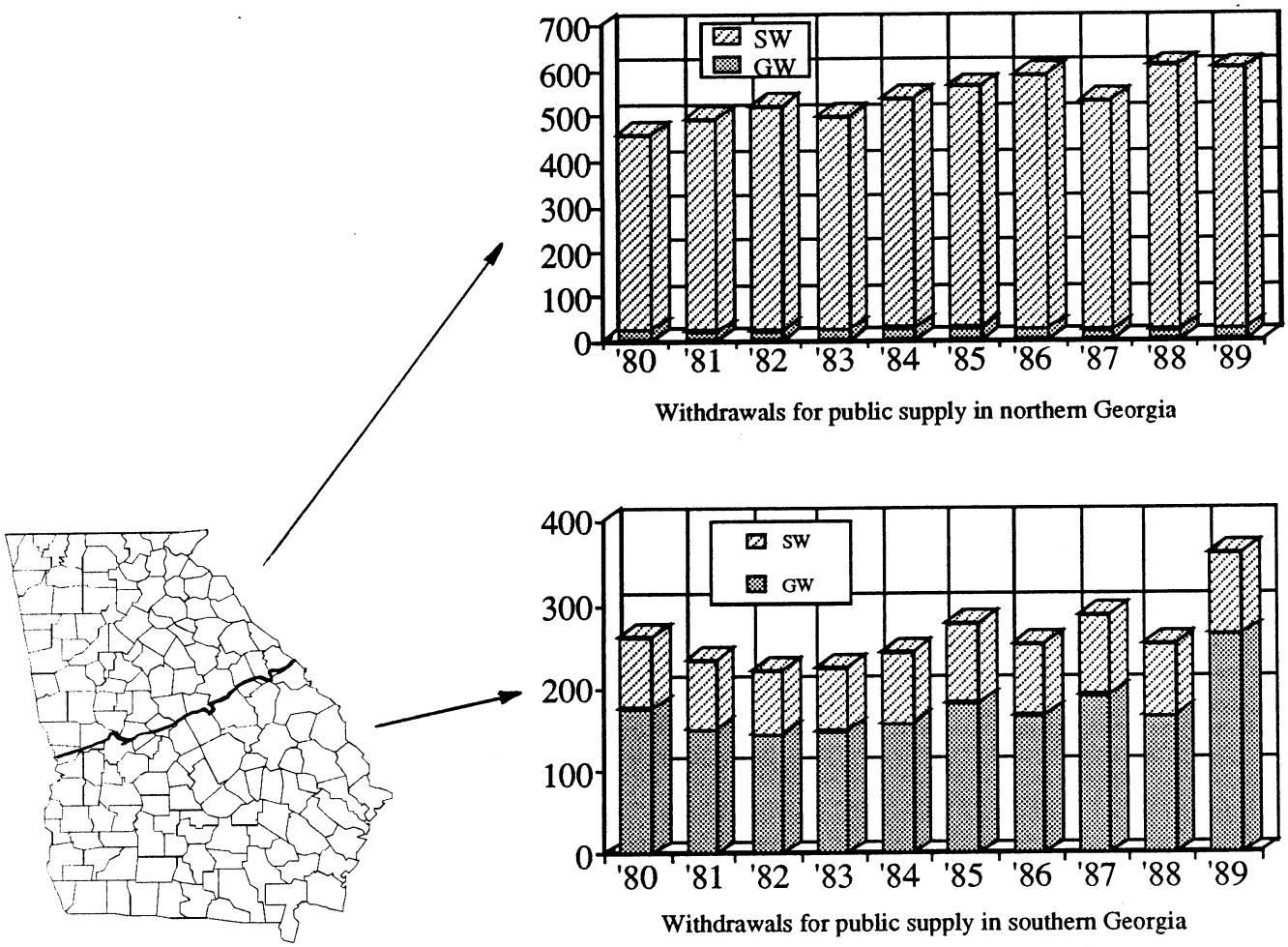


Figure 2. Withdrawals for public supply use in million gallons per day, 1980-89.

Public supply, domestic, and commercial

There was a gradual increase in public-supply withdrawals during the last decade. Withdrawal in 1980 was estimated at 773 Mgal/d and by 1989, had reached an estimated 904 Mgal/d, a 17 percent increase. Unlike public supply, withdrawal for domestic use actually decreased over the period to an estimated 108 Mgal/d in 1989. Commercial withdrawal was not determined in 1980; however, in 1989, commercial withdrawal was estimated at 26 Mgal/d.

Irrigation and agriculture

Irrigation withdrawal has continually increased since the fifties. In 1954, an estimated 21 Mgal/d was withdrawn statewide to irrigate about 24,000 acres. In 1980, there was an estimated 578 Mgal/d being withdrawn to irrigate 988,000 acres statewide. By 1989, there had been a 21 percent increase in acres irrigated to about 1.2 million and withdrawal estimated at 475 Mgal/d. Non-irrigation and withdrawal estimated at 475 Mgal/d. Non-irrigation agricultural withdrawal, which includes withdrawal for swine, cattle, horses, poultry and catfish farming, has dramatically increased over the last decade. Because of the surge of catfish farming in the early eighties, non-irrigation withdrawal nearly doubled from 27.9 Mgal/d in 1980 to 47.4 mgal/d in 1985. By 1989, withdrawal for agricultural uses were 49.6 Mgal/d, of which catfish farm withdrawal accounted for about 40 percent.

Industry and mining

The withdrawal for industry and mining declined during the eighties. This decrease may be due to efforts by industries to conserve and reuse water. The majority of mining withdrawal is for kaolin production, mostly for mine dewatering, and has remained nearly constant during the period. Industrial and mining withdrawal was estimated to be about 667 Mgal/d in 1989, a decrease of 24 percent from the 826 Mgal/d in 1980.

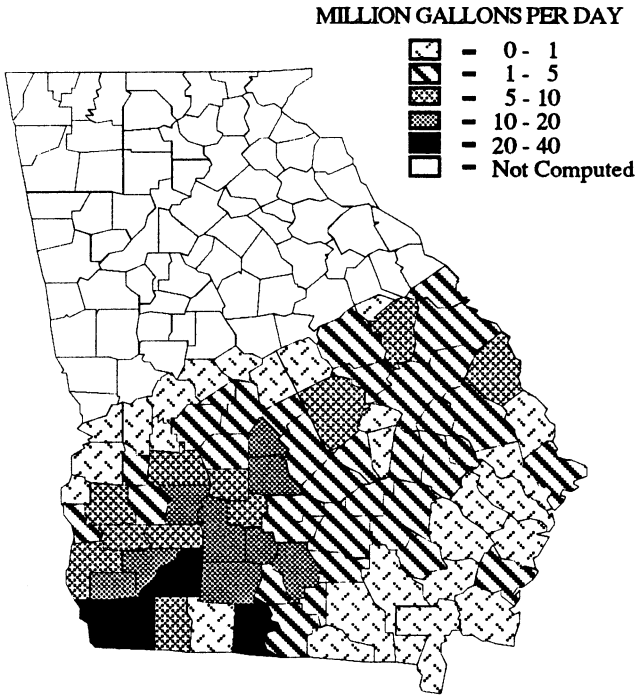


Figure 3. Withdrawal for irrigation in million gallons per day in 1989.

Thermoelectric and Hydroelectric

In Georgia, more water is used for electrical power generation than for all other activities combined. Almost all this water comes from surface-water sources. In 1989, about 4.8 billion gallons per day (Bgal/d) was withdrawn from streams for cooling purposes at 18 thermoelectric plants while about 46.2 Bgal/d was used instream for power production at 39 hydroelectric plants. The 1981 and 1986 droughts caused significant reductions in water used for power production. For instance, in 1981 only about 35.1 Bgal/d was used for power production compared to 58.4 Bgal/d in 1980.

SUMMARY

Water use in Georgia during the eighties was affected by population increase, drought, and changes in water-use practices. The total offstream withdrawals increased from 6,724 Mgal/d in 1980 to 7,038 Mgal/d in 1989. Instream water use for hydropower production actually decreased over the same 10-year period and estimated at 46,240 Mgal/d in 1989. The amount of withdrawals varied by user. Offstream withdrawals for public supply, commercial, irrigation, and agriculture increased from 1980 to 1989, while withdrawals for domestic, industry, mining, and thermoelectric power decreased.

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