

Coosa River Modeling Project
2006 Field Study Plan
Module 1
Watershed Flow and Temperature Data

Georgia Department of Natural Resources
Environmental Protection Division
Watershed Protection Branch
Watershed Planning & Monitoring Program
4220 International Parkway
Suite 101
Atlanta, Georgia 30354

Introduction

The primary objective of this module is to install, operate, and maintain streamflow gages and temperature recorders. A secondary objective of this module is to take periodic flow measurements in ungaged tributaries in order to determine a relationship between gaged and ungaged streams. These data will be used either directly as model input or to estimate tributary input data for ungaged streams.

Study Area

The Coosa River originates in Tennessee as the Conasauga River, and in the north Georgia mountains as the Etowah and Coosawattee Rivers (see Figure 1-1). The Conasauga River flows south from Tennessee. It converges with the Coosawattee River near Resaca, Georgia, to form the Oostanaula River. The Coosawattee River originates in Ellijay, Georgia, by the merging of the Ellijay and Cartecay Rivers. The Coosawattee flows west from Ellijay, joins with Mountaintown Creek and then flows into Carter's Lake. From Carter's Lake, the Coosawattee River flows west toward Resaca where it meets the Conasauga River to form the Oostanaula River. The Etowah River flows southwest from Lumpkin County to Lake Allatoona. From there, it flows west toward Rome, Georgia, where it merges with the Oostanaula River to form the Coosa River. The Coosa River then flows west into Alabama into Lake Weiss. The Coosa River flows from Lake Weiss through several other lakes and eventually flows into the Alabama River, which ultimately discharges to the Gulf of Mexico.

The 2005-2006 project will be performed in 200-miles of the Coosa River Basin located in northwest Georgia. This 200-mile river system consists of five (5) river segments in Georgia (Conasauga, Coosawattee, Oostanaula, Etowah, and Coosa) and thirty-six (36) tributary segments. A summary of each river segment is provided below:

- 43.4 miles of the Conasauga River from U.S. Geological Survey (USGS) Conasauga River near Eton Gauge to the Coosawattee River confluence;
- 25.2 miles of the Coosawattee River from Carter's Lake to the confluence with the Conasauga River;
- 48.8 miles of the Oostanaula River from the Conasauga and Coosawattee Rivers confluence to the confluence with the Etowah River;
- 48.7 miles of the Etowah River from Lake Allatoona to the confluence with the Oostanaula River; and
- 30.5 miles of the Coosa River from the Oostanaula and Etowah Rivers confluence to the Alabama State Line.

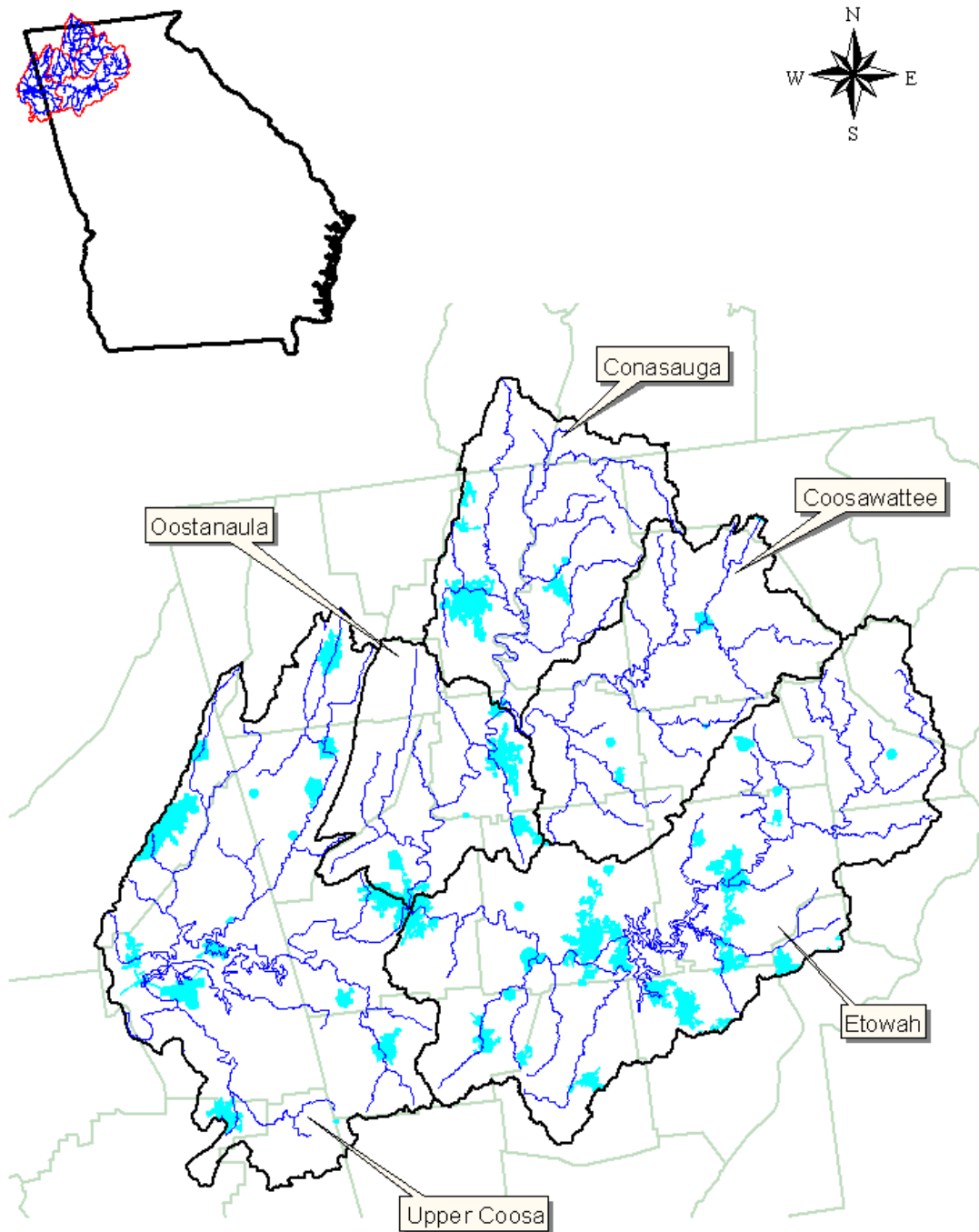


Figure 1-1. Location of the Coosa River Basin

Mainstem Flow Gages

The Coosa River Basin has ten mainstem United States Geological Survey (USGS) flow gages. These long-term USGS gages will be operated by the USGS during the study period. Only stage measurements are recorded at stations 02387010, 02383520, 02387520, 02388525, and 02394670. A stage recorder will be installed at the State Line to collect hydraulic boundary condition information for the EPD RIV-1 model. Rainfall data are collected at several of the locations in Table 1-1. Table 1-1 provides a list of the mainstem USGS flow gages and/or stage recorders.

Table 1-1. Location of Coosa River Mainstem USGS Flow Gages and Stage Recorders

Mainstem	Location	Stage only	USGS Station ID
Conasauga Sub-Basin			
Conasauga River	near Eton, GA (SR 286)		02384500
Conasauga River	at Tilton, GA (Tilton Road Bridge)		02387000
Conasauga River	below Dalton, GA (Sloan Bridge Rd)	X	02387010
Coosawattee Sub-Basin			
Coosawattee River	at Carters, GA (US 411)		02382500
Coosawattee River	near Pine Chapel, GA (Owens Gin Rd)		02383500
Coosawattee River	at Pine Chapel, GA (Pine Chapel Rd)	X	02383520
Oostanaula Sub-Basin			
Oostanaula River	at Resaca, GA (US 41)		02387500
Oostanaula River	at Calhoun, GA	X	02387520
Oostanaula River	near Rome, GA (Coker's Farm)		02388500
Oostanaula River	at Rome, GA (US 27)	X	02388525
Etowah Sub-Basin			
Etowah River	at Allatoona Dam, above Cartersville, GA		02394000
Etowah River	near Cartersville, GA (SR 61)	X	02394670
Etowah River	near Kingston, GA (US 411)		02395000
Etowah River	at GA 1 Loop, near Rome, GA		02395980
Upper Coosa Sub-Basin			
Coosa River	near Rome, GA (Mayo's Bar)		02397000
Coosa River	near Coosa, GA (State Line) newly installed	X	02397530

Tributary Flow Gages

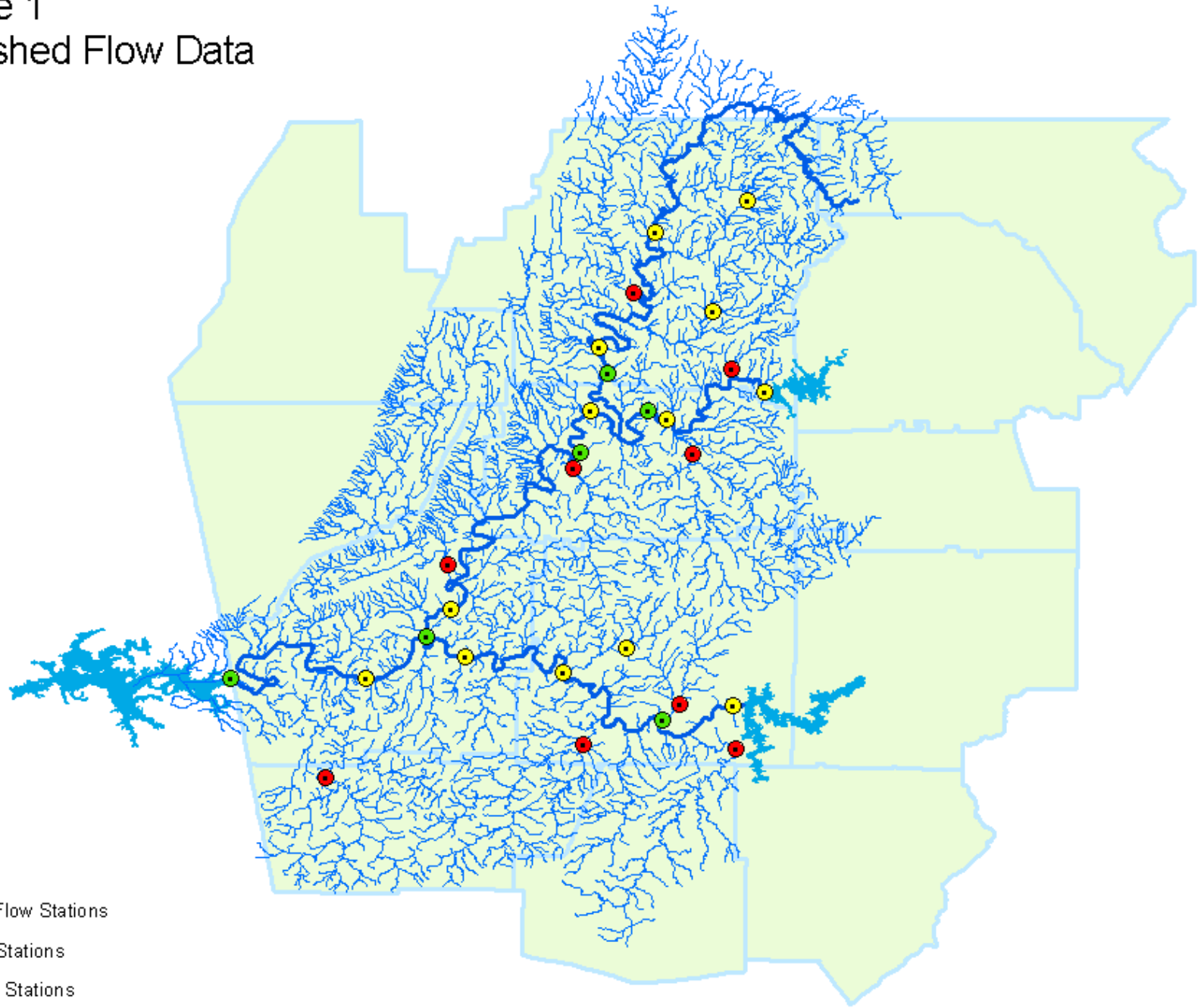
The Coosa River Basin has three tributary USGS flow gages and/or stage recorders relevant to this project. These long-term USGS gages will be operated by the USGS during the study period. An additional nine flow gages will be installed and maintained by the USGS to collect tributary flow information that will be used in the EPD RIV-1 model. Rainfall data are collected at several of the locations in Table 1-2. Table 1-2 provides a list of the tributary USGS flow gages and indicates which gages are newly installed for this module.

Table 1-2. Location of Coosa River Basin Tributary USGS Flow Gages

Tributary	Location	Newly Installed	USGS Station ID
Conasauga Sub-Basin			
Mill Creek	near Crandall, GA (Forest Service Rd)		02384540
Coahulla Creek	near Dalton, GA (Keith Mill Road)	X	02385170
Holly Creek	near Chatsworth, GA (Smyrna-Ramhurst Rd)		02385800
Coosawattee Sub-Basin			
Sugar Creek	near Carters, GA (Coniston Road)	X	02382610
Salacoa Creek	near Redbud, GA (CR 29)	X	02383180
Oostanaula Sub-Basin			
Oothlalooga Creek	near Calhoun, GA (SR 53 Spur)	X	02387600
Armuchee Creek	near Rome, GA (Old Dalton Road)	X	02388350
Etowah Sub-Basin			
Pumpkinvine Creek	near Emerson, GA (SR 293)	X	02394515
Pettit Creek	near Cartersville, GA (CR 450)	X	02394612
Euharlee Creek	near Stilesboro, GA (CR 32)	X	02394958
Two Run Creek	near Kingston, GA (GA 293)		02395120
Upper Coosa Sub-Basin			
Cedar Creek	near Cedartown, GA (Cave Springs Rd)	X	02397500

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Legend

- New Flow Stations
- Flow Stations
- Stage Stations

Temperature Recorders

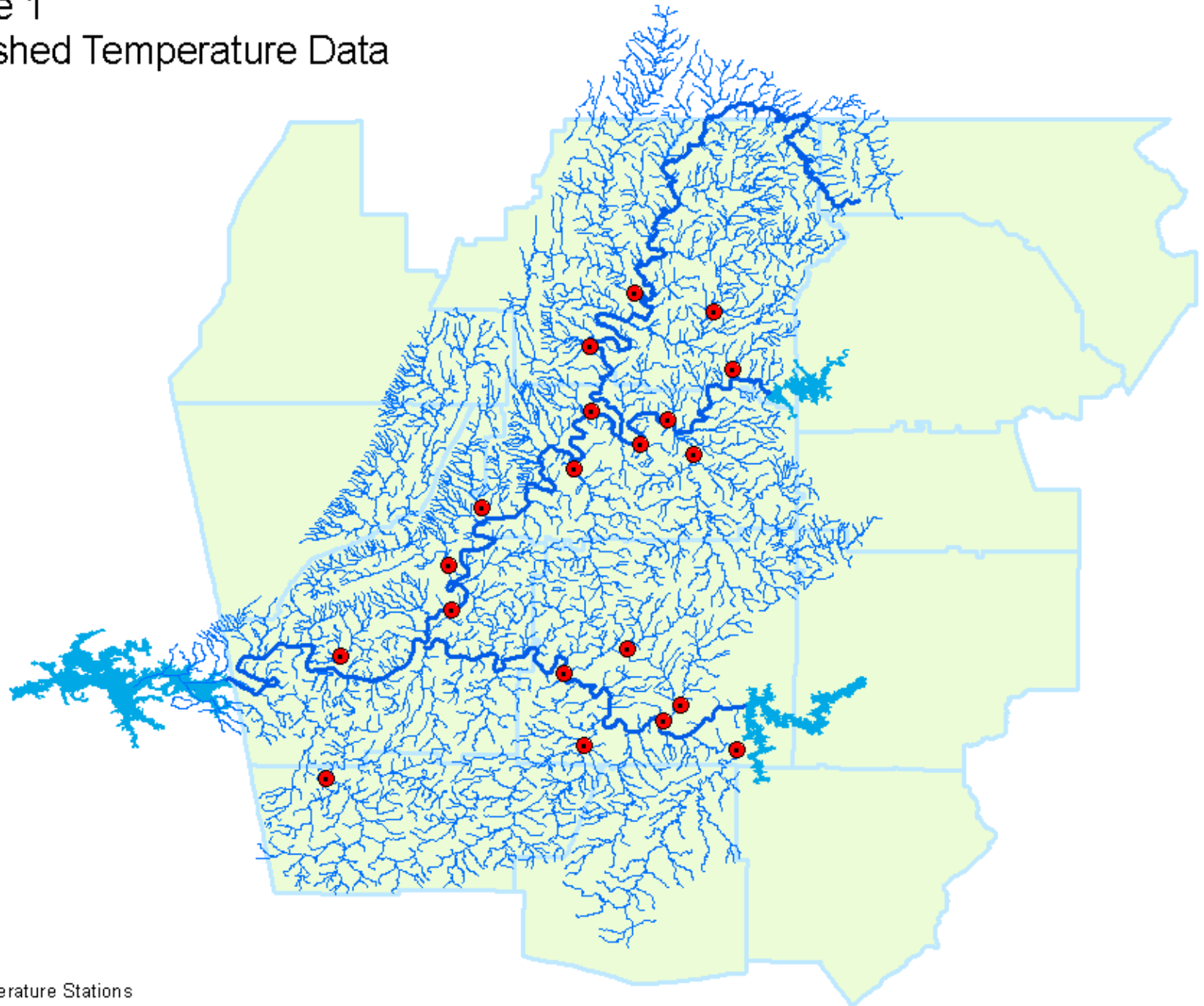
The USGS will install and maintain temperature recorders at nineteen locations. Table 1-3 provides a list of the mainstem and tributary USGS temperature recorders.

Table 1-3. Location of Coosa River Basin Mainstem and Tributary USGS Temperature Recorders

Mainstem/Tributary	Location	Newly Installed	USGS Station ID
Conasauga Sub-Basin			
Coahulla Creek	near Dalton, GA (US Hwy 76)	X	02385170
Holly Creek	near Chatsworth, GA (Smyrna-Ramhurst Road)	X	02385800
Swamp Creek	near Tilton, GA (Old Tilton Road)	X	02386865
Coosawattee Sub-Basin			
Sugar Creek	at Coniston Road, near Carters, GA	X	02382610
Salacoa Creek	at CR 29 near Redbud, GA	X	02383180
Coosawattee River	near Pine Chapel, GA	X	02383500
Oostanaula Sub-Basin			
Oostanaula River	at Resaca, GA (US Hwy 41)	X	02387500
Oothlaboga Creek	near Calhoun, GA (SR 53 Spur)	X	02387600
Johns Creek	near Curryville, GA (SR 156)	X	02387690
Armuchee Creek	near Rome, GA (Old Dalton Road)	X	02388350
Oostanaula River	near Rome, GA (Coker's Farm)	X	02388500
Etowah Sub-Basin			
Pumpkinvine Creek	near Emerson, GA (SR 293)	X	02394515
Pettit Creek	near Cartersville, GA (CR 450)	X	02394612
Etowah River	near Cartersville, GA (SR 61)	X	02394670
Euharlee Creek	near Stilesboro, GA (CR 32)	X	02394958
Etowah River	near Kingston, GA	X	02395000
Two Run Creek	near Kingston, GA	X	02395120
Upper Coosa Sub-Basin			
Beech Creek	at Mays Bridge Rd, near Rome, GA	X	02397075
Cedar Creek	near Cedartown, GA	X	02397500

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Legend

- Temperature Stations

Ungaged Tributaries Flow Measurements

Periodic flow measurements will be taken by USGS in ungaged tributaries. A maximum of three flow measurements will be taken in order to develop “basic” rating curves for these streams. These “basic” rating curves will be used to assign estimated discharge values to the samples that are collected at each location. The three discharge measurements will be used to determine a relationship between gaged and ungaged streams. Based on these relationships, estimated tributary inputs from the ungaged streams will be developed as input for the EPD RIV-1 model. Table 1-4 lists the ungaged tributaries locations.

**Table 1-4. Location of Coosa River Basin Tributaries
Where USGS will Develop Rating Curves**

Tributary	Location
Conasauga Sub-Basin	
Mill Creek	at US Highway 411
Town Branch	at County Road 113
Drowning Bear Creek	at Old Tilton Road
Swamp Creek	at Old Tilton Road
Polecat Creek	at County Line Road
Coosawattee Sub-Basin	
Dry Creek	at Pleasant Hill Road
Vanns Creek	at Owens Gin Road
Crane Eater Creek	at Pine Chapel Road
Oostanaula Sub-Basin	
Camp Creek	at GA Highway 136
Snake Creek	at Pocket Road Road
Johns Creek	near Curryville at SR 156
Woodward Creek	at Bells Ferry Road
Dozier Creek	at Bells Ferry Road
Etowah Sub-Basin	
Raccoon Creek	at Picklesimer Road
Connesena Creek	at Old Rome Road near Kingston
Toms Creek	at Norton Road
Spring Creek	at US 411 (GA 20) near Rome
Dykes Creek	at GA Highway 293 near Rome
Silver Creek	at Crescent Avenue near Rome

Tributary	Location
Upper Coosa Sub-Basin	
Horseleg Creek	at South Hanks Street at Rome
Webb Creek	at Cunningham Road
Beech Creek	at Mays Bridge Road
Cabin Creek	at GA Highway 20
Kings Creek	at GA Highway 20

Quality Control

USGS will conduct all streamflow measurements and streamflow data collection activities according to the standards and procedures outlined in “Surface Water Quality-Assurance Plan, U.S. Geological Survey, Georgia District”, T. C. Stamey, Open-File Report 99-71 and the upcoming revision “Surface Water Quality-Assurance Plan for the Georgia District of the U.S. Geological Survey”, A. J. Gotvald and T. C. Stamey, Open-File Report XX-XX, which is currently under review.

USGS will conduct all water temperature measurements and water temperature data collection activities according to the standards and procedures outlines in “Guidelines and Standard Procedures for Continuous Water-Quality Monitors: Site Selection, Field Operation, Calibration, Record Computation, and Report”, R. J. Wagner, H. C. Matraw, G. F. Ritz, and B. A. Smith, Water-Resources Investigations Report 00-4252.

All data will be stored and maintained as historical public record in the USGS National Water Information System (NWIS) database. All flow and temperature data will be entered and maintained in the Watershed Protection Branch's Water Resources Data-Base (WRDB).