WORLD WIDE WEB ACCESS TO U.S. GEOLOGICAL SURVEY PUBLICATIONS AND DATA: APALACHICOLA-CHATTAHOOCHEE-FLINT RIVER BASIN, GEORGIA, FLORIDA, AND ALABAMA, 1992-95

Jerry W. Garrett[1], Howard A. Perlman[2], and Judith D. Scholz[3]

AUTHORS: Hydrologic Technician[1], Hydrologist[2], Physical Science Technician[3], U.S. Geological Survey, Peachtree Business Center, 3039 Amwiler Road, Suite 130, Atlanta, GA 30360-2824.

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Abstract. Physical, chemical, and biological data were collected to assess surface- and ground-water quality in the Apalachicola-Chattahoochee-Flint (ACF) River basin from August 1992 through September 1995, as part of the U. S. Geological Survey (USGS) National Water-Quality Assessment (NAWQA) program. Surface-water data were collected at 132 stream sites and at 15 locations within 6 reservoirs. Ground-water data were collected at 161 sites. These data and associated information are accessible on the World Wide Web (WWW) from the ACF NAWQA home page (**http://wwwga.usgs.gov/nawqa/**). Data are presented in tables that are grouped by land use, site type, and project component. The user can view data tables on the computer screen or download data tables as relational data-base (tab-delimited ASCII) files. In addition to providing access to data, the ACF NAWQA home page provides information pertaining to the ACF River basin that includes: (1) a detailed basin description, (2) various ACF River basin descriptive maps, (3) access to ACF NAWQA publications, and (4) a list of links to other relevant home pages.

INTRODUCTION

The USGS NAWQA program is designed to describe the status and trends in the quality of the Nation's ground- and surface-water resources, and to provide a sound understanding of the natural and human factors that affect the quality of these resources (Leahy and others, 1990). In 1991, the Apalachicola-Chattahoochee-Flint River basin was selected for investigation in the NAWQA program (Figure 1).

Data collection began in August 1992 and continued through September 1995. During this period, water-quality data were collected at 308 sites, including 132 stream sites; at 15 locations within 6 reservoirs; and at 161 ground-water sites, including wells, springs, drains, and seeps. Surface-water samples were collected at frequencies varying from hourly to annually, depending upon the intended purpose, and were analyzed for nutrients, carbon, pesticides, major ions; field measurements included specific conductance, temperature, pH, dissolved oxygen, and alkalinity. As many as 80 samples were collected at several surface-water sites during the study period. Ground-water samples were collected at varying frequencies, depending on the purpose, and were analyzed for the same constituents. Ground-water samples also were analyzed for volatile organic compounds, trace metals, radionuclides and stable isotopes. Bed-sediment and tissue samples from selected surface-water sites were analyzed for metals and organic compounds; and ecological surveys of fish, algae, and macro invertebrates were conducted. Although no samples were analyzed for every constituent, the total list of analytes includes 470 constituents.

USGS data reports typically provide descriptive information, maps, and paper copies of data tables. USGS interpretive reports generally provide data summaries, but do not always provide tables that list the source data. Although both types of reports provide useful information, the reader interested in obtaining data in a digital format must request those data from the USGS. The WWW provides an alternative to the paper data report by giving the user access to data displayed in a digital format. This report describes the electronic format in which physical, chemical, and biological data; and associated information collected as part of the ACF River basin NAWQA study may be accessed from the ACF NAWQA home page.

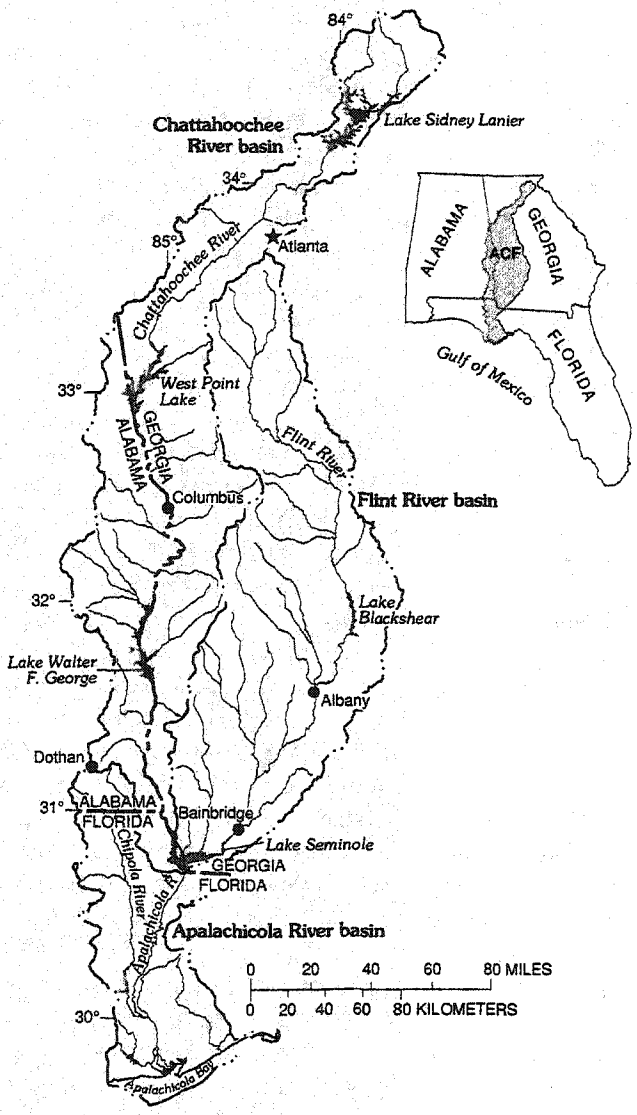


Figure 1. Location of the Apalachicola–Chattahoochee–Flint (ACF) River basin.

DESCRIPTION OF ACF NAWQA HOME PAGE

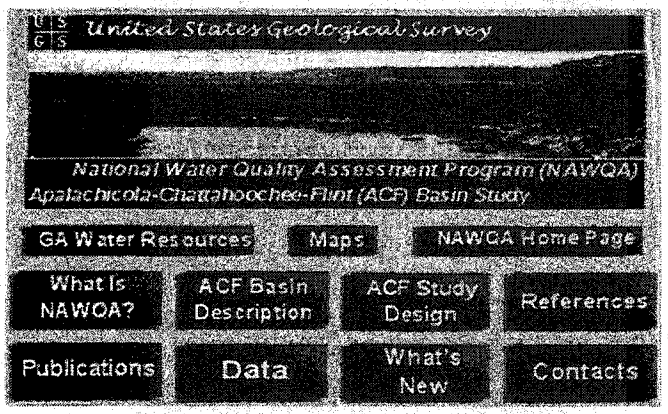
The ACF NAWQA home page can be accessed through the WWW at the following address:

http://wwwga.usgs.gov/nawqa/.

The home page (Figure 2) allows the user to select from several options that are briefly described below:

What is NAWQA?: This option provides a one page narrative that describes the goals of the NAWQA program.

ACF Basin Description: This option provides a detailed description of the environmental setting of the ACF River basin including locational information, physiography, soils, climate, and surface- and ground-water hydrology. The user also can access various maps (formatted as GIF images) including location, land use, generalized outcrop areas of aquifers, land resource areas, and physiographic provinces.



Welcome to the home page of the U.S. Geological Survey's Apalachicola–Chattahoochee–Flint (ACF) River basin Water Quality Assessment (NAWQA) Program.

Figure 2. Home page for the Apalachicola–Chattahoochee–Flint River basin NAWQA located at http://wwwga.usgs.gov/nawqa/.

ACF Study Design: This option describes NAWQA terminology and details the sampling design for each study component. This section is divided into three parts that describe surface-water and ground-water components; and special studies. The text is subdivided by site type and study component that allows the user to scan topics of particular interest.

References: This option provides a bibliography of information sources that are referenced within the ACF NAWQA home page, and other information sources that provide additional background on the ACF River basin. From here, the user can link directly to other NAWQA and USGS publications lists.

Publications: This option allows users to read short interpretive reports and abstracts of longer reports that have been published during the ACF River basin NAWQA study. A form with check boxes allows the user to request paper copies of available reports by selecting the reports, providing a return address, and sending the request directly to the USGS via electronic mail.

Data: This option provides access to data tables (described in more detail below).

What's New: This option includes a list of new reports, and updates the user on new NAWQA related projects.

Contacts: This option gives the user direct links to other WWW sites of interest. One example is the U.S. Census Bureau's Tiger Mapping Service page, which allows users to construct custom maps. The Tiger Mapping Service was used to produce several of the site-location maps used in the NAWQA pages. Another example is the *"GA Water Resources"* link, which provides access to information about many other USGS activities in Georgia.

Maps: This option provides a complete list of maps that have been produced for this web page.

NAWQA Home Page: This option provides access to information about the National NAWQA program and allows links to other NAWQA web sites throughout the United States.

United States Geological Survey: This option, located in the banner at the top of the home page (Figure 2), provides access to the USGS home page. This includes information on the Nation's water resources, biological resources, geology (including earthquakes and volcanoes), and mapping activities.

DESCRIPTION OF DATA OPTIONS

The ***Data*** menu of the ACF NAWQA home page is divided into two sections—"read me" text and data tables. The text section includes an ***Abstract, Introduction***, an abbreviated version of the ***ACF Study Design***, ***Glossary of Terms***, and ***Description of the Data Sets*** by study component. Detailed lists of surface- and ground-water sites can be obtained from ***ACF Study Design***. These lists include a numbered site identifier, site name, map identifier, detailed basin land use, latitude, longitude, and site type for each data-collection site. The ***Descriptions of Data Sets*** page describes the types of data collected for each study component. From here, the user can access groups of water-quality constituents (nutrients, for example), constituent lists (nitrate or phosphate, for example), and method detection levels for each constituent.

The data tables are presented by study component — surface water, ground water, special studies, streamflow, ancillary, and quality assurance. The data are further subdivided into groups consisting of related water-quality constituents. The data tables can be viewed on the screen or downloaded to a user's computer as relational data-base files. To limit the need for excessive scrolling, the tables are kept as concise as possible. Compounds that were analyzed for, but not detected at any site within a group, are not listed in the tables. A ***Glossary of Terms*** link is provided with each table, and includes terms unique to the NAWQA program; many general terms associated with water quality and streamflow; and definitions for the measurement units used within the tables. Links also are provided to the ***ACF Study Design*** section, allowing the user to obtain more detailed descriptions of surface- and ground-water types, if necessary.

The surface-water monitoring networks are grouped by land use and site type. The study design includes three land-use types—urban-suburban, silviculture, and agriculture. The primary agricultural land uses of interest are poultry production in the headwaters of the ACF River basin, and production of row crops in the southern half of the basin. The two site types are streams draining small watersheds (from about 3 to 100 square miles) predominated by one land-use type; and the main-stem river and large tributary sites that have larger drainage areas and mixed land use. The user has options to view location maps or select a particular land-use type (poultry land use, for example), and access a table that lists sites representative of that land use with the numbers of samples, by constituent group (nutrients or pesticides, for example) at each site.

The ground-water monitoring network is composed of four project components that are described in detail in ***ACF Study Design***—study-unit survey, urban land-use study, agricultural land-use study, and a flow-system study. A combination of wells, springs, drains, and seeps comprises the network for each study component. Data from each component are listed in separate tables that can be viewed or downloaded. The user is presented with a matrix table of clickable buttons that will allow access to a constituent group of interest (pesticides, for example) from the ground-water component (urban land use, for example), and then the site type (wells, for example) of interest (pesticide data from urban land use wells, for example). A map and list of sites associated with each ground-water study component also are available.

The study design for the ACF River basin also includes four special studies. The special studies were—(1) surface-water synoptic surveys conducted to determine spatial distribution of nutrients and pesticides, to better define the effects of poultry, urban, and suburban land-uses; (2) sediment cores collected from five reservoirs in the basin to better define long-term trends; (3) water-quality data collected during the flooding that followed record rainfall produced by Tropical Storm Alberto; and (4) a study of the recovery of the native fish community at a small watershed following the record floods resulting from Tropical Storm Alberto. The data from these studies are available for viewing or downloading, and then selecting the table of interest. Each special study has an associated site-location map or maps.

Streamflow Data, ***Ancillary Data***, and ***Quality Assurance Data*** comprise the last three data options. ***Streamflow Data*** provides access to mean-daily discharge values for the nine sites that comprised the core of the surface-water monitoring network. ***Ancillary Data*** provides access to site maps, site lists, parameter lists, a glossary of terms, and other information associated with this web site. ***Quality Assurance Data*** provides access to quality assurance and quality control data (blanks, replicates, and spikes), that are presented in tables and graphs for most constituents analyzed in water during the ACF River basin NAWQA study.

LITERATURE CITED

Leahy, P.P., Rosenshein, J.S., and Knopman, D.S., 1990, Implementation plan for the National Water-Quality Assessment Program: U.S. Geological Survey Open-File Report 90-174, 10 p.