

Coosa River Modeling Project

**2006 Field Study Plan
Module 3
Water Quality Sampling**

**Georgia Department of Natural Resources
Environmental Protection Division
Watershed Protection Branch
Watershed Planning & Monitoring Program
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Introduction

The primary objective of this module is the collection and analysis of discrete water quality samples at locations on the Coosa River mainstem and tributaries. These data will be used directly as model input for the tributaries and upstream boundaries and to calibrate the EPD RIV-1 Coosa River model.

Water Quality Sample Collection

The water quality data collection will extend from Allatoona Dam on the Etowah River, Carters Lake on the Coosawattee River, and the USGS Eton gage on the Conasauga River to the George/Alabama State Line. The data collection will include discrete mainstem and tributary water quality sampling.

At a minimum, the monitoring stations will be sampled once a week for the period from June 15th through October 15th. Samples collected in the lake portion of the basin downstream from Mayo's Bar will be sampled weekly for the period from April through October. The Coosa River at the State Line monitoring station will be sampled monthly during the period from January through March and November through December. These five sites will also be sampled once quarterly for fecal coliform bacteria to compute geometric mean bacteria concentrations. Table 3-1 lists the locations of the Coosa River mainstem water quality sampling sites and Table 3-2 lists the locations of the tributary water quality sampling sites.

Field Measurements and Laboratory Analyses

Field measurements will be recorded at the time the water samples are collected. These measurements will include dissolved oxygen, water temperature, pH, and specific conductance. The parameters that the water samples will be analyzed for include, 5-day biochemical oxygen demand (BOD₅); Total Kjeldahl Nitrogen (TKN); ammonia (NH₃); nitrate-nitrite (NO₂-NO₃); total phosphorus; ortho-phosphate, dissolved; total organic carbon (TOC); and turbidity. Eight fecal coliform samples will be collected at each discrete sampling location during the period May-October so that two geometric mean bacteria concentrations can be computed. Gage height will be determined at the time of each sample collection.

Personnel

USGS personnel will take the field measurements, collect the water samples and make any flow measurements. The water samples will be sent to either the USGS laboratory or the University of Georgia (UGA) laboratory in Athens for analyses. The UGA laboratory will analyze all samples for BOD₅ and fecal coliform bacteria.

**Table 3-1. Location of Coosa River Mainstem
 Water Quality Sampling Sites**

Mainstem	Location	No. of site visits	USGS Station ID
Conasauga Sub-Basin			
Conasauga River	near Eton, GA (SR 286)	18	02384500
Conasauga River	near Dalton, GA (US 76)	28	02384750
Conasauga River	at Tilton, GA (Tilton Road Bridge)	28	02387000
Coosawattee Sub-Basin			
Coosawattee River	at Carters, GA (US 411)	18	02382500
Coosawattee River	near Pine Chapel, GA (Owens Gin Rd)	18	02383500
Coosawattee River	near Calhoun, GA (SR 225)	18	02383540
Oostanaula Sub-Basin			
Oostanaula River	at Resaca, GA (US 41)	18	02387500
Oostanaula River	near Calhoun, GA (Reeves Station Rd)	18	02387670
Oostanaula River	near Rome, GA (Coker's Farm)	18	02388500
Etowah Sub-Basin			
Etowah River	at Allatoona Dam, above Cartersville, GA	18	02394000
Etowah River	at Douthit Ferry Road	18	02394550
Etowah River	near Kingston, GA (US 411)	18	02395000
Etowah River	at GA Loop 1, near Rome, GA	18	02395980
Upper Coosa Sub-Basin			
Coosa River	near Rome, GA (Mayo's Bar)	18	02397000
Coosa River	at SR 100 near Coosa, GA	30	02397100
Coosa River	near Coosa, GA (State Line)	39	02397530

**Table 3-2. Location of Coosa River Tributary
 Water Quality Sampling Sites**

Tributary	Location	No. of site visits	USGS Station ID
Conasauga Sub-Basin			
Coahulla Creek	near Dalton, GA (Keith Mill Road)	18	02385170
Holly Creek	below Chatsworth, GA (SR 225)	18	02386100
Swamp Creek	near Tilton, GA (Old Tilton Road)	18	02386865
Coosawattee Sub-Basin			
Sugar Creek	at Coniston Road	18	02382610
Salacoa Creek	near Redbud, GA (CR 29)	18	02383180
Oostanaula Sub-Basin			
Oothkalooga Creek	at GA Highway 53 spur	18	02387600
Johns Creek	near Curryville, GA (SR156)	18	02387690
Armuchee Creek	near Rome, GA (Old Dalton Road)	18	02388350
Etowah Sub-Basin			
Pumpkinvine Creek	near Emerson, GA (SR 293)	18	02394515
Pettit Creek	near Cartersville, GA (CR 450)	18	02394612
Raccoon Creek	at Picklesimer Road	18	02394760
Euharlee Creek	near Stilesboro, GA (CR 32)	18	02394958
Two Run Creek	at Reynolds Bridge Road	18	02395150
Spring Creek	near Rome, GA (US 411/SR 20)	18	02395540
Silver Creek	near Rome, GA (Crescent Avenue)	18	02396525
Upper Coosa Sub-Basin			
Beech Creek	at Mays Bridge Road	18	02397075
Cedar Creek	near Cedartown, GA (Cave Springs Rd)	18	02397500

Quality Control

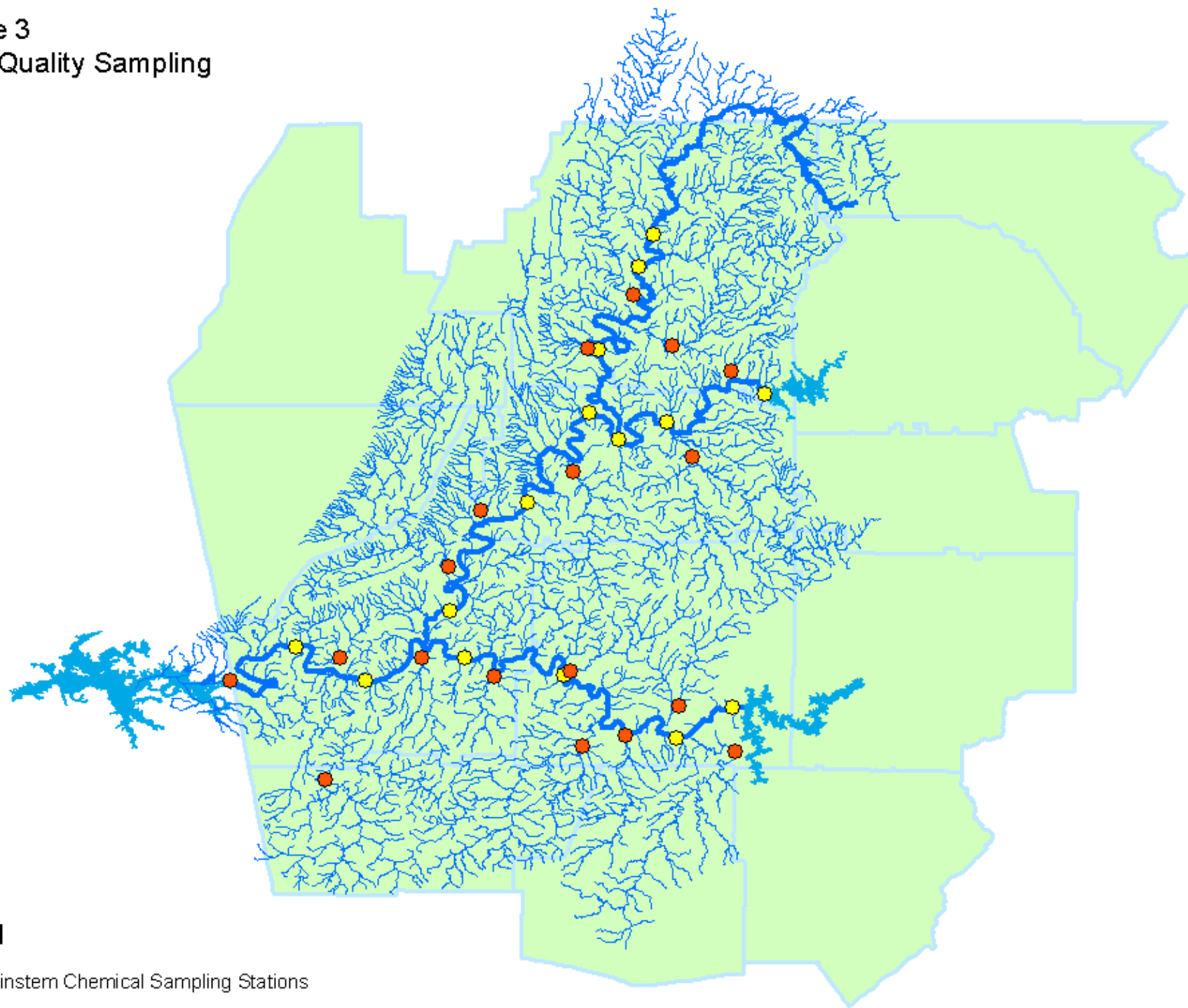
USGS will conduct all water quality sampling according to their Quality Assurance Plan. The samples will be analyzed according to the test methods outlined in:

Title 40, Code of Federal Regulations, Part 136.3, (latest revision), United States Federal Register, Office of the Federal Register, National Archives and Records Administration, Washington, D.C., 20001.

All water quality data will be entered and maintained in the Watershed Protection Branch's Water Resources Data-Base (WRDB).

Module 3

Water Quality Sampling



Legend

- Mainstem Chemical Sampling Stations
- Tributary Chemical Sampling Stations