

Status of Georgia Water Use

Since 1950, the United States Geological Survey (USGS) has prepared national estimates of water use every five years. The first Georgia-specific surveys were conducted in 1970 and published in 1974. In a joint venture with the Georgia Geologic Survey (GGS) the USGS began in 1978 the Georgia Water-Use Data Collection Project (USGS 1982) that has evolved into the became the Water Use in Georgia report that details water use by county and also describes trends in water use data (Fanning 2003). The latest report was released in 2003 and compiles information from the year 2000. The data used for this national report is gathered primarily from EPD water withdrawal permit files, along with other sources such as the Cooperative Extension Service, power companies and mail surveys (Fanning 2003).

Most of the data used in this phase of the planning process originates from EPD Watershed Protection Branch, Water Withdrawal Permitting Unit. Information to be discussed regarding major water users represents water withdrawals from 2004, the most recent data available to state officials. Water use is inevitably affected by climatic and weather conditions. The year 2004, by many respects, was a wet year. Comparing the USGS Water Use Report from 2000, a year of intense drought, and the water use data from 2004 we can begin to see the broad and variable spectrum of water use trends in Georgia.

Throughout this report, we will describe water use and permitted capacity of use. Water use is the reported total of water used by a particular sector and is reported in million gallons per day (MGD). Data is reported annually and semiannually by those entities that hold water withdrawal and/or drinking water permits (see Summary of conservation-oriented statutes, rules and policies). Permitted capacity is the total amount of water use allowed by a sector or an individual withdrawal permit holder.

The water use sectors that will be referenced throughout the planning process are the same sectors categorized by the USGS. Descriptions of these sectors are offered below. Supplemental information and detailed data is available and will be summarized and provided for discussion at public meetings.

Sector specific information*

USGS divides water use into two major categories offstream use and instream use. Offstream uses include water withdrawn or diverted from a source and transported to a place of use. Offstream uses include public supply, commercial, industrial, mining, irrigation, and thermoelectric power. Instream uses are defined

* Definitions for sector specific water use groups comes from the 2000 USGS Water Use Report (Fanning 2003).

as those that occur within a stream. In Georgia, the only recognized and reported instream use is hydroelectric power generation.

Public Supply - public and private water suppliers who deliver water to residential customers and a variety of other purposes (including domestic, commercial, and industrial).

- To be considered for the public supply water use sector, a provider must serve at least 25 people, or have at least 15 hookups.
- Public supply in Georgia has steadily increased over the past twenty years.
- In 1980 public supply water use was estimated at 717.86 MGD (Pierce et al 1982).
- In 2000, estimated public supply use was 1,246 MGD (Fanning 2003).
- The largest and fastest growing water use sector in the state.

Domestic and Commercial - self-supplied water for residential purposes and occurs mostly in rural areas of the state.

- Commercial users are businesses, such as restaurants, hotels, and retail stores, large enough to require their own permit.
- Both user groups in this category are self-supplied and represent a relatively small portion of the water used in Georgia.

Industrial and Mining – self-supplied water use group for industrial purposes such as fabrication, processing, washing, and cooling.

- The largest industrial water user is the pulp and paper mills (concentrated on the Georgia Coast), textile industries (in Northwest Georgia), chemical manufactures and mining and mineral operations.
- In 2000, industrial and mining water use is estimated at 662.06 (Fanning 2003)
- In 2004 industrial water use is reported to be 428 MGD.
- Total permitted capacity of industrial and mining operations totals about 1,000 MGD (EPDa 2005).

Agricultural Irrigation - water used for crops, larger nurseries, athletic fields, and golf courses.

- Estimates conducted for the USGS study indicate that water used for irrigation in 2000 was about 1,100 MGD or 1.1 billion gallons of water per day.
- Detailed data about agricultural water use, and used to inform advisory committee discussion, is gathered from the 2005 UGA NESPAL *Ag Water Pumping* report (Hook et al. 2005). This report provides a statistically valid estimation of agricultural irrigation water use in the state from the years 1999 – 2004. Information collected and reported from this source is appropriated noted.
- Golf course water users in most areas of the state are considered agricultural water users and are not required to regularly report water user to EPD. Only in the Upper Chattahoochee River Basin and in three counties on the

Georgia Coast are self-supplied golf course water users required to obtain a permit similar to the municipal and industrial water use sectors.

Golf Courses – self supplied water used for irrigation on golf courses.

- Golf courses are only required to obtain non-farm water use permits if they use more than 100,000 gallons of water a day and are located upstream of Peachtree Creek in the Chattahoochee River basin or in Bryan, Effingham, Chatham, and Glynn Counties on the Coast.
- Georgia EPD holds approximately 116 golf course water use permits (EPD 2005a).
- Water use by those golf course with non-farm permits totaled about 1.3 MGD (EPD 2005a).

Thermoelectric-Power Generation - water used in the generation of thermoelectric power.

- In Georgia, there are 17 plants that operate on fossil fuels and 2 nuclear-powered plants.
- It is estimated that from these 3,3100 MGD, or 3.31 billion gallons of water a day is used.
- Water consumed and not returned to the source depends on the type and age of the operation (Fanning 2003).
- Most water withdrawn for thermoelectric-power generation is returned to the surface water source from which it was taken. Most water losses occur in the cooling process, through cooling towers (Evans 2005).
- In 2004 reported water usage is estimated at 2279.6 MGD (EPD 2005a).

Hydroelectric-Power Generation - water used for the generation of electricity at plants where turbine generators are driven by falling water.

- Hydroelectric power generation is considered an “instream use,” meaning the water is not actually taken out of the water source.
- Water used in the generation of hydropower is estimated at 31.9 billion gallons of water per day (Fanning 2003).