Surface Water Quality Screening Assessment of the Coosa River Basin -- 2000

Report Date: April 1, 2002

Aquatic Assessment Unit
Mongtgomery Branch -- Field Operations Division
Alabama Department of Environmental Management

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AQUATIC ASSESSMENT UNIT ✦ FIELD OPERATIONS DIVISION
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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AQUATIC ASSESSMENT UNIT
MONTGOMERY BRANCH
FIELD OPERATIONS DIVISION
ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
P.O. 301463
MONTGOMERY, AL 36130-1463

Background: In 1996, the Alabama Department of Environmental Management (ADEM) adopted a basin-wide approach to nonpoint source monitoring and management using a repeating 5-year management cycle. Because of the 5-year rotation, basins are placed into groups so that all basins receive equal focus. Concentrating planning and implementation efforts within one basin group allows a focused review of available data, provides coordinated water quality monitoring and assessment efforts, efficient implementation of control activities on a geographic basis, and consistent and integrated decision-making for awarding CWA §319 funds.

During 2000, the Aquatic Assessment Unit (AAU) of the Field Operations Division completed basin-wide screening assessments of the Coosa, Tallapoosa, and Alabama River basins. At the request of the Office of Education and Outreach, separate screening assessments were conducted within each of these basins, although together, they comprise one of ADEM's basin groups. This document provides an overview of the basin-wide screening assessment conducted in the Coosa River basin. Land use information and assessment data available from each of the 69 sub-watersheds in the Coosa basin are summarized.

Land use: Land use percentages and estimates of animal populations and sedimentation rates were obtained from information provided to ADEM by the Alabama Soil and Water Conservation Committee (ASWCC) and local Soil and Water Conservation Districts (SWCD). This information was provided on Conservation Assessment Worksheets completed in 1998 (FY97 CWA § 319 Workplan Project #4) and entered into an ACCESS database by the ADEM AAU.

Estimates of percent land cover differed between the Upper and Middle Coosa cataloging units (CUs), and Lower Coosa CU (Table E-1). Percent row crop was higher in the Upper and Middle Coosa River CUs. The pasture/hay landuse was also somewhat higher in the Middle Coosa than in the Upper and Lower Coosa CUs.

Table E-1. Estimates of percent land cover within the Upper, Middle, and Lower Coosa River CUs (SWCD 1998).

Cataloging Unit	Forest	Row crop	Pasture /Hay	Mining	Urban	Open Water	Other
Upper Coosa	62%	13%	11%	<1%	4%	7%	3%
Middle Coosa	65%	11%	15%	1%	4%	2%	3%
Lower Coosa	78%	3%	10%	1%	5%	2%	1%

Nonpoint Source (NPS) Impairment Potential: The potential for NPS impairment was estimated for each sub-watershed in the Coosa River basin using data compiled by the local SWCD (1998) and information on the number of current construction stormwater authorizations issued (Tables E-2a and E-2b). Results indicated more sub-watersheds potentially at risk from NPS impairment in the Middle Coosa CU. Sedimentation, forestry activities and pasture landuse were potential sources of NPS impairment within the Middle and Lower Coosa CUs. Row crop landuse was a significant concern in the Upper and Middle Coosa CUs. Animal husbandry and mining activities were estimated to be potential sources of NPS impairment in the Middle Coosa CU.

Table E-2a. Number of sub-watersheds with moderate or high ratings for each NPS category

Cataloging Unit	Total # Sub-watersheds	Overall Potential	Animal Husbandry	Row crop	Pasture	Mining	Forestry	Sediment
Upper Coosa	16	8	4	10	3	3	3	0
Middle Coosa	33	16	15	11	19	21	8	9
Lower Coosa	20	6	1	4	7	4	10	9

Table E-2b. Number of sub-watersheds with moderate or high ratings for each point source or urban category

Category	% Urban	Development	Septic tank failure
Upper Coosa	5	2	12
Middle Coosa	15	21	15
Lower Coosa	8	12	2

***Historical data/studies*:** The majority of the water quality data (current and historical) included in this report were from nine major projects conducted by ADEM. Data collected by Auburn University/Auburn University at Montgomery (Appendix F-5) and GSA (Appendices F-8 and F-11) are also provided.

These data include both monitored and evaluated data. Monitored assessments are based on chemical, physical, and/or biological data collected using commonly accepted and well-documented methods. Evaluated assessments are based on observed conditions, limited water quality data, water quality data older than 5 years, or estimated impacts from observed or suspected activities.

Results of monitored assessments were used in this report to assess habitat, biological, and chemical conditions within a sub-watershed. Monitored assessments were conducted during seven projects (Table E-3). Evaluated assessments were conducted in conjunction with ADEM's ALAMAP Program (Appendix F-6), Ambient Trend Monitoring Program (Appendix F-1), and Clean Water Strategy Project (Appendix F-7). A summary of each project, including lead agency, project objectives, data collected, and applicable quality assurance manuals, is provided in the Methodology Section.

Table E-3. Projects that have generated monitored assessment information.

Project	Appendix
ADEM's State Parks Monitoring Project	F-2
ADEM's Ecoregional Reference Site Program	F-3
ADEM's CWA §303(d) Waterbody Monitoring Program	F-4
University Tributary Nutrient Project	F-5
GSA's Lower and Middle Choccolocco Creek Project	F-8
ADEM's Big Wills Cr Water Quality Demonstration Study	F-9
ADEM's Reservoir Monitoring Program	F-10
GSA's Hatchet Creek Watershed Project	F-11

Assessments conducted during this study: Sub-watersheds were selected for assessment during this study if recent monitoring data were not available, potential impacts from point sources or urban areas were minimal, and the potential for impairment from nonpoint sources was estimated as *moderate* or *high*. Because of the number of sub-watersheds located within the Coosa, Tallapoosa, and Alabama basin group, some sub-watersheds meeting these criteria could not be monitored. Assessments were conducted in 15 sub-watersheds in the Coosa River basin.

***Sub-watershed summaries*:** Current and historical monitoring data were combined to provide a comprehensive assessment. A summary of information available for each of the 69 sub-watersheds is provided. The summaries are organized into three sections by CU. Each summary discusses land use, NPS impairment potential, assessments conducted within the sub-watershed, and the NPS priority rating based on available data. The summaries point out significant data and reference appropriate tables and appendices. Assessments of habitat, biological and chemical conditions are based on long-term data from ADEM's Ecoregional Reference Reach Program. Tables referenced in the summaries are located at the end of each summary section. Appendices are located at the end of the report.

Sub-watershed assessments: Habitat, biological, and chemical/physical indicators of water quality were monitored at 92 stations within 33 sub-watersheds from 1996 - 2000. These data are summarized in Tables 11a - 11c. Habitat and aquatic macroinvertebrate assessments were conducted at 67 of the 92 stations. Fish community Index of Biotic Integrity (IBI) assessments were conducted at 15 of these stations. Overall condition for each station was rated as the lowest biological assessment result obtained. Forty-six (69%) stations were assessed as *excellent* or *good*. Seventeen (25%) stations were assessed as *fair* and four (6%) stations were assessed as *poor*.

***Priority sub-watersheds*:** Seven priority sub-watersheds were identified within the Coosa River Basin (Tables E-4, 17). Four (57%) were located within the Middle Coosa CU and three (43%) in the Lower Coosa CU.

Table E-4. Sub-watersheds recommended for NPS priority status.

Sub-watershed Number	Sub-watershed Name	Lowest Station Assessment	Suspected Cause(s)	Suspected Nonpoint Source(s)
0106-070	Lower Big Wills-Little Wills Cr	Fair	Unknown	Pasture Runoff Mining
0106-080	Black Cr	Fair	Sedimentation, Organic Enrichment/DO	Row Crops and Pasture Runoff Mining
0106-260	Cheaha Cr	Poor	Unknown	Forestry Activities
0106-330	Talladega Cr	Fair	Habitat Degradation, Sedimentation	Forestry Activities Mining
0107-090	Buxahatchee Cr	Fair	Nutrient Enrichment	Septic Tanks
0107-140	Weogufka Cr	Fair	Sedimentation	Forestry Practices
0107-200	Taylor Cr	Fair	Fecal Coliform, Nutrient Enrichment Sedimentation	Pasture Runoff Developing Urban Land

Lower Big Wills-Little Wills Creek (0106-070): was identified as a priority sub-watershed due to impaired biological conditions in the Line Creek portion of the sub-watershed. Very low stream flows may have had an adverse impact on the biological community. The SWCD estimated pasture land use as 23%, and mining land use as 1% within the sub-watershed. Additional assessments should be conducted during normal rainfall years in order to re-evaluate its priority status. Assessments on three other tributaries were all evaluated as *good* or better.

Black Creek (0106-080): The aquatic macroinvertebrate community, assessed at one location on Black Creek, was in *fair* condition. SWCD estimated percent land cover as 25% pasture and 10% row crops. The dissolved oxygen concentration at the time of the assessment was 3.7 mg/L. Habitat quality was assessed as *fair*, with all categories indicating impairment.

Cheaha Creek (0106-260): The fish communities at all three locations assessed were assessed as *fair* or lower. The habitat and aquatic macroinvertebrate communities at all three locations were assessed as *excellent*. Water quality data did not indicate a cause of impairment to the fish community. Forestry practices have a moderate potential for NPS impairment.

Talladega Creek (0106-330): The fish community was assessed as *fair/good* during 2000. The aquatic macroinvertebrate community was assessed as *good* at this location and *excellent* at three other locations. The habitat assessment indicated evidence of sedimentation impairments. Forestry and mining activities have *high* and *moderate* potentials for impairment, respectively.

Buxahatchee Creek (0107-090): was identified as a priority sub-watershed due to impaired biological conditions in the Watson Creek portion of the sub-watershed. The habitat quality was assessed as *excellent* and the aquatic macroinvertebrate community was assessed as *good*. Water quality data included elevated nutrients. However, many of these values were obtained during apparently low or undetectable flow regimes. Very low stream flows may have also had an adverse impact on the fish community, which was assessed as *fair/good*. The SWCD estimates of mining land use and sediment loading indicated both to have a *moderate* potential for NPS impairment. Additional assessments should be conducted during normal rainfall years in order to re-evaluate its priority status. Assessments on the mainstem of Buxahatchee Creek were not considered due to the influence of a municipal point source.

Weogufka Creek (0107-140): is an historical ecoregional reference station. The aquatic macroinvertebrate and fish communities, assessed at one location on Weogufka Creek, were in *good* and *fair* condition, respectively. Local SWCD estimates of forestry practices indicated a *moderate* potential for NPS impairment. Habitat quality was assessed as *good* with the sediment deposition category indicating some impairment. During the September site visit, the dissolved oxygen concentration was 4.5 mg/L and the stream flow was estimated at 0.1 cfs. There was a partial beaver dam upstream of the sampling reach. Increased beaver activity in the watershed due to the drought conditions may have had an adverse impact on the fish community and the dissolved oxygen concentration.

Taylor Creek (0107-200): The fish and aquatic macroinvertebrate communities were generally in *fair* condition at both Taylor Creek locations. The habitat at both locations was assessed as *excellent*, however the category indicating sedimentation was only 35% and 38% of the maximum score, indicating impairment. Water quality data did not indicate a cause of impairment. Local SWCD estimates of pasture indicated a *moderate* potential, and the estimates of sedimentation rates indicated a *high* potential, for NPS impairment.

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LIST OF ABBREVIATIONS

Abbreviation	Interpretation
§	Section
AAU	Aquatic Assessment Unit of ADEM's Field Operations Division (Formerly EIS)
ACT	Alabama, Coosa, and Tallapoosa Basin Group
ADEM	Alabama Department of Environmental Management
ALAMAP	Alabama Monitoring and Assessment Program
AU	Animal Unit as defined by ADEM CAFO Rules
BMP	Best Management Practices
Br	Branch
CAFO	Concentrated Animal Feeding Operation
cfs	Cubic Feet per Second
Chem.	Chemical/Physical Water Quality
Co.	County
Confl.	Confluence
Cr	Creek
CU	Cataloging Unit
CWA	Clean Water Act
CWP	Clean Water Partnership
ds	Downstream
EIS	Environmental Indicators Section of ADEM's Field Operations Division
EPA	U.S. Environmental Protection Agency
FOD	Field Operations Division
GPS	Global Positioning System
GSA	Geological Survey of Alabama
IBI	Index of Biotic Integrity (fish community)
Macroinv.	Aquatic Macroinvertebrate
MB-EPT	Multihabitat Bioassessment for Ephemeroptera, Plecoptera and Trichoptera
mg/L	Milligrams per Liter
mi^2	square miles
Mod.	Moderate
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
nr	Near
NRCS	Natural Resources Conservation Service
OAW	Outstanding Alabama Water
OE/DO	Organic Enrichment/Dissolved Oxygen
ONRW	Outstanding National Resource Water
R	River
Rd	Road
RM	River Mile
SSWCC	State Soil and Water Conservation Committee
SWCD	Soil and Water Conservation District
TMDL	Total Maximum Daily Load
TNTC	Too numerous to count
TVA	Tennessee Valley Authority
ug/g	Micrograms per Gram
ug/L	Micrograms per Liter
us	Upstream
WQDS	Water Quality Demonstration Study

INTRODUCTION

The Alabama Department of the Environmental Management (ADEM) is charged with monitoring the status of the State's water quality pursuant to the Clean Water Act and the Alabama Water Pollution Control Act. Under the Clean Water Act of 1977, the EPA emphasized programs addressing the chemical contamination of the nation's waters (National Research Council 1992). State and federal programs initiated to meet these water quality guidelines have been largely successful in controlling and reducing certain kinds of chemical pollution from point source discharges (National Research Council 1992, ADEM 1996c). The detection, assessment, and control of impairment from point sources is fairly well understood because the pollutants, their concentrations, and probable points of impact are known (National Research Council 1992, EPA 1997a).

Nonpoint source pollution accounts for approximately two-thirds of the water quality impairments in Alabama's streams (ADEM 2000j). However, the Clean Water Act of 1977 does not directly address impairment from nonpoint sources. Nonpoint source pollution, defined as any unconfined or diffuse source of contamination, is generated irregularly and often associated with storm water runoff or atmospheric deposition (USEPA 1997a). Nonpoint source impairment is associated with land use within a watershed, such as agriculture, silviculture, and mining. The pollutants, their concentrations, and/or their sources may not be known or well-defined. Because of their transient nature, these pollutants may not be detected by periodic chemical water quality measurements (National Research Council 1992).

In 1996, ADEM adopted a basin-wide approach to water quality monitoring using a five-year rotating basin-group cycle. Concentrating the planning and implementation efforts within one basin group allows a focused review of available historical data and provides coordinated water quality monitoring and assessment efforts, efficient implementation of control activities on a geographic basis, and consistent and integrated decision making for awarding CWA §319 NPS funds.

In 1997, the Environmental Indicators Section (now the Aquatic Assessment Unit) of the Field Operations Division developed methods that could be used to complete basin-wide screening assessment projects. These methods have been refined as new information and techniques have become available. The projects are completed in five phases. During Phase I, land use information, Departmental regulatory databases, available historical data, and other assessment information are used to identify data gaps and to prioritize sub-watersheds with the greatest potential for nonpoint source impairment. Phase II includes reconnaissance and selection of assessment sites. During Phase III, sites are assessed using macroinvertebrate and fish community assessments, habitat assessments, and collection of physical/chemical water quality data. During Phase IV, data collected during Phase III, as well as existing data and assessment information, are analyzed to evaluate the level of impairment within each sub-watershed and determine the cause(s) and source(s) of impairment. A comprehensive report is completed during the final phase.

The Aquatic Assessment Unit (AAU) of the Field Operations Division has completed basin-wide NPS screening assessments of the Black Warrior (1997), the Tennessee (1998), and the southeast Alabama river basins (1999). The results of these assessments have been reported in five separate documents (ADEM 1999h, ADEM 2000g, ADEM 2002a, ADEM 2002b, and ADEM 2002c).

During 2000, the AAU completed basin-wide screening assessments of the Alabama, Tallapoosa, and Coosa basins. At the request of the Office of Education and Outreach, separate screening assessment projects were conducted within each of these basins, although together these basins comprise one of ADEM's basin groups. Combined, these basins contain 189 sub-watersheds. Sampling efforts were divided evenly between the three basins using desktop screening methods to target the ten (14-17%) sub-watersheds per basin most at risk of nonpoint source impairment. This document summarizes the assessment information and results obtained within the Coosa River basin.

Study Area

The Alabama portion of the Coosa River Basin (0315) is comprised of three major divisions or *cataloging units* (Upper, Middle and Lower Coosa) and 69 sub-watersheds. The Coosa River basin drains 5,400 mi^2 (10.3%) of Alabama's land area and flows through parts of 16 counties in Alabama, but only 12 counties contain a significant portion of the Basin (Fig. 1).

Ecoregions

Ecoregions are relatively homogeneous ecological areas defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables. Since 1991, ADEM has maintained a network of least-impaired ecoregional reference sites. Intensive monitoring assessments, including chemical, physical, habitat, and biological data, are used to develop baseline reference conditions for each of Alabama's 29 Level IV subecoregions (Griffith et al 2001). The reference condition establishes the basis for making comparisons and detecting use impairment.

This basin lies above the Fall Line mostly within the *Interior Plateau* (71), *Southwestern Appalachians* (68), and *Piedmont* (45) ecoregions; a small portion of the southwestern part of the basin is in the *Fall Line Hills* and *Flatwoods Alluvial Prairie Margins* subregions of the *Southeastern Plains (65)* (Fig. 2).

The *Interior Plateau* is a diverse ecoregion extending from southern Indiana and Ohio to northern Alabama. Rock types are distinctly different from the coastal plain sands of *Southeastern Plains* ecoregion (65), and elevations are lower than the Appalachian ecoregions (66, 67, 68) to the east. Mississippi to Ordovician-age limestone, chert, sandstone, siltstone, and shale compose the landforms of open hills, irregular plains, and tablelands. The natural vegetation is primarily oak-hickory forest, with some areas of cedar glades. The springs, lime sinks, and caves contribute to this region's distinctive faunal distribution. (Griffin pers. comm. 1999)

Stretching from Kentucky to Alabama, the open, low mountains of the *Southwestern Appalachians* contain a mosaic of forest and woodland with some cropland and pasture. The eastern boundary of the ecoregion along the more abrupt escarpment where it meets the *Ridge and Valley* (67), is relatively smooth and only slightly notched by small eastward flowing stream drainages. The western boundary, next to the *Interior Plateau's Eastern Highland Rim* (71g), is more crenulated with a rougher escarpment that is more deeply incised. The mixed mesophytic forest is restricted mostly to the deeper ravines and escarpment slopes, and the upland forests are dominated by mixed oaks with shortleaf pine. (Griffin pers. comm. 1999)

Considered the non-mountainous portion of the old Appalachians Highland by physiographers, the northeast-southwest trending *Piedmont* ecoregion comprises a transitional area between the mostly mountainous ecological regions of the Appalachians to the northwest and the flatter coastal plain to the southeast. The dissected upland has an irregular and rolling surface, with some hills of moderate relief. The underlying geology is complex, comprised of Precambrian to Paleozoic-age metamorphic and igneous rocks including gneiss, schist, quartzite, granite, phyllite, slate, and amphibolite. Elevations are generally between 400-1200 feet, although a few higher hills and ridges are found in the northern portion. Soils of the *Piedmont* are developed on saprolite, a soft, clay-rich, decomposed layer formed during the long history of in-place weathering of the underlying metamorphic and igneous rocks. Soils, mostly Ultisols, tend to be deep, highly weathered, with a high clay content and low amount of organic matter, and are lower in nutrients than many coastal plain regions. Widespread forest clearing and farming in the 1800's and early part of the 1900's led to high rates of soil erosion (Trimble 1974). The *Piedmont* has little original topsoil, and the subsoil remaining is not as productive. With loss of soil fertility and abandonment of farmland, much of the *Piedmont* reverted to secondary forest cover of pine and hardwood woodlands. Much of the open land is used for pasture. Stream substrates range widely from rock and gravel, to sand and silt. The history of soil erosion greatly increased sediment loads in the streams and rivers of the *Piedmont* with extensive deposits of sand and silt on the floodplains (Mulholland and Lenat 1992). These deposits continue to serve as a source for sediment transport. (Griffin pers. comm. 2000)

Topography/Soils

The Coosa Basin contains several distinct soil areas. The *Limestone Valleys and Uplands* consists of red clayey soils with silt/loam surface textures. The topography of the valleys is generally level to undulating with elevations of about 600 feet. Most of the land is open and cropped with cotton or soybeans. The uplands are gravelly loam and gravelly clay subsoil with gravelly/silt/loam surface layers. The elevations are about 700 feet and the topography ranges from level to very steep. Cotton and soybeans are the major row crops with much of the area used for pasture or forest. (ACES 1997)

The *Appalachian Plateau* comprises Cumberland, Sand, Lookout, Gunter, Brindlee, Chandler and other smaller mountains. Most of the soils are derived from sandstone or shale. The more level areas are dominated by Nauvoo, Hartsells and Wynville soils that are formed in residuum from sandstone. They have loamy subsoils and fine sandy loam surface layers. Most slopes are less than ten percent. Elevation is about 1300 feet. Corn, soybeans, potatoes, and tomatoes are major crops. Poultry production is very important in this area. The more rugged portions of the *Appalachian Plateau* are dominated by soils such as Montevallo and Townley, which were formed in residuum from shale. These soils have either a very channery loam or a clayey subsoil and silt loam surface layers. Most areas are too steeply sloping for agriculture. Elevations range from 300 to 700 feet. (ACES 1997)

Most of the soils in the *Piedmont Plateau* are derived from granite, hornblende, and mica schists. Madison, Pacolet, and Cecil soils, which have red clayey subsoils and sandy loam or clay loam surface layers, are very extensive. Topography is rolling to steep with elevations in most areas ranging from 700 to 1000 feet, although in the Talladega Hills, elevations range from 900 to 2407 feet (highest point in Alabama). Most rolling areas were once cultivated but are now in pasture or forest.

Most of the soils in the *Upper Coastal Plain* are derived from marine and fluvial sediments eroded from the Appalachian and Piedmont plateaus. Smithdale, Luverne and Savannah soils are extensive with either loamy or clayey subsoils and sandy loam or loam surface layers. Savannah soils have a fragipan. Topography is level to very steep with narrow ridge tops and broad terraces that are cultivated. Most of the area is in forest with elevations ranging from 200 to 1000 feet. (ACES 1997)

The soils of the *Major Flood Plains and Terraces* are not extensive but important where they are found along streams and rivers as in the Lower Coosa Cataloging Unit. They are derived from alluvium deposited by the streams. The Cahaba, Annemaine, and Urbo series represent major soils of this area. A typical area consists of cultivated crops on the nearly level terraces, and bottomland hardwood forests on the floodplain of streams. (ACES 1997)

Review of Available Data

The use of available data was an important component of the ACT basin-wide screening assessment because it allowed ADEM to concentrate efforts in those areas where recent data were not available. Chemical, habitat, and biological data from other projects were used to supplement data collected during this study. However, water quality data and information can take many forms, from casual observations to intensive water chemistry, biological, and physical characterization. It is important to understand the objectives of these projects when using the data in order to accurately assess conditions within a sub-watershed.

During 2000, ADEM identified two levels of waterbody assessments: monitored and evaluated (ADEM 2000h). When information such as observed conditions, limited water quality data, water quality data older than five years, or estimated impacts from observed or suspected activities are used as the basis for the assessment, the assessment is generally referred to as *evaluated*. Evaluated assessments usually require the use of some degree of professional judgement by the person making the assessment. *Monitored* assessments are based on chemical, physical, and/or biological data collected using commonly accepted and well-documented methods. There is a higher level of certainty associated with monitored assessments than with evaluated assessments.

A summary of each project, including lead agency, project objectives, type of assessments conducted and data collected, and applicable quality assurance is provided below.

303(d) Waterbody Monitoring Project:
Lead agency: ADEM
Purpose: In accordance with §303(d) of the Federal Clean Water Act, each state must identify its water bodies that do not meet surface water quality standards and submit this list to the USEPA. In an effort to address water quality problems within Alabama, some waterbodies included on ADEM's 1996 and 1998 §303(d) lists are only "suspected" to have water quality problems based on evaluated assessment data. ADEM conducts monitored assessments of these and other suspected impaired waterbodies to support §303(d) listing and de-listing decisions. This project includes intensive chemical, habitat,

and biological data collected using *ADEM Standard Operating Procedures and Quality Assurance/Quality Control manuals (SOP QA/QC).*
Reference: ADEM 2000

ALAMAP (Alabama Monitoring and Assessment Program)
Lead agencies: ADEM and USEPA
Purpose: Statewide monitoring effort to provide data that can be used to estimate the status of all streams within the State. Evaluated assessment data, including chemical, physical, and habitat parameters are collected once at 250 randomly selected wadeable stream stations (provided by USEPA-Gulf Breeze) over a 5-year period using current *ADEM SOP QA/QC manuals*.
Reference: ADEM 2000b

Ambient Trend Monitoring Program:
Lead agency: ADEM
Purpose: Long term water quality and biological monitoring has been conducted at stations located throughout Alabama. Stations were established primarily to monitor water quality below point source discharges. During 1996, with the addition of upland ALAMAP, the ambient monitoring program was modified to focus on wadeable streams and rivers. Large river sites near a monitored reservoir were transferred to ADEM's Reservoir Monitoring Program (1997a). Eight ambient trend monitoring stations were established in the Coosa River. In general, intensive water quality sampling was conducted at these sites using *ADEM SOP QA/QC manuals*.
Reference: ADEM 2001f

Ecoregional Reference Reach Program:
Lead agency: ADEM
Purpose: Ecoregions are relatively homogeneous ecological areas defined by similarity of climate, landform, soil, potential natural vegetation, hydrology, or other ecologically relevant variables. Since 1991, ADEM has maintained a network of least-impaired ecoregional reference sites. Intensive monitoring assessments, including chemical, physical, habitat, and biological data, are collected to develop baseline reference conditions for each of Alabama's 29 Level IV sub-ecoregions (Griffith et al. 2001). All samples and in-situ measures were collected in accordance with *ADEM SOP QA/QC manuals*. The reference condition establishes the basis for making comparisons and detecting use impairment.
Reference: ADEM 2000a, Griffith et al. 2001

University Reservoir Tributary Nutrient Study:
Lead Agencies: Cooperative effort by the University of Alabama, Auburn University, Tennessee Valley Authority and Auburn University at Montgomery funded by ADEM
Purpose: Intensive chemical sampling was conducted October 1998-March 2000 to study nutrient loading from tributaries to 26 reservoirs in Alabama. These data were used to quantify tributary nutrient loads to reservoirs, and, in conjunction with ongoing efforts to quantify point source nutrient loads, provide estimates of nonpoint source nutrient contributions. These loading estimates will be essential to the Department's effort to

address lake eutrophication concerns across the state. Samples were collected monthly, June-November and biweekly, December-May. All samples and in-situ measures were collected in accordance with *ADEM SOP QA/QC manuals*.
Reference: ADEM 2000i

ADEM Reservoir Tributary Monitoring Project:
Lead agency: ADEM
Purpose: Assessment and reporting of water quality conditions and tributary loadings from major tributaries of publicly-owned lakes and reservoirs that will be essential as the Department begins to address lake eutrophication concerns across the state. Objectives are to develop an adequate water quality database for all publicly owned lakes in the state, establish trends in trophic status that can only be established through long term monitoring efforts, and determine water quality conditions of the reservoirs located throughout the state. Intensive water quality monitoring was conducted at major tributaries of the Alabama, Coosa, and Tallapoosa Rivers during April, June, and August, 2000. Chlorophyll *a* samples were collected as indicators of biological conditions at each site. All samples and in-situ measures were collected in accordance with *ADEM SOP QA/QC manuals*.
Reference: ADEM 2000d

Clean Water Strategy Project:
Lead Agency: ADEM
Purpose: Intensive water quality monitoring was conducted to evaluate the condition of the State's surface waters, identify or confirm problem areas, and to serve as a guide from which to direct future sampling efforts. Sampling stations were chosen where problems were known or suspected to exist, or where there was a lack of existing data. Data were collected monthly, June through October, 1996. All samples and in-situ measures were collected in accordance with *ADEM SOP QA/QC manuals*.
Reference: ADEM 1999a

State Parks Monitoring Project:
Lead agency: ADEM
Purpose: The objectives of this project were to assess water quality of flowing streams in sub-watersheds located within Alabama's State Parks, to identify current and potential causes and sources of impairments, and to identify non- or minimally-impaired streams that may be considered for water use classification upgrade to Outstanding Alabama Water (OAW) (ADEM 1999). Intensive monitoring assessments, including chemical, physical, habitat, and biological data, were conducted at 34 sites in or near nine State Parks during 1998. All samples and in-situ measures were collected in accordance with current *ADEM SOP QA/QC manuals*.
Reference: ADEM 1999d

Middle Choccolocco Creek Water Quality Monitoring Project:
Lead agency: GSA (Funded by ADEM)
Purpose: An intensive water quality study was designed for use in the evaluation of NPS pollution controls and BMPs implemented in the Middle Choccolocco Creek Watershed.

(GSA 2001, unpublished data). Water samples were collected in accordance with the ADEM *SOP QA/QC* manual (ADEM 1986) Lab sample analyses were conducted in accordance with Federal Register 40CFR 136.3, as amended.
Reference: O'Neil et al. 2002, Chandler 2002

Big Wills Creek Water Quality Demonstration Project:
Lead Agency: ADEM
Purpose: Water quality monitoring was conducted to evaluate the condition of Big Wills Creek upstream and down stream of the Ft. Payne Wastewater Treatment Facility. Assessments were conducted *before* and *after* upgrade of the treatment systems in order to document any improvement evident in the receiving water. Aquatic macroinvertebrate and habitat assessments were conducted one time before and after upgrade. Instream water column and effluent samples were collected for laboratory analysis and bioassay toxicity test. All samples and in-situ measures were collected in accordance with *ADEM SOP QA/QC manuals*.
Reference: ADEM 2001a

Hatchet Creek Watershed Water Quality Monitoring Project:
Lead agency: GSA (Funded by ADEM)
Purpose: An intensive water quality study was designed for use in the evaluation of proposed *Outstanding Alabama Waters* status. Water samples were collected in accordance with the ADEM *SOP QA/QC* manual (ADEM 1986). Lab sample analyses were conducted in accordance with Federal Register 40CFR 136.3, as amended.
Reference: GSA 1997

Other Data/Information

ADEM's Departmental municipal, industrial, mining, and CAFO databases were reviewed to rule out sub-watersheds primarily impacted by point sources or monitored in conjunction with NPDES permits. Biological and chemical data were also reviewed to concentrate efforts of the current study in areas that have not been recently assessed.

Land Use, Sedimentation Rates and Animal Population Estimates

Land use percentages (Figs. 6 and 7) and estimates of animal populations and sedimentation rates (Fig 4) were obtained from information provided to ADEM by the Alabama Soil and Water Conservation Committee (ASWCC) and local Soil and Water Conservation Districts (SWCD). This information was provided on Conservation Assessment Worksheets completed in 1998 (FY97 CWA § 319 Workplan Project #4). Additional land use information was obtained from EPA published estimates of percent land cover for the entire southeastern U.S. (EPA 1997a). These estimates were based on leaves-off Landsat TM data acquired in 1988, 1990, 1991, 1992, and 1993. Although the images used to estimate land cover were slightly dated, they provide generalized and consistent estimates for the entire basin. Therefore, these estimates of percent land-cover were used to supplement information collected by the local SWCD. A comparison of the two data sets for the broad categories of land uses is found in Tables 2a through 2c.

Animal Husbandry: The potential NPS impairment from activities associated with animal husbandry was evaluated (Fig. 3). The impairment potential among the different animal types was standardized by converting animal populations (ASWCC 1998) into animal units (AU). Animal unit estimates were calculated for each of the animal types based on the current conversion factors found in ADEM Administrative Code Chapter 335-6-7 (CAFO Program Rules). These values considered characteristics such as live weight equivalent waste quantity and constituent composition (limiting nutrients, moisture, additive compounds, etc.) (ADEM 1999b). The AU estimates for each animal type were summed and further standardized by converting to animal unit densities (AU/acre of sub-watershed).

Table M-1. Current conversion factors found in ADEM Administrative Code Chapter 335-6-7 (CAFO Program Rules).

Animal Type (CAFO Definition)	*Numbers of Animals*	*Animal Unit (AU) Equivalent*
Cattle (slaughter, feeder, dairy heifers)	1	1.0
Dairy (mature)	1	1.4
Swine (>55 lbs.)	1	0.4
Poultry (Broiler & Layer)	125	1.0

Forestry Practices: Where the information was available, three categories provided by the SWCD and the Alabama Forestry Association were added to assess the potential for impairment from forestry practices: percent of acres clear-cut, percent of acres harvested annually, and percent of forest acres needing improvement (Fig 5).

Urban Nonpoint Sources: SWCD estimates of percent urban land use, number of current construction/stormwater authorizations, and estimates of the number of septic tanks were used to identify sub-watersheds potentially impacted by urban land uses (Fig 8).

Nonpoint Source Impairment Potential and Sub-watershed Ranking

For each sub-watershed and cataloging unit, an estimate of the potential for nonpoint source impairment was determined for several categories: animal husbandry, row crops, pasture runoff, mining, forestry practices, and sedimentation. Each sub-watershed was assigned an impairment potential for each category. The sub-watershed values for each category were H=5, M=3, and L=1. The ranges of parameter values used for a sub-watershed's impairment potential were determined by calculating the mean and standard deviation for each parameter including data from the Alabama, Coosa and Tallapoosa basins. A value less-than-or-equal-to the calculated mean was assigned a "Low" potential. Values greater than the mean, but equal-to-or-less-than two-standard deviations above the mean were assigned a "Moderate" potential and values greater than two-standard deviations above the mean were assigned a "High" potential for NPS impairment. If more than one parameter was considered in a category, then the highest parameter potential was considered the category potential.

For each sub-watershed and cataloging unit, the potential for the seven rural nonpoint source categories were summed to rate overall NPS impairment potential (Fig. 9). Total scores greater than the 90th percentile were rated as *high*; total scores greater than the 50th percentile, but less than the 90th percentile were *moderate*; and, total scores less than the 50th percentile were *low*. In addition, sub-watersheds and cataloging units that scored in the *low* range, but received a *high* rating in at least one category were rated as *moderate* for overall NPS impairment. Sub-watersheds and cataloging units that scored in the *moderate* range, but received a *high* rating in at least two categories were rating as *high* for overall NPS potential. *High* ranked sub-watersheds also having a *high* non-rural NPS potential were further evaluated to determine the point source location(s) in relation to potential assessment sites.

Any sub-watershed containing a CWA §303(d) segment was ranked highest on the impairment potential list regardless of its overall impairment potential status. Those sub-watersheds with a *high* potential in any rural NPS category were given priority over other sub-watersheds with the same total score. The "non-rural" and "other" NPS categories were used as indicators of potential problems in the watersheds, but are not addressed in this project. The information used to compile the rural NPS categories is from the 1998 SWCD Conservation Assessments. It is important to note that the ranges used for the Alabama, Coosa, and Tallapoosa Basins may not be applicable to water quality conditions and activities in other basins of the State. These categories and ranges are intended to be descriptive, but are open to differing interpretations considering alternative data analysis techniques and are subject to refinement as data availability and analysis warrants.

The local SWCDs also evaluated the streams for each of the sub-watersheds located in their respective counties. These evaluations were discussed during public meetings and were used by the local SWCDs to rank the sub-watersheds as to their perceived priority for conducting water quality improvement projects. The first priority was given to the sub-watershed with the greatest need. A single sub-watershed may have more than one priority if two or more of the counties containing the sub-watershed gave it a top-five priority ranking. This information was used to supplement the sub-watershed estimates of NPS impairment potential (Tables 5a - 5c).

Table M-2. Range of values used to define *low*, *moderate*, and *high* potentials for impairment for each nonpoint source category.

Category	Impairment Potential		
Rural NPS Categories	**Low**	**Moderate**	**High**
Cropland Land use (highest rating)			
% Cropland	<7	7 to 23	>23
% of Acres where Pesticides used	<8	8 to 33	>33
% Pastureland	<14	14 to 38	>38
% Mining	<0.3	0.3 to 2.1	>2.1
% Forestry Activities (highest rating)			
% of Acres Clear Cut	<2.0	2.0 to 5.5	>5.5
% of Acres Harvested Annually	<4	4 to 11	>11
% of Forest Needing Improvement	<13	13 to 41	>41
Animal Units per Acre	<0.12	0.56 to 0.12	>0.56
% Aquaculture (Acres/Acre)	<0.2	0.2 to 2.6	>2.6
Sedimentation rate (tons/acre/yr.)	<4.5	4.5 to 18.2	>18.2

Table M-3. Range of values used to define *low*, *moderate*, and *high* potentials for impairment for each urban or point source category.

Category	Impairment Potential		
Urban NPS Categories	**Low**	**Moderate**	**High**
% Urban	<4	4 to 23	>23
Development (highest rating)			
# construction./stormwater authorizations (CSA)	<5	5 to 21	>21
# CSA/acre of sub-watershed	<0.11	0.11 to 0.47	>0.47
# Septic Tanks failing per acre	<0.003	0.003 to 0.011	>0.011

Site Selection

The results of the AAU calculated sub-watershed NPS impairment potential estimates were used to rank the sub-watersheds for the Alabama, Coosa, and Tallapoosa. Additional review of municipal, industrial and mining permit tracking databases were used to identify those sub-watersheds most impacted by point sources. Approximately ten sub-watersheds were chosen from each of the three basins (~30 total) to select candidate assessment sites and conduct field reconnaissance. Where possible, assessment sites were located in relatively small drainages in order to relate water quality to specific NPS sources and to compare results to ADEM’s network of least-impacted reference sites.

Habitat Assessment

Aquatic biological condition of the fish and aquatic macroinvertebrate communities is generally correlated with the quality of available habitat (without considering influences of water quality). The presence of stable and diverse habitat usually will support a diverse and healthy aquatic fauna (Barbour and Stribling 1991). Habitat quality was therefore assessed at each project location to evaluate stream condition and to assist in the interpretation of the biological data. Three habitat characteristics were evaluated to assess overall habitat quality at each site: Primary, secondary, and tertiary habitat parameters. Primary habitat parameters evaluate the availability and quality of substrate and instream cover. They include those characteristics that directly support aquatic communities, such as substrate type and stability, and availability. Secondary habitat parameters evaluate channel morphology, which was determined by flow regime, local geology, land surface form, soil, and human activities. Channel morphology indirectly affects the biological communities by affecting sediment movement through a stream (Barbour and Stribling 1991). Secondary habitat parameters include an evaluation of flow regime, sinuosity/ instream geomorphology, and sediment deposition and scouring. Tertiary habitat characteristics evaluate bank structure and riparian vegetation. Bank and riparian vegetation prevent bank erosion and protect the stream from stormwater runoff from impervious surfaces. The presence of overhanging riparian vegetation also determines the primary energy source for aquatic macroinvertebrate communities—the base of the fish food chain (Vannote et al. 1980). Tertiary parameters include bank condition, bank vegetative protection, and riparian zone width.

The EPA has published two versions of the stream habitat assessment forms to evaluate primary, secondary, and tertiary habitat parameters (Plafkin et al. 1989, Barbour et al. 1999). ADEM used the original habitat assessment form from 1989 through 1996. The EPA published revised habitat assessment forms that evaluated riffle/run (Appendix B-1) and glide/pool (Appendix B-2) streams separately (EPA 1997b). The primary habitat parameters of the glide/pool habitat assessment place more emphasis on habitat characteristics important to this stream-type, primarily pool structure and variability. The ADEM began using the revised forms in 1996 because they more accurately assessed habitat quality and degradation to glide/pool streams common in the coastal plains of Alabama (ADEM 1999f). In addition, because they measure impairment to habitat quality, the scores (converted into percent maximum) were comparable between stream types and can be used to evaluate streams throughout the basin.

At each site, all field personnel complete a riffle/run or glide/pool habitat assessment. The scores were averaged to obtain a final score. One physical characterization sheet was filled out at each station (Appendix C).

Aquatic Macroinvertebrate Assessment: Multi-Habitat EPT Method

A three-member team conducted ADEM's Multihabitat EPT screening method at 29 study sites within the Coosa River basins (Tables 7a-7c). Eleven ecoregional reference stations were also assessed. At each station, basic field parameters were measured and a stream flow was estimated using an abbreviated cross-section flow measurement technique of 6-10 velocity/depth measurements (ADEM 2001c). A satellite correctable GPS Unit was used to determine the latitude and longitude of each station (if possible).

The Multihabitat EPT (MB-EPT) method is used in watershed screening assessment studies, which entail assessments at multiple sites over a large area. The MB-EPT decreases collection effort and analysis time by processing the samples in the field and focusing on the collection of the pollution-sensitive Ephemeroptera, Plecoptera, and Trichoptera (EPT) taxa. This method was used to prioritize sub-watersheds most impaired by nonpoint source pollution. Once priority sub-watersheds have been identified, more extensive watershed monitoring efforts will be needed to thoroughly document the causes and sources of impairment to the water quality.

Collect samples from multiple habitats: The productive habitats at a site will differ naturally between upland streams above the Fall Line and Coastal Plain streams. Streams above the Fall Line were generally "Riffle-Run" streams. The streams below the Fall Line were generally "Glide-Pool" streams and were characterized by low gradient, sandy substrates, a lack of riffle habitat, and meandering flows. All available habitats were sampled at each site including: riffles, leaf packs, rootbanks, snags/logs and rocks, and sand.

Process samples in the field: After each habitat was collected, the organic material was elutriated from the inorganic material. The inorganic material was visually inspected for organisms (esp. Trichoptera in stone cases). The organic matter was washed down, and large debris was visually inspected and removed.

Collect pollution-sensitive taxa: Representative "EPT" organisms were removed from the sample and preserved in a pre-labeled vial by habitat. The vials for each station were returned to the lab in a Nalgene container labeled with the Station number, date and time collected, the names of the habitats collected at the station along with the initials of the team member who processed the sample. The organisms were identified to family level in the Laboratory.

Field QA/QC procedures: At ten percent of the field picked stations, the debris remaining from each habitat was preserved in a wide-mouth container and returned to the laboratory for verification of the removal of all EPT taxa.

Lab QA/QC procedures: Laboratory identifications for ten percent of macroinvertebrate samples were verified by a second qualified biologist. All data entered in the aquatic macroinvertebrate mainframe PACE database were verified for accuracy. Ten percent (10%) of all metric calculations completed by the database were hand calculated to verify the accuracy.

Data analysis: The total number of pollution-sensitive EPT families collected from each station was compared to EPT Family Index data collected from least-impaired ecoregional reference sites to indicate the health of each stream reach. Each site was assessed as *excellent*, *good*, *fair*, or *poor* based on the number of pollution-sensitive EPT families collected (ADEM 1999g).

Fish IBI Assessment

Site Selection: Fish community assessments were completed July 6- July 20, 2000 by personnel from the AAU. Nine fish assessment stations were sampled in the Coosa River Basin (Tables 7a-7c and Appendix F-3d). These sites were selected in sub-watersheds where either the aquatic macroinvertebrate screening assessment bordered between two impairment categories, or impairment from sedimentation or habitat degradation was detected using the habitat assessment.

Sample Collection: The Fish IBI Assessment, developed by the GSA, was used to evaluate water quality at stations in the Alabama, Coosa, and Tallapoosa Basins. The methods summarized here are described in more detail in O'Neil and Shepard (1998). They are currently being incorporated into the ADEM's Fish Community Assessment Standard Operating Procedures manual. Additional information pertaining to metrics testing and criteria development is included in these sources.

At each station, one three-person team conducted a timed, multi-habitat assessment of the fish community, sampling all available habitats including riffles, pools, runs, snags, and undercut banks. Small streams were sampled for 30-to-40 minutes while larger streams were sampled for one hour. Nylon minnow seines (1/8 to 3/16-inch mesh) and a portable backpack shocking unit were used to collect from all habitat areas.

In the field, collected specimens were fixed in 10% formalin and a field-sheet completed. Samples were transported to the laboratory where fish were identified to species, enumerated, weighed to the nearest gram and preserved in 70% ethanol.

Fish IBI Metrics: The fish IBI method, initially developed by Karr et al. (1986), was modified by the GSA to increase sensitivity to sources of impairment found within Alabama. Twelve metrics are used to evaluate species richness and composition, trophic composition, and fish abundance and condition (O'Neil and Shepard 1998). Assessment criteria for each metric, developed specifically for upland and coastal streams within the Black Warrior and Cahaba River basins, have been applied statewide because data from other basins were insufficient to refine the scoring criteria. As the available dataset increases in size the method will be refined for each of the State's basins.

The 12 metrics used to evaluate water quality of streams and rivers include measures of species richness (# of species) and composition, trophic composition, fish abundance, and condition (O'Neil and Shepard 1998). The total number of fish captured was standardized to catch per hour for purposes of calculating one metric. Each metric was given a score according to the associated criteria and totaled to determine the Index of Biotic Integrity (IBI) score. The integrity of the fish community was determined to be *excellent*, *good*, *fair*, *poor*, or *very-poor* based on the total IBI score. All final fish IBI assessments were completed by the AAU for incorporation into the final site assessment.

Chemical Assessment

Table 4 lists the analysis method and detection limits for parameters analyzed by ADEM in conjunction with its monitoring programs. During the Coosa River Basin Screening Assessment, chemical parameters were used as indicators of NPS impairment including sedimentation (total suspended solids, total dissolved solids), nutrient enrichment (total phosphorus, nitrate/nitrite-nitrogen, BOD-5), agricultural impacts (pesticide scan), and mining impacts (iron, manganese).

Stream flow estimates, routine field parameters, and water quality samples were collected at each of the stations in September 2000. Chemical analyses of water samples were conducted by the ADEM's Central Laboratory in Montgomery. Water quality samples for laboratory analysis were collected, preserved, and transported to the ADEM Laboratory as described in ADEM Field Operations Standard Operating Procedures and Quality Control Assurance Manual, Volume I - Physical/Chemical (2000f).

Duplicate field parameters and samples were collected during ten percent (10%) of the sampling events. Water quality samples and routine field parameters were collected in conjunction with several other studies conducted or funded by ADEM (Appendix F). Water quality parameters were assessed as *exceeding* or *not exceeding* background levels as defined by the 95th percentile of ADEM's current database of least-impaired ecoregional reference sites.

Chain of Custody

Sample handling and chain-of-custody procedures were utilized for all biological and chemical samples as outlined in ADEM Field Operations Standard Operating Procedures and Quality Control Assurance Manual, Volumes I and II to ensure the integrity of all samples collected (ADEM 1999f, ADEM 2000f).

Final Assessment and Ranking of Sub-watersheds

Although the components or phases of this project resulted in a fully integrated assessment of the Alabama, Coosa and Tallapoosa basins, biological, habitat, and chemical assessments were weighted differently in ranking and prioritizing sub-watersheds. Monitoring changes in biological communities, which respond to stresses of various degrees over time, can detect impairment caused by infrequent or low-level NPS pollution. The results of fish and aquatic macroinvertebrate assessments were therefore used to identify priority sub-watersheds. Landuse patterns, habitat condition, chemical water quality measurements, and Conservation Assessment Worksheet data were used to evaluate the cause(s) of impairment.

Aquatic Macroinvertebrate or fish community assessments of *fair* or *poor* were used to identified the priority sub-watersheds. Sub-watersheds meeting these criteria, but suspected to be impaired primarily by point sources or urban runoff were not recommended as priority sub-watersheds for implementation of NPS controls.

Table M-4. Parameters analyzed by ADEM laboratories and the method used.

Parameter	*Method*	*Reference*	*Detection Limit*
Air Temperature	Thermometer	ADEM SOP Vol. 1	1 C
Water Temperature	Thermometer/Thermistor	ADEM SOP Vol. 1	1 C
Dissolved Oxygen	Modified Winkler Membrane Electrode	ADEM SOP Vol. 1	0.1 mg/L
pH	Glass Electrode	ADEM SOP Vol. 1	0.1 su
Conductivity	Wheatstone Bridge	ADEM SOP Vol. 1	0.1
Turbidity	Nephelometer	ADEM SOP Vol. 1	0.1 NTU
Stream Flow	Modified Cross Sectional	ADEM SOP Vol. 1	0.1 cfs
5-day Biochemical Oxygen Demand (BOD-5)	EPA 405.1	EPA/600/4-79/020	0.1 mg/L
Alkalinity (Alk)	EPA 310.1	EPA/600/4-79/020	1 mg/L
Aluminum, Total (Al)	EPA 200.7	EPA/600/R-94/111	0.2 mg/L
Ammonia Nitrogen (NH_3)	EPA350.1	EPA/600/R-93/100	0.015 mg/L
Arsenic, Total (As)	EPA 206.2	EPA/600/4-79/020	10 ug/L
Cadmium, Total (Cd)	EPA 200.7	EPA/600/R-94/111	0.003 mg/L
Carbonaceous BOD-5 (CBOD-5)	EPA 405.1	EPA/600/4-79/020	0.1 mg/L
Chloride (Cl)	EPA 300.A EPA 325.1	EPA/600/R-93/100 EPA/600/4-79/020	0.5 mg/L
Chlorophyll a (Chlor a)	SM 10200H	APHA et al. 1998	0.1 mg/m3
Chromium, Total (Cr-T)	EPA 200.7	EPA/600/R-94/111	0.015 mg/L
Copper	EPA 200.7	EPA/600/R-94/111	0.02 mg/L
Fecal Coliform	Membrane Filter	ADEM SOP Vol. 6	---
Hardness	EPA 130.2 / SM2340B	EPA/600/4-79/020	1 mg/L
Hexavalent Chromium (Cr+6)	SM 3500CrD	APHA et al. 1998	0.02 mg/L
Iron, Total (Fe)	EPA 200.7	EPA/600/R-94/111	0.02 mg/L
Lead, Total (Pb)	EPA 239.2	EPA/600/4-79/020	2 ug/L
Magnesium, Total (Mg)	EPA 200.7 EPA 242.1	EPA/600/R-94/111 EPA/600/4-79/020	0.05 mg/L
Manganese, Total (Mn)	EPA 200.7	EPA/600/R-94/111	0.02 mg/L
Mercury, Total (Hg)	EPA 245.2 EPA 245.5	EPA/600/4-79/020 EPA/600/4-91/010	0.3 ug/L
Nickel, Total (Ni)	EPA 200.7	EPA/600/R-94/111	0.03 mg/L
Nitrate+Nitrite Nitrogen (NO3+NO2-N)	EPA 353.2	EPA/600/R-93/100	0.003 mg/L
Organochlorine Pesticides	SW 8081A	EPA 1994	---
Organophosphorus Pesticides	SW 8141	EPA 1994	---
Ortho-Phosphorus (Ortho-P)	EPA 365.3	EPA/600/4-79/020	0.004 mg/L
Selenium, Total (Se)	EPA 270.2	EPA/600/4-79/020	10 ug/L
Silver, Total (Ag)	EPA 200.7	EPA/600/R-94/111	0.01 mg/L
Total Dissolved Solids (TDS)	EPA 160.1	EPA/600/4-79/020	1 mg/L
Total Kjeldahl Nitrogen (TKN)	EPA 351.2	EPA/600/R-93/100	0.15 mg/L
Total Organic Carbon (TOC)	EPA 415.2	EPA/600/4-79/020	0.5 mg/L
Total Organic Nitrogen (TON)	TKN-NH_3	EPA 1994	0.2 mg/L
Total Phosphorus (Total P)	EPA 365.4	EPA/600/4-79/020	0.004 mg/L
Total Suspended Solids (TSS)	EPA 160.2	EPA/600/4-79/020	1 mg/L
Zinc, Total (Zn) Zinc, Dissolved (Dis-Zn)	EPA 200.7 EPA 289.2	EPA/600/R-94/111 EPA/600/4-79/020	0.03 mg/L 0.03 mg/L

Land use: Table R-1 summarizes SWCD estimates of percent land cover within the Upper, Middle, and Lower Coosa CUs. Estimates of percent land cover differed between the Upper and Middle Coosa cataloging units (CUs), and Lower Coosa CU (Table E-1). Percent row crop was higher in the Upper and Middle Coosa CUs. The pasture/hay landuse was also somewhat higher in the Middle Coosa than in the Upper and Lower Coosa CUs.

Table R-1. Estimates of percent land cover within the Upper, Middle, and Lower Coosa River CUs (SWCD 1998).

Cataloging Unit	Forest	Row Crop	Pasture /Hay	Mining	Urban	Open Water	Other
Upper Coosa	62%	13%	11%	<1%	4%	7%	3%
Middle Coosa	65%	11%	15%	1%	4%	2%	3%
Lower Coosa	78%	3%	10%	1%	5%	2%	1%

Nonpoint Source Impairment Potential: Results indicated more sub-watersheds potentially at risk from NPS impairment in the Middle Coosa CU. Sedimentation (Fig 4.), forestry activities (Fig. 5) and pasture landuse (Fig. 7) were potential sources of NPS impairment within the Middle and Lower Coosa CUs. Row crop landuse (Fig 6) was a significant concern in the Upper and Middle Coosa CUs. Animal husbandry (Fig. 3) and mining activities were estimated to be potential sources of NPS impairment in the Middle Coosa CU.

***Historical data/studies*:** The majority of the water quality data (current and historical) included in this report were from eight major projects conducted by ADEM. Data collected by Auburn University/Auburn University at Montgomery (Appendix F-5) and GSA (Appendices F-8 and F-11) are also provided.

Historical data include both monitored and evaluated data. Monitored assessments are based on chemical, physical, and/or biological data collected using commonly accepted and well-documented methods. Evaluated assessments are based on observed conditions, limited water quality data, water quality data older than 5 years, or estimated impacts from observed or suspected activities.

Results of monitored assessments were used in this report to assess habitat, biological, and chemical conditions within a sub-watershed. Monitored assessments were conducted during eight projects (Table R-2). Evaluated assessments were conducted in conjunction with ADEM's ALAMAP Program (Appendix F-6), Ambient Trend Monitoring Program (Appendix F-1), and Clean Water Strategy Project (Appendix F-7). A summary of each project, including lead agency, project objectives, data collected, and applicable quality assurance manuals, is provided in the Methodology Section.

Figure 3. Estimates of NPS Impairment Potential from Animal Husbandry Activities Based upon Local SWCD Animal Population Estimates for the Coosa River Basin.

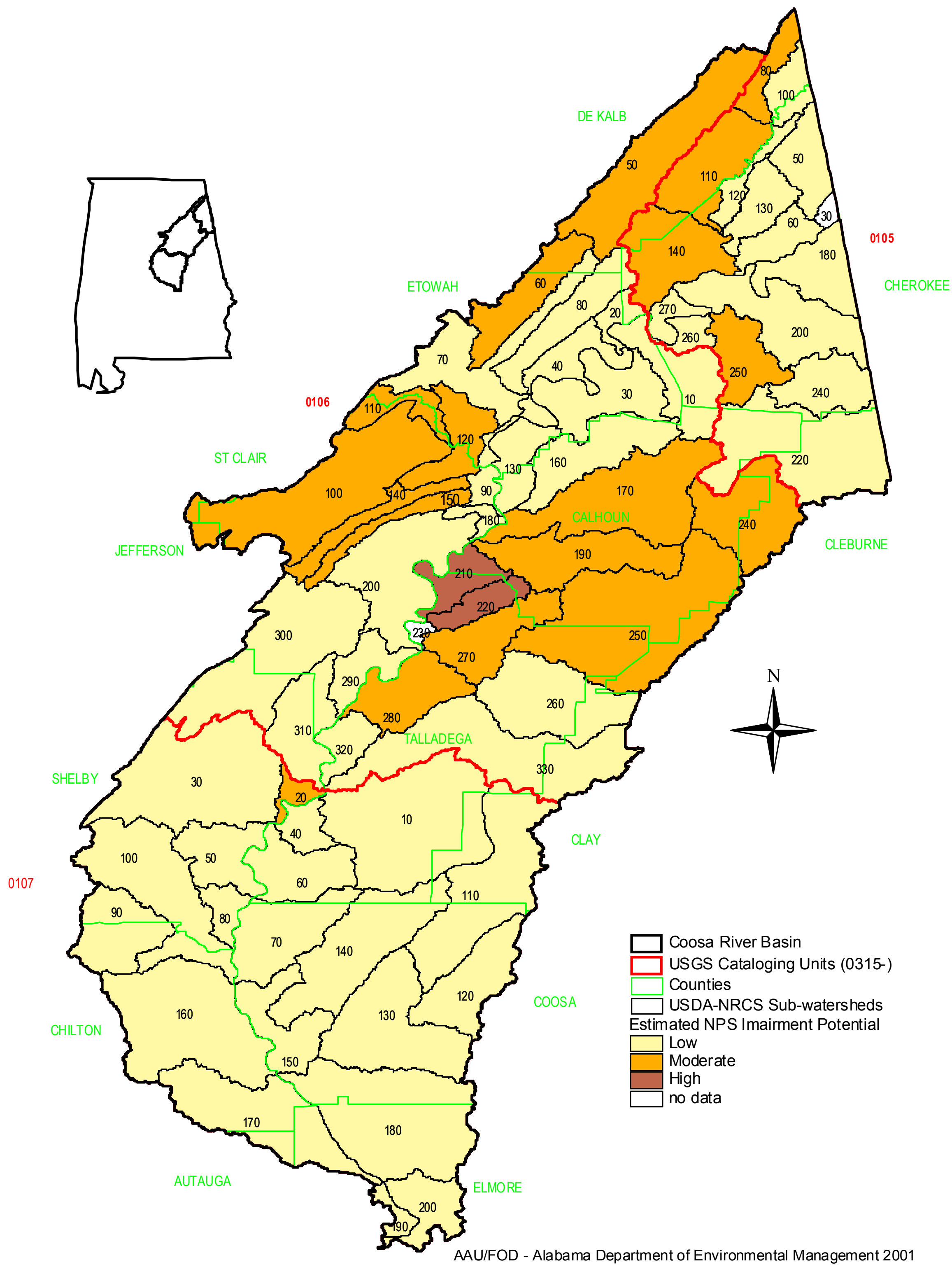

Figure 4. Estimates of NPS Impairment Potential from Sedimentation Based upon Local SWCD Sedimentation Rate Estimates for the Coosa River Basin.

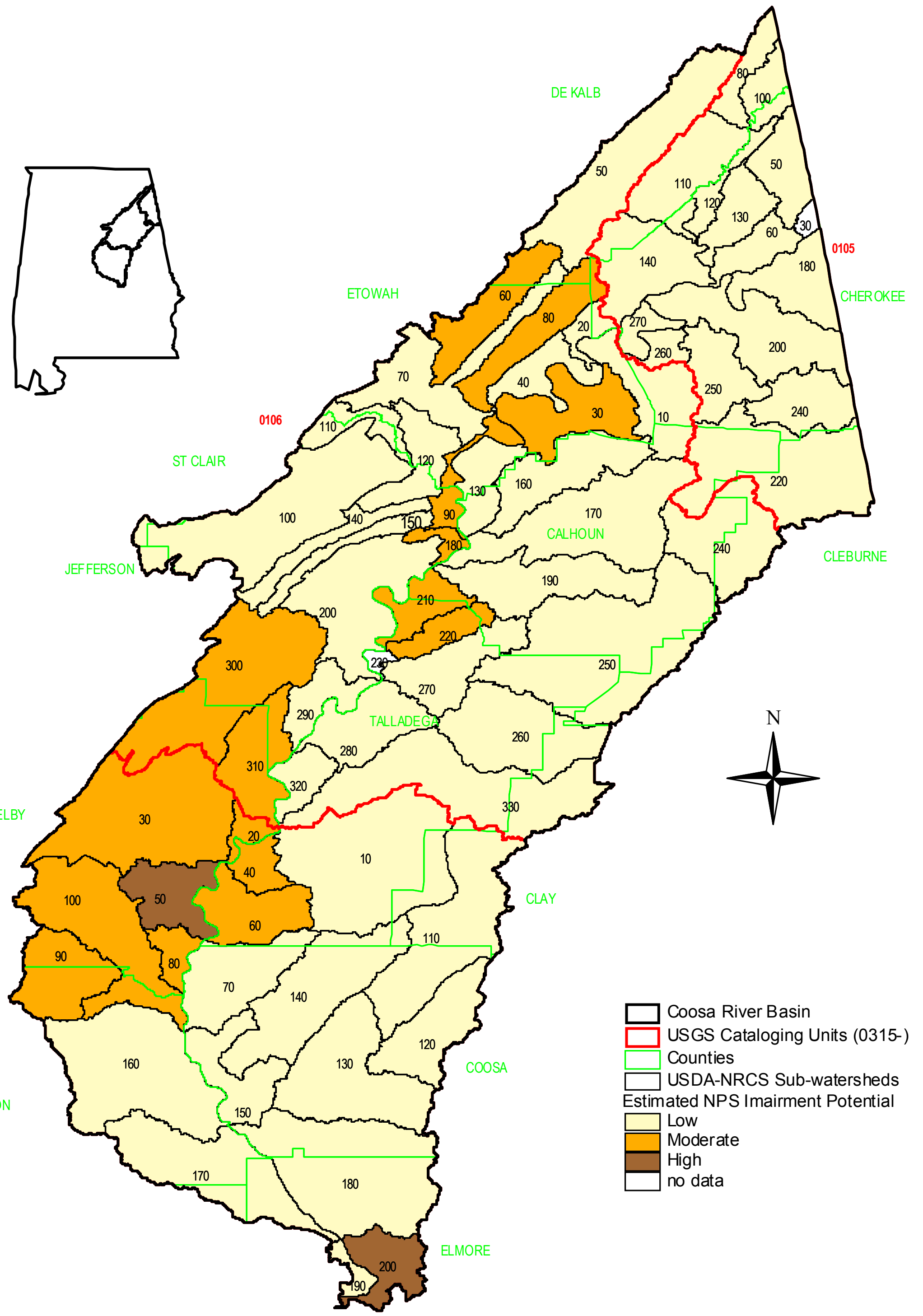

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Figure 5. Estimates of NPS Impairment Potential from Forestry Activities Based upon Local SWCD Estimates in the Coosa River Basin.

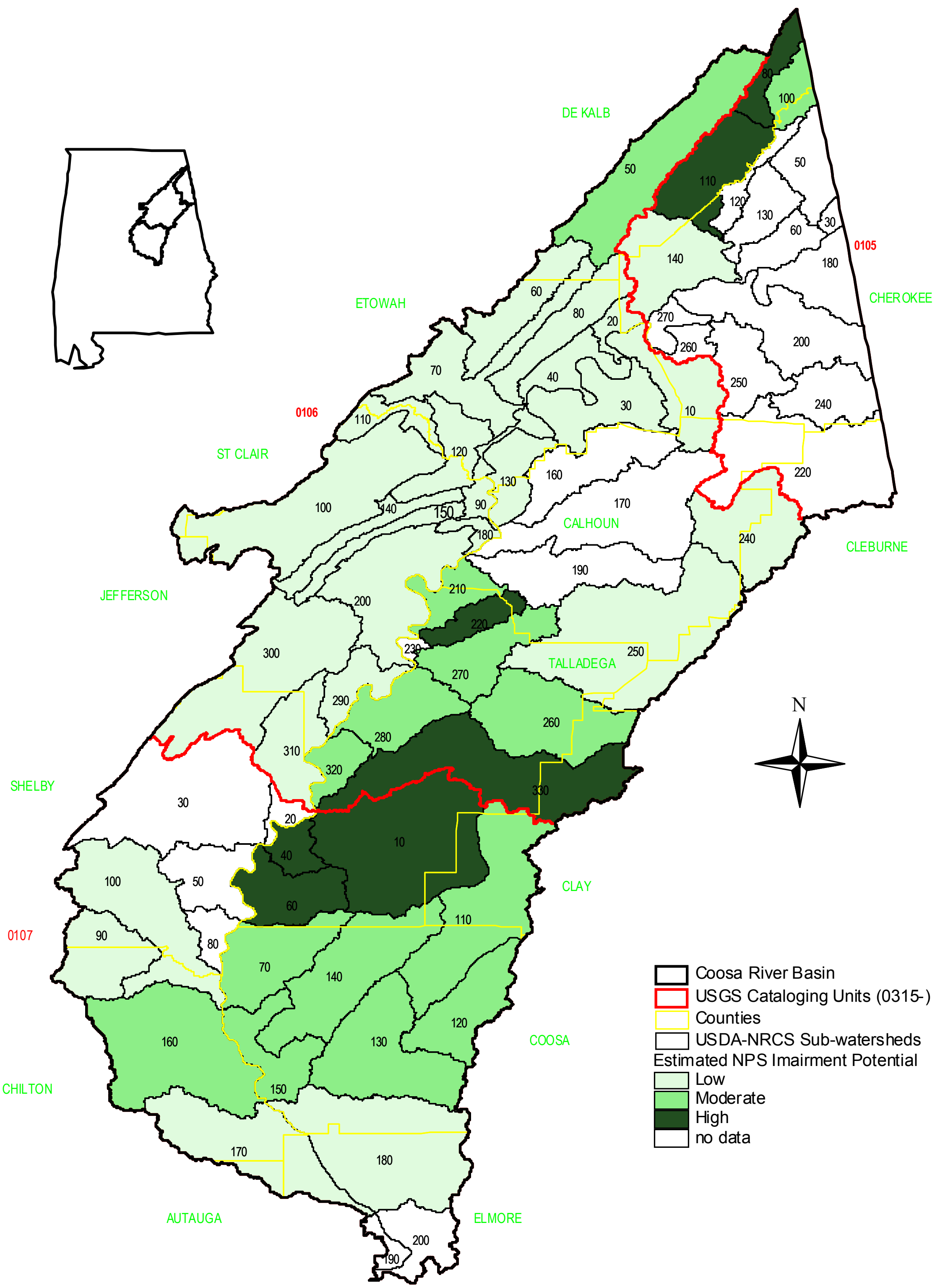

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Figure 6. Estimates of NPS Impairment Potential from Cropland Runoff Based upon Local SWCD Estimates of Row Crop Land Use in the Coosa River Basin.

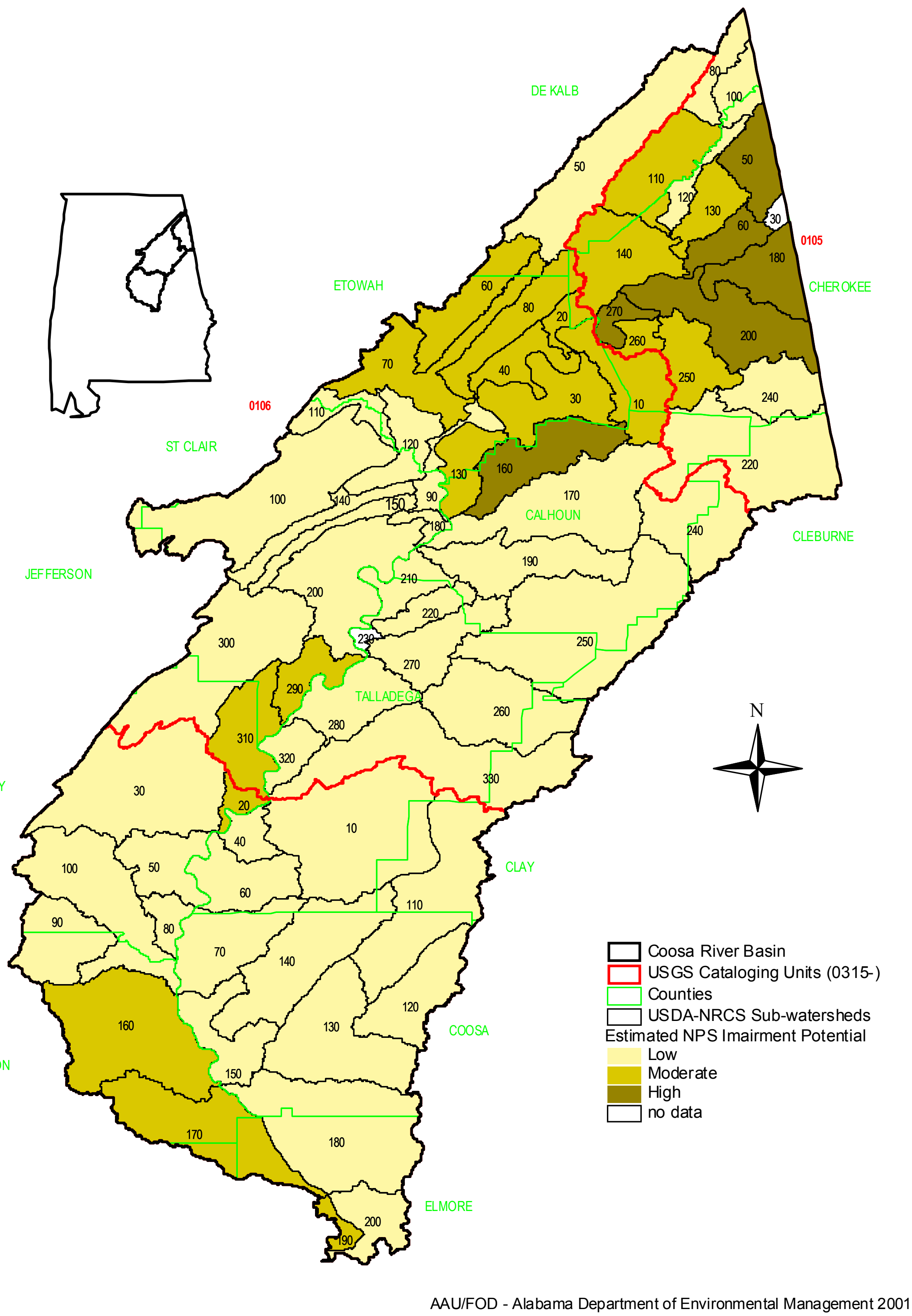

Figure 7. Estimates of NPS Impairment Potential from Pasture Runoff Based upon Local SWCD Estimates of Pasture Land Use in the Coosa River Basin.

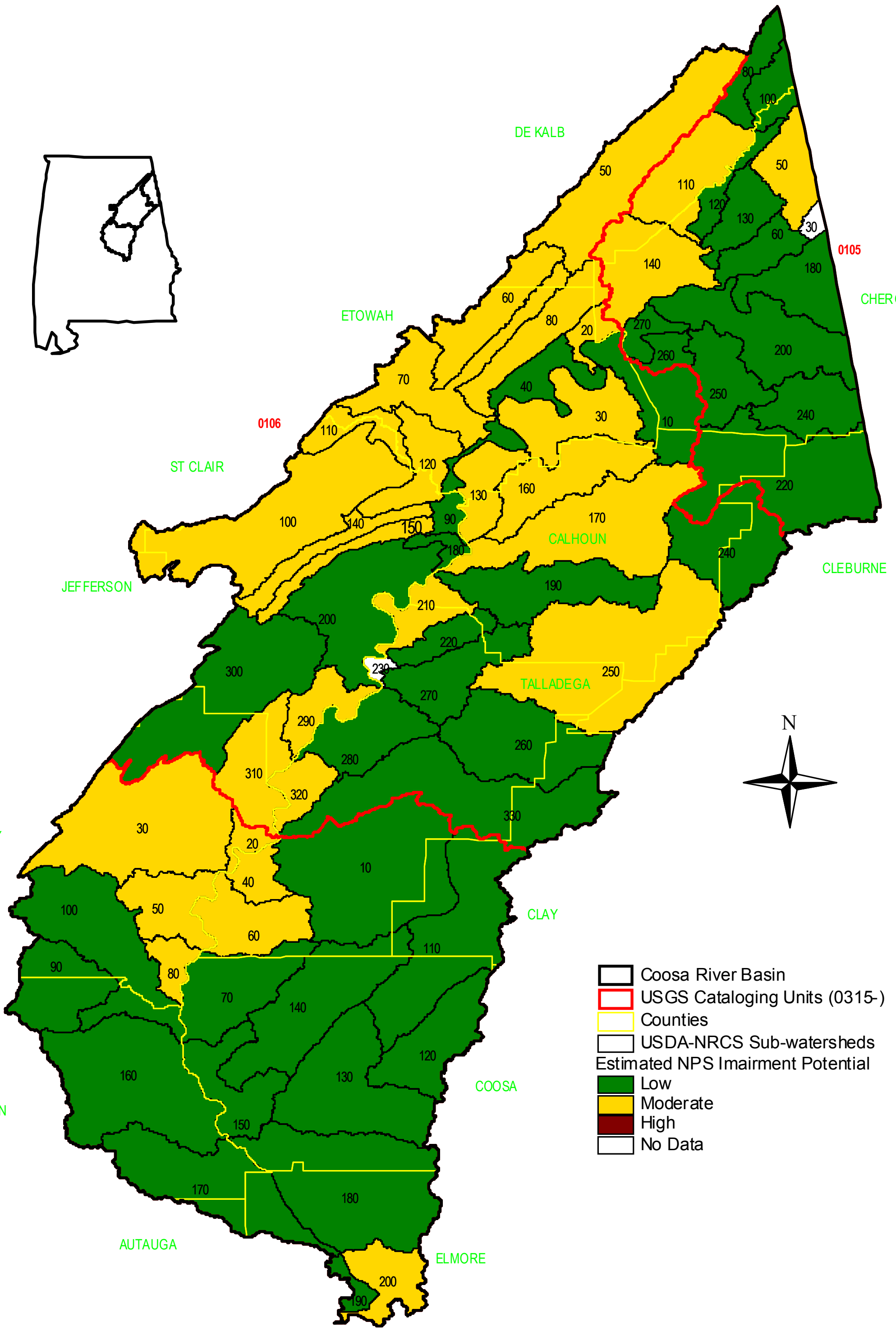

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Figure 8. Estimates of NPS Impairment Potential from Non-Rural Sources Based upon ADEM Current Construction/Stormwater Authorizations and Local SWCD Estimates of Urban Land Use and Septic Tank Failure Rates in the Coosa River Basin.

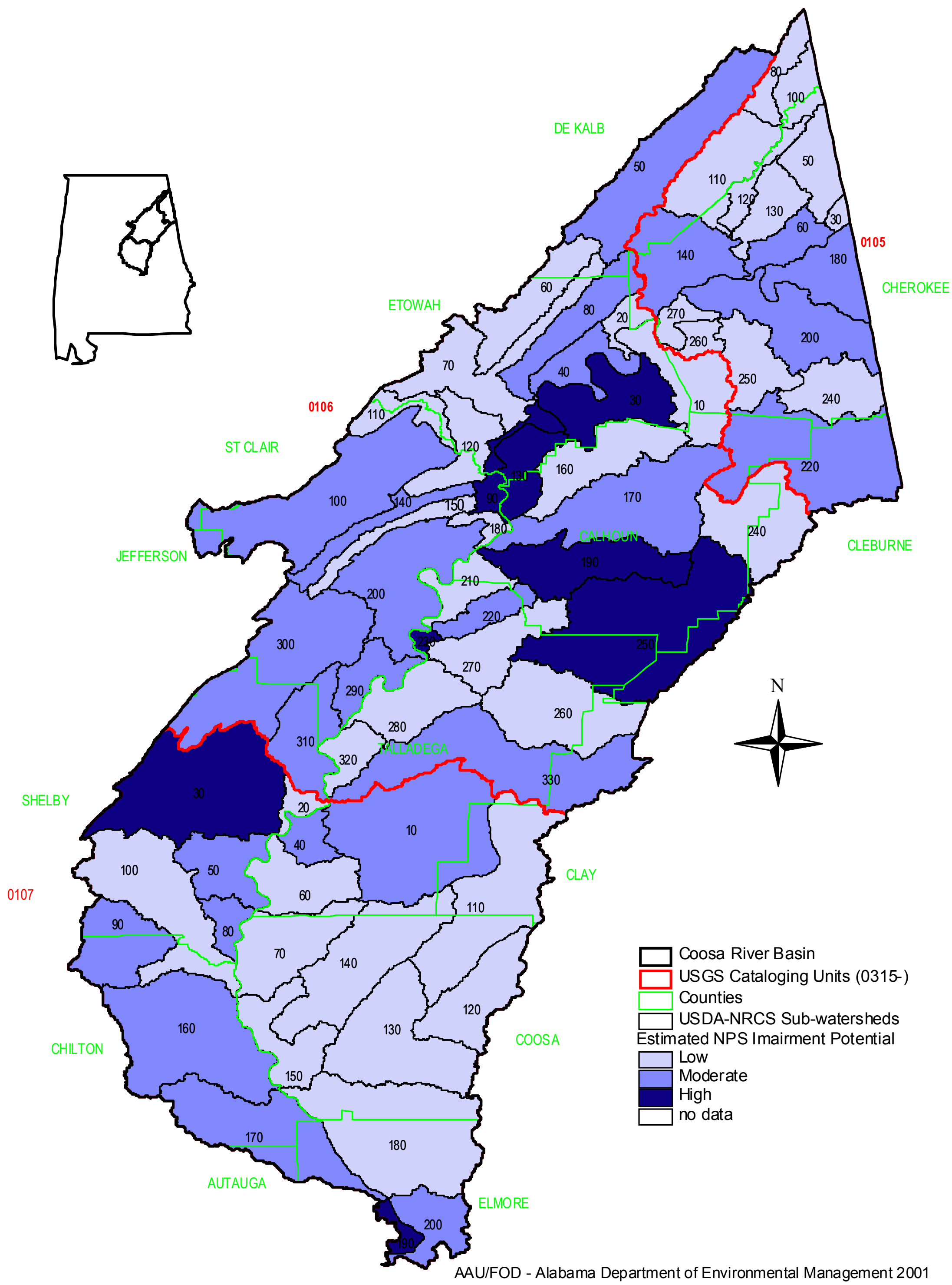
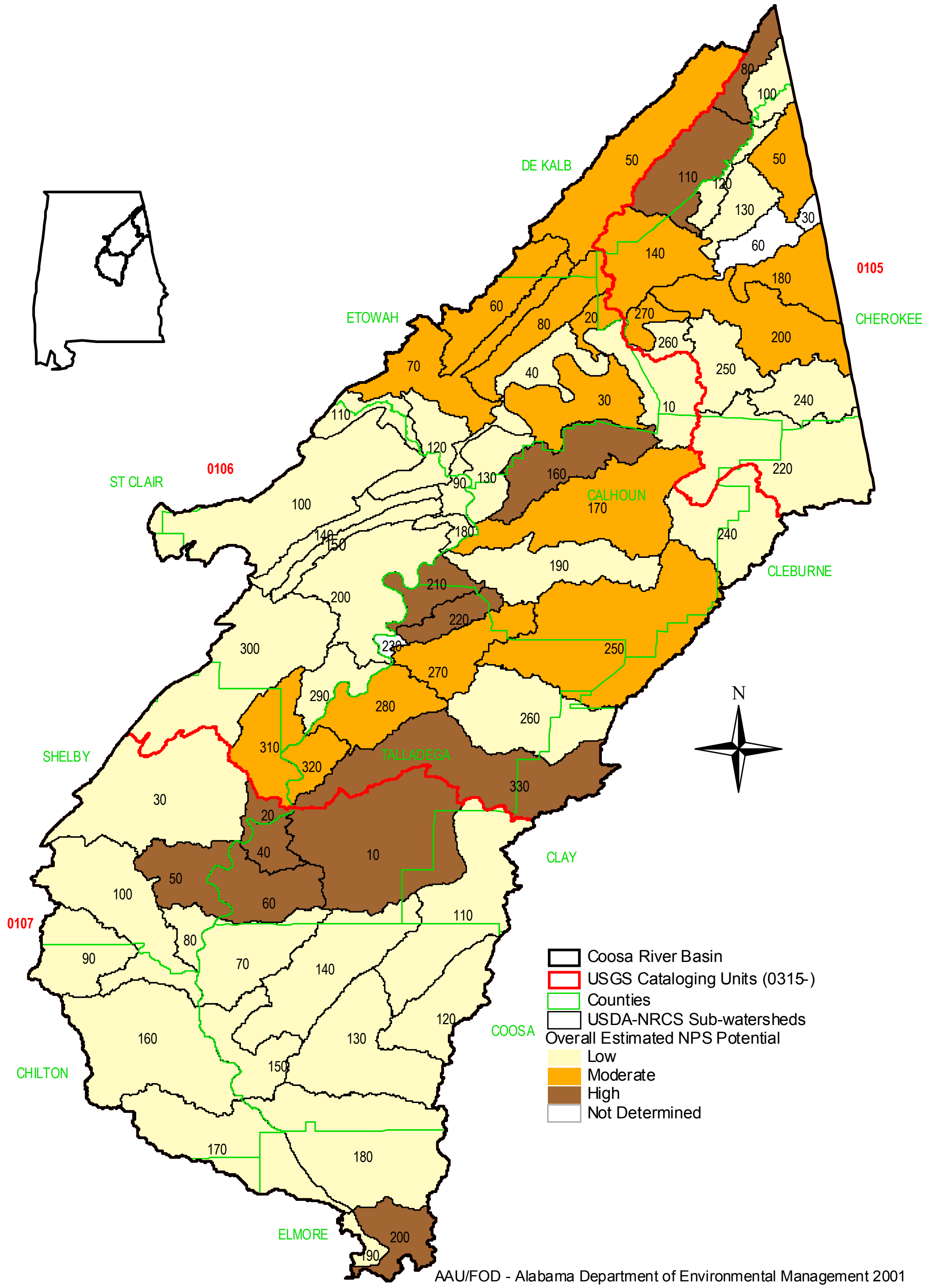


Figure 9. Estimates of NPS Impairment Potential for Sub-Watersheds of the Coosa River Basin.



Section I: Upper Coosa Cataloging Unit (0315-0105)

The Upper Coosa cataloging unit of the Coosa River Basin contains 16 sub-watersheds located within Cherokee, Calhoun, Cleburne, Dekalb, and Etowah Counties (Fig. 1). The cataloging unit is located in three different Ecoregions: the Piedmont (Subregion 45d), the Ridge and Valley (Subregions 67f - 67h) and the Southwestern Appalachians (Subregions 68c, 68d) (Fig. 2) (Griffith et al. 2001). It drains soils in portions of the Piedmont Plateau, Limestone Valleys and Uplands, and the Appalachian Plateau soil areas (ACES 1997).

Landuse:

Landuse within the Upper Coosa cataloging unit was primarily forest mixed with row crops and pasture. Approximately 45,000 acres of crop and pastureland (8% of total area) were treated with pesticides and/or herbicides. Two sub-watersheds contain stream segments and one sub-watershed contains a reservoir on Alabama's 1998 CWA §303(d) list of impaired waterbodies (Table 12a). One of the stream segments has been proposed for removal on the draft 2000 CWA §303(d) list. The reservoir is listed with non-rural sources of impairment.

Percent land cover estimated by local SWCD (Table 5a, ASWCC 1998)

Forest	Row crop	Pasture	Mining	Urban	Open Water	Other
62%	13%	11%	<1%	4%	7%	3%

NPS Impairment Potential

The primary nonpoint source concerns within the Upper Coosa cataloging unit were forestry practices, and runoff from row crops. A total of eight sub-watersheds had a *moderate* or *high* potential for impairment from nonpoint sources. Thirteen of the sub-watersheds had a *moderate* potential for impairment from urban or residential sources. Only one sub-watershed (120) had a *low* potential for impairment from both point and nonpoint sources.

Number of sub-watersheds with (M)oderate or (H)igh ratings for each NPS category (Table 5a).

Category	Overall Potential	Animal husbandry	Row crop	Pasture	Mining	Forestry	Sediment
Moderate	6	4	5	3	3	1	0
High	2	0	5	0	0	2	0

Number of sub-watersheds with (M)oderate or (H)igh ratings for each point source category (Table 5a).

Category	% Urban	Development	Septic tank failure
Moderate	5	2	12
High	0	0	0

Local SWCD animal unit concentration estimates by animal type (Table 3a, ASWCC 1998).

Category	NPS Potential	Total	Cattle	Dairy	Swine	Poultry-Broilers	Poultry-Layers
AU/Acre	Low	0.08	0.05	0.00	0.00	0.03	0.00

Local SWCD sedimentation rate estimates by source (Table 4a, ASWCC 1998).

NPS Potential	Total Tons/ Acre /yr.	Crop Land	Sand & Gravel Pits	Mined Land	Developing Urban Land	Critical Areas	Gullies	Stream Banks	Dirt Roads	Wood Land
Low	2.08	0.30	0.01	0.19	0.07	0.12	0.01	0.33	0.33	0.72

Five sub-watersheds were listed as top-five priorities by the local SWCD in public meetings conducted during 1998 (050, 130, 200, 220, and 250). Erosion from roads/road banks, inadequate management of animal wastes, nutrients in surface waters, and access of livestock to streams were indicated as the most common public concerns within the sub-watersheds.

Historical Data/Studies

A review of existing data indicated that bioassessments have been conducted recently within three sub-watersheds by ADEM (Table 8 and Appendices F-2c, F-4e). Physical/ chemical data were collected from an additional eight sub-watersheds. In 1998, three stream segments were monitored as part of the ADEM State Parks Assessment (Appendices E and F-2a - 2c) (ADEM 1999d). Eight stations were assessed as part of the ADEM 1996 Clean Water Strategy (Appendices E and F-7) and two stations were assessed as part of the ambient water quality monitoring effort (Appendices E and F-1). Alabama universities conducted water quality sampling during 1998-99 at six stations that were tributaries to the Coosa River and its reservoirs (Appendices E and F-5).

Assessments Conducted During This Project

Four of the 16 sub-watersheds in the Upper Coosa Cataloging Unit were targeted in this project because they had a *high* or *moderate* estimated potential for NPS impairment, *low* potential from urban or point sources, and relatively little recent assessment data. These included the Mills Creek (050), West Fork of Little River (080) and Bear Creek (110) and Yellow Creek (140) Sub-watersheds (Table 10a).

Data Summaries

Current and historical monitoring data were combined to provide a comprehensive assessment (Fig. 12a). A summary of the information available for each of the 16 sub-watersheds is provided. Each summary discusses landuse, nonpoint source impairment potential, assessments conducted within the sub-watershed, and the nonpoint source priority rating based on available data. The summaries point out significant data and reference appropriate tables and appendices. Assessment of habitat, biological, and chemical conditions is based on long-term data from ADEM's Ecoregional Reference Reach Program. Tables referenced in the summaries are located at the end of the summary section. Appendices are located at the end of the report.

Sub-watershed Assessments

Habitat, chemical/physical, and biological indicators of water quality were evaluated in six sub-watersheds during this project (Table 11a). Habitat quality at 15 stations was assessed as *excellent* or *good*. Aquatic macroinvertebrate community assessments were evaluated from 11 stations. Results of these assessments indicated the macroinvertebrate community was in *excellent* condition at three stations (27%), *good* at seven (64%) and *fair* condition at one (9%) station (Fig 10a). No fish community assessments were conducted in this cataloging unit (Fig. 11a).

The overall condition for each station was rated as the lowest assessment result obtained (Table 11a). Three (27%) and seven (64%) stations were assessed as *excellent* and *good*, respectively. One (9%) station was assessed as *fair* and was likely caused by dry stream conditions, therefore the sub-watershed (140) was not recommended as a priority.

NPS Priority Sub-watersheds

No Upper Coosa CU sub-watersheds were recommended as priority (Fig 12a).

Sub-Watershed Summaries

Sub-Watershed: Upper Chattooga River
NRCS Sub-Watershed Number 030

Percent land cover of the Upper Chattooga River sub-watershed was estimated as 4% transitional forest, 35% deciduous forest, 23% evergreen forest, 22% mixed forest, 5% pasture/hay, 9% row crop, 2% wetlands (Table 1a). One current construction/stormwater authorization was issued in the sub-watershed (Table 9a). Due to the relatively small size of this sub-watershed (6.5 mi^2), no Conservation Assessments were completed by the local SWCDs. No in-stream assessments were conducted during this project. However, one ADEM ambient monitoring station is located on the Chattooga River at the Georgia State line (Appendix F-1).

Sub-Watershed: Mills Creek
NRCS Sub-Watershed Number 050

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
MLLC-10	Macroinv., Habitat	2000	Mills Creek @ Cherokee Co. Rd. 747 T7S, R11E, S32	47	F&W
MLLC-11	Macroinv., Habitat	2000	Mills Creek @ Cherokee Co. Rd. 56 T8S, R11E, S20	68	F&W

The Mills Creek sub-watershed drains approximately 46 mi^2 in Cherokee County. Percent land cover of the sub-watershed was estimated as 2% transitional forest, 38% deciduous forest, 17% evergreen forest, 24% mixed forest, 12% pasture/hay, 7% row crop (Table 1a). Estimates of land use (Table 2a) by the local SWCDs indicated higher amounts of pasture (16%) and row crops (10%). One construction/stormwater authorization, one mining NPDES permit, and one CAFO registration have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.08 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (1.1 tons/acre). The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *moderate*, mainly from pasture (M) and row crop (H) land use estimates. Mills Creek was a 3rd priority sub-watershed by the Cherokee County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4a. Two stations were assessed during this project.

Mill Creek

Mill Creek at MLLC-10 had a shaded streambed dominated by sand (~40%) with lesser amounts of silt (~20%), detritus (~15%), gravel (~11%), and cobble (~10%) substrates (Table 6a). Habitat quality was assessed as *good* using the riffle/run assessment matrix. Instream habitat quality, sediment deposition, and bank stability were the general areas of slight impairment to the habitat quality (Table 6a). An instream aquatic macroinvertebrate community assessment was conducted in June of 2000. Nine EPT families were collected indicating that the community was in *fair* condition (Table 7a and Fig. 10a). Stream flow was estimated at 16.5 cubic feet per second (cfs) (Table D-1). No water quality data were collected at this location.

Mill Creek, at the MLLC-11 sampling reach, had a mostly-open canopy and was dominated by cobble (~35%) and gravel (~20%) with lesser amounts of boulder, sand, silt, and bedrock substrates (Table 6a). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix. The riparian zone, and bank and vegetative stability categories indicated slight impairment (Table 6a). Eleven EPT families were collected during the June 2000 aquatic macroinvertebrate assessment indicating *excellent* community richness (Table 7a and Fig. 10a). Stream flow was estimated at 15.8 cfs (Appendix D-1). No water quality data were collected from this location.

Sub-Watershed: Lower Chattooga River
NRCS Sub-Watershed Number 060

Percent land cover of the Lower Chattooga River sub-watershed was estimated as 24% deciduous forest, 21% evergreen forest, 22% mixed forest, 7% pasture/hay, 9% row crop, 1% wetlands, and 16% open water (Table 1a). Estimates of land use (Table 2a) by the local SWCDs indicated a higher amount of row crops (33%) and urban land use (6%), and lower amount of open water (8%). One current municipal NPDES permit, one construction/ stormwater authorization, and one CAFO registration have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.03 AU/Acre), with cattle being the dominant animals. Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (1.8 tons/acre) from erosion of cropland. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated a *moderate* due to the *high* potential from row crop landuses.

The Lower Chattooga River sub-watershed drains approximately 34 mi^2 in Cherokee County. One station on the Chattooga River (CHAAU01) was assessed during the 1999 University Reservoir Tributary Nutrient Study (Appendix F-5) and one site on the Chattooga River (W-6) was assessed during 2000 by the AAU as part of the ADEM Reservoir Tributary Monitoring Study (Appendix F-10). No in-stream bioassessments were conducted during this project.

Sub-Watershed: West Fork of Little River
NRCS Sub-Watershed Number 080

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
STRD-1	Macroinv., Habitat, Chemistry	1998	Straight Creek at DeSoto State Park trail	4	F&W
WFLD-2	Macroinv., Habitat, Chemistry	1998	West Fork of Little River at DeSoto State Park	41	F&W ONRW

Percent land cover of the West Fork of Little River sub-watershed was estimated as 4% transitional forest, 32% deciduous forest, 19% evergreen forest, 38% mixed forest, 5% pasture/hay, and 2% row crop (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were higher for pasture (12%). One current Semi-Public/Private NPDES permit has been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *moderate* (0.15 AU/Acre), with poultry and cattle being the dominant animal types (0.09 and 0.06 AU/acre, respectively). Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (1.6 tons/acre) mostly from erosion of mined lands and dirt roads and road banks. Forestry practices and mining landuse estimates indicated *moderate* and *high* nonpoint source impairment potentials, respectively. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *high.*

The West Fork Little River sub-watershed drains approximately 29 mi^2 in Dekalb County. Two sites on the West Fork of Little River were assessed during the 1996 ADEM Clean Water Strategy (Appendices E and F-7). Three reaches were assessed by ADEM during the 1998 State Parks Assessment project (Appendices F-2a and 2b), two of which included biological community data collection (ADEM 1999d). No in-stream bioassessments were conducted during this project.

<u>Straight Creek</u>

Straight Creek, at the STRD-1 sampling reach, had a shaded canopy and the eight foot (8 ft.) wide channel was dominated by bedrock (~47%) with lesser amounts of boulder (~20%), silt (~15%), and cobble (~10%) substrates (Appendix F-2b). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix. Individual parameters within the overall habitat assessment indicated slight impairment from sediment deposition. Stream flow was estimated at 0.4 and 0.1 cfs during the May and July 1998 sampling events, respectively. The streambed was dry during the September 1998 site visit (Appendix F-2a). Water quality data indicated that the July TKN concentration was considerably higher than the May sampling event (1.4 and <0.15 mg/L, respectively). The aquatic macroinvertebrate community (Appendix F-2c) was evaluated to be in *good* condition when assessed in May (ADEM 1999d). No additional assessments were conducted during this project.

<u>West Fork Little River</u>

West Fork of Little River, at the WFLD-2 sampling reach, had a mostly-open canopy and was dominated by bedrock (~40%), boulder (~30%), and cobble (~24%) substrates (Appendices E and F-2b). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix. No impairments to any of the habitat quality categories was indicated (Appendix F-2b). Fourteen EPT families were collected indicating that the macroinvertebrate community was in *good* condition. Stream flow (Appendix F-2a) was estimated at 17.0, 0.6 and 3.6 cfs in May, July and September, respectively. Water quality data parameters selected for analysis did not indicate impairment (Appendix F-2a) (ADEM 1999d). This stream reach has been designated an Outstanding National Resource Water (ONRW) by ADEM.

Water quality data were also collected at WFLD-1. This station was not wadeable and sampled only in May 1998. No water quality impairments were indicated (Appendix F-2a).

Sub-Watershed: East Fork of Little River
NRCS Sub-Watershed Number 100

Percent land cover of the East Fork of Little River sub-watershed was estimated as 2% transitional forest, 31% deciduous forest, 23% evergreen forest, 37% mixed forest, 3% pasture/hay, and 2% row crop (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were slightly higher for pasture (10%). One current construction/stormwater authorization has been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.07 AU/Acre), with cattle and poultry being the dominant animal types (0.05 and 0.02 AU/acre, respectively). Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (1.9 tons/acre) mostly from erosion of dirt roads, road banks, and woodlands. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *low*.

The East Fork Little River sub-watershed drains approximately 29 mi^2 in Dekalb and Cherokee Counties. Two stations on the East Fork of Little River were assessed during the 1996 ADEM Clean Water Strategy (Appendices E and F-7). No in-stream bioassessments were conducted during this project.

Sub-Watershed: Bear Creek
NRCS Sub-Watershed Number 110

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
BERD-9	Chemistry, Habitat, Macinv.	2000	Bear Creek @ unnamed Dekalb Co. Rd. T7S, R9E, S20	11	F&W
HURD-1	Chemistry, Habitat, Macinv.	1998	Hurricane Creek @ trail in Little R. WMA T7S, R10E, S17	6	F&W

Percent land cover of the Bear Creek sub-watershed was estimated as 35% deciduous forest, 15% evergreen forest, 27% mixed forest, 13% pasture/hay, and 9% row crop (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were higher for pastureland (26%). One current mining/stormwater authorization (non-coal <5 acres) and two current construction/stormwater authorizations have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *moderate* (0.22 AU/Acre), with cattle and poultry being the dominant animal types (0.13 and 0.07 AU/acres, respectively). Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (3.3 tons/acre) mostly from erosion of dirt roads, road banks and mined lands. SWCD estimates of row crop, pasture and mining land uses indicated a *moderate* potential, and estimates of forestry activities indicated a *high* potential for NPS impairment. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *high*.

The Bear Creek sub-watershed drains approximately 80 mi^2 in Dekalb and Cherokee Counties. One site was assessed during the 2000 ADEM Reservoir Tributary Monitoring effort, and two sites were included in the 1997 and 1999 probabilistic sampling efforts (Appendices E, F-10, and F-6). One site was assessed on Hurricane Creek as part of the 1998 State Parks Assessment project (Appendices F-2a - 2c). One ecoregional reference site was assessed during this project to provide baseline water quality information (Appendices F-3a - 3d).

<u>Bear Creek</u>

The BERD-9 sampling reach, had a partly open / partly shaded canopy and was dominated by bedrock (~50%), boulder (~15%) and cobble (~15%) substrates (Appendix F-3c). Habitat quality was assessed as *excellent* in June using the riffle/run assessment matrix. Instream habitat quality had the greatest adverse influence on the total score (Appendix F-3c). Eleven EPT families were collected during the June sampling event indicating that the instream macroinvertebrate community was in *excellent* condition. Stream flow was estimated at 0.1 cfs and 0.2 cfs in June and September, respectively. Water quality data, collected in September (Appendices F-3a and F-3b) indicated that the instream NH_3-N concentration was somewhat elevated (0.119 mg/L). No previous data were available for comparison.

<u>Hurricane Creek</u>

The HURD-1 reach had a mostly-shaded canopy, and a bedrock (~80%) and sand (~8%) dominated substrate (Appendix F-2b). The habitat quality was *excellent* as assessed using the riffle/run habitat assessment matrix (Appendix F-2b). Ten EPT families were collected during the May 1998 bioassessment indicating that the instream macroinvertebrate community was in *good* condition. Stream flow was estimated at 1.7 cfs during the May sampling event and was not detectable during the July site visit (Appendix F-2a). Lab analysis results did not indicate any water quality impairment at the time of sampling.

Sub-Watershed: Little River
NRCS Sub-Watershed Number 120

Percent land cover of the Little River sub-watershed was estimated as 34% deciduous forest, 29% evergreen forest, 32% mixed forest, 2% pasture/hay, and 2% row crops (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were similar. No current stormwater authorizations or NPDES permits have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.00 AU/Acre). Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (2.0 tons/acre) mostly from erosion of woodlands. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *low*.

The Little River sub-watershed drains approximately 22 mi^2 in Cherokee and Dekalb Counties. Historical data are available from one site on the Little River collected during the 1996 ADEM Clean Water Strategy (Appendices E and F-7) and the 1999 University Reservoir Tributary Nutrient Study (Appendices E and F-5). No in-stream assessments were conducted during this project.

Sub-Watershed: Spring Creek
NRCS Sub-Watershed Number 130

Percent land cover of the Spring Creek sub-watershed was estimated as 1% transitional forest, 34% deciduous forest, 25% evergreen forest, 25% mixed forest, 7% pasture/hay, 5% row crop, and 3% open water (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were higher for pasture (12%), row crops (12%), and open water (6%), and lower for forest (57%). One current mining/stormwater authorization (non-coal <5 acres) and one current construction/stormwater authorization have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.05 AU/Acre), with cattle being the dominant animal. Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (1.9 tons/acre) mostly from erosion of woodlands. The local SWCD estimates of row crop landuse indicated a *moderate* potential for NPS impairment. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *low*. The Spring Creek sub-watershed was listed as a 4th priority by the local SWCD in Cherokee County. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4a.

The Spring Creek sub-watershed drains approximately 41 mi^2 in Cherokee County. No historical data were available and no in-stream assessments were conducted during this project.

Sub-Watershed: Yellow Creek
NRCS Sub-Watershed Number 140

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
YLWC-6	Chemistry, Habitat, Macinv.	2000	Yellow Creek @ Cherokee Co. Rd. 166 T9S, R8E, S25	31	F&W

Percent land cover of the Yellow Creek sub-watershed was estimated as 1% transitional forest, 27% deciduous forest, 13% evergreen forest, 20% mixed forest, 11% pasture/hay, 13% row crop, and 13% open water (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were higher for pastureland (18%) and urban (8%), and lower for forest (42%). One current semi-public/private NPDES permit and two current construction/ stormwater authorizations have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *moderate* (0.13 AU/Acre), with poultry and cattle being the dominant animal types (0.03, and 0.09 AU/Acre, respectively). Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (1.8 tons/acre) mostly from erosion of woodlands, dirt roads/road banks, developing urban land, and cropland. The potential for nonpoint source impairment from row crop, pasture and mining landuses was *moderate*. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *moderate*.

The Yellow Creek sub-watershed drains approximately 86 mi^2 in Cherokee and Dekalb Counties. No historical data were available from this sub-watershed. One site on Yellow Creek was assessed during this project. Sampling of a candidate ecoregional reference site on Wolf Creek was attempted, but not completed due to dry conditions encountered at the site.

<u>Yellow Creek</u>

The YLWC-6 reach had a mostly-open canopy with a bedrock (~78%) and silt (~15%) dominated substrate (Table 6a). The habitat quality was *good* as assessed using the riffle/run habitat assessment matrix. Low percentages in the sinuosity category may indicate historic channelization (Table 6a). Five EPT families were collected during the June 2000 site visit indicating that the instream macroinvertebrate community was in *fair* condition (Table 7a and Fig. 10a). Stream flows at the time of the bioassessment were visible but not detectable with the flow meter (Appendix D-1). The dissolved oxygen concentration was low (5.2 mg/L) at 1145 hrs, probably due to the low stream flow (Appendix D-1). These were likely contributing factors to the *fair* condition of the macroinvertebrate community. Therefore, Yellow Creek is not recommended as a priority sub-watershed.

Sub-Watershed: Coosa River
NRCS Sub-Watershed Number: 180

Percent land cover of the Coosa River sub-watershed was estimated as 1% transitional forest, 17% deciduous forest, 16% evergreen forest, 17% mixed forest, 8% pasture/hay, 13% row crop, 5% wetland, and 24% open water (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were higher for row crops (26%) and urban land use (5%), and lower for forest (25%). One current construction/stormwater authorization has been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.03 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (1.3 tons/acre) dominated by erosion of cropland. The local SWCD estimate of row crop landuse indicated a *high* potential for NPS impairment. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *moderate*.

The Coosa River sub-watershed drains approximately 60 mi^2 in Cherokee County. One stream reach is located on the 1998 CWA §303(d) list of impaired waters due to organic enrichment/dissolved oxygen, ammonia, nutrient, and pathogen impairments from unknown sources (Table 12a). One site on the Coosa River at the Georgia state line has been assessed during three separate projects (Appendix E) including the 1996 ADEM Clean Water Strategy (Appendix F-7), the 1999 University Reservoir Tributary Nutrient Study (Appendix F-5), and the ADEM Ambient Monitoring Project - Trend Station CO-3 (Appendix F-1). No additional assessments were conducted during this project.

Sub-Watershed: Spring Creek
NRCS Sub-Watershed Number 200

Percent land cover of the Spring Creek sub-watershed was estimated as 3% transitional forest, 16% deciduous forest, 19% evergreen forest, 19% mixed forest, 17% pasture/hay, 15% row crop, and 9% open water (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were higher for row crops (25%). One current municipal NPDES permit and two current construction/stormwater authorizations have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.10 AU/Acre), with broiler-poultry and cattle being the dominant animal types (0.06, and 0.03 AU/acre, respectively). Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (1.6 tons/acre). Row crop landuse had a *high* NPS impairment potential. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *moderate*. The Spring Creek sub-watershed was listed as a 1st priority by the local SWCD in Cherokee County. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4a.

The Spring Creek sub-watershed drains approximately 107 mi^2 in Cherokee County. The AAU assessed three sites; one each in the embayments of Spring, Cowan, and Big Nose Creeks during 2000 as part of the ADEM Reservoir Tributary Monitoring Study (Appendices E and F-10). No in-stream biological community assessments were conducted as part of this NPS screening project.

Sub-Watershed: Upper Terrapin Creek
NRCS Sub-Watershed Number 220

The Upper Terrapin Creek sub-watershed drains approximately 165 mi^2 in Cleburne, Calhoun and Cherokee Counties. EPA Percent land cover of the sub-watershed was estimated as 3% transitional forest, 37% deciduous forest, 22% evergreen forest, 25% mixed forest, 6% pasture/hay, and 5% row crop (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were higher for pasture (11%) and urban (8%). One municipal NPDES permit and four current construction/stormwater authorizations have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.03 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (3.3 tons/acre) mostly from erosion of woodlands, stream banks, dirt roads and road banks. Row crop, pasture and mining landuses also had *low* potentials for NPS impairment. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *low*. The Upper Terrapin Creek sub-watershed was listed as a 5th priority by the local SWCD in Cherokee County. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4a.

One site on Terrapin Creek was assessed during the 1996 Clean Water Strategy (Appendices E and F-7). No instream assessments were conducted during this project.

Sub-Watershed: Hurricane Creek
NRCS Sub-Watershed Number: 240

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
FRG-1	Macroinv., Chem., Habitat	1999	Frog Creek @ Cherokee Co. Rd. 177	~ 20	F&W
FRG-2	Chem.	1999	Frog Creek @ Cherokee Co. Rd. 12	8	F&W
HRC-1	Macroinv., Chem., Habitat	1999	Hurricane Creek @ Cherokee Co. Rd. 33	50	F&W
HRC-2	Chem.	1999	Hurricane Creek @ Cherokee Co. Rd. 29	29	F&W
HRC-3	Macroinv., Chem., Habitat	1999	Hurricane Creek @ Cherokee Co. Rd. 8	~ 23	F&W
WOB-1	Macroinv., Chem., Habitat	1999	Wolf Branch @ Cherokee Co. Rd. 111	2	F&W
WOB-2	Chem.	1999	Wolf Branch @ U.S. Hwy 278	~ 2	F&W

Percent land cover of the Hurricane Creek sub-watershed was estimated as 44% deciduous forest, 20% evergreen forest, 22% mixed forest, 8% pasture/hay, and 5% row crop (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were slightly higher for forest (98%) and lower for pastureland (1%) and row crops (1%). One mining NPDES permit, one CAFO registration, and one current construction/stormwater authorization have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.03 AU/Acre), with broiler-poultry being the dominant animal type. Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (0.6 tons/acre). Row crop, pasture, and mining landuses also had *low* estimated potentials for NPS impairment. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *low*.

The Hurricane Creek sub-watershed drains approximately 56 mi^2 in Cherokee, Cleburne and Calhoun Counties. A segment of Wolf Branch is listed on the 1998 CWA §303(d) list of impaired waters due to organic enrichment/dissolved oxygen, and ammonia impairments from intensive animal feeding operations in the watershed (Table 12a). This segment has been proposed for removal on the draft 2000 CWA §303(d) list. Seven sites on three streams, Frog Creek, Hurricane Creek and Wolf Branch, were assessed during ADEM's 1999 CWA §303(d) monitoring effort (Appendices E and F-4). No additional assessments were conducted during this project.

<u>Frog Creek</u>

Frog Creek, at the FRG-1 sampling reach, had a mostly-open canopy and was dominated by sand (~77%) and silt (~12%) substrates (Appendix F-4d). Habitat quality was assessed as *good* using the glide/pool assessment matrix (Appendix F-4d). Eight EPT families were collected during the instream bioassessment indicating that the macroinvertebrate community was in *good* condition (Appendix F-4e). Stream flow estimates ranged from 24.9 to 10.9 cfs during the six site visits conducted from May to September 1999

(Appendix F-4a). Water quality samples (Appendix F-4a) had elevated fecal coliform counts during each site visit (range: 268 to >1,200 col/100 mL). Data collected during June and July had slightly elevated concentrations of TKN, 0.564 and 0.316 mg/L, respectively.

Frog Creek at FRG-2 was generally an intermittent stream based upon flow estimates taken in May and August of 1999. Fecal coliform counts during the site visits in May, June and August were elevated (range: >240 to >1,200 col/100 mL). TKN concentrations were also elevated during the June and August assessments (0.673 and 0.831 mg/L, respectively). Both of these are consistent with intermittent stream conditions.

Hurricane Creek

Three stream reaches on Hurricane Creek were visited by ADEM from May to September, 1999 to document water quality in varying flow conditions. Two of these reaches were also assessed using in-stream aquatic macroinvertebrate assessments (Appendix F-4e).

Hurricane Creek, at the upstream (HRC-3) sampling reach, had a mostly-open canopy over the 30-foot wide channel and was composed of bedrock (~30%), cobble (~20%), gravel(~20%), sand (~15%), and boulder (~10%) substrates (Appendix F-4d). Habitat quality was assessed as *excellent* during the July 1999 site visit using the riffle/run assessment matrix (Appendix F-4d). Eight EPT families were collected during the in-stream bioassessment indicating that the aquatic macroinvertebrate community was in *good* condition (Appendix F-4e). Stream flow estimates ranged from 10.6 to 29.9 cfs during May through September. Water quality data (Appendix F-4a) did not indicate impairment.

The HRC-2 reach had a mostly-open canopy, and was composed of cobble (~30%), gravel (~25%), sand (~22%), and bedrock (~10%) substrates (Appendix F-4d). The habitat quality was *excellent* as assessed using the riffle/run habitat assessment matrix (Appendix F-4d). No instream bioassessments were conducted at this site. Stream flow was estimated as 26.5 cfs during the May site visit (Appendix F-4a). Fecal coliform counts were slightly elevated (210 col/100 mL) during the August sampling event (Appendix F-4a).

Hurricane Creek, at the HRC-1 sampling reach (downstream station), had a partly open/partly shaded canopy over the approximately 45-foot wide channel dominated by sand (~40%) and gravel (~38%) substrates (Appendix F-4d). Habitat quality in July 1999 was assessed as *excellent* using the riffle/run assessment matrix (Appendix F-4d). Instream bioassessments indicated that the aquatic macroinvertebrate community (9 EPT Families collected) was in *good* condition (Appendix F-4e). Stream flow estimates ranged from 55.4 to 23.5 cfs during the May to September sampling events. Water quality data (Appendix F-4a) indicated slightly elevated nitrate/nitrite-nitrogen (range 0.144 - 0.203 mg/L) and TKN (range 0.309 - 0.513 mg/L) concentrations during the five sampling events when nutrients were measured. Fecal coliform counts were >1200 col/100 mL in the July sample, but this appears to be related to a rain event when compared to stream flow data.

Wolf Branch

Wolf Branch, at the WOB-1 sampling reach, had a shaded canopy over a six-foot wide channel with a mixed substrate of cobble (~30%), gravel (~30%), sand (~23%), and boulder (~10%) (Appendix F-4d). Habitat quality in July was assessed as *excellent* using the riffle/run assessment matrix (Appendix F-4d). An instream bioassessment was also conducted in July indicating that the stream reach supported an *excellent* aquatic macroinvertebrate community with 12 EPT families collected. The stream flow estimate (Appendix F-4a) during the bioassessment was 0.5 cfs. Water quality data (Appendix F-4a) collected during May to September indicated that nitrate/nitrite-nitrogen concentration (range 0.263 - 0.581 mg/L) was slightly elevated during each sampling event. The concentration of TKN was also elevated during the July site visit (1.008 mg/L).

Water quality data were also collected at WOB-2, however this site was determined to be intermittent during the course of the sampling season. Results of field and lab analyses conducted during the May and July, 1999 site visits did not indicate any water quality impairment (Appendix F-4a).

Sub-Watershed: Lower Terrapin Creek
NRCS Sub-Watershed Number: 250

Percent land cover of the Lower Terrapin Creek sub-watershed was estimated as 3% transitional forest, 26% deciduous forest, 23% evergreen forest, 22% mixed forest, 13% pasture/hay, 10% row crop, 2% wetlands, and 1% open water (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were higher for row crops (19%) and lower for pastureland (7%). One mining NPDES permit, one current mining/stormwater authorization (non-coal <5 acres), and one current construction/stormwater authorization have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *moderate* (0.14 AU/Acre), with broiler-poultry being the dominant animal type (0.11 AU/acre). Row crop landuses also indicated a *moderate* NPS impairment potential. Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (1.9 tons/acre), mainly from erosion of cropland and woodlands. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *low*. The Lower Terrapin Creek sub-watershed drains approximately 54 mi^2 in Cherokee County and was listed as a 2nd priority by the local SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4a.

Sites on Terrapin Creek (Appendix E) were assessed during the 1996 Clean Water Strategy (Appendix F-7) and during the 1999 University Reservoir Tributary Nutrient Study Strategy (Appendix F-5). A site on an unnamed tributary to Terrapin Creek was assessed during the 2000 ALAMAP sampling effort (Appendix F-6). No instream assessments were conducted during this project.

Sub-Watershed: Sugar Creek
NRCS Sub-Watershed Number 260

Percent land cover of the Sugar Creek sub-watershed was estimated as 23% deciduous forest, 24% evergreen forest, 22% mixed forest, 16% pasture/hay, 12% row crop, and 2% open water (Table 1a). Estimates of land use (Table 2a) by the local SWCDs indicated a lower pasture land use (7%) and higher row crop (19%) than did EPA data. One current construction/stormwater authorization has been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were very *low* (0.01 AU/Acre). Sedimentation estimates (Table 4a, Fig. 4) also indicated a *low* potential for NPS impairment (2.0 tons/acre). Row crop landuse estimates indicated a *moderate* potential for NPS impairment. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *low*.

The Sugar Creek sub-watershed drains approximately 17 mi^2 in Cherokee and Etowah Counties. No historical data were available and no in-stream assessments were conducted during this project.

Sub-Watershed: Coosa River
NRCS Sub-Watershed Number 270

Percent land cover of the Coosa River sub-watershed was estimated as 12% deciduous forest, 8% evergreen forest, 14% mixed forest, 24% pasture/hay, 31% row crop, 8% open water, and 2% wetland (Table 1a). Estimates of land use (Table 2a) by the local SWCDs were higher for row crops (53%) and lower for pastureland (4%). Two current construction/stormwater authorizations and one industrial NPDES permit have been issued in the sub-watershed (Table 9a).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3a, Fig. 3) were *low* (0.03 AU/Acre). Row crop landuse estimates indicated a *moderate* potential for NPS impairment. Sedimentation estimates (Table 4a, Fig. 4) indicated a *low* potential for NPS impairment (2.1 tons/acre), mainly from cropland and woodland areas. The overall potential for impairment from nonpoint sources (Table 5a, Fig. 5) was estimated as *moderate*.

The Coosa River sub-watershed drains approximately 18 mi^2 in Cherokee County. One site on the Coosa River was assessed during the 1999 University Tributary Nutrient Study (Appendices E and F-5). No instream assessments were conducted during this project.

Figure 10a. Habitat and Aquatic Macroinvertebrate Assessments Conducted in the Upper Coosa Cataloging Unit.

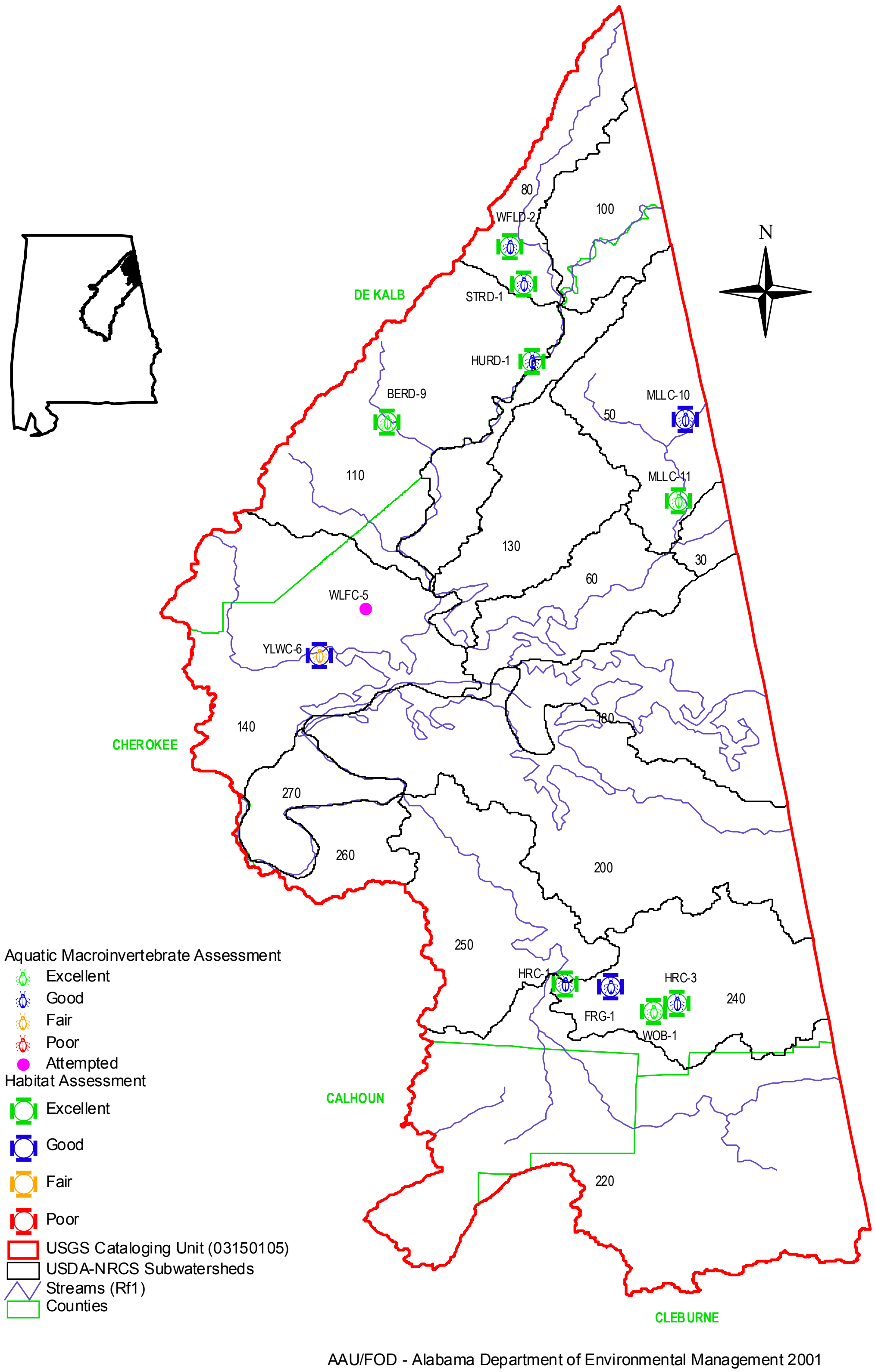


Figure 11a. No Fish Community IBI Assessments Were Conducted in the Upper Coosa Cataloging Unit.

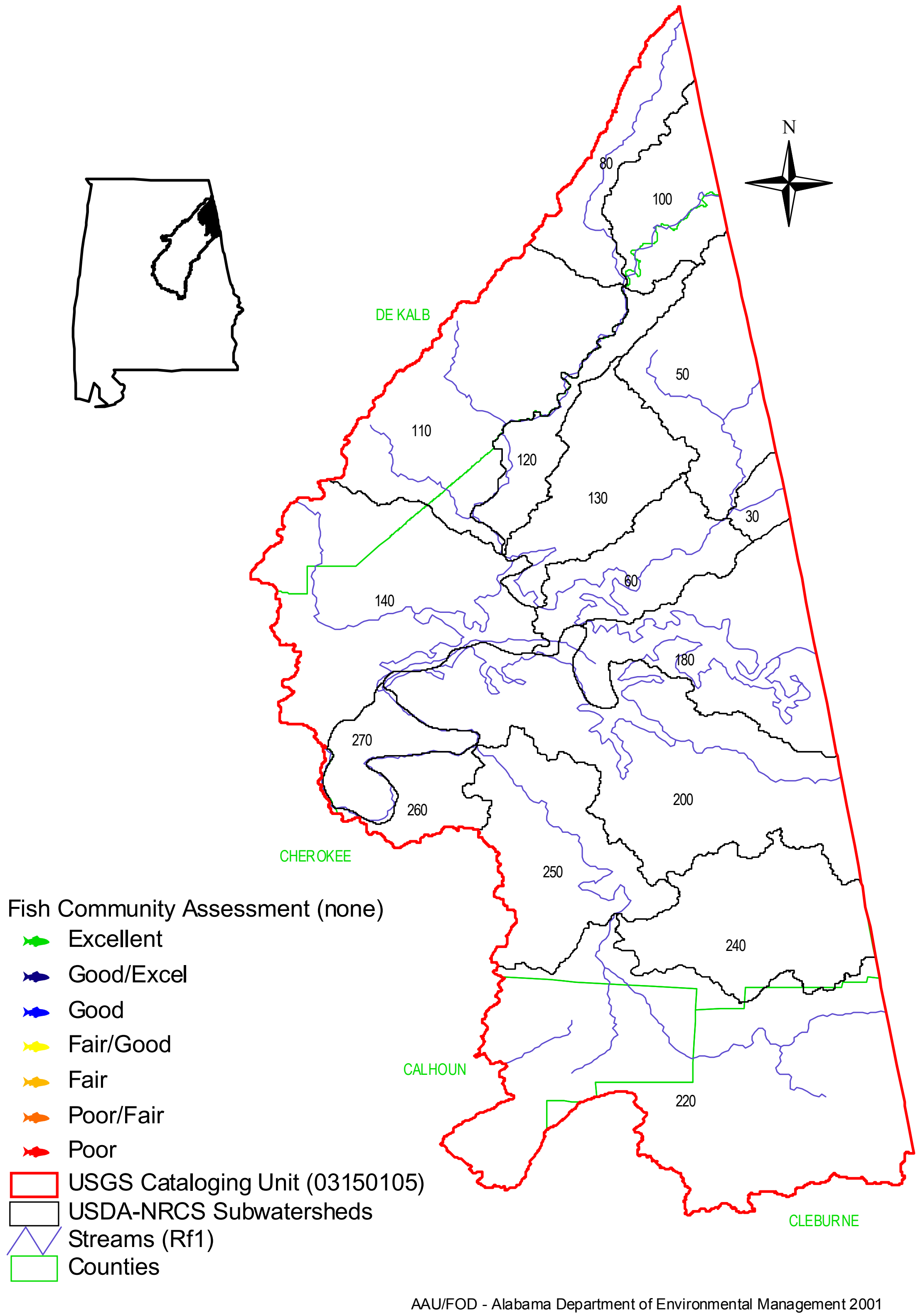


Figure 12a. Stream Stations Assessed or Attempted from 1990-2000 (From Appendix E) and NPS Priority Subwatersheds in the Upper Coosa Cataloging Unit.

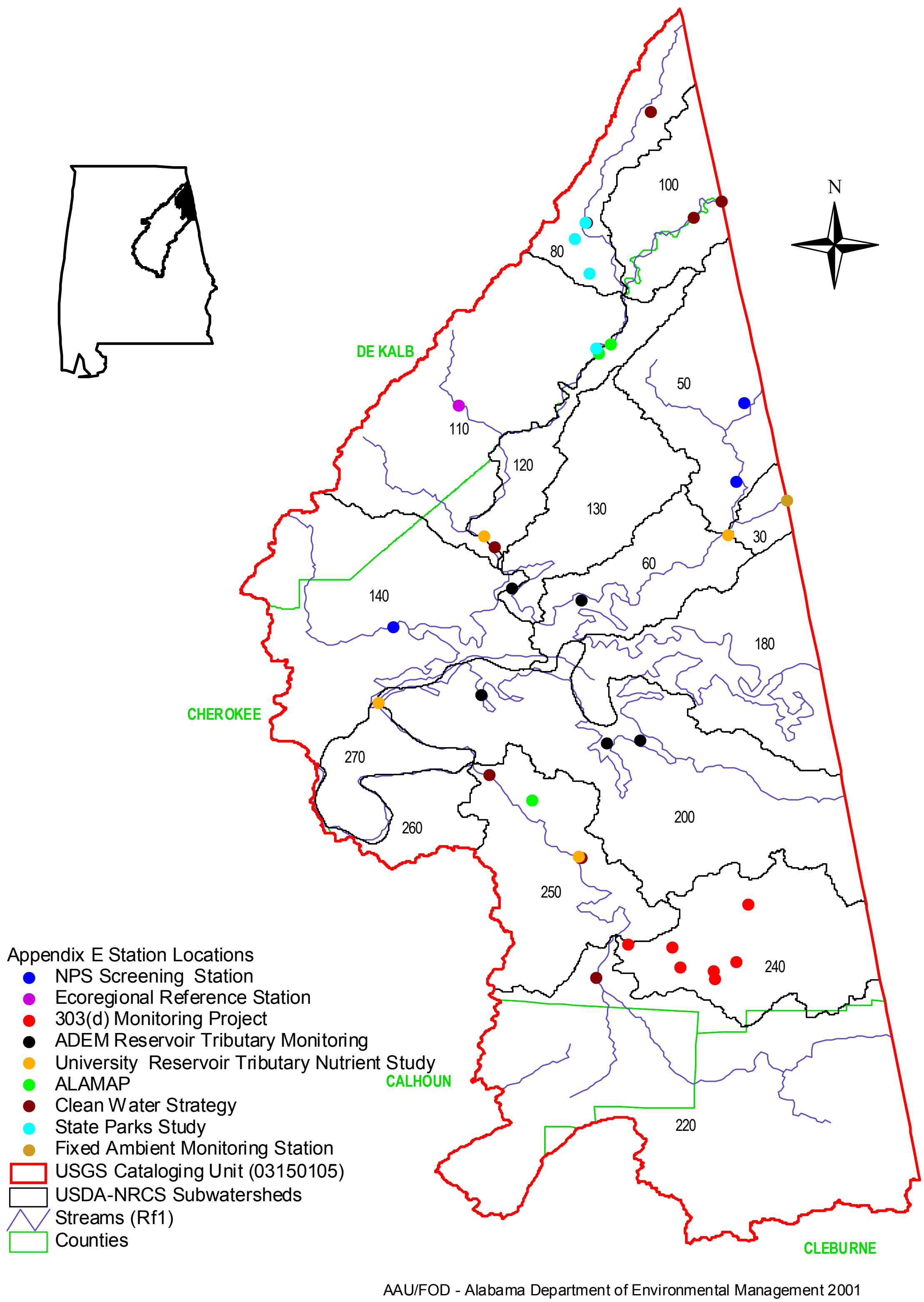


Table 1a. Land use percentages for the Upper Coosa cataloging unit (0315-0105) from EPA landuse subcategory data (EPA 1997) and broader categories used in comparison with local SWCD Conservation Assessment Worksheet landuse estimates (ASWCC 1998).

Subwatershed	***Percent Total Landuse (Category and Subcategory)***													
	Open Water	Urban			Mining	Forest				Pasture/ Hay	Row Crops	Other		
	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial/ Transportation	Quarries/ Strip Mines/ Gravel Pits	Transitional Forest	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/ Hay	Row Crops	Other Grasses	Woody Wetlands	Herbaceous Wetlands
Upper Coosa (0315-0105)														
30		<1		<1		4	35	23	22	5	9		2	<1
50	<1	<1		<1		2	38	17	24	12	7		<1	<1
60	16	1	<1	<1		<1	24	21	22	7	9	<1	1	<1
80	1	<1		<1		4	32	19	38	5	2	<1	<1	
100	<1	<1		<1		2	31	23	37	3	2		<1	
110	1	<1	<1	<1		0	35	15	27	13	9	<1	<1	<1
120	1	<1	<1			<1	34	29	32	2	2		<1	<1
130	3	<1		<1		1	34	25	25	7	5		<1	<1
140	13	<1	<1	<1		<1	27	13	20	11	13	<1	<1	1
180	24	<1	<1	<1	<1	1	17	16	17	8	13	<1	3	2
200	9	1	<1	1	<1	3	16	19	19	17	15	<1	1	<1
220	<1	1	<1	<1	<1	3	37	22	25	6	5	<1	<1	<1
240	<1	<1		<1	<1	<1	44	20	22	8	5		<1	<1
250	1	<1	<1	<1	<1	3	26	23	22	13	10	<1	2	<1
260	2	<1		<1		<1	23	24	22	16	12		1	<1
270	8	<1		<1	<1		12	8	14	24	31		2	<1

Table 2a. Land use percentages for the Upper Coosa cataloging unit (0315-0105) from EPA landuse categories (EPA 1997) and local SWCD Conservation Assessment Worksheet landuse estimates (ASWCC 1998).

Subwatershed	Percent Total Landuse													
	Open Water		Urban		Mines		Forest		Pasture		Row Crops		Other	
	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA
Upper Coosa (0315-0105)														
030	---		---	<1	---		---	84	---	5	---	9	---	2
050	1	<1		<1			70	81	16	12	10	7	3	<1
060	8	16	6	1	<1		43	66	7	7	33	9	3	2
080	1	1	2	<1	1		79	92	12	5	2	2	4	<1
100	1	<1		<1	<1		82	94	10	3	3	2	3	<1
110	<1	1		<1	1		65	77	26	13	7	9	1	<1
120	1	1		<1			96	95	1	2	2	2	1	<1
130	6	3	1	<1			57	85	12	7	12	5	12	<1
140	16	13	8	<1	1		42	61	18	11	11	13	3	1
180	29	24	5	<1		<1	25	50	7	8	26	13	8	5
200	14	9	7	1	<1	<1	44	56	7	17	25	15	4	1
220	1	<1	8	1	<1	<1	77	87	11	6	2	5	1	<1
240	<1	<1		<1		<1	98	87	1	8	1	5	<1	<1
250	1	1		<1		<1	72	74	7	13	19	10	2	2
260	<1	2		<1			76	69	2	16	17	12	3	1
270	1	8		<1		<1	39	34	4	24	53	31	3	2

Table 3a. Estimations of percent of acres where pesticides/herbicides applied, animal and animal unit (AU) concentrations, and NPS impairment potential from animal husbandry activities in the Upper Coosa Cataloging Unit (0315-0105). Numbers of animals and pesticides/herbicides listed by acreage and subwatershed were provided by the local SWCDs on Conservation Assessment Worksheets completed in 1998.

		Subwatershed									
		30	50	60	80	100	110	120	130	140	180
County (s)		Cherokee*	Cherokee	Cherokee	Dekalb	Cherokee Dekalb	Cherokee Dekalb*	Cherokee Dekalb	Cherokee	Cherokee Dekalb	Cherokee
Acres Reported (% of Total)		0	100	100	100	100	91	100	100	100	100
Pesticides Applied	Est. % Total Reported Acres	nd	71	nd	12	5	33	nd	nd	10	nd
Cattle	# / Acre	---	0.08	0.03	0.06	0.05	0.13	0.00	0.05	0.09	0.03
	AU/Acre	---	**0.08**	**0.03**	**0.06**	**0.05**	**0.13**	**0.00**	**0.05**	**0.09**	**0.03**
Dairy	# / Acre	---	---	---	---	---	0.00	---	---	0.00	---
	AU/Acre	---	---	---	---	---	**0.00**	---	---	**0.00**	---
Swine	# / Acre	---	---	---	---	---	0.02	---	---	**0.01**	0.01
	AU/Acre	---	---	---	---	---	**0.01**	---	---	**0.00**	**0.00**
Poultry - Broilers	# / Acre	---	---	---	11.86	2.14	8.66	---	---	3.63	---
	AU/Acre	---	---	---	**0.09**	**0.02**	**0.07**	---	---	**0.03**	---
Poultry - Layers	# / Acre	---	---	---	0.54	---	1.62	---	---	0.33	---
	AU/Acre	---	---	---	**0.00**	---	**0.01**	---	---	**0.00**	---
Catfish	# Acres/ Acre	---	0.00	---	---	---	---	---	---	---	---
^Total	AU/Acre	---	**0.08**	**0.03**	**0.16**	**0.06**	**0.22**	**0.00**	**0.05**	**0.13**	**0.03**
Potential for NPS Impairment		nd	Low	Low	Mod.	Low	Mod.	Low	Low	Mod.	Low

* No data reported for this portion of the subwatershed; nd = no data; ^Total AU/Acre may differ slightly from sum of Animal Type AU/Acre

Table 3a, cont. Estimations of percent of acres where pesticides/herbicides applied, animal and animal unit (AU) concentrations, and NPS impairment potential from animal husbandry activities in the Upper Coosa Cataloging Unit (0315-0105). Numbers of animals and pesticides/herbicides listed by acreage and subwatershed were provided by the local SWCDs on Conservation Assessment Worksheets completed in 1998.

		Subwatershed						
		200	220	240	250	260	270	Totals
County (s)		Cherokee	Calhoun Cherokee Cleburne	Calhoun Cherokee Cleburne*	Cherokee	Cherokee Etowah*	Cherokee	----
Acres Reported (% of Total)		100	100	97	100	96	100	98
Pesticides Applied	Est. % Total Reported Acres	nd	nd	nd	nd	nd	nd	8
Cattle	# / Acre	0.03	0.03	0.00	0.03	0.01	0.02	0.05
	AU/Acre	**0.03**	**0.03**	**0.00**	**0.03**	**0.01**	**0.02**	**0.05**
Dairy	# / Acre	0.00	---	---	---	---	---	0.00
	AU/Acre	**0.00**	---	---	---	---	---	**0.00**
Swine	# / Acre	---	---	---	---	---	0.02	0.00
	AU/Acre	---	---	---	---	---	**0.01**	**0.00**
Poultry - Broilers	# / Acre	7.85	---	3.80	13.87	---	---	3.76
	AU/Acre	**0.06**	---	**0.03**	**0.11**	---	---	**0.03**
Poultry - Layers	# / Acre	---	---	---	---	---	---	0.19
	AU/Acre	---	---	---	---	---	---	**0.00**
Catfish	# Acres/ Acre	---	---	---	---	0.00	0.00	0.00
^Total	AU/Acre	**0.10**	**0.03**	**0.03**	**0.14**	**0.01**	**0.03**	**0.08**
Potential for NPS Impairment		Low	Low	Low	Mod.	Low	Low	Low

* No data reported for this portion of the subwatershed; nd = no data; ^Total AU/Acre may differ slightly from sum of Animal Type AU/Acre

Table 4a. Estimates of forest condition, sedimentation by source, onsite wastewater treatment systems and resource concerns by subwatershed in the Upper Coosa cataloging unit (315-0105) as provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets (ASWCC 1998). (* Indicates not reported)

Basin Code - Cataloging Unit	0315-0105									
Subwatershed	**030***	**050**	**060**	**080**	**100**	**110**	**120**	**130**	**140**	**180**
Forest Condition										
% of Subwatershed Needing Forest Improvement		*	*	63	28	49	*	*	9	*
Sediment Contributions (Tons/Acre/Yr)										
Cropland		0.2	0.8	0.1	0.1	0.3	0.0	0.2	0.3	0.5
Sand & Gravel Pits			0.1				0.1		0.0	
Mined Land			0.0	0.6	0.0	1.7			0.1	
Developing Urban Land			0.2	0.2	0.1	0.0		0.0	0.3	0.1
Critical Areas		0.3	0.3	0.0	0.3	0.3	0.3	0.1	0.1	0.0
Gullies					0.0	0.1			0.0	
Stream Banks		0.2	0.2	0.0	0.2	0.0	0.2	0.2	0.1	0.1
Dirt Roads and Roadbanks		0.2	0.1	0.6	0.6	0.8	0.1	0.1	0.4	0.2
Woodlands		0.2	0.1	0.0	0.5	0.1	1.3	1.3	0.4	0.3
Total Sediment		1.1	1.8	1.6	1.9	3.3	2.0	1.9	1.8	1.3
Potential for Sediment NPS		Low	Low	Low	Low	Low	Low	Low	Low	Low
Onsite Wastewater Treatment Systems										
# Septic Tanks per Acre		0.02	0.02	0.04	0.02	0.01	0.01	0.02	0.02	0.02
# Septic Tanks Failing per Acre		0.007	0.006	0.008	0.003	0.002	0.002	0.007	0.007	0.007
# of Alternative Septic Systems		*	*	*	*	*	*	*	*	*
Resource Concerns in the Subwatershed										
Excessive Erosion on Cropland						X		X	X	
Gully Erosion on Agricultural Land						X				
Road and Roadbank Erosion		X	X	X	X	X	X	X	X	X
Poor Soil Condition (Cropland)				X	X	X			X	
Excessive Animal Waste Applied to Land					X	X			X	
Excessive Pesticides Applied to Land										
Excessive Sediment from Cropland						X			X	
Excessive Sediment From Roads/Roadbanks				X	X	X	X	X	X	
Excessive Sediment from Urban Development				X	X					
Inadequate Management of Animal Wastes		X	X		X	X		X	X	X
Nutrients in Surface Waters			X	X	X	X		X	X	X
Pesticides in Surface Waters										
Livestock Commonly have Access to Streams		X	X	X	X	X	X	X	X	X

Table 4a, cont. Estimates of forest condition, sedimentation by source, onsite wastewater treatment systems and resource concerns by subwatershed in the Upper Coosa cataloging unit (315-0105) as provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets (ASWCC 1998). (* Indicates not reported)

Basin Code- Cataloging Unit	0315-0105					
Subwatershed	**200**	**220**	**240**	**250**	**260**	**270**
Forest Condition						
% of Subwatershed Needing Forest Improvement	*	*	*	*	*	*
Sediment Contributions (Tons/acre						
Cropland	0.5	0.0	0.0	0.5	0.4	1.1
Sand & Gravel Pits	0.0		0.0	0.0		
Mined Land	0.0	0.0				
Developing Urban Land	0.1	0.0				
Critical Areas	0.1	0.0	0.1	0.1	0.2	0.2
Gullies						
Stream Banks	0.1	1.2	0.1	0.1	0.2	0.1
Dirt Roads and Roadbanks	0.2	0.4	0.2	0.2	0.2	0.2
Woodlands	0.6	1.7	0.1	1.0	1.0	0.5
Total Sediment	1.6	3.3	0.6	1.9	2.0	2.1
Potential for Sediment NPS	Low	Low	Low	Low	Low	Low
Onsite Wastewater Treatment Systems						
# Septic Tanks per acre	0.02	0.00	0.02	0.02	0.02	0.02
# Septic Tanks Failing per acre	0.007	0.001	0.006	0.008	0.006	0.005
# of Alternative Septic Systems	*	*	*	*	*	*
Resource Concerns in the Subwatershed						
Excessive Erosion on Cropland	X	X	X	X	X	X
Gully Erosion on Agricultural Land						
Road and Roadbank Erosion	X	X	X	X	X	X
Poor Soil Condition (cropland)						
Excessive Animal Waste Applied to Land						
Excessive Pesticides Applied to Land						
Excessive Sediment from Cropland	X					
Excessive Sediment From Roads/Roadbanks						
Excessive Sediment from Urban Development						
Inadequate Management of Animal Wastes	X	X	X	X	X	X
Nutrients in Surface Waters	X	X	X	X	X	X
Pesticides in Surface Waters	X					
Livestock Commonly have Access to Streams	X	X	X	X	X	X

Table 5a. Estimation of potential sources of NPS impairment for subwatersheds in the Upper Coosa cataloging unit (0315-0105). Source categories are based upon information provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets completed in 1998, and from Construction Stormwater Authorization information provided by the Mining and NPS Unit of ADEM. *Rural landuse sources were used to develop the NPS potential. The presence of a CWA Section 303(d) stream segment within a subwatershed raised the subwatershed to the top of the prioritization ranking.

Subwatershed	Potential NPS Impairment	Potential Sources of Impairment								
		Rural Landuses						Urban / Suburban / Residential Landuses		
		Animal Husbandry	Row Crops	Pasture Runoff	Mining	Forestry Practices	Sedimentation	Urban	Development	Septic Tank Failure
030	---	---	---	---	---	---	---	---	M	---
050	M	L	H	M	L	---	L	L	L	M
060	M	L	H	L	L	---	L	M	L	M
080	H	M	L	L	M	H	L	L	L	M
100	L	L	L	L	L	M	L	L	L	M
110	H	M	M	M	M	H	L	L	L	L
120	L	L	L	L	L	---	L	L	L	L
130	L	L	M	L	L	---	L	L	L	M
140	M	M	M	M	M	L	L	M	L	M
180	M	L	H	L	L	---	L	M	L	M
200	M	L	H	L	L	---	L	M	L	M
220	L	L	L	L	L	---	L	M	M	L
240*	L	L	L	L	L	---	L	L	L	M
250	L	M	M	L	L	---	L	L	L	M
260	L	L	M	L	L	---	L	L	L	M
270	M	L	H	L	L	---	L	L	L	M

* Contains a CWA §303(d) Segment

Table 6a. Physical characteristic and habitat quality estimates for sites assessed by ADEM in the Upper Coosa cataloging unit (0315-0105) during 2000. In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx. 50% Open/Shaded)

Station Number		MLLC-10	MLLC-11	BERD-9 (ref)	YLWC-6
Subwatershed #		050	050	110	140
Ecoregion/ Subregion		67f	67f	68d	68d
Drainage area (Approx. mi^2)		47	68	11	31
Date (YYMMDD)		000614	000614	000614	000614
Width (ft)		30	25	15	35
Canopy Cover*		S	MO	50/50	MO
Depth (ft)	Riffle	0.3	0.3	0.1	N/A
	Run	2.0	1.0	0.5	1.5
	Pool	>4	3.0	1.5	----
Substrate (%)	Bedrock	0	5	50	78
	Boulder	0	14	16	0
	Cobble	10	34	16	0
	Gravel	11	19	6	2
	Sand	40	15	6	3
	Silt	20	9	2	15
	Detritus	15	3	4	2
	Clay	4	1	0	0
Geomorphology*		RR	RR	RR	RR
Habitat Survey (% maximum)					
Instream Habitat Quality		52	88	53	18
Sediment Deposition		50	78	89	85
Sinuosity		95	100	95	0
Bank and Vegetative Stability		50	48	94	85
Riparian Measurements		63	53	100	100
Habitat Assessment Score					
% Maximum		63	73	80	63
Assessment		Good	Excellent	Excellent	good

Table 7a. Aquatic macroinvertebrate and fish community bioassessments conducted by ADEM during 2000 from the Upper Coosa Cataloging Unit (0315-0105).

Station Number	MLLC-10	MLLC-11	BERD-9 (ref)	YLWC-6
Sub-watershed #	050	050	110	140
Subecoregion #	67f	67f	68d	68d
Macroinvertebrate community				
Assessment Date (YYMMDD)	000614	000614	000614	000614
# EPT families	9	11	11	5
Assessment	Good	Excellent	Excellent	Fair
Fish community				
Assessment Date (YYMMDD)				
Time (min)				
Richness measures				
# species				
# darter species				
# minnow species				
# sunfish species				
# sucker species				
# intolerant species				
Composition measures				
% sunfish				
% omnivores and herbivores				
% insectivorous cyprinids				
% top carnivores				
Population measures				
Individuals				
# collected per hour				
% disease and anomalies				
IBI Score				
Assessment				

Table 8a. List of previous water quality assessments conducted on streams within the Upper Coosa River Cataloging Unit from 1990-1999. Chemical assessments are indicated when biological assessments were not conducted.

Waterbody	*Date(s)*	*Assessment Type**	*Reference +*
Upper Coosa (0315-0105)			
Coosa R	1995, 1996, 1998-99 1999	C	1, 2, 7
Chattooga R	1991, 1995, 1998-99	C	1, 7
Hurricane Cr - Dekalb Co.	1998	B, C	3
W. Fork Little R	1996, 1998	B, C	2, 3
E. Fork Little R	1996, 1997	C	2, 5
Frog Creek	1999	B, C	6
Hurricane Cr-Cherokee Co.	1999	B, C	6
Wolf Branch	1999	B, C	6
Straight Cr	1998	B, C	3
Little R	1996, 1999, 1998-99	C	2, 5, 7
Terrapin Cr	1996, 1999	C	2, 7

* B= Biological Assessment (either fish and/or aquatic macroinvertebrate); C= Chemical Assessment
\+ Key to References is located in Appendix G.

Table 9a. Summary of the number of current Construction/Stormwater Authorizations, Noncoal <5 Acres/Stormwater Authorizations, NPDES Permits, and CAFO Registrations issued within each subwatershed of the Upper Coosa River Cataloging Unit.

Cataloging Unit and Subwatershed	# of Authorizations / #NPDES permits / Registrations							
	Total Number	Construction/ Stormwater Authorizations (a)	Non-Coal Mining <5 Acres / Stormwater Authorizations (a)	Mining NPDES (c)	Municipal NPDES (b)	Semi Public/ Private NPDES (b)	Industrial Process Wastewater - NPDES Majors (b)	CAFO Registrations (c)
Upper Coosa (0315-0105)								
030	1	1						
050	4	1		1				2
060	3	1			1			1
080	1					1		
100	1	1						
110	3	2	1					
120	0							
130	2	1	1					
140	3	2				1		
180	1	1						
200	4	2			1			1
220	5	4			1			
240	3	1		1				1
250	4	1	1	1				1
260	1	1						
270	3	2					1	

(a) Source: ADEM Mining and Nonpoint Source Unit, Field Operations, database retrieval (7/18/00) (ADEM 1999e)

(b) Source: 1996 CWS Report (ADEM 1999a)

(c) Source: ADEM Mining and Nonpoint Source Unit, Field Operations, database retrieval (08/3/01) (ADEM 2001d)

Table 10a. List of stations assessed or attempted as part of the surface water quality NPS screening assessment of the Upper Coosa cataloging unit. Select additional stations assessed as part of other studies are included and noted with an asterisk (*).

Stream Name	Station	Approximate Basin Size (sq. mi.)	Assessment Type+	Subwatershed Number	Sub-Ecoregion **	County	T	R	S
Upper Coosa (0315-0105)									
Mills Cr	MLLC-10	47	M, H, C#	050	67f	Cherokee	7S	11E	32
Mills Cr	MLLC-11	68	M, H, C#	050	67f	Cherokee	8S	11E	20
Straight Cr	STRD-1*	13	M, H, C	080	68d	Dekalb	6S	10E	32
West Fk Little R	WFLD-2*	41	M, H, C	080	68d	Dekalb	6S	10E	20
Bear Cr (Ref)	BERD-9	11	M, H, C#	110	68d	Dekalb	7S	9E	20
Hurricane Cr	HURD-1*	6	M, H, C	110	68d	Dekalb	7S	10E	17
Wolf Cr (Ref)	WLFC-5		NA	140	68d	Cherokee	9S	9E	17
Yellow Cr	YLWC-6	31	M, H, C#	140	68d	Cherokee	9S	8E	25
Frog Cr	FRG-1*	20	M, H, C	240	67f	Cherokee	12S	10E	11
Frog Cr	FRG-2*	8	H, C	240	67f	Cherokee	11S	11E	32
Hurricane Cr	HRC-1*	50	M, H, C	240	67f	Cherokee	12S	10E	10
Hurricane Cr	HRC-2*	29	H, C	240	67f	Cherokee	12S	10E	13
Hurricane Cr	HRC-3*	23	M, H, C	240	67f	Cherokee	12S	11E	17
Wolf Br	WOB-1*	2	M, H, C	240	67f	Cherokee	12S	11E	19
Wolf Br	WOB-2*	1	C	240	67f	Cherokee	12S	11E	19

+ Assessment Type: C = Chemical Assessment; C# = *In situ* measurements only
H = Habitat Assessment; F = Fish Community Assessment;
M = Aquatic Macroinvertebrate Community Assessment;
NA = Not Assessed (dry / not flowing / beaver dam, etc)

** Level IV Ecoregions of Alabama (Griffith, et al. 2001)

Table 11a. Summary of Assessments conducted within the Upper Coosa cataloging unit. Includes data collected as a part of the Coosa Basin NPS project and other selected biological and chemical data collected since 1995.

Cataloging Unit and Subwatershed	Station Number	*Habitat*	*Macroinv.*	*Fish*	*Chemical* Data Available (X)	Overall Assessment
Upper Coosa (0315-0105)						
050	MLLC-10	Good	Good	---	FP Only	Good
050	MLLC-11	Excellent	Excellent	---	FP Only	Excellent
080	STRD-1	Excellent	Good	---	X	Good
080	WFLD-2	Excellent	Good	---	X	Good
110	HURD-1	Excellent	Good	---	X	Good
110	BERD-9	Excellent	Excellent	---	FP Only	Excellent
110	CO01U1	Excellent	---	---	X	---
110	CO07U3-25	Excellent	---	---	X	---
140	YLWC-6	Good	Fair	---	FP Only	Fair
240	FRG-1	Good	Good	---	X	Good
240	FRG-2	Fair	---	---	X	---
240	HRC-1	Excellent	Good	---	X	Good
240	HRC-2	Excellent	---	---	X	---
240	HRC-3	Excellent	Good	---	X	Good
240	WOB-1	Excellent	Excellent	---	X	Excellent
240	WOB-2	---	---	---	X	---
250	CO06U4-45	Good	---	---	X	---

Table 12a. List of the stream segments and reservoir acres within the Upper Coosa cataloging unit on ADEM's draft 2000 CWA §303(d) list along with sources and causes of impairment (ADEM 2001c). Only one segment remains on the draft list due to rural nonpoint source impacts. The reservoir acres are included on the CWA §303(d) list with urban/industrial/out of state sources. (*Segment on 1998 CWA §303(d) list and removed from draft 2000 CWA §303(d) list)

Waterbody	Sub- watershed	Miles impaired	Use	Support Status	Sources	Causes of Impairment
Upper Coosa (0315-0105)						
UT to Weiss Lake	180	4.4	F&W	Non	Agriculture	Organic enrichment/DO Ammonia, Nutrients Pathogens
Wolf Br. * (UT to Hurricane Cr)	240	2.0	F&W	Non	Intensive Animal Feeding Operation	Organic enrichment/DO Ammonia

Waterbody	Sub- watershed	Acres impaired	Use	Support Status	Sources	Causes of Impairment
Weiss Lake	---	*30,200*	*PWS/ S/F&W*	*Partial*	*Sources outside State Flow Regulation/ Modification*	*pH Nutrients Priority Organics*

The Middle Coosa Cataloging Unit drains 33 sub-watersheds located within Blount, Calhoun, Cherokee, Clay, Cleburne, Dekalb, Etowah, Jefferson, St. Clair, Talladega, and Shelby Counties (Fig. 1). The cataloging unit primarily drains portions of the Ridge and Valley (67f, 67g, 67h) with smaller regions draining portions of the Southwestern Appalachians (68c and 68d) and the Piedmont (45a and 45d) ecoregions (Fig. 2) (Griffith et al. 2001). The cataloging unit is dominated by the Limestone Valleys and Uplands soil areas with smaller amounts of the Appalachian Plateau and Piedmont Plateau soil areas (NRCS 1997).

Land use

Land use within the Middle Coosa cataloging unit was primarily forest, mixed with pasture and row crops. Approximately 105,000 acres of crop and pastureland (~6% of total land area) were treated with pesticides and/or herbicides. Four sub-watersheds contain stream segments or portions of reservoirs on Alabama's 1998 CWA §303(d) list of impaired waterbodies (Table 12b). The majority of those are listed due to impairment from urban or point sources (ADEM 1999c, ADEM 2001d).

Percent land cover estimated by local SWCD (Table 5b, ASWCC 1998)

Forest	Row crop	Pasture	Mining	Urban	Open Water	Other
65%	11%	15%	1%	4%	2%	3%

NPS Impairment Potential

The primary nonpoint source concerns within the Middle Coosa cataloging unit were animal husbandry, runoff from pasture and row crops, and mining land use. A total of 16 sub-watersheds had a *moderate* or *high* potential for impairment from nonpoint sources. Fifteen sub-watersheds had a *moderate* or *high* potential for impairment from urban or residential sources. Only two sub-watersheds (240 and 260) had *low* potentials for impairment from both point and nonpoint sources.

Number of sub-watersheds with (M)oderate or (H)igh ratings for each NPS category (Table 5b).

Category	Overall Potential	Animal husbandry	Row crop	Pasture	Mining	Forestry	Sediment
Moderate	12	13	10	19	21	6	9
High	4	2	1	0	0	2	0

Number of sub-watersheds with (M)oderate or (H)igh ratings for each point source category (Table 5b).

Category	% Urban	Development	Septic tank failure
Moderate	14	19	12
High	1	2	3

Local SWCD animal unit concentration estimates by animal type (Table 3b, ASWCC 1998).

Category	NPS Potential	Total	Cattle	Dairy	Swine	Poultry-Broilers	Poultry-Layers
AU/Acre	Moderate	0.19	0.05	0.00	0.01	0.13	0.00

Local SWCD sedimentation rate estimates by source (Table 4b, ASWCC 1998).

NPS Potential	Total Tons/ Acre /yr.	Crop Land	Sand & Gravel Pits	Mined Land	Developing Urban Land	Critical Areas	Gullies	Stream Banks	Dirt Roads	Wood Land
Low	2.84	0.11	0.64	0.13	0.71	0.29	0.12	0.32	0.36	0.19

Seventeen sub-watersheds were listed as top-five priorities by the local SWCD in public meetings conducted during 1998 (030, 050, 070, 080, 100, 140, 160, 170, 190, 200, 240, 250, 270, 280, 290, 300, and 330). Erosion and sediment from croplands and urban development, inadequate management of animal wastes, nutrients in surface waters, and animals commonly having access to streams were indicated as the most common concerns within the sub-watersheds (ASWCC 1998).

Historical Data/Studies

A review of existing data indicated that bioassessments have been conducted recently within six of the 33 sub-watersheds in the cataloging unit (Table 8b and Appendices E, F-2c, F-3d, F-4e, and F-9d). Two locations were monitored on Cheaha Creek as part of the State Parks Monitoring Project. Two current ecoregional reference sites have been assessed as part of the Ecoregional Reference Reach Program. Four locations were assessed on Big Wills Creek as part of a Water Quality Demonstration Study and two stations were sampled as part of the 1999 CWA §303(d) Water Quality Monitoring Project.

Historical water quality data were available from 28 of the 33 sub-watersheds in the Middle Coosa Cataloging Unit. In addition to the bioassessment sites (above), which also included water quality samples, three sites on Choccolocco Creek were included in the Ambient Trend Monitoring Program (Appendix F-1). Nine sites in nine sub-watersheds were assessed by Auburn University as part of the University Reservoir Tributary Nutrient Study (Appendix F-5). Eight sites were visited and five were assessed as part of the ALAMAP Program (Appendix F-6a and F-6b). Six sites (one on the Coosa River) were assessed as part of the 1996 Clean Water Strategy (Appendix F-7). GSA conducted water quality assessments during 1996-2001 at nine sites in four sub-watersheds of the Mid- and Lower- Choccolocco Creek watershed under contract with ADEM (Appendix F-8). During 2000, FOD also conducted embayment monitoring of 14 major tributaries to the Coosa River (Appendix F-10).

Assessments Conducted During This Project

Nine of the 33 sub-watersheds in the Middle Coosa cataloging unit were targeted in this project because they had a *high* or *moderate* estimated potential for NPS impairment, *low* potential from urban or point sources, and relatively little recent assessment data (Table 10b). Of these, two sub-watersheds were not assessed due to dry conditions (030, 220), and three were not assessed due to a relatively small drainage area (020) or because they contained a current NPS project (250, 270). Four sub-watersheds were added to the project for sampling of ecoregional reference stations (110, 240, 260, 300).

Data Summaries

Current and historical monitoring data were combined to provide a comprehensive assessment (Fig. 12b). A summary of the information available for each of the 33 sub-watersheds is provided. Each summary discusses land use, nonpoint source impairment potential, assessments conducted within the sub-watershed, and the nonpoint source priority rating based on available data. The summaries point out significant data and reference appropriate tables and appendices. Assessment of habitat, biological, and chemical conditions is based on long-term data from ADEM's Ecoregional Reference Reach Program. Tables referenced in the summaries are located at the end of the summary section. Appendices are located at the end of the report.

Sub-watershed Assessments

Habitat, chemical/physical, and biological indicators of water quality were evaluated in 14 sub-watersheds during this project (Table 11b). Habitat quality at 35 stations was assessed as *excellent* or *good*. Aquatic macroinvertebrate community assessments were evaluated from 33 stations. Results of these assessments indicated the macroinvertebrate community was in *excellent* condition at 23 stations (70%), *good* at eight (24%) and *fair* condition at two (6%) stations (Fig. 10b). One of the *fair* assessments was downstream of a point source, therefore the sub-watershed (050) is not recommended as a priority. Results of fish IBI assessments conducted at 10 of these sites indicated the fish community was in *good/excellent* condition at one (10%) station, *fair/good* or *fair* condition at six (60%) stations, and in *poor/fair* or *poor* condition at three (30%) stations (Fig. 11b). At all of the stations where both macroinvertebrate and fish communities were assessed, results of the fish IBI assessments indicated a greater degree of impairment.

The overall condition for each station was rated as the lowest assessment result obtained (Table 11b). Eighteen (55%) and four (12%) stations were assessed as *excellent* and *good*, respectively. Eight (24%) stations were assessed as *fair* and three (9%) were assessed as *poor*. Of the 11 stations assessed as *fair* or *poor*, three were primarily impacted by urban sources. One of the stations assessed as having a *poor* fish community (CHEC-3) was considered a headwater stream with a drainage area of 1.3 mi^2 (ADEM 1999d). This assessment may reflect a lack of data from very small streams necessary to calibrate our interpretation of the metrics used. The remaining six stations were located in five sub-watersheds.

NPS Priority Sub-watersheds

Figure 12b shows the location of the five sub-watersheds recommended as priority sub-watersheds. These included: Lower Big Wills-Little Wills Creek (070), Black Creek (080), Tallasseehatchee Creek (170), Cheaha Creek (260), and Talladega Creek (330) sub-watersheds.

Sub-watersheds recommended for NPS priority status.

Sub-watershed Number	Sub-watershed Name	Lowest Station Assessment	Suspected Cause(s)	Suspected nonpoint source(s)
070	Lower Big Wills-Little Wills Cr	Fair	Unknown	Runoff from Pasture and Mining
080	Black Cr	Fair	Sedimentation, Organic Enrichment/DO	Runoff from Row Crop, Pasture and Mining
260	Cheaha	Poor	Unknown	Forestry Activities
330	Talladega Cr	Fair	Habitat Degradation, Sedimentation	Forestry Activities and Mining

Lower Big Wills-Little Wills Creek (070): was identified as a priority sub-watershed due to impaired biological conditions in the Line Creek portion of the sub-watershed. Very low stream flows may have had an adverse impact on the biological community. The SWCD estimated pasture land use as 23%, and mining land use as 1% within the sub-watershed. Additional assessments should be conducted during normal rainfall years in order to re-evaluate its priority status. Assessments on three other tributaries were all evaluated as *good* or better.

Black Creek (080): The aquatic macroinvertebrate community, assessed at one location on Black Creek, was in *fair* condition. SWCD estimated percent land cover as 25% pasture and 10% row crops. The dissolved oxygen concentration at the time of the assessment was 3.7 mg/L. Habitat quality was assessed as *fair*, with all categories indicating impairment.

Cheaha Creek (260): The fish communities at all three locations assessed were assessed as *fair* or lower. The habitat and aquatic macroinvertebrate communities at all three locations were assessed as *excellent*. Water quality data did not indicate a cause of impairment to the fish community. Forestry practices have a moderate potential for NPS impairment.

Talladega Creek (330): The fish community was assessed as *fair/good* during 2000. The aquatic macroinvertebrate community was assessed as *good* at this location and *excellent* at three other locations. The habitat assessment indicated evidence of sedimentation impairments. Forestry and mining activities have *high* and *moderate* potentials for impairment, respectively.

Sub-Watershed Summaries

Sub-Watershed: Ball Play Creek
NRCS Sub-Watershed Number 010

Percent land cover of the Ball Play Creek sub-watershed was estimated as 1% transitional forest, 26% deciduous forest, 21% evergreen forest, 23% mixed forest, 11% pasture/hay, 10% woody wetlands, and 6% row crop (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were similar to EPA data. Three current construction/stormwater authorizations, two current mining/stormwater authorizations (non-coal <5 acres), and two mining NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.06 AU/Acre). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (3.5 tons/acre/yr.). The local SWCD estimates of row crop and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Ball Play Creek sub-watershed drains approximately 73 mi^2 in Cherokee, Etowah and Calhoun Counties. One site in the Ballplay Creek embayment was assessed as part of the ADEM Reservoir Tributary Monitoring effort in 2000. No assessments were conducted during this project.

Sub-Watershed: Coosa River
NRCS Sub-Watershed Number 020

EPA percent land cover of the Coosa River sub-watershed was estimated as 41% deciduous forest, 14% evergreen forest, 21% mixed forest, 13% pasture/hay, 9% row crop, 2% open water, and 1% woody wetlands (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (25%) and row crops (15%). Two current construction/stormwater authorizations have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.07 AU/Acre). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (2.6 tons/acre/yr.). The local SWCD estimates of row crop, pasture, and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*.

The Coosa River sub-watershed drains approximately 16 mi^2 in Etowah and Cherokee Counties. No assessments were conducted during this project.

Sub-Watershed: Big Cove Creek
NRCS Sub-Watershed Number 030

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
BCVE-13	NONE	2000	Big Cove Creek @ Sibert Rd. in Etowah Co.		F&W
DRYE-4	NONE	2000	Dry Creek 1 mi. east of Mayes Crossroad	8	F&W

Percent land cover of the Big Cove Creek sub-watershed was estimated as 26% deciduous forest, 17% evergreen forest, 23% mixed forest, 10% pasture/hay, 11% row crop, 3% open water, 1% wetland, 5% low intensity residential, 3% high intensity commercial/industrial/transportation, and 1% high intensity residential (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher in pastureland (20%) and row crops (15%). Five current construction/stormwater authorizations, four current mining/stormwater authorizations (non-coal <5 acres), one industrial, and two mining NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.06 AU/Acre), represented primarily by cattle. Sedimentation estimates (Table 4b, Fig. 4) indicated a *moderate* potential for NPS impairment (4.5 tons/acre/yr.). The local SWCD estimates of row crop, pasture, and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*. The Big Cove Creek sub-watershed was also given a 1st priority sub-watershed rating by the local Etowah County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Big Cove Creek sub-watershed drains approximately 80 mi^2 in Etowah and Calhoun Counties. One station on Spring Creek was assessed during the FY2000 ALAMAP project. This was a swampy site with no visible flow. A low dissolved oxygen concentration (1.8 mg/L) and lower pH (4.2 s.u.) were consistent with this observation.

Two stream stations were selected for assessment during this study, Big Cove Creek and Dry Creek. Big Cove Creek was not wadeable at any accessible stream crossing and exhibited swamp-like morphologic characteristics. Dry Creek, a candidate reference site, was reduced to intermittent pools by the dry weather conditions at the time of the June site visit (Appendix F-3a). No other assessments were conducted during this study.

Sub-Watershed: Town Creek
NRCS Sub-Watershed Number 040

EPA Percent land cover of the Town Creek sub-watershed was estimated as 28% deciduous forest, 15% evergreen forest, 22% mixed forest, 12% pasture/hay, and 11% row crop, 4% open water, 1% woody wetlands, 4% low intensity residential, and 3% high intensity commercial/industrial/transportation (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for row crops (20%) and lower for forest (55%), urban (4%), and open water (2%). Five current construction/stormwater authorizations have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.06 AU/Acre). Sedimentation estimates (Table 4b, Fig. 4) also indicated a *low* potential for NPS impairment (3.4 tons/acre/yr.). The local SWCD estimates of row crop and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Town Creek sub-watershed drains approximately 38 mi^2 in Etowah County. One site was assessed each year during of the 1999 and 2000 ALAMAP sampling effort (Appendices E and F-6). No additional assessments were conducted during this project.

Sub-Watershed: Upper Big Wills Creek
NRCS Sub-Watershed Number 050

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
BWLD-12	Macroinv., Habitat	2000	Big Wills Creek @ U.S. Hwy 11	36	F&W
BWC-1	Macroinv., Habitat, Chem.	2000	Big Wills Creek @ AL Hwy 35	55	F&W

Percent land cover of the Upper Big Wills Creek sub-watershed was estimated as 3% transitional forest, 40% deciduous forest, 14% evergreen forest, 21% mixed forest, 14% pasture/hay, 5% row crop, and 2% high intensity commercial/industrial/ transportation (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for urban (11%) and pasture (25%). Nine current construction/stormwater authorizations, two current mining/stormwater authorizations (non-coal <5 acres), two municipal and one semi-public private NPDES permits and three CAFO registrations have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.29 AU/Acre), with cattle, poultry and swine being the dominant animal types (0.12, 0.10, and 0.06 AU/Acre, respectively). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (1.8 tons/acre/yr.). The local SWCD estimates of pasture land use and forestry activities indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*. The Upper Big Wills Creek sub-watershed was also given a 2nd priority sub-watershed rating by the local Dekalb County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Upper Big Wills Creek sub-watershed drains approximately 141 mi^2 in Dekalb County. One segment of Little Wills Creek is listed on the draft Alabama 2000 CWA §303(d) list of impaired waters due to nutrient impairment from urban runoff/storm sewers (Table 12b). Water Quality Demonstration Studies were conducted on the Fort Payne Wastewater Treatment Facility during 1991 and 2000 (Appendix F-9a - F-9d). The 2000 study data from the upstream station, BWC-1, was used in this project. A second station on Big Wills Creek (BWLD-12) was also selected for assessment during this project.

Big Wills Creek

Big Wills Creek, at station BWLD-12, had a half shaded/half open canopy over the 18-foot wide channel characterized by a mixture of sand and gravel bottom substrates (Table 6b). Habitat quality in May 2000 was assessed as *good* using the riffle/run assessment matrix (Table 6b). Ten EPT families were collected during the June instream bioassessment indicating that the aquatic macroinvertebrate community was in *excellent* condition (Table 7b and Fig. 10b). Stream flows estimated in June before and after a rain event were 5.6 and 12.3 cfs, respectively (Appendix D-1). No water quality samples were collected during this study.

Big Wills Creek at the BWC-1 sampling reach (downstream of BWLD-12), had an open canopy and was dominated by sand (~40%) with lesser amounts of gravel (~17%), cobble (~15%), and silt (~15%) substrates (Table F-9c). Habitat quality during the June 2000 site visit was assessed as *good* using the riffle/run assessment matrix. The sinuosity, instream habitat quality, and sediment deposition categories indicated slight impairment (Appendix F-9c). Macroinvertebrate bioassessments were conducted using the MB-I sampling protocol. Ten EPT families were collected during this assessment indicating that the aquatic macroinvertebrate community was in *excellent* condition (Appendix F-9d). Water quality data (Appendices F-9a and F-9b) indicated that NO_3+NO_2-N and TKN were slightly elevated (0.590 and 0.441 mg/L, respectively) during the sampling event.

Sub-Watershed: Middle Big Wills Creek
NRCS Sub-Watershed Number 060

EPA percent land cover of the Middle Big Wills Creek sub-watershed was estimated as 38% deciduous forest, 15% evergreen forest, 27% mixed forest, 14% pasture/hay, and 5% row crop (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (28%) and row crops (9%). One CAFO registration has been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.29 AU/Acre), with cattle and poultry being the dominant animal types (0.12 and 0.15 AU/Acre, respectively). Sedimentation estimates (Table 4b, Fig. 4) also indicated a *moderate* potential for NPS impairment (4.1 tons/acre/yr.). The local SWCD estimates of row crop, pasture, and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*.

The Middle Big Wills Creek sub-watershed drains approximately 65 mi^2 in Etowah and Dekalb Counties. One location on Big Wills Creek near Cave Spring was assessed during the 1999 University Reservoir Tributary Nutrient Study (Appendices E and F-5). No assessments were conducted during this project.

Sub-Watershed: Lower Big Wills Creek - Little Wills Creek
NRCS Sub-Watershed Number 070

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
BRNE-28	Macroinv., Habitat, Fish, Chem.	2000	Brown Creek @ unnamed Etowah Co. Rd. nr Ivalee	8	F&W
CLRE-29	Macroinv., Habitat	2000	Clear Creek @ unnamed Etowah Co. Rd.	~10	F&W
LINE-30	Macroinv., Fish, Habitat, Chem.	2000	Line Creek @ unnamed Etowah Co. Rd. nr US 431	12	F&W
LWLE-31	Macroinv., Habitat	2000	Little Wills Creek @ unnamed Etowah Co. Rd. nr Kenner	11	F&W

Percent land cover of the Lower Big Wills Creek - Little Wills Creek sub-watershed was estimated as 35% deciduous forest, 15% evergreen forest, 24% mixed forest, 10% pasture/hay, and 5% row crop (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pastureland (23%). One mining and two municipal NPDES permits, four current construction/stormwater authorizations, and one CAFO registration, have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.12 AU/Acre), with cattle and poultry being the dominant animal types. Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (2.9 tons/acre/yr.). The local SWCD estimates of row crop, pasture, and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*. The sub-watershed was also given a 2nd priority sub-watershed rating by the local Etowah County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Lower Big Wills Creek - Little Wills Creek sub-watershed drains approximately 97 mi^2 in Dekalb and Etowah Counties. Two stations on Little Wills Creek were assessed during the 1996 Clean Water Strategy (Appendices E and F-7) and one site in the Big Wills Creek embayment was assessed as part of the 2000 ADEM Reservoir Tributary Monitoring effort. Four stream segments were assessed during this project.

Brown Creek

The BRNE-28 sampling reach had a mostly-open canopy with sand (~48%) and gravel (~35%) substrates (Table 6b). The habitat quality was *good* as assessed using the riffle/run habitat assessment matrix (Table 6b). Low percentages in the riparian measurement, and bank and vegetative stability categories are expected in streams where cows have direct access to the stream channel, as is the case with this location. Aquatic macroinvertebrate and fish community assessments indicated that the biological communities were in *excellent* and *good/excellent* condition, respectively (Table 7b, Figs. 10b and 11b). The results of the September water quality sampling event (stream flow of 0.4 cfs) were similar to reference conditions in Ecoregion 67 with the exception of elevated fecal coliform counts (554 col/100 mL) (Appendix D-1).

Clear Creek

Clear Creek, at the CLRE-29 sampling reach, had a mostly-shaded canopy over the 17-foot wide channel dominated by gravel (~45%) and cobble (~25%) substrates (Table 6b). Habitat quality in June 2000 was assessed as *excellent* using the riffle/run assessment matrix (Table 6b). Field notes indicated that the stream was heavily influenced by springs. Thirteen EPT families were collected during the instream bioassessment, indicating that the aquatic macroinvertebrate community was in *excellent* condition (Table 7b and Fig. 10b). Stream flows were estimated at 1.1 cfs during the June site visit (Appendix D-1). Field parameter measurements were similar to ecoregional reference conditions, with the exception of conductivity, which was slightly higher (254 μmhos @ 25C). No water quality samples were collected for laboratory analysis.

Line Creek

The LINE-30 reach had a mostly-shaded canopy over the ~15-foot wide channel, with cobble (~45%), boulder (~30%), sand (~11%) and gravel (~10%) substrates (Table 6b). The habitat quality was *excellent* as assessed using the riffle/run habitat assessment matrix (Table 6b). Instream bioassessments indicated that the aquatic macroinvertebrate (June) and fish (July) communities were in *good* and *fair* condition, respectively (Table 7b, Figs. 10b and 11b). Stream flow estimates ranged from 0.2 cfs in June to "visible but not measurable" in September (Appendix D-1). Lab analysis results from water quality samples collected in September did not indicate a cause of impairment.

Little Wills Creek

Little Wills Creek, at the LWLE-31 sampling reach, had a shaded canopy over a ~13 foot-wide channel composed of gravel (~35%), clay (~25%), sand (~15%), cobble (~10%), and silt (~10%) substrates (Table 6b). Habitat quality in June was assessed as *excellent* using the riffle/run assessment matrix (Table 6b). Twelve EPT families were collected during the instream bioassessment indicating that the aquatic macroinvertebrate community was in *excellent* condition. Stream flow was estimated as 1.4 cfs in June (Appendix D-1).

Recommended Priority Sub-Watershed

Lower Big Wills-Little Wills Creek was identified as a low priority sub-watershed due to biological conditions within the Line Creek portion of the sub-watershed (Fig. 12b).

Sub-Watershed: Black Creek
NRCS Sub-Watershed Number 080

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
BLKE-14	Habitat, Macroinv.	2000	Black Creek @ unnamed Etowah Co. Rd.	45	F&W

Percent land cover of the Black Creek sub-watershed was estimated as 32% deciduous forest, 19% evergreen forest, 27% mixed forest, 5% pasture/hay, 6% row crop, 2% wetland, 1% open water, 4% low intensity residential, 1% high intensity residential, and 3% high intensity commercial/industrial/transportation (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (25%) and urban (15%). One industrial and one semi-public/private NPDES permits, two current construction/ stormwater authorizations, and one current mining/stormwater authorization (non-coal <5 acres) have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.06 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4b, Fig. 4) indicated a *moderate* potential for NPS impairment (4.1 tons/acre/yr.). The local SWCD estimates of row crop, pasture, and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*. The Black Creek was also given a 5th priority sub-watershed rating by the local Etowah County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Black Creek sub-watershed drains approximately 64 mi^2 in Etowah, Dekalb, and Cherokee Counties. A three-mile segment of the downstream reach of Black Creek is included on the draft 2000 Alabama CWA §303(d) list of impaired waterbodies with a non-support status for priority organics, ammonia, and organic enrichment/dissolved oxygen from industrial, urban runoff/storm sewers, and contaminated sediments sources (Table 12b). A location in the Black Creek embayment was assessed as part of the 2000 ADEM Reservoir Tributary Monitoring effort (Appendices E and F-10). Two sites on Black Creek were visited during this study (Table 10b and Appendix E).

<u>Black Creek</u>

Black Creek, at the BLKE-14 sampling reach, had a mostly-shaded canopy over sand (~75%) and detritus (~13%) substrates (Table 6b). Habitat quality was assessed as *fair* using the glide/pool assessment matrix. All habitat assessment categories indicated some impairment (Table 6b). Five EPT families were collected indicating a *fair* aquatic macroinvertebrate community. Stream flow estimates at the time of the instream bioassessment were 0.2 cfs. The dissolved oxygen concentration was 3.7 mg/L, below the 5.0 mg/L minimum standard for *Fish and Wildlife* classified streams. No water quality samples were collected for laboratory analysis in September due to the low stream flow conditions. A station further downstream on Black Creek was not flowing during the June bioassessment visit, therefore no assessment was conducted.

<u>Recommended Priority Sub-Watershed</u>

Black Creek was identified as a priority sub-watershed due to biological conditions and organic enrichment/DO within the sub-watershed (Fig. 12b).

Sub-Watershed: Coosa River - Neely Henry
NRCS Sub-Watershed Number 090

Percent land cover of the Coosa River - Neely Henry sub-watershed was estimated as 35% deciduous forest, 10% evergreen forest, 16% mixed forest, 9% pasture/hay, 6% row crop, and 19% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs indicated a higher urban land use (7%) and much lower open water (<1%). Four current construction/stormwater authorizations, one current mining/stormwater authorization (non-coal <5 acres), one current mining, and four municipal NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.03 AU/Acre). Sedimentation estimates (Table 4b, Fig. 4) indicated a *moderate* potential for NPS impairment (6.5 tons/acre/yr.). The local SWCD estimate of mining land use indicated a *moderate* potential for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Coosa River - Neely Henry sub-watershed drains approximately 27 mi^2 in Etowah and St. Clair Counties. One ambient monitoring station is located on the Coosa River in Southside (Appendices E and F-1). No assessments were conducted during this project.

Sub-Watershed: Upper Big Canoe Creek
NRCS Sub-Watershed Number 100

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
BCNS-24	Habitat, Macroinv.	2000	Big Canoe Creek @ St. Clair Co. Rd. 36	~114	F&W
BCNS-35	Habitat, Macroinv.	2000	Big Canoe Creek @ St. Clair Co. Rd. 31	93	F&W
GLFS-25	NONE	2000	Gulf Creek @ unnamed St. Clair Co. Rd.	10	F&W
MCKS-27	Habitat, Macroinv.	2000	Muckleroy Creek @U.S. Hwy 231	9	F&W

EPA percent land cover of the Upper Big Canoe Creek sub-watershed was estimated as 43% deciduous forest, 13% evergreen forest, 25% mixed forest, 13% pasture/hay, and 4% row crop (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (21%). Thirteen current construction/stormwater authorizations, two CAFO registrations, two municipal and three semi-public/private NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.14 AU/Acre), with broiler-poultry and swine being the dominant animal types (0.07 and 0.05 AU/acre, respectively). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (1.0 tons/acre/yr.). The local SWCD estimate of pasture land use indicated a *moderate* potential for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*. Upper Big Canoe Creek was also given a 1st priority sub-watershed rating by the local St. Clair County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Upper Big Canoe sub-watershed drains approximately 195 mi^2 in St. Clair, Jefferson, Blount and Etowah Counties. One station on Big Canoe Creek was assessed as part of the 1999 University Reservoir Tributary Nutrient Study (Appendices E and F-5). Four stream segments were visited during this project, two on Big Canoe Creek, one on Gulf Creek, and one on Muckleroy Creek. Gulf Creek was dry at the time of the June instream bioassessment site visit.

Big Canoe Creek

Biological community and habitat assessments were conducted at two stations on Big Canoe Creek (Appendix E). Big Canoe at the BCNS-35 stream reach was composed of mixed substrates dominated by boulder (~38%) and cobble (~25%) (Table 6b). Habitat quality in June was assessed as *excellent* using the riffle/run assessment matrix (Table 6b). An instream bioassessment indicated that the aquatic macroinvertebrate community was in *excellent* condition with 14 EPT families collected (Table 7b and Fig. 10b). Stream flow in June was estimated at 6.8 cfs (Appendix D-1). Field parameters collected at the time of the instream bioassessment also did not indicate impairment.

Big Canoe Creek at the downstream station, BCNS-24, had a partly-open/partly shaded canopy over a ~30 foot-wide channel that was dominated by sand (~53%) and gravel (~20%) substrates (Table 6b). Habitat quality was evaluated as *good* using the riffle/run assessment matrix. The aquatic macroinvertebrate community was in *excellent* condition using the MB-EPT assessment method (12 EPT families collected) (Table 7b and Fig. 10b). Stream flow was estimated at 18.2 cfs during the June sampling event (Appendix D-1). Field parameter measurements were similar to ecoregional reference. No water quality samples were collected for laboratory analysis.

Muckleroy Creek

The MCKS-27 sampling reach, had a mostly-shaded canopy and was composed of gravel (~35%), sand (~15%), cobble (~15%), bedrock (~10%), and boulder (~10%) substrates (Table 6b). Habitat quality was assessed as *excellent* in June using the riffle/run assessment matrix (Table 6b). An instream bioassessment conducted in June indicated that the aquatic macroinvertebrate community (16 EPT families collected) was also in *excellent* condition (Table 7b and Fig. 10b). Stream flow was estimated at 2.7 cfs during the June site visit (Appendix D-1). All field parameter measurements were similar to reference conditions.

Sub-Watershed: Little Canoe Creek
NRCS Sub-Watershed Number 110

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
LCNE-1	Macroinv., Habitat, Chem.	1994-1995, 1998-2000	Little Canoe Creek @Unnamed Etowah Co. Rd.	23	F&W

Percent land cover of the Little Canoe Creek sub-watershed was estimated as 51% deciduous forest, 11% evergreen forest, 22% mixed forest, and 11% pasture/hay, and 3% row crop (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (29%). Three current construction/ stormwater authorizations, two current mining/stormwater authorization (non-coal <5 acres), one semi-public/private NPDES permit and one CAFO registration have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.25 AU/Acre), with broiler-poultry being the dominant animal type (0.21 AU/Acre). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (1.0 ton/acre). The local SWCD estimate of pasture land use indicated a *moderate* potential for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Little Canoe Creek sub-watershed drains approximately 32 mi^2 in St. Clair and Etowah Counties. Two locations on Little Canoe Creek have been assessed within this sub-watershed (Appendix E). One station was assessed during the 1997 ALAMAP sampling (Appendix F-6) and one was assessed during this project.

Little Canoe Creek

Little Canoe Creek at LCNE-1 is an ADEM ecoregional reference site that has been assessed since 1994. The stream reach is mostly-shaded over a stream channel of sand (~43%), gravel (~25%), silt (~15%), and cobble (~10%) substrates (Table 6b). Habitat quality at the time of the June site visit was assessed as *good* (Table 6b and Appendix F-3c). The instream macroinvertebrate assessment (MB-I) indicated that the community was in *excellent* condition, with 15 EPT families collected (Table 7b, Fig. 10b, and Appendix F-3d). Water chemistry samples for laboratory analysis were collected in September 2000. Nutrient (Total-P and NH_3-N) concentrations were slightly elevated (0.12 and 0.102 mg/L, respectively) as compared to historical data from this station (Appendix F-3a).

Sub-Watershed: Lower Big Canoe Creek
NRCS Sub-Watershed Number 120

EPA Percent land cover of the Lower Big Canoe Creek sub-watershed was estimated as 36% deciduous forest, 15% evergreen forest, 26% mixed forest, 11% pasture/hay, 4% row crop, 3% open water, and 2% wetland (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (17%). Three current construction/stormwater authorizations and two CAFO registrations have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.16 AU/acre), with broiler-poultry and cattle being the dominant animal types (0.11 and 0.05 AU/acre). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (1.3 tons/acre/yr.). The local SWCD estimate of pasture land use indicated a *moderate* potential for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Lower Big Canoe Creek sub-watershed drains approximately 51 mi^2 in Etowah and St. Clair counties. One station was assessed on the Coosa River at the Neely Henry Dam Tailrace (COOAU04) during the University Reservoir Tributary Nutrient Study in 1999 and one station (NH-8) was assessed in the Big Canoe Creek embayment as part of the 2000 ADEM Reservoir Tributary Monitoring (Appendices E and F-5). No additional assessments were conducted during this study.

Sub-Watershed: Greens Creek
NRCS Sub-Watershed Number 130

EPA percent land cover of the Greens Creek sub-watershed was estimated as 33% deciduous forest, 11% evergreen forest, 17% mixed forest, 14% pasture/hay, 8% row crop, 1% wetland, and 10% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (26%), row crops (16%), and urban (5%). Two current construction/stormwater authorizations and two current mining/stormwater authorizations (non-coal <5 acres) have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.07 AU/acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (1.8 tons/acre/yr.). The local SWCD estimates of row crop and pasture land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Greens Creek sub-watershed drains approximately 42 mi^2 in Etowah and Calhoun Counties. One site in the Greens Creek embayment was assessed as part of the 2000 ADEM Reservoir Tributary Monitoring efforts and another site was assessed on the Coosa River Tailrace of Neely Henry Dam as part of the University Reservoir Tributary Nutrient Study in 1999 (Appendices E, F-5 and F-10). No assessments were conducted during this project.

Sub-Watershed: Beaver Creek
NRCS Sub-Watershed Number 140

Percent land cover of the Beaver Creek sub-watershed was estimated as 42% deciduous forest, 10% evergreen forest, 23% mixed forest, 17% pasture/hay, and 6% row crop (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (36%). Five current construction/stormwater authorizations, one current mining/stormwater authorization (non-coal <5 acres), and three mining NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.12 AU/Acre), with cattle and swine being the dominant animal types (0.07 and 0.04 AU/acre, respectively). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (1.9 tons/acre/yr.). The local SWCD estimates of pasture, and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*. Beaver Creek was also given a 5th priority sub-watershed rating by the local St. Clair County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Beaver Creek sub-watershed drains approximately 36 mi^2 in St. Clair County. One site in the Beaver Creek embayment was assessed as part of the 2000 ADEM Reservoir Tributary Monitoring efforts (Appendices E and F-10). No assessments were conducted during this project.

Sub-Watershed: Shoal Creek
NRCS Sub-Watershed Number 150

Percent land cover of the Shoal Creek sub-watershed was estimated as 55% deciduous forest, 8% evergreen forest, 23% mixed forest, 10% pasture/hay, and 3% row crop (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for row crops (8%) and pasture (27%). Two current construction/stormwater authorizations and one CAFO registration have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations (0.29 AU/acre) in the sub-watershed (Table 3b, Fig. 3) were *moderate* with swine, cattle, and broiler-poultry being the dominant animal types (0.11, 0.09, 0.08 AU/acre, respectively). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (1.3 tons/acre/yr.). The local SWCD estimate pasture land use indicated a *moderate* potential for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Shoal Creek sub-watershed drains approximately 28 mi^2 in St. Clair County. No historical assessments were available from this watershed and no new assessments were conducted.

Sub-Watershed: Ohatchee Creek
NRCS Sub-Watershed Number 160

Percent land cover of the Ohatchee Creek sub-watershed was estimated as 1% transitional forest, 49% deciduous forest, 14% evergreen forest, 24% mixed forest, 7% pasture/hay, and 4% row crop (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (28%). One current construction/stormwater authorization and three semi-public/private NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.05 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (0.4 tons/acre/yr.). The local SWCD estimates of pasture, and mining land uses indicated *moderate* potentials and the row crop land use indicated a *high* potential, for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *high*. Ohatchee Creek was also given a 5th priority sub-watershed rating by the local Calhoun County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Ohatchee Creek sub-watershed drains approximately 80 mi^2 in Calhoun and Etowah Counties. One site on Ohatchee Creek was assessed in 1999 as part of the University Reservoir tributary Nutrient Study (Appendices E and F-5). No assessments were conducted during this project.

Sub-Watershed: Tallasseehatchee Creek
NRCS Sub-Watershed Number 170

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
ALXC-41	Habitat, Chem. Fish, Macroinv.	2000	Alexandra Creek just us of confluence with Tallasehatchee Creek	19	F&W
LTSC-39	Habitat, Chem., Macroinv.	2000	Little Tallasseehatchee Creek @ unnamed Calhoun Co. Rd.	~17	F&W
TLSC-38	Habitat, Chem., Macroinv.	2000	Tallasseehatchee Creek @ Calhoun Co. Rd. 19	31	F&W
TLSC-40	Habitat, Chem., Macroinv.	2000	Tallasseehatchee Creek @ unnamed Calhoun Co. Rd. nr Wellington	~93	F&W
WVRC-42	Habitat, Chem. Fish, Macroinv.	2000	Weavers Creek @ Calhoun Co. Rd. 73	7	F&W

Percent land cover of the Tallasseehatchee Creek sub-watershed was estimated as 37% deciduous forest, 15% evergreen forest, 24% mixed forest, 12% pasture/hay, 8% row crop, 3% low intensity residential (Table 1b). Estimates (Table 2b) by the local SWCDs were higher for urban (17%) and pasture (30%) land uses. Fifteen current construction/stormwater authorizations, four current mining/stormwater authorization (non-coal <5 acres), one mining, one municipal, four semi-public/private NPDES permits, and three CAFO registrations have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.32 AU/Acre), with broiler-poultry being the dominant animal type (0.26 AU/acre). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (0.6 tons/acre/yr.). The local SWCD estimates of pasture and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*. Tallasseehatchee Creek was also given a 3rd priority sub-watershed rating by the local Calhoun County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Tallasseehatchee Creek sub-watershed drains approximately 153 mi^2 in Calhoun County. Two reaches of Williams Branch were assessed during the 1996 Clean Water Strategy (Appendix F-7) and five stream segments (on four streams) were assessed during this project (Table 10b and Appendix E).

<u>Alexandria Creek</u>

Alexandria Creek, at the ALXC-41 sampling reach, had a partly-open/partly shaded canopy over a ~30-foot wide stream channel (Table 6b). The substrate composition was estimated as primarily sand (~50%) and gravel (~26%). Habitat quality in June was assessed as *good* using the riffle/run assessment matrix (Table 6b). Aquatic macroinvertebrate and fish bioassessments were conducted in June and July, 2000 respectively. The macroinvertebrate community was in *good* condition while the fish community was assessed as *fair* (Table 7b, Figs. 10b and 11b). Water quality data (Appendix D-1) collected during September indicated a slightly elevated total dissolved solids concentration. Cows had access to the creek at the sampling reach. This location is downstream of the Alexandria School wastewater NPDES discharge.

Little Tallasseehatchee Creek

Little Tallasseehatchee Creek, at the LTSC-39 sampling reach, had a mostly-shaded canopy and was dominated by gravel (~30%) and cobble (~25%) with lesser amounts of silt (~15%), clay (~15%), and sand (~10%) substrates (Table 6b). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix (Table 6b). An instream bioassessment conducted in June indicated that the aquatic macroinvertebrate community was in *excellent* condition. Stream flow was estimated at 7.8 cfs (Appendix D-1). Field parameter data did not indicate any water quality impairment at the time of sampling.

Tallasseehatchee Creek

ADEM collected aquatic macroinvertebrates, field parameter measurements and assessed habitat quality at two stream reaches on Tallasseehatchee Creek, TLSC-38 and TLSC-40, during this study. Tallasseehatchee Creek, at the TLSC-38 sampling reach, had a mostly-open canopy and was characterized by sand (~45%) and gravel (~30%) substrates (Table 6b). The partly-open/partly-shaded channel substrates of station TLSC-40 were dominated by bedrock (~65%), boulder (~10%) and silt (~10%). Habitat quality was assessed as *good* and *excellent,* respectively, using the riffle/run assessment matrix. Sinuosity was the primary category of slight impairment to the TLSC-38 habitat quality (Table 7b and Fig. 10b). Instream bioassessments indicated that the aquatic macroinvertebrate communities of TLSC-38 and TLSC-40 were in *excellent* and *good* condition, respectively (Table 7b and Fig. 10b). Stream flows were estimated at 15.7 cfs (TLSC-38) and 50.1 cfs (TLSC-40). Field parameter data did not indicate impairment at either site.

Weavers Creek

Weavers Creek, at the WVRC-42 sampling reach, had a shaded canopy and was dominated by sand (~40%) and gravel (~25%) substrates (Table 6b). Habitat quality was assessed as *good* using the riffle/run assessment matrix (Table 6b). The *bank and vegetative stability* category was a source of the slight habitat quality impairment. The aquatic macroinvertebrate community was assessed as *excellent* with 12 EPT families collected at the site; the fish community was assessed as *fair/good* with an IBI of 46 (Table 7b; Figs. 10b and 11b). Stream flow was estimated at 1.6 cfs, and no water quality impairment was indicated by the field parameter measurements conducted at the time of the bioassessment. Stream flow was not detectable in September when the water samples were collected (Appendix D-1). Parameters that are typically higher in stagnant water (pH, TOC, TDS, NO_3+NO_2-N) were elevated in the samples collected at that time. Field notes indicated large masses of floating algae were present at the site. The dissolved oxygen concentration was 13.6 mg/L, indicating increased algal activity (Appendix D-1).

The borderline *fair/good* fish assessment was likely affected by the drought conditions experienced during this project. It is recommended that the sub-watershed be re-evaluated during the 2005 assessment of the Coosa basin.

Sub-Watershed: Bridge Creek
NRCS Sub-Watershed Number 180

Percent land cover of the Bridge Creek sub-watershed was estimated as 63% deciduous forest, 9% evergreen forest, 20% mixed forest, 3% pasture/hay, 1% row crop, 4% open water (Table 1b). One current construction/stormwater authorization and one current mining NPDES permit have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.02 AU/Acre), with cattle being the dominant animal. Sedimentation estimates (Table 4b, Fig. 4) indicated a *moderate* potential for NPS impairment (5.5 tons/acre/yr.). The local SWCD estimate of mining land use indicated a *moderate* potential for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Bridge Creek sub-watershed drains approximately 11 mi^2 in St. Clair County. No historical assessments were available and no new assessments were conducted during this project.

Sub-Watershed: Cane Creek
NRCS Sub-Watershed Number 190

Percent land cover of the Cane Creek sub-watershed was estimated as 38% deciduous forest, 21% evergreen forest, 24% mixed forest, 4% pasture/hay, 4% row crop, 3% low intensity residential, 1% high intensity residential, and 2% high intensity commercial/ industrial/transportation (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for urban (25%). Three current construction/stormwater authorizations and one municipal NPDES permit have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.13 AU/Acre). Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (0.4 tons/acre/yr.). The local SWCD estimate of mining land use indicated a *moderate* potential for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*. Cane Creek was given a 4th priority sub-watershed rating by the local Calhoun County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Cane Creek sub-watershed drains approximately 93 mi^2 in Calhoun County. Three stations have been previously assessed in this sub-watershed (Appendix E); the Cane Creek embayment, Cane Creek, and an unnamed tributary to Cane Creek during the 2000 ADEM Reservoir Tributary Monitoring effort (Appendix F-10), the University Reservoir Tributary Nutrient Study in 1999 (Appendix F-5) and the 1999 ALAMAP sampling (Appendix F-6), respectively.

Sub-Watershed: Dye Creek
NRCS Sub-Watershed Number 200

EPA percent land cover of the Dye Creek sub-watershed was estimated as 40% deciduous forest, 15% evergreen forest, 28% mixed forest, 6% pasture/hay, 3% row crop, 1% wetland, 1% low intensity residential, 1% high intensity commercial/industrial/ transportation, and 3% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were similar. Five current construction/stormwater authorizations, one municipal and three semi-public/private NPDES permits, and two CAFO registrations have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.09 AU/Acre), with broiler-poultry being the dominant animal type. Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (1.0 tons/acre/yr.). The local SWCD estimate of mining land use indicated a *moderate* potential for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*. Dye Creek was given a 3rd priority sub-watershed rating by the local Calhoun County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Dye Creek sub-watershed drains approximately 125 mi^2 in St. Clair County. One site on the Dye Creek embayment was assessed as part of the 2000 ADEM Reservoir Tributary Monitoring effort (Appendices E and F-10). No additional assessments were conducted during this project.

Sub-Watershed: Acker Creek
NRCS Sub-Watershed Number 210

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
AKRC-21	Habitat, Macroinv.	2000	Acker Creek @ Calhoun Co. Rd. 73 S. of Mt. Olive Church	7	F&W

Percent land cover of the Acker Creek sub-watershed was estimated as 30% deciduous forest, 17% evergreen forest, 26% mixed forest, 8% pasture/hay, 8% row crop, 4% wetland, and 6% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs was higher for urban (4%) and pasture (22%). Six current construction/stormwater authorizations have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *high* (1.40 AU/Acre) with the broiler-poultry as the dominant animal type (1.35 AU/acre). Sedimentation estimates (Table 4b, Fig. 4) indicated a *moderate* potential for NPS impairment (6.5 tons/acre/yr.), mainly from dirt roads/road banks (2.0 tons/acre/yr.), stream banks (1.1 tons/acre/yr.), and critical areas (1.0 tons/acre/yr.). The local SWCD estimates of pasture and mining land uses, and forestry activities, indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *high*.

The Acker Creek sub-watershed drains approximately 37 mi^2 in Talladega and Calhoun Counties. One site on Acker Creek was assessed during this project.

<u>Acker Creek</u>

The AKRC-21 sampling reach, had a shaded canopy and was dominated by gravel (~50%), cobble (~25%), and sand (~15%) substrates (Table 6b). Habitat quality was assessed as *excellent* in June using the riffle/run assessment matrix (Table 6b). Thirteen EPT families were collected during the June 2000 instream macroinvertebrate bioassessment indicating that the community was in *excellent* condition (Table 7b and Fig. 10b). Stream flow was estimated at 2.0 cfs and field parameter measurements did not indicate impairment during the June site visit (Appendix D).

Sub-Watershed: Blue Eye Creek
NRCS Sub-Watershed Number 220

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
BEYT-15	NONE	2000	Blue Eye Creek @ unnamed Talladega Co. Rd. nr Lincoln	26	F&W

Percent land cover of the Blue Eye Creek sub-watershed was estimated as 30% deciduous forest, 14% evergreen forest, 20% mixed forest, 17% pasture/hay, 13% row crop, 3% wetland, 2% urban, and 1% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were lower for pasture (10%) and row crop (4%). Five current construction/stormwater authorizations, one municipal NPDES permit, and one CAFO registration have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *high* (0.97 AU/Acre), with broiler-poultry (0.80 AU/acre) and cattle (0.17 AU/acre) being the dominant animal types. Sedimentation estimates (Table 4b, Fig. 4) indicated a *moderate* potential for NPS impairment (8.5 tons/acre/yr.). The local SWCD estimates of mining land use indicated a *moderate* potential, and forestry activities indicated a *high* potential, for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *high*.

The Blue Eye Creek sub-watershed drains approximately 29 mi^2 in Talladega and Calhoun Counties. One site on the Blue Eye Creek embayment was assessed as part of the ADEM Reservoir Tributary Monitoring effort (Appendices E and F-10). An assessment was attempted on Blue Eye Creek at an unnamed Talladega County road near Lincoln, however, a wadeable site could not be located.

Sub-Watershed: Coosa River
NRCS Sub-Watershed Number 230

Percent land cover of the Coosa River sub-watershed was estimated as 15% deciduous forest, 19% evergreen forest, 15% mixed forest, 11% pasture/hay, 7% row crop, 4% wetland, and 28% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were not available. Three current construction/stormwater authorizations have been issued in the sub-watershed (Table 9b).

This sub-watershed drains approximately 5.6 mi^2 in Talladega County. The SWCD did not complete Conservation Assessments on this sub-watershed due to the relatively small size (<5000 Acres). No historical data were available and no assessments were conducted during this project.

Sub-Watershed: Upper Choccolocco Creek
NRCS Sub-Watershed Number 240

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
CHOC-2 (ref.)	Habitat, Macroinv., Chem.	2000	Choccolocco Creek @ USFS Rd. 540 Cleburne Co.	6	F&W
DRYC-2 (ref.)	Habitat, Macroinv., Chem.	2000	Dry Creek @ Calhoun Co. Rd. 55	6	F&W
SHLC-3 (ref.)	Habitat, Macroinv., Chem.	2000	Shoal Creek @USFS Rd. 500 Cleburne Co.	16	F&W

Percent land cover of the Upper Choccolocco Creek sub-watershed was estimated as 44% deciduous forest, 19% evergreen forest, 28% mixed forest, 5% pasture/hay, 2% row crop, and 1% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were somewhat higher for pasture (10%) land use. One current construction/stormwater authorization has been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.45 AU/Acre), with broiler-poultry being the dominant animal type. Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (2.6 tons/acre/yr.). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*. Upper Choccolocco Creek was given second priority sub-watershed ratings by the local Calhoun County SWCDs. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Upper Choccolocco Creek sub-watershed drains approximately 93 mi^2 in Cleburne and Calhoun Counties. One site on Choccolocco Creek has been assessed by Geological Survey of Alabama (Appendices E and F-8) and three ADEM ecoregional reference reaches are located in this sub-watershed (Appendices F-3a - 3d).

<u>Choccolocco Creek</u>

Choccolocco Creek, at the CHOC-2 sampling reach, had a mostly-shaded canopy over a ~15-foot wide channel composed of cobble (~30%), gravel (~20%), bedrock (~20%), sand (~15%), and boulder (~10%) substrates (Table 6b and Appendix F-3c). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix. Fifteen EPT families were collected during the June instream macroinvertebrate assessments indicating that the community was in *excellent* condition (Table 7b, Fig. 10b, and Appendix F-3d). Stream flow (Appendix F-3a) was estimated at 2.7 and 0.6 cfs during the June and September site visits, respectively. Water quality data (Appendices F-3a and 3b) did not indicate impairment.

<u>Dry Creek</u>

Dry Creek, at the DRYC-2 sampling reach, had a shaded canopy and was dominated by cobble (~45%), with lesser amounts of bedrock (~15%), boulder (~15%), gravel (~10%), and sand (~10%) substrates (Table 6b and Appendix F-3c). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix. Sixteen EPT families were collected indicating an *excellent* aquatic macroinvertebrate community. During both the June bioassessment and the September water quality site visit stream flows were visible-but-not-detectable. Water quality data did not indicate impairment (Appendix F-3a).

Shoal Creek

Shoal Creek, at the SHLC-3 sampling reach, had a mostly-shaded canopy over the ~20-foot wide channel with cobble (~30%), gravel (~30%), sand (~20%), and boulder (~10%) substrates (Table 6b and Appendix F-3c). Habitat quality in June 2000 was assessed by ADEM as *excellent* using the riffle/run assessment matrix (Table 6b and Appendix F-3c). An instream bioassessment (MB-I) conducted in June found the aquatic macroinvertebrate community was in *excellent* condition with 15 EPT taxa collected (Table 7b, Fig. 10b, and Appendix F-3d). Stream flows were 4.5 and 0.4 cfs during the June and September sampling events, respectively. Water quality data did not indicate impairment at the time of collection (Appendix F-3a).

Sub-Watershed: Middle Choccolocco Creek
NRCS Sub-Watershed Number 250

Percent land cover of the Middle Choccolocco Creek sub-watershed was estimated as 39% deciduous forest, 14% evergreen forest, 23% mixed forest, 8% pasture/hay, 7% row crop, 2% other grasses, 2% high intensity commercial/ industrial/transportation, and 3% low intensity residential, and 1% high intensity residential (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (15%). Forty-two current construction/stormwater authorizations, four current mining/stormwater authorizations (non-coal <5 acres), two mining, two municipal, one semi-public/private, and one industrial NPDES permits, have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.35 AU/Acre), with broiler-poultry and cattle being the dominant animal types. Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (2.2 tons/acre/yr.). The local SWCD estimates of pasture and mining land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*. Middle Choccolocco Creek was also given a 1st and 4th priority sub-watershed rating by the local Calhoun County and Talladega County SWCDs, respectively. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Middle Choccolocco Creek sub-watershed drains approximately 235 mi^2 in Calhoun, Talladega, Cleburne and Clay Counties. Water quality data have been collected from six stations on Choccolocco, Salt, Egoniaga, and Cheaha Creeks as part of the middle and lower Choccolocco Creek watershed study conducted by Geological Survey of Alabama (Appendix F-8). One station was assessed on an unnamed tributary to Choccolocco Creek as part of the 1998 ALAMAP sampling (Appendix F-6a - 6b). Two historical ambient monitoring stations are located on Choccolocco Creek; water quality data collected since 1997 are located in Appendix F-1.

Sub-Watershed: Cheaha Creek
NRCS Sub-Watershed Number 260

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
CHEC-6 (ref.)	Macroinv., Fish, Habitat, Chem.	2000	Cheaha Creek nr Clay/Talladega Co. Line	18	F&W
CHE-1	Macroinv., Fish, Habitat, Chem.	1998	Cheaha Creek us of Lake Chinnabee	~10	F&W
CHEC-3	Macroinv., Fish, Habitat, Chem.	1998	Cheaha Creek @ USFS Rd. 600-3	1.3	F&W

Percent land cover of the Cheaha Creek sub-watershed was estimated as 3% transitional forest, 35% deciduous forest, 19% evergreen forest, 26% mixed forest, 8% pasture/hay, and 8% row crop (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were lower for row crop (4%). Three current construction/stormwater authorizations have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.02 AU/Acre). Sedimentation estimates (Table 4b, Fig. 4) also indicated a *low* potential for NPS impairment (2.2 tons/acre/yr.). The local SWCD estimate of forestry activities indicated a *moderate* potential for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Cheaha Creek sub-watershed drains approximately 113 mi^2 in Talladega, Clay and Cleburne Counties. Two locations on Brecon Branch were assessed as part of the 1996 ADEM Clean Water Strategy (Appendix F-7). Historical data were available from three locations on Cheaha Creek; two were assessed during the 1998 assessment of State Parks (Appendix F-2) and one (CHEC-6) is an ecoregional reference site (Appendix F-3).

<u>Cheaha Creek</u>

Cheaha Creek, at the upstream sampling reach (CHEC-3), had a partly-open/partly-shaded canopy over the 15-foot wide channel (Appendix F-2b). The stream bottom was composed primarily of cobble (~39%), gravel (~20%), bedrock (~20%), and boulder (~10%) substrates. Habitat quality in May 1998 was assessed by ADEM as *excellent* using the riffle/run assessment matrix. Twenty (20) EPT families were collected during an instream bioassessment indicating that the aquatic macroinvertebrate community was in *excellent* condition (Appendix F-2c). Fish community assessments indicated that the fish population was in *poor/fair* condition, however, this was the smallest stream assessed during the State Parks Study and "additional work needs to be done in small streams in Alabama such as this to get a better understanding of composition of the fish community" (ADEM 1999d). Stream flow estimates were 3.5, 0.5, and 0.2 cfs in May, July, and September, respectively (Appendix F-2a). Water quality data did not indicate impairment.

The reach upstream of Lake Chinnabee (CHE-1) had *excellent* riffle/run habitat with cobble (~35%), sand (~25%), boulder (~21%), and gravel (~10%) substrates (Appendix F-2b). Twenty-one (21) EPT families were collected during the instream bioassessment indicating that the macroinvertebrate community was in *excellent* condition. The fish IBI assessment found the community was in *fair/good* condition (Appendix F-2c). Stream flow estimates were 11.2, 0.9, and 0.2 cfs in May, July and September, respectively. Water quality data did not indicate impairment (Appendix F-2a).

The downstream site and ecoregional reference reach, CHEC-6, had an open canopy over the ~20-foot wide channel with sand (~30%), boulder (~25%), cobble (~20%), and gravel (~15%) substrates (Table 6b and Appendix F-3c). The habitat quality was assessed as *excellent* using the riffle/run matrix. Fifteen EPT families were collected during the June 2000 instream community assessment, indicating that the aquatic macroinvertebrate community was in *excellent* condition (Table 7b; Figs. 10b and 11b; Appendix F-3d). The fish IBI assessment conducted in July indicated that the community was in *fair* condition. Stream flow estimates were 3.6 and 0.3 cfs in June and September, respectively. Water quality data collected in September did not indicate impairment (Appendix F-3a and 3b).

Recommended Priority Sub-Watershed

Cheaha Creek was identified as a low priority sub-watershed due to biological conditions the sub-watershed (Fig. 12b).

Sub-Watershed: Lower Choccolocco Creek
NRCS Sub-Watershed Number 270

Percent land cover of the Lower Choccolocco Creek sub-watershed was estimated as 29% deciduous forest, 14% evergreen forest, 21% mixed forest, 15% pasture/hay, 10% row crop, 2% other grasses, 1% wetland, 3% urban and 3% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for urban (17%) and lower for pasture (9%) and row crop (3%). Five current construction/stormwater authorizations, two current mining, one municipal, one semi-public/private, and one industrial, NPDES permits, and one CAFO registration have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.29 AU/Acre), with broiler-poultry and cattle being the dominant animals. Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (3.3 tons/acre/yr.). The local SWCD estimates of mining land use and forestry activities indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*. Lower Choccolocco Creek was also given a 1st priority sub-watershed rating by the local Talladega County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Lower Choccolocco Creek sub-watershed drains approximately 66 mi^2 in Talladega and Calhoun Counties. One site on Choccolocco Creek has been assessed as part of multiple projects including: ADEM Ambient Trend Monitoring (Appendix F-1), University Reservoir Tributary Nutrient Study (Appendix F-5), and GSA Mid- and Lower-Choccolocco Creek Watershed study (Appendix F-8). A second site, in the Choccolocco Creek embayment, was assessed as part of the ADEM Reservoir Tributary Monitoring effort conducted in 2000 (Appendix F-10). No assessments were conducted during this project.

Sub-Watershed: Clear Creek
NRCS Sub-Watershed Number 280

Percent land cover of the Clear Creek sub-watershed was estimated as 2% transitional forest, 34% deciduous forest, 20% evergreen forest, 25% mixed forest, 5% pasture/hay, 4% row crop, 2% wetland, and 8% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were somewhat higher for pasture (10%). Three current construction/stormwater authorizations, one current mining/stormwater authorization (non-coal <5 acres), and one semi-public/private NPDES permit have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *moderate* (0.29 AU/Acre), with broiler-poultry and cattle being the dominant animal types. Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (2.3 tons/acre/yr.). The local SWCD estimates of mining land use and forestry activities indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*. Clear Creek was also given a 5th priority sub-watershed rating by the local Talladega County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Clear Creek sub-watershed drains approximately 71 mi^2 in Talladega County. A site in the Clear Creek embayment was assessed as part of the ADEM Reservoir Tributary Monitoring effort in 2000 (Appendices E and F-10).

Sub-Watershed: Easonville Creek
NRCS Sub-Watershed Number 290

Percent land cover of the Easonville Creek sub-watershed was estimated as 20% deciduous forest, 16% evergreen forest, 21% mixed forest, 13% pasture/hay, 7% row crop, 1% wetland, 1% low intensity residential, and 21% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (25%). Three current construction/stormwater authorizations, and one mining and one semi-public/private NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.03 AU/Acre). Sedimentation estimates (Table 4b, Fig. 4) also indicated a *low* potential for NPS impairment (0.8 tons/acre/yr.). The local SWCD estimates of row crop and pasture land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*.

The Easonville Creek sub-watershed drains approximately 38 mi^2 in St. Clair and Talladega Counties. A site in the Cropwell Creek embayment was assessed as part of the ADEM Reservoir Tributary Monitoring effort conducted in 2000 (Appendices E and F-10). No assessments were conducted as a part of this study.

Sub-Watershed: Upper Kelly Creek
NRCS Sub-Watershed Number 300

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
WLFS-9 (ref.)	Macroinv., Fish, Habitat, Chem.	2000	Wolf Creek @ unnamed St. Clair Co. Rd.	33	F&W
KYC-2	Macroinv., Fish, Habitat, Chem.	1999	Kelly Creek @ Shelby Co. Rd. 27	86	S/F&W

Percent land cover of the Upper Kelly Creek sub-watershed was estimated as 1% transitional forest, 47% deciduous forest, 12% evergreen forest, 26% mixed forest, 7% pasture/hay, 2% row crop, 2% wetland, and 1% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were similar. Seventeen current construction/stormwater authorizations, one current mining/stormwater authorization (non-coal <5 acres), one municipal and three semi-public private NPDES permits, and four CAFO registrations have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.09 AU/Acre), with broiler-poultry and cattle being the dominant animal types. Sedimentation estimates (Table 4b, Fig. 4) indicated a *moderate* potential for NPS impairment (4.7 tons/acre/yr.). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *low*. Upper Kelly Creek was also given a 2nd priority sub-watershed rating by the local St Clair County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Upper Kelly Creek sub-watershed drains approximately 174 mi^2 in St Clair, Shelby and Jefferson Counties. Data from three locations (Appendix E) were available from this sub-watershed. One site on Cane Creek was assessed as part of the ALAMAP sampling during 2000 (Appendix F-6a) and one site on Kelly Creek was included in the 1999 monitoring in support of CWA §303(d) listing and de-listing activities. A candidate ecoregional reference reach on Wolf Creek was also sampled.

Kelly Creek

The KYC-2 reach had a partly-open/partly-shaded canopy over a ~50-foot wide channel primarily composed of sand (~80%) and detritus (~11%) substrates (Appendix F-4d). The habitat quality was *good* as assessed using the glide/pool assessment matrix. Eight EPT families were collected during the June 1999 instream bioassessment indicating that the macroinvertebrate community was in *good* condition, however the fish community collected in May 1999 was assessed as *poor/fair* (Appendix F-4e).

Water quality sampling was conducted monthly from May to September, 1999. Lab analysis results (Appendix F-4a) indicated slightly elevated TKN (0.457mg/L and 0.387 mg/L in August and May, respectively), total phosphorus (0.178 mg/L in August), and fecal coliform counts (190 and 248 col/100 mL, in July and September, respectively). Dissolved oxygen concentrations were low during the June site visit (4.7 mg/L). This location was downstream of a municipal point source and is therefore not recommended as a NPS priority sub-watershed.

Wolf Creek

Wolf Creek was assessed by ADEM in 2000 as a candidate ecoregional reference site. The WLFS-9 sampling reach had a mostly-shaded canopy over the 40-foot wide channel characterized by cobble (~35%), gravel (~25%), sand (~15%), and boulder (~14%) substrates (Table 6b and Appendix F-3c). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix (Table 6b, Appendix F-3c). Fourteen EPT families were collected during the instream bioassessment indicating that the macroinvertebrate community was in *excellent* condition (Table 7b, Fig. 10b, and Appendix F-3d). The stream flow was estimated at 9.9 cfs during the June sampling event and no flow was detected at the September site visit. Field parameter data did not indicate impairment (Appendix F-3a).

Sub-Watershed: Lower Kelly Creek
NRCS Sub-Watershed Number 310

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
KYC-1	Macroinv., Fish, Habitat, Chem.	1999	Kelly Creek @ U.S. HWY 231	193	S/F&W

Percent land cover of the Lower Kelly Creek sub-watershed was estimated as 25% deciduous forest, 18% evergreen forest, 23% mixed forest, 16% pasture/hay, 10% row crop, 5% wetland, and 2% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for row crop (15%) and urban (7%) land uses. Six current construction/stormwater authorizations and one semi-public/private NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.05 AU/Acre), with cattle and dairy being the dominant animal types. Sedimentation estimates (Table 4b, Fig. 4) indicated a *moderate* potential for NPS impairment (15.4 tons/acre/yr.). The local SWCD estimates of row crop and pasture land uses indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*.

The Lower Kelly Creek sub-watershed drains approximately 69 mi^2 in Shelby and St. Clair Counties. One site (KYC-1) in this sub-watershed was assessed during the 1999 CWA §303(d) monitoring in support of listing and de-listing decisions (Appendix F-4). This site was also assessed as part of the University Reservoir Tributary Nutrient Study during 1999 (Appendix F-5). A site in the Kelly Creek embayment was assessed as part of the 2000 ADEM Reservoir Tributary Monitoring Effort (Appendices E and F-10).

Kelly Creek

Kelly Creek, at KYC-1, had a partly-open/partly-shaded canopy. Bottom substrates were composed of sand (~50%) and gravel (~25%), with some silt (~10%), clay (6%), and cobble (~5%) (Appendix F-4d). Habitat quality was assessed as *good* using the glide/pool assessment matrix. Bank vegetative stability, riparian zone measurements and sinuosity were the general categories of slight impairment to the habitat quality (Appendix F-4d). The fish community collected in May, 1999 was assessed as *poor* with an IBI score of 30. Eight EPT families were collected during the instream bioassessment (June 1999) indicating that the macroinvertebrate community was in *good* condition (Appendix F-4e). Stream flow was estimated at 46.2 cubic feet per second (cfs) at the time of the macroinvertebrate bioassessment. Water quality data (Appendix F-4a) indicated that TKN concentrations were slightly elevated (0.756 mg/L) during the August, 1999 sampling event. This location is downstream of a municipal point source and is therefore not recommended as a NPS priority sub-watershed.

Sub-Watershed: Flipper Creek
NRCS Sub-Watershed Number 320

Percent land cover of the Flipper Creek sub-watershed was estimated as 30% deciduous forest, 19% evergreen forest, 28% mixed forest, 7% pasture/hay, 7% row crop, 1% other grasses, 2% wetland, 2% urban, and 3% open water (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (20%). Two current construction/stormwater authorizations, two current mining and one industrial NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.05 AU/Acre), with cattle being the dominant animal. Sedimentation estimates (Table 4b, Fig. 4) indicated a *low* potential for NPS impairment (3.3 tons/acre/yr.). The local SWCD estimates of mining and pasture land uses, and forestry activities, indicated *moderate* potentials for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *moderate*.

The Flipper Creek sub-watershed drains approximately 30 mi^2 in Talladega County. One station on the Coosa River was assessed as part of the University Reservoir Tributary Nutrient study during 1999 (Appendices E and F-5). No assessments were conducted during this project.

Sub-Watershed: Talladega Creek
NRCS Sub-Watershed Number 330

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
DRYT-9 (ref.)	Macroinv., Habitat	2000	Dry Creek @ unnamed Talladega National Forest Rd	9	F&W
TLDC-7	Macroinv., Fish, Habitat, Chem.	2000	Talladega Cr @ unnamed Clay Co. Rd.	33	F&W
TLDT-32	Macroinv., Habitat, Chem.	2000	Talladega Creek @ unnamed Talladega Co. Rd.	53	F&W
TCT-5 (ref.)	Macroinv., Fish, Habitat, Chem.	1993, 1995, 1998-2000	Talladega Creek @ AL Hwy 77 Bridge	70	F&W

Percent land cover of the Talladega Creek sub-watershed was estimated as 43% deciduous forest, 16% evergreen forest, 25% mixed forest, 5% pasture/hay, 5% row crop, 1% other grasses, 2% wetland, and 1% low intensity residential (Table 1b). Estimates of land use (Table 2b) by the local SWCDs were higher for pasture (11%) and urban (11%). Five current construction/stormwater authorizations and three municipal NPDES permits have been issued in the sub-watershed (Table 9b).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3b, Fig. 3) were *low* (0.03 AU/Acre). Sedimentation estimates (Table 4b, Fig. 4) also indicated a *low* potential for NPS impairment (3.4 tons/acre/yr.). The local SWCD estimates of mining land use indicated a *moderate* potential, and forestry activities indicated a *high* potential, for NPS impairment (Table 2b). The overall potential for impairment from nonpoint sources (Table 5b, Fig. 5) was estimated as *high*. Talladega Creek was also given a 2nd and 3rd priority sub-watershed rating by the local Clay County and Talladega County SWCDs, respectively. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4b.

The Talladega Creek sub-watershed drains approximately 173 mi^2 in Talladega and Clay Counties. Historical data were available from several locations in the sub-watershed (Appendix E). Talladega Creek near Alpine, Alabama was assessed during the 1999 University Reservoir Tributary Nutrient Study (Appendix F-5) and the Talladega Creek embayment was assessed in 2000 as part of the ADEM Reservoir Tributary Monitoring effort (Appendix F-10). A site on an unnamed tributary of Talladega Creek was visited during the 1999 ALAMAP sampling and the streambed was found to be dry (Appendix F-6). In 1990, two sites on Talladega Creek and two sites on Town Creek were assessed as part of the Talladega Water Quality Demonstration Study (Appendix E). Four sites were assessed in this sub-watershed during 2000, two ecoregional reference sites and two study sites (Tables 6b and 7b, Appendices E, D-1, D-2, and F-3a - 3d).

Dry Creek

Dry Creek was sampled as a candidate ecoregional reference site during June 2000. The DRYT-9 sampling reach, had a mostly-open canopy over the ~40-foot wide channel dominated by sand (~40%) and bedrock (~20%) substrates (Appendix F-3c). Habitat quality was assessed as *good* using the glide/pool assessment matrix (Appendix F-3c). The aquatic macroinvertebrate community was evaluated as *excellent* with 11 EPT collected during the June bioassessment (Appendix F-3d). Stream flow was estimated at 0.4 cfs during the June site visit (Appendix F-3a).

Talladega Creek

Talladega Creek was assessed at three locations during this study. The upstream site, TLDC-7, is located in ecoregion 45a. The shaded-canopy channel was approximately 30-feet wide and composed of gravel (~35%), sand (~33%), and cobble(~15%) substrates (Table 6b). The habitat quality was assessed *good* using a riffle/run assessment matrix (Table 6b). The aquatic macroinvertebrate community was evaluated as *good* using a multihabitat-EPT assessment method (Table 7b and Fig. 10b). A fish IBI assessment conducted in July 2000 determined that the fish community was in *fair/good* condition (Table 7b, Fig. 11b). The habitat assessment parameters indicative of sedimentation impairments were only 55% of the maximum possible score, indicating a possible cause of the lower fish community assessment. Water quality data, collected during a September, 2000 site visit, did not indicate impairment (Appendix D-1).

Talladega Creek at TLDT-32 is located in ecoregion 67f. The canopy is partly shaded/partly open over the approximately 60-foot wide stream. The stream bottom was dominated by bedrock (~40%) substrates (Table 6b). The habitat quality was evaluated as *excellent* using the riffle/run assessment matrix (Table 6b). Fourteen EPT families were collected at the reach in June 2000 indicating that the aquatic macroinvertebrate community was in *excellent* condition (Table 7b and Fig. 10b). Field parameter data collected during the bioassessment did not indicate impairment (Appendix D-1).

The ecoregion 45d reference reach, TCT-5, was first assessed in 1993 (Appendix F-3a). The habitat quality was assessed as *excellent* during the June 2000 site visit. The canopy was mostly-open over the bedrock (~35%), cobble (~20%), gravel (~17%), boulder (~10%), and sand (~10%) channel substrates (Table 6b and Appendix F-3c). The macroinvertebrate bioassessment included 17 EPT families, indicating that the community was in *excellent* condition (Table 7b, Fig. 10b, and Appendix F-3d). Stream flows dropped from 21.6 cfs in June to visible-but-not-detectable in September 2000. Water quality data did not indicate impairment (Appendix F-3a).

<u>Recommended Priority Sub-Watershed</u>

Talladega Creek was identified as a low priority sub-watershed due to biological conditions possibly related to habitat degradation/sedimentation within the upper reaches of Talladega Creek (Fig. 12b).

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Figure 10b. Habitat and Aquatic Macroinvertebrate Assessments Conducted in the Middle Coosa Cataloging Unit.

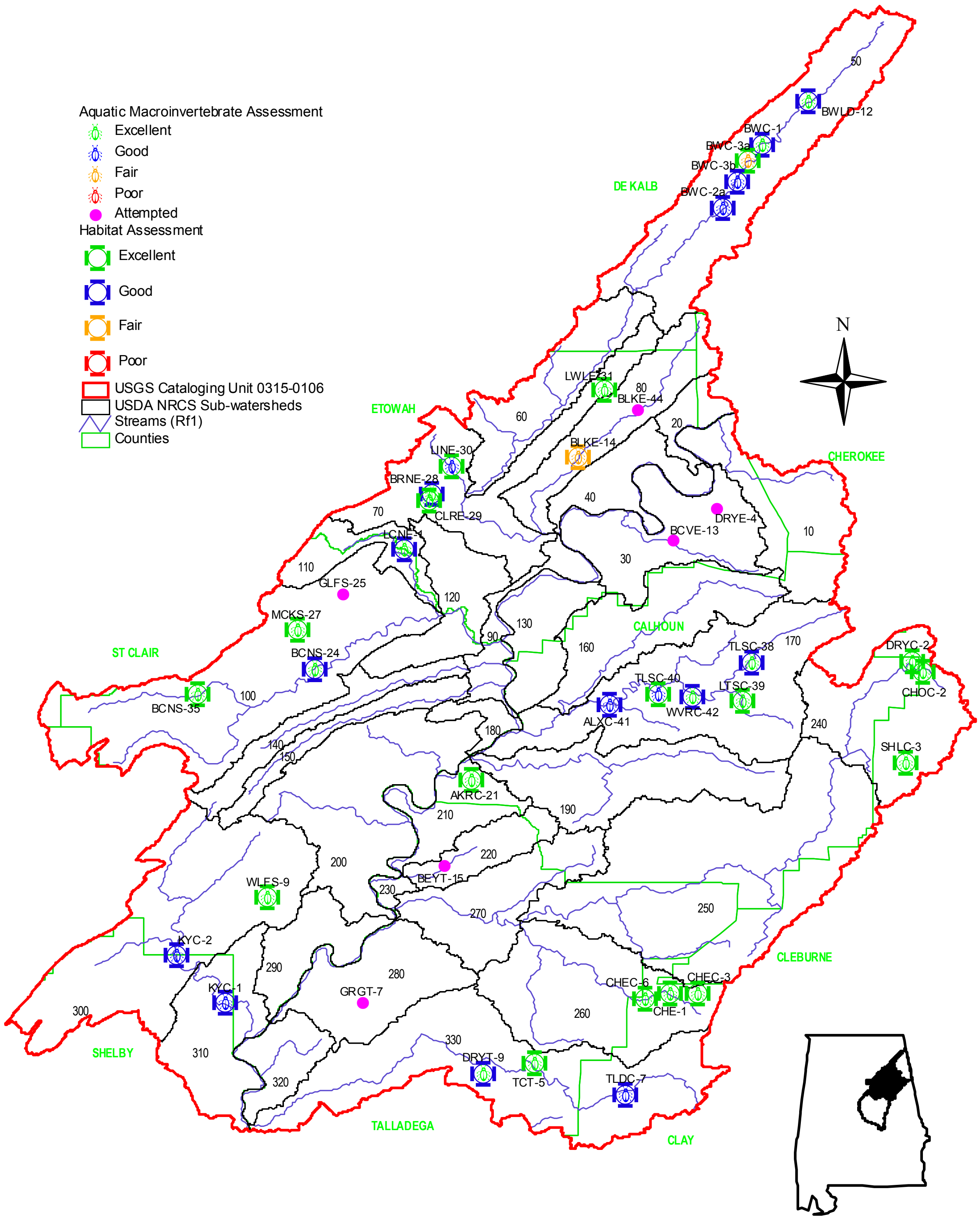

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Figure 11b. Fish Community IBI Assessments Conducted in the Middle Coosa Cataloging Unit.

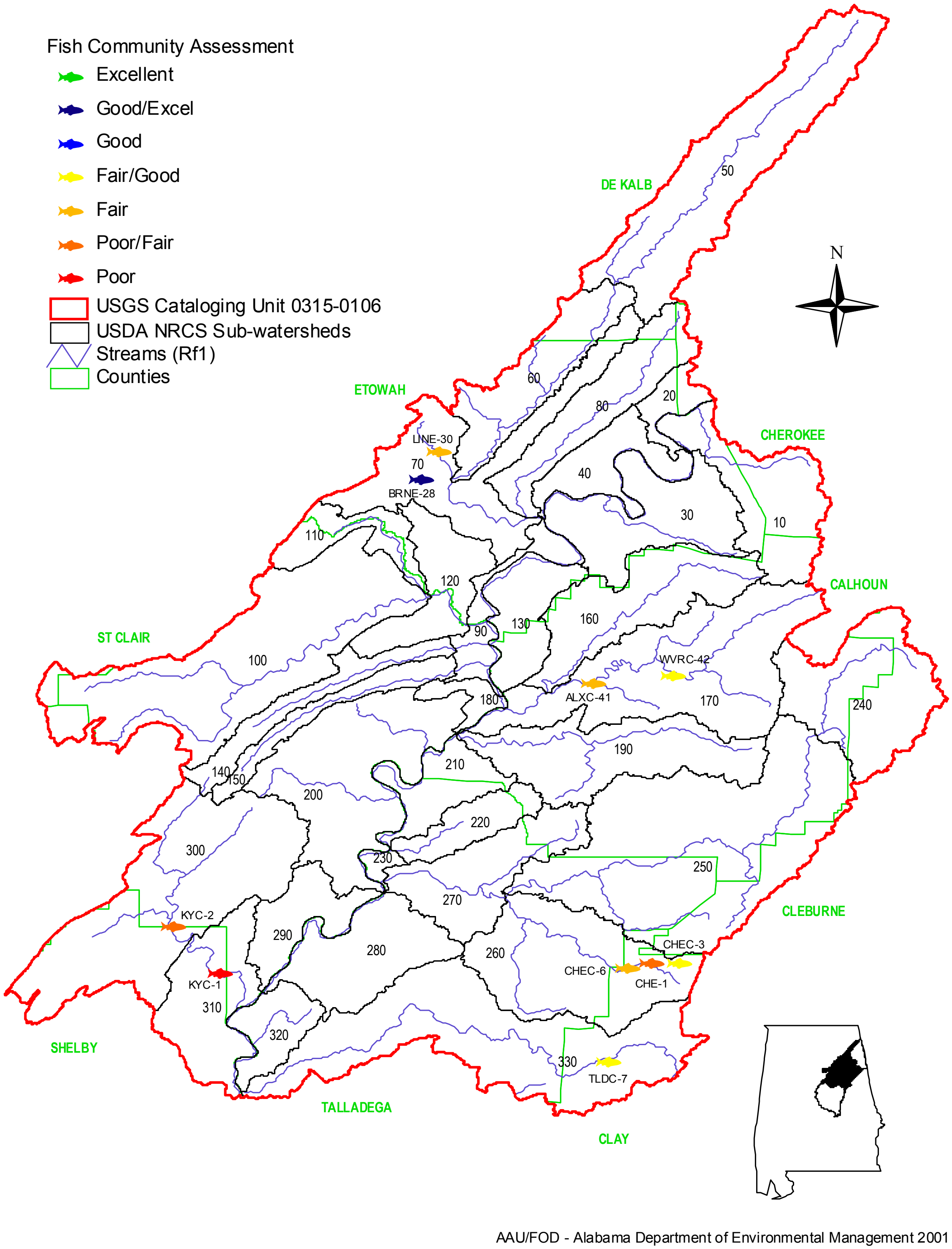

Figure 12b. Stream Stations Assessed or Attempted from 1990-2000 (From Appendix E) and NPS Priority Subwatersheds from the Middle Coosa Cataloging Unit.

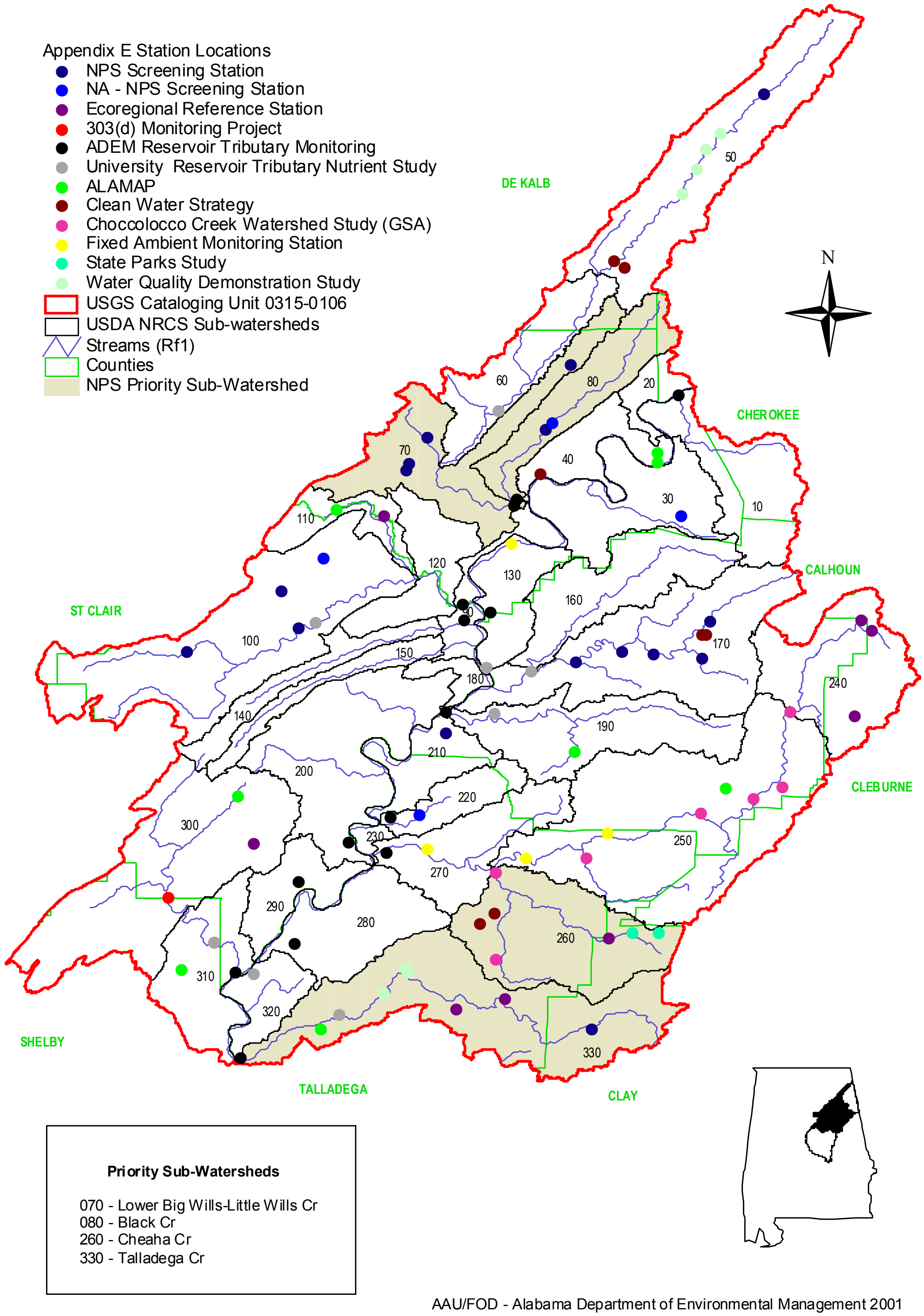

Table 1b. Land use percentages for Middle Coosa cataloging unit (0315-0106) from EPA landuse subcategory data (EPA 1997) and broader categories used in comparison with local SWCD Conservation Assessment Worksheet landuse estimates (ASWCC 1998).

Subwatershed	*Percent Total Landuse (Category and Subcategory)*													
	Open Water	Urban			Mining	Forest				Pasture/ Hay	Row Crops	Other		
	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial/ Transportation	Quarries/ Strip Mines/ Gravel Pits	Transitional Forest	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/ Hay	Row Crops	Other Grasses	Woody Wetlands	Herbaceous Wetlands
Middle Coosa (0315-0106)														
10	1	<1	<1	<1	<1	1	26	21	23	11	6	<1	10	<1
20	2	<1		<1		<1	41	14	21	13	9		1	<1
30	3	5	1	3	<1	<1	26	17	23	10	11	1	1	<1
40	4	4	1	3		<1	28	15	22	12	11	<1	1	<1
50	<1	1	<1	2	<1	3	40	14	21	14	5	<1	<1	
60	<1	<1		1		1	38	15	27	14	5	<1	<1	
70	1	3	1	2	<1	<1	35	15	24	10	5	1	3	<1
80	1	4	1	3		1	32	19	27	5	6	<1	2	<1
90	19	1	<1	1	<1	1	35	10	16	9	6	<1	<1	1
100	1	<1	<1	<1	<1	1	43	13	25	13	4	<1		<1
110	<1	<1		<1		<1	51	11	22	11	3	<1	<1	<1
120	3	1	<1	1	<1	<1	36	15	26	11	4	1	2	<1
130	10	1	<1	1	<1	<1	33	11	17	14	8	1	1	1
140	<1	<1	<1	<1	<1	<1	42	10	23	17	6	<1	1	<1
150	<1	<1	<1	<1		<1	55	8	23	10	3		1	<1
160	<1	<1	<1	<1	<1	1	49	14	24	7	4	<1	<1	<1
170	<1	2	<1	1	<1	<1	37	15	24	12	8	1	<1	<1
180	4	<1		<1	<1	<1	63	9	20	3	1		<1	<1
190	<1	3	1	2	<1	<1	38	21	24	4	4	1	2	<1

Table 1b, cont. Land use percentages for Middle Coosa cataloging unit (0315-0106) from EPA landuse subcategory data (EPA 1997) and broader categories used in comparison with local SWCD Conservation Assessment Worksheet landuse estimates (ASWCC 1998).

Subwatershed	*Percent Total Landuse (Category and Subcategory)*													
	Open Water	Urban			Mining	Forest				Pasture/ Hay	Row Crops	Other		
	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial/ Transportation	Quarries/ Strip Mines/ Gravel Pits	Transitional Forest	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/ Hay	Row Crops	Other Grasses	Woody Wetlands	Herbaceous Wetlands
Middle Coosa (0315-0106), cont.														
200	3	1	<1	1	<1	1	40	15	28	6	3	<1	1	<1
210	6	<1	<1	<1	<1	1	30	17	26	8	8	<1	3	1
220	1	1	<1	1		<1	30	14	20	17	13	1	2	1
230	28			<1		<1	15	19	15	11	7		2	2
240	1	0	<1	<1	<1	<1	44	19	28	5	2	<1	<1	<1
250	<1	3	1	2	<1	<1	39	14	23	8	7	2	<1	<1
260	<1	<1	<1	<1	<1	3	35	19	26	8	8	<1		
270	3	1	<1	2	1	<1	29	14	21	15	10	2	1	<1
280	8	<1	<1	<1		2	34	20	25	5	4	<1	2	<1
290	21	1	<1	<1		<1	20	16	21	13	7	<1	1	<1
300	1	<1	<1	<1		1	47	12	26	7	2	<1	2	<1
310	2	<1	<1	<1	<1	1	25	18	23	16	10	<1	5	<1
320	3	<1		2	<1	<1	30	19	28	7	7	1	2	<1
330	<1	1	<1	<1	<1	1	43	16	25	5	5	1	2	<1

Table 2b. Land use percentages for the Middle Coosa cataloging unit (0315-0106) from EPA landuse categories (EPA 1997) and local SWCD Conservation Assessment Worksheet landuse estimates (ASWCC 1998).

Subwatershed	Percent Total Landuse													
	Open Water		Urban		Mines		Forest		Pasture		Row Crops		Other	
	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA
Middle Coosa (0315-0106)														
010	1	1	<1	<1	1	<1	79	71	8	11	10	6	2	10
020	1	2		<1	<1		54	75	25	13	15	9	5	1
030	2	3	6	8	1	1	50	66	20	10	15	11	7	3
040	2	4	4	8	1	31	55	64	14	12	20	11	5	1
050	<1	<1	11	3	<1	<1	56	77	25	14	6	5	1	<1
060	1	<1	<1	1	1	1	56	80	28	14	9	5	6	<1
070	<1	1	3	6	1		60	74	23	10	7	5	6	4
080	1	1	15	8	1	<1	45	78	25	5	10	6	3	2
090	<1	19	7	2	1		68	62	13	9	6	6	4	2
100	1	1	1	1		<1	68	81	21	13	3	4	6	<1
110	1	<1		<1	<1		64	85	29	11	3	3	4	1
120	1	3	2	1	<1	<1	76	77	17	11	1	4	3	3
130	1	10	5	2	<1	<1	50	62	26	14	16	8	2	3
140	1	<1	2	<1	<1		50	76	36	17	4	6	6	1
150	1	<1		<1	<1		70	86	27	10	1	3	2	1
160	1	<1	2	1	<1	<1	65	88	28	7	3	4	<1	<1
170	2	<1	17	3	1	<1	40	75	30	12	5	8	2	1
180	10	4		<1	1	<1	79	92	7	3	1	1	1	1
190	1	<1	25	6	1		60	83	5	4	1	4	7	3
200	1	3	2	1	1	<1	80	84	11	6	2	3	4	2
210	5	6	4	<1	1	<1	60	74	22	8	2	8	6	4
220	1	1	4	2	1		72	63	10	17	4	13	10	4
230		28		<1				50		11		7		3

Table 2b, cont. Land use percentages for the Middle Coosa cataloging unit (0315-0106) from EPA landuse categories (EPA 1997) and local SWCD Conservation Assessment Worksheet landuse estimates (ASWCC 1998).

Subwatershed	Percent Total Landuse													
	Open Water		Urban		Mines		Forest		Pasture		Row Crops		Other	
	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA
Middle Coosa (0315-0106), cont.														
240	1	1	1	<1		<1	86	91	10	5	2	2	<1	<1
250	1	<1	8	5	1	<1	71	77	15	8	3	7	1	
260	1	<1	1	1	<1	<1	79	82	9	8	4	8	5	<1
270	8	3	17	3	1	1	58	64	9	15	3	10	4	4
280	10	8	5	<1	1		60	81	10	5	5	4	10	2
290	1	21	4	1			57	57	25	13	8	7	5	2
300	1	1	1	1	<1		85	86	10	7	1	2	3	2
310	1	2	7	1		<1	61	66	16	16	15	10	1	5
320	10	3	2	2	1	<1	62	78	20	7	3	7	1	3
330	1	<1	11	2	1	<1	62	86	11	5	3	5	4	2

Table 3b. Estimations of percent of acres where pesticides/herbicides applied, animal and animal unit (AU) concentrations, and NPS impairment potential from animal husbandry activities in the Upper Coosa cataloging unit (0315-0105). Numbers of animals and pesticides/herbicides listed by acreage and subwatershed were provided by the local SWCDs on Conservation Assessment Worksheets completed in 1998.

		Subwatershed									
		10	20	30	40	50	60	70	80	90	100
County (s)		Calhoun Cherokee Etowah	Cherokee* Etowah	Calhoun* Etowah	Etowah	Dekalb	Dekalb Etowah	Dekalb* Etowah	Cherokee* Dekalb* Etowah	Etowah St Clair	Blount* Etowah* Jefferson St Clair
Acres Reported (% of Total)		100	64	100	100	100	100	95	84	100	97
Pesticides Applied	Est. % Total Reported Acres	9	40	35	34	31	14	nd	nd	14	21
Cattle	# / Acre	0.04	0.07	0.05	0.06	0.12	0.12	0.06	0.06	0.03	0.01
	AU/Acre	**0.04**	**0.07**	**0.05**	**0.06**	**0.12**	**0.12**	**0.06**	**0.06**	**0.03**	**0.01**
Dairy	# / Acre	0.00	---	---	---	0.00	---	---	---	---	---
	AU/Acre	**0.01**	---	---	---	**0.00**	---	---	---	---	---
Swine	# / Acre	---	---	---	---	0.15	0.06	---	---	---	0.12
	AU/Acre	---	---	---	---	**0.06**	**0.02**	---	---	---	**0.05**
Poultry - Broilers	# / Acre	0.90	---	1.23	---	11.48	18.23	7.39	---	---	9.01
	AU/Acre	**0.01**	---	**0.01**	---	**0.09**	**0.15**	**0.06**	---	---	**0.07**
Poultry - Layers	# / Acre	---	---	---	---	1.22	0.48	---	---	---	---
	AU/Acre	---	---	---	---	**0.01**	**0.00**	---	---	---	---
Catfish	# Acres/ Acre	---	---	---	---	---	---	---	---	---	---
^Total	AU/Acre	**0.06**	**0.07**	**0.06**	**0.06**	**0.29**	**0.29**	**0.12**	**0.06**	**0.03**	**0.14**
Potential for NPS Impairment		Low	Low	Low	Low	Mod.	Mod.	Low	Low	Low	Mod.

* No data reported for this portion of the subwatershed; nd = no data; ^Total AU/Acre may differ slightly from sum of Animal Type AU/Acre

Table 3b, cont. Estimations of percent of acres where pesticides/herbicides applied, animal and animal unit (AU) concentrations, and NPS impairment potential from animal husbandry activities in the Upper Coosa cataloging unit (0315-0105). Numbers of animals and pesticides/herbicides listed by acreage and subwatershed were provided by the local SWCDs on Conservation Assessment Worksheets completed in 1998.

		Subwatershed									
		110	120	130	140	150	160	170	180	190	200
County (s)		Etowah St Clair	Etowah St Clair	Calhoun Etowah	St Clair	St Clair	Calhoun Etowah*	Calhoun	St Clair	Calhoun	St Clair
Acres Reported (% of Total)		100	100	100	100	100	94	100	100	100	100
Pesticides Applied	Est. % Total Reported Acres	nd	nd	38	nd	nd	nd	nd	nd	nd	nd
Cattle	# / Acre	0.04	0.05	0.06	0.07	0.09	0.05	0.05	0.02	0.05	0.02
	AU/Acre	**0.04**	**0.05**	**0.06**	**0.07**	**0.09**	**0.05**	**0.05**	**0.02**	**0.05**	**0.02**
Dairy	# / Acre	---	---	0.01	---	---	---	---	---	---	---
	AU/Acre	---	---	**0.01**	---	---	---	---	---	---	---
Swine	# / Acre	---	---	---	0.11	0.28	---	0.04	---	0.20	---
	AU/Acre	---	---	---	**0.04**	**0.11**	---	**0.02**	---	**0.08**	---
Poultry - Broilers	# / Acre	25.82	13.81	---	---	10.40	---	32.19	---	---	9.01
	AU/Acre	**0.21**	**0.11**	---	---	**0.08**	---	**0.26**	---	---	**0.07**
Poultry - Layers	# / Acre	---	---	---	---	---	---	---	---	---	---
	AU/Acre	---	---	---	---	---	---	---	---	---	---
Catfish	# Acres/ Acre	---	---	---	---	---	---	---	---	---	---
^Total	AU/Acre	**0.25**	**0.16**	**0.07**	**0.12**	**0.29**	**0.05**	**0.32**	**0.02**	**0.13**	**0.09**
Potential for NPS Impairment		Mod.	Mod.	Low	Mod.	Mod.	Low	Mod.	Low	Mod.	Low

* No data reported for this portion of the subwatershed; nd = no data; ^Total AU/Acre may differ slightly from sum of Animal Type AU/Acre

Table 3b, cont. Estimations of percent of acres where pesticides/herbicides applied, animal and animal unit (AU) concentrations, and NPS impairment potential from animal husbandry activities in the Upper Coosa cataloging unit (0315-0105). Numbers of animals and pesticides/herbicides listed by acreage and subwatershed were provided by the local SWCDs on Conservation Assessment Worksheets completed in 1998.

		Subwatershed									
		210	220	230	240	250	260	270	280	290	300
County (s)		Calhoun Talladega	Calhoun Talladega	Talladega	Calhoun Cleburne	Calhoun Clay Cleburne Talladega	Clay Cleburne Talladega	Calhoun Talladega	Talladega	St Clair Talladega	Jefferson St Clair Shelby
Acres Reported (% of Total)		100	86	0	100	99	99	100	100	99	100
Pesticides Applied	Est. % Total Reported Acres	nd	nd	nd	0	nd	0	nd	nd	nd	nd
Cattle	# / Acre	0.06	0.17	---	0.02	0.04	0.02	0.05	0.07	0.03	0.03
	AU/Acre	**0.06**	**0.17**	---	**0.02**	**0.04**	**0.02**	**0.05**	**0.07**	**0.03**	**0.03**
Dairy	# / Acre	---	---	---	---	0.00	---	0.00	---	---	---
	AU/Acre	---	---	---	---	**0.00**	---	**0.00**	---	---	---
Swine	# / Acre	0.00	0.01	---	---	0.00	---	0.00	0.00	---	---
	AU/Acre	**0.00**	**0.00**	---	---	**0.00**	---	**0.00**	**0.00**	---	---
Poultry - Broilers	# / Acre	168.14	100.40	---	53.20	37.68	---	28.68	26.92	---	7.82
	AU/Acre	**1.35**	**0.80**	---	**0.43**	**0.30**	---	**0.23**	**0.22**	---	**0.06**
Poultry - Layers	# / Acre	---	0.00	---	---	0.80	---	---	---	---	---
	AU/Acre	---	**0.00**	---	---	**0.01**	---	---	---	---	---
Catfish	# Acres/ Acre	0.01	0.03	---	---	0.00	0.00	0.00	0.01		
^Total	AU/Acre	**1.40**	**0.97**	**nd**	**0.45**	**0.35**	**0.02**	**0.29**	**0.29**	**0.03**	**0.09**
Potential for NPS Impairment		High	High	Low	Mod.	Mod.	Low	Mod.	Mod.	Low	Low

* No data reported for this portion of the subwatershed; nd = no data; ^Total AU/Acre may differ slightly from sum of Animal Type AU/Acre

Table 3b, cont. Estimations of percent of acres where pesticides/herbicides applied, animal and animal unit (AU) concentrations, and NPS impairment potential from animal husbandry activities in the Upper Coosa cataloging unit (0315-0105). Numbers of animals and pesticides/herbicides listed by acreage and subwatershed were provided by the local SWCDs on Conservation Assessment Worksheets completed in 1998.

		Subwatershed			
		310	320	330	Total
County (s)		St Clair Shelby	Talladega	Clay Talladega	----
Acres Reported (% of Total)		100	100	100	98
Pesticides Applied	Est. % Total Reported Acres	nd	nd	0	6
Cattle	# / Acre	0.03	0.05	0.03	0.05
	AU/Acre	**0.03**	**0.05**	**0.03**	**0.05**
Dairy	# / Acre	0.01	---	---	0.00
	AU/Acre	**0.02**	---	---	**0.00**
Swine	# / Acre	---	0.00	0.01	0.03
	AU/Acre	---	**0.00**	**0.00**	**0.01**
Poultry - Broilers	# / Acre	---	---	---	16.08
	AU/Acre	---	---	---	**0.13**
Poultry - Layers	# / Acre	---	---	---	0.15
	AU/Acre	---	---	---	**0.00**
Catfish	# Acres/ Acre	---	0.00	0.00	0.00
^Total	AU/Acre	**0.05**	**0.05**	**0.03**	**0.19**
Potential for NPS Impairment		Low	Low	Low	Mod.

* No data reported for this portion of the subwatershed; nd = no data; ^Total AU/Acre may differ slightly from sum of Animal Type AU/Acre

Table 4b. Sedimentation estimates by source, forest condition, septic tank information and resource concerns by subwatershed in the Middle Coosa cataloging unit (0315-0106) as provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets (ASWCC 1998). (* Indicates not reported)

Basin Code - Cataloging Unit	0315-0106									
Subwatershed	**010**	**020**	**030**	**040**	**050**	**060**	**070**	**080**	**090**	**100**
Forest Condition										
% of Subwatershed Needing Forest Improvement	<1	1	1	1	34	9	2	1	1	4
Sediment Contributions (Tons/Acre/Yr)										
Cropland	0.2	0.4	0.0	0.5	0.3	0.3	0.2	0.3	0.2	0.1
Sand & Gravel Pits	2.1	1.4	3.4	2.1	0.4	2.6	1.8	2.8	5.1	
Mined Land	0.1				0.5					
Developing Urban Land	0.0		0.2	0.2	0.0	0.0	0.2	0.1	0.3	0.1
Critical Areas	0.1	0.1	0.1	0.2	0.1	0.3	0.3	0.3	0.2	0.1
Gullies					0.0	0.1				0.2
Stream Banks	0.3	0.7	0.6	0.4	0.0	0.4	0.4	0.5	0.6	0.4
Dirt Roads and Roadbanks	0.1	0.0	0.0	0.0	0.5	0.4	0.0	0.1	0.0	0.0
Woodlands	0.6	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Total Sediment	3.5	2.6	4.5	3.4	1.8	4.1	2.9	4.1	6.5	1.0
Potential for Sediment NPS	Low	Low	**Mod.**	Low	Low	**Mod.**	Low	**Mod.**	**Mod.**	Low
Onsite Wastewater Treatment Systems										
# Septic Tanks per Acre	0.01	0.01	0.09	0.05	0.03	0.04	0.04	0.05	0.15	0.05
# Septic Tanks Failing per Acre	0.0	0.0	0.02	0.0	0.0	0.0	0.01	0.01	0.02	0.01
# of Alternative Septic Systems	15	4	234	63	600	173	129	90	126	448
Resource Concerns in the Subwatershed										
Excessive Erosion on Cropland	X	X	X	X	X	X	X	X	X	X
Gully Erosion on Agricultural Land						X				X
Road and Roadbank Erosion	X				X	X				
Poor Soil Condition (Cropland)			X		X	X		X	X	X
Excessive Animal Waste Applied to Land					X	X				X
Excessive Pesticides Applied to Land		X								X
Excessive Sediment from Cropland	X	X	X	X	X	X	X	X	X	X
Excessive Sediment From Roads/Roadbanks					X	X				
Excessive Sediment from Urban Development			X	X		X	X	X	X	X
Inadequate Management of Animal Wastes	X	X	X	X	X	X	X	X	X	X
Nutrients in Surface Waters	X		X	X	X	X	X	X	X	X
Pesticides in Surface Waters	X	X	X	X				X	X	X
Livestock Commonly have Access to Streams	X	X	X	X	X	X	X	X	X	X

Table 4b, cont. Sedimentation estimates by source, forest condition, septic tank information and resource concerns by subwatershed in the Middle Coosa cataloging unit (0315-0106) as provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets (ASWCC 1998). (* Indicates not reported)

Basin Code - Cataloging Unit	0315-0106									
Subwatershed	**110**	**120**	**130**	**140**	**150**	**160**	**170**	**180**	**190**	**200**
Forest Condition										
% of Subwatershed Needing Forest Improvement	1	2	<1	1	1	*	*	2	*	2
Sediment Contributions (Tons/Acre/Yr)										
Cropland	0.1	0.0	0.4	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Sand & Gravel Pits	0.3	0.6	0.4	1.1	0.5	0.1	0.0	4.8	0.0	0.3
Mined Land						0.0	0.1		0.1	
Developing Urban Land		0.2	0.3	0.0		0.1	0.1		0.0	0.1
Critical Areas	0.1	0.1	0.0	0.0	0.1	0.0	0.1	0.1	0.1	0.0
Gullies							0.0		0.0	
Stream Banks	0.5	0.3	0.5	0.5	0.7	0.1	0.2	0.5	0.1	0.5
Dirt Roads and Roadbanks	0.0	0.0	0.3			0.1	0.0		0.1	
Woodlands	0.1	0.1	0.0	0.1	0.1			0.1		0.1
Total Sediment	1.0	1.3	1.8	1.9	1.3	0.4	0.6	5.5	0.4	1.0
Potential for Sediment NPS	Low	Low	Low	Low	Low	Low	Low	**Mod.**	Low	Low
Onsite Wastewater Treatment Systems										
# Septic Tanks per Acre	0.01	0.02	0.11	0.05	0.01	*	*	0.01	*	0.04
# Septic Tanks Failing per Acre	0.002	0.003	0.016	0.004	0.001	*	*	0.000	*	0.004
# of Alternative Septic Systems	7	20	143	36	5	*	*	*	*	320
Resource Concerns in the Subwatershed										
Excessive Erosion on Cropland			X							
Gully Erosion on Agricultural Land										
Road and Roadbank Erosion										
Poor Soil Condition (Cropland)		X								
Excessive Animal Waste Applied to Land		X								X
Excessive Pesticides Applied to Land										
Excessive Sediment from Cropland			X							
Excessive Sediment From Roads/Roadbanks			X							
Excessive Sediment from Urban Development		X	X	X						X
Inadequate Management of Animal Wastes	X	X	X	X	X				X	X
Nutrients in Surface Waters	X	X	X	X	X	X			X	X
Pesticides in Surface Waters			X							
Livestock Commonly have Access to Streams	X	X	X	X	X			X		X

Table 4b, cont. Sedimentation estimates by source, forest condition, septic tank information and resource concerns by subwatershed in the Middle Coosa cataloging unit (0315-0106) as provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets (ASWCC 1998). (* Indicates not reported)

Basin Code - Cataloging Unit	0315-0106									
Subwatershed	**210**	**220**	**230***	**240**	**250**	**260**	**270**	**280**	**290**	**300**
Forest Condition										
% of Subwatershed Needing Forest Improvement	13	43		3	5	14	24	22	1	1
Sediment Contributions (Tons/Acre/Yr)										
Cropland	0.0	0.1		0.0	0.0	0.1	0.1	0.1	0.2	0.0
Sand & Gravel Pits	0.3	0.2			0.1	0.0	0.3	0.3		0.5
Mined Land	0.8	0.7			0.1	0.0	0.4	0.8		0.1
Developing Urban Land	0.5	4.9		0.0	0.9	0.1	1.4	0.3	0.2	1.4
Critical Areas	1.0	1.9		0.0	0.5	0.2	0.5	0.2	0.0	0.6
Gullies	0.7	0.3		0.0	0.0		0.1	0.1		1.1
Stream Banks	1.1	0.2		0.8	0.1	0.5	0.1	0.2	0.2	0.4
Dirt Roads and Roadbanks	2.0			0.2	0.3	0.7	0.1	0.2		0.3
Woodlands	0.1	0.2		1.6	0.1	0.6	0.1	0.2	0.1	0.2
Total Sediment	6.5	8.5		2.6	2.2	2.2	3.3	2.3	0.8	4.7
Potential for Sediment NPS	**Mod.**	**Mod.**		Low	Low	Low	Low	Low	Low	**Mod.**
Onsite Wastewater Treatment Systems										
# Septic Tanks per Acre	*	*	*	*	*	0.00	*	*	0.16	0.06
# Septic Tanks Failing per Acre	*	*	*	*	*	0.000	*	*	0.003	0.006
# of Alternative Septic Systems	*	*	*	*	*	*	10	*	*	134
Resource Concerns in the Subwatershed										
Excessive Erosion on Cropland									X	
Gully Erosion on Agricultural Land						X				
Road and Roadbank Erosion						X				X
Poor Soil Condition (Cropland)										X
Excessive Animal Waste Applied to Land		X								X
Excessive Pesticides Applied to Land									X	X
Excessive Sediment from Cropland									X	
Excessive Sediment From Roads/Roadbanks	X					X				X
Excessive Sediment from Urban Development		X							X	X
Inadequate Management of Animal Wastes		X							X	X
Nutrients in Surface Waters		X			X		X		X	X
Pesticides in Surface Waters									X	X
Livestock Commonly have Access to Streams		X				X		X	X	X

Table 4b, cont. Sedimentation estimates by source, forest condition, septic tank information and resource concerns by subwatershed in the Middle Coosa cataloging unit (0315-0106) as provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets (ASWCC 1998). (* Indicates not reported)

Basin Code - Cataloging Unit	0315-0106		
Subwatershed	**310**	**320**	**330**
Forest Condition			
% of Subwatershed Needing Forest Improvement	1	16	28
Sediment Contributions (Tons/Acre/Yr)			
Cropland	0.4	0.1	0.1
Sand & Gravel Pits		0.7	0.1
Mined Land		0.9	0.2
Developing Urban Land	12.7	0.6	0.3
Critical Areas	1.8	0.4	0.3
Gullies		0.1	0.0
Stream Banks	0.1	0.2	0.1
Dirt Roads and Roadbanks	0.3		2.0
Woodlands	0.2	0.2	0.3
Total Sediment	15.4	3.3	3.4
Potential for Sediment NPS	**Mod.**	Low	Low
Onsite Wastewater Treatment Systems			
# Septic Tanks per Acre	0.05	*	0.00
# Septic Tanks Failing per Acre	0.002	*	0.000
# of Alternative Septic Systems	20	*	*
Resource Concerns in the Subwatershed			
Excessive Erosion on Cropland	X		
Gully Erosion on Agricultural Land			X
Road and Roadbank Erosion	X		X
Poor Soil Condition (Cropland)			X
Excessive Animal Waste Applied to Land			
Excessive Pesticides Applied to Land			
Excessive Sediment from Cropland	X		
Excessive Sediment From Roads/Roadbanks	X		X
Excessive Sediment from Urban Development	X		
Inadequate Management of Animal Wastes			
Nutrients in Surface Waters			
Pesticides in Surface Waters			
Livestock Commonly have Access to Streams	X		X

Table 5b. Estimation of Potential Sources of NPS Impairment for subwatersheds in the Middle Coosa cataloging unit (0315-0106). Source categories are based upon information provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets completed in 1998, and from Construction Stormwater Authorization information provided by the Mining and NPS Unit of ADEM. *Rural landuse sources were used to develop the NPS potential. The presence of a CWA 303(d) stream segment within a subwatershed raised the subwatershed to the top of the prioritization ranking.

Subwatershed	Potential NPS Impairment	Potential Sources of Impairment								
		Rural Landuses						Urban / Suburban / Residential Landuses		
		Animal Husbandry	Row Crops	Pasture Runoff	Mining	Forestry Practices	Sedimentation	Urban	Development	Septic Tank Failure
010	L	L	M	L	M	L	L	L	L	M
020	M	L	M	M	M	L	L	L	M	L
030	M	L	M	M	M	L	M	M	M	H
040	L	L	M	L	M	L	L	M	M	M
050	M	M	L	M	L	M	L	M	M	M
060	M	M	M	M	M	L	M	L	L	M
070	M	L	M	M	M	L	L	L	L	M
080	M	L	M	M	M	L	M	M	L	M
090	L	L	L	L	M	L	M	M	M	H
100	L	M	L	M	L	L	L	L	M	M
110	L	M	L	M	L	L	L	L	M	L
120	L	M	L	M	L	L	L	L	L	M
130	L	L	M	M	L	L	L	M	M	H
140	L	M	L	M	M	L	L	L	M	M
150	L	M	L	M	L	L	L	L	M	L
160	H	L	H	M	M	---	L	L	L	L
170	M	M	L	M	M	---	L	M	M	L
180	L	L	L	L	M	L	M	L	M	L
190	L	M	L	L	M	---	L	H	L	L
200	L	L	L	L	M	L	L	L	M	M
210	H	H	L	M	M	M	M	L	M	L
220	H	H	L	L	M	H	M	M	M	L

Table 5b, cont. Estimation of Potential Sources of NPS Impairment for subwatersheds in the Middle Coosa cataloging unit (0315-0106). Source categories are based upon information provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets completed in 1998, and from Construction Stormwater Authorization information provided by the Mining and NPS Unit of ADEM. *Rural landuse sources were used to develop the NPS potential. The presence of a CWA 303(d) stream segment within a subwatershed raised the subwatershed to the top of the prioritization ranking.

Subwatershed	Potential NPS Impairment	Potential Sources of Impairment								
		Rural Landuses						Urban / Suburban / Residential Landuses		
		Animal Husbandry	Row Crops	Pasture Runoff	Mining	Forestry Practices	Sedimentation	Urban	Development	Septic Tank Failure
230	---	---	---	---	---	---	---	---	H	---
240	L	M	L	L	L	L	L	L	L	L
250	M	M	L	M	M	L	L	M	H	L
260	L	L	L	L	L	M	L	L	L	L
270	M	M	L	L	M	M	L	M	L	L
280	M	M	L	L	M	M	L	M	L	L
290	L	L	M	M	L	L	L	M	M	M
300	L	L	L	L	L	L	M	L	M	M
310	M	L	M	M	L	L	M	M	M	L
320	M	L	L	M	M	M	L	L	L	L
330	H	L	L	L	M	H	L	M	M	L

Table 6b. Physical characteristic and habitat quality estimates for sites assessed by ADEM in the Middle Coosa cataloging unit (0315-0106) during 2000. In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx. 50% Open/Shaded)

Station Number		BWLD-12	BRNE-28	CLRE-29	LINE-30	LWLE-31	BLKE-14	BCNS-24	BCNS-35
Subwatershed #		050	070	070	070	070	080	100	100
Ecoregion/ Subregion		67f	67f	67f	67f	67f	68d	67g	67f
Drainage area (Approx. mi^2)		36	8	~10	12	11	27	114	~93
Date (YYMMDD)		000614	000615	000615	000615	000614	000614	000613	000613
Width (ft)		18	6	17	15	13	25	30	35
Canopy Cover*		50/50	MO	MS	MS	S	MS	50/50	----
Depth (ft)	Riffle	0.5	0.2	0.2	0.2	0.3	N/A	0.8	0.5
	Run	1.0	1.5	1.0	1.0	1.0	1.5	1.0	1.5
	Pool	>3	----	1.5	1.0	2.0	2.0	3.0	2.5
Substrate (%)	Bedrock	0	0	0	0	0	0	0	0
	Boulder	0	0	4	30	0	2	2	38
	Cobble	10	1	25	45	10	0	2	25
	Gravel	20	35	45	10	35	0	20	15
	Sand	48	48	10	11	15	75	53	15
	Silt	15	10	3	2	10	5	15	5
	Detritus	5	3	3	2	5	13	7	2
	Clay	2	3	10	0	25	5	1	0
Geomorphology*		RR	RR	RR	RR	RR	GP	RR	RR
Habitat Survey (% maximum)									
Instream Habitat Quality		72	54	67	75	69	55	72	83
Sediment Deposition		50	56	60	86	63	53	63	89
Sinuosity		95	73	53	88	75	45	33	88
Bank and Vegetative Stability		48	53	65	70	63	48	49	90
Riparian Measurements		65	48	93	74	93	65	79	88
Habitat Assessment Score									
% Maximum		64	55	70	75	71	49	63	87
Assessment		Good	Good	Excellent	Excellent	Excellent	Fair	Good	Excellent

Table 6b, cont. Physical characteristic and habitat quality estimates for sites assessed by ADEM in the Middle Coosa cataloging unit (0315-0106) during 2000. In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx. 50% Open/Shaded)

Station Number		MCKS-27	LCNE-1 (ref)	ALXC-41	LTSC-39	TLSC-38	TLSC-40	WVRC-42	AKRC-21
Subwatershed #		100	110	170	170	0170	0170	0170	210
Ecoregion/ Subregion		67f	67f	67g	67f	67f	67f	67g	67g
Drainage area (Approx. mi^2)		9	23	19	~17	~31	~93	7	7
Date (YYMMDD)		000613	000613	000607	000608	000608	000607	000607	000606
Width (ft)		17	20	30	15	20	35	12	13
Canopy Cover*		MS	MS	50/50	MS	MO	50/50	S	S
Depth (ft)	Riffle	0.5	0.3	0.4	0.3	0.5	0.5	0.3	0.3
	Run	1.0	0.8	0.8	1.0	1.5	1.0	0.5	1.0
	Pool	2.0	1.5	2.0	>2	>3.5	2.0	3.0	>2.5
Substrate (%)	Bedrock	10	0	3	0	0	65	10	0
	Boulder	10	0	2	0	1	10	0	2
	Cobble	15	10	4	25	5	2	0	25
	Gravel	35	25	26	30	30	3	25	50
	Sand	15	43	50	10	45	5	40	15
	Silt	8	15	7	15	6	10	15	3
	Detritus	5	6	5	5	5	5	3	4
	Clay	2	1	3	15	8	0	7	1
Geomorphology*		RR	RR	RR	RR	RR	RR	RR	RR
Habitat Survey (% maximum)									
Instream Habitat Quality		77	63	47	76	60	63	55	76
Sediment Deposition		61	59	53	53	66	74	45	65
Sinuosity		80	65	38	83	33	80	48	78
Bank and Vegetative Stability		70	49	50	69	75	66	40	51
Riparian Measurements		81	78	53	85	70	76	79	95
Habitat Assessment Score									
% Maximum		73	63	51	71	65	73	56	73
Assessment		Excellent	Good	Good	Excellent	Good	Excellent	Good	Excellent

Table 6b, cont. Physical characteristic and habitat quality estimates for sites assessed by ADEM in the Middle Coosa cataloging unit (0315-0106) during 2000. In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx. 50% Open/Shaded)

Station Number		CHOC-2 (ref)	DRYC-2 (ref)	SHLC-3 (ref)	CHEC-6 (ref)	WLFS-9 (ref)	DRYT-9 (ref)	TLDC-7	TLDT-32
Subwatershed #		240	240	240	260	300	330	330	330
Ecoregion/ Subregion		45d	67h	45d	45d	67g	45d	45a	67f
Drainage area (Approx. mi^2)		6	6	16	18	33	9	33	53
Date (YYMMDD)		000613	000614	000613	000608	000606	000601	000606	000601
Width (ft)		15	7	20	20	40	40	30	60
Canopy Cover*		MS	S	MS	O	MS	MO	S	50/50
Depth (ft)	Riffle	0.3	0.2	0.5	0.3	0.4	N/A	0.5	0.5
	Run	0.5	0.4	1.0	1.5	0.8	1.5	1.0	1.5
	Pool	1.5	1.5	>3.5	3.5	2.5	>5	1.5	2.5
Substrate (%)	Bedrock	20	15	0	5	0	20	0	40
	Boulder	10	15	10	25	14	10	5	15
	Cobble	30	45	30	20	35	10	15	10
	Gravel	20	10	30	15	25	5	35	10
	Sand	15	10	20	30	15	40	33	10
	Silt	2	1	5	3	3	12	3	12
	Detritus	3	4	4	2	7	3	8	3
	Clay	0	0	1	0	1	0	1	0
Geomorphology*		RR	RR	RR	RR	RR	GP	RR	RR
Habitat Survey (% maximum)									
Instream Habitat Quality		83	75	82	82	78	58	87	82
Sediment Deposition		78	85	75	76	78	73	55	79
Sinuosity		100	100	85	93	60	43	90	95
Bank and Vegetative Stability		83	90	78	90	74	80	56	76
Riparian Measurements		100	85	100	100	100	100	88	79
Habitat Assessment Score									
% Maximum		85	82	85	88	81	71	75	82
Assessment		Excellent	Excellent	Excellent	Excellent	Excellent	Good	Good	Excellent

Table 6b, cont. Physical characteristic and habitat quality estimates for sites assessed by ADEM in the Middle Coosa cataloging unit (0315-0106) during 2000. In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded;, O - Open; 50/50 - Approx. 50% Open/Shaded)

Station Number		TCT-5 (ref)
Subwatershed #		010
Ecoregion/ Subregion		45d
Drainage area (Approx. mi^2)		70
Date (YYMMDD)		000601
Width (ft)		60
Canopy Cover*		MO
Depth (ft)	Riffle	0.4
	Run	0.8
	Pool	3.0
Substrate (%)	Bedrock	35
	Boulder	10
	Cobble	20
	Gravel	17
	Sand	10
	Silt	5
	Detritus	3
	Clay	0
Geomorphology*		RR
Habitat Survey (% maximum)		
Instream Habitat Quality		80
Sediment Deposition		71
Sinuosity		53
Bank and Vegetative Stability		79
Riparian Measurements		75
Habitat Assessment Score		
% Maximum		75
Assessment		Excellent

Table 7b. Aquatic macroinvertebrate and fish community bioassessments conducted by ADEM during 2000 from the Middle Coosa cataloging unit (0315-0106).

Station Number	BWLD-12	BRNE-28	CLRE-29	LINE-30	LWLE-31	BLKE-14	BCNS-24	BCNS-35	MCKS-27	LCNE-1 (ref)
Sub-watershed #	050	070	070	070	070	080	100	100	100	110
Subecoregion #	67f	67f	67f	67f	67f	68d	67g	67f	67f	67f
Macroinvertebrate community										
Assessment Date (YYMMDD)	000614	000615	000615	000615	000614	000614	000613	000613	000613	06/13/00
# EPT families	10	12	13	8	12	5	12	14	16	15
Assessment	Excellent	Excellent	Excellent	Good	Excellent	Fair	Excellent	Excellent	Excellent	Excellent
Fish community										
Assessment Date (YYMMDD)		000717		000717						
Time (min)		30		30						
Richness measures										
# species		19		15						
# darter species		3		1						
# minnow species		7		3						
# sunfish species		4		4						
# sucker species		2		3						
# intolerant species		2		0						
Composition measures										
% sunfish		5.7		34.1						
% omnivores and herbivores		7.8		14.2						
% insectivorous cyprinids		50		34.7						
% top carnivores		4.3		5.1						
Population measures										
Individuals		282		176						
# collected per hour		564		352						
% disease and anomalies		2.8		0						
IBI Score		54		44						
Assessment		Good/Excel		Fair						

Table 7b, cont. Aquatic macroinvertebrate and fish community bioassessments conducted by ADEM during 2000 from the Middle Coosa cataloging unit (0315-0106).

Station Number	ALXC-41	LTSC-39	TLSC-38	TLSC-40	WVRC-42	AKRC-21	CHOC-2 (ref)	DRYC-2 (ref)	SHLC-3 (ref)	CHEC-6 (ref)
Sub-watershed #	170	170	170	170	170	210	240	240	240	260
Subecoregion #	67g	67f	67f	67f	67g	67g	45d	67h	45d	45d
Macroinvertebrate community										
Assessment Date (YYMMDD)	000607	000608	000608	000607	000607	000606	000613	000614	000613	06/08/00
# EPT families	8	10	12	9	12	13	15	16	15	15
Assessment	Good	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Fish community										
Assessment Date (YYMMDD)	000717				000717					000719
Time (min)	30				30					30
Richness measures										
# species	22				20					14
# darter species	3				2					1
# minnow species	6				6					6
# sunfish species	4				4					3
# sucker species	2				3					1
# intolerant species	1				0					2
Composition measures										
% sunfish	19.1				27.9					8.3
% omnivores and herbivores	31				14.4					13.9
% insectivorous cyprinids	11.6				9.9					59.9
% top carnivores	2.4				3.6					5.2
Population measures										
Individuals	335				111					252
# collected per hour	670				222					504
% disease and anomalies	4.5				0					7.5
IBI Score	44				46					44
Assessment	Fair				Fair/Good					Fair

Table 7b, cont. Aquatic macroinvertebrate and fish community bioassessments conducted by ADEM during 2000 from the Middle Coosa cataloging unit (0315-0106).

Station Number	WLFS-9 (ref)	DRYT-9 (ref)	TLDC-7	TLDT-32	TCT-5
Sub-watershed #	300	330	330	330	330
Subecoregion #	67g	45d	45a	67f	45d
Macroinvertebrate community					
Assessment Date (YYMMDD)	000606	000601	000606	000601	06/01/99
# EPT families	14	11	12	14	17
Assessment	Excellent	Good	Good	Excellent	Excellent
Fish community					
Assessment Date (YYMMDD)			000719		
Time (min)			30		
Richness measures					
# species			13		
# darter species			0		
# minnow species			7		
# sunfish species			3		
# sucker species			1		
# intolerant species			1		
Composition measures					
% sunfish			5.1		
% omnivores and herbivores			0.6		
% insectivorous cyprinids			85.1		
% top carnivores			0.9		
Population measures					
Individuals			336		
# collected per hour			672		
% disease and anomalies			0		
IBI Score			46		
Assessment			Fair/Good		

Table 8b. List of previous water quality assessments conducted on streams within the Middle Coosa cataloging unit from 1990-1999. Chemical assessments are indicated when biological assessments were not conducted.

Waterbody	*Date(s)*	*Assessment Type**	*Reference +*
Middle Coosa (0315-0106)			
Big Canoe Cr	1999	C	7
Big Wills Cr	1991, 1998-99	B, C	9, 7
Brecon Br	1996	C	2
Cane Cr	1998-99	C	7
Cane Cr, UT to	1999	C	5
Cheaha Cr	1990, 1991, 1998	B, C	3, 4, 8
Choccolocco Cr, UT to	1998	C	5
Choccolocco Cr	1995, 1996-01	B, C	1, 10
Coosa R	1996, 1990-1999, 1998-99	C	1, 2, 7
Coosa R, UT to	1999	C	5
Kelly Cr	1999, 1998-99	B, C	6, 7
Little Canoe Cr	1994, 1995, 1997, 1999	B, C	4, 5
Little Wills Cr	1996	C	2
Ohatchee Cr	1999	C	7
Talladega Cr, UT to	1999	C	5
Talladega Cr	1990, 1993, 1995, 1998-99	B, C	4, 9, 7
Town Cr	1990	B, C	9
Williams Br	1996	C	2

* B= Biological Assessment (either fish and/or aquatic macroinvertebrate); C= Chemical Assessment
+ Key to References is located in Appendix G.

Table 9b. Summary of the number of current Construction/Stormwater Authorizations, Noncoal <5 Acres/Stormwater Authorizations, NPDES Permits, and CAFO Registrations issued within each subwatershed of the Middle Coosa cataloging unit.

Cataloging Unit and Subwatershed	# of Authorizations / #NPDES permits / Registrations							
	Total Number	Construction/ Stormwater Authorizations (a)	Non-Coal Mining <5 Acres / Stormwater Authorizations (a)	Mining NPDES (c)	Municipal NPDES (b)	Semi Public/ Private NPDES (b)	Industrial Process Wastewater - NPDES Majors (b)	CAFO Registrations (c)
Middle Coosa (0315-0106)								
010	7	3	2	2				
020	2	2						
030	12	5	4	2			1	
040	5	5						
050	16	9	2		2	1		2
060	1							1
070	8	4		1	2			1
080	6	2	1			1	1	1
090	10	4	1	1	4			
100	20	13			2	3		2
110	7	3	2			1		1
120	5	3						2
130	4	2	2					
140	9	5	1	3				
150	3	2						1
160	4	1				3		
170	28	15	4	1	1	4		3
180	2	1		1				
190	5	3			1			1
200	11	5			1	3		2
210	6	6						

Table 9b, cont. Summary of the number of current Construction/Stormwater Authorizations, Noncoal <5 Acres/Stormwater Authorizations, NPDES Permits, and CAFO Registrations issued within each subwatershed of the Middle Coosa cataloging unit.

Cataloging Unit and Subwatershed	# of Authorizations / #NPDES permits / Registrations							
	Total Number	Construction/ Stormwater Authorizations (a)	Non-Coal Mining <5 Acres / Stormwater Authorizations (a)	Mining NPDES (c)	Municipal NPDES (b)	Semi Public/ Private NPDES (b)	Industrial Process Wastewater - NPDES Majors (b)	CAFO Registrations (c)
Middle Coosa, cont. (0315-0106)								
220	7	5			1			1
230	3	3						
240	1	1						
250	52	42	4	2	2	1	1	
260	3	3						
270	11	5		2	1	1	1	1
280	5	3	1			1		
290	5	3		1		1		
300	26	17	1		1	3		4
310	7	6				1		
320	5	2		2			1	
330	8	5			3			

(a) Source: ADEM Mining and Nonpoint Source Unit, Field Operations, database retrieval (7/18/00) (ADEM 1999e)

(b) Source: 1996 CWS Report (ADEM 1999a)

(c) Source: ADEM Mining and Nonpoint Source Unit, Field Operations, database retrieval (08/3/01) (ADEM 2001d)

Table 10b. List of stations assessed or attempted as part of the surface water quality NPS screening assessment of the Middle Coosa cataloging unit. Select additional stations assessed as part of other studies are included and noted with an asterisk (*).

Stream Name	Station	Approximate Basin Size (sq. mi.)	Assessment Type+	Subwatershed Number	Sub-Ecoregion **	County	T	R	S
Middle Coosa (0315-0106)									
Dry Cr (Ref)	DRYE-4	8	*NA*	030	67g	Etowah	12S	8E	8
Big Cove Cr	BCVE-13		*NA*	030	67g	Etowah	12S	7E	23
Big Wills Cr	BWLD-12	36	M, H, C#	050	67f	Dekalb	6S	9E	29
Big Wills Cr	BWC-1	36	M, H, C	050	67f	Dekalb	6S	9E	29
Brown Cr	BRNE-28	8	M, H, C, F	070	67f	Etowah	11S	5E	32
Clear Cr	CLRE-29	10	M, H, C#	070	67f	Etowah	11S	5E	31
Line Cr	LINE-30	12	M, H, C, F	070	67f	Etowah	11S	5E	21
Little Wills Cr	LWLE-31	11	M, H, C#	070	67f	Etowah	10S	6E	24
Black Cr	BLKE-14	27	M, H, C#	080	68d	Etowah	10S	7E	29
Black Cr	BLKE-44	45	*NA*	080	68d	Etowah	11S	6E	14
Big Canoe Cr	BCNS-24	114	M, H, C#	100	67g	St. Clair	14S	3E	12
Big Canoe Cr	BCNS-35	93	M, H, C#	100	67f	St. Clair	14S	2E	22
Muckleroy Cr	MCKS-27	9	M, H, C#	100	67f	St. Clair	13S	3E	26
Gulf Cr	GLFS-25	10	*NA*	100	67f	St. Clair	13S	4E	8
Little Canoe Cr (Ref)	LCNE-1	23	M, H, C	110	67f	Etowah	12S	4E	23
Alexandria Cr	ALXC-41	19	M, H, C, F	170	67g	Calhoun	14S	7E	19
Little Tallasseehatchee Cr	LTSC-39	17	M, H, C#	170	67f	Calhoun	14S	8E	22
Tallasseehatchee Cr	TLSC-38	31	M, H, C#	170	67f	Calhoun	14S	8E	3
Tallasseehatchee Cr	TLSC-40	93	M, H, C#	170	67f	Calhoun	14S	7E	22
Weavers Cr	WVRC-42	7	M, H, C, F	170	67g	Calhoun	14S	7E	24

Table 10b, cont. List of stations assessed or attempted as part of the surface water quality NPS screening assessment of the Middle Coosa cataloging unit. Select additional stations assessed as part of other studies are included and noted with an asterisk (*).

Stream Name	Station	Approximate Basin Size (sq. mi.)	Assessment Type+	Subwatershed Number	Sub-Ecoregion **	County	T	R	S
Middle Coosa (0315-0106)									
Acker Cr	AKRC-21	7	M, H, C#	210	67g	Calhoun	15S	5E	27
Blue Eye Cr	BEYT-15	26	*NA*	220	67f	Talladega	16S	5E	32
Choccolocco Cr (Ref)	CHOC-2	6	M, H, C	240	45d	Cleburne	14S	10E	10
Dry Cr (Ref)	DRYC-2	6	M, H, C	240	67h	Calhoun	14S	10E	4
Shoal Cr (Ref)	SHLC-3	16	M, H, C	240	45d	Cleburne	15S	10E	16
Cheaha Cr (Ref)	CHEC-6	18	M, H, C, F	260	45d	Clay	18S	7E	22
Cheaha Cr	CHEC-3	1	M, H, C, F	260	45d	Clay	18S	8E	18
Cheaha Cr	CHE-1	10	M, H, C, F	260	45d	Clay	18S	7E	14
Wolf Cr (Ref)	WLFS-9	33	M, H, C#	300	67g	St. Clair	17S	3E	19
Kelly Cr	KYC-2*	86	M, H, C, F	300	67g	Shelby	17S	2E	33
Kelly Cr	KYC-1*	193	M, H, C, F	310	67f	Shelby	18S	2E	24
Dry Cr (Ref)	DRYT-9	9	M, H, C#	330	67f	Talladega	19S	5E	23
Talladega Cr	TLDC-7	33	M, H, C, F	330	45a	Clay	19S	7E	28
Talladega Cr	TLDT-32	53	M, H, C#	330	67f	Talladega	19S	6E	35
Talladega Cr (Ref)	TCT-5	70	M, H, C	330	45d	Talladega	19S	6E	17

+ Assessment Type: C = Chemical Assessment; C# = *In situ* measurements only
H = Habitat Assessment; F = Fish Community Assessment;
M = Aquatic Macroinvertebrate Community Assessment;
NA = Not Assessed (dry / not flowing / beaver dam, etc)

** Level IV Ecoregions of Alabama (Griffith, et al. 2001)

Table 11b. Summary of Assessments conducted within the Middle Coosa cataloging unit. Includes data collected as a part of the Coosa Basin NPS project and other selected biological and chemical data collected since 1995.

Cataloging Unit and Subwatershed	Station Number	*Habitat*	*Macroinv.*	*Fish*	*Chemical* Data Available (X)	Overall Assessment
Middle Coosa (0315-0106)						
050	BWLD-12	Good	Excellent	---	FP Only	Excellent
050	BWC-1	Good	Excellent	---	X	Excellent
050	BWC-2a*	Good	Good	---	X	Good
050	BWC-3a*	Excellent	Fair	---	X	Fair
050	BWC-3b*	Good	Good	---	X	Good
070	BRNE-28	Good	Excellent	Good/Excel	X	Good
070	CLRE-29	Excellent	Excellent	---	FP Only	Excellent
070	LINE-30	Excellent	Good	Fair	X	Fair
070	LWLE-31	Excellent	Excellent	---	FP Only	Excellent
080	BLKE-14	Fair	Fair	---	FP Only	Fair
100	BCNS-24	Good	Excellent	---	FP Only	Excellent
100	BCNS-35	Excellent	Excellent	---	FP Only	Excellent
100	MCKS-27	Excellent	Excellent	---	FP Only	Excellent
110	LCNE-1	Good	Excellent	---	X	Excellent
110	CO02U1	Excellent	---	---	X	---
170	ALXC-41	Good	Good	Fair	X	Fair
170	LTSC-39	Excellent	Excellent	---	FP Only	Excellent
170	TLSC-38	Good	Excellent	---	FP Only	Excellent
170	TLSC-40	Excellent	Good	---	FP Only	Good
170	WVRC-42	Good	Excellent	Fair/Good	X	Fair
190	CO05U3-36	Excellent	---	---	X	---
210	AKRC-21*	Excellent	Excellent	---	FP Only	Excellent
240	CHOC-2	Excellent	Excellent	---	X	Excellent

Table 11b, cont. Summary of Assessments conducted within the Middle Coosa cataloging unit. Includes data collected as a part of the Coosa Basin NPS project and other selected biological and chemical data collected since 1995.

Cataloging Unit and Subwatershed	Station Number	*Habitat*	*Macroinv.*	*Fish*	*Chemical* Data Available (X)	Overall Assessment
Middle Coosa (0315-0106)						
240	DRYC-2	Excellent	Excellent	---	X	Excellent
240	SHLC-3	Excellent	Excellent	---	X	Excellent
250	CO01U2-55	Excellent	---	---	X	---
260	CHEC-6	Excellent	Excellent	Fair+	X	Fair+
260	CHEC-3	Excellent	Excellent	Fair/Good	X	Fair
260	CHE-1	Excellent	Excellent	Poor/Fair	X	Poor
300	WLFS-9	Excellent	Excellent	---	FP Only	Excellent
300	CO05U4-34	Poor	---	---	X	---
300	KYC-2*	Good	Good	Poor/Fair	X	Poor
310	KYC-1*	Good	Good	Poor	X	Poor
330	DRYT-9	Good	Excellent	---	FP Only	Excellent
330	TLDC-7	Good	Good	Fair/Good	X	Fair
330	TLDT-32	Excellent	Excellent	---	FP Only	Excellent
330	TCT-5	Excellent	Excellent	---	X	Excellent

+Cheaha Creek water levels were too low to collect an adequate fish population
BWC-2a, BWC-3a, BWC-3b collected downstream of point source
ALXC-21 collected downstream of point source
KYC-1, KYC-2 collected downstream of point source

Table 12b. List of the stream segments and reservoir acres within the Middle Coosa cataloging unit on ADEM's draft 2000 CWA §303(d) list along with sources and causes of impairment (ADEM 2001c). All segments and reservoir acres are included on the CWA §303(d) list with urban/industrial sources.

Waterbody	Sub- watershed	Miles impaired	Use	Support Status	Sources	Causes of Impairment
Middle Coosa (0315-0106)						
Little Wills Cr	050	5.5	F&W	Partial	Urban Runoff/Storm sewers	Nutrients
Black Cr	080	3.0	A & I	Non	Industrial Urban runoff/Storm sewers Contaminated sediments	Priority Organics Ammonia OE/DO
Choccolocco Cr	250	34.2	F&W	Non	Contaminated sediments	Priority Organics

Waterbody	Sub- watershed	Acres impaired	Use	Support Status	Sources	Causes of Impairment
Lake Logan Martin	---	15,263	S/F&W	Partial	Urban runoff/Storm sewers Flow reg./mod Contaminated sediments	Nutrients Organic enrichment/DO Priority Organics
Lake Neely Henry	---	11,235	PWS/ S/F&W	Partial	Industrial Municipal Flow reg./mod Upstream sources	Nutrients pH Organic enrichment/DO

Section III: Lower Coosa Cataloging Unit (0315-0107)

The Lower Coosa River Cataloging Unit contains 20 sub-watersheds located within Clay, Talladega, Shelby, Coosa, Chilton, Tallapoosa, Autauga, and Elmore Counties (Fig. 1). The entire cataloging unit drains approximately 1,963 square miles and is comprised of a diverse combination of soil areas, including the Limestone Valleys and Uplands, Appalachian plateau, Piedmont Plateau and the Coastal Plain. The cataloging unit is primarily located within the Ridge and Valley, Piedmont and Coastal Ecoregions (Fig. 2) (Griffith et al. 2001).

Land use

Based on the conservation assessment worksheets completed by the local SWCDs in 1998, the primary land uses throughout the Lower Coosa cataloging unit were forests and pasture. Approximately 10,000 acres of crop and pasture land (~1% of total land area) were estimated to have been treated with pesticides and/or herbicides. Two stream reaches and two reservoirs are on the 2000 draft Alabama CWA §303(d) list of impaired waters (Table 12c). All four are listed as having *partial support* status with urban or point sources (ADEM, 1999c, ADEM 2001c).

Percent land cover estimated by local SWCD (Table 5c, ASWCC 1998)

Forest	Row crop	Pasture	Mining	Urban	Open Water	Other
78%	3%	10%	1%	5%	2%	1%

NPS Impairment Potential

The primary nonpoint source concerns within the Lower Coosa cataloging unit were from sedimentation, mining and forestry practices. A total of six sub-watersheds had a *moderate* or *high* potential for impairment from nonpoint sources. Eight sub-watersheds had a *moderate* or *high* potential for impairment from urban or residential sources. Eight sub-watersheds had *low* potentials for impairment from both point and nonpoint sources.

Number of sub-watersheds with (M)oderate or (H)igh ratings for each NPS category (Table 5c).

Category	Overall Potential	Animal husbandry	Row crop	Pasture	Mining	Forestry	Sediment
Moderate	0	1	4	7	3	7	7
High	6	0	0	0	1	3	2

Number of sub-watersheds with (M)oderate or (H)igh ratings for each point source category (Table 5c).

Category	% Urban	Development	Septic tank failure
Moderate	7	11	2
High	1	1	0

Local SWCD animal unit concentration estimates by animal type (Table 3c, ASWCC 1998).

Category	NPS Potential	Total	Cattle	Dairy	Swine	Poultry-Broilers	Poultry-Layers
AU/Acre	Low	0.03	0.03	0.00	0.00	----	----

Local SWCD sedimentation rate estimates by source (Table 4c, ASWCC 1998).

NPS Potential	Total Tons/ Acre /yr.	Crop Land	Sand & Gravel Pits	Mined Land	Developing Urban Land	Critical Areas	Gullies	Stream Banks	Dirt Roads	Wood Land
Moderate	4.28	0.09	0.28	0.21	2.13	0.40	0.18	0.29	0.29	0.41

Nine sub-watersheds were listed as top-five priorities by the local SWCD in public meetings conducted during 1998 (010, 030, 050, 070, 100, 130, 140, 160, and 170). Animals commonly having access to streams, and erosion and sediment from roads/road banks and urban development, were indicated as the most common concerns within the sub-watersheds (ASWCC 1998).

Historical Data/Studies

A review of existing data indicated that bioassessments have been conducted recently within two of the 20 sub-watersheds in the cataloging unit (Table 8c and Appendix E). One location was monitored as part of the ADEM Ecoregional Reference Reach Project (Appendix F-3d). Two sites were assessed as part of the 1999 monitoring in support of CWA §303(d) listing and de-listing decisions (Appendix F-4e), and one site has been used to conduct annual field quality assurance/quality control and training for AAU aquatic macroinvertebrate assessments (Appendix E and Table 6c).

Historical water quality data are available from 11 of the 20 sub-watersheds in the Middle Coosa cataloging unit (Table 8c and Appendix E). In addition to the bioassessments sites (above) which also generally include water quality samples, two sites, one on Shirtee Creek, and one on Tallasehatchee Creek, are included in the Ambient Trend Monitoring Program (Appendix F-1). Five sites in five sub-watersheds were assessed by Auburn University as part of the 1999 University Reservoir Tributary Nutrient Study (Appendix F-5). Eight sites were visited and seven were assessed using water quality parameters as part of the ALAMAP program (Appendix F-6a and F-6b). Fourteen sites (one on the Coosa River) were assessed as part of the 1996 Clean Water Strategy (Appendix F-7). In addition, during 2000, FOD also conducted embayment monitoring of nine major tributaries to the Coosa River (Appendix F-10).

Assessments Conducted During This Project

Five of the 20 sub-watersheds in the Lower Coosa cataloging unit were targeted in this project because they had a *high* or *moderate* estimated potential for NPS impairment, *low* potential from urban or point sources, and relatively little recent assessment data (Table 10c). Of these, one sub-watershed was not assessed due to dry conditions (040), and one was not assessed due to the relatively small drainage area (020). Five sub-watersheds were added to the project for sampling of existing or candidate ecoregional reference stations (030, 070, 130, 140 and 150).

Data Summaries

Current and historical monitoring data were combined to provide a comprehensive assessment (Fig. 12c). A summary of the information available for each of the 20 sub-watersheds is provided. Each summary discusses land use, nonpoint source impairment potential, assessments conducted within the sub-watershed, and the nonpoint source priority rating based on available data. The summaries point our significant data and reference appropriate tables and appendices. Assessment of habitat, biological, and chemical conditions is based on long-term data from ADEM's Ecoregional Reference Reach Program. Tables referenced in the summaries are located at the end of the summary section. Appendices are located at the end of the report.

Sub-watershed Assessments

Habitat, chemical/physical, and biological indicators of water quality were evaluated in 10 sub-watersheds during this project (Table 11c). Habitat quality at 35 stations was assessed as *excellent* or *good*. Aquatic macroinvertebrate community assessments were evaluated from 23 stations. Results of these assessments indicated the macroinvertebrate community was in *excellent* condition at 10 stations (43%), *good* at six (26%), *fair* at six (26%), and *poor* at one (4%) station (Fig. 10c). Results of fish IBI assessments conducted at five of these sites indicated the fish community was in *good* condition at one (20%) station, and *fair/good* or *fair* condition at four (80%) stations (Fig. 11c). At three of the five stations where both macroinvertebrate and fish communities were assessed, results of the fish IBI assessments indicated a greater degree of impairment.

The overall condition for each station was rated as the lowest assessment result obtained (Table 11c). Fourteen (61%) stations were assessed as *excellent* (7) or *good* (7). Eight (35%) stations were assessed as *fair* and one (3%) was assessed as *poor*. Of the nine stations assessed as *fair* or *poor*, four were primarily impacted by urban runoff or point sources. The *poor* aquatic macroinvertebrate community assessment at the QFMC-1 site reflects the natural conditions found upstream of a beaver dam. The remaining four stations were located in three sub-watersheds.

NPS Priority Sub-watersheds

Figure 12c shows the location of the three sub-watersheds recommended as priority sub-watersheds (Fig. 12c). These included: Buxahatchee Cr (090), Weogufka (140), and Taylor Creek (200) sub-watersheds.

Sub-watersheds recommended for NPS priority status.

Sub-watershed Number	Sub-watershed Name	Lowest Station Assessment	Suspected Cause(s)	Suspected nonpoint source(s)
090	Buxahatchee Cr	Fair	Nutrient Enrichment	Septic Tanks
140	Weogufka Cr	Fair	Sedimentation	Forestry Practices
200	Taylor Cr	Fair	Fecal Coliform, Nutrient Enrichment Sedimentation	Pasture Runoff Developing Urban Land

Buxahatchee Creek (090): was identified as a priority sub-watershed due to impaired biological conditions in the Watson Creek portion of the sub-watershed. The habitat quality was assessed as *excellent* and the aquatic macroinvertebrate community was assessed as *good*. Water quality data included elevated nutrient concentrations, however many of these values were obtaining during apparently low or undetectable flow regimes. Very low stream flows may have also had an adverse impact on the fish community, which was assessed as *fair/good*. The SWCD estimates of mining land use and sediment loading indicated both to have a *moderate* potential for NPS impairment. Additional assessments should be conducted during normal rainfall years in order to re-evaluate its priority status. Assessments on the mainstem of Buxahatchee Creek were not considered due to the influence of a municipal point source.

Weogufka Creek (140): is an historical ecoregional reference station. The aquatic macroinvertebrate and fish communities, assessed at one location on Weogufka Creek, were in *good* and *fair* condition, respectively. Local SWCD estimates of forestry practices indicated a *moderate* potential for NPS impairment. Habitat quality was assessed as *good* with the sediment deposition category indicating some impairment. During the September site visit the dissolved oxygen concentration was 4.5 mg/L and the stream flow was estimated at 0.1 cfs. There was a partial beaver dam upstream of the sampling reach. Increased beaver activity in the watershed due to the drought conditions may have had an adverse impact on the fish community and the dissolved oxygen concentration.

Taylor Creek (200): The fish and aquatic macroinvertebrate communities were generally in *fair* condition at both Taylor Creek locations. The habitat at both locations was assessed as *excellent*, however the category indicating sedimentation was only 35% and 38% of the maximum score, indicating impairment. Water quality data did not indicate a cause of impairment. Local SWCD estimates of pasture indicated a *moderate* potential, and the estimates of sedimentation rates indicated a *high* potential, for NPS impairment.

Sub-Watershed Summaries

Sub-Watershed: Tallaseehatchee Creek
NRCS Sub-Watershed Number 010

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
EMHT-16	Macroinv., Habitat	2000	Emauhee Creek @ unnamed Talladega Co. Rd. nr Gascot	29	F&W
SHRT-1	Macroinv., Habitat, Chem.	2000	Shirtee Creek @ Talladega Co. Rd. 24	17	A&I
TLST-19	Macroinv., Fish, Habitat, Chem.	2000	Tallaseehatchee Creek @ unnamed Talladega Co. Rd. nr Emauhee	53	F&W
TLST-1	Macroinv., Habitat, Chem.	2000	Tallaseehatchee Creek @ Talladega Co. Rd. 139	88	F&W
TLST-2	Macroinv., Habitat, Chem.	2000	Tallaseehatchee Creek @ Talladega Co. Rd. 105	122	F&W
TLST-3	Chem.	2000	Tallaseehatchee Creek @ Talladega Co. Rd. 103	173	F&W
WWOT-37	Macroinv., Habitat	2000	Weewoka Creek @ Shelby Co. Rd. 61	35	F&W
WWOT-1	Chem.	2000	Weewoka Creek @ Talladega Co. Rd. 175	42	F&W

EPA percent land cover of the Tallaseehatchee Creek sub-watershed was estimated as 33% deciduous forest, 17% evergreen forest, 27% mixed forest, 10% pasture/hay, 7% row crop and 3% urban (Table 1c). Estimates by the local SWCDs (Table 2c) were higher for urban land use (13%). Seven current construction/stormwater authorizations, two non-coal mining/stormwater authorizations, four mining NPDES permits, five municipal NPDES permits, one semi public/private NPDES permit, and one industrial NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.03 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *low* potential for NPS impairment (2.8 tons/acre/yr.). The local SWCD estimates of mining land use and forestry activities indicated *high* potentials for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *high*. Tallaseehatchee Creek was also given a 2nd priority sub-watershed rating by the Talladega County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Tallaseehatchee Creek sub-watershed drains approximately 200 mi^2 in Clay and Talladega Counties. Twelve sites on four streams have been recently assessed (Appendix E). One site on Tallaseehatchee Creek was assessed during 1999 as part of the University Reservoir Tributary Nutrient Study and a site in the Tallaseehatchee Creek embayment was assessed as part of the ADEM Reservoir Tributary Monitoring effort (Appendix F-10). Three stations have been assessed as part of the Department's ambient monitoring program (Appendix F-1), one on Shirtee Creek and a station on Tallaseehatchee Creek (TH-1a) that was moved due to bridge decay (to TH-1). Eight stations on four streams were assessed during 2000 as part of this project, and the ADEM CWA §303(d) sampling effort in support of listing and de-listing decisions.

Emauhee Creek

Emauhee Creek, at the EMHT-16 sampling reach, drains about 29 mi^2 of the watershed. The channel had a partly-shaded/partly-open canopy and was dominated by sand (~50%), gravel (~20%), and bedrock (~13%) substrates (Table 6c). Habitat quality was assessed as *good* using the riffle/run assessment matrix (Table 6c). Bank/vegetative stability was the main category of slight impairment to the habitat quality. The instream bioassessment conducted during May, 2000 indicated that the aquatic macroinvertebrate community was in *good* condition with nine EPT families collected (Table 7c and Fig. 10c). Field parameters collected during the bioassessment did not indicate impairment. Stream flow was estimated at 0.4 cfs during the May site visit (Appendix D-1).

Shirtee Creek

Shirtee Creek at station SHRT-1 (SHIRTEE03), was a riffle/run dominated stream with a shaded canopy. The stream channel was composed of mixed substrates (sand (~40%), gravel (~16%), cobble (~15%) and silt (~15%)) (Appendix F-4d). Stream width in May was approximately 30 feet and habitat quality was assessed as *excellent* (Appendix F-4d). An instream bioassessment was conducted in May, 2000. Five EPT families were collected indicating that the aquatic macroinvertebrate community was in *fair* condition (Appendix F-4e and Fig. 10c). Water quality data were collected eight times from May 2000 to March 2001 in support of the CWA §303(d) sampling project (Appendices D-1, F-4b). SHRT-1 is downstream of the Avondale Mills wastewater treatment facility and the J. Earl Ham wastewater treatment facility for Sylacauga, Alabama. Most nutrient parameter concentration data were elevated including: nitrate/nitrite-nitrogen (range 0.301-3.63 mg/L), TKN (range 1.03–2.64 mg/L), and total phosphorus (range 1.66 - 15.4 mg/L). The conductivity field parameter measurements were also elevated, ranging from 647 μmhos @25 C (during a rain event), to 2260 μmhos @25 C collected during October 2000 when the lowest flow was measured.

Tallaseehatchee Creek

Tallaseehatchee Creek, at the TLST-19 sampling reach, had a shaded canopy and was dominated by bedrock (~60%) substrates (Table 6c). Habitat quality was assessed as *excellent* in May using the riffle/run assessment matrix (Table 6c). Instream macroinvertebrate and fish community bioassessments were also conducted in May and July, respectively. Ten EPT families were collected indicating that the aquatic macroinvertebrate community was in *excellent* condition and an IBI score of 52 evaluated the fish community as *good* (Table 7c; Figs. 10c and 11c). Stream flow was estimated at 7.5 cfs in May and 1.3 cfs during the September water quality sampling site visit (Appendix D-1). Water quality data (Appendix D-1) indicated that the total phosphorus and total organic carbon concentrations were slightly elevated (0.18 and 4.12 mg/L, respectively).

Station TLST-1 on Tallaseehatchee Creek, was a glide/pool dominated stream with *good* habitat quality. The channel had a mostly-open canopy with sand (~60%), gravel (~13%), detritus (~15%), and silt (~10%) substrates (Table 6c). Ten EPT families were collected during the May instream bioassessment indicating that the aquatic macroinvertebrate community was in *excellent* condition (Table 7c and Fig. 10c). Water quality data were collected eight times from May 2000 to March 2001 in support of the CWA §303(d) sampling project (Appendices D-1, F-4b). Water samples indicated slightly elevated TKN concentrations (0.400 and 0.344 mg/L) in August and November, respectively. The ammonia-nitrogen concentration was also elevated (0.280 mg/L) during the November sampling event. However, stream flows were at or near zero during both the August and November sampling events.

Tallaseehatchee Creek, at the TLST-2 sampling reach (downstream station), had a partly-open/partly-shaded canopy over the approximately 30-foot wide channel dominated by sand (~50%) and gravel (~28%) substrates (Appendix F-4d). Habitat quality in May 2000 was assessed by ADEM as *excellent* using the riffle/run assessment matrix (Table 6c). Ten EPT families were collected during the instream bioassessment indicating that the aquatic macroinvertebrate community was in *good* condition (Appendix F-4e). Stream flow estimates ranged from 7.8 to 43 cfs during six-of-eight sampling events. Flows were not measured in March 2001 due to high water or in October 2000 because of a beaver dam (Appendix F-4b). Water quality data (Appendix F-4b) indicated elevated nitrate/nitrite-nitrogen (range 0.382 - 2.5 mg/L), total phosphorus (range 0.3 – 7.62 mg/L) and TKN (range 0.31 - 2.01) concentrations during the sampling events. Conductivity measurements were also elevated, ranging from 174 during the March high flow, to 1727 μmhos @ 25C during the October sampling event.

Water quality data were collected at station TLST-3 on Tallaseehatchee Creek from May 2000 to March 2001 as part of ADEM water quality assessments in support of CWA §303(d) listing and de-listing decisions (Appendix F-4b). Nutrient parameters, including, TKN, nitrate/nitrite-nitrogen and total phosphorus were elevated during multiple sampling events. Conductivity measurements were also well above background reference stream levels.

<u>Weewoka Creek</u>

Weewoka Creek, at the WWOT-37 sampling reach, had a partly-shaded/partly-open canopy over a ~25-foot wide channel. Bottom substrates were composed of cobble (~35%), gravel (~20%), sand (~20%) and boulder (~15%) (Table 6c). Habitat quality in June was assessed as *excellent* using the riffle/run assessment matrix (Table 6c). Twelve EPT families were collected during the instream bioassessment indicating that the aquatic macroinvertebrate community was in *excellent* condition (Table 7c and Fig. 10c). Stream flow was estimated at 8.6 cfs and turbidity was measured at 121 NTU at the time of the bioassessment (Appendix D-1). The cause of the elevated turbidity measurement was not determined.

Weewoka Creek at station WWOT-1 was monitored as part of the ADEM water quality assessments in support of CWA §303(d) listing and de-listing decisions (Appendix F-4b). Water quality data were collected from May 2000 to March 2001. Nutrient concentrations including TKN and nitrate/nitrite-nitrogen were elevated during several sampling events. Conductivity measurements were also well above background reference stream levels.

Sub-Watershed: Walthall Branch
NRCS Sub-Watershed Number 020

EPA percent land cover of the Walthall Branch sub-watershed was estimated as 10% deciduous forest, 18% evergreen forest, 20% mixed forest, 20% pasture/hay, 17% row crops, and 6% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were slightly higher for pastureland (30%). One current construction/stormwater authorization has been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *moderate* (0.14 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *moderate* potential for NPS impairment (10.2 tons/acre/yr.). The local SWCD estimates of row crop and pasture land uses indicated *moderate* potentials for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *high.*

The Walthall Branch sub-watershed drains approximately 13 mi^2 in Shelby County. No historical data were available and no assessments were conducted during this project.

Sub-Watershed: Yellowleaf Creek
NRCS Sub-Watershed Number 030

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
FRMS-9 (ref.)	Macroinv., Habitat	2000	Fourmile Creek @ Shelby Co. Rd. 61	13	F&W
YLFS-1	Habitat, Chem.	2000	North Fork of Yellowleaf Creek @ Shelby Co. Rd. 89	44	F&W
YLFS-2	Habitat, Chem.	2000	South Fork of Yellowleaf Creek @ Shelby Co. Rd. 49	42	F&W
YLFS-3	Macroinv., Habitat, Chem.	2000	Yellowleaf Creek @ Shelby Co. Rd. 59	100	S/F&W
YLFS-4	Macroinv., Habitat, Chem.	2000	Yellowleaf Creek @ Gulf States Property	~142	S/F&W

EPA percent land cover of the Yellow Leaf Creek sub-watershed was estimated as 34% transitional forest, 21% deciduous forest, 29% evergreen forest, 7% mixed forest, 4% pasture/hay (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were somewhat higher for pastureland (16%), urban (6%), and row crops (4%). Twenty-seven (27) current construction/stormwater authorizations, two non-coal mining/stormwater authorizations, one semi public/private NPDES permit, and one industrial NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.02 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *moderate* potential for NPS impairment (5.9 tons/acre/yr.). The local SWCD estimate of pasture land use indicated *moderate* a potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*. Yellowleaf Creek was given a 4th priority sub-watershed rating by the local SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Yellow Leaf Creek sub-watershed drains approximately 185 mi^2 in Shelby County. Seven sites were assessed during 2000; one site on Yellowleaf Creek was assessed during the ALAMAP sampling in August (Appendix F-6a), and four additional sites were assessed as part of the ADEM water quality assessments in support of CWA §303(d) listing and de-listing decisions (Appendix F-4b). Water quality data were collected from April 2000 to February 2001. A station was also assessed in the Yellowleaf Creek embayment as part of the 2000 ADEM Reservoir Tributary Monitoring effort (Appendix F-10). One candidate ecoregional reference site on Fourmile Creek was assessed in May 2000 (Appendix F-3a - F-3d).

<u>Fourmile Creek</u>

Fourmile Creek, at the FRMS-9 sampling reach had *excellent* habitat quality (Table 6c). The channel was dominated by bedrock (~40%) with lesser amounts of gravel (~20%), detritus (~15%), and cobble (~10%) substrates (Table 6c and Appendix F-3c). Twelve EPT families were collected during the June bioassessment indicating that the aquatic macroinvertebrate community was in *excellent* condition (Table 7c, Fig. 10c, and Appendix F-3d). The canopy shaded the ~25 ft. stream channel containing approximately 0.3-foot riffle depths. Stream flow was estimated at 0.8 cfs during the bioassessment and was intermittent pools-only during the September site visit (Appendix F-3a).

<u>North Fork of Yellowleaf Creek</u>

The North Fork of Yellowleaf Creek at YLFS-1 was mostly-shaded and dominated by sand (70%) substrates (Appendix F-4d). Habitat quality was assessed as *excellent* using the glide/pool assessment matrix. Instream habitat quality, bank stability, and sinuosity were the general areas of slight impairment to the habitat quality (Appendix F-4d). Dissolved oxygen concentrations were below the 5.0 mg/L standard for *Fish & Wildlife* classified streams during site visits in July, September, and October 2000 (Appendix F-4b). Nitrate/Nitrite-nitrogen (2.719 mg/L in October) and TKN concentrations (0.728, 0.552, and 0.791 mg/L in August, October and April '01, respectively) were also moderately elevated. No biological assessments were conducted during 2000.

<u>South Fork of Yellowleaf Creek</u>

ADEM also conducted water quality assessments on the South Fork of Yellowleaf Creek during 2000 - 2001. The mostly-shaded reach of YLFS-2 was approximately 20 feet wide and dominated by sand (~45%) and detritus (~35%) substrates (Appendix F-4d). Habitat quality was assessed as *excellent* using the glide/pool assessment matrix (Appendix F-4d). Low dissolved oxygen concentrations (range 2.0 - 4.7 mg/L) were measured during site visits conducted in April through October (Appendix F-4b). Water samples collected during these site visits had elevated concentrations of total Kjeldahl nitrogen. Field notes taken during the October site visit indicated that the stream consisted only of intermittent pools.

Yellowleaf Creek

Yellowleaf Creek was also assessed by ADEM in May 2000 as having a *good* aquatic macroinvertebrate community (9 EPT families) using a multi-habitat EPT assessment (Appendix F-4e). Yellowleaf Creek, at the YLFS-3 sampling reach, had a mostly-open canopy over the ~50-foot wide channel composed of clay (~23%), cobble (~30%), sand (~20%), gravel (~10%), and bedrock (~10%) substrates (Appendix F-4d). Habitat quality in May was assessed by as *excellent* using the glide/pool assessment matrix (Appendix F-4d). Stream flows were not detected during the July, September, and October site visits (Appendix F-4b). The elevated nutrient (TKN, total phosphorus) and low dissolved oxygen concentrations measured during these events are consistent with low or non-flowing conditions.

Yellowleaf Creek, at the YLFS-4 sampling reach, had a mostly-open canopy over the ~22-foot wide channel characterized by gravel (~30%), bedrock (~30%) and cobble (~25%) substrates (Appendix F-4d). Habitat quality in May 2000 was assessed by ADEM as *excellent* using the riffle/run assessment matrix (Appendix F-4d). Water quality data (Appendix F-4b) indicated elevated concentrations of nitrate/nitrite-nitrogen (2.476 mg/L) during the October site visit and TKN (0.708 mg/L) during the March site visit. The elevated fecal coliform count (1,460 col/100 mL) during the April 2001 sampling event is likely attributable to the high flow conditions at the time of sample collection.

Sub-Watershed: Kahatchee Creek
NRCS Sub-Watershed Number 040

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
KHTT-1 (Prop. ref.)	NONE	2000	Kahatchee Creek North of Mt. Sharon in Talladega Co.	4	F&W

EPA percent land cover of the Kahatchee Creek sub-watershed was estimated as 25% deciduous forest, 12% evergreen forest, 6% mixed forest, 3% row crop, and 3% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were higher for urban land use (15%), and pasture (15%). Three current construction/stormwater authorizations and one municipal NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.03 AU/Acre), with cattle and catfish being the dominant types. Sedimentation estimates (Table 4c, Fig. 4) indicated a *moderate* potential for NPS impairment (12.2 tons/acre/yr.). The local SWCD estimate of forestry activities indicated a *high* potential, and mining and pasture land uses indicated *moderate* potentials, for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *high*.

The Kahatchee Creek sub-watershed drains approximately 25 mi^2 in Talladega County. Two sites on the Coosa River near Childersburg (Appendix E) have been assessed, an historical ambient monitoring station and a station included in the 1996 ADEM Clean Water Strategy (Appendix F-7). One proposed ecoregional reference site was selected for assessment on Kahatchee Creek (Appendix E). At the time of the May 2000 site visit, the stream channel contained only standing pools. No samples were collected from the site.

Sub-Watershed: Beeswax Creek
NRCS Sub-Watershed Number 050

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
BWXS-8	Macroinv., Habitat	2000	Beeswax Creek @ Shelby Co. Rd. 61	17	F&W
LBWS-9	Macroinv., Habitat	2000	Little Beeswax Creek @ Shelby Co. Rd. 28	9	F&W

EPA percent land cover of the Beeswax Creek sub-watershed was estimated as 20% deciduous forest, 18% evergreen forest, 27% mixed forest, 18% pasture/hay, 6% row crop, and 7% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were higher for urban (8%). Four current construction/stormwater authorizations, one non-coal mining/stormwater authorization, one municipal NPDES permit, and one semi-public/private NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.05 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *high* potential for NPS impairment (20.3 tons/acre/yr.). The local SWCD estimate of pasture land use indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *high*. Beeswax Creek was also given a 2nd priority sub-watershed rating by the local SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Beeswax Creek sub-watershed drains approximately 57 mi^2 in Shelby County. Recent water quality data from four sites within the sub-watershed were available. Two sites, one on an unnamed tributary to Dry creek and one on Beeswax Creek, have been assessed as part of the ADEM Clean Water Strategy and ALAMAP sampling programs, respectively (Appendix E). Two sites were included in the project, one each on Beeswax and Little Beeswax Creeks.

<u>Beeswax Creek</u>

Beeswax Creek, at the BWXS-8 sampling reach, had a partly-open, partly-shaded canopy. The stream channel was composed of cobble (~31%), gravel (~31%), bedrock (~20%), and sand (~10%) substrates (Table 6c). Habitat quality in May was assessed as *excellent* using the riffle/run assessment matrix (Table 6c). Nine EPT families were collected during the instream bioassessment indicating that the aquatic macroinvertebrate community was in *good* condition (Table 7c and Fig. 10c). Stream flow was estimated at 1.1 cfs, and field parameters measured did not indicate impairment during the May site visit (Appendix D-1).

<u>Little Beeswax Creek</u>

The LBWS-9 sampling reach, had a shaded canopy and was dominated by gravel (~50%), sand (~23%), and clay (~20%) substrates (Table 6c). Habitat quality was assessed as *excellent* in May using the riffle/run assessment matrix. Twelve EPT families were collected during the instream bioassessment indicating that the aquatic macroinvertebrate community was in *excellent* condition (Table 7c and Fig. 10c). Field parameters measured at the time of the bioassessment (Appendix D-1) did not indicate impairment. Stream flow was estimated at 0.9 cfs.

Sub-Watershed: Cedar Creek
NRCS Sub-Watershed Number 060

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
CDRT-22	Habitat, Macroinv.	2000	Cedar Creek adjacent to unnamed Talladega Co. Rd.	32	F&W

EPA percent land cover of the Cedar Creek sub-watershed was estimated as 1% transitional forest, 23% deciduous forest, 20% evergreen forest, 25% mixed forest, 15% pasture/hay, 6% row crop, and 6% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were somewhat higher for pasture land (25%). Two current construction/stormwater authorizations and two mining NPDES permits have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.03 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *moderate* potential for NPS impairment (4.8 tons/acre/yr.). The local SWCD estimate of forestry activities indicated a *high* potential, and pasture land use indicated a *moderate* potential, for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *high*.

The Cedar Creek sub-watershed drains approximately 65 mi^2 in Talladega County. No historical assessments were available from this sub-watershed. One site on Cedar Creek was assessed as part of this project (Table 10c and Appendix E).

<u>Cedar Creek</u>

Cedar Creek, at the CDRT-22 sampling reach, had a mostly-shaded canopy over a ~20-foot wide channel of bedrock (~20%), cobble (~20%), and gravel (~20%), boulder (~10%), silt (~10%), and clay (~10%) substrates (Table 6c). Habitat quality in May was assessed as *good* using the riffle/run assessment matrix (Table 6c). An instream bioassessment was also conducted in May indicating that the stream reach supported an *excellent* aquatic macroinvertebrate community with ten EPT families collected (Table 7c and Fig. 10c). The stream flow estimate (Appendix D-1) during the bioassessment was 9.3 cfs. Field parameter data collected at the time of the assessment did not indicate impairment (Appendix D-1).

Sub-Watershed: Peckerwood Creek
NRCS Sub-Watershed Number 070

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
PNTC-11 (ref)	Habitat, Macroinv., Chem.	2000	Panther Creek @ unnamed Coosa Co. Rd. nr Marble Valley	12	F&W

EPA percent land cover of the Peckerwood Creek sub-watershed was estimated as 35% deciduous forest, 24% evergreen forest, 29% mixed forest, 3% pasture/hay, 1% row crop, and 5% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were essentially the same. Two current construction/stormwater authorizations have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.01 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *low* potential for NPS impairment (1.8 tons/acre/yr.). The local SWCD estimates of forestry activities indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*. Peckerwood Creek was given a 2nd priority sub-watershed rating by the Coosa County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Peckerwood Creek sub-watershed drains approximately 83 mi^2 in Coosa and Talladega Counties. Three sites have been assessed in this sub-watershed. A site on Peckerwood Creek was sampled during the 1997 ALAMAP project, a Peckerwood Creek embayment location was assessed as part of the 2000 ADEM Reservoir Tributary Monitoring effort, and a proposed ecoregional reference site was sampled on Panther Creek during 2000 (Appendix E).

<u>Panther Creek</u>

Panther Creek was assessed by ADEM in 2000 as a candidate ecoregional reference site. The PNTC-11 sampling reach had a partly-open/partly-shaded canopy over the 15-foot wide channel with gravel (~45%), sand (~30%), and cobble (~10%), substrates (Table 6c and Appendix F-3c). Habitat quality was assessed as *good* using the riffle/run assessment matrix (Table 6c and Appendix F-3c). Fifteen EPT families were collected during the instream bioassessment indicating that the aquatic macroinvertebrate community was in *excellent* condition (Table 7c, Fig. 10c, and Appendix F-3d). Stream flows were estimated at 6.1 and 0.3 cfs during the May and September site visits, respectively. Field parameter data did not indicate impairment, however, fecal coliform counts were elevated (2,900 col/100 mL) during the September sampling event (Appendix F-3a). No indications of possible source (s) were noted.

Sub-Watershed: Spring Creek
NRCS Sub-Watershed Number 080

EPA percent land cover of the Spring Creek sub-watershed was estimated as 22% deciduous forest, 24% evergreen forest, 29% mixed forest, 3% pasture/hay, 2% row crop, and 15% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were higher for pasture (19%), and urban (15%) land uses. One current construction/stormwater authorization has been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.05 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *moderate* potential for NPS impairment (13.9 tons/acre/yr.). The local SWCD estimate of pasture land use indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*.

The Spring Creek sub-watershed drains approximately 23 mi^2 in Shelby County. No historical data were available from this sub-watershed and no assessments were conducted during this project.

Sub-Watershed: Buxahatchee Creek
NRCS Sub-Watershed Number 090

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
WTNS-1	Habitat, Macroinv., Fish, Chem.	2000	Watson Creek us of Shelby Co. Rd. 161 and Buxahatchee Creek	35	F&W
BXHS-1	Chem.	2000	Buxahatchee Creek at U.S. Hwy 31 (us of Calera WWTP)	4	F&W
BXHS-2	Habitat, Chem.	2000	Buxahatchee Creek (us of Calera WWTP)	4	F&W
BXHS-3	Habitat, Chem.	2000	Buxahatchee Creek us of I-65 southbound (ds of Calera WWTP)	10	F&W
BXHS-4	Habitat, Macroinv., Chem.	2000	Buxahatchee Creek us of Shelby Co. Rd. 161 and Watson Creek	23	F&W

EPA percent land cover of the Buxahatchee Creek sub-watershed was estimated as 3% transitional forest, 22% deciduous forest, 31% evergreen forest, 32% mixed forest, 6% pasture/hay, and 4% row crop (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were similar. Seven current construction/stormwater authorizations, one municipal, and one mining NPDES permits have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.03 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *moderate* potential for NPS impairment (8.0 tons/acre/yr.). The local SWCD estimate of mining land use indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*.

The Buxahatchee Creek sub-watershed drains approximately 70 mi^2 in Chilton and Shelby Counties. A 13 mile segment of Buxahatchee Creek is included on the draft 2000 CWA §303(d) list of impaired waters of Alabama with partial support status due to nutrients from municipal and urban runoff/storm sewer sources (Table 12c). Five stream reaches were assessed during 2000, four were located on Buxahatchee Creek and one on Watson Creek (Appendix E). Two of the sites on Buxahatchee Creek were also assessed during the ADEM 1996 Clean Water Strategy sampling (Appendix E). These assessments were part of the ADEM CWA §303(d) water quality assessments supporting listing and de-listing decisions. The site on Watson Creek was also assessed as part of this project (Table 10c). Field notes taken during the September and October site visits indicated that the Calera wastewater treatment facility which discharges to Buxahatchee Creek between stations BXHS-2 and BXHS-3 was experiencing treatment failures. Nutrient concentrations and fecal coliform counts from samples taken from Stations BXHS-3 and BXHS-4 during those visits reflect the noted treatment failure.

<u>Watson Creek</u>

Watson Creek is a tributary to Buxahatchee Creek entering just downstream of the BXHS-4 CWA §303(d) station. The WTNS-1 sampling reach, upstream of the confluence, had a mostly-open canopy and was dominated by bedrock (~60%) with lesser amounts of boulder (~10%), and cobble (~7%) substrates (Table 6c). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix. Bioassessments of aquatic macroinvertebrates (May) and fish (July) indicated that the communities were in *good* and *fair/good* condition, respectively (Table 7c; Figs. 10c and 11c). Water quality data collected April 2000 to March 2001 included elevated nutrient data, however many of these values were obtained during apparently low or undetectable flow regimes (Appendix F-4b).

Buxahatchee Creek

Two sites were assessed upstream of the Calera WWTP (Appendix E). Buxahatchee Creek, at the BXHS-1 sampling site, was non-flowing for the majority of the site visits conducted during 2000. The next downstream site (BXHS-2) had a mostly-open canopy over a streambed with sand (~30%), gravel (~30%), and cobble (~25%) substrates (Appendix F-4d). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix. Instream habitat quality was the only habitat category that indicated slight impairment (Appendix F-4d). No instream biological assessments were conducted. Water quality samples were collected from April 2000 to April 2001 (Appendix F-4b). Data at BXHS-2 indicated elevated nutrient concentrations (TKN range: 0.333 to 1.622 mg/L) and fecal coliform counts (range 26 to >1200 col/100 mL) during several sampling events.

Buxahatchee Creek, at BXHS-3, was also assessed as having *excellent* habitat quality, however the substrate was dominated by cobble (~25%), detritus (~20%), and clay (~20%), with lesser amounts of sand (~10%), and gravel (~10%) (Appendix F-4d). Water quality data collected over the same time frame as BXHS-2 indicated highly elevated nutrient concentrations (total phosphorus range: 0.158 to 6.199 mg/L; NH3-N range: <0.015 to 20.207 mg/L) and fecal coliform counts (35 to TNTC col/100 mL) (Appendix F-4b).

Buxahatchee Creek, at the BXHS-4 sampling reach, had a mostly-open canopy and was dominated by bedrock (~50%) with lesser amounts of sand (~15%), grave (~10%), and boulder (~10%) substrates (Appendix F-4d). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix. The bank and vegetative stability category indicated only slight impairment (Appendix F-4d). Nine EPT families were collected during the May 2000 aquatic macroinvertebrate assessment indicating *good* community quality (Appendix F-4e). Stream flow was estimated at 1.8 cfs during the bioassessment (Appendix F-4b). Water quality data were collected from this location from April 2000 to April 2001 (Appendix F-4b and F-4c). Nutrient concentrations were generally elevated as compared to upstream (BXHS-1 and BXHS-2) and ecoregional reference conditions.

Recommended Priority Sub-Watershed

Buxahatchee Creek was identified as a NPS priority sub-watershed due to biological conditions possibly related to nutrient enrichment within the Watson Creek portion of the sub-watershed (Fig. 12c).

Sub-Watershed: Waxahatchee Creek
NRCS Sub-Watershed Number 100

EPA percent land cover of the Waxahatchee Creek sub-watershed was estimated as 2% transitional forest, 26% deciduous forest, 27 evergreen forest, 34% mixed forest, 5% pasture/hay, 2% row crop, and 2% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were essentially the same. Eleven current construction/stormwater authorizations, one non-coal mining/stormwater authorization, one mining and one municipal NPDES permits have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.03 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *moderate* potential for NPS impairment (6.0 tons/acre/yr.). The local SWCD estimate of mining land use indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*. Waxahatchee Creek was given a 1st priority sub-watershed rating by the Shelby County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Waxahatchee Creek sub-watershed drains approximately 137 mi^2 in Chilton and Shelby Counties. Three sites have been assessed in this sub-watershed (Appendix E), one on Mud Creek as part of the 1999 ALAMAP sampling effort (Appendix F-6) one site was assessed in the embayment of Waxahatchee Creek as part of the ADEM Reservoir Tributary Monitoring effort (Appendix F-10), and one site was included in the 1999 University Reservoir Tributary Nutrient Study (Appendix F-5). No additional assessments were included in this project.

Sub-Watershed: Upper Hatchet Creek
NRCS Sub-Watershed Number 110

EPA percent land cover of the Upper Hatchet Creek sub-watershed was estimated as 52% deciduous forest, 13% evergreen forest, 26% mixed forest, 4% pasture/hay, 2% row crop (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were essentially the same. Three current construction/stormwater authorizations, one non-coal mining/stormwater authorization, and one semi public/private NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.01AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *low* potential for NPS impairment (1.7 tons/acre/yr.). The local SWCD estimate of forestry activities indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*.

The Upper Hatchet Creek sub-watershed drains approximately 154 mi^2 in Coosa, Clay, Talladega, and Tallapoosa Counties, Alabama. Data from seven sites on four streams are included in this report (Appendix E). Two sites from Hatchet Creek were assessed during the ADEM 1996 Clean Water Strategy Sampling (Appendix F-7). One site was visited on an unnamed tributary to Hatchet Creek during the 1997 ALAMAP sampling effort (Appendix F-6). One site was assessed on each of the East and West Forks of Hatchet Creek during GSA's 1997 assessment of the Hatchet Creek Drainage (Appendix

F-11a and 11b; GSA 1997). Two additional sites on Hatchet Creek were also assessed. No assessments were conducted during this project.

Sub-Watershed: Socapatoy Creek
NRCS Sub-Watershed Number 120

EPA percent land cover of the Socapatoy Creek sub-watershed was estimated as 40% deciduous forest, 20% evergreen forest, 32% mixed forest, 3% pasture/hay, and 2% row crop (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were similar. Three current construction/stormwater authorizations, one non-coal mining/stormwater authorization, and one municipal NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.01 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *low* potential for NPS impairment (1.0 tons/acre/yr.). The local SWCD estimate of forestry activities indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*.

The Socapatoy Creek sub-watershed drains approximately 76 mi^2 in Coosa County. Data from two sites on Socapatoy Creek (Appendix E) collected during the ADEM 1996 Clean Water Strategy Sampling are included in Appendix F-7. One of these sites was also assessed by GSA during the 1997 assessment of the Hatchet Creek drainage (Appendix F-11a and 11b; GSA 1997). No assessments were conducted during this project.

Sub-Watershed: Middle Hatchet Creek
NRCS Sub-Watershed Number 130

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
JNSC-16 (ref.)	Habitat, Macroinv., Chem.	2000	Jones Creek @ Coosa Co. Rd. 18	6	F&W

EPA percent land cover of the Middle Hatchet Creek sub-watershed was estimated as 42% deciduous forest, 20% evergreen forest, 30% mixed forest, 3% pasture/hay, and 1% row crop (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were similar. Four current construction/stormwater authorizations, one mining NPDES permit, and one municipal NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.01 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) also indicated a *low* potential for NPS impairment (1.5 tons/acre/yr.). The local SWCD estimate of forestry activities indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*. Middle Hatchet Creek was given a 3rd priority sub-watershed rating by the local SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Middle Hatchet Creek sub-watershed drains approximately 132 mi^2 in Coosa County (Appendix E). Historical data were available from seven sites in the subwatershed. Two sites on Hatchet Creek were assessed during the ADEM 1996 Clean Water Strategy sampling (Appendix F-7), and one on Hatchet Creek was included in the 1999 University Reservoir Tributary Nutrient Study. Three additional sites on Hatchet Creek and one on

Swamp Creek were assessed by GSA as part of an assessment of the Hatchet Creek drainage. A proposed ecoregional reference site on Jones Creek was assessed as part of this project.

Jones Creek

Jones Creek, at the JNSC-16 sampling reach, had a shaded canopy over the ~11-foot wide stream channel dominated by cobble (~35%), sand (~30%) and boulder (~21%) substrates (Table 6c and Appendix F-3c). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix (Table 6c and Appendix F-3c). Twenty-one (21) EPT families were collected during the instream bioassessment indicating an *excellent* aquatic macroinvertebrate community (Table 7c, Fig. 10c, and Appendix F-3d). Water quality data collected during September 2000 (Appendices F-3a) indicated that there may be slight nutrient enrichment (NO3+NO2-N = 0.302 mg/L), however the elevated turbidity measurement (86.9 NTU) and fecal coliform counts (910 col/100 mL) may indicate a recent rain event.

Sub-Watershed: Weogufka Creek
NRCS Sub-Watershed Number 140

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
WGFC-1	Habitat, Macroinv., Chem.	1993, 1995, 1997-98, 2000	Weogufka Creek @ Coosa Co. Rd. 41	13	S/F&W

EPA percent land cover of the Weogufka Creek sub-watershed was estimated as 40% deciduous forest, 19% evergreen forest, 29% mixed forest, 7% pasture/hay, 3% row crop, and 1% wetland (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were similar. Three current construction/stormwater authorizations and one semi-public/private NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.03 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *low* potential for NPS impairment (1.1 tons/acre/yr.). The local SWCD estimate of forestry activities indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*. Weogufka Creek was given a 1st priority sub-watershed rating by the Coosa County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Weogufka Creek sub-watershed drains approximately 129 mi^2 in Coosa, Clay, and Talladega Counties. Historical data were available from six reaches on three streams in this sub-watershed (Appendix E). Two sites on Finikochika Creek and two sites on Weogufka Creek where assessed as part of the ADEM 1996 Clean Water Strategy. One location on Stewart Branch was assessed during the 1999 ALAMAP project. Data were collected during the 1999 University Reservoir Tributary Nutrient Study at one of the 1996 CWS stations (CO-23). Weogufka Creek, near Stewartville, is an historical ecoregional reference site.

<u>Weogufka Creek</u>

Weogufka Creek, at the WGFC-1 reference sampling reach, had a shaded canopy over the ~12-foot wide stream channel. The substrate was composed of gravel (~49%), sand (~35%), and detritus (~9%) (Table 6c and Appendix F-3c). Habitat quality was assessed as *good* using the riffle/run assessment matrix (Table 6c and Appendix F-3c). However, the sediment deposition category was only 59% of the maximum score indicating possible sedimentation impairment. Fifteen EPT families were collected indicating an *excellent* aquatic macroinvertebrate community. The fish community was assessed as *fair* using an IBI assessment conducted in June 1999 (Table 7c; Figs. 10c and 11c, and Appendix F-3d). Water quality data collected from 1993-2000 (Appendix F-3a) does not indicate impairment. The dissolved oxygen concentration measured during September 2000 was 4.5 mg/L, below the 5.0 mg/L water quality standard for Fish & Wildlife classified streams. The stream at the time of collection was flowing at an estimated 0.1 cfs and there was a partial beaver dam upstream of the sampling site. Both of these factors may have contributed to the low dissolved oxygen concentration.

Sub-Watershed: Lower Hatchet Creek
NRCS Sub-Watershed Number 150

EPA percent land cover of the Lower Hatchet Creek sub-watershed was estimated as 10% transitional forest, 28% deciduous forest, 26% evergreen forest, 25% mixed forest, 1% pasture/hay, and 9% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were similar. One current construction/stormwater authorizations has been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.00 AU/Acre). Sedimentation estimates (Table 4c, Fig. 4) also indicated a *low* potential for NPS impairment (1.6 tons/acre/yr.). The local SWCD estimate of forestry activities indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*.

The Lower Hatchet Creek sub-watershed drains approximately 61 mi^2 in Coosa County. One embayment location for Hatchet Creek was assessed as part of the ADEM Reservoir Tributary Monitoring effort (Appendix E). No assessments were conducted during this project.

Sub-Watershed: Walnut Creek
NRCS Sub-Watershed Number 160

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
WNTC-1	Habitat, Macroinv., Chem.	2000	Walnut Creek @ Chilton Co. Rd. 89	30	F&W
WNTC-2	Habitat, Macroinv., Chem.	2000	Walnut Creek @ Chilton Co. Rd. 455	34	F&W
WNTC-3	Habitat, Macroinv., Chem.	2000	Walnut Creek @ Mount Springs Rd. in Chilton Co.	36	F&W
WNTC-4	Habitat, Chem.	2000	Walnut Creek @ Chilton Co. Rd. 32	42	F&W

EPA percent land cover of the Walnut Creek sub-watershed was estimated as 1% transitional forest, 29% deciduous forest, 15% evergreen forest, 28% mixed forest, 14% pasture/hay, 9% row crop, and 2% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were similar. Four current construction/stormwater authorizations and two municipal NPDES permits have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.07 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *low* potential for NPS impairment (2.0 tons/acre/yr.). The local SWCD estimates of row crop land use and forestry activities indicated *moderate* potentials for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*. Walnut Creek was given a 1st priority sub-watershed rating by the local SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Walnut Creek sub-watershed drains approximately 176 mi^2 in Chilton County. Five sites were assessed during 2000 (Appendix E). One embayment location of Walnut Creek was assessed as part of the ADEM Reservoir Tributary Monitoring Effort (Appendix F-10). Four stream sites on Walnut creek were assessed during the 2000 CWA §303(d) monitoring in support of listing and de-listing decisions (Appendices E , F-4b and F-4c). All sampling locations are considered downstream of urban point or nonpoint sources.

<u>Walnut Creek</u>

In May 2000, the upstream (WNTC-1) sampling reach had an open canopy over a ~35-foot wide channel characterized by bedrock (~50%), cobble (~20%), gravel (~12%), and boulder (~10%) substrates (Appendix F-4d). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix (Appendix F-4d). Five EPT families were collected during the instream bioassessment indicating that the macroinvertebrate community was in *fair* condition (Appendix F-4d). Water quality data indicated elevated nitrate/nitrite-nitrogen concentrations during the October, January and March site visits (1.949, 0.967, and 0.948 mg/L, respectively). Historical field notes indicated that cows have access to the stream channel at this reach. This location is also downstream of two tributaries that drain downtown Clanton, Alabama.

The WNTC-2 sampling reach had a partly-shaded/partly-open canopy, and a mixed sand (~30%), boulder (~20%), silt (~15%), and cobble (~14%) channel substrate (Appendix F-4d). The habitat quality was *excellent* as assessed using the riffle/run habitat assessment matrix (Appendix F-4d). Seven EPT families were collected during the May 2000 bioassessment indicating that the aquatic macroinvertebrate community was in *fair* condition (Appendix F-4e). Lab analysis results (Appendix F-4b) from samples collected during April 2000 to March 2001 indicated elevated nitrate/nitrite-nitrogen concentrations during the September, October and January sampling events (5.023, 2.227 and 1.026 mg/L, respectively).

Walnut Creek, at the WNTC-3 sampling reach had a mostly-open canopy over the ~30-foot wide channel composed of cobble (~60%), sand (~20%), and gravel (~12%) substrates (Appendix F-4d). Habitat quality in May 2000 was assessed by ADEM as *excellent* using the riffle/run assessment matrix (Appendix F-4d). Eight EPT families were collected during the May 2000 bioassessment indicating that the instream macroinvertebrate community was in *fair* condition. Water quality data (Appendix F-4b) indicated highly elevated nitrate/nitrite-nitrogen concentrations during the September and October 2000, and January 2001 sampling visits (Appendix F-4b).

The WNTC-4 reach had a mostly-shaded canopy, and a sand (~35%), gravel (~20%), cobble (~15%), and boulder (~15%) channel substrate (Appendix F-2b). The habitat quality was *excellent* as assessed using the riffle/run habitat assessment matrix (Appendix F-4d). Lab analysis results also indicated elevated nitrate/nitrite-nitrogen concentrations consistent with the upstream pattern (Appendix F-4b).

Sub-Watershed: Chestnut Creek
NRCS Sub-Watershed Number 170

EPA percent land cover of the Chestnut Creek sub-watershed was estimated as 28% deciduous forest, 13% evergreen forest, 31% mixed forest, 10% pasture/hay, 12% row crop, 3% wetland, and 3% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were slightly higher for urban (6%). Six current construction/stormwater authorizations and one mining NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.02 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *low* potential for NPS impairment (2.5 tons/acre/yr.). The local SWCD estimate of row crop land use indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*. Chestnut Creek was given a 2nd priority sub-watershed rating by the Chilton County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Chestnut Creek sub-watershed drains approximately 127 mi^2 in Autauga, Elmore, and Chilton Counties. Two sites have been assessed in this sub-watershed (Appendix E). One site on Chestnut Creek was assessed during the 2000 ALAMAP monitoring effort (Appendices E and F-6) and one site in the Shoal Creek embayment was assessed as part of the 2000 ADEM Reservoir Tributary Monitoring Effort (Appendix F-10). No additional assessments were conducted during this project.

Sub-Watershed: Weoka Creek
NRCS Sub-Watershed Number 180

EPA percent land cover of the Weoka Creek sub-watershed was estimated as 1% transitional forest, 36% deciduous forest, 17% evergreen forest, 34% mixed forest, 5% pasture/hay, 5% row crop, and 2% open water (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were similar. Three current construction/stormwater authorizations have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.01 AU/Acre), with cattle being the dominant animal type. Sedimentation estimates (Table 4c, Fig. 4) indicated a *low* potential for NPS impairment (1.2 tons/acre/yr.). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*. Weoka Creek was given a 4th priority sub-watershed rating by the Coosa County SWCD. Resource concerns expressed during public meetings conducted by the local SWCDs are found in Table 4c.

The Weoka Creek sub-watershed drains approximately 189 mi^2 in Coosa and Elmore Counties. Two embayment sites were assessed during 2000 for Weoka and Sofkahatchee Creeks as part of the ADEM Reservoir Tributary Monitoring effort (Appendices E and F-10). No additional assessments were conducted during this project.

Sub-Watershed: Pigeon Roost Creek
NRCS Sub-Watershed Number 190

EPA percent land cover of the Pigeon Roost Creek sub-watershed was estimated as 16% deciduous forest, 11% evergreen forest, 19% mixed forest, 24% pasture/hay, 12% row crop, 6% woody wetlands, 5% open water, and 4% urban (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were lower for pasture (11%) and higher for row crops (21%), and urban (26%) land uses. Four current construction/ stormwater authorizations and one municipal NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.00 AU/Acre). Sedimentation estimates (Table 4c, Fig. 4) indicated a *low* potential for NPS impairment (3.5 tons/acre/yr.). The local SWCD estimate of row crop land uses indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *low*.

The Pigeon Roost Creek sub-watershed drains approximately 18 mi^2 in Elmore County. A segment of the Coosa River was assessed as part of the 1999 University Reservoir Tributary Nutrient Study (Appendices E and F-5). No additional assessments were conducted during this project.

Sub-Watershed: Taylor Creek
NRCS Sub-Watershed Number 200

Station	Assessment Type	Date	Location	Area (mi^2)	Classification
TYC-1	Chem., Macroinv., Habitat	1999	Taylor Creek us of Corn Creek Conf.	18	F&W
TYC-2	Chem., Macroinv., Habitat	1999	Taylor Creek adjacent to Williams Road	12	F&W
QFMC-1	Macroinv., Habitat	2000	Fourmile Creek @ AL Hwy 9	6	F&W

EPA percent land cover of the Taylor Creek sub-watershed was estimated as 18% deciduous forest, 20% evergreen forest, 34% mixed forest, 12% pasture/hay, 8% row crop, 2% open water, 4% woody wetlands, and urban (2%) (Table 1c). Estimates of land use (Table 2c) by the local SWCDs were higher for urban (20%) and pasture (19%), and lower for row crops (3%). Thirteen current construction/ stormwater authorizations and one mining NPDES permit have been issued in the sub-watershed (Table 9c).

The SWCD estimates of animal concentrations in the sub-watershed (Table 3c, Fig. 3) were *low* (0.00 AU/Acre). Sedimentation estimates (Table 4c, Fig. 4) indicated a *high* potential for NPS impairment (27.5 tons/acre/yr.), mainly from developing urban land (25.9 tons/acre/yr.). The local SWCD estimate of pasture land use indicated a *moderate* potential for NPS impairment (Table 2c). The overall potential for impairment from nonpoint sources (Table 5c, Fig. 5) was estimated as *high*.

The Taylor Creek sub-watershed drains approximately 45 mi^2 in Elmore County. Recent data were available from four sites on three streams (Appendix E). A segment of Corn Creek was included in the 2000 ALAMAP monitoring effort (Appendix F-6a and F-6b) and a site on Fourmile Creek was used to conduct aquatic macroinvertebrate and habitat assessment method quality assurance activities. Two sites on Taylor Creek were assessed as part of the 1999 CWA §303(d) monitoring in support of listing and de-listing decisions (Appendix F-4a and 4d).

<u>Taylor Creek</u>

The TYC-1 sampling reach had a mostly-open canopy over a channel composed of sand (~40%), gravel (~25%), bedrock (~12%), and cobble (~10%) substrates (Appendix F-4b). Habitat quality was assessed as *excellent* using the riffle/run assessment matrix. Sediment deposition and instream habitat quality were the only categories of slight impairment (Appendix F-4d). Fish and aquatic macroinvertebrate assessments, conducted in May 1999, indicated that the communities were in *fair* condition (Appendix F-4e). Water quality samples were collected during both high and low stream flow events (Appendix F-4a). Water quality data did not indicate any sources of impairment. Fecal coliform counts were elevated, as expected, during the high flow sampling events (May and July 1999).

The TYC-2 reach had a shaded canopy with a sand (~80%) dominated substrate (Appendix F-4d). The habitat quality was *excellent* as assessed using the riffle/run habitat assessment matrix (Appendix F-4d). A low percentage in the sinuosity category may indicate historic channelization (Appendix F-4d). Instream bioassessments of the fish and aquatic macroinvertebrates indicated that the stream reach was in *fair/good* and *fair* condition, respectively (Appendix F-4e). Water quality samples were collected in May, June, July, and August 1999 (Appendix F-4a). Lab analysis results included elevated fecal coliform counts from each of the sampling events (range: 444 to 1900, >640 col/100 mL). Some of these correspond to high flow events at TYC-1, however several elevated fecal coliform samples appear to have been collected during normal flow events.

Fourmile Creek

Fourmile Creek (QFMC-1) was assessed during 2000 using aquatic macroinvertebrate and habitat assessments at a reach upstream of a beaverdam. This reach has been assessed historically as a part of the AAU quality assurance/quality control program for aquatic macroinvertebrate and habitat assessments. The *good* habitat quality and *poor* aquatic macroinvertebrate community quality are consistent with the flow regime and are a natural result.

Recommended Priority Sub-Watershed

Taylor Creek was identified as a priority sub-watershed due to fecal coliform counts and biological conditions possibly related to nutrient enrichment within the sub-watershed (Fig. 12c).

Figure 10c. Habitat and Aquatic Macroinvertebrate Assessments Conducted in the Lower Coosa Cataloging Unit.

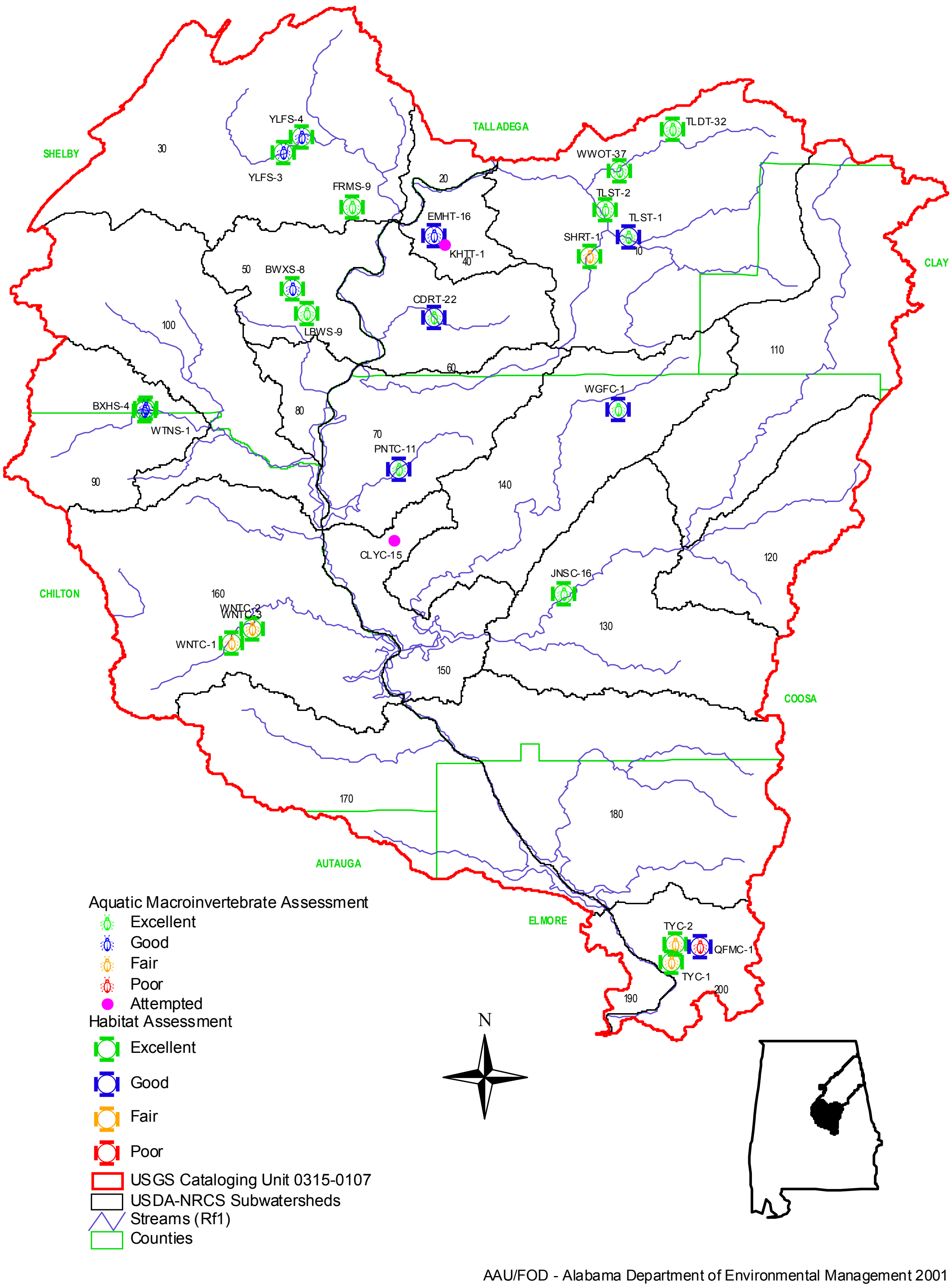

Figure 11C. Fish Community IBI Assessments Conducted in the Lower Coosa Cataloging Unit.

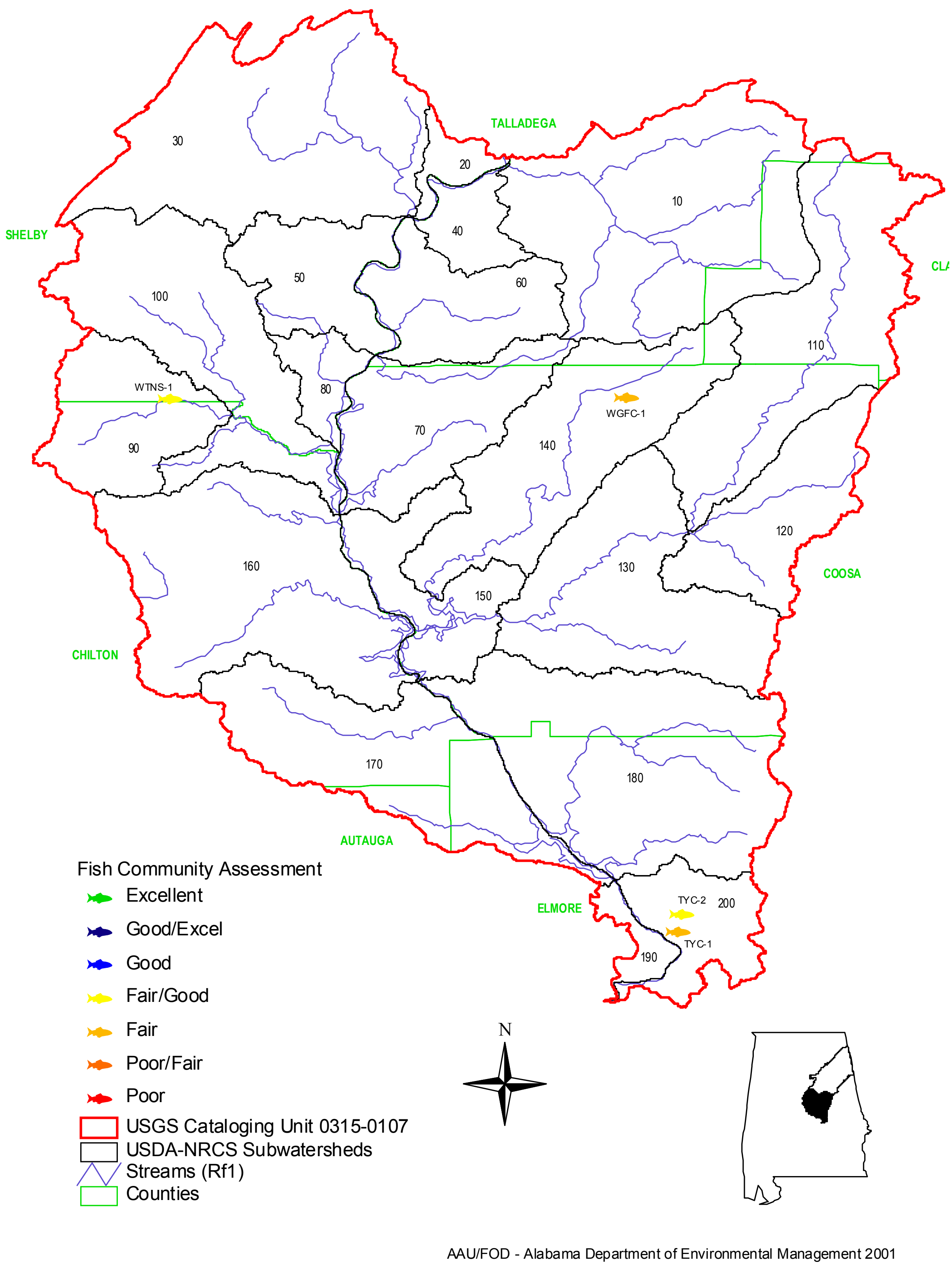

Figure 12c. Stream Stations Assessed or Attempted from 1990-2000 (From Appendix E) and NPS Priority Subwatersheds from the Lower Coosa Cataloging Unit.

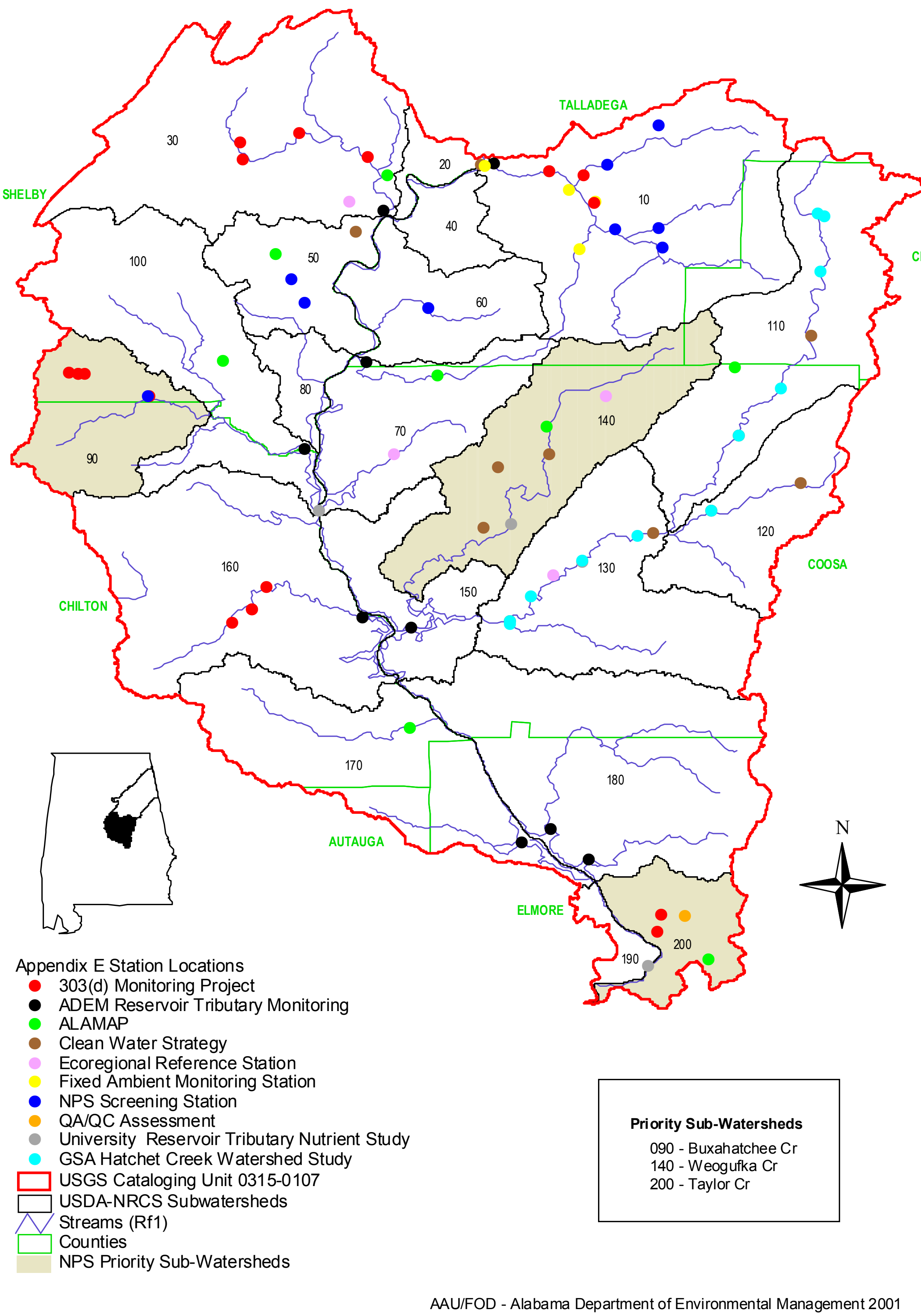

Table 1c. Land use percentages for Lower Coosa cataloging unit (0315-0107) from EPA landuse subcategory data (EPA 1997) and broader categories used in comparison with local SWCD Conservation Assessment Worksheet landuse estimates (ASWCC 1998).

Subwatershed	***Percent Total Landuse (Category and Subcategory)***													
	Open Water	Urban			Mining	Forest				Pasture/ Hay	Row Crops	Other		
	Open Water	Low Intensity Residential	High Intensity Residential	High Intensity Commercial/ Industrial/ Transportation	Quarries/ Strip Mines/ Gravel Pits	Transitional Forest	Deciduous Forest	Evergreen Forest	Mixed Forest	Pasture/ Hay	Row Crops	Other Grasses	Woody Wetlands	Herbaceous Wetlands
Lower Coosa (0315-0107)														
10	<1	2	<1	1	<1	1	33	17	27	10	7	1	1	<1
20	6	<1		<1			10	18	20	20	17	1	9	1
30	1	<1	<1	<1	1	34	21	29	7	4	<1	3	<1	
40	3	<1	<1	<1	31	19	25	12	6	<1	3	<1		
50	7	<1	<1	<1	<1	1	20	18	27	18	6	<1	2	<1
60	6	<1	<1	<1	1	1	23	20	25	15	6	<1	3	<1
70	5	<1		<1		3	35	24	29	3	1	<1	1	<1
80	15	<1	<1	<1	<1	4	22	24	29	3	2	<1	1	<1
90	<1	<1	<1	1		3	22	31	32	6	4	<1	<1	<1
100	2	<1	<1	1	<1	2	26	27	34	5	2	<1	<1	<1
110	<1	<1	<1	<1		3	52	13	26	4	2	<1		
120	<1	<1	<1	<1	<1	2	40	20	32	3	2	<1	<1	<1
130	<1	<1	<1	<1	<1	3	42	20	30	3	1	<1		
140	<1	<1	<1	<1		2	40	19	29	7	3	<1	1	<1
150	9	<1	<1	<1		10	28	26	25	1	<1	<1	<1	<1
160	2	1	<1	1	<1	1	29	15	28	14	9	1	<1	<1
170	3	<1	<1	<1	<1	<1	28	13	31	10	12	<1	3	<1
180	2	<1	<1	<1	<1	1	36	17	34	5	5	<1	<1	<1
190	5	2	<1	1		<1	16	11	19	24	12	1	6	1
200	2	<1	<1	1		<1	18	20	34	12	8	<1	4	<1

Table 2c. Land use percentages for the Lower Coosa cataloging unit (0315-0107) from EPA landuse categories (EPA 1997) and local SWCD Conservation Assessment Worksheet landuse estimates (ASWCC 1998).

Subwatershed	Percent Total Landuse													
	Open Water		Urban		Mines		Forest		Pasture		Row Crops		Other	
	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA	SWCD	EPA
Lower Coosa (0315-0107)														
010	2	<1	13	3	3	<1	67	78	8	10	3	7	3	2
020	4	6	3	<1			50	47	30	20	12	17		11
030	1	1	6	<1	<1	1	71	90	16	4	4	<1	1	4
040	7	3	15	1	2	31	54	63	15	<1	4	3	3	<1
050	2	7	8	1	<1	<1	69	66	17	18	3	6	1	3
060	7	6	3	<1		1	59	69	25	15	4	6	3	3
070	6	5	<1	<1	<1		88	90	5	3	<1	1	1	1
080	3	15	15	1		<1	61	79	19	3	2	2		1
090	1	<1	2	1	<1		83	89	9	6	2	4	2	1
100	1	2	3	1	1	<1	85	89	8	5	1	2	1	<1
110	<1	<1	<1	<1	<1		91	94	7	4	<1	2	1	<1
120	<1	<1	2	1		<1	91	94	6	3		2	1	<1
130	<1	<1	<1	<1		<1	94	96	5	3		1	1	<1
140	<1	<1	<1	<1	<1		85	89	11	7	1	3	2	1
150	10	9	<1	<1			89	90		1		<1	<1	<1
160	<1	2	3	1		<1	76	73	13	14	7	9	2	1
170	3	3	6	<1		<1	71	72	11	10	8	12	2	3
180	2	2	3	<1	<1	<1	84	87	9	5	1	5	<1	<1
190	8	5	26	4			34	46	11	24	21	12		8
200	1	2	20	2			57	72	19	12	3	8		4

Table 3c. Estimations of percent of acres where pesticides/herbicides applied, animal and animal unit (AU) concentrations, and NPS impairment potential from animal husbandry activities in the Upper Coosa cataloging unit (0315-0105). Numbers of animals and pesticides/herbicides listed by acreage and subwatershed were provided by the local SWCDs on Conservation Assessment Worksheets completed in 1998

		Subwatershed								
		010	020	030	040	050	060	070	080	090
County (s)		Clay Talladega	Shelby	Shelby	Talladega	Shelby	Talladega	Coosa Talladega	Shelby	Chilton Shelby
Acres Reported (% of Total)		100	100	100	100	100	100	100	100	100
Pesticides Applied	Est. % Total Reported Acres	0	nd	nd	nd	nd	nd	nd	0	nd
Cattle	# / Acre	0.03	0.14	0.02	0.03	0.05	0.03	0.01	0.05	0.03
	AU/Acre	**0.03**	**0.14**	**0.02**	**0.03**	**0.05**	**0.03**	**0.01**	**0.05**	**0.03**
Dairy	# / Acre	0.00	---	---	---	---	---	---	---	---
	AU/Acre	**0.00**	---	---	---	---	---	---	---	---
Swine	# / Acre	0.00	---	---	0.00	---	0.00	0.00	---	---
	AU/Acre	**0.00**	---	---	**0.00**	---	**0.00**	**0.00**	---	---
Poultry - Broilers	# / Acre	---	---	---	---	---	---	---	---	---
	AU/Acre	---	---	---	---	---	---	---	---	---
Poultry - Layers	# / Acre	---	---	---	---	---	---	---	---	---
	AU/Acre	---	---	---	---	---	---	---	---	---
Catfish	# Acres/ Acre	0.01	---	0.00	0.01	---	0.01	0.00	0.00	0.00
^Total	AU/Acre	**0.03**	**0.14**	**0.02**	**0.03**	**0.05**	**0.03**	**0.01**	**0.05**	**0.03**
Potential for NPS Impairment		Low	Mod.	Low	Low	Low	Low	Low	Low	Low

* No data reported for this portion of the subwatershed; nd = no data; ^Total AU/Acre may differ slightly from sum of Animal Type AU/Acre

Table 3c, cont. Estimations of percent of acres where pesticides/herbicides applied, animal and animal unit (AU) concentrations, and NPS impairment potential from animal husbandry activities in the Upper Coosa cataloging unit (0315-0105). Numbers of animals and pesticides/herbicides listed by acreage and subwatershed were provided by the local SWCDs on Conservation Assessment Worksheets completed in 1998

		Subwatershed*								
		100	110	120	130	140	150	160	170	180
County (s)		Chilton Shelby	Clay Coosa Talladega* Tallapoosa*	Coosa	Coosa	Clay* Coosa Talladega	Coosa	Chilton	Autauga Chilton Elmore	Coosa Elmore
Acres Reported (% of Total)		100	98	100	100	96	100	100	100	100
Pesticides Applied	Est. % Total Reported Acres	0	0	nd	nd	nd	nd	4	5	1
Cattle	# / Acre	0.03	0.01	0.01	0.01	0.03	0.00	0.07	0.02	0.01
	AU/Acre	**0.03**	**0.01**	**0.01**	**0.01**	**0.03**	**0.00**	**0.07**	**0.02**	**0.01**
Dairy	# / Acre	---	---	---	---	---	---	---	---	0.00
	AU/Acre	---	---	---	---	---	---	---	---	**0.00**
Swine	# / Acre	---	---	---	---	0.00	---	---	0.00	---
	AU/Acre	---	---	---	---	**0.00**	---	---	**0.00**	---
Poultry - Broilers	# / Acre	---	---	---	---	---	---	---	---	---
	AU/Acre	---	---	---	---	---	---	---	---	---
Poultry - Layers	# / Acre	---	---	---	---	---	---	---	---	---
	AU/Acre	---	---	---	---	---	---	---	---	---
Catfish	# Acres/ Acre	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
^Total	AU/Acre	**0.03**	**0.01**	**0.01**	**0.01**	**0.03**	**0.00**	**0.07**	**0.02**	**0.01**
Potential for NPS Impairment		Low	Low	Low	Low	Low	Low	Low	Low	Low

* No data reported for this portion of the subwatershed; nd = no data; ^Total AU/Acre may differ slightly from sum of Animal Type AU/Acre

Table 3c, cont. Estimations of animal concentrations, animal units (AU), and percent of acres where pesticides/herbicides applied in the Lower Coosa Cataloging Unit (0316-0107). Numbers of animals and pesticides/herbicides listed by acreage and subwatershed were provided by the local SWCDs on Conservation Assessment Worksheets completed in 1998.

		Subwatershed*		
		190	200	Total
County (s)		Elmore	Elmore	----
Acres Reported (% of Total)		100	100	100
Pesticides Applied	Est. % Total Reported Acres	nd	nd	1
Cattle	# / Acre	0.00	0.00	0.03
	AU/Acre	**0.00**	**0.00**	**0.03**
Dairy	# / Acre	---	---	0.00
	AU/Acre	---	---	**0.00**
Swine	# / Acre	---	---	0.00
	AU/Acre	---	---	**0.00**
Poultry - Broilers	# / Acre	---	---	---
	AU/Acre	---	---	---
Poultry - Layers	# / Acre	---	---	---
	AU/Acre	---	---	---
Catfish	# Acres/ Acre	---	---	0.00
^Total	AU/Acre	**0.00**	**0.00**	**0.03**
Potential for NPS Impairment		Low	Low	Low

* No data reported for this portion of the subwatershed; nd = no data; ^Total AU/Acre may differ slightly from sum of Animal Type AU/Acre

Table 4c. Estimates of forest condition, sedimentation by source, onsite wastewater treament systems and resource concerns by subwatershed in the Lower Coosa cataloging unit (315-0107) as provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets (ASWCC 1998). (* Indicates not reported)

Basin Code - Cataloging Unit	0315-0107								
Subwatershed	**010**	**020**	**030**	**040**	**050**	**060**	**070**	**080**	**090**
Forest Condition									
% of Subwatershed Needing Forest Improvement	16	*	*	19	*	12	9	*	*
Sediment Contributions (Tons/Acre/Yr)									
Cropland	0.1	0.3	0.1	0.1	0.1	0.3	0.0	0.1	0.1
Sand & Gravel Pits	0.1		0.1	0.9	0.5	0.7	0.1		0.4
Mined Land	0.1		0.1	0.6	0.2	1.4	0.3		1.0
Developing Urban Land	0.6	7.0	3.8	4.0	16.8	1.0	0.1	9.1	3.8
Critical Areas	0.3	1.6	1.3	1.5	2.3	0.2	0.1	1.8	0.5
Gullies	0.0			1.1			0.1		1.2
Stream Banks	0.3	0.1	0.0	3.7	0.0	1.0	0.5	0.1	0.1
Dirt Roads and Roadbanks	0.9	1.0	0.1	0.2	0.2	0.1	0.2	0.8	0.5
Woodlands	0.3	0.2	0.2	0.2	0.2	0.1	0.4	2.1	0.5
Total Sediment	2.8	10.2	5.9	12.2	20.3	4.8	1.8	13.9	8.0
Potential for Sediment NPS	Low	**Mod.**	**Mod.**	**Mod.**	**High**	**Mod.**	Low	**Mod.**	**Mod.**
Onsite Wastewater Treatment Systems									
# Septic Tanks per Acre	0.00	0.02	0.03	*	0.08	*	0.00	0.07	0.02
# Septic Tanks Failing per Acre	0.000	0.001	0.001	*	0.002	*	0.000	0.002	0.005
# of Alternative Septic Systems	*	5	90	*	50	*	*	15	10
Resource Concerns in the Subwatershed									
Excessive Erosion on Cropland		X	X		X				X
Gully Erosion on Agricultural Land	X						X		
Road and Roadbank Erosion	X	X	X	X	X		X	X	X
Poor Soil Condition (Cropland)									
Excessive Animal Waste Applied to Land									
Excessive Pesticides Applied to Land		X			X				
Excessive Sediment from Cropland		X							
Excessive Sediment From Roads/Roadbanks	X	X	X	X	X		X	X	X
Excessive Sediment from Urban Development		X	X		X			X	X
Inadequate Management of Animal Wastes									
Nutrients in Surface Waters					X				
Pesticides in Surface Waters									
Livestock Commonly have Access to Streams	X	X	X	X	X		X	X	X

Table 4c, cont. Estimates of forest condition, sedimentation by source, onsite wastewater treament systems and resource concerns by subwatershed in the Lower Coosa cataloging unit (315-0107) as provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets (ASWCC 1998). (* Indicates not reported)

Basin Code - Cataloging Unit	0315-0107							
Subwatershed	**100**	**110**	**120**	**130**	**140**	**150**	**160**	**170**
Forest Condition								
% of Subwatershed Needing Forest Improvement	3	8	18	9	16	4	5	4
Sediment Contributions (Tons/Acre/Yr)								
Cropland	0.0	0.0			0.0		0.2	0.3
Sand & Gravel Pits	2.4				0.0		0.2	0.0
Mined Land	1.0	0.0			0.0			
Developing Urban Land	1.6	0.0	0.1		0.0	0.0	0.2	0.9
Critical Areas	0.1	0.2	0.1	0.1	0.1	0.0	0.1	0.1
Gullies	0.3	0.0	0.1	0.1	0.2	0.0	0.3	0.5
Stream Banks	0.1	0.4	0.4	0.2	0.6	0.1	0.2	0.1
Dirt Roads and Roadbanks	0.3	0.5	0.1	0.1	0.1	0.1	0.4	0.3
Woodlands	0.4	0.5	0.3	1.0	0.0	1.3	0.5	0.2
Total Sediment	6.0	1.7	1.0	1.5	1.1	1.6	2.0	2.5
Potential for Sediment NPS	**Mod.**	Low	Low	Low	Low	Low	Low	Low
Onsite Wastewater Treatment Systems								
# Septic Tanks per Acre	0.02	0.00	0.01	0.01	0.01	0.00	0.01	0.03
# Septic Tanks Failing per Acre	0.001	0.000	0.000	0.000	0.000	0.000	0.003	0.001
# of Alternative Septic Systems	30	*	*	*	*	*	*	*
Resource Concerns in the Subwatershed								
Excessive Erosion on Cropland	X						X	X
Gully Erosion on Agricultural Land		X	X		X			
Road and Roadbank Erosion	X	X	X	X	X	X	X	X
Poor Soil Condition (Cropland)								
Excessive Animal Waste Applied to Land								
Excessive Pesticides Applied to Land	X							
Excessive Sediment from Cropland								X
Excessive Sediment From Roads/Roadbanks	X	X	X	X	X	X	X	X
Excessive Sediment from Urban Development	X	X						X
Inadequate Management of Animal Wastes								
Nutrients in Surface Waters	X		X					
Pesticides in Surface Waters								
Livestock Commonly have Access to Streams	X	X	X	X	X		X	X

Table 4c, cont. Estimates of forest condition, sedimentation by source, onsite wastewater treament systems and resource concerns by subwatershed in the Lower Coosa cataloging unit (315-0107) as provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets (ASWCC 1998). (* Indicates not reported)

Basin Code - Cataloging Unit	0315-0107		
Subwatershed	**180**	**190**	**200**
Forest Condition			
% of Subwatershed Needing Forest Improvement	9	*	*
Sediment Contributions (Tons/Acre/Yr)			
Cropland	0.1	0.1	0.1
Sand & Gravel Pits			
Mined Land	0.0		
Developing Urban Land	0.2	2.7	25.9
Critical Areas	0.3		0.3
Gullies	0.0	0.4	0.8
Stream Banks	0.2	0.1	0.0
Dirt Roads and Roadbanks	0.0	0.0	0.0
Woodlands	0.3	0.2	0.3
Total Sediment	1.2	3.5	27.5
Potential for Sediment NPS	Low	Low	**High**
Onsite Wastewater Treatment Systems			
# Septic Tanks per Acre	0.0	*	*
# Septic Tanks Failing per Acre	0.000	*	*
# of Alternative Septic Systems	*	*	*
Resource Concerns in the Subwatershed			
Excessive Erosion on Cropland			
Gully Erosion on Agricultural Land	X		
Road and Roadbank Erosion			
Poor Soil Condition (Cropland)			
Excessive Animal Waste Applied to Land			
Excessive Pesticides Applied to Land			
Excessive Sediment from Cropland			
Excessive Sediment From Roads/Roadbanks	X		
Excessive Sediment from Urban Development	X	X	X
Inadequate Management of Animal Wastes	X		
Nutrients in Surface Waters			
Pesticides in Surface Waters			
Livestock Commonly have Access to Streams	X		X

Table 5c. Estimation of Potential Sources of NPS Impairment for subwatersheds in the Lower Coosa cataloging unit (0315-0107). Source categories are based upon information provided by the local Soil and Water Conservation Districts (SWCD) on Conservation Assessment Worksheets completed in 1998, and from Construction Stormwater Authorization information provided by the Mining and NPS Unit of ADEM. *Rural landuse sources were used to develop the NPS potential. The presence of a CWA 303(d) stream segment within a subwatershed raised the subwatershed to the top of the prioritization ranking.

Subwatershed	Potential NPS Impairment	Potential Sources of Impairment								
		Rural Landuses						Urban / Suburban / Residential Landuses		
		Animal Husbandry	Row Crops	Pasture Runoff	Mining	Forestry Practices	Sedimentation	Urban	Development	Septic Tank Failure
010	H	L	L	L	H	H	L	M	M	L
020	H	M	M	M	L	---	M	L	M	L
030	L	L	L	M	L	---	M	M	H	L
040	H	L	L	M	M	H	M	M	M	L
050	H	L	L	M	L	---	H	M	M	L
060	H	L	L	M	L	H	M	L	L	L
070	L	L	L	L	L	M	L	L	L	L
080	L	L	L	M	L	---	M	M	M	L
090	L	L	L	L	M	L	M	L	M	M
100	L	L	L	L	M	L	M	L	M	L
110	L	L	L	L	L	M	L	L	L	L
120	L	L	L	L	L	M	L	L	L	L
130	L	L	L	L	L	M	L	L	L	L
140	L	L	L	L	L	M	L	L	L	L
150	L	L	L	L	L	M	L	L	L	L
160	L	L	M	L	L	M	L	L	M	M
170	L	L	M	L	L	L	L	M	M	L
180	L	L	L	L	L	L	L	L	L	L
190	L	L	M	L	L	---	L	H	M	L
200	H	L	L	M	L	---	H	M	M	L

Table 6c. Physical characteristic and habitat quality estimates for sites assessed by ADEM in the Lower Coosa cataloging unit (0315-0107) during 2000. In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		EMHT-16	TLST-1	TLST-19	WWOT-37	FRMS-9 (ref)	BWXS-8	LBWS-9	CDRT-22	PNTC-11 (ref)	WTNS-1
Subwatershed #		010	010	010	010	030	050	050	060	70	90
Ecoregion/ Subregion		67i	67f	45a	67f	67f	67f	67f	67f	45a	45a
Drainage area (Approx. mi^2)		29	88	53	35	13	17	9	32	12	35
Date (YYMMDD)		000531	000531	000531	000601	000530	000525	000525	000530	000524	000524
Width (ft)		20	25	40	25	25	30	12	20	15	30
Canopy Cover*		50/50	MO	S	50/50	S	50/50	S	MS	50/50	MO
Depth (ft)	Riffle	0.3	----	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.8
	Run	1.0	1.5	1.0	1.5	1.0	1.0	0.5	2.0	1.0	1.0
	Pool	2.5	>3	2.5	3.5	1.5	>3	3.0	3.0	2.5	2.0
Substrate (%)	Bedrock	13	0	60	0	40	20	0	20	1	60
	Boulder	5	0	0	15	3	0	0	10	0	10
	Cobble	5	0	10	35	10	31	1	20	10	7
	Gravel	20	13	5	20	20	31	50	20	45	5
	Sand	50	60	6	20	2	10	23	5	30	5
	Silt	3	10	15	5	5	5	2	10	8	7
	Detritus	4	15	4	5	15	2	4	5	5	5
	Clay	0	2	0	0	5	1	20	10	1	1
Geomorphology*		RR	GP	RR	RR	RR	RR	RR	RR	RR	RR
Habitat Survey (% maximum)											
Instream Habitat Quality		63	61	71	84	68	79	67	68	77	67
Sediment Deposition		68	64	71	63	70	84	71	74	65	85
Sinuosity		53	38	75	80	75	73	83	55	78	55
Bank and Vegetative Stability		49	55	79	51	73	53	78	60	59	84
Riparian Measurements		73	70	85	93	95	55	90	59	98	100
Habitat Assessment Score											
% Maximum		63	59	76	75	75	70	75	67	75	79
Assessment		Good	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Good	Good	Excellent

Table 6c, cont. Physical characteristic and habitat quality estimates for sites assessed by ADEM in the Lower Coosa cataloging unit (0315-0107) during 2000. In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		JNSC-16 (ref)	WGFC-1 (ref)	QFMC-1
Subwatershed #		130	140	200
Ecoregion/ Subregion		45a	45a	65i
Drainage area (Approx. mi^2)		6	13	
Date (YYMMDD)		000524	000524	000501
Width (ft)		11	12	20
Canopy Cover*		S	S	S
Depth (ft)	Riffle	0.4	0.3	N/A
	Run	1.0	1.0	0.7
	Pool	1.8	3.0	1.0
Substrate (%)	Bedrock	1	0	0
	Boulder	21	0	0
	Cobble	35	3	3
	Gravel	5	49	12
	Sand	30	35	75
	Silt	5	3	6
	Detritus	3	9	4
	Clay	0	1	0
Geomorphology*		RR	RR	RR
Habitat Survey (% maximum)				
Instream Habitat Quality		86	73	27
Sediment Deposition		81	59	28
Sinuosity		95	90	10
Bank and Vegetative Stability		94	59	73
Riparian Measurements		78	100	85
Habitat Assessment Score				
% Maximum		86	74	52
Assessment		Excellent	Good	Good

Table 7c. Aquatic macroinvertebrate and fish community bioassessments conducted by ADEM during 2000 from the Lower Coosa Cataloging Unit (0315-0107).

Station Number	EMHT-16	TLST-1	TLST-19	WWOT-37	FRMS-9 (ref)	BWXS-8	LBWS-9	CDRT-22	PNTC-11 (ref)	WTNS-1
Sub-watershed #	010	010	010	010	030	050	050	060	070	090
Subecoregion #	67i	67f	67f	67f	67f	67f	67f	67f	45a	45a
Macroinvertebrate community										
Assessment Date (YYMMDD)	000531	000531	000531	000601	000601	000525	000525	000530	000524	000524
# EPT families	9	10	10	12	12	9	12	10	15	9
Assessment	Good	Excellent	Excellent	Excellent	Excellent	Good	Excellent	Excellent	Excellent	Good
Fish community										
Assessment Date (YYMMDD)			000719							000720
Time (min)			30							30
Richness measures										
# species			25							19
# darter species			3							2
# minnow species			9							7
# sunfish species			4							3
# sucker species			2							2
# intolerant species			1							2
Composition measures										
% sunfish			9.1							25.3
% omnivores and herbivores			19.4							10.4
% insectivourous cyprinids			28.8							35.1
% top carnivores			2.8							5.5
Population measures										
Individuals			320							202
# collected per hour			640							404
% disease and anomalies			0							0
IBI Score			52							46
Assessment			Good							Fair/Good

Table 7c, cont. Aquatic macroinvertebrate and fish community bioassessments conducted by ADEM during 2000 from the Lower Coosa Cataloging Unit (0315-0107).

Station Number	JNSC-16 (ref)	WGFC-1 (ref)	QFMC-1
Sub-watershed #	130	140	200
Subecoregion #	45a	45a	65i
Macroinvertebrate community			
Assessment Date (YYMMDD)	000524	000524	000501
# EPT families	21	15	4
Assessment	Excellent	Excellent	Poor
Fish community			
Assessment Date (YYMMDD)		990609	
Time (min)		30	
Richness measures			
# species		12	
# darter species		2	
# minnow species		6	
# sunfish species		2	
# sucker species		1	
# intolerant species		0	
Composition measures			
% sunfish		11.1	
% omnivores and herbivores		4.7	
% insectivourous cyprinids		58.8	
% top carnivores		0	
Population measures			
Individuals		170	
# collected per hour		340	
% disease and anomalies		0	
IBI Score		42	
Assessment		Fair	

Table 8c. List of previous water quality assessments conducted on streams within the Lower Coosa River Cataloging from 1990-1999. Chemical assessments are indicated when biological assessments were not conducted.

Waterbody	*Date(s)*	*Assessment Type**	*Reference +*
Lower Coosa (0315-0107)			
Beeswax Cr	1999	C	5
Buxahatchee Cr	1996	C	2, 6
Chestnut Cr	1997	C	5
Coosa River	1990, 1991, 1995, 1996, 1999	C	1, 2, 7
Dry Cr, UT to	1996	C	2
Finikochika Cr	1996	C	2
Fourmile Creek	1992-1999	B	8
Hatchet Cr	1996, 1998-99	C	2, 7
Hatchet Creek, UT to	1997	C	5
Mud Cr	1999	C	5
Peckerwood Cr	1997	C	5
Shirtee Creek	1997-1999	C	1
Socapatoy Cr	1996	C	2
Stewart Br	1999	C	5
Tallaseehatchee Cr	1991, 1995, 1998-99	C	1, 6, 7
Taylor Cr	1999	B, C	6
Weogufka Creek	1993, 1995, 1996, 1998-99	B, C	2, 4, 7

* B= Biological Assessment (either fish and/or aquatic macroinvertebrate); C= Chemical Assessment
+ Key to References is located in Appendix G.

Table 9c. Summary of the number of current Construction/Stormwater Authorizations, Noncoal <5 Acres/Stormwater Authorizations, NPDES Permits, and CAFO Registrations issued within each subwatershed of the Lower Coosa River cataloging unit.

Cataloging Unit and Subwatershed	# of Authorizations / #NPDES permits / Registrations							
	Total Number	Construction/ Stormwater Authorizations (a)	Non-Coal Mining <5 Acres / Stormwater Authorizations (a)	Mining NPDES (c)	Municipal NPDES (b)	Semi Public/ Private NPDES (b)	Industrial Process Wastewater - NPDES Majors (b)	CAFO Registrations '(c)
Lower Coosa (0315-0107)								
010	20	7	2	4	5	1	1	
020	1	1						
030	31	27	2			1	1	
040	4	3			1			
050	7	4	1		1	1		
060	4	2		2				
070	2	2						
080	1	1						
090	9	7		1	1			
100	14	11	1	1	1			
110	5	3	1			1		
120	5	3	1		1			
130	6	4		1	1			
140	4	3				1		
150	1	1						
160	6	4			2			
170	7	6		1				
180	3	3						
190	5	4			1			
200	14	13		1				

(a) Source: ADEM Mining and Nonpoint Source Unit, Field Operations, database retrieval (7/18/00) (ADEM 1999e)

(b) Source: 1996 CWS Report (ADEM 1999a)

(c) Source: ADEM Mining and Nonpoint Source Unit, Field Operations, database retrieval (08/3/01) (ADEM 2001d)

Table 10c. List of stations assessed or attempted as part of the surface water quality NPS screening assessment of the Lower Coosa Cataloging Unit. Select additional stations assessed as part of other studies are included and noted with an asterisk (*).

Stream Name	Station	Approximate Basin Size (sq. mi.)	Assessment Type+	Subwatershed Number	Sub-Ecoregion **	County	T	R	S
Lower Coosa (0315-0107)									
Emauhee Cr	EMHT-16	29	M, H, C#	010	67i	Talladega	21S	4E	2
Shirtee Cr	SHRT-1	17	M, H, C	010	67f	Talladega	21S	4E	7
Tallasseehatchee Cr	TLST-19	53	M, H, C, F	010	45a	Talladega	21S	4E	11
Tallasseehatchee Cr	TLST-1*	88	M, H, C	010	67f	Talladega	21S	4E	4
Tallasseehatchee Cr	TLST-2*	122	M, H, C	010	67f	Talladega	20S	4E	30
Tallasseehatchee Cr	TLST-3*	173	C	010	67f	Talladega	20S	3E	14
Weewoka Cr	WWOT-37	35	M, H, C#	010	67f	Talladega	20S	4E	17
Weewoka Cr	WWOT-1	42	H, C	010	67f	Talladega	20S	4E	19
Fourmile Cr (Ref)	FRMS-9	13	M, H, C#	030	67f	Shelby	20S	1E	36
N. Fk Yellowleaf Cr	YLFS-1*	44	H, C	030	67g	Shelby	20S	1W	12
S. Fk Yellowleaf Cr	YLFS-2*	42	H, C	030	67g	Shelby	20S	1W	13
Yellowleaf Cr	YLFS-3*	100	M, H, C	030	67g	Shelby	20S	1E	4
Yellowleaf Cr	YLFS-4*	~142	M, H, C	030	67f	Shelby	20S	1E	18
Kahatchee Cr	KHTT-1	3	*NA*	040	67f	Talladega	21S	2E	11
Beeswax Cr	BWXS-8	17	M, H, C#	050	67f	Shelby	21S	1E	17
Little Beeswax Cr	LBWS-9	9	M, H, C#	050	67f	Shelby	22S	3E	34
Cedar Cr	CDRT-22	32	M, H, C#	060	67f	Talladega	22S	2E	35
Panther Cr (Ref)	PNTC-11	12	M, H, C	070	45a	Coosa	24N	16E	35
Buxahatchee Cr	BXHS-1*	4	C	090	67g	Shelby	24N	13E	2
Buxahatchee Cr	BXHS-2*	4	H, C	090	67g	Shelby	24N	13E	2
Buxahatchee Cr	BXHS-3*	10	H, C	090	67g	Shelby	24N	13E	2
Buxahatchee Cr	BXHS-4*	23	M, H, C	090	45a	Shelby	24N	14E	9

Table 10c, cont. List of stations assessed or attempted as part of the surface water quality NPS screening assessment of the Lower Coosa Cataloging Unit. Select additional stations assessed as part of other studies are included and noted with an asterisk (*).

Stream Name	Station	Approximate Basin Size (sq. mi.)	Assessment Type+	Subwatershed Number	Sub-Ecoregion **	County	T	R	S
Lower Coosa (0315-0107)									
Watson Cr	WTNS-1	35	M, H, C, F	090	45a	Shelby	24N	14E	9
Jones Cr (Ref)	JNSC-16	6	M, H, C	130	45a	Coosa	22N	18E	8
Weogufka Cr (Ref)	WGFC-1	13	M, H, C, F	140	45a	Coosa	24N	18E	14
Clay Cr (Ref)	CLYC-15	6	*NA*	150	45a	Coosa	23N	16E	26
Walnut Cr	WNTC-1*	30	M, H, C	160	65i	Chilton	22N	15E	30
Walnut Cr	WNTC-2*	34	M, H, C	160	45a	Chilton	22N	15E	20
Walnut Cr	WNTC-3*	36	M, H, C	160	45a	Chilton	22N	15E	16
Walnut Cr	WNTC-4*	42	H, C	160	65i	Chilton	22N	15E	14
Fourmile Cr	QFMC-1*	6	M, H	200	65i	Elmore	19N	19E	33
Taylor Cr	TYC-1*	18	M, H, C, F	200	65p	Elmore	18N	19E	6
Taylor Cr	TYC-2*	12	M, H, C, F	200	65i	Elmore	19N	19E	32

+ Assessment Type: C = Chemical Assessment; C# = *In situ* measurements only
H = Habitat Assessment; F = Fish Community Assessment;
M = Aquatic Macroinvertebrate Community Assessment;
NA = Not Assessed (dry / not flowing / beaver dam, etc)

** Level IV Ecoregions of Alabama (Griffith, etal 2001)

Table 11c. Summary of Assessments conducted within the Lower Coosa Cataloging Unit. Includes data collected as a part of the Coosa Basin NPS project and other selected biological and chemical data collected since 1995.

Cataloging Unit and Subwatershed	Station Number	*Habitat*	*Macroinv.*	*Fish*	*Chemical* Data Available (X)	Overall Assessment
Lower Coosa (0315-0107)						
010	EMHT-16	Good	Good	---	FP Only	Good
010	SHRT-1*	Excellent	Fair	---	X	Fair
010	TLST-1	Good	Excellent	---	X	Excellent
010	TLST-19	Excellent	Excellent	Good	X	Good
010	TLST-2	Excellent	Excellent	---	X	Good
010	TLST-3	---	---	---	X	---
010	WWOT-37	Excellent	Excellent	---	FP Only	Excellent
010	WWOT-1	Fair	---	---	X	---
030	FRMS-9	Excellent	Excellent	---	FP Only	Excellent
030	YLFS-1	Excellent	---	---	X	---
030	YLFS-2	Excellent	---	---	X	---
030	YLFS-3	Excellent	Good	---	X	Good
030	YLFS-4	Excellent	Good	---	X	Good
050	BWXS-8	Excellent	Good	---	FP Only	Good
050	LBWS-9	Excellent	Excellent	---	FP Only	Excellent
050	CO02U3-18	Good	---	---	X	---
060	CDRT-22	Good	Excellent	---	FP Only	Excellent
070	PNTC-11	Good	Excellent	---	X	Excellent
070	CO04U1	Excellent	---	---	X	---
090	BXHS-1	---	---	---	X	---
090	BXHS-2*	Excellent	---	---	X	---
090	BXHS-3*	Excellent	---	---	X	---
090	BXHS-4*	Excellent	Good	---	X	Good
090	WTNS-1	Excellent	Good	Fair/Good	X	Fair
100	CO01U3-31	Good	---	---	X	---
110	CO03U1	Good	---	---	X	---
130	JNSC-16	Excellent	Excellent	---	X	Excellent

Table 11c. Summary of Assessments conducted within the Lower Coosa Cataloging Unit. Includes data collected as a part of the Coosa Basin NPS project and other selected biological and chemical data collected since 1995.

Cataloging Unit and Subwatershed	Station Number	*Habitat*	*Macroinv.*	*Fish*	*Chemical* Data Available (X)	Overall Assessment
Lower Coosa (0315-0107)						
140	WGFC-1	Good	Excellent	Fair	X	Fair
140	CO03U3-47	Good	---	---	X	---
160	WNTC-1	Excellent	Fair	---	X	Fair
160	WNTC-2*	Excellent	Fair	---	X	Fair
160	WNTC-3*	Excellent	Fair	---	X	Fair
160	WNTC-4*	Excellent	---	---	X	---
170	CO05U1	Excellent	---	---	X	---
200	QFMC-1	Good	Poor*	---	---	Poor*
200	CO04U4-31	Good	---	---	X	---
200	TYC-1	Excellent	Fair	Fair	X	Fair
200	TYC-2	Excellent	Fair	Fair/Good	X	Fair

+Cheaha Creek water levels were too low to collect an adequate fish population

BWC-2a, BWC-3a, BWC-3b collected downstream of point source

KYC-1, KYC-2 collected downstream of point source

SHRT-1 collected downstream of point source

BXHS-2, BXHS-3, BXHS-4 collected downstream of point source

WNTC-2, WNTC-3, WNTC-4 collected downstream of point source

QFMC-1 collected upstream of beaverdam; "Poor" condition considered due to natural conditions.

Table 12c. List of the stream segments and reservoir acres within the Lower Coosa cataloging unit on ADEM's draft 2000 CWA §303(d) list along with sources and causes of impairment (ADEM 2001c).

Waterbody	Sub- watershed	Miles impaired	Use	Support Status	Sources	Causes of Impairment
Lower Coosa (0315-0107)						
Buxahatchee Cr	090	13.0	F&W	Partial	Municipal Urban Runoff/Storm sewers	Nutrients
UT to Dry Br	090	1.5	F&W	Partial	Municipal Urban Runoff/Storm sewers	Nutrients

Waterbody	Sub- watershed	Acres impaired	Use	Support Status	Sources	Causes of Impairment
Lay Lake	---	12,000	PWS/ S/F&W	Partial	Flow reg/mod Contaminated sediments Upstream sources	Nutrients Priority Organics Organic enrichment/DO
Lake Mitchell	---	5,850	PWS/ S/F&W	Partial	Urban runoff/Storm sewers Flow reg/mod	Nutrients Organic enrichment/DO

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----APPENDICES----

APPENDIX A

EPA Region IV Land Cover Data Set

South-Central Portion

VERSION 1

INTRODUCTION

The main objective of this project was to generate a generalized and consistent (i.e. seamless) land cover data layer for the South-central portion of EPA Region IV, which includes most of Alabama, Western Georgia, Eastern Mississippi, and the Florida Panhandle. This data set was developed by personnel at the EROS Data Center (EDC), Sioux Falls, SD. The project was initiated during the summer of 1997, and a first draft product was completed in November, 1997 (Version 1). The write-up that follows pertains to Version 1. Questions about the data set can be directed to Terry Sohl (EDC; email sohl@edcmail.cr.usgs.gov; telephone 605-594-6537).

GENERAL PROCEDURES

Data sources: The primary source of data for this project was leaves-off (primarily spring) Landsat TM data, acquired in 1988, 1990, 1991, 1992 and 1993. While most of the leaves-off data sets were acquired in spring, a few were from late autumn due to the difficulties in acquiring cloud-free TM data. These data sets were referenced to Albers Conical Equal Area coordinates (see table 1). Additionally, leaves-on (summer) TM data sets were acquired and referenced. The south-central and north-central portions of Region IV were processed as one unit and later split for distribution purposes; in total, 40 TM scenes were analyzed. Data sets used are provided in Table 2. In addition, other intermediate scale spatial data were acquired and utilized. These included 3-arc second Digital Terrain Elevation Dataset (DTED) and derivative DTED products (slope, shaded relief, and relative elevation), population density and housing units density data at the census block level, USGS land use and land cover data (LUDA), National Wetlands Inventory (NWI) data, and STATSGO soils information (available water and organic carbon).

Methods: The general procedure of this project was to (1) mosaic multiple spring TM scenes and classify them using an unsupervised classification algorithm, (2) interpret and label classes into sixteen land cover categories using aerial photographs as reference data, (3) resolve confused classes using the appropriate ancillary data source(s), and (4) incorporate land cover information from leaves-on TM data, NWI data, and other data sources to refine and augment the "basic" classification developed above. The entire area (north-central and south-central portions of Region IV) was analyzed as one large mosaic consisting of 20 leaves-off scenes. For mosaicing purposes, a base scene was selected, and other scenes were normalized to mimic spectral properties of the base scene following histogram equalization using pixels in regions of spatial overlap.

Following mosaicing, mosaiced scenes were clustered into 100 spectrally distinct classes using the Cluster algorithm developed by Los Alamos [1]. Clusters were assigned into Anderson level 1 and 2 land cover classes using National High Altitude Photography program (NHAP) aerial photographs as reference information. Almost invariably, individual spectral classes were confused between/among two or more "targeted" land cover classes. Separation of spectral classes into meaningful land cover units was accomplished using ancillary data. Briefly, for a given confused spectral class, digital values of the various ancillary data layers were compared to determine: (1) which data layers were the most effective for splitting the confused class into the appropriate land cover units, and (2) the appropriate thresholds for splitting the classes. Models were then developed using one to several data sets to split each confused class into the desired land cover categories. As an example, a spectral class might be confused between row crop and high-intensity residential areas. In order to split this particular class into more meaningful land cover units, population density and housing units density data were assessed to determine if they could be used to split the class into the respective categories, and if so, to define the appropriate thresholds to be used in the class splitting model.

Following the above class splitting steps, a "first order" classification product was constructed from the clustered leaves-off data. Leaves-on data were then clustered with the goal of refining certain land cover features not easily discriminated using leaves-off TM data. Land cover classes that were spatially but not spectrally distinct in the leaves-off data (barren areas, clearcuts) were digitized off the screen from the leaves-on data. These digitized data layers were used in conjunction with clustered leaves-on data to define barren and cleared areas that were then incorporated into the classification product. A digitized layer outlining wetland areas was also used to refine the wetlands information. "Other grasses", consisting largely of parks, urban lawns, and golf courses, were defined at this point by using hand-digitized information and

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LUDA urban information to separate "other grasses" from "hay/pasture". Similarly, high-intensity residential and high-intensity commercial/industrial areas were separated by using a threshold in the population density data.

The resulting classification (Version 1) includes the following. Please note that not all classes were used for this region:

Water
- 11 Open Water
- 12 Perennial Ice/Snow

Developed
- 21 Low Intensity Residential
- 22 High Intensity Residential
- 23 High Intensity Commercial/Industrial/Transportation

Barren
- 31 Bare Rock/Sand
- 32 Quarries/Strip Mines/Gravel Pits
- 33 Transitional

Natural Forested Upland (non-wet)
- 41 Deciduous Forest
- 42 Evergreen Forest
- 43 Mixed Forest

Natural Shrubland
- 51 Deciduous Shrubland
- 52 Evergreen Shrubland
- 53 Mixed Shrubland

Non-Natural Woody
- 61 Planted/Cultivated (orchards, vineyards, groves)

Herbaceous Upland Natural/Semi-Natural Vegetation
- 71 Grassland/Herbaceous

Herbaceous Planted/Cultivated
- 81 Pasture/Hay
- 82 Row Crops

83 Small Grains

84 Bare Soil

85 Other Grasses (Urban/recreational; e.g. parks, lawns, golf courses)

Wetlands

91 Woody Wetlands

92 Herbaceous Wetlands

Current definitions of the classes are as follows; percentages given must be viewed as guidelines.

Water - All areas of open water or permanent ice/snow cover

Water - all areas of open water, generally with less than 25% cover of vegetation/land cover.

Perennial Ice/Snow - all areas characterized by yearlong surface cover of ice and/or snow.

Developed - areas characterized by high percentage (approximately 30% or greater) of construction materials (e.g. asphalt, concrete, buildings, etc).

Low Intensity Residential - Land includes areas with a mixture of constructed materials and vegetation or other cover. Constructed materials account for 30-80 percent of the total area. These areas most commonly include single-family housing areas, especially suburban neighborhoods. Generally, population density values in this class will be lower than in high intensity residential areas.

High Intensity Residential - Includes heavily built-up urban centers where people reside. Examples include apartment complexes and row houses. Vegetation occupies less than 20 percent of the landscape. Constructed materials account for 80-100 percent of the total area. Typically, population densities will be quite high in these areas.

High-Intensity Commercial/Industrial/Transportation - Includes all highly developed lands not classified as High Intensity Residential, most of which is Commercial/Industrial/Transportation.

Barren - Bare rock, sand, silt, gravel, or other earthen material with little or no vegetation regardless of its inherent ability to support life. Vegetation, if present, is more widely spaced and scrubby than that in the vegetated categories.

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Bare Rock / Sand - Includes areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, and other accumulations of rock without vegetative cover.

Quarries / Strip Mines / Gravel Pits - Areas of extractive mining activities with significant surface expression.

Transitional - Areas dynamically changing from one land cover to another, often because of land use activities. Examples include forestlands cleared for timber, and may include both freshly cleared areas as well as areas in the earliest stages of forest regrowth.

Natural Forested Upland (non-wet) - A class of vegetation dominated by trees generally forming > 25 percent canopy cover.

Deciduous Forest - Areas dominated by trees where 75 percent or more of the tree species shed foliage simultaneously in response to an unfavorable season.

Evergreen Forest - Areas dominated by trees where 75 percent or more of the tree species maintain their leaves all year. Canopy is never without green foliage.

Mixed Forest - Areas dominated by trees where neither deciduous nor evergreen species represent more than 75 percent of the cover present. Natural Shrubland - A class of vegetation defined by areas dominated by shrubs generally less than 6 meters tall with individuals or clumps not touching to interlocking. The species may include true shrubs or trees and shrubs that are small or stunted because of environmental conditions. Shrub canopy cover is generally greater than 25 percent when tree canopy is less than 25 percent. Shrub cover may be less than 25 percent if cases when the cover of each other life form (herbaceous, tree) is less than 25 percent and shrubs exceed the cover of the other life forms. Not currently represented in the central portion of the EPA Region IV data set.

Deciduous Shrubland - Areas dominated by shrubs where 75 percent or more of the shrub species shed foliage simultaneously in response to an unfavorable season.

Evergreen Shrubland - Areas dominated by shrubs where 75 percent or more of the shrub species maintain their leaves all year. Canopy is never without green foliage.

Mixed Shrubland - Areas dominated by shrubs where neither deciduous nor evergreen species represent more than 75 percent of the cover present. Non-Natural Woody - Areas dominated by non-natural woody plant species such as orchards, vineyards, and groves. The classification of

APPENDIX A

Non-Natural Woody is subject to availability of sufficient ancillary data to differentiate from natural woody vegetation. Not currently represented in the central portion of the EPA Region IV data set.

Planted / Cultivated - Orchards, Vineyards, and tree plantations planted for the production of fruit, nuts, fiber (wood), or ornamental. Herbaceous Upland Natural/Semi-Natural Vegetation - Areas comprised of natural or semi-natural upland herbaceous vegetation.

Grassland/Herbaceous - A class of vegetation dominated by natural upland grasslands, i.e. neither planted nor cultivated by humans, as well as other non-woody plants known as herbs (graminoids, Forbes, and ferns). The grasses/herbs generally form at least 25 percent cover. Trees and shrubs generally have less than 25 percent cover. In rare cases, herbaceous cover is less than 25 percent but exceeds the combined cover of other life forms present.

Herbaceous Planted / Cultivated - Areas dominated with vegetation which has been planted in its current location by humans, and/or is treated with annual tillage, a modified conservation tillage, or other intensive management or manipulation. The majority of vegetation in these areas is planted and/or maintained for the production of food, feed, fiber, or seed.

Pasture / Hay - Grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops.

Row Crops - All areas used for the production of crops, such as corn, soybeans, vegetables, tobacco, and cotton.

Small Grains - All areas used for the production of graminoid crops such as wheat and rice. Not represented in the central portion of the EPA Region IV data set.

Bare Soil - Areas within planted or cultivated regions that have been tilled or plowed and do not exhibit any visible cover of vegetation. Not represented in the central portion of the EPA Region IV data set.

Other Grasses - Vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes. Examples include parks, lawns, and golf courses.

Wetlands - Non-woody or woody vegetation where the substrate is periodically saturated with or covered with water as defined by Cowardin et al. [2].

Woody Wetlands - Areas of forested or shrubland vegetation where the soil or substrate is periodically saturated with or covered with water as defined by Cowardin et al. [2].

Emergent Woodlands - Non-woody vascular perennial vegetation where the soil or substrate is periodically saturated with or covered with water as defined by Cowardin et al. [2].

CAVEATS AND CONCERNS

While we believe that the approach taken has yielded a very good general land cover classification product for a very large region, it is important to indicate to the user where there might be some potential problems. The biggest concerns are listed below:

1) Quantitative accuracy checks have yet to be conducted. We plan to make comparisons with existing data sets in order to develop a general overview regarding the quality of the land cover data set developed. Feedback from users of the data will be greatly appreciated.

2) Some of the leaves-off data sets were not temporally ideal. In this project, leaves-off data sets are heavily relied upon for discriminating between hay/pasture and row crop, and also for discriminating between forest classes. The success of discriminating between these classes using leaves-off data sets hinges on the time of data acquisition. When hay/pasture areas are non-green, they are not easily distinguishable from other agricultural areas using remotely sensed data. However, there is a temporal window during which hay and pasture areas green up before most other vegetation (excluding evergreens, which have different spectral properties); during this window these areas are easily distinguishable from other crop areas. The discrimination between evergreen and deciduous forest is likewise optimized by selecting data in a temporal window where deciduous vegetation has yet to leaf out. Due to double-cropping practices and the long-growing season in this portion of the country, it's difficult to acquire a single-date of imagery that adequately differentiates between both deciduous/conifer and hay-pasture/row crop.

3) The data sets used cover a range of years, and changes that have taken place across the landscape over the time period may not have been captured. While this is not viewed as a major problem for most classes, it is possible that some land cover features change more rapidly than might be expected (e.g. hay one year, row crop the next).

4) Wetlands classes are extremely difficult to extract from Landsat TM spectral information alone. The use of ancillary information such as National Wetlands Inventory (NWI) data is highly desirable. NWI data were not available in digital format for much of this area. Manual digitizing was used in combination with spectral information to derive much of the wetlands information, a procedure that isn't able to provide the level of detail of NWI data. It is suspected that forested wetlands are underestimated in areas where NWI wasn't available.

5) Accurate definition of the transitional barren class was extremely difficult. The majority of pixels in this class correspond to clear-cut forests in various stages of regrowth. Spectrally, fresh clear-cuts are very similar to row-crops in the leaves-off data. Manual correction of coding errors was performed to improve differentiation between row-crops and clear-cuts, but some errors may still be found. As regrowth occurs in a clear-cut region, the definition of transitional barren verses a forested class becomes problematic. An attempt was made to classify only fresh clear-cuts or those in the earliest stages of regrowth, but there are likely forested regions classed as transitional barren and vice versa.

6) Due to the confusion between clear-cuts, regrowth in clear-cuts, forested areas, and shrublands, no attempts were made to populate the shrubland classes. Any shrubland areas that exist in this area are classed in their like forest class, i.e. deciduous shrubland is classed as deciduous forest, etc.

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Table C-1. Projection Information

The initial Landsat TM mosaics, all ancillary data sets, and the final classification product are all map-registered to an Albers Conical Equal Area projection. The following represents projection information for the final classification product:

Projection: Albers Conical Equal Area
- Datum: NAD83
- Spheroid: GRS80
- Standard Parallels: 29.5 degrees North Latitude 45.5 degrees North Latitude
- Central Meridian: 96 degrees West Longitude
- Origin of the Projection: 23 degrees North Latitude
- False Easting: 0 meters
- False Northing: 0 meters
- Number of Lines: 17220
- Number of Samples: 21773
- Number of Bands: 1

Pixel size: 30 X 30 meters
Upper Left Corner: 591953 meters (X), 1301000 meters (Y)
Upper Right Corner: 1245113 meters (X), 1301000 meters (Y)
Lower Left Corner: 591953 meters (X), 784430 meters (Y)
Lower Right Corner: 1245113 meters (X), 784430 meters (Y)

Table C-2. MRLC Landsat thematic mapper (TM) data sets used to develop north-central and south-central portions of the EPA Region IV data set.

No asterisk represents scenes used in south-central portion only
* Represents scenes used in north-central portion only.
** Represents scenes used in both the north-central and south-central portion

Path/Row	Date	EOSAT-ID
19/33	12/14/90	5019033009034810*
19/33	09/20/94	5019033009426310*
19/34	10/03/93	5019034009327610*
19/34	11/20/93	5019034009332410*
19/35	11/12/90	5019035009031610*
19/35	09/30/92	5019035009227410*
19/36	09/28/91	5019036009127110**
19/36	11/17/92	5019036009232210**
19/37	03/09/93	5019037009306810
19/37	10/03/93	5019037009327610
19/38	02/16/91	5019038009104710
19/38	10/03/93	5019038009327610
19/39	02/16/91	5019039009104710
19/39	10/03/93	5019039009327610
20/33	08/02/91	5020033009121410*
20/33	11/22/91	5020033009132610*
20/34	11/29/88	5020034008833410*
20/34	08/02/91	5020034009121410*
20/35	11/29/88	5020035008833410*
20/35	10/07/92	5020035009228110*
20/36	03/11/91	5020036009107010**
20/36	07/22/93	5020036009320310**
20/37	11/29/88	5020037008833410
20/37	10/23/92	5020037009229710
20/38	02/10/92	5020038009204110
20/38	10/23/92	5020038009229710
20/39	01/22/91	5020039009102210
20/39	11/06/91	5020039009131010
21/34	04/05/92	5021034009209610*
21/34	10/14/92	5021034009228810*
21/35	04/05/92	5021035009209610*
21/35	08/30/93	5021035009324210*
21/36	09/10/91	5021036009125310**
21/36	12/15/91	5021036009134910**
21/37	02/03/93	5021037009303410
21/37	10/01/93	5021037009327410
21/38	02/14/91	5021038009104510
21/38	10/12/91	5021038009128510
21/39	09/26/91	5021039009126910
21/39	02/01/92	5021039009203210

APPENDIX B-1.

ADEM-FIELD OPERATIONS-ECOLOGICAL STUDIES
RIFFLE/RUN HABITAT ASSESSMENT FIELD DATA SHEET

Name of Waterbody ______________________ Date: ______________

Station Number ______________ Investigators ______________________

Habitat Parameter	Category: Optimal	Suboptimal	Marginal	Poor
1 **Instream Cover**	>50% mix of boulder, cobble, submerged logs, undercut banks, or other stable habitat.	50-30% mix of boulder, cobble, or other stable habitat; adequate habitat.	30-10% mix of boulder, cobble, or other stable habitat; habitat availability less than desirable.	<10% mix of boulder, cobble, or other stable habitat; lack of habitat is obvious.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2 **Epifaunal surface**	Well developed riffle and run; riffles as wide as stream and length extends 2x the width of stream; abundance of cobble.	Riffle is as wide as stream but length is <2 times width; abundance of cobble; boulders and gravel common.	Run area may be lacking; riffle not as wide as stream and its length is <2 times the stream width; gravel or large boulders and bedrock prevalent; some cobble present.	Riffles or run virtually non existent; large boulders and bedrock prevalent; cobble lacking.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3 **Embeddedness**	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble and boulder particles are >75% surrounded by fine sediment.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4 **Velocity/Depth Regimes**	All 4 velocity/depth regimes present (slow-deep, slow-shallow, fast-shallow, fast-deep).	Only 3 of 4 regimes present. (if fast-shallow is missing, score lower.)	Only 2 of 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5 **Channel Alteration**	No Channelization or dredging present.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization (>20 years) may be present, but not recent.	New embankments present on both banks; and 40 - 80% of stream reach is channelized and disrupted.	Banks shored with gabion or cement; >80% of the stream reach channelized and disrupted.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
6 **Sediment Deposition**	Little or no enlargement of islands or point bars and less than 5 % of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from coarse gravel; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel coarse sand on old and new bars; 30-50% of the bottom affected; sediment deposits at obstruction, constriction,, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; > 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7 **Frequency of Riffles**	Occurrence of riffles relatively frequent; distance between riffles divided by stream width equals 5-7; variety of habitat.	Occurrence of riffles relatively infrequent; distance between riffles divided by the stream width equals 7-15.	Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided stream width is 15-25.	Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by stream width >25.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8 **Channel flow Status**	Water reaches base of both lower banks and minimal amount t of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
9 **Condition of Banks**	Banks stable; no evidence of erosion or bank failure.	Moderately stable; infrequent, small areas of erosion mostly healed over.	Moderately unstable; up to 60% of banks in reach have areas of erosion.	Unstable; many eroded areas; "raw" areas frequent Along straight section and bends; on side slopes, 60-100% of bank has erosional scars.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
10 **Bank Vegetative Protection**	>90% of the stream bank surfaces covered by vegetation.	90-70% of the streambank surfaces covered by vegetation.	70-50% of the stream bank surfaces covered by vegetation.	<50% of the streambank surfaces covered by vegetation.
Score (LB) ______	10 9 8	7 6	5 4 3	2 1 0
Score (RB) ______	10 9 8	7 6	5 4 3	2 1 0
11 **Grazing or other disruptive pressure**	Vegetative disruption, through grazing or mowing, minimal or not evident; almost all plants allowed to grow naturally.	Disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	Disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Disruption of stream bank vegetation is very high; vegetation has been removed to 2 inches or less in average stubble height.
Score (LB) ______	10 9 8	7 6	5 4 3	2 1 0
Score (RB) ______	10 9 8	7 6	5 4 3	2 1 0
12 **Riparian vegetative zone (each bank)**	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clearcuts, lawns, or crops) have not impacted zone.	Width of riparian zone 18-12 meters; human activities have impacted zone only minimally.	Width of riparian zone 12-6 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters;: little or no riparian vegetation due to human activities.
Score (LB) ______	10 9 8	7 6	5 4 3	2 1 0
Score (RB) ______	10 9 8	7 6	5 4 3	2 1 0

APPENDIX B-2.

ADEM-FIELD OPERATIONS-ECOLOGICAL STUDIES
GLIDE/POOL HABITAT ASSESSMENT FIELD DATA SHEET

Name of Waterbody ______________________________ Date: ____________________

Station Number ____________________ Investigators ______________________________

Habitat Parameter	Category: Optimal	Suboptimal	Marginal	Poor
1 **Instream Cover**	> 50% mix of snags, submerged logs, undercut banks, or other stable habitat; rubble, gravel may be present.	50-30% mix of stable habitat; adequate habitat for maintenance of populations.	30-10% mix of stable habitat; habitat availability less than desirable.	<10% stable habitat; lack of habitat is obvious.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
2 **Pool Substrate Characterization**	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant ; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
3 **Pool Variability**	Even mix of large-shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
4 **Channel Alteration**	No Channelization or dredging present.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization (>20 years) may be present, but not recent.	New embankments present on both banks; channelization may be extensive, usually in urban or agriculture lands; and > 80% of stream reach is channelized and disrupted.	Extensive channelization; banks shored with gabion or cement; heavily urbanized areas; instream habitat greatly altered or removed entirely.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
5 **Sediment Deposition**	<20% of bottom affected; minor accumulation of fine and coarse material at snags and submerged vegetation; little or no enlargement of islands or point bars.	20-50% affected; moderate accumulation; substantial sediment movement only during major storm event; some new increase in bar formation.	50-80% affected; major deposition; pools shallow, heavily silted; embankments may be present on both banks; frequent and substantial sediment movement during storm events.	Channelized; mud, silt, and/or sand in braided or non-braided channels; pools almost absent due to deposition.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
6 **Channel Sinuosity**	Bends in stream increase stream length 3 to 4 times longer than if it was in a straight line.	Bends in stream increase stream length 2 to 3 times longer than if it was in a straight line.	Bends in stream increase the stream length 2 to 1 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
7 **Channel flow Status**	Water reaches base of both lower banks and minimal amount t of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
8 **Condition of Banks**	Banks stable; no evidence of erosion or bank failure; <5% affected.	Moderately stable; infrequent, small areas of erosion mostly healed over; 5-30% affected.	Moderately unstable; 30-60% of banks in reach have areas of erosion.	Unstable; many eroded areas; "raw" areas frequent Along straight section and bends; on side slopes, 60-100% of bank has erosional scars.
Score ______	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
9 **Bank Vegetative Protection (each bank)**	> 90% of the stream bank surfaces covered by vegetation.	90-70% of the streambank surfaces covered by vegetation.	70-50% of the stream bank surfaces covered by vegetation.	<50% of the streambank surfaces covered by vegetation.
Score (LB) ______	10 9 8	7 6	5 4 3	2 1 0
Score (RB) ______	10 9 8	7 6	5 4 3	2 1 0
10 **Grazing or other disruptive pressure (each bank)**	Vegetative disruption, through grazing or mowing, minimal or not evident; almost all plants allowed to grow naturally.	Disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	Disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.	Disruption of stream bank vegetation is very high; vegetation has been removed to 2 inches or less in average stubble height.
Score (LB) ______	10 9 8	7 6	5 4 3	2 1 0
Score (RB) ______	10 9 8	7 6	5 4 3	2 1 0
11 **Riparian vegetative zone Width (each bank)**	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clearcuts, lawns, or crops) have not impacted zone.	Width of riparian zone 18-12 meters; human activities have impacted zone only minimally.	Width of riparian zone 12-6 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.
Score (LB) ______	10 9 8	7 6	5 4 3	2 1 0
Score (RB) ______	10 9 8	7 6	5 4 3	2 1 0

APPENDIX C.

ADEM-FIELD OPERATIONS
PHYSICAL CHARACTERIZATION / WATER QUALITY FIELD DATA SHEET-Wadeable Streams

Station # ____________________ Date: ____________________ Collector Names ____________________

Reach Description: ____

WATERSHED CHARACTERISTICS

Watershed Land Use: Forest Pasture Ag. Residential Commercial Ind. Other: __________

Local Watershed Erosion: None Slight Moderate Heavy

Local Watershed NPS Pollution: No Evidence Potential sources Obvious Sources

REACH CHARACTERISTICS

Land Use at Reach: Pasture Crops Residential Forest Commercial Ind. Other: __________

Est. Stream Width: ______ ft *Depth:* Mid Channel ______ ft Riffle: ______ ft Run: ______ ft Pool: ______ ft

Length of Reach: __________ ft *Stream Gradient:* ________ ft drop in 25 feet (representative seg.) *Channelized:* Y N

Rosgen Stream Type: ________ *Bank Height:* ________ ft *High Water Mark:* __________ ft *Dam Present:* Y N

Prev. 7 day precip: Fl. Flood Heavy Mod. light none *Macrophytes:* None Rare Common Abundant

Canopy Cover: Open 0-20% Mostly Open 20-40% Est. 50/50 40-60% Mostly Shaded 60-80% Shaded 80-100% *Canopy Type:* __________

SEDIMENT / SUBSTRATE CHARACTERISTICS

Odors: Normal Sewage Petroleum Chemical Anaerobic Other: __________

Oils: Absent Slight Moderate Profuse

Deposits: Sludge Sawdust Paper-Fiber Sand Relict Shells Other: __________

Are the undersides of stones not deeply embedded, black? Y N N/A

WATER QUALITY CHARACTERISTICS

Water Odors: Normal Sewage Petroleum Chemical Other: __________

Water Surface Oils: None Slick Sheen Globs Flecks

Water Color: Clear Sl. Tannic Mod. Tannic Dk Tannic Green Gray Other: __________

Weather Conditions: Clear P/C Mostly Cloudy Cloudy Raining

Biological Indicators: Periphyton Macrophytes Fish Filamentous Slimes Others

PHOTOS

Picture # ______ Description __________________ Picture # ______ Description __________________

EST. % COMP. IN SAMPLING AREA				***FIELD NOTES***	***WATER QUALITY***
Inorganic + Organic = 100%					
Type	Diameter	Percent			Time ________ hrs (24hrs)
Bedrock		______	%		
Boulder	>10 in.	______	%		Mid Channel Depth ________ ft
Cobble	2.5 - 10 inches	______	%		Sample Depth ________ ft
Gravel	0.1 - 2.5 inches	______	%		
Sand	gritty	______	%		T-Air ________ C
Silt		______	%		T-H2O ________ C
Clay	slick	______	%		pH ________ s.u.
Detritus	Stick, Wood	______	%		Cond. ________ umhos @ 25c
	CPOM	______	%		D.O. ________ mg/l
Mud-Muck	fine organic	______	%		Turb. ________ ntu
Marl	Gray Shell Frag.	______	%		

Appendix D-1. Results of physical and chemical measurements and water quality samples collected from stations included as part of the nonpoint source watershed screening assessment of the Coosa Basin, 2000.

Sub-Watershed	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	TOC	ALK	Total-P	NO3+ NO2-N	NH3-N	TKN
#	*#*	*yymmdd*	*24hr*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100mL*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105)																			
050	MLLC-10	000614	1640	22	8.4	7.8	230	8.3	16.5	---	---	---	---	---	---	---	---	---	---
050	MLLC-11	000614	1430	25	8.4	7.9	234	8.3	15.8	---	---	---	---	---	---	---	---	---	---
140	YLWC-6	000614	1145	25	5.2	6.8	78	2.7	vnd	---	---	---	---	---	---	---	---	---	---
Middle Coosa (0315-0106)																			
030	BCVE-13	000614	0641	---	---	---	---	---	nw	---	---	---	---	---	---	---	---	---	---
050	BWLD-12	000614	1235	25	6.9	7.7	292	17	5.6	---	---	---	---	---	---	---	---	---	---
050	BWLD-12	000615	0840	24	---	7.4	265	19	12.3	---	---	---	---	---	---	---	---	---	---
070	BRNE-28	000615	0855	23	6.7	7.4	291	5.4	1.5	---	---	---	---	---	---	---	---	---	---
070	BRNE-28	000918	0745	17	6.0	7.9	342	3.5	0.4	554	0.4	4	204	1.382	155	0.02	< 0.003	< 0.015	< 0.15
070	CLRE-29	000615	1020	24	6.5	7.6	254	4.8	1.1	---	---	---	---	---	---	---	---	---	---
070	LINE-30	000615	0750	23	5.9	7.2	185	3.0	0.2	---	---	---	---	---	---	---	---	---	---
070	LINE-30	000918	0715	17	6.8	7.7	204	4.7	vnd	143	0.2	1	124	1.176	85	0.01	0.139	< 0.015	< 0.15
070	LWLE-31	000614	0930	22	6.7	7.5	248	9.4	1.4	---	---	---	---	---	---	---	---	---	---
080	BLKE-14	000614	0725	23	3.7	6.4	67	5.5	0.2	---	---	---	---	---	---	---	---	---	---
080	BLKE-44	000614	0917	---	---	---	---	---	nd	---	---	---	---	---	---	---	---	---	---
100	BCNS-24	000613	1340	27	6.4	7.7	268	7.3	18.2	---	---	---	---	---	---	---	---	---	---
100	BCNS-35	000613	1130	25	7.5	7.9	245	4.7	6.8	---	---	---	---	---	---	---	---	---	---
100	GLFS-25	000613	1653	---	---	---	---	---	dry	---	---	---	---	---	---	---	---	---	---
100	MCKS-27	000613	1535	24	8.5	7.7	261	4.0	2.7	---	---	---	---	---	---	---	---	---	---
170	ALXC-41	000607	0745	18	8.5	8.0	263	7.4	15.5	---	---	---	---	---	---	---	---	---	---
170	ALXC-41	000918	1410	23	9.1	8.3	286	10	10.7	163	0.7	11	180	0.812	132	0.04	0.222	0.0593	< 0.15
170	LTSC-39	000608	1138	---	8.8	7.7	247	6.4	7.8	---	---	---	---	---	---	---	---	---	---
170	TLSC-38	000608	0915	18	8.6	7.7	218	10	15.7	---	---	---	---	---	---	---	---	---	---
170	TLSC-40	000607	1310	22	8.3	7.8	249	11	50.1	---	---	---	---	---	---	---	---	---	---
170	WVRC-42	000607	1605	22	7.9	7.7	303	11.2	1.6	---	---	---	---	---	---	---	---	---	---
170	WVRC-42	000918	1330	21	13.6	8.9	306	4.2	nd	est 57	1.1	3	197	2.205	132	0.09	0.426	0.0473	< 0.15
210	AKRC-21	000606	1520	21	7.8	7.7	232	6.1	2	---	---	---	---	---	---	---	---	---	---

Appendix D-1, cont. Results of physical and chemical measurements and water quality samples collected from stations included as part of the nonpoint source watershed screening assessment of the Coosa Basin, 2000.

Sub-Watershed	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	TOC	ALK	Total-P	NO3+ NO2-N	NH3-N	TKN
#	*#*	*yymmdd*	*24hr*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100mL*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Middle Coosa (0315-0106), cont.																			
330	TLDC-7	000606	1800	22	8.1	7.3	38	5.1	13.1	---	---	---	---	---	---	---	---	---	---
330	TLDC-7	000928	0945	15	8.6	7.1	49	3.4	3.6	est 46	0.5	1	40	1.718	32	0.09	0.015	0.0505	< 0.15
330	TLDC-7	000928	0946	15	8.6	7.0	48	3.4	---	63	0.5	1	41	1.654	25	< 0.004	0.014	< 0.015	< 0.15
330	TLDT-32	000601	1220	22	8.7	7.0	43	4.7	14.4	---	---	---	---	---	---	---	---	---	---
Lower Coosa (0315-0107)																			
010	EMHT-16	000531	1310	23	6.3	7.2	145	2.4	0.4	---	---	---	---	---	---	---	---	---	---
010	SHRT-1	000531	0830	24	7.3	7.9	1010	6.0	12.7	---	---	---	---	---	---	---	---	---	---
010	TLST-1	000531	0900	24	6.1	7.4	2038	9.2	6.9	---	---	---	---	---	---	---	---	---	---
010	TLST-19	000531	1440	22	7.9	7.3	868	5.8	7.5	---	---	---	---	---	---	---	---	---	---
010	TLST-19	000914	1415	24	6.4	7.6	258	20.2	1.3	est 53	1.4	11	135	4.120	101	0.18	0.194	<0.015	0.357
010	TLST-2	000531	1030	---	6.9	7.8	664	5.1	gs	---	---	---	---	---	---	---	---	---	---
010	WWOT-1	000531	----	---	---	---	---	---	nw	---	---	---	---	---	---	---	---	---	---
010	WWOT-37	000601	0740	20	7.5	7.9	241	121	8.6	---	---	---	---	---	---	---	---	---	---
030	YLFS-3	000530	1300	25	5.6	7.2	85	6.9	3.5	---	---	---	---	---	---	---	---	---	---
030	YLFS-4	000530	1200	24	6.9	7.2	90	5.0	8.4	---	---	---	---	---	---	---	---	---	---
050	BWXS-8	000525	1330	27	10.6	8.4	261	2.1	1.1	---	---	---	---	---	---	---	---	---	---
050	LBWS-9	000525	1210	24	6.0	7.5	250	4.3	0.9	---	---	---	---	---	---	---	---	---	---
060	CDRT-22	000530	1635	25	8.2	8.1	277	3.7	9.3	---	---	---	---	---	---	---	---	---	---
090	BXHS-1	000524	---	---	---	---	---	---	dam	---	---	---	---	---	---	---	---	---	---
090	BXHS-4	000525	1000	24	6.8	7.3	194	5.7	---	---	---	---	---	---	---	---	---	---	---
090	BXHS-4	000525	1600	---	---	---	---	---	1.8	---	---	---	---	---	---	---	---	---	---
090	WTNS-1	000524	1100	25	7.3	7.4	91	8.6	---	---	---	---	---	---	---	---	---	---	---
090	WTNS-1	000524	1510	---	---	---	---	---	2.5	---	---	---	---	---	---	---	---	---	---

ip - intermittent pools
beaver - beaver dam prevented measurement of flow
mm - meter malfunction
vnd - visible but not detectable with meter
dry - dry streambed
nd - not detectable
nw- not wadeable
dam - lowhead dam prevented water flow
gs - gauging station

Appendix D-2. Water column metals and hardness data collected from nonpoint source screening study sites in the Coosa River Basin during 2000. (All metals analyses are for total fractions, unless otherwise noted)

Sub-Watershed #	Station #	Date *yymmdd*	Time *24hr*	Hardness *mg/L CaCO3* MDL=1.0	Al *ug/L* MDL=0.2	Ca *mg/L* MDL=0.2	Fe *mg/L* MDL=0.02	Mg *mg/L* MDL=0.05	Mn *mg/L* MDL=0.02
Middle Coosa (0315-0106)									
070	BRNE - 28	000918	0745	144	<0.2	36.7	0.188	12.8	0.059
070	LINE - 30	000918	0715	97.1	<0.2	29.4	0.452	5.75	0.168
170	ALXC - 41	000918	1410	146	<0.2	30.8	0.131	16.9	0.022
170	WVRC - 42	000918	1330	159	<0.2	34.6	0.194	17.7	0.054
330	TLDC - 7	000928	0945	15.2	<0.2	4.0	0.490	1.29	0.041
330	TLDC-7 (*Dup)	000928	0946	15.4	<0.2	4.0	0.489	1.32	0.043
Lower Coosa (0315-0107)									
010	TLST - 19	000914	1415	97.3	---	27.8	---	6.77	---

*Field Duplicate Sample

Appendix E. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Upper Coosa (0315-0105)								
030	Cherokee	CT-2	Ambient Monitoring Station	Chattooga R	near Cherokee Co. Rd. 140 at the Georgia State Line	8S/11E/27	34.31417	-85.46811
050	Cherokee	MLLC-10	FY2000 NPS Screening Station	Mills Cr	Cherokee Co. Rd. 747 (dirt Rd. past bridge)	7S/11E/32	34.38285	-85.49799
050	Cherokee	MLLC-11	FY2000 NPS Screening Station	Mills Cr	Cherokee Co. Rd. 56	8S/11E/20	34.32758	-85.50294
060	Cherokee	W-6	ADEM Reservoir Tributary Monitoring FY00	Chattooga R	Deepest point, main river channel, Chattooga River embayment, CRM 12.5		34.24432	-85.61202
060	Cherokee	CHAAU01	University Reservoir Tributary Nutrient Study 1999	Chattooga R	Cherokee Co. Rd. 97 near Fullerton	9S/11E/5	34.29028	-85.50917
080	Dekalb	STRD-1	State Parks Study	Straight Cr	Trail in Desoto State Park	6S/10E/32	34.47370	-85.60640
080	Dekalb	CO-13	CWS-96	W Fk Little R	River ford on Co. Rd. 517 off of Unnamed Co. Rd. NE of Mentone	5S/10E/23	34.58664	-85.56356
080	Dekalb	CO-14	CWS-96	W Fk Little R	Dekalb Co. Rd. 165 S of Mentone	6S/10E/17	34.50842	-85.60844
080	Dekalb	WFLD-1	State Parks Study	W Fk Little R	Dekalb Co.165	6S/10E/17	34.50860	-85.60870
080	Dekalb	WFLD-2	State Parks Study	W Fk Little R	Desoto State Park	6S/10E/20	34.49790	-85.61620
100	Cherokee	CO-01	CWS-96	E Fk Little R	Co. Rd. 84 us of dam	6S/11E/7	34.52383	-85.51394
100	Cherokee	CO-02	CWS-96	E Fk Little R	1/2 mile DS of Lookout Mountain Boys Camp-RR crossing	6S/10E/24	34.51267	-85.53311
110	Dekalb	BERD-9	Ecoregional Reference Station	Bear Cr	on unnamed Dekalb Co. Rd. off of Al Hwy 176 near Ft. Payne	7S/9E/20	34.38094	-85.69789
110	Dekalb	CO01U1	ALAMAP 1997	E Fk Little R	approx. 6.7 miles upstream of confluence with Bear Ck.	7S/10E/20	34.41680	-85.59970

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Upper Coosa (0315-0105), cont.								
110	Dekalb	HURD-1	State Parks Study	Hurricane Cr	Trail in Little River Wildlife Management Area	7S/10E/17	34.42140	-85.60130
110	Cherokee	W-5	ADEM Reservoir Tributary Monitoring FY00	Little R	Deepest point, main river channel, Little River embayment, LRM 12.5		34.25246	-85.66027
110	Dekalb	CO07U3-25	ALAMAP 1999	Little R	Little River	7S/10E/16	34.42400	-85.59140
120	Cherokee	CO-12	CWS-96	Little R	AL Hwy 273 at Little River	9S/9E/3	34.28186	-85.67244
120	Cherokee	LTRAU01	University Reservoir Tributary Nutrient Study 1999	Little R	AL Highway 273 near Little River	9S/9E/6	34.28889	-85.68056
140	Cherokee	WLFC-5	Candidate Reference site	Wolf Cr	Co. Rd. 47	9S/9E/17	34.25494	-85.71339
140	Cherokee	YLWC-6	FY2000 NPS Screening Station	Yellow Cr	Cherokee Co. Rd. 166	9S/8E/25	34.22513	-85.74387
180	Cherokee	COOAU01 (CO-3) (CO-30)	University Reservoir Tributary Nutrient Study 1999 (ADEM Ambient Station) (CWS-96)	Coosa R	Coosa River on the Alabama/Georgia State Line.--ADEM Trend Station	10S/11E/2	34.20000	-85.44472
200	Cherokee	W-7	ADEM Reservoir Tributary Monitoring FY00	Spring Cr	Deepest point, main creek channel, Spring Creek embayment, downstream of Cherokee Co. Hwy. 31 bridge.		34.14568	-85.57082
200	Cherokee	W-8	ADEM Reservoir Tributary Monitoring FY00	Cowan Cr	Deepest point, main creek channel, Cowan Creek embayment, downstream of Cherokee Co. Hwy. 16 bridge.		34.14400	-85.59432
200	Cherokee	W-9	ADEM Reservoir Tributary Monitoring FY00	Big Nose Cr	Deepest point, main creek channel, Big Nose Creek embayment, approximately 0.5 miles upstream of lake confluence.		34.17799	-85.68242
220	Cherokee	CO-15	CWS-96	Terrapin Cr	Co. Rd. 8 West of McFrey Crossroads	12S/10E/20	33.97961	-85.60122
240	Cherokee	FRG-1	FY99 303(d) Monitoring Proj.	Frog Cr	Cherokee Co. Rd. 177; approx. 1.9 miles upstream of confluence with Hurricane Creek.	12S/10E/11	34.00110	-85.54800
240	Cherokee	FRG-2	FY99 303(d) Monitoring Proj.	Frog Cr	Cherokee Co. Rd. 12; approx. 6.2 miles upstream of confluence with Hurricane Creek.	11S/11E/32	34.03070	-85.49530

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Upper Coosa (0315-0105), cont.								
240	Cherokee	HRC-1	FY99 303(d) Monitoring Proj.	Hurricane Cr	Cherokee Co. Rd. 33; approx. 0.9 miles upstream of confluence with Terrapin Creek.	12S/10E/10	34.00280	-85.57900
240	Cherokee	HRC-2	FY99 303(d) Monitoring Proj.	Hurricane Cr	Cherokee Co. Rd. 29; approx. 4.1 miles upstream of confluence with Terrapin Creek.	12S/10E/13	33.98690	-85.54280
240	Cherokee	HRC-3	FY99 303(d) Monitoring Proj.	Hurricane Cr	Cherokee Co. Rd. 8; approx. 6.7 miles upstream of confluence with Terrapin Creek.	12S/11E/17	33.99070	-85.50380
240	Cherokee	WOB-1	FY99 303(d) Monitoring Proj.	Wolf Branch	adjacent to Cherokee Co. Rd. 111 downstream of poultry houses.	12S/11E/19	33.98430	-85.51940
240	Cherokee	WOB-2	FY99 303(d) Monitoring Proj.	Wolf Br	US Hwy 278	12S/11E/19	33.97840	-85.51790
250	Cherokee	CO-16	CWS-96	Terrapin Cr	AL Hwy 9 at Ellisville	11S/10E/20	34.06328	-85.61197
250	Cherokee	CO-17	CWS-96	Terrapin Cr	Co. Rd. 71 South of Centre	10S/9E/34	34.12194	-85.67672
250	Cherokee	TERAU01	University Reservoir Tributary Nutrient Study 1999	Terrapin Cr	AL Highway 9 near Ellisville	11S/10E/20	34.06500	-85.61417
250	Cherokee	CO6U4-45	ALAMAP 2000	Terrapin Cr, UT to	Tributary to Terrapin Creek	11S/ 9E/1	34.10350	-85.64630
270	Cherokee	COOAU02	University Reservoir Tributary Nutrient Study 1999	Coosa R	Weiss Dam Tailrace Co. Rd. 7	10S/8E/13	34.17194	-85.75389
Middle Coosa (0315-0106)								
000	Etowah	CO-28	CWS-96	Coosa R	Gadsden Water Intake E. of U.S. Hwy 431		34.02222	-85.98750
010	Etowah	NH-5	ADEM Reservoir Tributary Monitoring FY00	Ballplay Cr	Deepest point, main creek channel, Ballplay Creek embayment, approximately 0.5 miles upstream of Coosa River confluence.		34.11786	-85.81751
030	Etowah	BCVE-13	FY2000 NPS Screening Station	Big Cove Cr	Sibert Rd	12S/7E/23	33.96937	-85.81505
030	Etowah	DRYE-4	Candidate Reference site	Dry Cr	Dry Creek approximately 1 mile east of Mayes Crossroads	12S/8E/8	34.00866	-85.81268

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Middle Coosa (0315-0106), cont.								
030	Shelby	CO2U4-20	ALAMAP 2000	Spring Cr	Spring Creek	19S/ 2E/ S3	33.41410	-86.42640
040	Etowah	CO3U4-24	ALAMAP 2000	Coosa R, UT to	Tributary to Coosa River	11S/ 7E/ S31	34.03580	-85.84340
040	Etowah	CO06U3-37	ALAMAP 1999	Coosa R, UT to	approx. 1/4 mile downstream of unnamed road in Coats Bend.	11S/7E/25	34.04650	-85.84370
050	Dekalb	BWC-1	Water Quality Demonstration Study (2000)	Big Wills Cr	Alabama Hwy 35	7S/8E/12	34.43806	-85.76669
050	Dekalb	BWC-2a	Water Quality Demonstration Study (2000)	Big Wills Cr	upstream of the Ft Payne WWTP	7S/8E/14	34.36528	-85.81319
050	Dekalb	BWC-3A	Water Quality Demonstration Study (2000)	Big Wills Cr	~ 100 m downstream of the WWTP discharge	7S/8E/14	34.41944	-85.78389
050	Dekalb	BWC-3B	Water Quality Demonstration Study (2000)	Big Wills Cr	Hughes Mill, ~ 2 mi. downstream of WWTP discharge	7S/8E/22	34.39528	-85.79528
050	Dekalb	BWLD-12	FY2000 NPS Screening Station	Big Wills Cr	US Hwy 11	6S/9E/29	34.48767	-85.71307
060	Etowah	BWCAU01	University Reservoir Tributary Nutrient Study 1999	Big Wills Cr	Etowah Co. Rd. near Cave Spring	11S/6E/6	34.09806	-86.03806
070	Dekalb	CO-03	CWS-96	Little Wills Cr	Dekalb Co. Rd. 51 South of AL Hwy 68	9S/7E/3	34.27450	-85.88336
070	Dekalb	CO-04	CWS-96	Little Wills Cr	20 yards us of Little Wills Creek mouth, South of Hwy 68	9S/7E/3	34.28294	-85.89608
070	Etowah	BRNE-28	FY2000 NPS Screening Station	Brown Cr	unnamed Co. Rd. near Ivalee	11S/5E/32	34.03416	-86.14798
070	Etowah	CLRE-29	FY2000 NPS Screening Station	Clear Cr	unnamed Co. Rd.	11S/5E/31	34.02661	-86.15161
070	Etowah	LINE-30	FY2000 NPS Screening Station	Line Cr	unnamed Co. Rd. near US 431	11S/5E/21	34.06677	-86.12617

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Middle Coosa (0315-0106), cont.								
070	Etowah	LWLE-31	FY2000 NPS Screening Station	Little Wills Cr	unnamed Co. Rd. near Kenner off US Hwy 11	10S/6E/24	34.15504	-85.94983
070	Etowah	NH-6	ADEM Reservoir Tributary Monitoring FY00	Big Wills Cr	Deepest point, main creek channel, Big Wills Creek embayment, approximately 1.0 miles upstream of US Hwy. 411 bridge.		33.98291	-86.01838
080	Etowah	NH-7	ADEM Reservoir Tributary Monitoring FY00	Black Cr	Deepest point, main creek channel, Black Creek embayment, immediately upstream of Interstate 759 bridge.		33.99157	-86.01532
080	Etowah	BLKE-14	FY2000 NPS Screening Station	Black Cr	unnamed Co. Rd.	10S/7E/28/29	34.07683	-85.97983
080	Etowah	BLKE-44	FY2000 NPS Screening Station	Black Cr	unnamed Co. Rd. near Highland School (Yates Road)	11S/6E/14	34.08403	-85.97175
090	Etowah	CO-1	Ambient Monitoring Station	Coosa R	Alabama Hwy 77 bridge in Southside	12S/6E/33	33.93544	-86.02311
100	St Clair	BCCAU01	University Reservoir Tributary Nutrient Study 1999	Big Canoe Cr	U.S. Highway 231	14S/4E/6	33.83972	-86.26278
100	St. Clair	BCNS-24	FY2000 NPS Screening Station	Big Canoe Cr	Co. Rd. 36 near Ashville	14S/3E/12	33.83277	-86.28348
100	St. Clair	BCNS-35	FY2000 NPS Screening Station	Big Canoe Cr	Co. Rd. 31	14S/2E/22	33.80434	-86.41965
100	St. Clair	GLFS-25	FY2000 NPS Screening Station	Gulf Cr	unnamed Co. Rd.	13S/4E/8	33.91825	-86.25238
100	St. Clair	MCKS-27	FY2000 NPS Screening Station	Muckleroy Cr	US Hwy 231	13S/3E/26	33.87797	-86.30422
110	Etowah	CO02U1	ALAMAP 1997	Little Canoe Cr	approx. 5.3 miles upstream of confluence with Big Canoe Creek.	12S/4E/21	33.97820	-86.23590
110	Etowah	LCNE-1	Ecoregional Reference Station	Little Canoe Cr	unnamed Etowah Co. Rd. off of AL Hwy 7	12S/4E/23	33.97006	-86.17892
120	Etowah	NH-8	ADEM Reservoir Tributary Monitoring FY00	Big Canoe Cr	Deepest point, main creek channel, Big Canoe Creek embayment, downstream of Canoe Creek Campground.		33.86174	-86.08170

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Middle Coosa (0315-0106), cont.								
130	Calhoun	COOAU04	University Reservoir Tributary Nutrient Study 1999	Coosa R	Neely Henry Dam Tailrace near Ohatchee	14S/6E/30	33.78389	-86.05278
130	Etowah	NH-9	ADEM Reservoir Tributary Monitoring FY00	Greens Cr	Deepest point, main creek channel, Greens Creek embayment, immediately upstream of AL Hwy. 77 bridge.		33.85293	-86.04744
140	St. Clair	NH-10	ADEM Reservoir Tributary Monitoring FY00	Beaver Cr	Deepest point, main creek channel, Beaver Creek embayment, upstream of Greensport Marina.		33.84250	-86.07972
160	Calhoun	OHCAU01	University Reservoir Tributary Nutrient Study 1999	Ohatchee Cr	Cherokee Trail near Ohatchee	14S/6E/27	33.78028	-85.99806
170	Calhoun	CO-26	CWS-96	Williams Br	Trib to Tallahatchee Cr. us of Jacksonville WWTP--Farm lane off AL Hwy 204, 0.7 miles East of Tallahatchee Cr Bridge	14S/8E/10	33.82463	-85.78836
170	Calhoun	CO-27	CWS-96	Williams Br	Al. Hwy 204; near confluence of Tallasahatchee Cr.	14S/8E/9	33.82417	-85.78333
170	Calhoun	ALXC-41	FY2000 NPS Screening Station	Alexandra Cr	upstream of unnamed of Co. Rd. and confluence w/ Tallaseehatchee Ck.	14S/7E/19	33.79129	-85.94344
170	Calhoun	LTSC-39	FY2000 NPS Screening Station	Little Tallasseehatchee Cr	unnamed Co. Rd	14S/8E/22	33.79595	-85.78951
170	Calhoun	TLSC-38	FY2000 NPS Screening Station	Tallasseehatchee Cr	Calhoun Co. Rd. 19	14S/8E/3	33.84064	-85.77945
170	Calhoun	TLSC-40	FY2000 NPS Screening Station	Tallasseehatchee Cr	unnamed Co. Rd. near Wellington	14S/7E/22	33.80365	-85.88686
170	Calhoun	WVRC-42	FY2000 NPS Screening Station	Weavers Cr	Co. Rd. 73	14S/7E/24	33.80076	-85.84769
190	Calhoun	CACAU01	University Reservoir Tributary Nutrient Study 1999	Cane Cr	Calhoun Co. Rd. 93	15S/6E/18	33.72889	-86.04389
190	Calhoun	LM-4	ADEM Reservoir Tributary Monitoring FY00	Cane Cr	Deepest point, main creek channel, Cane Creek embayment, approximately 0.25 miles upstream of Coosa River confluence.		33.73065	-86.10230
190	Calhoun	CO05U3-36	ALAMAP 1999	Cane Cr, UT to	approx 1/8 mile upstream of unnamed road on Fort McClellan Military Reservation.	15S/7E/30	33.68150	-85.94500

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Middle Coosa (0315-0106), cont.								
200	St. Clair	LM-7	ADEM Reservoir Tributary Monitoring FY00	Dye Cr	Deepest point, main creek channel, Dye Creek embayment, approximately 0.5 miles upstream of lake confluence.		33.57086	-86.22270
210	Calhoun	AKRC-21	FY2000 NPS Screening Station	Acker Cr	Co. Rd. 73 South of Mt. Olive Church	15S/5E/27	33.70483	-86.10305
220	Talladega	BEYT-15	FY2000 NPS Screening Station	Blue Eye Cr	US Hwy 78 near Lincoln	16S/5E/32	33.60404	-86.13448
220	Talladega	LM-5	ADEM Reservoir Tributary Monitoring FY00	Blue Eye Cr	Deepest point, main creek channel, Blue Eye Creek embayment, approximately 0.5 miles upstream of lake confluence.		33.60139	-86.17107
240	Calhoun	DRYC-2	Ecoregional Reference Station	Dry Cr	Calhoun Co. Rd. 55 (Rabbittown Rd.), near Burns, Talladega National Forest	14S/10E/4	33.84240	-85.59422
240	Cleburne	CHOC-2	Ecoregional Reference Station	Choccolocco Cr	FS Rd. 540, Talladega National Forest Cleburne County	14S/10E/10	33.82946	-85.58173
240	Cleburne	SHLC-3	Ecoregional Reference Station	Shoal Cr	FS Rd. 500, Talladega National Forest, Cleburne Co	15N/10E/16	33.72529	-85.60115
240	Calhoun	CHOC-GSA-1	GSA-Choccolocco Creek Watershed Study	Choccolocco Cr	AL Hwy 9	15S/9E/10	33.73060	-85.68030
250	Calhoun	CHOC-GSA-2	GSA-Choccolocco Creek Watershed Study	Choccolocco Cr	US Hwy 78	16S/9E/19	33.62340	-85.72640
250	Calhoun	CHOC-GSA-3	GSA-Choccolocco Creek Watershed Study	Choccolocco Cr	Boiling Springs	16S/8E/27	33.60640	-85.79000
250	Talladega	CHOC-GSA-5	GSA-Choccolocco Creek Watershed Study	Salt Creek	Talladega Co. Rd. 103	17S/7E/17	33.55140	-85.93110
250	Talladega	CHOC-GSA-6	GSA-Choccolocco Creek Watershed Study	Choccolocco Cr	Talladega Co. Rd. 5	17S/6E/17	33.42640	-86.04160
250	Calhoun	CHOC-GSA-7	GSA-Choccolocco Creek Watershed Study	Egoniaga Cr	Riddle Farm Rd	17S/6E/17	33.63830	-85.69050
250	Talladega	CHOC-GSA-8	GSA-Choccolocco Creek Watershed Study	Cheaha Cr	Talladega Co. Rd.5	17S/6E/20	33.53410	-86.04160

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Middle Coosa (0315-0106), cont.								
250	Calhoun	CO01U2-55	ALAMAP 1998	Choccolocco Cr, UT to	approx. 3.7 miles upstream of confluence with Choccolocco Creek.	16S/8E/13	33.63670	-85.76010
250	Talladega	CL-2	Ambient Monitoring Station	Choccolocco Cr	Talladega Co. Rd. 103 crossing	17S/7E/4	33.58194	-85.90556
250	Talladega	CL-3	Ambient Monitoring Station	Choccolocco Cr	Talladega Co. Rd. 399 crossing	17S/6E/15	33.55139	-86.00528
260	Talladega	CO-24	CWS-96	Brecon Br	us of Brecon Cr. WWTP	18S/6E/7	33.47111	-86.06056
260	Clay	CHEC-6	Ecoregional Reference Station	Cheaha Cr	near Clay/Talladega County line, Talladega National Forest	18S/7E/22	33.45275	-85.90273
260	Clay	CHE-1	State Parks Study	Cheaha Cr	just upstream of Lake Chinnabee at Lake Chinnabee Recreational Area	18S/7E/14	33.45860	-85.87372
260	Clay	CHEC-3	State Parks Study	Cheaha Cr	upstream of CHE-1 at USFS road #600-3.	18S/8E/18	33.45900	-85.84160
260	Talladega	CO-25	CWS-96	Brecon Br	Co. Rd. 5 ds of Brecon Cr. WWTP	18S/6E/8	33.48308	-86.04272
270	Talladega	CL-1 (CHOAUO1) (CHOC-GSA-9)	Ambient Monitoring Station, University Reservoir Tributary Nutrient Study, GSA-Choccolocco	Choccolocco Cr	Talladega Co. Rd. 326 crossing	17S/5E/15	33.56192	-86.12631
270	Talladega	LM-6	ADEM Reservoir Tributary Monitoring FY00	Choccolocco Cr	Deepest point, main creek channel, Choccolocco Creek embayment, approximately 1.0 miles upstream of lake confluence.		33.55822	-86.17536
280	Talladega	LM-9	ADEM Reservoir Tributary Monitoring FY00	Clear Cr	Deepest point, main creek channel, Clear Creek embayment, immediately upstream of Talladega Co. Rd. 191 bridge.		33.44679	-86.28765
290	St. Clair	LM-8	ADEM Reservoir Tributary Monitoring FY00	Cropwell Cr	Deepest point, main creek channel, Cropwell Creek embayment, approximately 0.5 miles upstream of lake confluence.		33.52186	-86.28285
300	St. Clair	CO5U4-34	ALAMAP 2000	Cane Cr	Cane Creek	16S/ 3E/ S19	33.62660	-86.35730
300	St Clair	KYC -2	FY99 303(d) Monitoring Proj.	Kelly Cr	St. Clair Co. Rd. 27.	17S/2E/33	33.50242	-86.44304

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Middle Coosa (0315-0106), cont.								
300	St Clair	WLFS-9	Ecoregional Reference Station	Wolf Cr	unnamed St. Clair Co. Rd.approx. 1 mile north of Wolf Creek	17S/3E/19	33.56883	-86.33817
310	Shelby	KYC -1	FY99 303(d) Monitoring Proj.	Kelly Cr	US Hwy 231.	18S/2E/24	33.44743	-86.38692
310	Shelby	KELAU01	University Reservoir Tributary Nutrient Study 1999	Kelly Cr	U.S. Highway 231 near Vincent	18S/2E/24	33.44750	-86.38694
310	St. Clair	LAY-6	ADEM Reservoir Tributary Monitoring FY00	Kelly Cr	Deepest point, main creek channel, Kelly Creek embayment, approximately 0.5 miles upstream of lake confluence.		33.41151	-86.36058
320	Talladega/ St Clair	COOAU03	University Reservoir Tributary Nutrient Study 1999	Coosa R	Logan Martin Dam Tailrace Talladega Co.54	18S/3E/33	33.40917	-86.33806
330	Talladega	DRYT-9	Ecoregional Reference Station	Dry Cr	Forest Service Rd., upstream from Talladega Co. Rd.302, Talladega National Forest	19S/5E/23	33.36568	-86.08963
330	Talladega	TCT-5	Ecoregional Reference Station	Talladega Cr	AL Hwy 77 bridge in Talladega Co	19S/6E/17	33.37839	-86.03025
330	Talladega	TACAU01	University Reservoir Tributary Nutrient Study 1999	Talladega Cr	Talladega Co. Rd. 207 near Alpine	19S/4E/28	33.35944	-86.23417
330	Talladega	TCT-3	Water Quality Demonstration Study 1990	Talladega Cr	~200 yds upstream of the confluence with Town Creek	19S/5E/6	33.41103	-86.14919
330	Talladega	TCT-4	Water Quality Demonstration Study 1990	Talladega Cr	~4 miles upstream of the confluence with Town Creek	19S/4E/13	33.38458	-86.17944
330	Talladega	LAY-7	ADEM Reservoir Tributary Monitoring FY00	Talladega Cr	Deepest point, main creek channel, Talladega Creek embayment, immediately upstream of AL Hwy. 235 bridge.		33.30642	-86.35371
330	Clay	TLDC-7	FY2000 NPS Screening Station	Talladega Cr	unnamed Co. Rd. near Cairmont Springs	19S/7E/28	33.34221	-85.92468
330	Talladega	TLDT-32	FY2000 NPS Screening Station	Talladega Cr	unnamed Co. Rd. near Chandler	19S/6E/35	33.32815	-85.99048
330	Talladega	CO04U3-34	ALAMAP 1999	Talladega Cr, UT to	~1/2 mile upstream of Talladega Co. Rd. 180 crossing.	19S/4E/32	33.34170	-86.25560

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Middle Coosa, cont. (0315-0106)								
330	Talladega	TCT-1	Water Quality Demonstration Study 1990	Town Cr	~100yds upstream of the Talladega WWTP outfall	18S/5E/31	33.41497	-86.15122
330	Talladega	TCT-2	Water Quality Demonstration Study 1990	Town Cr	~50yds downstream of the Talladega WWTP outfall	18S/5E/31	33.41497	-86.15256
Lower Coosa (0315-0107)								
010	Talladega	SHRT-1 SHIRTEE03	FY00 303(d) Monitoring Proj., Ambient Montoring Station	Shirtee Cr	Talladega Co. Rd. 24; Approx. 2.0 miles upstream of confluence with Tallasseehchee Creek.	21S/4E/7	33.21200	-86.27320
010	Talladega	TALAU01	University Reservoir Tributary Nutrient Study 1999	Tallaseehatchee Cr	Talladega Co. Rd. north of Boaz Corner	20S/3E/14	33.28472	-86.30083
010	Talladega	TH-1	Ambient Monitoring Station	Tallaseehatchee Cr	Bridge east of Childersberg	20S/4E/19	33.25606	-86.25825
010	Talladega	TH-1a	Ambient Monitoring Station 1991	Tallaseehatchee Cr	Bridge east of Childersberg	20S/4E/19	33.26667	-86.28333
010	Talladega	TLST-3	FY00 303(d) Monitoring Proj.	Tallaseehatchee Cr	Talladega Co. Rd. 103 (Coleman Bridge)	20S/3E/14	33.28410	-86.30080
010	Talladega	TLST-1	FY2000 NPS Screening Station/ FY00 303(d) Monitoring Proj.	Tallasseehatchee Cr	Talladega Co. Rd. 139, South of Co. Rd. 204.	21S/4E/4	33.23020	-86.23890
010	Talladega	TLST-2	FY00 303(d) Monitoring Proj.	Tallasseehatchee Cr	Talladega Co. Rd. 105.	20S/4E/30	33.25530	-86.25970
010	Talladega	WWOT-1	FY00 303(d) Monitoring Proj.	Weewoka Cr	Talladega Co. Rd. 175.	20S/4E/19	33.28090	-86.26920
010	Talladega	EMHT-16	FY2000 NPS Screening Station	Emauhee Cr	unnamed Co. Rd. near Gascot	21S/4E/2	33.23316	-86.19830
010	Talladega	TLST-19	FY2000 NPS Screening Station	Tallasseehatchee Cr	unnamed Co. Rd. near Emauhee	21S/4E/11	33.21333	-86.19513
010	Talladega	LAY-8	ADEM Reservoir Tributary Monitoring FY00	Tallasseehatchee Cr	Deepest point, main creek channel, Tallaseehatchee Creek embayment, immediately upstream of AL Hwy. 235 bridge.		33.29233	-86.35281
010	Talladega	WWOT-37	FY2000 NPS Screening Station	Weewoka Cr	Co. Rd. 139 bridge	20S/4E/17	33.29050	-86.24700

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Lower Coosa (0315-0107), cont.								
030	Shelby	FRMS-9	Ecoregional Reference Station	Fourmile Cr	Shelby Co. Rd. 61	20S/1E/36	33.25649	-86.48980
030	Shelby	YLFS-1	FY00 303(d) Monitoring Proj.	N Fk Yellowleaf Cr	Shelby Co. Rd. 89.	20S1W/12	33.31200	-86.59170
030	Shelby	YLFS-2	FY00 303(d) Monitoring Proj.	S Fk Yellowleaf Cr	Shelby Co. Rd. 49.	20S/1W/13	33.29560	-86.58980
030	Shelby	CO1U4-17	ALAMAP 2000	Yellow Leaf Cr	Yellowleaf Creek	20S/ 2E/ S20	33.28030	-86.45380
030	Shelby	YLFS-3	FY00 303(d) Monitoring Proj.	Yellowleaf Cr	Shelby Co. Rd. 51.	20S/1E/4	33.32100	-86.53570
030	Shelby	YLFS-4	FY00 303(d) Monitoring Proj.	Yellowleaf Cr	on Gulf States Paper Co. property.; NE1/4.	20S/1E/12	33.29800	-86.47250
030	Shelby	LAY-9	ADEM Reservoir Tributary Monitoring FY00	Yellowleaf Cr	Deepest point, main creek channel, Yellowleaf Creek embayment, upstream of Gaston Steam Plant discharge.		33.24758	-86.45697
040	Talladega	CO-29	CWS-96	Coosa R	U.S. Hwy 231 near Childersburg--Talladega\Shelby Water Treatment Plant	20S/3E/18	33.29056	-86.36528
040	Talladega	CO-2	Ambient Monitoring Station	Coosa R	Hwy 230 bridge near Childersburg	20S/3E/18	33.29011	-86.36167
040	Talladega	KHTT-1	Proposed Ecoregional Reference Station	Kahatchee Cr	North of Mt Sharon at Co. Rd. 8	21S/2E/11	33.22187	-86.40571
050	Shelby	CO02U3-18	ALAMAP 1999	Beeswax Cr	Beeswax Creek.	21S/1E/17	33.20650	-86.55890
050	Shelby	CO-05	CWS-96	Dry Cr, UT to	Shelby Co. Rd. 103; 1/2 mile South of Wilsonville	21S/1E,2E/1,6	33.22747	-86.48325
050	Shelby	BWXS-8	FY2000 NPS Screening Station	Beeswax Cr	Shelby Co. Rd. 61, North of Co. Rd 77	21S/1E/17	33.18317	-86.54367
050	Shelby	LBWS-9	FY2000 NPS Screening Station	Little Beeswax Cr	Shelby Co. Rd. 28 West of AL Hwy 145	22S/3E/34	33.16067	-86.53100

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Lower Coosa (0315-0107), cont.								
060	Talladega	CDRT-22	FY2000 NPS Screening Station	Cedar Cr	adjacent to unnamed Co. Rd. and Northeast of Fayetteville Church	22S/2E/35	33.15617	-86.41500
070	Coosa	PNTC-11	Ecoregional Reference Station	PantherCr	unnamed Co. Rd. off of Coosa Co. Rd. 56 near Marble Valley--trib. to Lay Lake/Coosa R.	24N/16E/35	33.01838	-86.44741
070	Coosa	CO04U1	ALAMAP 1997	Peckerwood Cr	~ 5.5 miles upstream of confluence with Coosa River.	24N/17E/5	33.09310	-86.40640
070	Talladega	LAY-10	ADEM Reservoir Tributary Monitoring FY00	Peckerwood Cr	Deepest point, main creek channel, Peckerwood Creek embayment, approximately 0.5 miles upstream of lake confluence.		33.10578	-86.47378
090	Shelby	BXHS-1/ CO-06	FY00 303(d) Monitoring Proj./ CWS-96	Buxahatchee Cr	US Hwy 31 in Calera, us of Calera WWTP.	24N/13E/2	33.09580	-86.75270
090	Shelby	BXHS-2	FY00 303(d) Monitoring Proj.	Buxahatchee Cr	upstream of the Calera WWTP outfall.	24N/13E/2	33.09430	-86.74390
090	Shelby	BXHS-3	FY00 303(d) Monitoring Proj.	Buxahatchee Cr	100 feet upstream of the Southbound lane of I-65.	24N/13E/2	33.09370	-86.73840
090	Shelby	BXHS-4/ CO-07	FY00 303(d) Monitoring Proj./ CWS-96	Buxahatchee Cr	upstream of Hiawatha Road (Shelby Co. Rd. 161) and Watson Branch, ds of Calera WWTP	24N/14E/9	33.07350	-86.67750
090	Shelby	CAWW-1	FY00 303(d) Monitoring Proj.	Calera WWTP Outfall	Calera WWTP outfall at Buxahatchee Creek.	24N/13E/2	33.09410	-86.74440
090	Shelby	WTNS-1	FY00 303(d) Monitoring Proj./ FY2000 NPS Screening Station	Watson Cr	upstream of Hiawatha Rd. (Shelby Co. Rd. 161) and Buxahatchee Creek.	24N/14E/9	33.07340	-86.67830
100	Chilton	COOAU05	University Reservoir Tributary Nutrient Study 1999	Coosa R	Lay Dam Tailrace Chilton Co. Rd. 55	23N/16E/30	32.96500	-86.51750
100	Shelby	CO01U3-31	ALAMAP 1999	Mud Cr	~ 1/2 mile south of Shelby Co. Rd. 42 off end of unnamed road at Providence Church.	22S/1W/23	33.10600	-86.60790
100	Chilton	LAY-11	ADEM Reservoir Tributary Monitoring FY00	Waxahatchee Cr	Deepest point, main creek channel, Waxahatchee Creek embayment, approximately 0.5 miles upstream of lake confluence.		33.02364	-86.53116
110	Clay	EFH-1	1997 GSA OAW Study	East Fork Hatchet Cr	East Fork of Hatchet Cr at unimproved road	20S/6E/32 SW1/4	32.89972	-86.21000

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Lower Coosa (0315-0107), cont.								
110	Coosa	CO-10 HCT-5	CWS-96 1997 GSA Hatchet Cr Study	Hatchet Cr	U.S. Hwy 280	24N/19E/25 SW 1/4	33.03639	-86.12333
110	Clay	CO-11	CWS-96	Hatchet Cr	Co. Rd. 4	23S/6E/7	33.13028	-86.05556
110	Coosa	HCT-6	1997 GSA Hatchet Cr Study	Hatchet Cr	Hatchet Cr at Coosa Co Hwy 511	24N/20/E8 SE 1/4	33.08111	-86.08333
110	Clay	HCT-7	1997 GSA Hatchet Cr Study	Hatchet Cr	Hatchet Cr at AL Hwy 143	21S/6E/20 NW 1/4	33.19111	-86.04639
110	Clay	WFH-1	1997 GSA Hatchet Cr Study	West Fork Hatchet Cr	West Fork of Hatchet Cr at unimproved road	20S/9E/32 W1/2	33.24444	-86.04944
110	Coosa	CO03U1	ALAMAP 1997	Hatchet Cr, UT to	~ 2.5 miles upstream of confluence with Hatchet Creek.	24N/19E/1	33.09980	-86.12740
120	Coosa	CO-20	CWS-96	Socapatoy Cr	AL Hwy 9 North of Socapatoy	23N/20E/9	32.99139	-86.06528
120	Coosa	CO-21 SPY-1	CWS-96 1997 GSA Hatchet Cr Study	Socapatoy Cr	Co. Rd. 69 Northwest of Keyno	23N/19E/22 SE 1/4	32.96556	-86.14972
130	Coosa	HCT-2	1997 GSA OAW Study	Hatchet Cr	Hatchet Cr at abandoned bridge	22N/17E/24 NE1/4	32.88472	-86.31861
130	Coosa	HCT-3	1997 GSA OAW Study	Hatchet Cr	Hatchet Cr at unimproved roat at USGS stream station 02408540	22N/18E/4 SE 1/4	32.91861	-86.27028
130	Coosa	HCT-4	1997 GSA OAW Study	Hatchet Cr	Hatchet Cr at old U.S. Hwy 231 bridge site	23N/19E/31 NE 1/4	32.94167	-86.21861
130	Coosa	SWP-1	1997 GSA OAW Study	Swamp Creek	Swamp Cr adjacent to Coosa Co Rd 29.	22N/17E/26 SE1/4	32.85944	-86.33806
130	Coosa	CO-08 HCT-1	CWS-96 1997 GSA Hatchet Cr Study	Hatchet Cr	Hatchet Cr at Coosa Co. Rd. 29	22N/17E/26 SE1/4	32.86111	-86.33861
130	Coosa	CO-09	CWS-96	Hatchet Cr	U.S. Hwy 231 North of Rockford	23N/19E/30	32.94389	-86.20330

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Lower Coosa (0315-0107), cont.								
130	Coosa	HATAU01	University Reservoir Tributary Nutrient Study 1999	Hatchet Cr	Coosa Co. Rd. Northwest of Rockford	22N/18E/4	32.91667	-86.27028
130	Coosa	JNSC-16	Ecoregional Reference Station	Jones Cr	Coosa Co. Rd. 18-- 2.5 miles Northeast of Lyle -- trib. to Hatchet Cr.	22N/18E/8	32.90492	-86.29758
140	Coosa	CO-18	CWS-96	Finikochika Cr	Co. Rd. 56 West of Weogufka	23N/17E/2	33.00639	-86.35000
140	Coosa	CO-19	CWS-96	Finikochika Cr	Co. Rd. 15 Northwest of Moriah	23N/17E/27	32.95000	-86.36333
140	Coosa	CO03U3-47	ALAMAP 1999	Stewart Branch	~ 1/8 mile upstream of Coosa Co. Rd. 35 crossing.	24N/18E/20	33.04500	-86.30320
140	Coosa	CO-22	CWS-96	Weogufka Cr	Co. Rd. 56 East of Weogufka	24N/18E/32	33.01861	-86.30083
140	Coosa	WEOAU01 CO-23	University Reservoir Tributary Nutrient Study 1999 / CWS-96	Weogufka Cr	Coosa Co. Rd. 15 near Moriah	23N/17E/34	32.95278	-86.33667
140	Coosa	WGFC-1	Ecoregional Reference Station	Weogufka Cr	Co. Rd. 41 near Stewartville	24N/18E/14	33.07264	-86.24800
150	Coosa	MIT-4	ADEM Reservoir Tributary Monitoring FY00	Hatchet Cr	Deepest point, main creek channel, Hatchet Creek embayment, approximately 0.5 miles upstream of lake confluence.		32.85550	-86.43171
150	Coosa	CLYC-15	Candidate Ecoregional Reference Station	Clay Creek		23N/16E/26	32.95324	-86.45144
160	Chilton	MIT-3	ADEM Reservoir Tributary Monitoring FY00	Walnut Cr	Deepest point, main creek channel, Walnut Creek embayment, approximately 0.5 miles upstream of lake confluence.		32.86525	-86.47711
160	Chilton	WNTC-1	FY00 303(d) Monitoring Proj.	Walnut Cr	Chilton Co. Rd. 89.	22N/15E/30	32.86000	-86.59960
160	Chilton	WNTC-2	FY00 303(d) Monitoring Proj.	Walnut Cr	Chilton Co. Rd. 455.	22N/15E/20	32.87310	-86.58050
160	Chilton	WNTC-3	FY00 303(d) Monitoring Proj.	Walnut Cr	Mount Springs Rd.	22N/15E/16	32.87330	-86.58080

Appendix E, cont. Location Descriptions for stations where data were collected within the Coosa River Basin from 1990 to 2000.

Sub-watershed	County	Station Number	Purpose	Waterbody Name	Station Description	T / R / S	Latitude	Longitude
Lower Coosa (0315-0107), cont.								
160	Chilton	WNTC-4	FY00 303(d) Monitoring Proj.	Walnut Cr	Chilton Co. Rd. 32.	22N/15E/14	32.89420	-86.56690
170	Elmore	JOR-3	ADEM Reservoir Tributary Monitoring FY00	Shoal Cr	Deepest point, main creek channel, Shoal Creek embayment, immediately upstream of Elmore County Rd. 23 bridge.		32.65421	-86.32768
170	Chilton	CO05U1	ALAMAP 1997	Chestnut Cr	~ 1.6 miles upstream of confluence with Coosa River.	21N/16E/35	32.76150	-86.43190
180	Elmore	JOR-4	ADEM Reservoir Tributary Monitoring FY00	Weoka Cr	Deepest point, main creek channel, Weoka Creek embayment, approximately 0.5 miles upstream of lake confluence.		32.66636	-86.30060
180	Elmore	JOR-5	ADEM Reservoir Tributary Monitoring FY00	Sofkahatchee Cr	Deepest point, main creek channel, Sofkahatchee Creek embayment, approximately 0.5 miles upstream of lake confluence.		32.63716	-86.26449
190	Elmore	COOAUM01 CRWB	University Reservoir Tributary Nutrient Study 1999	Coosa R	Al. Highway 111 Bridge in Downtown Wetumpka	18N/19E/18	32.53694	-86.20889
200	Elmore	CO4U4-31	ALAMAP 2000	Corn Cr	Corn Creek	18N/ 19E/ S15	32.54310	-86.15140
200	Elmore	QFMC-1	Quality Assurance Quality Control Assessment	Fourmile Cr	Alabama Hwy 9 bridge near Wetumpka in Elmore Co	19N/19E/33	32.58389	-86.17394
200	Elmore	TYC -1	FY99 303(d) Monitoring Proj.	Taylor Cr	upstream of Corn Creek; approx. 1.2 miles upstream of confluence with Coosa River.	18N/19E/6	32.57000	-86.19970
200	Elmore	TYC -2	FY99 303(d) Monitoring Proj.	Taylor Cr	adjacent to Williams Rd. upstream of unnamed tributary; approx 2.6 miles upstream of confluence with Coosa River.	19N/19E/32	32.58610	-86.19590

Appendix F-1. Physical / chemical data collected from stations in the Coosa River Basin as part of the ADEM Ambient Monitoring Program. (ADEM 2001f)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Air Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	Total-P	NH3-N	NO3+ NO2-N	Cl-
#		#	*yymmdd*	24hr	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100mL*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105)																			
050	Chattooga R	CT2	980820	1100	30	25	5.2	7.3	312	17		92	1.2	20	281	0.277	<0.005	0.469	<1.0
050	Chattooga R	CT2	981015	1010	20	17	7.5	7.5	653	4		108	0.7	9	407	0.355	<0.005	0.275	<1.0
050	Chattooga R	CT2	990603	1100	26	22	6.6	7.2	335	28		>240	1.7	44	275	0.215	0.111	0.585	<1
050	Chattooga R	CT2	990805	1015	27	25	6.5	7.8	540	9	Normal	80	0.5	13	319	0.49	0.048	0.485	37.8
050	Chattooga R	CT2	991007	1030	24	18	7.1	7.1	710	5	----	264	2.6	8	537	0.535	0.067	0.282	31.5
050	Chattooga R	CT2	991014	1315	29	20	7.6	7.4	413	6	Normal	43	1.2	16	369	0.462	<MDL	0.336	41.5
050	Chattooga R	CT2	991021	1100	17	16	7.6	6.9	655	3	----	----	0.8	4	499	0.582	<0.015	0.309	55.5
050	Chattooga R	CT2	991104	1030	16	11	8.7	6.8	282	3	----	168	1.5	4	252	0.188	<0.015	0.604	<0.5
050	Chattooga R	CT2	991116	1100	17	12	10.0	7.6	535	3	----	102	1.3	2	526	0.455	<0.015	0.079	<0.5
050	Chattooga R	CT2	991208	1100	14	8	11.5	7.1	753	3	----	92	0.8	4	326	0.637	<0.015	0.156	----
050	Chattooga R	CT2	000120	1025	6	9	9.7	6.6	503	4		112	2.1	5	178	0.503	<0.015	0.365	30.3
050	Chattooga R	CT2	000216	1050	15	11	9.1	6.2	324	45	----	----	2.3	37	172	0.233	<mdl	0.306	14.1
050	Chattooga R	CT2	000412	1200	15	16	8.2	7.2	175	10	----	96	1.5	11	172	0.123	<0.015	0.460	6.0
050	Chattooga R	CT2	000510	1045	22	22	5.9	6.9	426	5	----	60	1.4	9	299	0.299	<0.015	1.143	34.0
050	Chattooga R	CT2	000608	1015	21	21	6.6	6.3	343	10	----	80	0.8	13	303	0.338	0.039	0.430	24.2
050	Chattooga R	CT2	000629	1050	23	24	5.6	7.0	104	13	-----	240	0.7	11	444	0.475	<0.015	0.692	54.2
050	Chattooga R	CT2	000705	1100	26	25	6.4	7.3	311	7	----	56	0.6	12	303	0.211	<0.015	0.370	28.7
050	Chattooga R	CT2	000720	1000	36	26	5.7	7.0	527	9	----	64	1.0	13	487	0.813	<0.015	0.350	68.5
050	Chattooga R	CT2	000810	1100	28	28	5.7	7.6	870	6	----	96	1.0	10	357	0.781	<0.015	0.345	65.9
050	Chattooga R	CT2	000907	1015	15	22	6.6	7.2	830	4	Normal	66	1.5	4	508	0.342	<0.015	0.332	----
050	Chattooga R	CT2	000921	1215	21	21	7.0	8.1	807	16	----	360	1.6	7	481	0.566	<0.015	0.246	62.4
180	Coosa R	CO3	980820	1230	28	28	5.4	7.2	115	18		74	1.6	12	119	0.129	<0.005	0.494	<1.0
180	Coosa R	CO3	981015	1140	20	25	7.4	7.1	185	10		232	1.8	10	97	0.11	<0.005	0.274	<1.0
180	Coosa R	CO3	990603	1235	27	25	8.1	8.3	152	9		1	3.4	9	121	0.107	<MDL	0.275	<1
180	Coosa R	CO3	990805	1130	29	32	9.5	8.5	177	8	Normal	2	2.3	10	107	0.066	<MDL	0.061	13.2
180	Coosa R	CO3	991007	1200	80F	26	7.4	7.4	220	10	----	5	3.5	10	153	0.121	0.070	0.295	<0.5
180	Coosa R	CO3	991014	1145	27	23	6.0	6.8	128	13	Low	92	1.2	14	109	0.105	0.065	0.421	45.4
180	Coosa R	CO3	991021	1240	18	24	7.2	7.4	157	10	----	----	2.6	8	113	0.115	0.088	0.369	11.8
180	Coosa R	CO3	991104	1200	19	19	7.5	7.4	129	10	----	35	1.3	7	103	0.125	0.038	0.308	<0.5
180	Coosa R	CO3	991116	1230	19	18	8.3	6.9	109	9	----	3	1.2	8	126	0.075	<0.015	0.367	12.9
180	Coosa R	CO3	991208	1230	15	15	8.2	7.2	186	13	----	5	<0.1	3	102	0.152	<0.015	0.276	----
180	Coosa R	CO3	000120	1140	8	11	7.8	6.5	187	17		12	2.4	15	101	0.122	<0.015	0.480	6.1
180	Coosa R	CO3	000216	1215	16	13	9.7	5.8	210	39	----	----	2.2	31	109	0.13	<mdl	0.490	8.8
180	Coosa R	CO3	000412	1330	15	14	8.3	7.1	66	39	----	148	1.2	43	73	0.081	<0.015	0.410	<0.5
180	Coosa R	CO3	000510	1150	22	26	8.4	7.7	163	13	----	32	3.1	13	108	0.142	<0.015	0.427	6.7

Appendix F-1, cont. Physical / chemical data collected from stations in the Coosa River Basin as part of the ADEM Ambient Monitoring Program. (ADEM 2001f)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Air Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	Total-P	NH3-N	NO3+ NO2-N	Cl-
#		#	*yymmdd*	24hr	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100mL*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105), cont																			
180	Coosa R	CO3	000608	1115	23	25	7.7	6.5	141	22	----	10	1.2	23	137	<0.004	<0.015	0.450	8.6
180	Coosa R	CO3	000629	1205	25	30	5.6	7.0	28	11	----	12	1.0	13	135	0.141	<0.015	0.421	9.9
180	Coosa R	CO3	000705	1215	26	31	9.1	7.1	110	28	----	27	3.2	22	129	0.166	<0.015	0.335	10.6
180	Coosa R	CO3	000720	1130	37	33	8.0	6.9	130	16	----	21	2.6	21	131	0.14	<0.015	0.221	5.3
180	Coosa R	CO3	000810	1245	31	33	6.8	7.6	230	5	----	<1	2.3	9	149	0.143	<0.015	0.301	6.7
180	Coosa R	CO3	000907	1145	16	27	6.1	7.2	163	-----	Normal	63	2.2	15	124	0.098	<0.015	0.359	----
180	Coosa R	CO3	000921	1350	20	26	7.6	7.7	193	19	----	58	2.8	15	104	0.129	<0.015	0.176	6.9
Middle Coosa (0315-0106)																			
090	Coosa R	CO1	980820	1500	29	30	7.6	8.0	117	10		25	3.5	14	103	0.109	<0.005	0.017	<1.0
090	Coosa R	CO1	981015	1400	22	24	9.3	8.1	187	10		130	3.4	13	87	0.108	0.005	0.051	<1.0
090	Coosa R	CO1	990603	1450	24	27	9.0	7.7	130	6		13	3.5	8	96	0.098	<MDL	0.032	<1
090	Coosa R	CO1	990805	1340	30	31	5.7	8.6	139	7	Normal	<MDL	2.9	13	91	0.063	<MDL	0.004	8.3
090	Coosa R	CO1	991014	1005	25	22	6.3	7.3	140	6	Normal	132	2.1	8	114	0.087	0.119	0.072	36.2
090	Coosa R	CO1	000608	1310	27	28	10.4	7.0	149	9	----	75	3.0	17	143	<0.004	<0.015	0.014	8.3
090	Coosa R	CO1	000810	1515	32	32	9.5	8.6	221	8	----	<1	4.7	12	141	0.104	<0.015	<0.003	5.9
250	Chocolocco Cr	CL2	971008	1010	26	21	7.4	7.6	507	10	----	>870	0.9	7	310	0.34	<0.015	0.920	61.8
250	Chocolocco Cr	CL2	980610	1158	32	23	7.0	7.3	212	19	----	164	1.2	22	149	0.22	0.090	0.410	9.0
250	Chocolocco Cr	CL2	980812	1108	24	25	6.6	7.5	513	----	----	>1360	0.4	15	297	0.21	0.190	0.800	47.0
250	Chocolocco Cr	CL2	981022	1245	17	17	8.9	7.4	682	6	----	23	0.2	9	409	0.42	<0.015	2.100	79.3
250	Chocolocco Cr	CL2	990610	958	27	26	6.6	7.3	298	12	110	35	0.6	43	197	0.27	<0.015	0.840	22.9
250	Chocolocco Cr	CL2	990819	935	*	*	5.9	7.7	473	18	20	Est. 53	0.8	23	266	0.55	<0.015	1.390	43.6
250	Chocolocco Cr	CL2	991014	915	17	19	7.5	7.0	458	13	----	120	0.2	24	272	0.33	0.040	1.050	42.7
250	Chocolocco Cr	CL2	000503		20	20	7.2	7.2	266	13		Est. 15	1.5	21	154	0.16	0.050	0.628	15.4
250	Chocolocco Cr	CL2	000607	745	18	20	7.2	6.9	443	21	----	200	1.2	25	182	0.258	0.040	1.410	31.1
250	Chocolocco Cr	CL2	000808	1205	35	28	7.1	7.0	833	21	----	63	1.0	13	450	0.64	0.070	2.140	76.3
250	Chocolocco Cr	CL2	000808		35	28	7.1	7.0	833	21		63	1.0	13	450	0.64	0.070	2.140	76.3
250	Chocolocco Cr	CL2	001003	1600	24	25	8.8	7.8	565	16	----	127	1.7	16	322	0.7	<0.015	2.660	49.3
250	Chocolocco Cr	CL3	971008	940	25	21	8.0	7.8	401	6	75	50	0.7	7	259	0.43	<0.015	0.600	31.6
250	Chocolocco Cr	CL3	980610	1026	31	23	8.0	7.5	46	14	----	60	1.9	16	144	0.22	<0.015	0.460	7.4
250	Chocolocco Cr	CL3	980812	1025	24	25	7.5	7.8	373	----	----	214	0.6	8	225	0.18	<0.015	0.860	26.8
250	Chocolocco Cr	CL3	981022	1220	18	17	9.5	7.6	418	4	----	32	0.2	3	273	0.25	<0.015	1.360	29.7
250	Chocolocco Cr	CL3	990610	932	30	26	7.2	7.5	275	10	145	Est. 10	0.6	22	195	0.23	<0.015	0.710	17.5
250	Chocolocco Cr	CL3	990819	1011	*	*	7.1	7.9	392	5	26	Est. 5	0.8	3	212	0.29	<0.015	0.920	29.0
250	Chocolocco Cr	CL3	991014	955	20	19	8.3	7.1	349	6	----	58	0.3	22	246	0.26	<0.015	0.680	25.4
250	Chocolocco Cr	CL3	000503		21	20	8.5	8.3	247	9		Est. 10	2.0	14	151	0.12	0.110	0.544	12.0

Appendix F-1, cont. Physical / chemical data collected from stations in the Coosa River Basin as part of the ADEM Ambient Monitoring Program. (ADEM 2001f)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Air Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	Total-P	NH3-N	NO3+ NO2-N	Cl-
#		#	yymmdd	24hr	C	C	mg/L	s.u.	umhos @25c	NTU	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Middle Coosa (0315-0106), cont.																			
250	Chocolocco Cr	CL3	000607	815	19	20	8.1	7.0	371	12	----	45	1.4	4	271	0.268	<0.015	1.290	21.2
250	Chocolocco Cr	CL3	000808	1120	36	28	7.5	7.0	502	11	----	Est. 13	1.9	6	1234	0.33	0.130	1.220	33.2
250	Chocolocco Cr	CL3	001004	755	18	21	7.7	7.8	450	8	----	Est. 37	2.3	11	270	0.47	<0.015	2.010	29.8
270	Chocolocco Cr	CL1	971008	925	22	21	8.2	7.9	304	7	194	57	1.1	2	181	0.11	<0.015	0.510	15.3
270	Chocolocco Cr	CL1	980610	929	30	27	5.1	7.0	135	13	----	80	1.1	10	143	0.14	<0.015	0.480	6.0
270	Chocolocco Cr	CL1	980812	935	25	25	7.2	7.7	286			Est. 37	0.7	10	174	0.05	<0.015	0.660	13.5
270	Chocolocco Cr	CL1	981022	1200	20	19	9.5	7.8	347	8	----	30	0.4	7	214	0.14	<0.015	0.870	18.3
270	Chocolocco Cr	CL1	990610	915	27	26	7.0	7.5	233	15	292	Est. 9	0.8	15	141	0.14	<0.015	0.560	9.5
270	Chocolocco Cr	CL1	990819	1050	*	*	7.9	8.1	284	10	197	36	1.3	11	143	0.13	<0.015	0.550	11.6
270	Chocolocco Cr	CL1	991014	1035	23	20	8.4	7.1	268	14	----	46	0.3	14	180	0.21	<0.015	0.570	13.6
270	Chocolocco Cr	CL1	000503		21	21	9.2	7.9	228	21		Est. 13	2.5	19	131	0.13	0.100	0.357	7.4
270	Chocolocco Cr	CL1	000607	850	23	21	7.9	7.1	291	19	----	48	0.3	20	185	0.13	0.060	1.040	10.9
270	Chocolocco Cr	CL1	000808	1045	35	27	8.3	7.1	359	7	----	25	0.4	1	202	0.18	0.160	0.760	16.9
270	Chocolocco Cr	CL1	001004	825	20	21	8.0	7.8	350	7	----	36	2.5	6	201	0.21	<0.015	0.844	15.8
Lower Coosa (0315-0106), cont.																			
107	Shirtee Cr	SHIRTEE03	971008	935	23	22	7.9	7.9	1207	4		41	1.7	7	842	2.6	0.020	4.190	127.4
107	Shirtee Cr	SHIRTEE03	980609	927	29	21	8.6	7.8	802	10		1,370	2.1	5	478	2.68	<0.015	2.170	28.3
107	Shirtee Cr	SHIRTEE03	980609	927	29	21	8.6	7.8	802	10		1,370	2.1	5	478	2.68	<0.015	2.170	28.3
107	Shirtee Cr	SHIRTEE03	980813	940	25	25	7.1	7.7	800	11		>2467	2.0	9	519	2.69	<0.015	2.440	85.3
107	Shirtee Cr	SHIRTEE03	981021	920	19	20	7.5	7.7	1457	3		59	0.5	9	859	9.42	<0.015	3.860	160.0
107	Shirtee Cr	SHIRTEE03	990624	815	24	23	7.5	8.2	822	25		>600	1.3	22	472	2.6	0.060	2.520	87.2
107	Shirtee Cr	SHIRTEE03	990818	830	*	*	6.6	7.7	1711	7		123	0.8	9	1013	8.36	<0.015	2.050	176.0
107	Shirtee Cr	SHIRTEE03	991013	830	22	22	8.4	7.7	1855	2		Est. 63	2.0	9	1123	9.03	<0.015	2.390	163.0
107	Shirtee Cr	SHIRTEE03	000503	945	31	23	8.1	8.0	1070	7	15.3	Est. 18	0.4	10	----	4.81	<0.015	1.278	106.2
107	Shirtee Cr	SHIRTEE03	000607	1000	22	21	8.1	7.5	1736	4	8.6	610	0.4	7	1003	15.4	<0.015	0.301	166.4
107	Shirtee Cr	SHIRTEE03	001004	915	22	22	7.0	8.1	2260	4	4.8	Est. 53	2.5	8	1410	11.1	<0.015	3.630	261.0
107	Tallasehatchee Cr	TH1	971008	1003	24	21	7.4	7.6	745	7	20	187	1.0	6	510	1.38	<0.015	2.770	77.4
107	Tallasehatchee Cr	TH1	980609	952	26	22	8.3	7.2	356	11	----	460	1.2	6	229	0.75	<0.015	0.840	12.0
107	Tallasehatchee Cr	TH1	980813	916	25	235	6.6	7.7	311	20	----	>2000	1.7	24	195	0.62	<0.015	1.010	19.7
107	Tallasehatchee Cr	TH1	981021	935	19	19	7.0	7.7	1275	5	----	103	0.4	8	724	7.83	<0.015	2.340	141.9
107	Tallasehatchee Cr	TH1	990624	845	23	23	7.0	8.0	551	17	30	>850	1.3	16	412	1.41	<0.015	1.950	44.0
107	Tallasehatchee Cr	TH1	990818	852	*	*	6.6	8.0	795	7	25	Est. 120	0.4	16	462	4.28	<0.015	1.250	81.0
107	Tallasehatchee Cr	TH1	991013	855	22	20	7.8	7.3	550	9	----	70	1.2	13	392	1.88	<0.015	0.740	36.0
107	Tallasehatchee Cr	TH1	000504	900	25	22	7.5	7.6	444	6	30	77	1.2	9	----	1.26	<0.015	0.618	30.7
107	Tallasehatchee Cr	TH1	000608	900	22	22	7.1	8.2	1050	8	----	147	0.3	14	----	4.62	0.020	1.240	----

Appendix F-1, cont. Physical / chemical data collected from stations in the Coosa River Basin as part of the ADEM Ambient Monitoring Program. (ADEM 2001f)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Air Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	Total-P	NH3-N	NO3+NO2-N	Cl-
#		#	*yymmdd*	24hr	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100mL*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Lower Coosa (0315-0106), cont.																			
107	Tallasehatchee Cr	TH1	001004	1020	26	22	6.2	8.0	1727	5	----	87	2.9	8	1078	7.62	<0.015	2.500	193.0

Appendix F-2a. Physical / chemical data collected as part of the State Parks Monitoring Project conducted by ADEM. (ADEM 1999d)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	Alkalinity	Hardness	Total-P	NO3+ NO2-N	NH3-N	TKN	Cl-
#		#	*yymmdd*	24hr	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100mL*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105)																						
080	Straight Cr	STRD-1	980520	1145	28	17	8.4	6.5	26	3.0	0.4	23	0.2	2	21	2	8.4	0.04	0.260	<0.015	<0.15	3.40
080	Straight Cr	STRD-1	980706	1225	26	21	7.5	6.7	34	mm	0.1	45	1.1	4	51	12	11.5	<0.004	0.240	<0.015	1.42	3.78
080	Straight Cr	STRD-1	980923	---	---	---	---	---	---	---	dry	---	---	---	---	---	---	---	---	---	---	---
080	West Fork Little R	WFLD-1	980520	649	16	21	8.8	7.3	16	1.7	nw	9	0.2	1	7	1	5.7	<0.004	0.060	<0.015	<0.15	3.18
080	West Fork Little R	WFLD-2	980520	0722	---	21	8.3	7.0	15	2.0	17.0	18	0.4	1	6	2	5.6	<0.004	0.040	<0.015	<0.15	3.16
080	West Fork Little R	WFLD-2	980706	1332	27	28	7.7	6.8	30	mm	0.6	8	0.8	1	38	5	10.4	0.038	0.150	<0.015	<0.15	3.77
080	West Fork Little R	WFLD-2	980923	1220	27	---	7.7	---	---	3.0	3.6	7	0.6	1	5	9	6.2	0.006	0.071	0.029	<0.15	3.94
110	Hurricane Cr	HURD-1	980520	0952	28	17	7.7	6.7	19	4.8	1.7	73	0.1	2	14	5	6.1	0.02	0.180	<0.015	<0.15	3.33
110	Hurricane Cr	HURD-1	980706	1115	---	---	---	---	---	---	dry	---	---	---	---	---	---	---	---	---	---	---
Middle Coosa (0315-0106)																						
260	Cheaha Cr	CHE-1	980512	1100	24	18	9.3	5.9	25	2.1	11.2	11	0.6	1	26	6	5.6	<0.004	0.020	<0.015	<0.15	3.34
260	Cheaha Cr	CHE-1	980727	1033	27	24	7.7	7.2	23	1.3	0.9	1	1.1	1	34	10	7.6	0.004	0.020	<0.015	<0.15	---
260	Cheaha Cr	CHE-1	980901	1025	27	23	7.4	6.7	30	1.7	0.2	3	0.1	1	31	20	9.6	0.04	0.030	<0.015	<0.15	4.30
260	Cheaha Cr	CHEC-3	980512	1230	24	18	9.1	6.0	23	1.6	3.5	7	0.5	2	39	50	5.3	0.004	0.020	<0.015	<0.15	3.29
260	Cheaha Cr	CHEC-3	980727	1130	25	23	7.6	6.0	18	3.4	0.5	9	1.0	2	44	7	5.6	<0.004	0.070	<0.015	<0.15	---
260	Cheaha Cr	CHEC-3	980901	1115	29	22	8.1	6.4	17	1.6	0.2	25	0.1	1	33	12	5.4	0.04	0.110	<0.015	<0.15	3.99

nw - nonwadeable

mm - Meter malfunction

Appendix F-2b. Physical characteristic and habitat quality estimates for Coosa River Basin sites assessed as part of the State Parks monitoring project (1998). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded;, O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		STRD-1+	WFLD-2+	HURD-1+	CHEC-3+	CHE-1+
CU - Subwatershed #		0105-080	0105-080	0105-110	0106-260	0106-260
Ecoregion/ Subregion		68d	68d	68d	45d	45d
Drainage area (Approx. mi^2)		13	41	6	1	10
Date (yymmdd)		980520	980520	980520	980512	980512
Width (ft)		8	30	15	15	30
Canopy Cover*		S	MO	MS	50/50	50/50
Depth (ft)	Riffle	0.3	1.0	0.3	0.3	0.8
	Run	1.0	1.5	0.4	0.8	1.5
	Pool	1.5	3.0	3.0	1.5	4.0
Substrate (%)	Bedrock	47	40	80	20	2
	Boulder	20	30	2	10	21
	Cobble	10	24	1	39	35
	Gravel	1	2	2	20	10
	Sand	5	1	8	5	25
	Silt	15	1	2	1	3
	Detritus	2	2	5	4	4
	Clay	0	0	0	1	0
Geomorphology*		RR	RR	RR	RR	RR
Habitat Survey (% maximum)						
Instream Habitat Quality		86	99	78	90	92
Sediment Deposition		65	95	89	86	76
Sinuosity		95	98	95	98	95
Bank and Vegetative Stability		94	96	91	89	77
Riparian Measurements		100	100	95	93	75
Habitat Assessment Score						
% Maximum		84	98	89	92	84
Assessment		Excellent	Excellent	Excellent	Excellent	Excellent

Appendix F-2c. Aquatic macroinvertebrate and fish community bioassessment results for Coosa River Basin sites assessed as part of the State Parks monitoring project (1998).

Station Number	STRD-1+	WFLD-2+	HURD-1+	CHEC-3+	CHE-1+
CU - Subwatershed #	0105-080	0105-080	0105-110	0106-260	0106-260
Subecoregion #	68d	68d	68d	45d	45d
Macroinvertebrate community					
Assessment Date (yymmdd)	980520	980520	980520	980512	980512
# EPT families	10	14	10	20	21
Assessment	Good	Good	Good	Excellent	Excellent
Fish community					
Assessment Date				990610	990610
Time (min)				30	30
Richness measures					
# species				3	12
# darter species				0	2
# minnow species				2	5
# sunfish species				1	2
# sucker species				1 (headwater sp.)	1
# intolerant species				0	1
Composition measures					
% sunfish				8	5.2
% omnivores and herbivores				0	9.3
% insectivorous cyprinids				39	39.2
% top carnivores				53 (pioneer Sp)	2.1
Population measures					
Individuals				168	97
# collected per hour				336	194
% disease and anomalies				0	0
IBI Score				36	46
Assessment				Poor/Fair	Fair/Good

Appendix F-3a. Physical / chemical data collected from ecoregional reference sites in the Coosa River Basin during various water quality monitoring activities conducted by ADEM since 1993 (ADEM 2000a).

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	TOC	ALK	Total-P	NO3+ NO2-N	NH3-N	TKN	Ortho-P
#		#	yymmdd	24hr	C	C	mg/L	s.u.	umhos @25c	NTU	cfs	col/100ml	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Upper Coosa (0315-0105)																						
110	Bear Cr	BERD-9	000614	1125	26	23	6.7	6.8	51.3	0.64	0.1	---	---	---	---	---	---	---	---	---	---	---
110	Bear Cr	BERD-9	000615	1100	32	23	6.0	6.5	49	1.88	nd	---	---	---	---	---	---	---	---	---	---	---
110	Bear Cr	BERD-9	000918	1630	23	19	8.7	7.1	58	1.4	0.2	20	0.3	1	59	1.9	21	0.02	<0.003	0.119	<0.15	0.01
140	Wolf Cr	WLFC-5	000614	---	---	---	---	---	---	---	ip	---	---	---	---	---	---	---	---	---	---	---
Middle Coosa (0315-0106)																						
030	Dry Cr	DRYE-4	000614	---	---	---	---	---	---	---	ip	---	---	---	---	---	---	---	---	---	---	---
110	Little Canoe Cr	LCNE-1	940621	1325	29	24	7.8	7.8	168	4.8	6.5	est 9	---	---	---	3.5	75	0.032	0.310	<0.015	0.218	---
110	Little Canoe Cr	LCNE-1	950523	1315	28	21	8.8	7.8	173	3.6	10.1	est 33	---	---	---	2.5	78	0.04	0.240	<0.015	<0.15	---
110	Little Canoe Cr	LCNE-1	980520	1400	29	22	8.7	7.4	159	5.4	13.4	67	0.8	1	81	---	59	0.01	0.200	<0.015	<0.15	---
110	Little Canoe Cr	LCNE-1	980707	1100	30	24	7.7	7.5	189	mm	6.8	47	0.8	3	122	---	91	0.06	0.240	<0.015	<0.15	---
110	Little Canoe Cr	LCNE-1	980923	1715	28	---	7.6	---	---	2.9	2.7	59	0.2	5	106	---	105	<0.004	0.112	0.040	<0.15	---
110	Little Canoe Cr	LCNE-1	990528	1220	26	20	8.3	7.6	179	3.1	8.6	108	0.1	2	---	1.7	---	<0.004	0.460	<0.015	0.217	---
110	Little Canoe Cr	LCNE-1	990609	1300	---	23	8.5	7.5	178.6	3.1	7.2	142	0.4	2	---	1.9	---	<0.004	0.225	<0.015	0.370	---
110	Little Canoe Cr	LCNE-1	990708	1547	30	24	8.3	7.5	150	3.8	15.8	---	---	---	---	---	---	---	---	---	---	---
110	Little Canoe Cr	LCNE-1	990714	1130	21	22	8.2	6.9	114.2	5	15.7	30	0.4	1	---	2.8	---	0.034	0.214	<0.015	0.300	---
110	Little Canoe Cr	LCNE-1	990804	0930	21	23	7.9	7.6	151.2	2.4	6.4	47	0.6	3	---	3.1	---	0.032	0.257	<0.015	0.205	---
110	Little Canoe Cr	LCNE-1	990908	0900	22	21	7.1	6.3	185	---	3.6	140	<0.1	7	---	2.0	---	0.008	0.165	<0.015	<0.15	---
110	Little Canoe Cr	LCNE-1	000613	1705	26	24	7.5	7.6	192	2.91	3.8	---	---	---	---	---	---	---	---	---	---	---
110	Little Canoe Cr	LCNE-1	000919	0830	15.5	17	8.0	7.7	203	4.4	2.4	44	0.3	4	130	2.0	75	0.12	0.168	0.102	0.210	0.01
240	Choccolocco Cr	CHOC-2	000613	1700	32	25	8.5	7.4	51	2.2	2.7	---	---	---	---	---	---	---	---	---	---	---
240	Choccolocco Cr	CHOC-2	000918	1140	24	18	9.7	7.8	58	1.3	0.6	est14	0.4	2	68	1.7	18	0.03	<0.003	<0.015	<0.15	0.02
240	Dry Cr	DRYC-2	000614	0945	28	22	7.6	6.5	32	1.73	vnd	---	---	---	---	---	---	---	---	---	---	---
240	Dry Cr	DRYC-2	000918	1225	26	20	9.4	7.9	145	2.3	vnd	60	0.3	2	104	1.3	44	0.02	0.280	<0.015	<0.15	0.01
240	Shoal Cr	SHLC-3	000613	1445	32	25	7.3	6.8	43	2.91	4.5	---	---	---	---	---	---	---	---	---	---	---
240	Shoal Cr	SHLC-3	000918	1030	20	17	8.3	7.5	54.7	1.5	0.4	44	0.6	1	58	2.1	18	0.02	0.067	<0.015	<0.15	0.01
240	Shoal Cr - Dup	SHLC-3	000918	1035	20	17	8.4	7.5	54.4	1.7	---	46	0.3	1	58	2.1	28	0.04	0.058	<0.015	0.248	---
260	Cheaha Cr	CHEC-6	000608	1330	32	26	8.8	7.1	41	3.2	3.6	---	---	---	---	---	---	---	---	---	---	---
260	Cheaha Cr	CHEC-6	000914	1050	28	24	7.3	7.1	44.5	1.7	0.3	est 4	1.0	4	37	2.4	9	0.03	0.015	<0.015	0.276	0.01
300	Wolf Cr	WLFS-9	000606	1300	20	21	6.5	7.1	85.6	9.9	9.9	---	---	---	---	---	---	---	---	---	---	---
300	Wolf Cr	WLFS-9	000919	1135	---	---	---	---	---	---	ip	---	---	---	---	---	---	---	---	---	---	---
330	Dry Cr	DRYT-9	000601	0935	---	21	6.0	6.8	49.1	3.83	0.4	---	---	---	---	---	---	---	---	---	---	---
330	Talladega Cr	TCT-5	930616	0819	23	21	8.0	6.8	32	9.9	57.7	>64	---	---	---	2.0	13	0.019	0.140	<0.015	<0.15	

Appendix F-3a, cont. Physical / chemical data collected from ecoregional reference sites in the Coosa River Basin during various water quality monitoring activities conducted by ADEM since 1993.

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	TOC	ALK	Total-P	NO3+ NO2-N	NH3-N	TKN	Ortho-P
#		#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100ml*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Middle Coosa (0315-0106), cont.																						
330	Talladega Cr	TCT-5	950516	1205	29	23	8.7	7.4	42	2	54.5	37	---	---	---	1.9	13	0.07	0.100	<0.015	<0.15	---
330	Talladega Cr	TCT-5	980512	0915	24	18	9.6	5.7	36.3	8.67	122.0	62	0.4	1	56	---	7	0.007	0.080	<0.015	<0.15	---
330	Talladega Cr	TCT-5	980727	0900	26	24	7.8	7.1	35	6.73	43.1	13	2.1	1	45	---	15	<0.004	0.060	<0.015	<0.15	---
330	Talladega Cr	TCT-5	980901	0920	25	24	7.6	7.0	38	4.49	21.4	11	0.1	1	33	---	30	<0.004	0.070	<0.015	<0.15	---
330	Talladega Cr	TCT-5	990706	0910	32.5	24	8.2	7.2	39	2.1	42.5	---	---	---	---	---	---	---	---	---	---	---
330	Talladega Cr	TCT-5	000601	1050		22	8.1	7.2	43	2.9	21.6	---	---	---	---	---	---	---	---	---	---	---
330	Talladega Cr	TCT-5	000914	1240	30.5	24	7.7	7.4	57.7	5.1	vnd	22	0.3	3	37	1.6	15	0	0.019	<0.015	0.150	0.01
Lower Coosa (0315-0107)																						
030	Fourmile Cr	FRMS-9	000530	0930	26	22	6.4	8.0	304	3.5	0.8	---	---	---	---	---	---	---	---	---	---	---
030	Fourmile Cr	FRMS-9	000919	1235	---	---	---	---	---	---	ip	---	---	---	---	---	---	---	---	---	---	---
040	Kahatchee Cr	KHTT-1	000530	1510	---	---	---	---	---	---	ip	---	---	---	---	---	---	---	---	---	---	---
070	Panther Cr	PNTC-11	000524	1200	---	24	8.0	7.1	44	7.5	6.1	---	---	---	---	---	---	---	---	---	---	---
070	Panther Cr	PNTC-11	000914	1310	27	26	6.2	6.9	44	11.2	0.3	2900	0.2	3	40	3.1	21	0.02	0.008	<0.015	0.284	0.01
130	Jones Cr	JNSC-16	000524	0830	27	21	8.4	7.1	43	7	2.0	---	---	---	---	---	---	---	---	---	---	---
130	Jones Cr	JNSC-16	000914	1445	28	25	7.0	7.1	57	86.9	0.7	910	0.5	15	58	3.0	30	0.03	0.302	<0.015	0.193	0.01
140	Weogufka Cr	WGFC-1	930616	1240	30	25	7.3	7.0	55	9.3	8.2	145	---	---	---	3.8	20	0.031	0.190	<0.015	0.314	---
140	Weogufka Cr	WGFC-1	950516	0855	23	20	7.5	7.1	55	7.3	9.1	210	---	---	---	2.6	19	0.08	0.170	<0.015	0.188	---
140	Weogufka Cr	WGFC-1	970701	0950	---	---	9.5	---	---	12.8	---	---	0.2	9	40	---	24	0.042	0.120	<0.015	<0.15	---
140	Weogufka Cr	WGFC-1	980514	1120	25	20	8.4	6.2	25.5	11.1	15.6	420	0.9	6	59	---	12	0.008	0.100	<0.015	<0.15	---
140	Weogufka Cr	WGFC-1	980728	1056	30	25	7.0	7.2	58	13.1	5.8	570	0.5	12	11	---	25	<0.004	0.150	<0.015	<0.15	---
140	Weogufka Cr	WGFC-1	980909	1044	29	22	6.3	7.2	51	5.21	0.3	83	1.0	4	40	---	19	<0.004	0.090	<0.015	<0.15	---
140	Weogufka Cr	WGFC-1	000524	1010	27	23	6.4	7.3	64.1	11.4	3.3	---	---	---	---	---	---	---	---	---	---	---
140	Weogufka Cr	WGFC-1	000919	1320	30	21	4.5	7.0	49.1	6.2	0.1	est 17	0.4	2	61	2.3	21	<0.004	0.068	<0.015	<0.15	0.02
150	Clay Cr	CLYC-15	000524	1326	---	---	---	---	---	too small		---	---	---	---	---	---	---	---	---	---	---

nd - not detectable
ip - intermittant pools
vnd - visible, but not detectable with meter
mm - meter malfunction

Appendix F-3b. Water column metals and hardness data collected from reference sites in the Coosa River Basin during the various water quality monitoring activities conducted by ADEM since 1993. (All metals analyses are for total fractions, unless otherwise noted)

Sub-Watershed #	Stream Name	Station #	Date yymmdd	Time 24hr	Hardness mg/l CaCO3	Al ug/L	Ag mg/L	As ug/L	Cd mg/L	Ca mg/L	Cr-T mg/L	Cr+6 mg/L	Cu mg/L	Fe mg/L	Hg ug/L	Pb ug/L	Mg mg/L	Mn mg/L	Se mg/L	Zn mg/L	Ni mg/L
Upper Coosa (0315-0105)																					
110	Bear Cr	BERD-9	000918	1630	15.1	<0.2	---	<10	<0.003	4.64	<0.015	---	<0.02	0.064	---	<2	0.864	<0.02	<10	<0.03	---
Middle Coosa (0315-0106)																					
110	Little Canoe Cr	LCNE-1	940621	1325	103	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
110	Little Canoe Cr	LCNE-1	950523	1315	76.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
110	Little Canoe Cr	LCNE-1	980707	1100	---	---	<0.015	<10	<0.003	<0.015	---	<0.02	<0.02	---	<0.5	<2	---	---	---	<0.03	<0.03
110	Little Canoe Cr	LCNE-1	980923	1715	---	---	<0.015	<10	<0.003	<0.015	---	<0.02	<0.02	---	<0.3	<2	---	---	---	<0.03	<0.03
110	Little Canoe Cr	LCNE-1	990528	1220	82	---	---	2.2	<0.003	---	<0.015	---	<0.02	1.71	<0.3	6	---	0.152	---	<0.03	---
110	Little Canoe Cr	LCNE-1	990609	1300	---	---	---	<10	<0.003	---	0.025	---	<0.02	0.283	<0.3	<2	---	0.046	---	<0.03	---
110	Little Canoe Cr	LCNE-1	990714	1130	77	---	---	<10	<0.003	---	<0.015	---	<0.02	0.76	<0.3	<2	---	0.067	---	<0.03	---
110	Little Canoe Cr	LCNE-1	990804	0930	---	---	---	<10	<0.003	---	<0.015	---	<0.02	0.235	<0.3	11	---	0.05	---	<0.03	---
110	Little Canoe Cr	LCNE-1	990908	0900	86	---	---	<10	<0.003	---	<0.015	---	<0.02	0.065	<0.3	2	---	0.051	---	<0.03	---
110	Little Canoe Cr	LCNE-1	000919	0830	98	<0.2	---	<10	0.003	34.4	<0.015	---	<0.02	0.119	---	<2	2.93	0.043	<10	<0.03	---
240	Choccolocco Cr	CHOC-2	000918	1140	20.4	<0.2	---	<10	0.003	5.47	<0.015	---	<0.02	0.165	---	<2	1.63	<0.02	<10	<0.03	---
240	Dry Cr	DRYC-2	000918	1225	61.5	<0.2	---	<10	0.003	13.6	<0.015	---	<0.02	0.03	---	<2	6.68	<0.02	<10	<0.03	---
240	Shoal Cr	SHLC-3	000918	1030	18.9	<0.2	---	<10	0.003	5.03	<0.015	---	<0.02	0.202	---	<2	1.55	0.024	<10	<0.03	---
240	Shoal Cr	SHLC-3	000918	1035	18.6	---	---	---	---	4.92	---	---	---	0.229	---	---	1.59	0.028	---	---	---
260	Cheaha Cr	CHEC-6	000914	1050	11.4	---	---	---	---	2.59	---	---	---	---	---	---	1.19	---	---	---	---
330	Talladega Cr	TCT-5	930616	0819	32	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
330	Talladega Cr	TCT-5	950516	1205	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
330	Talladega Cr	TCT-5	980727	0900	13.3	---	<0.015	<10	<0.003	<0.015	---	<0.02	<0.02	---	<0.5	<2	---	---	---	<0.03	<0.03
330	Talladega Cr	TCT-5	980901	0920	16.1	---	<0.015	<10	<0.003	<0.015	---	<0.02	<0.02	---	<0.3	<2	---	---	---	<0.03	<0.03
330	Talladega Cr	TCT-5	000914	1240	16.2	---	---	---	---	3.84	---	---	---	---	---	---	1.6	---	---	---	---
Lower Coosa (0315-0107)																					
70	Panther Cr	PNTC-11	000914	1310	11.8	<0.2	---	<10	0.003	2.39	<0.015	---	<0.02	0.909	---	<2	1.41	0.077	<10	<0.03	---
130	Jones Cr	JNSC-16	000914	1445	15.8	<0.2	---	<10	0.003	3.71	<0.015	---	<0.02	0.391	---	<2	1.59	<0.02	<10	<0.03	---
140	Weogufka Cr	WGFC-1	930616	1240	41	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
140	Weogufka Cr	WGFC-1	950516	0855	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
140	Weogufka Cr	WGFC-1	970701	0950	21.3	---	---	---	---	4.898	---	---	---	0.982	---	---	2.204	0.148	---	---	---
140	Weogufka Cr	WGFC-1	980728	1056	23.3	---	<0.015	<10	<0.003	<0.015	---	<0.02	<0.02	---	<0.5	<2	---	---	---	<0.03	<0.03
140	Weogufka Cr	WGFC-1	980909	1044	18.0	---	<0.015	<10	<0.003	<0.015	---	<0.02	<0.02	---	<0.3	<2	---	---	---	<0.03	<0.03
140	Weogufka Cr	WGFC-1	000919	1320	13.8	0.066	---	<10	0.003	2.92	<0.015	---	<0.02	0.989	---	<2	1.58	0.313	<10	<0.03	

Appendix F-3c. Physical characteristic and habitat quality estimates for ecoregional reference sites assessed in the Coosa River Basin (2000). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded;, O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		BERD-9	LCNE-1	CHOC-2	DRYC-2	SHLC-3	CHEC-6	WLFS-9	DRYT-9	TCT-5	FRMS-9
CU - Subwatershed #		0105-110	0106-110	0106-240	0106-240	0106-240	0106-260	0106-300	0106-330	0106-330	0107-30
Ecoregion/ Subregion		68d	67f	45d	67h	45d	45d	67g	45d	45d	67f
Drainage area (mi^2)		11	23	6	6	16	18	33	9	70	13
Date (YYMMDD)		000614	000613	000613	000614	000613	000608	000606	000601	000601	000530
Width (ft)		15	20	15	7	20	20	40	40	60	25
Canopy Cover*		50/50	MS	MS	S	MS	O	MS	MO	MO	S
Depth (ft)	Riffle	0.1	0.3	0.3	0.2	0.5	0.3	0.4	N/A	0.4	0.3
	Run	0.5	0.8	0.5	0.4	1.0	1.5	0.8	1.5	0.8	1.0
	Pool	1.5	1.5	1.5	1.5	>3.5	3.5	2.5	>5	3.0	1.5
Substrate (%)	Bedrock	50	0	20	15	0	5	0	20	35	40
	Boulder	15	0	10	15	10	25	14	10	10	3
	Cobble	15	10	30	45	30	20	35	10	20	10
	Gravel	5	25	20	10	30	15	25	5	17	20
	Sand	5	43	15	10	20	30	15	40	10	2
	Silt	2	15	2	1	5	3	3	12	5	5
	Detritus	4	6	6	4	4	2	7	3	3	15
	Clay	0	1	0	0	1	0	1	0	0	5
Geomorphology*		RR	RR	RR	RR	RR	RR	RR	GP	RR	RR
Habitat Survey (% maximum)											
Instream Habitat Quality		53	63	83	75	82	82	78	58	80	68
Sediment Deposition		89	59	78	85	75	76	78	73	71	70
Sinuosity		95	65	100	100	85	93	60	43	53	75
Bank and Vegetative Stability		94	49	83	90	78	90	74	80	79	73
Riparian Measurements		100	78	100	85	100	100	100	100	75	95
Habitat Assessment Score											
% Maximum		80	63	85	82	85	88	81	71	75	75
Assessment		Excellent	Good	Excellent	Excellent	Excellent	Excellent	Excellent	Good	Excellent	Excellent

Appendix F-3c, cont. Physical characteristic and habitat quality estimates for ecoregional reference sites assessed in the Coosa River Basin (2000). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded;, O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		PNTC-11	JNSC-16	WGFC-1
Subwatershed #		0107-070	0107-130	0107-140
Ecoregion/ Subregion		45a	45a	45a
Drainage area (mi^2)		12	6	13
Date (YYMMDD)		000524	000524	000524
Width (ft)		15	11	12
Canopy Cover*		50/50	S	S
Depth (ft)	Riffle	0.3	0.4	0.3
	Run	1.0	1.0	1.0
	Pool	2.5	1.8	3.0
Substrate (%)	Bedrock	1	1	0
	Boulder	0	21	0
	Cobble	10	35	3
	Gravel	45	5	49
	Sand	30	30	35
	Silt	5	5	3
	Detritus	5	3	9
	Clay	1	0	1
Geomorphology*		RR	RR	RR
Habitat Survey (% maximum)				
Instream Habitat Quality		77	86	73
Sediment Deposition		65	81	59
Sinuosity		78	95	90
Bank and Vegetative Stability		59	94	59
Riparian Measurements		98	78	100
Habitat Assessment Score				
% Maximum		75	86	74
Assessment		Good	Excellent	Good

Appendix F-3d. Aquatic macroinvertebrate and fish community bioassessment results for ecoregional reference sites assessed in the Coosa River Basin (2000).

Station Number	BERD-9	LCNE-1	CHOC-2	DRYC-2	SHLC-3	CHEC-6	WLFS-9	DRYT-9	TCT-5	FRMS-9
CU - Subwatershed #	0105-110	0106-110	0106-240	0106-240	0106-240	0106-260	0106-300	0106-330	0106-330	0107-070
Subecoregion #	68d	67f	45d	67h	45d	45d	67g	67f	45d	67f
Macroinvertebrate community										
Assessment Date (yymmdd)	000614	000613	000613	000614	000613	000608	000606	000601	990601	000601
# EPT families	11	15	15	16	15	15	14	11	17	12
Assessment	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Fish community										
Assessment Date						000719				
Time (min)						30				
Richness measures										
# species						14				
# darter species						1				
# minnow species						6				
# sunfish species						3				
# sucker species						1				
# intolerant species						2				
Composition measures										
% sunfish						8.3				
% omnivores and herbivores						13.9				
% insectivorous cyprinids						59.9				
% top carnivores						5.2				
Population measures										
Individuals						252				
# collected per hour						504				
% disease and anomalies						7.5				
IBI Score						44				
Assessment						**Fair**				

Appendix F-3d, cont. Aquatic macroinvertebrate and fish community bioassessment results for ecoregional reference sites assessed in the Coosa River Basin (2000).

Station Number	PNTC-11	JNSC-16	WGFC-1
Sub-watershed #	0107-070	0107-130	0107-140
Subecoregion #	45a	45a	45a
Macroinvertebrate community			
Assessment Date	000524	000524	000524
# EPT families	15	21	15
Assessment	Excellent	Excellent	Excellent
Fish community			
Assessment Date			990609
Time (min)			30
Richness measures			
# species			12
# darter species			2
# minnow species			6
# sunfish species			2
# sucker species			1
# intolerant species			0
Composition measures			
% sunfish			11.1
% omnivores and herbivores			4.7
% insectivorous cyprinids			58.8
% top carnivores			0
Population measures			
Individuals			170
# collected per hour			340
% disease and anomalies			0
IBI Score			42
Assessment			Fair

Appendix F-4a. Physical / chemical data collected from May to September 1999 as part of the CWA § 303(d) Monitoring conducted by ADEM. (ADEM 2000c)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TOC	Total-P	NO3+ NO2-N	NH3-N	TKN
#		#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100ml*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105)																			
240	Frog Cr	FRG-1	990512	1130	25	15	8.7	7.8	202	4	17.4	524	0.1	4	0.9	<0.004	0.203	<0.015	0.210
240	Frog Cr	FRG-1	990608	1450	---	23	8.2	8.0	213	9.9	14.3	>1200	0.9	11	1.7	<0.004	0.166	<0.015	0.564
240	Frog Cr	FRG-1	990707	1102	34	20	8.6	7.5	206	8.8	16.6	---	---	---	---	---	---	---	---
240	Frog Cr	FRG-1	990713	1145	18	20	8.1	6.2	77	10	24.9	540	1.3	9	1.6	<0.004	0.256	<0.015	0.316
240	Frog Cr	FRG-1	990803	1120	25	20	8.7	7.4	179	4.6	12.3	440	0.5	5	1.1	<0.004	0.198	<0.015	0.153
240	Frog Cr	FRG-1	990907	1430	29	22	9.0	6.3	188	---	10.9	268	1.2	4	1.3	<0.004	0.125	<0.015	0.192
240	Frog Cr	FRG-2	990511	1715	29	22	8.6	6.8	32	12	0	>240	<0.1	2	0.9	<0.004	0.029	<0.015	<0.15
240	Frog Cr	FRG-2	990609	0825	---	24	2.1	6.8	96	6.8	---	>1200	4.3	8	4.7	<0.004	0.029	<0.015	0.673
240	Frog Cr	FRG-2	990713	1118	20	21	7.1	7.5	95	6.8	---	32	0.6	<1	1.5	<0.004	0.110	<0.015	0.189
240	Frog Cr	FRG-2	990803	1050	24	27	2.6	4.0	86	4.7	0	>1200	3.3	5	3.2	0.054	<0.003	<0.015	0.831
240	Hurricane Cr	HRC-1	990511	1620	28	23	8.1	8.1	155	8.4	50.9	>240	1.3	10	2.0	<0.004	0.180	<0.015	0.439
240	Hurricane Cr	HRC-1	990608	1335	---	26	7.4	8.1	192	5.1	38.7	80	0.4	7	1.5	<0.004	0.144	<0.015	0.309
240	Hurricane Cr	HRC-1	990707	0843	29	25	6.8	7.6	197	4.1	34.7	---	---	---	---	---	---	---	---
240	Hurricane Cr	HRC-1	990713	1450	20	23	7.1	6.7	155	13	55.4	>1200	1.8	14	2.5	0.055	0.151	<0.015	0.513
240	Hurricane Cr	HRC-1	990803	1220	27	27	6.9	7.8	168	6.9	25.5	216	1.1	11	2.0	0.054	0.203	<0.015	0.324
240	Hurricane Cr	HRC-1	990907	1600	30	26	6.7	7.4	189	---	23.5	84	1.6	9	1.8	0.015	0.147	<0.015	0.366
240	Hurricane Cr	HRC-2	990512	1030	---	15	9.1	7.4	138	3.2	26.5	52	<0.1	1	1.1	<0.004	0.194	<0.015	0.201
240	Hurricane Cr	HRC-2	990608	1530	---	24	8.4	8.1	173	2.4	---	104	0.3	1	1.1	<0.004	0.199	<0.015	0.198
240	Hurricane Cr	HRC-2	990713	1354	21	21	7.1	9.0	120	3.5	---	104	0.6	3	1.4	<0.004	0.206	<0.015	0.210
240	Hurricane Cr	HRC-2	990803	1315	25	23	8.5	8.1	160	1.8	---	210	0.2	3	0.7	<0.004	0.210	<0.015	0.187
240	Hurricane Cr	HRC-2	990907	1515	---	23	8.7	7.5	188	---	---	37	<0.1	3	1.2	<0.004	0.195	<0.015	<0.15
240	Hurricane Cr	HRC-3	990512	0910	---	14	9.3	7.6	114	3.7	29.9	188	<0.1	1	1.4	<0.004	0.076	<0.015	0.223
240	Hurricane Cr	HRC-3	990609	0930	---	19	9.1	7.4	155	2.4	16.1	116	<0.1	1	0.9	<0.004	0.086	<0.015	<0.15
240	Hurricane Cr	HRC-3	990707	1531	38	24	8.7	7.9	159	1.1	10.6	---	---	---	---	---	---	---	---
240	Hurricane Cr	HRC-3	990713	1430	22	21	8.5	7.8	157	3.2	29.7	80	0.5	6	1.9	<0.004	0.086	<0.015	0.214
240	Hurricane Cr	HRC-3	990803	1415	29	22	9.5	8.0	148	1.1	16.8	62	0.2	2	0.5	<0.004	0.079	<0.015	<0.15
240	Hurricane Cr	HRC-3	990907	1320	31	21	9.3	6.8	183	---	12.5	27	0.4	6	1.0	<0.004	0.078	<0.015	<0.15
240	Wolf Br	WOB-1	990512	0800	16	13	8.0	7.4	130	3.5	---	140	<0.1	2	0.9	<0.004	0.581	<0.015	<0.15
240	Wolf Br	WOB-1	990609	1045	---	21	8.2	7.5	180	2.4	---	620	0.1	3	1.0	<0.004	0.274	<0.015	0.168
240	Wolf Br	WOB-1	990707	1346	33	23	7.7	7.4	164	1.1	0.5	---	---	---	---	---	---	---	---

Appendix F-4a, cont. Physical / chemical data collected from May to September 1999 as part of the CWA § 303(d) Monitoring conducted by ADEM. (ADEM 2000c)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TOC	Total-P	NO3+ NO2-N	NH3-N	TKN
#		#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100ml*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105)																			
240	Wolf Br	WOB-1	990713	1518	21	21	7.7	7.4	186	2.9	---	>1200	0.8	7		0.206	0.409	<0.015	1.008
240	Wolf Br	WOB-1	990803	1330	28	24	7.5	7.2	149	18	---	480	0.7	63	1.1	0.034	0.346	<0.015	0.268
240	Wolf Br	WOB-1	990907	1300	27	22	9.4	9.5	193	---	---	17	0.1	7	1.1	0.008	0.263	<0.015	<0.15
240	Wolf Br	WOB-2	990512	0940	22	13	9.7	7.0	81	1.5	---	32	<0.1	1	0.6	<0.004	0.095	<0.015	<0.15
240	Wolf Br	WOB-2	990609	1100	---	---	---	---	---	---	0	---	---	---	---	---	---	---	---
240	Wolf Br	WOB-2	990713	1620	22	20	7.4	7.4	53	2	---	22	0.3	<1	0.7	0.213	0.238	<0.015	<0.15
240	Wolf Br	WOB-2	990803	1400	---	---	---	---	---	---	0	---	---	---	---	---	---	---	---
240	Wolf Br	WOB-2	990907	---	---	---	---	---	---	---	0	---	---	---	---	---	---	---	---
Middle Coosa (0315-0106)																			
300	Kelly Cr	KYC-2	990505	1340	20	19	7.2	6.7	77	3.2	26.4	112	0.6	<1	2.9	<0.004	0.061	---	0.314
300	Kelly Cr	KYC-2	990609	1010	30	27	6.3	7.2	56	3.8	29.6	---	---	---	---	---	---	---	---
300	Kelly Cr	KYC-2	990622	1030	30	24	4.7	7.0	77	5.6	---	37	---	<1	---	0.017	0.050	---	0.213
300	Kelly Cr	KYC-2	990715	1045	25	23	8.0	6.7	72	12	---	190	---	2	---	0.057	0.217	---	0.387
300	Kelly Cr	KYC-2	990811	1345	30	27	6.6	7.4	47	4.1	---	32	---	3	---	0.178	0.092	---	0.457
300	Kelly Cr	KYC-2	990915	1110	32	22	6.3	6.8	42	2.5	---	248	---	7	---	<0.004	0.090	---	0.161
310	Kelly Cr	KYC-1	990505	1145	20	19	8.2	6.4	83	6.4	---	148	0.7	7	2.6	<0.004	0.151	<0.015	0.272
310	Kelly Cr	KYC-1	990609	0805	25	24	6.5	7.1	73	8.5	46.2	---	---	---	---	---	---	---	---
310	Kelly Cr	KYC-1	990622	1000	28	23	5.1	6.6	93	5.8	---	124	---	15	---	0.033	0.071	---	0.220
310	Kelly Cr	KYC-1	990715	1130	25	25	7.2	8.4	57	12	---	112	---	2	---	0.023	0.101	---	0.354
310	Kelly Cr	KYC-1	990811	1245	28	27	8.5	7.2	88	3.3	---	168	---	4	---	0.017	0.077	---	0.756
310	Kelly Cr	KYC-1	990915	1040	25	22	5.6	6.8	110	3.3	---	148	---	7	---	<0.004	0.046	---	0.204
Lower Coosa (0315-0107)																			
200	Taylor Cr	TYC-1	990504	1130	24	17	8.7	6.7	31	6.1	2.6	---	---	---	---	---	---	---	---
200	Taylor Cr	TYC-1	990519	0816	22	19	8.0	7.5	30	73	18.9	>600	2.1	81	8.5	0.07	0.080	<0.015	0.630
200	Taylor Cr	TYC-1	990602	1135	32	24	8.8	7.4	40	20	5.2	330	0.7	7	4.4	0.02	0.090	<0.015	<0.15
200	Taylor Cr	TYC-1	990708	1005	30	24	7.7	7.1	40	22	32.0	1833	1.0	32	5.6	0.06	0.120	<0.015	<0.15
200	Taylor Cr	TYC-1	990831	1050	29	26	5.7	7.1	60	8.2	0	97	1.1	8	4.7	<0.004	0.030	<0.015	0.460
200	Taylor Cr	TYC-2	990504	0900	19	16	8.4	6.1	32	8.4	7.4	---	---	---	---	---	---	---	---
200	Taylor Cr	TYC-2	990519	1050	25	20	8.6	7.3	30	46	---	1533	---	---	---	---	---	---	---
200	Taylor Cr	TYC-2	990602	1315	---	---	---	---	---	17	---	444	0.5	2	3.7	0.03	0.090	<0.015	0.260

Appendix F-4a, cont. Physical / chemical data collected from May to September 1999 as part of the CWA § 303(d) Monitoring conducted by ADEM. (ADEM 2000c)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TOC	Total-P	NO3+ NO2-N	NH3-N	TKN
#		*#*	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100ml*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Lower Coosa (0315-0107), cont.																			
200	Taylor Cr	TYC-2	990708	1220	29	25	7.4	7.0	40	17	---	1900	1.3	24	4.8	0.06	<0.003	<0.015	<0.15
200	Taylor Cr	TYC-2	990831	1320	33	25	7.9	6.8	40	27	0	>640	2.4	82	3.5	0.03	0.090	<0.015	0.530

Appendix F-4b. Physical / chemical data from the Lower Coosa Cataloging Unit (0315-0107) collected from April 2000 through April 2001 as part of the CWA § 303(d) Monitoring conducted by ADEM. (ADEM 2001g)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Total Depth	Fecal Coliform	CBOD-5	TSS	Total-P	NO3+ NO2-N	NH3-N	TKN	Hardness	Ortho-P
#		#	yymmdd	24hr	C	C	mg/L	s.u.	umhos @25c	NTU	cfs	ft	col/100ml	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
010	Tallasseehatchee Cr	TLST-1*	000503	1030	27	23	7.6	7.4	160	6.9	23.5	4.0	209	1.5	15	<0.004	0.177	0.630	0.690	73	---
010	Tallasseehatchee Cr	TLST-1	000531	0900	---	24	6.0	7.4	2038	9.2	---	---	---	---	---	---	---	---	---	---	---
010	Tallasseehatchee Cr	TLST-1	000607	1030	29	20	7.0	7.0	222	8.7	2.2	3.0	300	0.6	21	0.016	0.292	<0.015	<0.15	96	---
010	Tallasseehatchee Cr	TLST-1	000802	1000	31	24	5.1	6.8	240	4.9	0	3.0	193	0.7	5	0.04	<0.003	<0.015	0.400	109	---
010	Tallasseehatchee Cr	TLST-1*	000913	0845	26	23	4.8	6.8	266	3.9	0	3.5	370	2.4	4	0.05	0.017	0.029	<0.15	122	---
010	Tallasseehatchee Cr	TLST-1	001004	1000	25	22	6.9	7.7	280	5.3	0	2.0	est 80	2.0	7	<0.004	<0.003	<0.015	<0.15	135	---
010	Tallasseehatchee Cr	TLST-1	001121	0940	4	8	10.6	7.0	77	13	----	2.5	210	0.8	11	0.01	0.109	0.280	0.344	30	---
010	Tallasseehatchee Cr	TLST-1	001213	1235	5	6	9.0	7.5	214	5.7	nd	2.0	113	2.7	7	0.009	0.089	0.060	<0.15	87	---
010	Tallasseehatchee Cr	TLST-1	010308	0945	15	10	10.6	6.7	70	10	high	---	93	1.1	9	0.06	0.211	0.020	0.110	31	---
010	Tallasseehatchee Cr	TLST-2*	000504	0900	25	22	7.5	7.6	444	6.3	30.0	2.5	77	1.2	9	1.26	0.618	<0.015	---	100	---
010	Tallasseehatchee Cr	TLST-2	000531	1030	---	---	7.0	7.8	664	5.1	---	---	---	---	---	---	---	---	---	---	---
010	Tallasseehatchee Cr	TLST-2	000608	0900	22	22	7.1	8.2	1050	7.6	---	1.5	147	0.3	14	4.62	1.240	0.020	1.800	147	---
010	Tallasseehatchee Cr	TLST-2	000803	0850	31	25	5.7	7.4	1054	7.0	23.6	2.5	173	0.4	13	3.44	0.830	0.052	0.882	117	---
010	Tallasseehatchee Cr	TLST-2*	000913	0910	26	24	5.7	7.5	1676	4.2	7.8	2.5	225	0.9	6	5.14	2.310	<0.015	1.700	132	---
010	Tallasseehatchee Cr	TLST-2	001004	1020	26	22	6.2	8.0	1727	4.6	bd	2.5	87	2.9	8	7.62	2.500	<0.015	2.010	126	---
010	Tallasseehatchee Cr	TLST-2	001121	1000	4	8	10.7	7.6	279	12	43.0	2.5	214	0.8	6	0.76	0.382	<0.015	0.711	45	---
010	Tallasseehatchee Cr	TLST-2	001213	1250	5	6	11.0	8.0	1049	3.2	13.9	2.0	90	0.8	15	3.19	1.350	0.090	0.890	116	---
010	Tallasseehatchee Cr	TLST-2	010308	0930	13	10	12.0	7.0	174	10	high	---	153	0.6	7	0.3	0.539	0.020	0.310	50	---
010	Tallasseehatchee Cr	TLST-3	000504	1040	23	21	9.3	7.8	353	5.4	76.5	3.5	100	0.2	9	0.49	0.573	<0.015	---	119	---
010	Tallasseehatchee Cr	TLST-3	000608	1100	26	21	8.3	8.3	394	5.5	48.7	2.5	57	0.2	11	0.746	0.648	<0.015	0.398	141	---
010	Tallasseehatchee Cr	TLST-3	000803	0945	32	21	7.6	7.4	529	3.8	33.6	3.0	70	0.4	4	1.13	0.410	0.072	0.356	121	---
010	Tallasseehatchee Cr	TLST-3	000913	1000	28	21	7.8	7.4	631	2.9	16.1	2.5	180	0.6	4	1.74	0.796	0.066	0.219	132	---
010	Tallasseehatchee Cr	TLST-3	001004	1115	27	20	8.5	8.0	719	7.8	19.6	2.0	est 50	1.9	11	2.33	0.908	0.079	0.739	131	---
010	Tallasseehatchee Cr	TLST-3	001121	1115	8	9	10.7	7.8	243	8.6	77.7	2.5	133	1.2	4	0.46	0.396	0.100	0.346	67	---
010	Tallasseehatchee Cr	TLST-3	001213	1330	5	6	11.5	8.0	679	6.2	29.3	1.5	62	1.6	8	6.84	0.820	0.130	0.810	119	---
010	Tallasseehatchee Cr	TLST-3	010308	0845	11	11	9.1	6.8	176	10	high	---	90	0.5	8	0.22	0.634	<0.015	0.700	64	---
010	Shirtee Cr	SHRT-1	000503	0945	31	23	8.1	8.0	1070	6.7	15.3	2.5	est 18	0.4	10	4.81	1.278	<0.015	1.490	152	---
010	Shirtee Cr	SHRT-1	000531	0830	22	24	7.0	7.9	1010	6.0	---	---	---	---	---	---	---	---	---	---	---
010	Shirtee Cr	SHRT-1	000607	1000	22	21	8.1	7.5	1736	4.0	8.6	2.0	610	0.4	7	15.4	0.301	<0.015	2.260	137	---
010	Shirtee Cr	SHRT-1	000802	0930	31	25	6.9	7.5	1336	2.8	5.9	1.3	47	0.3	8	4.76	1.420	1.200	1.550	130	---
010	Shirtee Cr	SHRT-1	000913	0815	25	25	7.0	7.5	1621	3.8	8.8	1.0	100	0.3	925	4.79	1.950	<0.015	1.210	142	---
010	Shirtee Cr	SHRT-1	001004	0915	22	22	7.0	8.1	2260	4.4	4.8	1.0	est 53	2.5	8	11.1	3.630	<0.015	2.640	126	---
010	Shirtee Cr	SHRT-1	001121	0845	3	10	10.6	8.0	1674	2.9	5.9	1.0	59	0.9	2	2.96	2.070	<0.015	1.450	130	---

Appendix F-4b, cont. Physical / chemical data from the Lower Coosa Cataloging Unit (0315-0107) collected from April 2000 through April 2001 as part of the CWA § 303(d) Monitoring conducted by ADEM. (ADEM 2001g)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Total Depth	Fecal Coliform	CBOD-5	TSS	Total-P	NO3+ NO2-N	NH3-N	TKN	Hardness	Ortho-P
#		#	yymmdd	24hr	C	C	mg/L	s.u.	umhos @25c	NTU	cfs	ft	col/100ml	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
010	Shirtee Cr	SHRT-1	001213	1155	6	5	11.0	8.0	1367	3.1	12.8	1.0	120	1.3	7	6.84	1.850	0.060	1.030	128	---
010	Shirtee Cr	SHRT-1	010308	1005	13	12	11.2	7.8	645	3.9	37.8	2.5	>270	0.8	5	1.66	1.780	0.030	1.360	136	---
010	Weewoka Cr	WWOT-1*	000504	0950	27	21	8.3	7.7	249	11	12.9	1.0	137	0.4	14	<0.004	0.932	0.240	---	130	---
010	Weewoka Cr	WWOT-1	000608	1000	25	24	8.2	8.0	268	16.3	6.7	0.5	127	0.4	26	<0.004	0.734	0.020	18.000	148	---
010	Weewoka Cr	WWOT-1	000803	0915	29	24	6.8	7.2	226	9.0	11.9	1.0	>207	0.3	11	<0.004	0.370	0.059	0.188	109	---
010	Weewoka Cr	WWOT-1*	000913	0930	28	24	6.8	7.2	273	7.8	4.7	2.0	2400	0.9	5	<0.004	0.346	0.073	0.195	138	---
010	Weewoka Cr	WWOT-1	001004	1035	24	22	7.6	7.8	263	6.7	3.7	1.0	140	3.1	10	0.01	0.235	<0.015	<0.15	132	---
010	Weewoka Cr	WWOT-1	001121	1035	6	7	11.3	7.6	184	11	9.0	2	172	1.2	1	0.04	0.573	<0.015	0.488	90	---
010	Weewoka Cr	WWOT-1	001213	1315	5	5	11.6	7.7	275	4.7	bd	---	133	1.9	8	0.037	0.429	0.060	0.110	128	---
010	Weewoka Cr	WWOT-1	010308	0905	12	10	10.6	7.0	140	10	high	---	140	1.2	8	0.06	0.726	0.080	0.770	66	---
030	N Fk Yellowleaf Cr	YLFS-1	000427	1320	22	16	5.0	7.2	45	20	nw	6.0	47	0.1	9	0.021	0.063	<0.015	0.243	40	---
030	N Fk Yellowleaf Cr	YLFS-1	000511	1200	25	21	7.0	6.9	67	15	nw	3.0	32	0.6	17	0.024	0.071	<0.015	0.270	46	---
030	N Fk Yellowleaf Cr	YLFS-1	000706	1145	30	24	4.0	7.7	99	36	nw	3.5	55	1.0	74	0.072	0.111	<0.015	0.728	42	---
030	N Fk Yellowleaf Cr	YLFS-1	000919	1115	26	19	2.0	7.5	161	11	nw	2.0	104	0.4	4	0.008	<0.003	---	0.552	74	---
030	N Fk Yellowleaf Cr	YLFS-1	001019	1030	16	14	3.5	7.6	137	16	nw	1.5	47	0.7	7	0.012	2.719	<0.015	0.440	56	---
030	N Fk Yellowleaf Cr	YLFS-1	010111	1525	2	3	10.3	8.4	87	26	nw	6.0	70	5.1	---	<0.004	0.139	<0.015	0.288	28	---
030	N Fk Yellowleaf Cr	YLFS-1	010222	1230	16	14	8.3	7.7	52	20	nw	6.0	50	1.8	6	0.004	0.075	<0.015	0.334	32	---
030	N Fk Yellowleaf Cr	YLFS-1	010306	1055	8	11	9.8	6.4	63	51	nw	6.0	152	0.1	23	0.004	0.088	<0.015	0.234	40	---
030	N Fk Yellowleaf Cr	YLFS-1	010404	1250	15	14	8.8	6.7	45	144	nw	6.0	1100	0.9	105	0.13	0.123	0.027	0.791	16	---
030	S Fk Yellowleaf Cr	YLFS-2	000427	1415	24	15	3.0	7.1	32	14	---	4.0	80	0.2	4	0.019	0.062	<0.015	0.317	40	---
030	S Fk Yellowleaf Cr	YLFS-2	000511	1315	25	21	4.0	6.4	48	14	---	3.0	136	0.6	11	0.051	0.086	<0.015	0.267	46	---
030	S Fk Yellowleaf Cr	YLFS-2	000706	1215	30	24	2.0	7.5	65	10	---	2.0	22	1.7	93	0.066	0.008	<0.015	0.632	28	---
030	S Fk Yellowleaf Cr	YLFS-2	000919	1140	26	18	3.0	7.4	87	16	---	1.4	4	0.2	8	0.052	<0.003	---	0.697	52	---
030	S Fk Yellowleaf Cr	YLFS-2	001019	1100	18	14	4.7	7.7	64	6.3	ip	2.0	15	0.7	3	0.021	1.047	0.087	0.585	42	---
030	S Fk Yellowleaf Cr	YLFS-2	010111	1600	2	3	9.3	9.7	63	17	---	2.0	87	5.2	---	<0.004	0.215	<0.015	0.362	28	---
030	S Fk Yellowleaf Cr	YLFS-2	010222	1250	14	13	7.4	7.6	41	17	---	---	55	0.9	4	<0.004	0.106	<0.015	0.368	32	---
030	S Fk Yellowleaf Cr	YLFS-2	010306	1115	8	11	8.9	6.4	54	40	---	---	210	0.5	16	<0.004	0.137	<0.015	0.452	36	---
030	S Fk Yellowleaf Cr	YLFS-2	010404	1305	16	14	7.9	6.4	35	93	high	---	2400	1.6	31	0.09	0.105	0.043	<0.15	12	---
030	Yellowleaf Cr	YLFS-3	000427	1130	22	16	10.0	7.0	41	12	48.4	1.0	50	0.1	3	0.017	0.073	<0.015	0.566	32	---
030	Yellowleaf Cr	YLFS-3	000511	1000	25	21	6.0	6.9	60	6.3	10.6	1.2	40	0.8	6	0.025	0.097	<0.015	0.199	44	---
030	Yellowleaf Cr	YLFS-3	000530	1300	25	25	6.0	7.2	86	6.9	---	---	---	---	---	---	---	---	---	---	---
030	Yellowleaf Cr	YLFS-3	000706	1100	29	25	4.3	7.3	88	24	nd	1.0	22	1.1	18	0.072	0.137	<0.015	0.379	36	---
030	Yellowleaf Cr	YLFS-3	000919	1045	25	18	4.0	8.0	100	4.3	nd	1.2	>620	0.8	22	0.008	0.008	---	0.433	54	---

Appendix F-4b, cont. Physical / chemical data from the Lower Coosa Cataloging Unit (0315-0107) collected from April 2000 through April 2001 as part of the CWA § 303(d) Monitoring conducted by ADEM. (ADEM 2001g)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Total Depth	Fecal Coliform	CBOD-5	TSS	Total-P	NO3+ NO2-N	NH3-N	TKN	Hardness	Ortho-P
#		#	yymmdd	24hr	C	C	mg/L	s.u.	umhos @25c	NTU	cfs	ft	col/100ml	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
030	Yellowleaf Cr	YLFS-3	001019	0950	15	14	6.5	7.8	99	1.6	nd	1.0	540	1.3	3	0.007	2.721	<0.015	0.691	40	---
030	Yellowleaf Cr	YLFS-3	010111	1215	1	3	12.6	8.1	78	26	44.0	2.5	55	5.4	---	<0.004	0.195	<0.015	0.324	32	---
030	Yellowleaf Cr	YLFS-3	010222	1200	16	13	8.4	7.8	48	19	high		92	0.8	7	<0.004	0.100	<0.015	0.441	32	---
030	Yellowleaf Cr	YLFS-3	010306	1020	8	11	9.2	6.4	58	58	high		220	0.4	30	<0.004	<0.003	<0.015	0.379	36	---
030	Yellowleaf Cr	YLFS-3	010404	1230	16	14	8.5	6.8	42	205	high		2800	1.2	189	0.21	0.153	0.018	0.839	15	---
030	Yellowleaf Cr	YLFS-4	000427	0950	17	15	8.0	7.4	41	12	86.2	0.8	42	0.4	5	0.015	0.051	<0.015	0.289	30	---
030	Yellowleaf Cr	YLFS-4	000511	0900	25	21	7.0	6.9	41	5.0	13.3	1.0	35	0.5	5	0.029	0.057	<0.015	0.168	50	---
030	Yellowleaf Cr	YLFS-4	000530	1200	26	24	7.0	7.2	90.3	5.0	---	---	---	---	---	---	---	---	---	---	---
030	Yellowleaf Cr	YLFS-4	000706	0930	---	26	6.0	7.2	102	16.6	3.7	1.5	15	0.4	3	0.051	0.031	<0.015	0.351	44	---
030	Yellowleaf Cr	YLFS-4	000919	1000	25	21	7.0	8.4	188	1.9	nd	0.4	36	2.7	5	<0.004	0.068	---	0.137	108	---
030	Yellowleaf Cr	YLFS-4	001019	0920	15	16	8.0	7.6	159	1.5	1.0	0.7	7	1.4	<1	<0.004	2.476	<0.015	0.282	106	---
030	Yellowleaf Cr	YLFS-4	010111	1000	1	2	11.3	8.5	84	26	68.9	0.8	40	3.0	---	<0.004	0.169	<0.015	0.384	42	---
030	Yellowleaf Cr	YLFS-4	010222	1050	16	13	8.6	7.7	48	17	high	0.8	96	0.7	5	<0.004	0.074	0.015	0.316	32	---
030	Yellowleaf Cr	YLFS-4	010306	0945	7	11	9.5	6.4	47	56	high	2.0	196	0.5	25	<0.004	0.108	0.015	0.708	40	---
030	Yellowleaf Cr	YLFS-4	010404	1200	15	14	8.5	7.0	42	225	high		1460	1.1	184	0.14	0.156	0.095	0.732	15	---
090	Buxahatchee Cr	BXHS-1	000413	1300	17	16	9.0	7.9	239	11	---	0.6	132	1.2	75	0.030	0.106	<0.015	0	158	---
090	Buxahatchee Cr	BXHS-1	000502	1515	30	23	8.0	7.7	314	5	---	0.4	61	0.5	6	0.007	0.326	<0.015	0.749	184	---
090	Buxahatchee Cr	BXHS-1	000725	1330	---	---	---	---	---	---	ip	---	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-1	000726	0900	---	---	---	---	---	---	nf	---	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-1	000726	1330	---	---	---	---	---	---	nf	---	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-1	000727	0830	---	---	---	---	---	---	nf	---	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-1	000905	0930	---	---	---	---	---	---	ip	---	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-1	001004	---	---	---	---	---	---	---	dry	---	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-1	010118	0950	10	9	9.1	8.1	362	20	---	0.5	380	3.1	5	<0.004	0.270	<0.015	0.520	162	---
090	Buxahatchee Cr	BXHS-1	010221	0830	20	12	8.3	7.6	230	12	---	0.4	160	1.3	<1	<0.004	0.161	<0.015	0.485	104	---
090	Buxahatchee Cr	BXHS-1	010308	1045	14	10	10.7	7.8	168.3	11	---	0.5	108	1.0	<1	<0.004	0.125	<0.015	0.234	126	---
090	Buxahatchee Cr	BXHS-1	010419	1030	17	12	13.6	9.0	335	6.7	---	2.0	180	1.3	5	0.08	0.203	<0.015	<0.15	151	---
090	Buxahatchee Cr	BXHS-2	000413	1200	17	16	7.0	7.8	236	15	3.8	0.8	320	1.2	8	0.008	0.076	<0.015	0.333	156	---
090	Buxahatchee Cr	BXHS-2	000502	1400	28	22	8.0	7.5	366	5.1	0.6	0.8	>620	1.2	88	0.027	0.203	<0.015	0.582	180	---
090	Buxahatchee Cr	BXHS-2	000725	1445	28	28	1.9	7.1	422	5.2	---	0.8	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-2	000726	1430	32	27	4.4	7.6	547	10	---	1.5	---	5.7	153	0.328	<0.003	<0.015	1.622	216	0.024
090	Buxahatchee Cr	BXHS-2	000726	0920	29	25	1.2	7.1	335	2.3	---	1.5	---	2.0	11	0.085	<0.003	0.235	0.805	202	0.024
090	Buxahatchee Cr	BXHS-2	000727	1000	30	23	1.2	7.1	222	233	---	1.5	>1200	4.6	77	0.292	0.573	0.196	1.133	68	0.091

Appendix F-4b, cont. Physical / chemical data from the Lower Coosa Cataloging Unit (0315-0107) collected from April 2000 through April 2001 as part of the CWA § 303(d) Monitoring conducted by ADEM. (ADEM 2001g)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Total Depth	Fecal Coliform	CBOD-5	TSS	Total-P	NO3+ NO2-N	NH3-N	TKN	Hardness	Ortho-P
#		#	yymmdd	24hr	C	C	mg/L	s.u.	umhos @25c	NTU	cfs	ft	col/100ml	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
090	Buxahatchee Cr	BXHS-2	000905	1010	30	26	2.0	7.1	455	9.3	nd	1.0	168	3.4	11	0.085	<0.003	---	0.921	178	---
090	Buxahatchee Cr	BXHS-2	001004	0950	22	20	1.0	7.2	454	31	.009	1.5	26	4.3	14	0.032	<0.003	<0.015	0.761	194	---
090	Buxahatchee Cr	BXHS-2	010118	1050	10	9	9.8	8.1	277	57	12.7	2.5	>1200	2.9	37	0.094	0.244	0.124	0.813	128	---
090	Buxahatchee Cr	BXHS-2	010221	0915	21	12	8.7	7.7	235	16	5.7	0.8	1000	0.9	<1	<0.004	0.159	<0.015	0.514	102	---
090	Buxahatchee Cr	BXHS-2	010308	1145	14	11	11.0	7.7	183.4	13	8.0	0.5	est >6000	3.5	3	0.054	0.161	0.309	1.194	128	---
090	Buxahatchee Cr	BXHS-2	010419	1210	21	15	10.7	8.4	328	9.2	2.4	1.0	41	1.1	4	0.06	0.053	<0.015	0.276	145	---
090	Buxahatchee Cr	BXHS-3	000413	1130	16	17	8.0	7.8	285	13	3.8	0.5	>1200	1.0	8	0.158	1.073	<0.015	0.474	172	---
090	Buxahatchee Cr	BXHS-3	000502	1310	26	22	8.0	7.4	481	13	---	0.8	>620	3.7	15	0.561	1.161	1.379	2.587	210	---
090	Buxahatchee Cr	BXHS-3	000725	1430	30	28	6.8	7.7	721	21	---	0.4	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-3	000725	1400	33	27	3.6	7.5	671	4.3	---	0.5	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-3	000726	1020	29	24	10.5	8.2	578	1.0	---	2.0	---	2.0	11	0.085	<0.003	0.235	0.805	202	0.024
090	Buxahatchee Cr	BXHS-3	000726	1410	31	29	6.7	7.8	779	11.8	---	0.4	---	7.5	17	6.199	0.618	19.774	20.448	202	4.920
090	Buxahatchee Cr	BXHS-3	000726	1515	30	26	15.6	8.6	574	20.3	nw	2.5	---	12.3	34	3.654	1.190	1.040	4.448	192	0.728
090	Buxahatchee Cr	BXHS-3	000726	1020	29	24	10.5	8.2	578	1.0	---	2.0	---	4.9	18	2.609	1.129	1.719	3.416	196	1.229
090	Buxahatchee Cr	BXHS-3	000727	0850	25	24	3.8	7.3	244	68	high	2.0	>1200	5.3	37	1.017	0.574	2.523	3.734	88	0.471
090	Buxahatchee Cr	BXHS-3	000905	0950	29	25	0.0	7.4	755	26	---	0.8	TNTC	42.0	28	4.24	0.015	---	22.200	196	---
090	Buxahatchee Cr	BXHS-3	001004	0930	22	19	4.0	7.2	765	17	---	0.5	8700	7.0	224	4.869	0.032	20.207	33.569	200	---
090	Buxahatchee Cr	BXHS-3	010118	1140	12	10	9.9	8.0	290	6.0	---	1.5	>1200	4.0	42	0.374	0.559	0.007	1.174	124	---
090	Buxahatchee Cr	BXHS-3	010221	0900	20	13	9.0	7.7	263	15	---	0.5	310	0.8	2	<0.004	0.691	<0.015	0.523	116	---
090	Buxahatchee Cr	BXHS-3	010308	1115	14	12	10.6	7.8	209.3	12	---	0.5	est >6000	3.3	2	0.175	0.816	0.386	1.024	138	---
090	Buxahatchee Cr	BXHS-3	010419	1115	19	17	13.7	8.7	395	6.3	---	1.0	35	0.5	8	0.33	2.280	<0.015	838	166	---
090	Buxahatchee Cr	BXHS-4	000413	0830	17	16	9.0	8.1	184	7.0	14.5	2.0	112	0.7	1	0.035	0.313	<0.015	0.311	112	---
090	Buxahatchee Cr	BXHS-4	000502	1130	22	19	9.0	8.4	237	1.9	2.6	1.0	20	2.6	27	0.049	0.330	<0.015	0.646	130	---
090	Buxahatchee Cr	BXHS-4	000525	1000	---	24	7.0	7.3	194	5.7	1.8	---	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-4	000725	1540	29	26	10.6	8.4	185.9	4.6	---	1.5	---	---	---	---	---	---	---	---	---
090	Buxahatchee Cr	BXHS-4	000726	1120	29	25	8.5	8.1	261	1.1	---	1.5	---	0.7	4	0.062	0.036	0.051	0.269	104	0.021
090	Buxahatchee Cr	BXHS-4	000726	1610	29	27	9.0	8.3	292	0.0	---	1.0	---	2.1	36	0.098	0.028	0.479	0.483	102	0.020
090	Buxahatchee Cr	BXHS-4	000727	1140	31	25	7.9	7.9	517	0.6	---	1.0	168	1.2	4	0.809	0.247	0.237	0.730	82	0.157
090	Buxahatchee Cr	BXHS-4	000905	1210	29	25	8.0	7.6	305	0.0	1.8	1.5	108	1.1	<1	0.085	0.021	---	0.327	102	---
090	Buxahatchee Cr	BXHS-4	001004	1115	22	18	10.0	7.8	337	0.0	0.1	1.3	12	0.7	<1	0.192	0.882	<0.015	0.306	122	---
090	Buxahatchee Cr	BXHS-4	010118	1400	13	9	11.4	7.7	223	32	48.8	1.4	88	2.9	11	0.091	0.353	<0.015	0.379	102	---
090	Buxahatchee Cr	BXHS-4	010221	1100	21	13	9.5	7.9	176	18	18.5	0.8	300	1.2	6	<0.004	0.264	0.015	0.548	78	---
090	Buxahatchee Cr	BXHS-4	010308	1350	18	12	11.4	8.1	105.7	24	28.0	1.0	550	2.5	7	0.019	0.285	<0.015	0.535	88	---

Appendix F-4b, cont. Physical / chemical data from the Lower Coosa Cataloging Unit (0315-0107) collected from April 2000 through April 2001 as part of the CWA § 303(d) Monitoring conducted by ADEM. (ADEM 2001c)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Total Depth	Fecal Coliform	CBOD-5	TSS	Total-P	NO3+ NO2-N	NH3-N	TKN	Hardness	Ortho-P
#		#	yymmdd	24hr	C	C	mg/L	s.u.	umhos @25c	NTU	cfs	ft	col/100ml	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
090	Buxahatchee Cr	BXHS-4	010419	1430	23	17	12.0	8.4	81	6.0	6.8	2.0	8	1.5	6	0.07	0.182	<0.015	<0.15	104	---
090	Calera WWTP Outfall	CAWW-1	000413	1150	17	18	9.0	7.8	420	2.7	.68	0.8	>1200	0.9	2	0.782	6.140	<0.015	0.296	220	---
090	Calera WWTP Outfall	CAWW-1	000502	1440	29	21	7.0	7.4	514	4.9	.59	---	>620	0.4	9	<0.004	0.115	<0.015	0.326	224	---
090	Calera WWTP Outfall	CAWW-1	000725	1455	28	27	6.5	7.6	709	24	---	---	---	---	---	---	---	---	---	---	---
090	Calera WWTP Outfall	CAWW-1	000726	0840	26	26	6.6	7.1	742	19	---	---	---	---	---	---	---	---	---	---	---
090	Calera WWTP Outfall	CAWW-1	000726	1440	30	27	6.5	7.6	758	18	---	---	---	---	---	---	---	---	---	---	---
090	Calera WWTP Outfall	CAWW-1	000727	1030	30	26	6.7	7.6	708	---	---	---	>1200	7.2	28	5.273	0.120	18.361	19.934	190	0.933
090	Calera WWTP Outfall	CAWW-1	000905	1020	29	27	3.8	7.3	764	43	0.83	---	>600,000	100	33	0.421	0.052	---	24.250	190	---
090	Calera WWTP Outfall	CAWW-1	001004	1010	22	24	10.0	7.7	753	40	.52	---	>60,000	7.3	27	3.802	0.079	22.324	27.224	196	---
090	Calera WWTP Outfall	CAWW-1	010118	1040	10	13	10.1	7.6	483	1.8	1.24	---	57	3.0	3	0.929	4.820	0.015	0.637	198	---
090	Calera WWTP Outfall	CAWW-1	010221	0930	21	15	9.1	7.5	466	5.6	1.24	---	4	1.0	3	0.974	4.279	<0.015	0.409	202	---
090	Calera WWTP Outfall	CAWW-1	010308	1150	14	16	9.7	7.6	376.6	1.9	.99	0.8	<1	1.2	<1	0.855	5.713	<0.015	0.107	212	---
090	Calera WWTP Outfall	CAWW-1	010419	1230	21	18	8.8	8.0	540	3.4	1.22	0.5	10	8.0	4	0.94	0.708	<0.015	1.070	207	---
090	Watson Cr	WTNS-1	000413	0815	17	17	9.0	7.7	71	7.0	25.2	2.2	40	0.8	6	<0.004	0.025	<0.015	0.421	50	---
090	Watson Cr	WTNS-1	000502	1145	22	20	8.0	7.6	95	7.9	3.9	1.5	96	2.9	5	0.936	2.210	0.748	1.827	58	---
090	Watson Cr	WTNS-1	000524	1100	---	25	7.0	7.4	91	8.6	3.7	---	---	---	---	---	---	---	---	---	---
090	Watson Cr	WTNS-1	000725	1530	29	29	5.1	7.3	---	3.9	---	1.0	---	---	---	---	---	---	---	---	---
090	Watson Cr	WTNS-1	000726	1110	29	27	7.0	7.9	282	3.0	nf	1.0	---	1.0	7	0.044	0.014	<0.015	0.349	92	---
090	Watson Cr	WTNS-1	000726	1600	27	29	10.5	8.4	289	7.8	nf	2.5	---	2.3	25	0.065	0.096	0.450	0.480	100	---
090	Watson Cr	WTNS-1	000727	1130	31	25	10.1	8.0	464	4.9	nf	2.0	124	2.1	70	0.218	0.083	0.360	0.613	118	---
090	Watson Cr	WTNS-1	000905	1215	29	25	5.2	7.4	96	3.8	ip	1.0	980	1.4	<1	0.01	0.034	---	0.538	40	---
090	Watson Cr	WTNS-1	001004	1130	26	24	15.0	8.5	282	34	nd	1.0	4	3.4	25	0.285	0.136	<0.015	1.484	98	---
090	Watson Cr	WTNS-1	010118	1315	13	9	11.7	7.9	82	8.9	66.1	0.8	47	2.7	<1	<0.004	<0.003	<0.015	0.147	48	---
090	Watson Cr	WTNS-1	010221	1015	21	12	9.4	7.6	74	9.8	51.7	1.0	56	0.6	4	<0.004	0.036	<0.015	0.298	28	---
090	Watson Cr	WTNS-1	010308	1305	18	11	11.5	8.0	38.9	7.8	52.6	1.5	17	1.6	<1	<0.004	0.022	<0.015	0.569	42	---
160	Walnut Cr	WNTC-1	000405	1110	18	13	10.0	6.3	48	26	high	3.0	200	0.5	5	0.03	0.477	0.075	0.447	20	---
160	Walnut Cr	WNTC-1	000510	1150	25	24	7.0	7.1	88	9.8	4.2	0.8	82	0.4	9	0.021	0.366	<0.015	0.458	50	---
160	Walnut Cr	WNTC-1	000524	1635	32	30	7.0	7.0	111	10	---	---	---	---	---	---	---	---	---	---	---
160	Walnut Cr	WNTC-1	000713	1215	26	30	6.0	7.4	67	4.8	12.2	0.8	>620	0.3	16	0.018	0.117	0.048	0.278	46	---
160	Walnut Cr	WNTC-1	000920	1020	23	23	6.0	7.3	92	5.2	5.5	0.5	340	0.6	9	<0.004	0.011	<0.015	0.196	40	---
160	Walnut Cr	WNTC-1	001018	1130	22	18	8.8	7.4	101	3.0	9.4	0.8	292	0.5	3	<0.004	1.949	<0.015	0.281	38	---
160	Walnut Cr	WNTC-1	010124	1130	3	7	12.5	7.8	105	2.9	37.5	1.0	12	0.6	5	<0.004	0.967	0.017	0.066	44	---
160	Walnut Cr	WNTC-1	010220	1245	14	12	9.4	6.4	60	8.7	44.8	0.5	152	<0.1	5	<0.004	0.156	<0.015	0.530	42	---

Appendix F-4b, cont. Physical / chemical data from the Lower Coosa Cataloging Unit (0315-0107) collected from April 2000 through April 2001 as part of the CWA § 303(d) Monitoring conducted by ADEM. (ADEM 2001g)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Total Depth	Fecal Coliform	CBOD-5	TSS	Total-P	NO3+ NO2-N	NH3-N	TKN	Hardness	Ortho-P
#		#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*ft*	*col/100ml*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
160	Walnut Cr	WNTC-1	010307	1330	10	12	10.1	7.0	53.5	8.6	77.8	2.0	16	1.4	1	<0.004	0.948	<0.015	0.411	42	---
160	Walnut Cr	WNTC-2	000405	1045	18	12	10.0	6.7	50	28	---	4.0	290	0.5	15	0.049	0.506	0.052	0.862	24	---
160	Walnut Cr	WNTC-2	000510	1030	21	22	7.0	7.1	166	7.7	5.4	0.5	250	0.5	7	0.041	0.453	<0.015	0.406	54	---
160	Walnut Cr	WNTC-2	000524	1510	34	27	6.0	6.8	211.2	8.3	---	---	---	---	---	---	---	---	---	---	---
160	Walnut Cr	WNTC-2	000713	1115	28	27	6.0	7.6	310	4.4	4.1	1.5	490	0.3	10	0.071	0.308	<0.015	0.293	68	---
160	Walnut Cr	WNTC-2	000920	0945	22	20	7.0	7.4	307	3.8	6.6	0.5	84	0.3	8	0.008	5.023	<0.015	<0.15	76	---
160	Walnut Cr	WNTC-2	001018	1100	18	17	6.7	7.4	274	3.9	6.5	0.8	330	0.5	1	0.059	2.227	0.012	0.502	62	---
160	Walnut Cr	WNTC-2	010124	1050	4	7	12.2	8.1	127	3.0	30.7	1.3	10	0.8	2	<0.004	1.026	0.006	0.110	46	---
160	Walnut Cr	WNTC-2	010220	1210	13	12	9.7	6.9	64	8.0	55.8	0.8	120	0.3	3	<0.004	0.558	<0.015	0.490	40	---
160	Walnut Cr	WNTC-2	010307	1245	10	10	10.2	6.8	56.5	10	78.1	2.0	45	0.8	5	<0.004	0.857	<0.015	0.438	42	---
160	Walnut Cr	WNTC-3	000405	1010	15	13	10.0	6.7	64	30	high	---	420	0.4	18	0.047	0.478	0.039	0.832	20	---
160	Walnut Cr	WNTC-3	000510	0940	22	21	8.0	7.4	164	2.1	13.6	0.5	55	0.4	3	0.032	0.452	<0.015	0.323	52	---
160	Walnut Cr	WNTC-3	000524	1355	29	26	8.0	7.3	161	5.6	---	---	---	---	---	---	---	---	---	---	---
160	Walnut Cr	WNTC-3	000713	1015	28	28	9.0	8.0	280	2.0	2.5	---	28	0.4	6	0.053	0.208	<0.015	0.697	68	---
160	Walnut Cr	WNTC-3	000920	0900	22	20	8.0	7.7	298	2.3	3.2	0.5	180	0.3	7	0.008	3.552	<0.015	0.121	70	---
160	Walnut Cr	WNTC-3	001018	1000	17	16	8.8	7.7	303	0.3	2.9	0.7	21	0.6	3	0.015	2.158	<0.015	0.569	74	---
160	Walnut Cr	WNTC-3	010124	0945	3	6	13.4	7.4	132	2.8	28.9	0.5	104	0.3	2	<0.004	1.106	<0.015	0.140	58	---
160	Walnut Cr	WNTC-3	010220	1110	13	12	10.1	6.9	62	17	56.6	1.1	192	0.8	38	<0.004	0.613	<0.015	0.506	48	---
160	Walnut Cr	WNTC-3	010307	1200	11	11	10.5	7.4	55.7	7.8	86.5	2.0	40	1.8	6	<0.004	0.819	<0.015	0.420	50	---
160	Walnut Cr	WNTC-4	000405	0900	15	13	9.0	7.0	45	34	high	2	360	0.6	23	0.047	0.408	<0.015	0.920	18	---
160	Walnut Cr	WNTC-4	000510	0815	22	21	7.0	7.5	165	6.7	---	4.0	104	0.7	4	0.019	0.408	<0.015	0.414	50	---
160	Walnut Cr	WNTC-4	000713	0840	28	27	6.0	7.8	280	3.4	---	---	41	0.3	6	0.047	0.190	<0.015	0.198	70	---
160	Walnut Cr	WNTC-4	000920	0830	22	19	8.0	8.1	209	5.8	---	2.0	88	0.3	2	<0.004	0.554	<0.015	0.184	58	---
160	Walnut Cr	WNTC-4	001018	0900	16	14	8.2	7.8	310	3.1	---	3.0	208	0.8	4	0.005	1.897	<0.015	0.449	76	---
160	Walnut Cr	WNTC-4	010124	0900	2	5	13.5	7.8	122	3.5	---	3.5	196	1.9	21	<0.004	0.961	<0.015	0.036	50	---
160	Walnut Cr	WNTC-4	010220	1040	14	12	10.1	7.0	57	8.2	---	1.5	164	0.6	4	<0.004	0.559	<0.015	0.552	48	---
160	Walnut Cr	WNTC-4	010307	1105	10	11	10.8	7.8	51.8	9.2	---	5.0	80	1.3	5	<0.004	0.744	<0.015	0.254	48	---

Flow Comments:

bd - beaver dam present obstructing flow

dry - streambed dry

High - water level too high to wade or safely measure flow

ip - intermittent pools only

nd - not detectable

nf - no flow measureable

nw - not wadeable

* Pesticide samples collected. The following pesticides were analyzed for and not detected: Chlordane, 4,4'-DDE, 4,4'-DDD, 4,4'-DDT, Aldrin, alpha BHC, beta -BHC, delta-BHC, Dieldrin, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Heptachlor, Heptachlor Epoxide, Lindane, Methoxychlor, Toxaphene, Azinphos mehtyl, Diazinon, Ethion, Malathion, Mevinphos, Parathion ethyl, Parathion methyl

Appendix F-4c. Water column metals data collected from sites within the Coosa River Basin during 1999 and 2000 as part of the CWA §303(d) Monitoring conducted by ADEM. (ADEM 2000c, 2001g).

Sub-Watershed #	Stream Name	Station #	Date *(yymmdd)*	Time *(24hr)*	Hardness *mg/L*	Fe *mg/L*	Cr *mg/L*	Mn *mg/L*	Cu *mg/L*	Zn *mg/L*	As *ug/L*	Cd *mg/L*	Pb *ug/L*	Hg *ug/L*	Al *mg/L*	Ni *mg/L*
Upper Coosa (0315-0105)																
240	Frog Cr	FRG-1	990512	1130	106	0.25	<0.015	0.041	<0.02	<0.03	<10	<0.003	<2	<0.3	---	---
240	Frog Cr	FRG-2	990511	1715	16	0.37	<0.015	0.025	<0.02	<0.03	<10	<0.003	<2	<0.3	---	---
240	Hurricane Cr	HRC-1	990622	1211	6	0.44	<0.015	0.010	<0.02	<0.03	<10	<0.003	3	<0.3	---	---
240	Hurricane Cr	HRC-1	990511	1620	76	0.63	<0.015	0.068	<0.02	<0.03	<10	<0.003	<2	<0.3	---	---
240	Hurricane Cr	HRC-2	990512	1030	70	0.55	<0.015	0.045	<0.02	<0.03	<10	<0.003	<2	<0.3	---	---
240	Hurricane Cr	HRC-3	990512	0910		0.74	<0.015	0.048	<0.02	<0.03	<10	<0.003	<2	<0.3	---	---
240	Wolf Br	WOB-1	990512	0800	60	0.17	<0.015	0.048	<0.02	<0.03	<10	<0.003	<2	<0.3	---	---
240	Wolf Br	WOB-2	990512	0940	40	0.24	<0.015	<0.02	<0.02	<0.03	<10	<0.003	<2	<0.3	---	---
Middle Coosa (0315-0106)																
310	Kelly Cr	KYC-1	990505	1145	46	0.71	<0.015	0.049	<0.02	<0.03	<10	<0.003	<2	---	---	---
Lower Coosa (0315-0107)																
090	Buxahatchee Cr	BXHS-2	000413	1200	156	0.84	<0.015	0.062	<0.02	<0.03	<10	<0.003	<2	<0.3	0.919	<0.03
090	Buxahatchee Cr	BXHS-2	000502	1400	180	0.46	<0.015	0.089	<0.02	<0.03	<10	<0.003	<2	<0.3	0.232	<0.03
090	Buxahatchee Cr	BXHS-2	000727	1000	68	9.21	0.033	0.123	<0.02	0.033	<10	<0.003	10.49	---	17.8	<0.03
090	Buxahatchee Cr	BXHS-3	000413	1130	172	0.70	<0.015	0.057	<0.02	<0.03	<10	<0.003	2.7	<0.3	0.761	<0.03
090	Buxahatchee Cr	BXHS-3	000502	1310	210	0.56	<0.015	0.114	<0.02	<0.03	<10	<0.003	<2	<0.3	0.428	<0.03
090	Buxahatchee Cr	BXHS-3	000727	0850	88	3.22	<0.015	0.191	<0.02	<0.03	<10	<0.003	4.37	---	5.02	<0.03
090	Buxahatchee Cr	BXHS-4	000413	0830	112	0.48	<0.015	0.023	<0.02	<0.03	<10	<0.003	<2	<0.3	0.309	<0.03
090	Buxahatchee Cr	BXHS-4	000502	1130	130	0.66	<0.015	0.115	<0.02	<0.03	<10	<0.003	<2	<0.3	0.536	<0.03
090	Buxahatchee Cr	BXHS-4	000727	1140	82	0.23	<0.015	0.083	<0.02	<0.03	<10	<0.003	<2	---	0.06	<0.03
090	Calera WWTP Outfall	CAWW-1	000413	1150	220	0.08	<0.015	<0.02	<0.02	0.01	<10	<0.003	<2	<0.3	0.044	<0.03
090	Calera WWTP Outfall	CAWW-1	000727	1030	190	0.53	<0.015	0.259	<0.02	<0.03	<10	<0.003	2	---	0.087	<0.03
090	Watson Cr	WTNS-1	000413	0815	50	0.45	<0.015	<0.02	<0.02	<0.03	<10	<0.003	<2	<0.3	0.269	<0.03
090	Watson Cr	WTNS-1	000727	1130	118	0.60	<0.015	0.198	<0.02	<0.03	<10	<0.003	<2	---	0.471	<0.03
160	Watson Cr	WNTC-1	000405	1110	20	1.86	<0.015	0.149	0.027	0.057	<10	<0.003	<2	<0.3	36.2	<0.03
160	Watson Cr	WNTC-1	000510	1150	50	0.90	<0.015	0.096	<0.02	<0.03	<10	<0.003	<2	<0.3	0.358	<0.03
160	Walnut Cr	WNTC-1	000713	1215	46	0.82	<0.015	0.139	<0.02	<0.03	<10	<0.003	<2	<0.3	0.208	<0.03

Appendix F-4c, cont. Water column metals data collected from sites within the Coosa River Basin during 1999 and 2000 as part of the CWA §303(d) Monitoring conducted by ADEM. (ADEM 2000c, 2001g).

Sub-Watershed #	Stream Name	Station #	Date (yymmdd)	Time (24hr)	Hardness mg/L	Fe mg/L	Cr mg/L	Mn mg/L	Cu mg/L	Zn mg/L	As ug/L	Cd mg/L	Pb ug/L	Hg ug/L	Al mg/L	Ni mg/L
Lower Coosa (0315-0107), cont.																
160	Walnut Cr	WNTC-4	000405	0900	18	1.92	<0.015	0.066	<0.02	<0.03	<10	<0.003	<2	<0.3	52.8	<0.03
160	Walnut Cr	WNTC-4	000510	0815	50	0.58	<0.015	0.034	<0.02	<0.03	<10	<0.003	<2	<0.3	0.056	<0.03
160	Walnut Cr	WNTC-4	000713	0840	70	0.55	<0.015	0.105	<0.02	<0.03	<10	<0.003	<2	<0.3	0.351	<0.03

Appendix F-4d. Physical characteristic and habitat quality estimates for Coosa River Basin sites assessed as part of the CWA Section 303(d) monitoring project (1999-2000). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		FRG-1	FRG -2	HRC-1	HRC -2	HRC-3	WOB-1	KYC-2	KYC-1	TLST-1	TLST-2
CU - Subwatershed #		0105-240	0105-240	0105-240	0105-240	0105-240	0105-240	0106-300	0106-310	0107-010	0107-010
Ecoregion/ Subregion		67f	67f	67f	67f	67f	67f	67g	67f	67f	67f
Drainage area (Approx. mi^2)		20	8	50	29	23	2	86	193	88	122
Date (yymmdd)		990707	990609	990707	990608	990707	990707	990609	990609	000531	000531
Width (ft)		30	---	45	30	30	6	50	60	25	30
Canopy Cover*		MO	---	50/50	MO	MO	S	50/50	50/50	MO	50/50
Depth (ft)	Riffle	N/A	---	0.5	0.2	0.5	0.3	N/A	N/A	----	0.3
	Run	1.0	---	2.5	0.5	1.5	0.5	2.0	3.0	1.5	1.0
	Pool	3.5	---	2.5	---	2.5	0.8	5.0	5.0	>3	N/A
Substrate (%)	Bedrock	0	---	0	10	30	0	0	0	0	0
	Boulder	0	---	2	2	10	10	0	0	0	0
	Cobble	1	---	10	30	20	30	0	5	0	5
	Gravel	5	---	38	25	20	30	3	25	13	28
	Sand	77	---	40	22	15	23	80	50	60	50
	Silt	12	---	2	5	2	2	4	10	10	11
	Detritus	5	---	5	6	3	5	11	4	15	5
	Clay	0	---	3	0	0	0	2	6	2	1
Geomorphology*		GP	RR	RR	RR	RR	RR	GP	GP	GP	RR
Habitat Survey (% maximum)											
Instream Habitat Quality		55	22	72	92	87	75	58	70	61	73
Sediment Deposition		70	53	63	93	83	80	80	83	64	61
Sinuosity		40	0	50	100	95	100	40	55	38	80
Bank and Vegetative Stability		65	75	83	93	75	88	53	38	55	54
Riparian Measurements		58	45	75	65	95	100	55	48	70	77.5
Habitat Assessment Score											
% Maximum		61	45	74	88	84	84	61	62	59	68
Assessment		Good	Fair	Excellent	Excellent	Excellent	Excellent	Good	Good	Good	Excellent

Appendix F-4d, cont. Physical characteristic and habitat quality estimates for Coosa River Basin sites assessed as part of the CWA Section 303(d) monitoring project (1999-2000). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		SHRT-1	WWOT-1	YLFS-1	YLFS-2	YLFS-3	YLFS-4	BXHS-2	BXHS-3	BXHS-4	WNTS-1
CU - Subwatershed #		0107-010	0107-010	0107-030	0107-030	0107-030	0107-030	0107-090	0107-090	0107-090	0107-160
Ecoregion/ Subregion		67f	67f	67g	67g	67g	67f	67g	67g	67g	67g
Drainage area (Approx. mi^2)		17	42	44	42	100	86	4	10		35
Date (yymmdd)		000531	000504	000511	000511	000530	000530	000621	000621	000525	000524
Width (ft)		30	12	25	20	50	22	19	19	35	35
Canopy Cover*		S	O	MS	MS	MO	MO	MO	50/50	MO	O
Depth (ft)	Riffle	0.5	1	---	---	N/A	0	1	1	1	1
	Run	2.0	0.5	4.0	2.0	---	1.5	1.5	0.8	1.0	1.5
	Pool	2.5	2.5	4.0	4.0	4.0+	2.0	2.0	1.5	1.5	2.5
Substrate (%)	Bedrock	0	0	0	0	10	30	0	10	50	50
	Boulder	10	10	0	0	5	0	2	2	10	10
	Cobble	15	35	0	0	20	25	25	25	5	20
	Gravel	16	15	0	10	10	30	30	10	10	12
	Sand	40	20	70	45	20	5	30	10	15	2
	Silt	15	15	10	5	5	3	4	3	3	3
	Detritus	4	5	17	35	7	5	6	20	6	2
	Clay	0	0	3	5	23	2	1	20	1	1
Geomorphology*		RR	RR	GP	GP	GP	RR	RR	RR	RR	RR
Habitat Survey (% maximum)											
Instream Habitat Quality		70	67	55	71	73	78	54	54	75	71
Sediment Deposition		69	45	80	85	76	61	85	75	90	65
Sinuosity		75	75	30	43	40	55	83	73	88	43
Bank and Vegetative Stability		65	18	50	45	63	59	80	63	69	58
Riparian Measurements		90	13	81	71	95	95	75	90	100	40
Habitat Assessment Score											
% Maximum		75	45	65	68	73	71	75	69	83	60
Assessment		Excellent	Fair	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Good

Appendix F-4d, cont. Physical characteristic and habitat quality estimates for Coosa River Basin sites assessed as part of the CWA Section 303(d) monitoring project (1999-2000). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		WNTC-1	WNTC-2	WNTC-3	WNTC-4	TYC -1	TYC -2
CU - Subwatershed #		0107-160	0107-160	0107-160	0107-160	0107-200	0107-200
Ecoregion/ Subregion		65i	65i	65i	65i	65i	65i
Drainage area (Approx. mi^2)		30	34	36	42	18	12
Date (yymmdd)		000524	000524	000524	000621	990504	990504
Width (ft)		35	20	30	30	30	30
Canopy Cover*		O	50/50	MO	MS	MO	S
Depth (ft)	Riffle	1	0	0	---	1	1
	Run	1.5	2.5	1.0	2.5	0.8	0.5
	Pool	2.5	2.0	N/A	4.0	3.0	3.0
Substrate (%)	Bedrock	50	10	0	5	12	0
	Boulder	10	20	1	15	3	2
	Cobble	20	14	60	15	10	3
	Gravel	12	7	12	20	25	10
	Sand	2	30	20	35	40	80
	Silt	3	15	5	7	5	2
	Detritus	2	4	2	3	5	3
	Clay	1	0	0	0	0	0
Geomorphology*		RR	RR	RR	GP	RR	RR
Habitat Survey (% maximum)							
Instream Habitat Quality		71	63	77	78	58	47
Sediment Deposition		65	61	75	90	38	35
Sinuosity		43	38	78	35	70	5
Bank and Vegetative Stability		58	45	86	63	80	48
Riparian Measurements		40	50	91	85	90	90
Habitat Assessment Score							
% Maximum		60	59	81	76	69	56
Assessment		Excellent	Excellent	Excellent	Excellent	Excellent	Excellent

Appendix F-4e. Aquatic macroinvertebrate and fish community bioassessment results for Coosa River Basin sites assessed as part of the CWA Section 303(d) monitoring project (1999-2000).

Station Number	FGR-1+	HRC-1+	HRC-3+	WOB-1+	KYC-2+	KYC-1+	SHRT-1	TLST-1	TLST-2	YLFS-3
CU - Subwatershed #	0105-240	0105-240	0105-240	0105-240	0106-300	0106-310	0107-010	0107-010	0107-010	0107-030
Subecoregion #	67f	67f	67f	67f	67g	67f	67f	67f	67f	67g
Macroinvertebrate community										
Assessment Date (yymmdd)	990707	990707	990707	990707	990609	990609	000531	000531	000531	000530
# EPT families	8	9	8	12	8	8	5	10	10	9
Assessment	Good	Good	Good	Excellent	Good	Good	Fair	Excellent	Excellent	Good
Fish community										
Assessment Date (yymmdd)					990519	990519				
Time (min)										
Richness measures										
# species					14	9				
# darter species										
# minnow species										
# sunfish species										
# sucker species										
# intolerant species										
Composition measures										
% sunfish										
% omnivores and herbivores										
% insectivorous cyprinids										
% top carnivores										
Population measures										
Individuals					94	126				
# collected per hour										
% disease and anomalies										
IBI Score					36	30				
Assessment					Poor/Fair	Poor				

Appendix F-4e, cont. Aquatic macroinvertebrate and fish community bioassessment results for Coosa River Basin sites assessed as part of the CWA Section 303(d) monitoring project (1999-2000).

Station Number	YLFS-4	WTNS-1	BXHS-4	WNTC-1	WNTC-2	WNTC-3	TYC-1+	TYC-2+
CU - Subwatershed #	0107-030	0107-090	0107-090	0107-160	0107-160	0107-160	0107-200	0107-200
Subecoregion #	67f	67g	67g	65i	65i	65i	65p	65i
Macroinvertebrate community								
Assessment Date (yymmdd)	000530	000524	000525	000524	000524	000524	990504	990504
# EPT families	9	9	9	5	7	8	7	5
Assessment	Good	Good	Good	Fair	Fair	fair	Fair	Fair
Fish community								
Assessment Date (yymmdd)							990505	990505
Time (min)								
Richness measures								
# species							17	17
# darter species								
# minnow species								
# sunfish species								
# sucker species								
# intolerant species								
Composition measures								
% sunfish								
% omnivores and herbivores								
% insectivorous cyprinids								
% top carnivores								
Population measures								
Individuals							584	454
# collected per hour								
% disease and anomalies								
IBI Score							40	46
Assessment							Fair	Fair/Good

Appendix F-5. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		#	#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105)																				
060	Chattooga R	CO-02	CHAAU01	981013	0730	12	21	12.9	7.6	401	11	---	5	409	0	---	0.028	0.244	0.314	0.291
060	Chattooga R	CO-02	CHAAU01	981117	0920	16	15	8.0	7.6	458	12	---	13	339	0	---	0.057	0.396	0.343	0.328
060	Chattooga R	CO-02	CHAAU01	981201	1530	22	13	11.5	8.2	467	6	---	5	286	0	---	0.012	0.081	0.129	0.238
060	Chattooga R	CO-02	CHAAU01	981208	1556	20	18	7.1	7.8	522	15	---	14	387	0	---	0.040	0.184	0.500	0.403
060	Chattooga R	CO-02	CHAAU01	990112	1500	20	8	12.4	7.4	291	9	---	8	198	0	104	0.052	0.655	0.529	0.167
060	Chattooga R	CO-02	CHAAU01	990125	1525	22	12	9.9	7.0	151	45	---	50	94	0.27	57	0.058	0.511	0.615	0.137
060	Chattooga R	CO-02	CHAAU01	990202	1450	17	11	11.3	6.8	122	36	---	39	76	0.1	46	0.079	0.383	0.313	0.097
060	Chattooga R	CO-02	CHAAU01	990215	1540	21	10	11.2	7.5	265	8	---	8	172	0	99	0.053	0.609	0.451	0.166
060	Chattooga R	CO-02	CHAAU01	990223	1500	---	10	11.0	7.2	212	8	---	10	174	0	89	0.027	0.536	0.145	0.122
060	Chattooga R	CO-02	CHAAU01	990309	1520	16	10	11.4	6.9	191	10	---	10	124	0	88	0.042	0.439	0.318	0.135
060	Chattooga R	CO-02	CHAAU01	990316	1512	23	12	12.3	7.4	229	15	---	12	196	0	88	0.020	0.377	0.272	0.135
060	Chattooga R	CO-02	CHAAU01	990412	1549	24	21	8.4	7.3	281	8	---	20	244	0	109	0.087	0.458	0.405	0.139
060	Chattooga R	CO-02	CHAAU01	990426	1401	24	19	7.6	7.3	386	7	---	12	310	0	105	0.554	0.548	0.370	0.368
060	Chattooga R	CO-02	CHAAU01	990510	1450	32	20	8.5	7.6	221	19	---	25	198	0	87	0.055	0.430	0.292	0.125
060	Chattooga R	CO-02	CHAAU01	990524	1325	29	23	8.3	8.1	380	7	---	13	304	0	127	0.051	0.599	0.312	0.251
060	Chattooga R	CO-02	CHAAU01	990614	1240	32	24	6.7	7.8	401	6	---	17	368	0	144	0.012	0.684	0.486	0.317
060	Chattooga R	CO-02	CHAAU01	990629	1343	32	25	6.4	7.8	407	10	---	23	304	0	126	0.039	0.618	0.396	0.300
060	Chattooga R	CO-02	CHAAU01	990720	1245	34	25	6.8	7.8	313	12	---	22	318	0	119	0.042	0.622	0.370	0.259
060	Chattooga R	CO-02	CHAAU01	990810	1331	34	27	7.4	8.0	389	8	---	14	410	0	154	0.012	0.364	0.330	0.398
060	Chattooga R	CO-02	CHAAU01	990928	1420	28	22	7.5	8.0	590	7	---	11	524	0	162	0.023	0.337	0.202	0.525
120	Little R	CO-03	LTRAU01	981013	0830	14	22	8.1	7.2	42	1	---	0	36	0	---	0.004	0.038	0.214	0.007
120	Little R	CO-03	LTRAU01	981117	0955	20	15	10.3	6.9	43	3	---	1	24	0	---	0.017	0.292	0.014	0.007
120	Little R	CO-03	LTRAU01	981201	1605	22	14	10.8	6.9	55	1	---	0	33	0	---	0.013	0.177	0.114	0.005
120	Little R	CO-03	LTRAU01	981208	1625	17	16	9.7	6.9	61	0	---	0	39	0	---	0.017	0.149	0.229	0.005
120	Little R	CO-03	LTRAU01	990112	1540	17	7	14.3	6.3	40	2	---	0	41	0	3	0.022	0.886	0.386	0.004
120	Little R	CO-03	LTRAU01	990125	1555	24	11	11.5	5.8	34	5	---	5	20	0	2	0.023	0.774	0.277	0.014

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		#	#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105), cont.																				
120	Little R	CO-03	LTRAU01	990202	1522	20	11	12.5	6.0	33	3	---	4	26	0	3	0.011	0.589	0.231	0.007
120	Little R	CO-03	LTRAU01	990215	1610	20	9	11.9	6.1	33	3	---	0	18	0	4	0.005	0.668	0.179	0.010
120	Little R	CO-03	LTRAU01	990223	1530	6	8	12.8	6.0	39	2	---	0	49	0	4	0.002	0.663	0.150	0.006
120	Little R	CO-03	LTRAU01	990309	1550	14	9	12.8	6.0	35	1	---	1	29	0	3	0.006	0.548	0.182	0.011
120	Little R	CO-03	LTRAU01	990316	1600	23	11	12.0	6.0	34	2	---	0	56	0	3	0.022	0.455	0.194	0.007
120	Little R	CO-03	LTRAU01	990412	1615	24	20	9.7	6.3	37	1	---	0	86	0	4	0.010	0.214	0.090	0.007
120	Little R	CO-03	LTRAU01	990426	1445	23	19	9.3	6.0	36	1	---	0	91	0	5	0.472	0.161	0.101	0.005
120	Little R	CO-03	LTRAU01	990510	1530	34	20	10.4	6.5	28	2	---	1	77	0	4	0.008	0.233	0.116	0.007
120	Little R	CO-03	LTRAU01	990524	1400	30	24	8.7	7.0	39	1	---	1	91	0	5	0.000	0.175	0.121	0.007
120	Little R	CO-03	LTRAU01	990614	1320	31	26	8.6	6.7	39	1	---	1	95	0	5	0.000	0.129	0.032	0.007
120	Little R	CO-03	LTRAU01	990629	1430	30	24	7.0	6.8	39	5	---	10	108	0	6	0.019	0.268	0.202	0.021
120	Little R	CO-03	LTRAU01	990720	1320	34	26	9.2	6.8	30	1	---	1	96	0	6	0.010	0.178	0.110	0.007
120	Little R	CO-03	LTRAU01	990810	1404	34	30	8.0	7.0	44	1	---	1	97	0	7	0.009	0.129	0.098	0.007
120	Little R	CO-03	LTRAU01	990928	1455	31	26	7.4	7.1	57	1	---	0	77	0	13	0.016	0.026	0.168	0.006
180	Coosa R	CO-01A	COOAU01	981013	1800	24	25	10.8	7.6	149	15	---	13	106	0	---	0.033	0.229	0.314	0.134
180	Coosa R	CO-01A Split	COOAU01	981013	1800	---	---	---	---	---	---	---	13	118	---	---	<0.015	0.230	0.220	0.060
180	Coosa R	CO-01B	COOAU01	981013	1800	24	25	10.8	7.6	155	11	---	7	106	0	---	0.023	0.263	0.857	0.202
180	Coosa R	CO-01A	COOAU01	981117	0805	13	15	8.1	7.2	215	17	---	10	141	0	---	0.076	0.616	0.343	0.192
180	Coosa R	CO-01B	COOAU01	981117	0805	13	15	8.1	7.2	207	17	---	11	137	0	---	0.075	0.603	0.286	0.189
180	Coosa R	CO-01A	COOAU01	981201	1430	24	16	9.2	7.1	159	13	---	10	107	0	---	0.030	0.446	0.171	0.118
180	Coosa R	CO-01B	COOAU01	981201	1430	24	16	9.2	7.0	157	13	---	11	105	0	---	0.018	0.428	0.186	0.124
180	Coosa R	CO-01A	COOAU01	981208	1500	21	18	7.5	7.4	189	16	---	10	119	0	---	0.043	0.385	0.357	0.178
180	Coosa R	CO-01B	COOAU01	981208	1500	20	18	7.5	7.4	171	16	---	10	126	0	---	0.043	0.393	0.400	0.175
180	Coosa R	CO-01A	COOAU01	990112	1405	20	8	12.8	7.1	168	16	---	13	114	0	56	0.047	0.655	0.386	0.088
180	Coosa R	CO-01B	COOAU01	990112	1405	19	8	12.8	7.0	160	16	---	12	115	0	56	0.045	0.689	0.457	0.090

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		#	#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105), cont.																				
180	Coosa R	CO-01A	COOAU01	990125	1425	22	14	9.2	6.7	98	131	---	116	90	0.31	32	0.091	0.440	0.832	0.244
180	Coosa R	CO-01B	COOAU01	990125	1425	22	14	9.2	6.7	96	140	---	136	81	0.35	33	0.094	0.464	0.506	0.327
180	Coosa R	CO-01A	COOAU01	990202	1355	19	11	11.3	6.8	103	65	---	63	86	0.2	36	0.121	0.425	0.554	0.166
180	Coosa R	CO-01B	COOAU01	990202	1355	19	11	11.4	6.7	104	66	---	63	81	0.2	36	0.134	0.435	0.617	0.148
180	Coosa R	CO-01A	COOAU01	990215	1430	21	12	10.2	7.3	128	14	---	12	82	0.1	48	0.025	0.515	0.362	0.077
180	Coosa R	CO-01A Split	COOAU01	990215	1430	---	---	---	---	---	---	---	11	100	---	---	0.060	0.500	<0.15	0.090
180	Coosa R	CO-01B	COOAU01	990215	1430	21	12	10.2	6.9	132	18	---	13	82	0.1	48	0.022	0.524	0.338	0.081
180	Coosa R	CO-01A	COOAU01	990223	1400	6	11	10.3	7.0	127	22	---	15	106	0	49	0.032	0.559	0.376	0.076
180	Coosa R	CO-01B	COOAU01	990223	1400	6	11	10.5	6.9	136	22	---	15	106	0	48	0.031	0.562	0.390	0.086
180	Coosa R	CO-01A	COOAU01	990309	1420	10	10	11.3	6.6	113	16	---	14	67	0	47	0.057	0.502	0.289	0.067
180	Coosa R	CO-01B	COOAU01	990309	1420	10	10	11.4	6.5	112	16	---	13	64	0	47	0.049	0.497	0.330	0.067
180	Coosa R	CO-01A	COOAU01	990316	1415	21	11	11.0	7.3	131	22	---	14	137	0	55	0.026	0.337	0.228	0.049
180	Coosa R	CO-01B	COOAU01	990316	1415	21	12	10.8	6.9	133	20	---	11	116	0	57	0.047	0.561	0.388	0.086
180	Coosa R	CO-01A	COOAU01	990412	1436	26	23	8.1	6.8	153	5	---	4	151	0	61	0.043	0.434	0.399	0.075
180	Coosa R	CO-01A Split	COOAU01	990412	1436	---	---	---	---	---	---	---	15	79	---	---	<.015	0.150	0.350	0.080
180	Coosa R	CO-01B	COOAU01	990412	1436	25	23	8.3	6.8	155	5	---	5	154	0	63	0.033	0.421	0.356	0.076
180	Coosa R	CO-01A	COOAU01	990426	1300	22	21	7.8	7.3	179	6	---	6	170	0	65	0.409	0.421	0.228	0.094
180	Coosa R	CO-01B	COOAU01	990426	1300	22	21	7.8	6.9	177	5	---	5	178	0	63	0.537	0.444	0.324	0.092
180	Coosa R	CO-01A	COOAU01	990510	1350	32	20	7.3	7.1	90	46	---	48	137	0.1	31	0.054	0.329	0.564	0.178
180	Coosa R	CO-01B	COOAU01	990510	1350	32	19	7.1	7.0	88	45	---	30	129	0	32	0.058	0.326	0.685	0.183
180	Coosa R	CO-01A	COOAU01	990524	1156	27	25	9.0	7.9	166	7	---	8	155	0	61	0.061	0.566	0.443	0.085
180	Coosa R	CO-01B	COOAU01	990524	1156	27	25	9.0	7.8	177	10	---	10	179	0	73	0.044	0.498	0.237	0.081
180	Coosa R	CO-01A	COOAU01	990614	1126	31	29	7.9	7.6	168	11	---	10	178	0	68	0.000	0.654	0.500	0.120
180	Coosa R	CO-01B	COOAU01	990614	1126	31	29	7.9	7.6	173	7	---	8	189	0	65	0.004	0.534	0.382	0.108
180	Coosa R	CO-01A	COOAU01	990629	1227	30	25	5.6	7.4	116	155	---	89	171	0	43	0.129	0.519	0.639	0.215

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed *#*	Waterbody Name	University Station ID *#*	ADEM Station ID *#*	Date *yymmdd*	Time *24hr*	Air Temp. *C*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	Stream Flow *cfs*	TSS *mg/L*	TDS *mg/L*	Total Set. Solids *mg/L*	Total Alkalinity *mg/L*	NH3-N *mg/L*	NO3+ NO2-N *mg/L*	TKN *mg/L*	Total-P *mg/L*
Upper Coosa (0315-0105), cont.																				
180	Coosa R	CO-01B	COOAU01	990629	1227	30	26	5.6	7.3	118	159	---	79	196	0.1	43	0.160	0.553	0.628	0.187
180	Coosa R	CO-01A	COOAU01	990720	1145	32	27	7.5	7.3	130	9	---	9	167	0	45	0.016	0.500	0.231	0.057
180	Coosa R	CO-01A Split	COOAU01	990720	1145	---	---	---	---	---	---	---	5	108	---	---	<.015	0.380	0.440	0.060
180	Coosa R	CO-01B	COOAU01	990720	1145	32	27	7.6	7.6	131	10	---	12	150	0	48	0.026	0.411	0.321	0.057
180	Coosa R	CO-01A	COOAU01	990810	1229	35	33	8.4	7.9	208	5	---	7	187	0	66	0.023	0.121	0.555	0.095
180	Coosa R	CO-01B	COOAU01	990810	1229	35	33	8.5	7.9	202	6	---	7	183	0	68	0.021	0.118	0.506	0.091
180	Coosa R	CO-01A	COOAU01	990928	1310	29	27	8.8	7.9	220	10	---	7	212	0	79	0.012	0.383	0.448	0.107
180	Coosa R	CO-01B	COOAU01	990928	1310	29	27	8.9	7.9	238	10	---	9	216	0	83	0.011	0.386	0.289	0.115
250	Coosa R	CO-05	TERAU01	981013	0710	13	21	9.2	7.6	148	7	---	7	97	0	---	0.000	0.200	0.214	0.032
250	Terrapin Cr	CO-05	TERAU01	981117	0630	12	16	9.5	7.4	117	10	---	8	89	0	---	0.028	0.173	0.229	0.031
250	Terrapin Cr	CO-05	TERAU01	981201	1330	27	15	10.7	7.6	178	9	---	10	104	0	---	0.010	0.247	0.100	0.022
250	Terrapin Cr	CO-05	TERAU01	981208	1347	23	17	9.2	7.8	171	6	---	7	102	0	---	0.015	0.233	0.229	0.019
250	Terrapin Cr	CO-05	TERAU01	990112	1315	23	8	12.7	7.4	136	6	---	3	96	0	62	0.023	0.394	0.386	0.018
250	Terrapin Cr	CO-05	TERAU01	990125	1330	26	12	11.7	7.1	61	50	---	38	46	0.1	23	0.039	0.266	0.354	0.079
250	Terrapin Cr	CO-05	TERAU01	990202	1244	20	11	11.9	6.8	65	21	---	21	52	0	23	0.050	0.235	0.386	0.043
250	Terrapin Cr	CO-05	TERAU01	990215	1335	23	10	12.2	7.1	111	9	---	4	59	0	51	0.009	0.405	0.314	0.022
250	Terrapin Cr	CO-05	TERAU01	990223	1245	8	10	12.1	6.9	103	7	---	4	85	0	46	0.003	0.366	0.188	0.019
250	Terrapin Cr	CO-05	TERAU01	990309	1315	12	10	12.0	7.0	105	9	---	8	36	0	42	0.004	0.302	0.295	0.029
250	Terrapin Cr	CO-05	TERAU01	990316	1250	26	12	12.3	6.8	77	19	---	15	94	0.1	32	0.008	0.240	0.000	0.031
250	Terrapin Cr	CO-05	TERAU01	990412	1330	20	21	9.1	7.1	127	5	---	8	159	0	63	0.023	0.294	0.188	0.023
250	Terrapin Cr	CO-05	TERAU01	990426	1200	21	19	8.2	6.9	139	6	---	8	139	0	64	0.223	0.370	0.145	0.024
250	Terrapin Cr	CO-05	TERAU01	990510	1250	31	20	8.6	7.3	99	13	---	13	125	0	46	0.022	0.258	0.205	0.037
250	Terrapin Cr	CO-05	TERAU01	990524	1035	25	22	7.7	7.8	143	18	---	19	171	0	76	0.093	0.270	0.156	0.043
250	Terrapin Cr	CO-05	TERAU01	990614	1035	31	24	7.8	7.8	147	6	---	8	161	0	81	0.000	0.240	0.020	0.023
250	Terrapin Cr	CO-05	TERAU01	990629	1118	28	24	7.3	7.2	58	41	---	56	107	0.3	19	0.029	0.220	0.434	0.098

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		*#*	*#*	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105), cont.																				
250	Terrapin Cr	CO-05	TERAU01	990720	1045	33	26	7.2	7.8	183	4	---	9	161	0	75	0.023	0.202	0.205	0.024
250	Terrapin Cr	CO-05	TERAU01	990810	1049	30	26	7.2	7.8	171	4	---	5	183	0	92	0.028	0.285	0.101	0.019
250	Terrapin Cr	CO-05	TERAU01	990928	1205	28	22	8.0	7.9	207	4	---	5	153	0	107	0.021	0.258	0.075	0.018
270	Coosa R	CO-04	COOAU02	981013	1106	28	26	6.6	7.1	157	15	---	14	114	0	---	0.060	0.015	0.586	0.087
270	Coosa R	CO-04	COOAU02	981116	1652	13	16	11.0	7.4	189	17	---	13	123	0	---	0.056	0.019	0.600	0.082
270	Coosa R	CO-04	COOAU02	981202	0630	14	15	10.9	7.7	229	16	---	17	128	0	---	0.023	0.059	0.429	0.093
270	Coosa R	CO-04	COOAU02	981208	1655	15	16	10.4	8.0	184	18	---	17	126	0	---	0.061	0.054	0.614	0.095
270	Coosa R	CO-04	COOAU02	990112	1847	17	6	13.2	7.3	136	18	---	11	103	0	48	0.055	0.631	0.529	0.076
270	Coosa R	CO-04	COOAU02	990125	1640	24	13	10.1	6.9	126	52	---	35	82	0	42	0.096	0.568	0.615	0.122
270	Coosa R	CO-04	COOAU02	990202	1600	19	11	11.0	6.7	107	35	---	25	81	0	37	0.138	0.442	0.289	0.097
270	Coosa R	CO-04	COOAU02	990215	1645	20	11	10.2	6.8	100	23	---	16	53	0	35	0.041	0.530	0.188	0.078
270	Coosa R	CO-04	COOAU02	990223	1800	9	11	11.1	6.7	113	23	---	16	98	0	43	0.017	0.475	0.399	0.087
270	Coosa R	CO-04	COOAU02	990309	1626	16	11	12.0	7.2	103	22	---	15	60	0	42	0.030	0.433	0.558	0.088
270	Coosa R	CO-04	COOAU02	990316	1640	22	10	12.4	6.8	119	17	---	12	136	0	47	0.027	0.356	0.301	0.069
270	Coosa R	CO-04	COOAU02	990412	1705	22	21	10.0	7.3	147	13	---	16	146	0	61	0.023	0.006	0.489	0.064
270	Coosa R	CO-04	COOAU02	990426	1515	22	20	7.6	7.4	151	11	---	10	173	0	61	0.272	0.004	0.338	0.063
270	Coosa R	CO-04	COOAU02	990510	1610	33	22	8.9	7.7	159	16	---	15	154	0	63	0.053	0.125	0.616	0.083
270	Coosa R	CO-04	COOAU02	990524	1440	28	25	7.0	7.8	119	11	---	11	146	0	50	0.112	0.015	0.581	0.063
270	Coosa R	CO-04	COOAU02	990614	1407	27	27	5.7	7.7	139	15	---	13	158	0	54	0.088	0.016	0.434	0.074
270	Coosa R	CO-04	COOAU02	990629	1542	31	27	6.1	7.8	168	12	---	16	110	0	64	0.046	0.023	0.503	0.080
270	Coosa R	CO-04	COOAU02	990720	1435	34	29	5.0	7.4	124	17	---	16	171	0	49	0.100	0.096	0.732	0.099
270	Coosa R	CO-04	COOAU02	990810	1442	34	30	3.4	7.2	126	8	---	9	149	0	50	0.103	0.007	0.706	0.074
270	Coosa R	CO-04	COOAU02	990928	1605	28	24	8.6	8.1	239	6	---	13	151	0	54	0.033	0.022	0.471	0.071
Middle Coosa (0315-0106)																				
060	Big Wills Cr	CO-06	BWCAU01	981013	0955	19	20	8.0	7.7	267	18	---	16	211	0	---	0.022	0.834	0.286	0.553

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed #	Waterbody Name	University Station ID #	ADEM Station ID #	Date *yymmdd*	Time *24hr*	Air Temp. *C*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	Stream Flow *cfs*	TSS *mg/L*	TDS *mg/L*	Total Set. Solids *mg/L*	Total Alkalinity *mg/L*	NH3-N *mg/L*	NO3+ NO2-N *mg/L*	TKN *mg/L*	Total-P *mg/L*
Middle Coosa (0315-0106), cont.																				
060	Big Wills Cr	CO-06	BWCAU01	981117	1050	18	15	8.9	7.6	327	19	---	16	200	0	---	0.125	1.159	0.386	0.690
060	Big Wills Cr	CO-06	BWCAU01	981202	0820	17	11	9.9	8.1	467	12	---	13	252	0	---	0.020	1.023	0.129	0.755
060	Big Wills Cr	CO-06	BWCAU01	981209	0735	11	15	7.8	7.9	436	18	---	19	231	0	---	0.050	1.102	0.300	0.707
060	Big Wills Cr	CO-06	BWCAU01	990113	0755	15	8	12.8	7.6	287	16	---	16	188	0	123	0.065	1.634	0.386	0.393
060	Big Wills Cr	CO-06	BWCAU01	990126	0735	12	11	11.2	7.2	188	64	---	70	106	0.2	79	0.060	1.544	0.289	0.213
060	Big Wills Cr	CO-06	BWCAU01	990203	0730	7	11	10.0	7.3	211	29	---	41	153	0.1	93	0.130	1.176	0.265	0.171
060	Big Wills Cr	CO-06	BWCAU01	990216	0735	7	9	11.6	7.7	231	15	---	11	129	0	102	0.021	1.277	0.453	0.173
060	Big Wills Cr	CO-06	BWCAU01	990224	0735	1	10	11.3	7.3	210	15	---	14	138	0	100	0.026	1.230	0.298	0.146
060	Big Wills Cr	CO-06	BWCAU01	990310	0755	6	10	11.3	7.4	127	15	---	16	113	0	101	0.046	1.056	0.454	0.142
060	Big Wills Cr	CO-06	BWCAU01	990316	1740	18	12	11.3	7.4	225	21	---	20	196	0	105	0.032	0.928	0.338	0.155
060	Big Wills Cr	CO-06	BWCAU01	990413	0730	7	18	8.4	7.4	245	17	---	23	231	0	122	0.031	0.869	0.231	0.242
060	Big Wills Cr	CO-06	BWCAU01	990426	1620	23	19	7.9	7.4	321	16	---	26	204	0	129	0.235	0.919	0.266	0.316
060	Big Wills Cr	CO-06	BWCAU01	990510	1705	30	19	8.7	7.8	238	42	---	32	204	0.1	105	0.067	0.920	0.405	0.230
060	Big Wills Cr	CO-06	BWCAU01	990524	1547	30	22	7.7	8.0	350	33	---	42	262	0	127	0.063	1.019	0.388	0.488
060	Big Wills Cr	CO-06	BWCAU01	990614	1458	24	23	7.1	7.9	311	40	---	49	276	0	129	0.018	1.461	0.434	0.484
060	Big Wills Cr	CO-06	BWCAU01	990629	1641	26	24	6.5	7.4	139	57	---	32	185	0	53	0.105	0.621	0.680	0.235
060	Big Wills Cr	CO-06	BWCAU01	990720	1530	31	24	7.5	7.9	214	22	---	39	240	0	119	0.022	1.449	0.295	0.262
060	Big Wills Cr	CO-06	BWCAU01	990810	1600	33	26	7.0	7.9	345	18	---	23	288	0	142	0.034	1.338	0.260	0.455
060	Big Wills Cr	CO-06	BWCAU01	990929	0640	23	21	7.3	7.9	382	13	---	17	326	0	142	0.037	1.574	0.185	0.811
100	Big Canoe Cr	CO-07	BCCAU01	981013	1205	28	21	8.4	7.8	199	6	---	4	142	0	---	0.025	0.043	0.214	0.059
100	Big Canoe Cr	CO-07	BCCAU01	981117	1125	19	16	9.0	7.6	230	7	---	5	131	0	---	0.037	0.082	0.157	0.061
100	Big Canoe Cr	CO-07	BCCAU01	981202	0850	17	12	9.6	7.7	232	5	---	4	142	0	---	0.025	0.003	0.086	0.046
100	Big Canoe Cr	CO-07	BCCAU01	981209	0812	12	15	7.8	7.6	109	16	---	9	155	0	---	0.042	0.124	0.329	0.062
100	Big Canoe Cr	CO-07	BCCAU01	990113	0830	15	8	12.6	7.7	165	9	---	4	123	0	74	0.031	0.655	0.243	0.028
100	Big Canoe Cr	CO-07	BCCAU01	990126	0810	18	11	9.9	7.0	130	22	---	19	76	0	51	0.028	0.669	0.217	0.052

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		*#*	*#*	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Middle Coosa (0315-0106), cont.																				
100	Big Canoe Cr	CO-07	BCCAU01	990203	0810	10	12	10.5	7.2	119	35	---	13	80	0.3	48	0.044	0.518	0.366	0.053
100	Big Canoe Cr	CO-07	BCCAU01	990216	0830	9	9	11.6	7.2	165	9	---	32	89	0	75	0.007	0.502	0.300	0.024
100	Big Canoe Cr	CO-07	BCCAU01	990224	0815	7	9	11.4	7.2	154	9	---	6	99	0	66	0.012	0.507	0.168	0.024
100	Big Canoe Cr	CO-07	BCCAU01	990310	0840	9	11	10.3	7.0	144	24	---	17	69	0	51	0.046	0.312	0.405	0.046
100	Big Canoe Cr	CO-07	BCCAU01	990317	0740	12	12	10.6	6.9	127	15	---	13	137	0	54	0.025	0.363	0.275	0.037
100	Big Canoe Cr	CO-07	BCCAU01	990413	0745	13	18	7.5	7.2	165	8	---	8	182	0	84	0.043	0.345	0.289	0.039
100	Big Canoe Cr	CO-07	BCCAU01	990427	0705	21	19	7.9	7.1	201	9	---	10	192	0	101	0.199	0.395	0.087	0.046
100	Big Canoe Cr	CO-07	BCCAU01	990511	0725	22	19	8.5	7.6	182	16	---	16	166	0	89	0.044	0.440	0.281	0.054
100	Big Canoe Cr	CO-07	BCCAU01	990524	1624	28	23	8.0	7.9	203	14	---	17	182	0	95	0.076	0.389	0.353	0.057
100	Big Canoe Cr	CO-07	BCCAU01	990614	1540	29	25	7.2	7.8	187	10	---	18	186	0	97	0.000	0.357	0.159	0.066
100	Big Canoe Cr	CO-07	BCCAU01	990629	1731	27	25	6.4	7.1	75	33	---	20	139	0	32	0.040	0.153	0.480	0.084
100	Big Canoe Cr	CO-07	BCCAU01	990721	1030	32	26	7.7	7.8	180	8	---	11	199	0	105	0.023	0.323	0.292	0.047
100	Big Canoe Cr	CO-07	BCCAU01	990810	1637	35	28	6.8	7.9	248	8	---	11	207	0	121	0.032	0.203	0.463	0.051
100	Big Canoe Cr	CO-07	BCCAU01	990929	0720	22	22	6.6	7.9	214	6	---	6	214	0	129	0.026	0.048	0.130	0.049
130	Coosa R	CO-08	COOAU04	981013	1330	30	28	6.7	7.8	171	17	---	16	111	0	---	0.069	0.009	0.671	0.084
130	Coosa R	CO-08	COOAU04	981117	1158	19	19	13.4	7.8	192	13	---	13	125	0	---	0.068	0.114	0.543	0.072
130	Coosa R	CO-08	COOAU04	981202	0925	20	15	10.4	7.6	202	13	---	16	125	0	---	0.037	0.009	0.486	0.079
130	Coosa R	CO-08	COOAU04	981209	0851	15	16	9.0	7.5	207	19	---	20	125	0	---	0.051	0.017	0.643	0.092
130	Coosa R	CO-08	COOAU04	990113	0900	15	6	13.2	7.6	134	18	---	10	107	0	46	0.058	0.615	0.386	0.077
130	Coosa R	CO-08	COOAU04	990126	0900	21	13	10.0	7.2	114	63	---	41	82	0	39	0.095	0.580	0.458	0.158
130	Coosa R	CO-08	COOAU04	990203	0840	18	11	10.3	6.7	97	42	---	44	73	0	29	0.143	0.410	0.482	0.110
130	Coosa R	CO-08	COOAU04	990216	0905	15	12	11.0	6.8	103	26	---	17	75	0	38	0.045	0.510	0.618	0.087
130	Coosa R	CO-08	COOAU04	990224	0845	9	11	10.8	6.8	116	20	---	14	87	0	44	0.026	0.471	0.373	0.078
130	Coosa R	CO-08	COOAU04	990310	0915	17	11	11.4	6.9	112	20	---	17	50	0	47	0.057	0.436	0.521	0.081
130	Coosa R	CO-08	COOAU04	990317	0830	15	11	12.0	7.2	124	23	---	16	141	0	45	0.022	0.365	0.454	0.075

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		#	#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Middle Coosa (0315-0106), cont.																				
130	Coosa R	CO-08	COOAU04	990412	1815	21	21	8.7	7.0	144	14	---	15	141	0	57	0.061	0.071	0.506	0.062
130	Coosa R	CO-08	COOAU04	990426	1710	26	21	7.7	7.7	149	9	---	9	169	0	62	0.216	0.004	0.174	0.051
130	Coosa R	CO-08	COOAU04	990510	1900	26	22	7.5	7.5	160	16	---	17	164	0	64	0.049	0.016	0.706	0.075
130	Coosa R	CO-08	COOAU04	990524	1845	26	25	7.3	7.7	148	11	---	12	160	0	55	0.124	0.073	0.593	0.064
130	Coosa R	CO-08	COOAU04	990614	1608	27	28	4.5	7.4	125	10	---	10	161	0	56	0.090	0.046	0.500	0.065
130	Coosa R	CO-08	COOAU04	990629	1829	28	28	6.3	7.6	149	22	---	20	150	0	53	0.057	0.174	0.544	0.085
130	Coosa R	CO-08	COOAU04	990720	2000	28	30	7.3	7.4	137	14	---	17	171	0	53	0.045	0.029	0.538	0.078
130	Coosa R	CO-08	COOAU04	990810	1714	32	31	5.1	7.4	153	8	---	9	166	0	51	0.032	0.008	0.593	0.062
130	Coosa R	CO-08	COOAU04	990928	1715	28	24	6.7	7.6	179	10	---	13	154	0	67	0.062	0.021	0.521	0.067
160	Ohatchee Cr	CO-09	OHCAU01	981013	1434	28	22	9.2	7.9	222	9	100.1	6	138	0	---	0.016	0.359	0.186	0.046
160	Ohatchee Cr	CO-09	OHCAU01	981117	1234	19	17	9.3	7.6	225	20	101.5	18	143	0	---	0.060	0.311	0.157	0.076
160	Ohatchee Cr	CO-09	OHCAU01	981202	1000	22	13	10.8	8.0	250	17	86.3	11	146	0	---	0.040	0.160	0.071	0.041
160	Ohatchee Cr	CO-09	OHCAU01	981209	0900	14	15	8.5	7.5	198	14	155.0	18	127	0	---	0.029	0.074	0.300	0.040
160	Ohatchee Cr	CO-09	OHCAU01	990113	0955	20	11	11.7	7.6	249	8	152.0	6	167	0	112	0.033	0.732	0.314	0.037
160	Ohatchee Cr	CO-09	OHCAU01	990126	0915	20	12	10.3	7.2	179	32	358.6	31	77	0.1	77	0.031	0.642	0.362	0.064
160	Ohatchee Cr	CO-09	OHCAU01	990203	0925	11	11	10.3	7.0	81	29	765.8	28	93	0.1	27	0.059	0.282	0.352	0.046
160	Ohatchee Cr	CO-09	OHCAU01	990216	0930	11	9	11.4	7.5	185	11	304.4	7	98	0	87	0.011	0.553	0.375	0.037
160	Ohatchee Cr	CO-09	OHCAU01	990224	0920	8	10	9.5	7.5	202	15	368.7	10	126	0	90	0.015	0.744	0.162	0.037
160	Ohatchee Cr	CO-09	OHCAU01	990310	0935	15	10	10.4	6.9	86	27	692.4	26	65	0	28	0.032	0.190	0.506	0.057
160	Ohatchee Cr	CO-09	OHCAU01	990317	0920	18	12	11.0	7.3	168	17	624.2	15	152	0	78	0.019	0.572	0.182	0.048
160	Ohatchee Cr	CO-09	OHCAU01	990413	0830	16	18	8.8	7.5	186	9	318.3	9	181	0	96	0.024	0.347	0.240	0.033
160	Ohatchee Cr	CO-09	OHCAU01	990426	1735	24	19	8.4	7.5	167	36	700.3	39	163	0	75	0.174	0.566	0.194	0.098
160	Ohatchee Cr	CO-09	OHCAU01	990510	1840	25	20	8.5	7.9	234	13	331.7	36	199	0	110	0.031	0.766	0.217	0.049
160	Ohatchee Cr	CO-09	OHCAU01	990524	1912	22	22	8.3	8.1	252	12	188.4	17	224	0	123	0.052	0.665	0.185	0.050
160	Ohatchee Cr	CO-09	OHCAU01	990615	0850	25	23	7.2	7.7	200	85	397.1	93	207	0.2	87	0.084	1.253	0.677	0.222

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		#	#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Middle Coosa (0315-0106), cont.																				
160	Ohatchee Cr	CO-09	OHCAU01	990629	1850	29	25	7.0	7.1	88	38	1327.1	65	148	0.2	35	0.029	0.143	0.578	0.084
160	Ohatchee Cr	CO-09	OHCAU01	990721	0915	29	25	8.1	7.9	203	9	240.6	14	222	0	113	0.024	0.842	0.127	0.040
160	Ohatchee Cr	CO-09	OHCAU01	990811	0749	28	25	7.3	7.9	256	8	111.1	13	201	0	130	0.022	0.660	---	0.046
160	Ohatchee Cr	CO-09	OHCAU01	990929	0920	23	22	7.2	7.9	238	7	99.6	9	190	0	125	0.013	0.343	0.104	0.057
190	Cane Cr	CO-10	CACAU01	981013	1530	29	25	9.0	7.9	218	7	17.7	5	128	0	---	0.010	0.266	0.014	0.061
190	Cane Cr	CO-10	CACAU01	981117	1321	18	17	9.1	7.5	181	18	49.8	7	120	0	---	0.056	0.214	0.214	0.095
190	Cane Cr	CO-10	CACAU01	981202	1035	20	13	10.5	8.1	231	4	28.8	2	127	0	---	0.009	0.064	0.071	0.043
190	Cane Cr	CO-10	CACAU01	981209	0950	13	15	9.1	7.7	217	6	23.5	4	134	0	---	0.022	0.104	0.186	0.056
190	Cane Cr	CO-10	CACAU01	990113	1010	16	11	11.5	8.0	226	8	43.0	8	144	0	110	0.023	0.401	0.457	0.050
190	Cane Cr	CO-10	CACAU01	990126	1020	19	11	11.0	7.7	159	21	148.1	33	82	0	75	0.034	0.434	0.313	0.062
190	Cane Cr	CO-10	CACAU01	990203	1010	14	12	9.5	7.0	130	28	242.0	19	88	0.1	59	0.059	0.377	0.280	0.061
190	Cane Cr	CO-10	CACAU01	990216	1015	17	9	12.0	7.7	212	9	90.1	6	103	0	97	0.022	0.446	0.000	0.039
190	Cane Cr	CO-10	CACAU01	990224	0958	6	10	11.5	7.5	183	9	110.6	6	112	0	79	0.015	0.458	0.211	0.035
190	Cane Cr	CO-10	CACAU01	990310	1050	10	11	10.3	7.0	118	44	195.9	22	68	0	59	0.061	0.361	0.440	0.081
190	Cane Cr	CO-10	CACAU01	990317	1010	19	12	10.6	7.2	146	14	267.2	9	126	0	69	0.019	0.297	0.220	0.030
190	Cane Cr	CO-10	CACAU01	990413	0940	14	16	8.8	7.5	189	7	69.6	7	178	0	106	0.024	0.399	0.226	0.046
190	Cane Cr	CO-10	CACAU01	990427	0845	22	18	8.5	7.5	151	25	217.7	26	176	0	74	0.328	0.445	0.636	0.303
190	Cane Cr	CO-10	CACAU01	990511	0835	19	18	8.5	7.8	208	17	73.5	17	186	0	105	0.025	0.484	0.159	0.053
190	Cane Cr	CO-10	CACAU01	990525	0810	18	19	8.2	8.0	248	12	48.5	13	211	0	113	0.022	0.405	0.136	0.055
190	Cane Cr	CO-10	CACAU01	990615	0750	24	22	8.1	7.7	173	306	213.8	222	191	0.25	77	0.304	0.290	0.512	0.098
190	Cane Cr	CO-10	CACAU01	990630	0824	27	25	8.0	7.2	83	152	1234.7	207	152	0.35	37	0.169	0.488	0.593	0.249
190	Cane Cr	CO-10	CACAU01	990721	0740	23	24	7.7	7.9	183	11	68.1	14	211	0	115	0.019	0.462	0.179	0.048
190	Cane Cr	CO-10	CACAU01	990811	0847	29	24	7.2	8.0	233	6	39.5	6	212	0	119	0.023	0.441	0.116	0.038
190	Cane Cr	CO-10	CACAU01	990929	0955	26	23	6.9	8.0	202	6	27.7	7	174	0	115	0.017	0.236	0.040	0.037
270	Choccolocco Cr	CO-11	CHOAU01	981013	1630	26	26	9.4	8.2	268	7	---	5	154	0	---	0.016	0.785	0.071	0.139

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed #	Waterbody Name	University Station ID #	ADEM Station ID #	Date yymmdd	Time 24hr	Air Temp. C	Water Temp. C	Dissolved Oxygen mg/L	pH s.u.	Conductivity umhos @25c	Turbidity NTU	Stream Flow cfs	TSS mg/L	TDS mg/L	Total Set. Solids mg/L	Total Alkalinity mg/L	NH3-N mg/L	NO3+ NO2-N mg/L	TKN mg/L	Total-P mg/L
Middle Coosa (0315-0106), cont.																				
270	Choccolocco Cr	CO-11	CHOAU01	981117	1413	21	18	9.9	7.5	229	9	---	6	141	0	---	0.069	0.738	0.229	0.149
270	Choccolocco Cr	CO-11	CHOAU01	981202	1124	24	15	13.0	8.2	207	6	---	4	132	0	---	0.024	0.769	0.064	0.120
270	Choccolocco Cr	CO-11	CHOAU01	981209	1030	17	18	10.2	7.8	222	7	---	5	127	0	---	0.026	0.928	0.157	0.143
270	Choccolocco Cr	CO-11	CHOAU01	990113	1055	18	10	12.2	7.8	194	6	---	5	129	0	74	0.034	0.584	0.314	0.077
270	Choccolocco Cr	CO-11	CHOAU01	990126	1105	24	13	10.8	7.0	115	31	---	23	75	0	39	0.046	0.423	0.145	0.089
270	Choccolocco Cr	CO-11	CHOAU01	990203	1050	16	12	10.7	6.8	103	24	---	25	83	0	39	0.069	0.408	0.241	0.079
270	Choccolocco Cr	CO-11	CHOAU01	990216	1100	21	12	11.9	7.4	209	9	---	7	105	0	72	0.008	0.626	0.255	0.063
270	Choccolocco Cr	CO-11	CHOAU01	990224	1030	13	11	11.5	7.2	160	8	---	7	113	0	69	0.014	0.615	0.145	0.073
270	Choccolocco Cr	CO-11	CHOAU01	990310	1125	13	13	11.1	7.0	123	28	---	18	73	0	52	0.051	0.489	0.289	0.088
270	Choccolocco Cr	CO-11	CHOAU01	990317	1120	21	13	11.5	7.1	130	24	---	30	128	0.1	48	0.033	0.396	0.182	0.064
270	Choccolocco Cr	CO-11	CHOAU01	990413	1025	19	20	9.4	7.4	197	11	---	10	178	0	75	0.026	0.558	0.234	0.107
270	Choccolocco Cr	CO-11	CHOAU01	990427	1018	23	20	8.5	7.7	196	18	---	14	180	0	82	0.197	0.706	0.269	0.130
270	Choccolocco Cr	CO-11	CHOAU01	990511	0938	29	22	8.4	7.7	153	19	---	19	163	0	62	0.045	0.539	0.246	0.107
270	Choccolocco Cr	CO-11	CHOAU01	990525	0918	25	22	8.5	7.9	230	17	---	17	170	0	86	0.070	0.845	0.275	0.146
270	Choccolocco Cr	CO-11	CHOAU01	990614	1950	24	25	7.3	8.0	278	7	---	10	230	0	92	0.018	0.959	0.324	0.161
270	Choccolocco Cr	CO-11	CHOAU01	990630	1040	28	24	7.8	7.5	126	35	---	34	169	0	47	0.058	0.478	0.506	0.129
270	Choccolocco Cr	CO-11	CHOAU01	990720	1915	28	27	7.3	7.8	173	10	---	15	207	0	85	0.025	0.809	0.240	0.125
270	Choccolocco Cr	CO-11	CHOAU01	990810	1749	30	27	7.4	8.0	218	6	---	16	227	0	95	0.024	0.761	0.483	0.223
270	Choccolocco Cr	CO-11	CHOAU01	990929	1045	24	22	8.1	8.0	301	9	---	9	276	0	111	0.051	0.839	0.133	0.201
310	Kelly Cr	CO-13	KELAU01	981013	1820	25	20	3.5	7.1	133	5	---	4	80	0	---	1.082	0.040	2.100	0.512
310	Kelly Cr	CO-13	KELAU01	981117	1525	19	17	7.0	6.9	89	14	---	7	69	0	---	0.104	0.086	0.600	0.096
310	Kelly Cr	CO-13	KELAU01	981202	1329	25	13	8.6	7.4	121	4	---	4	79	0	---	0.066	0.123	0.479	0.066
310	Kelly Cr	CO-13	KELAU01	981209	1328	18	15	7.5	7.1	114	6	---	6	71	0	---	0.105	0.148	0.643	0.093
310	Kelly Cr	CO-13	KELAU01	990113	1340	19	9	12.1	7.1	58	11	---	4	55	0	19	0.051	0.193	0.386	0.021
310	Kelly Cr	CO-13	KELAU01	990126	1400	27	13	11.5	6.6	48	21	---	15	34	0	13	0.035	0.221	0.369	0.045

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed #	Waterbody Name	University Station ID #	ADEM Station ID #	Date yymmdd	Time 24hr	Air Temp. C	Water Temp. C	Dissolved Oxygen mg/L	pH s.u.	Conductivity umhos @25c	Turbidity NTU	Stream Flow cfs	TSS mg/L	TDS mg/L	Total Set. Solids mg/L	Total Alkalinity mg/L	NH3-N mg/L	NO3+ NO2-N mg/L	TKN mg/L	Total-P mg/L
Middle Coosa (0315-0106), cont.																				
310	Kelly Cr	CO-13	KELAU01	990203	1355	21	13	10.6	6.3	42	25	---	26	54	0.1	12	0.069	0.162	0.241	0.045
310	Kelly Cr	CO-13	KELAU01	990216	1255	22	11	12.1	6.7	63	8	---	3	42	0	23	0.013	0.157	0.341	0.025
310	Kelly Cr	CO-13	KELAU01	990224	1220	14	10	12.9	6.6	67	8	---	2	50	0	22	0.082	0.154	0.367	0.058
310	Kelly Cr	CO-13	KELAU01	990310	1420	20	12	11.8	6.6	50	26	---	22	37	0	14	0.058	0.149	0.246	0.049
310	Kelly Cr	CO-13	KELAU01	990317	1455	25	13	11.6	6.6	48	16	---	18	107	0	13	0.020	0.135	0.249	0.033
310	Kelly Cr	CO-13	KELAU01	990413	1340	26	21	9.4	6.7	66	5	---	3	111	0	25	0.013	0.108	0.266	0.034
310	Kelly Cr	CO-13	KELAU01	990427	1255	26	20	8.1	7.0	68	7	---	5	131	0	28	0.179	0.214	0.197	0.033
310	Kelly Cr	CO-13	KELAU01	990511	1215	34	21	8.7	7.0	67	12	---	9	115	0	26	0.032	0.203	0.217	0.037
310	Kelly Cr	CO-13	KELAU01	990524	1737	28	24	8.2	7.5	72	6	---	4	137	0	27	0.040	0.180	0.188	0.030
310	Kelly Cr	CO-13	KELAU01	990614	1750	28	27	7.8	7.3	74	5	---	17	134	0	28	0.000	0.100	0.295	0.029
310	Kelly Cr	CO-13	KELAU01	990630	1235	27	25	7.5	6.9	43	50	---	62	124	0.15	13	0.040	0.125	0.399	0.096
310	Kelly Cr	CO-13	KELAU01	990720	1750	29	28	7.8	6.9	42	8	---	8	65	0	17	0.017	0.109	0.159	0.028
310	Kelly Cr	CO-13	KELAU01	990810	1912	29	27	8.5	7.6	96	3	---	3	136	0	40	0.018	0.086	0.202	0.023
310	Kelly Cr	CO-13	KELAU01	990928	1835	26	23	7.3	7.4	117	2	---	3	120	0	51	0.017	0.077	0.130	0.020
320	Coosa R	CO-12	COOAU03	981013	1800	23	25	6.2	7.5	166	7	---	7	98	0	---	0.063	0.062	0.429	0.050
320	Coosa R	CO-12	COOAU03	981117	1630	18	18	8.6	7.5	185	4	---	8	107	0	---	0.058	0.082	0.386	0.052
320	Coosa R	CO-12	COOAU03	981202	1520	23	18	9.0	7.5	192	6	---	7	121	0	---	0.069	0.098	0.464	0.046
320	Coosa R	CO-12	COOAU03	981209	1640	15	16	8.5	7.6	198	7	---	7	117	0	---	0.091	0.046	0.529	0.046
320	Coosa R	CO-12	COOAU03	990113	0730	11	8	10.9	6.8	172	12	---	6	116	0	64	0.044	0.463	0.814	0.065
320	Coosa R	CO-12	COOAU03	990126	1445	27	14	10.2	7.0	136	32	---	16	74	0	44	0.050	0.540	0.470	0.100
320	Coosa R	CO-12	COOAU03	990203	1415	24	13	9.2	6.7	101	33	---	15	79	0	36	0.173	0.391	0.439	0.093
320	Coosa R	CO-12	COOAU03	990216	0710	6	12	8.8	7.2	105	17	---	9	88	0	39	0.084	0.506	0.347	0.068
320	Coosa R	CO-12	COOAU03	990224	0930	8	11	7.8	6.9	119	14	---	9	75	0	40	0.030	0.416	0.411	0.058
320	Coosa R	CO-12	COOAU03	990311	0936	13	12	11.6	6.8	112	11	---	9	79	0	45	0.005	0.368	0.260	0.069
320	Coosa R	CO-12	COOAU03	990317	0750	12	12	10.0	7.0	128	11	---	8	135	0	49	0.036	0.327	0.483	0.059

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		*#*	*#*	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Middle Coosa (0315-0106), cont.																				
320	Coosa R	CO-12	COOAU03	990413	1410	26	21	9.0	7.3	141	4	---	5	144	0	56	0.041	0.063	0.469	0.043
320	Coosa R	CO-12	COOAU03	990427	1310	28	21	8.2	7.6	137	5	---	4	150	0	58	0.185	0.032	0.376	0.037
320	Coosa R	CO-12	COOAU03	990511	1150	33	23	8.1	7.5	158	6	---	6	155	0	64	0.049	0.032	0.552	0.042
320	Coosa R	CO-12	COOAU03	990524	1714	29	24	6.7	7.7	154	4	---	4	166	0	65	0.112	0.031	0.370	0.037
320	Coosa R	CO-12	COOAU03	990614	1726	29	27	6.1	7.5	155	4	---	4	165	0	62	0.014	0.074	0.309	0.035
320	Coosa R	CO-12	COOAU03	990630	1209	28	27	6.4	7.6	138	8	---	8	155	0	60	0.060	0.067	0.443	0.053
320	Coosa R	CO-12	COOAU03	990720	1820	29	30	7.6	7.6	144	5	---	6	164	0	57	0.015	0.079	0.165	0.055
320	Coosa R	CO-12	COOAU03	990810	1849	30	30	5.0	7.3	161	5	---	4	153	0	59	0.065	0.019	0.390	0.064
320	Coosa R	CO-12	COOAU03	990928	1815	26	25	5.5	7.6	153	5	---	6	169	0	66	0.085	0.098	0.255	0.045
330	Talladega Cr	CO-14	TACAU01	981013	1715	27	24	8.2	7.5	209	4	---	3	124	0	---	0.007	0.726	0.186	0.089
330	Talladega Cr	CO-14	TACAU01	981117	1450	21	18	8.4	7.3	160	5	---	4	95	0	---	0.031	0.696	0.286	0.080
330	Talladega Cr	CO-14	TACAU01	981202	1241	27	15	9.1	7.5	219	3	---	4	140	0	---	0.014	0.834	0.264	0.097
330	Talladega Cr	CO-14	TACAU01	981209	1106	18	16	8.0	7.7	214	5	---	4	126	0	---	0.020	0.777	0.257	0.081
330	Talladega Cr	CO-14	TACAU01	990113	1133	20	11	11.0	7.6	151	9	---	6	100	0	67	0.032	0.609	0.243	0.058
330	Talladega Cr	CO-14	TACAU01	990126	1135	23	13	10.4	7.1	122	12	---	13	66	0	55	0.029	0.433	0.470	0.047
330	Talladega Cr	CO-14	TACAU01	990203	1125	20	13	10.3	7.0	111	14	---	13	75	0	49	0.026	0.275	0.352	0.037
330	Talladega Cr	CO-14	TACAU01	990216	1130	21	12	10.2	7.4	182	6	---	4	101	0	89	0.010	0.625	0.283	0.050
330	Talladega Cr	CO-14	TACAU01	990224	1103	16	12	11.2	7.5	204	6	---	4	120	0	89	0.006	0.618	0.275	0.058
330	Talladega Cr	CO-14	TACAU01	990310	1210	24	13	10.8	7.0	94	9	---	9	63	0	46	0.015	0.212	0.202	0.050
330	Talladega Cr	CO-14	TACAU01	990317	1222	27	13	10.6	7.1	130	8	---	6	146	0	56	0.026	0.312	0.095	0.045
330	Talladega Cr	CO-14	TACAU01	990413	1115	21	19	8.0	7.1	156	5	---	4	150	0	80	0.102	0.569	0.301	0.058
330	Talladega Cr	CO-14	TACAU01	990427	1045	25	19	7.7	7.6	181	4	---	5	177	0	89	0.173	0.678	0.208	0.070
330	Talladega Cr	CO-14	TACAU01	990511	1020	29	19	7.7	7.5	136	9	---	11	151	0	63	0.028	0.705	0.179	0.060
330	Talladega Cr	CO-14	TACAU01	990525	0955	27	20	7.4	7.8	180	7	---	7	195	0	87	0.058	0.533	0.150	0.067
330	Talladega Cr	CO-14	TACAU01	990614	1910	26	23	7.6	7.9	180	3	---	7	179	0	100	0.021	0.708	0.035	0.071

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		*#*	*#*	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Middle Coosa (0315-0106), cont.																				
330	Talladega Cr	CO-14	TACAU01	990630	1136	26	24	7.6	7.5	120	19	---	21	144	0	46	0.024	0.435	0.304	0.071
330	Talladega Cr	CO-14	TACAU01	990721	1210	36	24	7.3	7.5	170	9	---	10	189	0	84	0.047	0.749	0.252	0.067
330	Talladega Cr	CO-14	TACAU01	990811	1015	35	23	6.6	7.7	195	9	---	8	231	0	105	0.029	0.644	0.324	0.070
330	Talladega Cr	CO-14	TACAU01	990929	1120	24	20	6.8	7.9	243	7	---	8	227	0	132	0.028	0.952	0.101	0.113
Lower Coosa (0315-0107)																				
010	Tallaseehatchee Cr	CO-15	TALAU01	981014	1150	25	17	9.5	7.8	429	3	37.14	2	268	0	---	0.001	1.080	0.257	1.153
010	Tallaseehatchee Cr	CO-15	TALAU01	981117	1140	24	18	8.6	7.7	323	7	58.27	3	212	0	---	0.027	0.634	0.429	0.996
010	Tallaseehatchee Cr	CO-15	TALAU01	981202	1437	25	16	11.0	8.2	301	2	38.85	2	196	0	---	0.003	1.262	0.379	0.699
010	Tallaseehatchee Cr	CO-15	TALAU01	981209	1135	17	16	9.4	7.8	587	3	47.63	2	399	0	---	0.018	2.050	0.371	2.354
010	Tallaseehatchee Cr	CO-15	TALAU01	990113	1214	18	12	12.0	7.7	246	6	109.24	3	155	0	95	0.019	0.654	0.386	0.472
010	Tallaseehatchee Cr	CO-15	TALAU01	990126	1225	23	13	10.6	7.3	167	20	228.52	15	98	0	64	0.035	0.504	0.398	0.192
010	Tallaseehatchee Cr	CO-15	TALAU01	990203	1110	21	13	10.8	6.9	121	21	645.45	23	81	0.15	46	0.048	0.320	0.193	0.125
010	Tallaseehatchee Cr	CO-15	TALAU01	990216	1200	25	13	10.9	7.7	244	5	171.74	3	142	0	104	0.000	0.791	0.188	0.285
010	Tallaseehatchee Cr	CO-15	TALAU01	990224	1125	13	12	11.6	7.7	254	4	170.83	2	177	0	100	0.002	0.736	0.240	0.482
010	Tallaseehatchee Cr	CO-15	TALAU01	990310	1255	18	14	11.6	7.6	127	13	414.04	11	94	0	53	0.009	0.338	0.211	0.212
010	Tallaseehatchee Cr	CO-15	TALAU01	990317	1335	30	15	11.6	7.4	170	9	138.98	7	166	0	64	0.011	0.422	0.084	0.206
010	Tallaseehatchee Cr	CO-15	TALAU01	990413	1145	24	19	9.2	7.5	244	3	131.01	3	223	0	102	0.015	0.700	0.156	0.430
010	Tallaseehatchee Cr	CO-15	TALAU01	990427	1115	24	20	8.2	7.8	266	4	121.7	4	251	0	114	0.127	0.802	0.260	0.502
010	Tallaseehatchee Cr	CO-15	TALAU01	990511	1040	31	21	8.9	7.9	258	4	113.01	5	221	0	101	0.028	0.942	0.260	0.544
010	Tallaseehatchee Cr	CO-15	TALAU01	990525	1045	28	21	8.3	8.0	253	15	68.39	9	252	0	96	0.106	1.076	0.304	0.485
010	Tallaseehatchee Cr	CO-15	TALAU01	990614	1830	27	24	8.1	8.2	319	4	73.18	10	331	0	127	0.000	1.296	0.356	1.219
010	Tallaseehatchee Cr	CO-15	TALAU01	990630	1351	29	25	7.9	8.0	206	22	168.58	36	196	0.1	67	0.033	0.509	0.362	0.420
010	Tallaseehatchee Cr	CO-15	TALAU01	990721	1255	35	26	8.0	7.8	198	20	148.81	24	229	0	66	0.030	0.627	0.324	0.510
010	Tallaseehatchee Cr	CO-15	TALAU01	990811	1040	34	24	7.9	8.0	446	44	37.07	17	325	0	141	0.079	0.971	0.255	1.111
010	Tallaseehatchee Cr	CO-15	TALAU01	990929	1155	24	22	7.5	8.1	555	6	32.23	11	573	0	168	0.021	1.449	0.364	3.407

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		#	#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Lower Coosa (0315-0107), cont.																				
100	Coosa R	CO-16	COOAU05	981014	1450	30	25	7.0	7.6	200	7	---	8	117	0	---	0.042	0.027	0.414	0.054
100	Coosa R	CO-16	COOAU05	981117	1540	22	19	8.8	7.5	222	6	---	7	134	0	---	0.022	0.058	0.357	0.061
100	Coosa R	CO-16	COOAU05	981202	1520	26	20	10.8	7.9	220	3	---	3	150	0	---	0.022	0.174	0.379	0.052
100	Coosa R	CO-16	COOAU05	981209	0900	9	17	9.5	7.3	203	4	---	6	123	0	---	0.044	0.052	0.514	0.046
100	Coosa R	CO-16	COOAU05	990113	0915	14	9	13.3	6.8	174	9	---	8	56	0	59	0.013	0.253	0.386	0.065
100	Coosa R	CO-16	COOAU05	990126	0900	14	12	11.1	6.7	139	23	---	18	93	0	47	0.029	0.514	0.615	0.089
100	Coosa R	CO-16	COOAU05	990203	0900	14	12	10.3	7.0	99	29	---	17	58	0	33	0.056	0.339	0.540	0.082
100	Coosa R	CO-16	COOAU05	990216	0835	10	13	9.4	7.5	115	13	---	7	78	0	41	0.071	0.501	0.341	0.073
100	Coosa R	CO-16	COOAU05	990224	0815	6	12	9.9	7.4	117	13	---	8	93	0	40	0.047	0.487	0.567	0.063
100	Coosa R	CO-16	COOAU05	990310	0915	10	13	9.8	7.2	129	9	---	8	78	0	49	0.022	0.332	0.286	0.058
100	Coosa R	CO-16	COOAU05	990317	0900	14	12	10.5	6.9	112	13	---	9	80	0	46	0.019	0.288	0.451	0.062
100	Coosa R	CO-16	COOAU05	990413	1430	24	21	8.1	7.1	141	6	---	6	150	0	52	0.052	0.151	0.356	0.050
100	Coosa R	CO-16	COOAU05	990427	1300	24	22	7.2	7.4	144	6	---	6	162	0	57	0.154	0.088	0.341	0.041
100	Coosa R	CO-16	COOAU05	990511	1140	31	23	7.1	7.7	159	9	---	7	158	0	66	0.051	0.083	0.390	0.049
100	Coosa R	CO-16	COOAU05	990525	1330	32	25	6.0	7.5	171	6	---	6	172	0	64	0.102	0.050	0.471	0.044
100	Coosa R	CO-16	COOAU05	990615	1120	28	28	3.9	7.4	204	3	---	4	173	0	65	0.021	0.141	0.463	0.048
100	Coosa R	CO-16	COOAU05	990630	0940	37	27	6.0	7.3	146	15	---	8	158	0	58	0.039	0.087	0.408	0.057
100	Coosa R	CO-16	COOAU05	990721	1045	33	29	4.8	7.3	125	4	---	5	177	0	55	0.049	0.113	0.362	0.051
100	Coosa R	CO-16	COOAU05	990811	1115	35	32	2.8	7.3	161	2	---	2	160	0	61	0.052	0.111	0.362	0.047
100	Coosa R	CO-16	COOAU05	990929	1415	25	26	6.0	7.5	186	4	---	6	176	0	70	0.046	0.101	0.174	0.053
130	Hatchet Cr	CO-18	HATAU01	981014	1642	24	20	9.2	7.3	45	7	---	2	49	0	---	0.003	0.006	0.100	0.017
130	Hatchet Cr	CO-18	HATAU01	981117	0905	20	17	9.7	7.1	45	13	---	9	40	0	---	0.027	0.014	0.100	0.026
130	Hatchet Cr	CO-18	HATAU01	981202	1310	26	14	11.4	7.2	47	3	---	0	48	0	---	0.004	0.005	0.121	0.013
130	Hatchet Cr	CO-18	HATAU01	981209	1100	14	15	9.7	6.8	48	3	---	1	46	0	---	0.002	0.002	0.229	0.012
130	Hatchet Cr	CO-18	HATAU01	990113	1200	14	10	10.3	6.1	43	12	---	2	54	0	14	0.008	0.087	0.457	0.020

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed #	Waterbody Name	University Station ID #	ADEM Station ID #	Date *yymmdd*	Time *24hr*	Air Temp. *C*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	Stream Flow *cfs*	TSS *mg/L*	TDS *mg/L*	Total Set. Solids *mg/L*	Total Alkalinity *mg/L*	NH3-N *mg/L*	NO3+ NO2-N *mg/L*	TKN *mg/L*	Total-P *mg/L*
Lower Coosa (0315-0107), cont.																				
130	Hatchet Cr	CO-18	HATAU01	990126	1045	21	11	12.1	6.3	38	16	---	8	34	0	9	0.011	0.171	0.398	0.030
130	Hatchet Cr	CO-18	HATAU01	990203	1050	19	12	10.4	6.2	32	15	---	10	29	0	8	0.027	0.137	0.304	0.031
130	Hatchet Cr	CO-18	HATAU01	990216	1220	22	10	10.8	6.5	38	5	---	9	34	0	14	0.007	0.020	0.121	0.012
130	Hatchet Cr	CO-18	HATAU01	990224	1130	13	8	10.3	6.7	40	4	---	1	56	0	15	0.007	0.013	0.130	0.011
130	Hatchet Cr	CO-18	HATAU01	990310	1100	14	13	9.6	7.1	38	21	---	10	34	0	12	0.023	0.057	0.000	0.029
130	Hatchet Cr	CO-18	HATAU01	990317	1030	22	12	11.4	6.6	32	10	---	5	83	0	10	0.019	0.067	0.058	0.020
130	Hatchet Cr	CO-18	HATAU01	990413	1300	28	22	8.2	6.8	39	3	---	2	97	0	14	0.007	0.013	0.101	0.013
130	Hatchet Cr	CO-18	HATAU01	990427	1120	26	21	8.2	6.8	35	157	---	127	128	0.35	11	0.238	0.173	0.581	0.207
130	Hatchet Cr	CO-18	HATAU01	990511	1020	32	22	8.7	7.1	40	9	---	16	111	0.25	14	0.010	0.074	0.289	0.022
130	Hatchet Cr	CO-18	HATAU01	990525	1145	32	24	8.6	6.9	39	10	---	6	113	0	15	0.040	0.041	0.188	0.023
130	Hatchet Cr	CO-18	HATAU01	990615	0940	27	24	7.2	6.8	35	320	---	385	127	1.25	11	0.227	0.256	1.475	0.230
130	Hatchet Cr	CO-18	HATAU01	990630	0800	28	23	7.8	6.8	33	75	---	52	109	0.1	11	0.049	0.128	0.362	0.098
130	Hatchet Cr	CO-18	HATAU01	990721	0930	32	25	7.4	7.0	40	86	---	84	140	0.3	13	0.075	0.120	0.364	0.120
130	Hatchet Cr	CO-18	HATAU01	990811	0845	30	27	6.4	7.0	41	6	---	3	101	0	16	0.011	0.012	0.124	0.015
130	Hatchet Cr	CO-18	HATAU01	990929	1515	24	24	8.3	7.1	41	4	---	5	100	0	16	0.010	0.007	0.052	0.013
140	Weogufka Cr	CO-17	WEOAU01	981014	1555	24	18	8.9	7.0	47	4	5.87	1	28	0	---	0.001	0.037	0.129	0.013
140	Weogufka Cr	CO-17	WEOAU01	981117	0950	19	16	9.2	7.0	51	4	19.32	1	38	0	---	0.009	0.003	0.529	0.015
140	Weogufka Cr	CO-17	WEOAU01	981202	1400	25	15	11.6	7.1	53	3	6.68	1	42	0	---	0.004	0.004	0.207	0.012
140	Weogufka Cr	CO-17	WEOAU01	981209	0940	16	15	9.1	6.8	50	4	4.31	1	43	0	---	0.001	0.005	0.200	0.015
140	Weogufka Cr	CO-17	WEOAU01	990113	1230	16	9	11.4	6.4	59	8	31.01	1	130	0	17	0.014	0.053	0.243	0.016
140	Weogufka Cr	CO-17	WEOAU01	990126	0950	19	11	12.4	6.8	53	13	79.3	6	32	0	13	0.008	0.173	0.239	0.026
140	Weogufka Cr	CO-17	WEOAU01	990203	0950	18	12	10.9	6.4	43	14	282.25	8	49	0	10	0.031	0.135	0.395	0.027
140	Weogufka Cr	CO-17	WEOAU01	990216	1130	19	10	10.6	7.3	49	6	50.84	2	43	0	16	0.005	0.067	0.095	0.012
140	Weogufka Cr	CO-17	WEOAU01	990224	1045	12	8	10.8	6.9	50	5	53.06	2	61	0	16	0.011	0.064	0.153	0.011
140	Weogufka Cr	CO-17	WEOAU01	990310	1020	15	12	9.9	6.6	46	26	194.99	14	45	0	12	0.044	0.095	0.414	0.042

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed	Waterbody Name	University Station ID	ADEM Station ID	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	TSS	TDS	Total Set. Solids	Total Alkalinity	NH3-N	NO3+ NO2-N	TKN	Total-P
#		*#*	*#*	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Lower Coosa (0315-0107), cont.																				
140	Weogufka Cr	CO-17	WEOAU01	990317	0945	17	11	11.5	6.5	43	9	138.29	3	95	0	12	0.009	0.078	0.043	0.018
140	Weogufka Cr	CO-17	WEOAU01	990413	1330	25	20	9.2	6.7	50	4	59.85	2	103	0	18	0.003	0.048	0.159	0.016
140	Weogufka Cr	CO-17	WEOAU01	990427	1210	26	20	9.0	7.0	48	5	39.69	2	100	0	18	0.065	0.137	0.182	0.018
140	Weogufka Cr	CO-17	WEOAU01	990511	1045	27	20	8.8	7.4	53	8	47.81	3	130	0	11	0.015	0.138	0.243	0.021
140	Weogufka Cr	CO-17	WEOAU01	990525	1215	30	22	8.2	7.3	57	9	41.08	4	137	0	18	0.043	0.202	0.255	0.024
140	Weogufka Cr	CO-17	WEOAU01	990615	1020	28	24	7.3	7.0	54	184	487.89	248	136	1	18	0.118	0.214	1.197	0.242
140	Weogufka Cr	CO-17	WEOAU01	990630	0905	31	23	7.7	6.9	47	24	246.46	22	134	0	15	0.021	0.136	0.292	0.042
140	Weogufka Cr	CO-17	WEOAU01	990721	1000	30	24	7.6	7.3	52	10	52.61	5	136	0	21	0.014	0.142	0.208	0.024
140	Weogufka Cr	CO-17	WEOAU01	990811	0930	32	25	7.2	7.0	56	9	48.51	4	117	0	17	0.014	0.149	0.263	0.028
140	Weogufka Cr	CO-17	WEOAU01	990929	1445	24	24	8.2	6.8	44	4	15.92	4	111	0	17	0.013	0.025	0.058	0.017
190	Coosa R	CRWB	COOAUM01	981208	1101	25	19	7.9	7.7	221	4	2330	7	107	---	---	<0.015	0.14	1.020	0.04
190	Coosa R	CRWB	COOAUM01	981215	1300	20	17	8.0	7.9	221	10	2480	---	---	---	---	<0.015	0.13	<0.15	0.07
190	Coosa R	CRWB	COOAUM01	990104	1030	0	6	8.3	6.7	263	5	4730	6	128	---	---	<0.015	0.18	0.380	0.06
190	Coosa R	CRWB	COOAUM01	990118	1100	28	10	10.8	7.8	205	5	2330	---	---	---	---	0.15	0.09	0.270	0.05
190	Coosa R	CRWB	COOAUM01	990124	0905	9	11	10.6	7.6	188	8	19200	12	97	---	---	<0.015	0.24	0.350	<0.004
190	Coosa R	CRWB	COOAUM01	990201	1030	10	12	10.3	7.6	129	21	30800	13	108	---	---	0.03	0.41	<0.15	0.07
190	Coosa R	CRWB	COOAUM01	990215	1100	22	12	9.6	7.7	95	14	2900	12	70	---	---	<0.015	0.40	<0.15	0.07
190	Coosa R	CRWB	COOAUM01	990301	1000	29	13	9.9	7.6	110	14	4560	4	61	---	---	<0.015	0.38	<0.15	0.03
190	Coosa R	CRWB	COOAUM01	990315	1045	17	13	10.2	7.7	118	8	8240	9	59	---	---	0.02	0.31	0.260	0.03
190	Coosa R	CRWB	COOAUM01	990405	1025	32	21	8.3	7.2	134	7	5500	22	70	---	---	<0.015	0.02	0.640	0.05
190	Coosa R	CRWB	COOAUM01	990419	1000	25	18	8.3	7.1	113	6	5450	17	78	---	---	<0.015	<0.003	<0.15	0.02
190	Coosa R	CRWB	COOAUM01	990419	1000	25	18	8.3	7.1	114	6	---	5	76	---	---	<0.015	<0.003	<0.15	0.02
190	Coosa R	CRWB	COOAUM01	990510	0935	30	21	7.1	7.2	139	7	5320	32	95	---	---	<0.015	0.15	0.650	0.03
190	Coosa R	CRWB	COOAUM01	990608	1010	31	25	6.0	7.1	152	4	4530	13	130	---	---	<0.015	0.14	<0.15	0.03
190	Coosa R	CRWB	COOAUM01	990706	1115	38	27	7.1	7.1	144	7	2320	12	96	---	---	<0.015	0.19	1.400	0.05
190	Coosa R	CRWB	COOAUM01	990803	1020	40	29	5.7	7.5	146	3	2288	1	84	---	---	<0.015	0.15	1.050	<0.004

Appendix F-5, cont. Physical / chemical data collected by Alabama Universities (Auburn Univ. and Auburn Univ. at Montgomery) from tributaries to the Coosa Basin reservoirs from October 1998 through September 1999 under contract with ADEM (ADEM 2000i).

Sub-watershed #	Waterbody Name	University Station ID #	ADEM Station ID #	Date yymmdd	Time 24hr	Air Temp. C	Water Temp. C	Dissolved Oxygen mg/L	pH s.u.	Conductivity umhos @25c	Turbidity NTU	Stream Flow cfs	TSS mg/L	TDS mg/L	Total Set. Solids mg/L	Total Alkalinity mg/L	NH3-N mg/L	NO3+ NO2-N mg/L	TKN mg/L	Total-P mg/L
Lower Coosa (0315-0107), cont.																				
190	Coosa R	CRWB	COOAUM01	990902	1000	28	29	5.4	7.4	152	3	2260	12	56	---	---	<0.015	0.15	0.690	0.02
190	Coosa R	CRWB	COOAUM01	991001	1115	28	24	7.4	7.5	154	2	2220	5	88	---	---	<0.015	0.09	<0.15	0.05
190	Coosa R	CRWB	COOAUM01	991015	1300	26	24	7.4	7.4	170	3	2280	6	95	---	---	<0.015	0.20	0.450	0.02
190	Coosa R	CRWB	COOAUM01	991029	1135	26	20	8.0	7.4	172	3	---	12	101	---	---	<0.015	0.02	<0.15	0.05
190	Coosa R	CRWB	COOAUM01	991111	1300	27	19	8.2	7.5	180	3	---	6	87	---	---	<0.015	0.04	0.190	0.05
190	Coosa R	CRWB	COOAUM01	991128	0915	14	16	8.9	7.4	188	3	---	5	105	---	---	<0.015	0.11	0.270	0.03

Appendix F-6a. Physical / chemical data collected within the Coosa River Basin from August 1997-2000 as part of the Alabama Monitoring and Assessment Program (ALAMAP) (ADEM 2000b)

Sub-Watershed	Stream Name	Station	Date	Time	Air Temp.	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TDS	TSS	NO3+ NO2-N	Total-P	Cl-
#		#	*yymmdd*	*24hr*	*C*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100ml*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Upper Coosa (0315-0105)																		
110	E Fk Little R	CO01U1	970814	0712	24	25	6.7	6.3	46	5	17.8	25	0.8	90	2	0.04	0.03	3.91
110	Little R	CO07U3-25	990817	1400	33	29	6.7	6.6	33	3	no flow	15	1.2	124	6	0.013	<0.004	1.5
250	Terrapin Cr, UT to	CO6U4-45	000822	1045	24	25	7.4	8.1	216	3	nvf	156	2.4	105	9	0.789	0.042	<0.5
Middle Coosa (0315-0106)																		
030	Spring Cr	CO2U4-20	000815	1205	30	24	1.8	4.2	274	7	RW - nvf	54	1.7	175	16	0.003	0.045	2.46
040	Coosa R, UT to	CO3U4-24	000822	1245	27	---	---	---	---	---	Dry	---	---	---	---	---	---	---
040	Coosa R, UT to	CO06U3-37	990818	---	---	---	---	---	---	---	Impounded	---	---	---	---	---	---	---
110	Little Canoe Cr	CO02U1	970813	1620	25	23	8.5	7.6	135	3	4.7	140	0.9	145	1	0.3	0.04	4.1
190	Cane Cr, UT to	CO05U3-36	990818	1000	---	31	10.0	6.6	7	2	no flow	15	1.4	119	3	<0.003	<0.004	1.7
250	Choccolocco Cr, UT to	CO01U2-55	980812	1441	26	21	7.7	7.5	41	5	0.03	260	0.5	44	4	0.29	0.03	3.88
300	Cane Cr	CO5U4-34	000815	1445	30	20	3.4	6.0	65	32	Pools - nvf	120	1.1	75	8	<0.003	0.048	<0.5
330	Talladega Cr, UT to	CO04U3-34	990810	---	---	---	---	---	---	---	Dry	---	---	---	---	---	---	---
Lower Coosa (0315-0107)																		
030	Yellowleaf Cr	CO1U4-17	000815	1015	28	26	3.7	7.1	190	5	nw-nvf	108	1.2	117	5	0.108	0.031	5.5
050	Beeswax Cr	CO02U3-18	990810	1530	---				263	2	no flow	84	0.8	172	3	0.153	0.015	---
070	Peckerwood Cr	CO04U1	970814	1216	30	27	7.8	7.4	47	5	5.8	110	0.6	172	2	0.03	0.05	4.02
100	Mud Cr	CO01U3-31	990810	1250	28	24	7.1	6.4	85.6	38	---	204	0.8	95	11	0.127	0.035	---
110	Hatchet Creek, UT to	CO03U1	970814	0935	26	25	6.6	7.1	81	14	0.6	630	1	144	5	0.13	0.04	4.27
140	Stewart Br	CO03U3-47	990803	1135	30	24	7.5	6.0	39	6	2.5	44	0.8	41	5	0.09	0.007	4.32
170	Chestnut Cr	CO05U1	970813	0940	28	27	7.2	6.9	37	7	17.0	54	0.1	108	3	0.08	<0.004	4.87
200	Corn Cr	CO4U4-31	000801	0815	24	22	8.1	5.9	25	34	0.3	>5770	0.7	29	24	0.08	0.05	3.68

Flow comments:

nvf - No visible flow
Dry - streambed dry
pools - nvf - Streambed consists of nonflowing pools
no flow - no flow measured

Impounded - stream impounded - no flow
RW-nvf - location a riverine wetland with no visible flow

Appendix F- 6b. Physical characteristic and habitat quality estimates for sites assessed in the Coosa River Basin as part of the Alabama Monitoring and Assessment Program (ALAMAP). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded;, O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		CO01U1	CO07U3-25	CO06U4-45	CO05U4-34	CO02U1	CO05U3-36	CO01U2-55	CO02U3-18	CO04U1	CO01U3-31
Subwatershed #		0105-110	0105-110	0105-250	0106-300	0106-110	0106-190	0106-250	0107-050	0107-070	0107-100
Ecoregion/ Subregion		68d	68d	67g	67h	67f	67f	67f	67f	67f	45a
Date (yymmdd)		970814	990817	000822	000515	970813	990818	980812	990810	970814	990810
Width (ft)		150	120	6	7	30	20	3	25	25	20
Canopy Cover*		O	O	MS	MS	MS	MO	S	50/50	MO	MS
Depth (ft)	Riffle	0.8	---	---	---	0.5	---	0.1	0.5	---	---
	Run	1.5	2.5	---	1.0	1.5	2.0	0.2	2.0	1.5	---
	Pool	3.0	---	---	3.5	3.0	---	0.5	3.0	3.0	---
Substrate (%)	Bedrock	---	90	0	0	2	0	0	0	0	78
	Boulder	---	6	0	0	50	2	1	2	0	2
	Cobble	---	0	8	0	30	40	24	28	13	4
	Gravel	---	0	17	10	0	43	40	25	5	4
	Sand	---	1	30	65	11	5	25	8	36	4
	Silt	---	0	5	5	5	2	8	5	25	4
	Detritus	---	2	0	15	2	8	2	30	6	3
	Clay	---	1	0	5	0	0	0	2	15	1
Geomorphology*		RR	RR	RR	RR	RR	RR	RR	RR	RR	RR
Habitat Survey (% maximum)											
Instream Habitat Quality		85	20	18	23	85	55	63	47	57	30
Sediment Deposition		83	90	90	10	78	95	85	68	25	58
Sinuosity		95	5	35	5	95	5	95	15	55	0
Bank and Vegetative Stability		90	93	83	35	80	100	85	53	90	78
Riparian Measurements		100	100	68	45	70	100	50	48	100	98
Habitat Assessment Score											
% Maximum		90	69	63	31	82	80	71	55	71	63
Assessment		Excellent	Excellent	Good	Poor	Excellent	Excellent	Excellent	Good	Excellent	Good

Appendix F- 6b, cont. Physical characteristic and habitat quality estimates for sites assessed in the Coosa River Basin as part of the Alabama Monitoring and Assessment Program (ALAMAP). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded;, O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		CO03U1	CO03U3-47	CO05U1	CO04U4-31
Subwatershed #		0107-110	0107-140	0107-170	0107-200
Ecoregion/ Subregion		45a	45a	45a	65i
Date (yymmdd)		970814	990803	970813	000801
Width (ft)		7	10	60	7
Canopy Cover*		S	S	MO	S
Depth (ft)	Riffle	0.2	0.4	0.5	0.18
	Run	0.5	0.8	1.0	0.2
	Pool	1.0	1.3	1.5	0.6
Substrate (%)	Bedrock	0	0	3	0
	Boulder	2	0	25	0
	Cobble	10	1	29	0
	Gravel	30	30	20	7
	Sand	48	62	10	85
	Silt	4	2	10	3
	Detritus	5	5	3	5
	Clay	0	0	0	0
Geomorphology*		RR	RR	RR	GP
Habitat Survey (% maximum)					
Instream Habitat Quality		65	60	90	33
Sediment Deposition		65	50	90	70
Sinuosity		100	80	95	43
Bank and Vegetative Stability		63	65	100	43
Riparian Measurements		100	95	100	90
Habitat Assessment Score					
% Maximum		75	69	95	53
Assessment		Good	Good	Excellent	Good

Appendix F-7. Clean Water Strategy water quality data collected by ADEM during 1996 from selected stations in the Coosa River Basin (ADEM 1999a).

Sub-watershed #	Stream Name	Station #	Date yymmdd	Time 24hr	Stream Depth ft	Sampling Depth ft	Water Temp. C	Dissolved Oxygen mg/L	pH s.u.	Conductivity umhos @25c	Turbidity NTU	BOD-5 mg/L	NO3+ NO2-N mg/L	NH3-N mg/L	TKN mg/L	Total-P mg/L
Upper Coosa (0315-0105)																
080	W Fk Little R	CO-13	960624	1615	---	---	---	---	---	---	---	---	---	---	---	---
080	W Fk Little R	CO-13	960724	1420	1.0	0.5	24	6.5	6.6	22	---	0.3	0.015	<0.005	0.124	0.05
080	W Fk Little R	CO-13	960828	1450	1.0	0.5	26	7.3	6.6	19	---	1.3	0.234	0.014	0.23	0.04
080	W Fk Little R	CO-13	960923	1420	2.0	1.0	18	9.4	6.7	20	---	---	---	---	---	---
080	W Fk Little R	CO-13	961024	1240	0.5	0.3	12	6.5	5.8	16	---	1.2	0.1	<0.1	1.1	<0.05
080	W Fk Little R	CO-14	960625	1200	5.0	2.5	27	6.6	6.8	18	---	---	---	---	---	---
080	W Fk Little R	CO-14	960724	1215	6.0	3.0	23	5.9	6.9	33	---	0.6	0.005	<0.005	0.184	<0.05
080	W Fk Little R	CO-14	960828	1400	8.0	5.0	25	6.4	7.5	28	---	1.0	0.031	0.034	0.186	<0.04
080	W Fk Little R	CO-14	960923	1200	7.0	5.0	18	8.9	7.3	23	---	---	---	---	---	---
080	W Fk Little R	CO-14	961024	1440	6.5	3.3	14	6.2	6.5	23	---	1.6	0.1	<0.1	1.1	<0.05
100	E Fk Little R	CO-01	960624	1345	5.0	2.5	25	5.7	6.8	51	---	---	---	---	---	---
100	E Fk Little R	CO-01	960724	1350	7.2	---	25	7.0	7.1	55	---	1.8	<0.005	0.007	0.263	<0.05
100	E Fk Little R	CO-01	960828	1520	8.4	5.0	26	7.3	7.3	47	---	2.3	0.01	<0.005	0.226	<0.04
100	E Fk Little R	CO-01	960923	1345	8.0	4.0	17	9.2	7.0	30	---	---	---	---	---	---
100	E Fk Little R	CO-01	961024	1310	7.5	3.8	15	4.6	6.5	43	---	2.2	0.13	<0.1	<0.05	0.05
100	E Fk Little R	CO-02	960624	1445	---	---	27	7.5	7.2	53	---	---	---	---	---	---
100	E Fk Little R	CO-02	960724	1330	0.8	0.4	25	7.8	6.7	55	---	0.5	0.005	<0.005	0.18	<0.05
100	E Fk Little R	CO-02	960829	1015	0.8	0.4	26	7.3	7.1	41	---	1.6	<0.01	<0.005	0.183	<0.04
100	E Fk Little R	CO-02	960923	1250	2.0	1.8	19	9.0	7.0	29	---	---	---	---	---	---
100	E Fk Little R	CO-02	961024	1345	0.8	0.8	16	6.9	6.6	39	---	0.7	0.1	<0.1	<0.15	<0.05
120	Little R	CO-12	960624	1150	---	---	26	7.9	7.6	38	---	---	---	---	---	---
120	Little R	CO-12	960725	1040	3.1	1.5	22	7.5	7.2	43	---	0.4	0.067	<0.005	0.177	0.13
120	Little R	CO-12	960829	1200	1.5	0.8	26	7.7	6.5	38	---	1.7	0.243	0.005	0.168	0.04
120	Little R	CO-12	960924	0850	0.5	0.5	20	8.2	7.0	31	---	---	---	---	---	---

Appendix F-7, cont. Clean Water Strategy water quality data collected by ADEM during 1996 from selected stations in the Coosa River Basin (ADEM 1999a).

Sub-watershed #	Stream Name	Station #	Date *yymmdd*	Time *24hr*	Stream Depth *ft*	Sampling Depth *ft*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	BOD-5 *mg/L*	NO3+ NO2-N *mg/L*	NH3-N *mg/L*	TKN *mg/L*	Total-P *mg/L*
Upper Coosa (0315-0105), cont.																
120	Little R	CO-12	961024	1525	1.0	0.5	16	7.0	6.7	34	---	0.7	<0.1	<0.1	<0.15	<0.05
180	Coosa R	CO-30	960606	1215	---	---	26	7.6	7.9	138	---	---	---	---	---	---
180	Coosa R	CO-30	960711	1030	---	5.0	29	7.6	7.7	186	---	2.6	<0.091		0.4	<0.005
180	Coosa R	CO-30	960808	1200	40.0	0.0	27	8.5	7.8	---	---	---	---	---	---	---
180	Coosa R	CO-30	960912	1230	41.0	5.0	28	6.6	7.4	199	---	1.0	0.465	---	<0.1	0.102
180	Coosa R	CO-30	961017	1130	27.5	5.0	19	9.1	7.4	159	---	---	0.8	---	---	0.16
220	Terrapin Cr	CO-15	960620	1300	---	---	26	9.7	8.1	132	---	---	---	---	---	---
220	Terrapin Cr	CO-15	960731	1120	4.0	2.0	25	7.7	7.4	241	---	0.1	0.267	0.005	0.181	0.043
220	Terrapin Cr	CO-15	960815	1300	1.1	0.6	26	9.2	8.1	118	---	0.6	0.265	0.015	0.158	<0.04
220	Terrapin Cr	CO-15	960904	1150	0.8	0.4	23	8.1	7.7	125	---	---	---	---	---	---
220	Terrapin Cr	CO-15	961030	1225	0.9	0.5	21	8.8	7.2	118	---	1.0	0.15	<0.1	0.54	<0.05
250	Terrapin Cr	CO-16	960620	1230	---	---	28	7.2	7.8	152	---	---	---	---	---	---
250	Terrapin Cr	CO-16	960731	1100	7.3	3.8	25	6.9	7.5	290	---	<0.1	0.233	0.013	0.152	<0.04
250	Terrapin Cr	CO-16	960815	1230	---	0.0	25	7.6	8.9	159	---	0.9	0.222	0.01	0.191	0.044
250	Terrapin Cr	CO-16	960904	1125	---	0.5	22	6.9	7.6	159	---	---	---	---	---	---
250	Terrapin Cr	CO-16	961030	1250	1.2	0.6	20	8.1	7.3	145	---	0.8	0.14	<0.1	0.49	<0.05
250	Terrapin Cr	CO-17	960620	1130	---	---	27	8.0	7.9	154	---	---	---	---	---	---
250	Terrapin Cr	CO-17	960731	1030	3.3	1.5	25	7.3	7.5	---	---	---	---	---	---	---
250	Terrapin Cr	CO-17	960815	1205	1.0	0.0	26	8.3	7.7	158	---	0.9	0.189	0.008	0.191	0.043
250	Terrapin Cr	CO-17	960904	1030	---	1.0	22	6.8	7.1	137	---	---	---	---	---	---
250	Terrapin Cr	CO-17	961030	1320	1.5	0.8	20	7.8	7.3	148	---	1.0	0.14	<0.1	0.54	<0.05
Middle Coosa (0315-0106)																
000	Coosa R	CO-28	960606	1400	---	---	28	5.3	7.5	151	---	---	---	---	---	---
000	Coosa R	CO-28	960711	1330	---	---	32	5.1	7.3	145	---	---	0.229	---	---	---

Appendix F-7, cont. Clean Water Strategy water quality data collected by ADEM during 1996 from selected stations in the Coosa River Basin (ADEM 1999a).

Sub-watershed #	Stream Name	Station #	Date *yymmdd*	Time *24hr*	Stream Depth *ft*	Sampling Depth *ft*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	BOD-5 *mg/L*	NO3+ NO2-N *mg/L*	NH3-N *mg/L*	TKN *mg/L*	Total-P *mg/L*
Middle Coosa (0315-0106), cont.																
000	Coosa R	CO-28	960829	1400	---	---	30	3.1	7.4	---	---	---	0.248	---	---	---
000	Coosa R	CO-28	960924	0950	---	---	25	4.2	7.0	154	---	---	0.158	---	---	---
000	Coosa R	CO-28	961023	1310	50.0	40.0	21	6.9	8.5	140	---	---	1.08	---	---	---
070	Little Wills Cr	CO-03	960625	1055	---	---	19	8.0	8.0	250	---	---	---	---	---	---
070	Little Wills Cr	CO-03	960724	1020	1.0	0.5	20	8.0	7.9	224	---	0.1	0.582	0.014	<0.1	<0.05
070	Little Wills Cr	CO-03	960828	1200	0.5	0.3	22	7.9	7.5	247	---	1.4	1.052	0.022	0.215	0.091
070	Little Wills Cr	CO-03	960923	1035	1.0	0.5	19	9.2	7.7	274	---	---	---	---	---	---
070	Little Wills Cr	CO-03	961025	0900	1.0	0.5	13	5.6	7.0	261	---	0.7	1.13	<0.1	<0.15	<0.05
070	Little Wills Cr	CO-04	960625	1030	---	---	21	6.7	7.8	271	---	---	---	---	---	---
070	Little Wills Cr	CO-04	960724	1050	0.6	0.0	20	6.0	7.6	275	---	2.5	0.857	0.299	0.497	0.11
070	Little Wills Cr	CO-04	960828	1220	0.8	0.4	23	6.5	6.8	250	---	2.0	1.033	0.335	0.6	0.189
070	Little Wills Cr	CO-04	960923	1100	0.8	0.4	17	8.4	7.9	293	---	---	---	---	---	---
070	Little Wills Cr	CO-04	961025	0920	0.5	0.3	13	5.0	7.5	296	---	1.4	1.32	<0.1	0.18	0.12
170	Williams Br	CO-26	960620	1525	---	---	25	8.0	7.8	235	---	---	---	---	---	---
170	Williams Br	CO-26	960731	1150	1.5	0.8	23	9.2	8.0	493	---	<0.1	0.472	<0.005	<0.1	0.052
170	Williams Br	CO-26	960815	1420	0.8	0.4	26	7.2	8.3	231	---	0.1	0.436	0.007	0.104	0.053
170	Williams Br	CO-26	960904	1230	1.3	0.7	25	8.5	7.9	329	---	---	---	---	---	---
170	Williams Br	CO-26	961030	1050	1.0	0.5	26	9.9	7.6	305	---	0.6	6.05	<0.1	0.76	0.92
170	Williams Br	CO-27	960620	1435	---	---	26	8.0	7.9	188	---	---	---	---	---	---
170	Williams Br	CO-27	960731	1210	0.8	0.4	23	7.8	8.1	616	---	0.3	4.016	0.11	0.399	0.681
170	Williams Br	CO-27	960815	1400	2.0	1.0	26	8.1	8.1	128	---	0.8	3.796	0.009	0.213	0.595
170	Williams Br	CO-27	960904	1250	0.5	0.3	24	9.1	8.3	245	---	---	---	---	---	---
170	Williams Br	CO-27	961030	1115	0.8	0.4	32	10.0	7.3	209	---	0.8	0.12	<0.1	0.72	<0.05
260	Brecon Br	CO-24	960613	1105	---	---	21	9.6	7.9	224	---	---	---	---	---	---

Appendix F-7, cont. Clean Water Strategy water quality data collected by ADEM during 1996 from selected stations in the Coosa River Basin (ADEM 1999a).

Sub-watershed #	Stream Name	Station #	Date *yymmdd*	Time *24hr*	Stream Depth *ft*	Sampling Depth *ft*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	BOD-5 *mg/L*	NO3+ NO2-N *mg/L*	NH3-N *mg/L*	TKN *mg/L*	Total-P *mg/L*
Middle Coosa (0315-0106), cont.																
260	Brecon Br	CO-24	960731	1015	2.0	1.0	21	8.7	8.5	236	---	0.3	0.136	0.008	0.255	0.054
260	Brecon Br	CO-24	960813	1010	0.8	0.4	21	9.5	9.1	217	---	0.3	0.12	<0.005	<0.1	<0.04
260	Brecon Br	CO-24	960925	1010	0.8	0.4	20	9.0	8.0	225	---	---	---	---	---	---
260	Brecon Br	CO-24	961022	1130	1.0	0.5	18	10.0	7.2	231	---	0.7	<0.1	0.1	<0.15	<0.05
260	Brecon Br	CO-25	960613	1020	---	---	21	8.6	6.3	217	---	---	---	---	---	---
260	Brecon Br	CO-25	960731	1040	3.0	1.5	24	6.5	7.1	182	---	0.1	0.711	0.011	0.143	0.07
260	Brecon Br	CO-25	960813	1035	0.5	0.3	23	7.5	7.6	320	---	0.1	1.416	0.01	0.143	0.142
260	Brecon Br	CO-25	960925	1035	0.5	0.5	20	7.4	7.5	255	---	---	---	---	---	---
260	Brecon Br	CO-25	961022	1150	1.0	0.5	19	8.3	6.9	240	---	0.6	2.32	<0.1	<0.15	0.18
Lower Coosa (0315-0107)																
040	Coosa R	CO-29	960628	1050	---	---	29	5.8	7.8	131	---	---	---	---	---	---
040	Coosa R	CO-29	960731	1215	---	---	28	5.5	6.8	162	---	---	0.092	---	---	---
040	Coosa R	CO-29	960813	1130	---	---	28	4.9	7.5	152	---	---	0.156	---	---	---
040	Coosa R	CO-29	960925	1120	---	---	26	4.0	7.3	187	---	---	0.156	---	---	---
040	Coosa R	CO-29	961022	1315	40.0	20.0	21	8.2	7.9	260	---	---	<0.1	---	---	---
050	Dry Cr, UT to	CO-05	960620	0720	---	---	23	4.7	7.5	227	---	---	---	---	---	---
050	Dry Cr, UT to	CO-05	960725	0730	2.0	1.0	25	1.9	6.4	934	---	1.5	1.058	0.083	0.344	1.959
050	Dry Cr, UT to	CO-05	960815	0740	2.0	1.0	22	4.0	7.1	404	---	0.4	0.466	0.037	0.204	0.078
050	Dry Cr, UT to	CO-05	960918	0730	3.0	2.0	19	4.3	6.6	536	---	---	---	---	---	---
050	Dry Cr, UT to	CO-05	961022	1405	1.0	0.5	19	5.4	7.6	419	---	1.8	1.6	0.27	<0.15	0.14
100	Buxahatchee Cr	CO-06	960618	0810	---	---	25	1.6	7.7	335	---	---	---	---	---	---
100	Buxahatchee Cr	CO-06	960710	0800	---	---	25	4.5	7.5	282	---	2.7	0.056	0.078	0.414	<0.05
100	Buxahatchee Cr	CO-06	960815	0800	0.5	0.3	22	1.6	7.6	302	---	1.1	0.04	0.181	0.377	0.078
100	Buxahatchee Cr	CO-06	960926	0730	0.8	0.4	20	2.6	7.5	209	---	---	---	---	---	---

Appendix F-7, cont. Clean Water Strategy water quality data collected by ADEM during 1996 from selected stations in the Coosa River Basin (ADEM 1999a).

Sub-watershed #	Stream Name	Station #	Date *yymmdd*	Time *24hr*	Stream Depth *ft*	Sampling Depth *ft*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	BOD-5 *mg/L*	NO3+ NO2-N *mg/L*	NH3-N *mg/L*	TKN *mg/L*	Total-P *mg/L*
Lower Coosa (0315-0107), cont.																
100	Buxahatchee Cr	CO-06	961024	0745	0.8	0.4	10	3.3	7.7	422	---	2.3	2.17	<0.1	0.25	0.08
100	Buxahatchee Cr	CO-07	960618	0915	---	---	25	6.2	7.5	122	---	---	---	---	---	---
100	Buxahatchee Cr	CO-07	960710	0845	---	---	25	7.0	7.1	201	---	2.1	0.068	0.042	0.405	<0.05
100	Buxahatchee Cr	CO-07	960815	0840	1.8	0.9	23	6.7	7.3	194	---	0.1	0.03	<0.005	0.213	0.05
100	Buxahatchee Cr	CO-07	960926	0800	1.5	0.8	20	6.8	6.8	282	---	---	---	---	---	---
100	Buxahatchee Cr	CO-07	961024	0815	1.1	0.6	10	7.8	7.2	138	---	1.9	0.91	<0.1	<0.15	<0.05
110	Hatchet Cr	CO-10	960625	0925	2.0	1.0	26	7.1	6.9	49	3	---	---	---	---	---
110	Hatchet Cr	CO-10	960723	0830	1.0	0.0	28	7.2	7.3	46	5	1.5	0.1	<0.015	<0.15	0.03
110	Hatchet Cr	CO-10	960821	0910	2.0	1.0	25	7.0	6.5	50	4	0.6	0.02	<0.015	<0.15	0.11
110	Hatchet Cr	CO-10	960919	1510	1.5	0.7	24	8.7	7.4	42	22	---	---	---	---	---
110	Hatchet Cr	CO-10	961009	1150	2.5	1.5	17	9.7	7.6	54	5	0.6	---	---	---	---
110	Hatchet Cr	CO-11	960625	1145	5.0	2.5	26	7.1	7.0	48	7	---	---	---	---	---
110	Hatchet Cr	CO-11	960723	1125	2.0	1.0	27	6.9	7.2	46	4	0.5	0.07	<0.015	<0.15	0.03
110	Hatchet Cr	CO-11	960821	1055	2.0	1.0	24	7.2	6.6	59	5	0.6	0.03	<0.015	<0.15	0.12
110	Hatchet Cr	CO-11	960919	1400	2.5	1.2	23	8.2	7.2	51	12	---	---	---	---	---
110	Hatchet Cr	CO-11	961009	1310	2.5	1.5	18	9.0	7.3	54	5	0.7	0.03	<0.015	<0.15	0.01
120	Socapatoy Cr	CO-20	960625	1045	1.0	0.0	30	6.2	6.6	63	32	---	---	---	---	---
120	Socapatoy Cr	CO-20	960723	1025	1.0	0.5	25	5.3	6.8	55	30	2.1	0.06	<0.015	<0.15	0.05
120	Socapatoy Cr	CO-20	960821	1025	1.0	0.5	24	5.1	6.4	72	17	0.8	0.06	<0.015	<0.15	0.12
120	Socapatoy Cr	CO-20	960919	1340	2.0	1.0	23	6.3	6.6	59	18	---	---	---	---	---
120	Socapatoy Cr	CO-20	961009	1336	2.5	1.5	18	6.6	6.8	66	13	0.7	0.01	<0.015	0.26	0.05
120	Socapatoy Cr	CO-21	960625	0955	2.0	1.0	26	7.7	7.4	49	5	---	---	---	---	---
120	Socapatoy Cr	CO-21	960723	0930	1.0	0.5	26	7.4	7.4	51	22	0.9	0.06	<0.015	<0.15	0.05
120	Socapatoy Cr	CO-21	960821	0950	1.0	0.5	26	8.2	6.6	59	6	1.1	0.02	<0.015	<0.15	0.11

Appendix F-7, cont. Clean Water Strategy water quality data collected by ADEM during 1996 from selected stations in the Coosa River Basin (ADEM 1999a).

Sub-watershed #	Stream Name	Station #	Date *yymmdd*	Time *24hr*	Stream Depth *ft*	Sampling Depth *ft*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	BOD-5 *mg/L*	NO3+ NO2-N *mg/L*	NH3-N *mg/L*	TKN *mg/L*	Total-P *mg/L*
Lower Coosa (0315-0107), cont.																
120	Socapatoy Cr	CO-21	961009	1220	1.0	0.5	19	10.0	7.7	60	8	0.7	0.04	<0.015	<0.15	0.02
130	Hatchet Cr	CO-08	960625	1400	6.0	3.0	29	7.6	7.4	46	6	---	---	---	---	---
130	Hatchet Cr	CO-08	960723	1530	8.0	4.0	30	7.1	7.1	46	46	0.9	0.02	<0.015	<0.15	0.03
130	Hatchet Cr	CO-08	960821	1335	6.0	3.0	30	6.9	6.6	47	3	0.8	0.03	<0.015	<0.15	0.1
130	Hatchet Cr	CO-08	960919	1745	7.0	3.5	25	8.3	7.3	39	34	---	---	---	---	---
130	Hatchet Cr	CO-08	961009	0900	6.5	3.0	19	7.5	7.8	58	4	0.5	<0.003	0.015	<0.15	0.01
130	Hatchet Cr	CO-09	960625	0840	4.0	2.0	26	6.8	6.8	49	26	---	---	---	---	---
130	Hatchet Cr	CO-09	960723	0735	2.5	1.3	26	7.0	6.4	41	51	1.8	0.06	<0.015	<0.15	0.03
130	Hatchet Cr	CO-09	960821	0825	2.0	1.0	26	7.1	5.4	49	6	1.1	0.02	<0.015	<0.15	0.14
130	Hatchet Cr	CO-09	960919	1530	3.0	1.5	24	8.6	7.4	43	20	---	---	---	---	---
130	Hatchet Cr	CO-09	961009	1110	3.0	1.5	18	9.0	7.6	52	5	0.5	<0.003	<0.015	<0.15	0.02
140	Finikochika Cr	CO-18	960625	1245	2.0	1.0	27	6.3	7.0	67	13	---	---	---	---	---
140	Finikochika Cr	CO-18	960723	1220	2.0	1.0	25	6.7	6.8	59	24	1.4	0.05	<0.015	<0.15	0.03
140	Finikochika Cr	CO-18	960821	1155	1.0	0.5	26	6.0	6.4	76	9	1.1	0.13	<0.015	0.15	0.13
140	Finikochika Cr	CO-18	960919	1605	1.5	0.7	22	6.9	6.8	64	21	---	---	---	---	---
140	Finikochika Cr	CO-18	961009	1008	2.0	1.0	18	8.9	7.1	78	22	2.8	0.02	0.015	0.26	0.04
140	Finikochika Cr	CO-19	960625	1315	2.0	1.0	27	6.6	7.5	57	3	---	---	---	---	---
140	Finikochika Cr	CO-19	960723	1430	1.0	0.0	28	8.0	6.2	75	4	1.0	0.09	<0.015	<0.15	0.25
140	Finikochika Cr	CO-19	960821	1300	1.0	0.5	27	8.0	6.6	67	4	0.7	0.05	<0.015	<0.15	0.11
140	Finikochika Cr	CO-19	960919	1640	1.5	0.7	23	8.5	7.4	67	7	---	---	---	---	---
140	Finikochika Cr	CO-19	961009	0939	2.5	1.5	18	9.7	7.5	73	418	0.8	<0.003	<0.015	<0.15	0.02
140	Weogufka Cr	CO-22	960625	1230	5.0	2.5	26	7.0	7.1	59	14	---	---	---	---	---
140	Weogufka Cr	CO-22	960723	1335	2.0	1.0	27	6.3	7.0	66	34	0.9	0.17	<0.015	<0.15	0.02
140	Weogufka Cr	CO-22	960821	1230	2.0	1.0	25	6.6	6.5	69	11	1.1	0.13	<0.015	7.06	0.1

Appendix F-7, cont. Clean Water Strategy water quality data collected by ADEM during 1996 from selected stations in the Coosa River Basin (ADEM 1999a).

Sub-watershed #	Stream Name	Station #	Date *yymmdd*	Time *24hr*	Stream Depth *ft*	Sampling Depth *ft*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	BOD-5 *mg/L*	NO3+ NO2-N *mg/L*	NH3-N *mg/L*	TKN *mg/L*	Total-P *mg/L*
Lower Coosa (0315-0107), cont.																
140	Weogufka Cr	CO-22	960919	1555	2.5	1.3	22	7.4	6.9	52	19	---	---	---	---	---
140	Weogufka Cr	CO-22	961009	1025	2.0	1.0	17	9.0	7.3	69	9	0.7	0.03	<0.015	<0.15	0.01
140	Weogufka Cr	CO-23	960625	1330	2.0	1.0	27	7.8	7.4	48	12	---	---	---	---	---
140	Weogufka Cr	CO-23	960723	1455	3.0	1.5	26	6.8	6.3	41	87	2.5	0.18	<0.015	<0.15	0.05
140	Weogufka Cr	CO-23	960821	1315	1.0	0.5	27	8.0	6.6	53	5	1.9	0.04	<0.015	2.436	0.12
140	Weogufka Cr	CO-23	960919	1730	1.5	0.7	23	8.0	7.1	44	24	---	---	---	---	---
140	Weogufka Cr	CO-23	961009	0923	1.5	0.8	18	8.4	7.4	58	7	0.6	0.01	<0.015	<0.15	0.02

Appendix F-8. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	yymmdd	24hr	C	mg/L	s.u.	umhos @25c	NTU	ft	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
240	Choccolocco Cr	CHOC-GSA- 1	961203	1345	12.0	10.5	6.6	60	15	4.8	358	130	1.0	40	40	<0.08	<0.010	<0.010	0.073	0.44	1.62
240	Choccolocco Cr	CHOC-GSA- 1	961231	0820	13.0	9.7	6.7	82	3	3.2	163	127	1.1	9	47	<0.08	<0.010	0.016	0.147	0.45	1.60
240	Choccolocco Cr	CHOC-GSA- 1	970130	0810	8.0	11.8	6.4	53	3	5.2	461	150	0.8	11	35	<0.08	<0.010	<0.010	0.142	0.16	1.38
240	Choccolocco Cr	CHOC-GSA- 1	970219	0830	9.0	11.0	6.7	64	4	3.4	231	200	0.8	9	76	<0.08	0.075	<0.010	0.148	0.34	1.42
240	Choccolocco Cr	CHOC-GSA- 1	970318	0910	13.0	12.0	6.3	68	8	3.4	216	200	0.5	5	34	<0.08	0.013	<0.010	0.112	0.15	1.35
240	Choccolocco Cr	CHOC-GSA- 1	970422	0830	16.0	8.8	6.5	74	8	2.8	162	790	0.7	15	56	<0.08	<0.010	0.019	0.136	0.24	1.48
240	Choccolocco Cr	CHOC-GSA- 1	970519	0830	18.0	8.4	5.9	73	7	3.0	137	350	0.4	13	46	<0.08	0.012	0.036	0.130	0.32	1.42
240	Choccolocco Cr	CHOC-GSA- 1	970617	0830	19.0	9.4	5.8	63	18	3.9	264	660	0.5	26	15	<0.08	0.030	0.015	0.102	0.98	1.38
240	Choccolocco Cr	CHOC-GSA- 1	970729	0830	22.0	7.5	6.5	76	8	2.7	110	650	0.8	14	51	<0.08	0.077	0.018	0.147	0.44	1.44
240	Choccolocco Cr	CHOC-GSA- 1	970821	0815	21.0	7.5	6.3	81	8	2.6	72.2	410	0.3	11	40	<0.08	0.031	<0.010	0.099	0.57	1.35
240	Choccolocco Cr	CHOC-GSA- 1	970915	0830	17.0	8.1	6.7	92	10	1.2	37.5	620	0.4	11	55	<0.08	0.015	0.013	0.112	0.09	1.43
240	Choccolocco Cr	CHOC-GSA- 1	971029	0815	10.0	10.1	6.8	60	8	3.2	127	380	0.3	7	73	<0.08	0.032	<0.010	0.090	0.31	1.50
240	Choccolocco Cr	CHOC-GSA- 1	971112	0825	7.0	10.6	6.6	86	7	2.5	78.2	650	0.7	<4	85	<0.08	<0.010	<0.010	0.110	0.25	1.59
240	Choccolocco Cr	CHOC-GSA- 1	971217	0820	7.0	11.0	6.7	67	15	2.7	70	570	0.5	4	68	<0.08	<0.010	0.010	0.146	0.10	4.92
240	Choccolocco Cr	CHOC-GSA- 1	980126	0810	8.0	11.4	6.7	50	10	4.4	271	2,200	0.6	7	34	<0.08	0.019	0.023	0.157	0.13	1.59
240	Choccolocco Cr	CHOC-GSA- 1	980219	0825	8.0	11.8	6.4	41	10	6.0	551	130	0.9	19	19	<0.08	0.012	<0.010	0.093	0.34	1.44
240	Choccolocco Cr	CHOC-GSA- 1	980318	0815	11.0	10.5	6.6	51	7	4.7	369	47	0.9	13	45	<0.08	<0.010	0.022	0.098	0.10	1.26
240	Choccolocco Cr	CHOC-GSA- 1	980427	0845	16.0	9.1	6.3	66	3	3.3	176	150	0.5	4	52	<0.08	0.021	0.013	0.096	0.11	1.38
240	Choccolocco Cr	CHOC-GSA- 1	980519	0900	21.0	7.5	6.3	67	7	3.1	128	150	0.5	9	56	<0.08	0.012	0.043	0.116	0.19	1.39
240	Choccolocco Cr	CHOC-GSA- 1	980623	1000	26.0	6.8	6.3	84	11	2.7	71	270	0.5	11	81	<0.08	0.281	0.063	0.130	0.16	1.43
240	Choccolocco Cr	CHOC-GSA- 1	980727	1015	25.0	7.2	6.5	91	17	2.7	59	1,000	0.8	27	59	<0.08	<0.010	<0.010	0.166	0.23	1.27
240	Choccolocco Cr	CHOC-GSA- 1	980825	1015	23.0	7.2	6.6	111	15	2.4	35	360	0.5	9	104	<0.08	<0.010	0.014	0.141	0.39	1.30
240	Choccolocco Cr	CHOC-GSA- 1	980908	0930	23.0	7.2	6.3	107	28	2.3	24	310	0.5	10	68	<0.08	0.019	0.014	0.152	0.30	1.40
240	Choccolocco Cr	CHOC-GSA- 1	981026	0850	14.0	9.0	6.5	115	8	1.3	27	410	0.4	<4	83	<0.08	<0.010	0.011	0.132	0.14	2.99
240	Choccolocco Cr	CHOC-GSA- 1	981110	0830	16.0	8.4	6.3	94	6	1.5	37	220	0.4	6	67	<0.08	0.019	<0.07	0.062	0.10	1.47
240	Choccolocco Cr	CHOC-GSA- 1	981210	0830	12.0	9.3	6.7	115	5	1.6	34	270	0.4	5	60	<0.08	<0.010	<0.010	0.092	0.13	1.33
240	Choccolocco Cr	CHOC-GSA- 1	990114	0830	10.0	10.5	6.7	72	8	2.0	83	150	0.7	7	60	<0.08	0.012	0.043	0.146	0.29	3.12
240	Choccolocco Cr	CHOC-GSA- 1	990209	0815	13.0	9.7	6.6	83	4	2.2	111	87	0.5	8	48	<0.08	0.025	0.019	0.243	0.15	1.57
240	Choccolocco Cr	CHOC-GSA- 1	990310	0830	10.0	10.8	7.0	55	8	3.5	236	97	0.6	10	44	<0.08	<0.010	0.030	0.118	0.14	1.27
240	Choccolocco Cr	CHOC-GSA- 1	990415	0810	17.0	7.5	6.2	92	35	3.0	120	6,300	1.6	40	42	<0.08	0.034	0.064	0.305	0.90	1.51
240	Choccolocco Cr	CHOC-GSA- 1	990513	0840	19.0	8.0	6.4	79	5	3.0	88	330	0.5	10	54	<0.08	0.024	0.016	0.150	0.20	1.37
240	Choccolocco Cr	CHOC-GSA- 1	990624	0800	23.0	7.3	6.5	98	40	2.8	81	1,800	1.2	65	62	<0.08	0.028	0.102	0.278	0.95	1.57
240	Choccolocco Cr	CHOC-GSA- 1	990715	0830	24.0	6.5	6.7	99	13	2.8	93	230	0.4	13	56	<0.08	<0.010	0.031	0.152	<0.07	1.36
240	Choccolocco Cr	CHOC-GSA- 1	990817	0810	24.0	6.5	7.3	124	17	2.2	27	200	0.3	10	88	<0.08	0.026	0.024	0.210	0.25	1.37
240	Choccolocco Cr	CHOC-GSA- 1	990908	0810	22.0	7.2	7.1	135	15	2.0	21	290	0.4	7	80	<0.08	0.044	<0.010	0.160	<0.07	1.34
240	Choccolocco Cr	CHOC-GSA- 1	991028	0900	13.0	9.0	6.5	127	4	1.4	24	290	0.4	<4	62	<0.08	<0.010	0.026	0.143	0.13	1.48

Appendix F-8, cont. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	yymmdd	24hr	C	mg/L	s.u.	umhos @25c	NTU	ft	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
240	Choccolocco Cr	CHOC-GSA- 1	991109	0900	14.5	8.5	6.8	111	11	2.2	38	300	0.5	<4	72	<0.08	0.011	0.014	0.074	0.12	1.54
240	Choccolocco Cr	CHOC-GSA- 1	991201	0830	8.0	10.2	6.3	112	5	1.4	26	270	0.5	4	71	<0.08	0.027	<0.010	0.081	0.91	1.62
240	Choccolocco Cr	CHOC-GSA- 1	000111	0820	10.0	10.6	6.8	46	23	3.6	295	410	0.7	52	54	<0.08	0.015	0.016	0.096	0.63	1.39
240	Choccolocco Cr	CHOC-GSA- 1	000207	0815	6.0	11.2	6.7	111	20	2.3	47	150	0.5	<4	69	<0.08	0.012	<0.010	0.164	0.23	1.51
240	Choccolocco Cr	CHOC-GSA- 1	000328	0900	14.0	9.4	7.1	79	5	2.2	83	190	0.6	7	78	<0.08	0.023	<0.010	0.157	<0.07	1.51
240	Choccolocco Cr	CHOC-GSA- 1	000411	0815	14.0	9.2	6.2	54	24	2.5	235	100	0.6	17	29	<0.08	<0.010	<0.010	0.106	0.27	1.36
240	Choccolocco Cr	CHOC-GSA- 1	000510	0730	21.0	7.4	6.6	100	15	2.2	43	200	0.6	11	73	<0.08	0.023	0.018	0.216	0.20	1.42
240	Choccolocco Cr	CHOC-GSA- 1	000607	0745	19.0	7.8	7.0	100	7	2.6	35	210	0.4	9	65	<0.08	0.046	0.053	0.216	0.26	1.77
240	Choccolocco Cr	CHOC-GSA- 1	000731	0840	22.0	6.9	6.6	160	9	2.9	19	2,500	0.7	6	111	<0.08	0.027	0.082	0.245	0.34	1.68
240	Choccolocco Cr	CHOC-GSA- 1	000822	0810	20.0	6.6	7.0	183	0	2.5	16	190	0.5	<4	114	<0.08	0.052	0.153	0.306	0.33	1.72
240	Choccolocco Cr	CHOC-GSA- 1	000912	0810	20.5	6.5	6.9	174	22	2.5	17	380	0.5	7	111	<0.08	0.028	<0.010	0.303	0.38	1.74
240	Choccolocco Cr	CHOC-GSA- 1	001017	0840	15.0	7.7	7.8	151	16	2.6	20	140	0.7	8	91	<0.08	0.020	0.010	0.203	<0.07	1.96
240	Choccolocco Cr	CHOC-GSA- 1	001114	0830	13.0	8.8	8.0	92	3	2.3	38	240	0.6	5	79	<0.08	0.011	0.014	0.196	0.14	1.95
240	Choccolocco Cr	CHOC-GSA- 1	001205	0830	7.5	10.4	8.1	109	17	2.4	31	120	0.7	<4	94	<0.08	0.031	0.015	0.130	0.18	1.70
240	Choccolocco Cr	CHOC-GSA- 1	010108	0915	7.0	10.6	8.5	117	2	2.8	53	540	0.8	5	77	<0.08	<0.010	0.014	0.191	0.51	1.85
250	Choccolocco Cr	CHOC-GSA- 2	961203	1435	11.0	10.4	6.2	59	15	5.2	442	200	0.8	44	46	<0.08	<0.010	0.013	0.095	0.20	1.56
250	Choccolocco Cr	CHOC-GSA- 2	961231	0950	13.0	9.5	6.7	90	8	3.3	183	150	0.9	22	56	<0.08	<0.010	0.018	0.164	0.34	1.63
250	Choccolocco Cr	CHOC-GSA- 2	970130	1000	8.0	11.4	6.1	57	8	6.0	576	183	0.8	33	34	<0.08	<0.010	0.016	0.174	0.13	1.43
250	Choccolocco Cr	CHOC-GSA- 2	970219	1020	10.0	10.2	7.0	79	2	4.0	278	77	0.8	24	84	<0.08	0.010	0.021	0.192	0.45	1.60
250	Choccolocco Cr	CHOC-GSA- 2	970318	1030	14.0	9.6	6.2	78	15	3.9	254	86	0.5	13	48	<0.08	0.058	0.011	0.150	0.09	1.52
250	Choccolocco Cr	CHOC-GSA- 2	970422	0950	16.0	8.7	6.8	90	15	2.2	167	510	0.6	17	70	<0.08	<0.010	0.034	0.176	0.20	1.60
250	Choccolocco Cr	CHOC-GSA- 2	970519	1000	18.0	8.3	6.1	95	14	3.3	162	250	0.3	16	55	<0.08	0.016	0.023	0.182	0.22	1.54
250	Choccolocco Cr	CHOC-GSA- 2	970617	1010	19.0	9.0	6.2	77	25	4.0	269	570	0.5	40	42	<0.08	0.022	0.031	0.172	0.93	1.61
250	Choccolocco Cr	CHOC-GSA- 2	970729	1015	22.0	7.2	6.4	97	15	2.6	120	200	0.6	26	57	<0.08	0.022	<0.010	0.159	0.34	1.55
250	Choccolocco Cr	CHOC-GSA- 2	970821	0935	21.0	7.3	6.3	96	9	2.5	81.5	340	0.3	22	50	<0.08	0.025	<0.010	0.132	0.63	1.52
250	Choccolocco Cr	CHOC-GSA- 2	970915	0940	17.0	8.3	6.7	94	12	1.8	47.7	280	0.6	29	61	<0.08	0.023	0.019	0.092	0.39	1.52
250	Choccolocco Cr	CHOC-GSA- 2	971029	0935	10.0	10.0	6.8	61	11	2.2	165	260	0.6	19	69	<0.08	0.024	<0.010	0.093	0.63	1.46
250	Choccolocco Cr	CHOC-GSA- 2	971112	0945	7.0	10.5	6.7	99	9	2.5	84	110	0.9	4	87	<0.08	0.036	0.019	0.092	0.96	1.68
250	Choccolocco Cr	CHOC-GSA- 2	971217	0930	6.0	11.2	6.7	101	15	2.1	97.3	160	0.4	5	74	<0.08	<0.010	<0.010	0.163	0.12	1.98
250	Choccolocco Cr	CHOC-GSA- 2	980126	0945	8.0	10.8	6.7	55	17	4.6	374	6,400	0.5	12	41	<0.08	0.024	0.029	0.198	0.30	1.81
250	Choccolocco Cr	CHOC-GSA- 2	980219	1000	9.0	11.0	6.2	45	10	7.3	782	160	0.9	35	21	<0.08	0.014	0.016	0.126	0.46	1.48
250	Choccolocco Cr	CHOC-GSA- 2	980318	0945	11.0	9.9	6.6	63	6	5.4	405	140	0.6	19	N/A	<0.08	<0.010	0.021	0.134	0.11	1.43
250	Choccolocco Cr	CHOC-GSA- 2	980427	1115	16.0	9.2	6.3	72	27	4.6	180	100	0.4	12	52	<0.08	0.018	0.012	0.127	0.26	1.48
250	Choccolocco Cr	CHOC-GSA- 2	980519	1130	22.0	7.6	6.2	92	14	4.7	172	130	0.4	16	66	<0.08	0.013	0.032	0.161	0.23	1.56
250	Choccolocco Cr	CHOC-GSA- 2	980623	1130	27.0	7.0	6.6	79	10	3.2	95	150	1.7	19	88	<0.08	0.033	0.057	0.173	0.16	1.59
250	Choccolocco Cr	CHOC-GSA- 2	980727	1200	24.5	6.6	6.9	90	115	4.2	175	12,000	4.6	184	76	0.17	0.191	0.191	0.675	1.50	2.69

Appendix F-8, cont. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	yymmdd	24hr	C	mg/L	s.u.	umhos @25c	NTU	ft	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
250	Choccolocco Cr	CHOC-GSA- 2	980825	1130	24.0	6.9	6.7	121	17	3.0	59	450	0.4	23	91	<0.08	<0.010	0.017	0.150	0.30	1.52
250	Choccolocco Cr	CHOC-GSA- 2	980908	1055	25.0	7.4	7.0	141	30	2.6	36	780	0.6	19	79	<0.08	0.039	0.029	0.160	0.56	2.23
250	Choccolocco Cr	CHOC-GSA- 2	981026	1000	13.0	9.7	6.6	137	12	1.1	38	250	0.4	4	90	<0.08	0.011	<0.010	0.121	0.16	1.34
250	Choccolocco Cr	CHOC-GSA- 2	981110	0935	15.0	8.6	6.4	119	15	1.7	47	170	0.5	11	83	<0.08	0.018	<0.010	0.131	0.20	1.77
250	Choccolocco Cr	CHOC-GSA- 2	981210	0935	12.0	9.0	6.7	132	2	1.4	43	230	0.5	10	70	<0.08	<0.010	<0.010	0.079	0.15	1.42
250	Choccolocco Cr	CHOC-GSA- 2	990114	0930	10.0	10.2	6.8	106	8	2.2	103	87	0.8	14	68	<0.08	<0.010	0.029	0.186	0.14	1.54
250	Choccolocco Cr	CHOC-GSA- 2	990209	0940	13.0	9.3	6.7	101	7	2.6	147	140	0.4	18	58	<0.08	0.014	0.018	0.258	0.23	1.70
250	Choccolocco Cr	CHOC-GSA- 2	990310	0950	10.0	10.3	6.9	67	3	3.5	280	170	0.5	27	62	<0.08	<0.010	0.022	0.162	0.18	1.44
250	Choccolocco Cr	CHOC-GSA- 2	990415	0945	17.0	7.5	6.8	106	35	3.2	140	1,100	0.9	28	49	<0.08	0.073	0.064	0.262	0.42	1.77
250	Choccolocco Cr	CHOC-GSA- 2	990513	1000	20.0	7.8	7.1	97	8	3.4	130	200	0.5	20	59	<0.08	0.032	0.060	0.188	0.31	1.43
250	Choccolocco Cr	CHOC-GSA- 2	990624	0940	22.0	7.2	6.5	119	90	3.7	100	4,700	1.5	211	83	<0.08	0.094	0.287	0.468	1.76	2.16
250	Choccolocco Cr	CHOC-GSA- 2	990715	1000	23.0	7.5	7.0	95	13	3.9	147	280	0.4	26	82	<0.08	0.025	0.048	0.196	<0.07	1.53
250	Choccolocco Cr	CHOC-GSA- 2	990817	0930	25.0	6.9	7.4	125	4	2.4	25	1,500	0.4	19	103	<0.08	0.026	0.041	0.200	<0.07	1.62
250	Choccolocco Cr	CHOC-GSA- 2	990908	0930	24.0	6.7	7.3	159	20	2.2	20	350	0.5	18	94	<0.08	0.024	0.022	0.159	0.10	1.48
250	Choccolocco Cr	CHOC-GSA- 2	991028	1015	12.0	9.7	7.0	135	18	1.2	35	160	0.6	10	73	<0.08	<0.010	<0.010	0.135	0.10	1.58
250	Choccolocco Cr	CHOC-GSA- 2	991109	1030	14.0	8.8	7.0	126	14	2.5	50	140	0.7	11	72	<0.08	0.018	<0.010	0.056	0.18	1.56
250	Choccolocco Cr	CHOC-GSA- 2	991201	0945	8.0	10.7	6.6	129	10	1.3	40	140	0.5	<4	79	<0.08	0.027	<0.010	0.046	0.63	1.62
250	Choccolocco Cr	CHOC-GSA- 2	000111	0920	10.0	10.2	7.1	47	37	4.1	360	830	0.8	85	56	<0.08	<0.010	0.017	0.124	0.73	1.46
250	Choccolocco Cr	CHOC-GSA- 2	000207	0940	5.5	11.6	7.5	128	19	2.9	69	40	0.6	6	80	<0.08	<0.010	<0.010	0.193	<0.07	1.63
250	Choccolocco Cr	CHOC-GSA- 2	000328	1010	15.0	9.6	7.5	95	3	3.6	112	140	0.6	21	86	<0.08	<0.010	0.015	0.195	0.19	1.62
250	Choccolocco Cr	CHOC-GSA- 2	000411	0930	15.0	9.0	6.6	67	18	6.2	242	140	0.6	33	73	<0.08	<0.010	<0.010	0.145	0.22	1.43
250	Choccolocco Cr	CHOC-GSA- 2	000510	0850	21.0	7.3	7.0	125	17	2.9	62	180	0.6	16	84	<0.08	0.024	0.019	0.236	0.18	1.62
250	Choccolocco Cr	CHOC-GSA- 2	000607	0900	19.5	7.2	7.4	131	12	2.6	49	170	0.6	16	75	<0.08	0.047	0.051	0.293	0.45	1.69
250	Choccolocco Cr	CHOC-GSA- 2	000731	0930	24.0	6.2	7.0	177	28	2.0	27	210	0.6	13	116	<0.08	0.029	0.104	0.195	0.33	1.75
250	Choccolocco Cr	CHOC-GSA- 2	000822	0945	24.0	5.7	7.6	178	20	1.8	23	140	0.7	18	119	<0.08	0.051	0.187	0.230	0.49	2.06
250	Choccolocco Cr	CHOC-GSA- 2	000912	0925	22.5	6.5	7.2	186	18	1.9	26	160	0.8	22	116	<0.08	0.029	0.042	0.270	0.34	1.88
250	Choccolocco Cr	CHOC-GSA- 2	001017	1000	15.0	8.3	8.0	166	7	2.0	27	260	0.7	12	94	<0.08	0.015	0.012	0.161	0.17	2.08
250	Choccolocco Cr	CHOC-GSA- 2	001114	0945	12.5	9.0	8.0	100	18	1.6	47	210	0.7	13	83	<0.08	0.022	<0.010	0.187	0.20	1.98
250	Choccolocco Cr	CHOC-GSA- 2	001205	0955	7.0	11.8	8.1	124	13	2.6	42	100	0.6	<4	86	<0.08	0.025	<0.010	0.132	0.11	1.81
250	Choccolocco Cr	CHOC-GSA- 2	010108	1045	6.5	11.7	8.0	120	1	2.7	50	150	0.5	8	81	<0.08	<0.010	<0.010	0.154	0.33	1.89
250	Choccolocco Cr	CHOC-GSA- 3	961204	1030	10.0	1.4	6.3	63	20	5.5	370	80	0.8	34	44	<0.08	0.021	<0.010	0.099	0.20	1.54
250	Choccolocco Cr	CHOC-GSA- 3	961231	1030	13.0	9.7	6.7	75	7	4.6	240	120	1.1	23	42	<0.08	<0.010	0.027	0.147	0.49	1.65
250	Choccolocco Cr	CHOC-GSA- 3	970130	1050	8.0	11.0	6.1	57	15	6.6	770	130	0.8	30	44	<0.08	<0.010	<0.010	0.178	0.37	1.49
250	Choccolocco Cr	CHOC-GSA- 3	970219	1100	10.0	10.6	7.0	72	8	4.7	370	47	0.8	16	79	<0.08	0.081	0.015	0.173	0.41	1.59
250	Choccolocco Cr	CHOC-GSA- 3	970318	1110	14.0	9.9	6.2	71	18	4.6	340	60	0.6	11	43	<0.08	<0.010	0.019	0.141	0.26	1.44
250	Choccolocco Cr	CHOC-GSA- 3	970422	1030	17.0	9.3	6.9	83	15	4.4	220	100	0.6	12	60	<0.08	0.020	0.012	0.151	0.18	1.56

Appendix F-8, cont. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	yymmdd	24hr	C	mg/L	s.u.	umhos @25c	NTU	ft	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
250	Choccolocco Cr	CHOC-GSA- 3	970519	1050	18.0	8.5	6.5	92	10	3.9	215	470	0.3	12	54	<0.08	0.011	0.013	0.163	0.16	1.46
250	Choccolocco Cr	CHOC-GSA- 3	970617	1100	20.0	9.3	6.7	61	27	6.6	355	630	0.5	37	88	<0.08	0.037	0.024	0.132	0.71	1.44
250	Choccolocco Cr	CHOC-GSA- 3	970729	1100	23.0	7.4	6.5	87	15	3.0	160	178	0.5	17	56	<0.08	0.017	0.026	0.174	0.37	1.62
250	Choccolocco Cr	CHOC-GSA- 3	970821	1015	21.0	7.5	6.4	95	8	3.2	110	290	0.3	19	44	<0.08	0.034	0.011	0.152	0.44	1.59
250	Choccolocco Cr	CHOC-GSA- 3	970915	1030	18.0	8.2	6.7	101	10	2.8	53.1	240	0.5	15	45	<0.08	0.032	<0.010	0.109	0.38	1.63
250	Choccolocco Cr	CHOC-GSA- 3	971029	1000	10.0	10.2	6.8	54	18	4.1	220	260	0.1	18	65	<0.08	0.034	<0.010	0.085	0.39	1.51
250	Choccolocco Cr	CHOC-GSA- 3	971112	1025	6.0	10.6	6.7	97	6	3.4	110	110	1.0	5	87	<0.08	0.025	<0.010	0.093	0.28	1.73
250	Choccolocco Cr	CHOC-GSA- 3	971217	1010	6.0	11.5	6.7	79	17	3.5	130	73	0.5	4	68	<0.08	0.017	<0.010	0.152	0.12	2.00
250	Choccolocco Cr	CHOC-GSA- 3	980126	1030	8.0	10.7	6.7	46	18	5.4	500	4,100	0.5	13	39	<0.08	0.040	0.026	0.181	0.50	1.78
250	Choccolocco Cr	CHOC-GSA- 3	980219	1100	10.0	11.2	6.0	37	8	7.0	1,040	170	1.0	30	24	<0.08	0.013	0.018	0.123	0.44	1.44
250	Choccolocco Cr	CHOC-GSA- 3	980318	1030	11.0	10.2	6.6	57	3	5.6	540	87	0.8	18	52	<0.08	<0.010	0.019	0.124	0.15	1.40
250	Choccolocco Cr	CHOC-GSA- 3	980427	1150	17.0	9.5	6.2	73	23	5.0	240	60	0.4	10	50	<0.08	0.016	0.015	0.123	0.17	1.49
250	Choccolocco Cr	CHOC-GSA- 3	980519	1220	23.0	8.4	6.4	77	18	3.6	230	67	0.5	13	62	<0.08	0.014	0.034	0.144	0.36	1.62
250	Choccolocco Cr	CHOC-GSA- 3	980623	1215	27.0	7.9	6.4	87	20	3.0	130	130	0.4	21	89	<0.08	0.022	0.043	0.183	0.20	1.65
250	Choccolocco Cr	CHOC-GSA- 3	980727	1245	25.0	7.3	6.8	103	4	3.0	200	770	0.5	32	75	<0.08	0.011	0.020	0.194	0.17	1.35
250	Choccolocco Cr	CHOC-GSA- 3	980825	1215	24.0	8.4	6.7	117	17	2.4	80	140	0.4	19	94	<0.08	<0.010	0.013	0.161	0.26	1.51
250	Choccolocco Cr	CHOC-GSA- 3	980908	1125	25.0	7.7	6.5	133	16	2.3	48	240	0.7	12	81	<0.08	0.022	0.011	0.130	0.14	1.80
250	Choccolocco Cr	CHOC-GSA- 3	981026	1040	13.0	9.8	6.5	145	14	2.5	40	70	0.4	4	92	<0.08	0.014	<0.010	0.123	0.16	1.41
250	Choccolocco Cr	CHOC-GSA- 3	981110	1000	14.5	8.9	6.4	123	10	2.8	56	120	0.5	10	85	<0.08	0.024	<0.010	0.095	0.20	2.11
250	Choccolocco Cr	CHOC-GSA- 3	981210	1010	12.5	9.2	6.7	128	5	2.2	52	140	0.5	8	68	<0.08	0.011	<0.010	0.070	0.15	1.42
250	Choccolocco Cr	CHOC-GSA- 3	990114	1015	10.0	10.5	6.8	100	9	3.4	140	67	0.7	12	66	<0.08	0.014	0.023	0.172	0.21	1.60
250	Choccolocco Cr	CHOC-GSA- 3	990209	1020	14.0	9.6	6.8	98	6	3.9	200	120	0.4	16	57	<0.08	0.018	0.021	0.230	0.22	1.68
250	Choccolocco Cr	CHOC-GSA- 3	990310	1015	10.0	10.4	6.6	70	7	4.5	370	670	0.6	30	63	<0.08	<0.010	0.020	0.173	0.41	1.56
250	Choccolocco Cr	CHOC-GSA- 3	990415	1015	18.0	8.9	6.6	98	13	3.9	190	180	0.5	10	44	<0.08	<0.010	0.022	0.139	0.17	1.36
250	Choccolocco Cr	CHOC-GSA- 3	990513	1045	20.0	8.2	7.0	93	30	3.5	170	100	0.4	19	59	<0.08	0.045	0.058	0.183	0.38	1.44
250	Choccolocco Cr	CHOC-GSA- 3	990624	1010	22.0	7.0	6.5	112	50	3.5	130	5,200	1.3	202	78	<0.08	0.082	0.157	0.430	0.51	1.91
250	Choccolocco Cr	CHOC-GSA- 3	990715	1025	23.0	7.6	6.9	93	17	3.4	200	240	0.3	25	69	<0.08	<0.010	0.042	0.188	0.65	1.50
250	Choccolocco Cr	CHOC-GSA- 3	990817	1005	25.0	7.0	7.4	140	8	1.9	47	50	0.3	30	102	<0.08	0.017	0.038	0.236	0.27	1.67
250	Choccolocco Cr	CHOC-GSA- 3	990908	1010	24.0	6.5	7.2	157	14	1.7	27	180	0.4	13	94	<0.08	0.025	0.019	0.189	0.13	1.50
250	Choccolocco Cr	CHOC-GSA- 3	991028	1045	12.0	9.9	6.8	145	32	2.6	41	190	0.6	52	72	<0.08	<0.010	<0.010	0.115	0.24	1.66
250	Choccolocco Cr	CHOC-GSA- 3	991109	1100	14.0	9.3	6.8	125	14	3.0	60	80	0.6	8	78	<0.08	0.013	<0.010	0.047	0.16	1.57
250	Choccolocco Cr	CHOC-GSA- 3	991201	1015	7.0	10.8	6.6	119	10	2.4	41	67	0.5	<4	77	<0.08	0.032	<0.010	0.021	1.16	1.58
250	Choccolocco Cr	CHOC-GSA- 3	000111	0945	10.5	10.0	6.8	57	43	4.8	410	1,600	0.8	91	58	<0.08	0.017	0.019	0.152	0.77	1.48
250	Choccolocco Cr	CHOC-GSA- 3	000207	1020	6.0	12.0	6.8	125	1	3.6	410	50	0.6	<4	74	<0.08	0.019	0.011	0.163	0.28	1.63
250	Choccolocco Cr	CHOC-GSA- 3	000328	1055	15.5	10.2	7.1	87	11	3.5	140	90	0.4	17	82	<0.08	<0.010	0.011	0.167	0.11	1.68
250	Choccolocco Cr	CHOC-GSA- 3	000411	1010	15.0	9.2	6.8	62	17	6.3	320	130	0.6	29	64	<0.08	0.011	<0.010	0.122	0.28	1.40

Appendix F-8, cont. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	yymmdd	24hr	C	mg/L	s.u.	umhos @25c	NTU	ft	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
250	Choccolocco Cr	CHOC-GSA- 3	000510	0925	21.0	7.4	7.0	121	4	3.4	80	100	0.5	9	80	<0.08	0.025	0.013	0.229	0.15	1.60
250	Choccolocco Cr	CHOC-GSA- 3	000607	0945	19.0	8.2	7.2	134	12	2.8	60	130	0.4	20	73	<0.08	0.045	0.050	0.303	0.22	1.70
250	Choccolocco Cr	CHOC-GSA- 3	000731	0955	24.0	6.1	6.7	160	33	2.5	35	410	0.6	20	102	<0.08	0.016	0.129	0.233	0.46	1.79
250	Choccolocco Cr	CHOC-GSA- 3	000822	1010	23.0	5.7	7.4	174	11	3.8	30	140	0.5	8	112	<0.08	0.061	0.103	0.285	0.36	1.84
250	Choccolocco Cr	CHOC-GSA- 3	000912	1010	23.0	6.7	7.1	190	13	4.4	35	110	0.6	12	112	<0.08	0.027	0.012	0.285	0.43	1.91
250	Choccolocco Cr	CHOC-GSA- 3	001017	1035	15.5	8.2	8.0	163	5	2.5	34	53	0.7	12	93	<0.08	0.010	0.014	0.161	0.13	2.04
250	Choccolocco Cr	CHOC-GSA- 3	001114	1025	12.5	9.3	8.1	84	25	2.8	56	150	0.7	13	76	<0.08	0.016	<0.010	0.170	0.26	1.91
250	Choccolocco Cr	CHOC-GSA- 3	001205	1025	7.0	11.4	7.9	111	4	3.7	53	73	0.6	<4	88	<0.08	0.026	0.010	0.102	0.17	1.74
250	Choccolocco Cr	CHOC-GSA- 3	010108	1120	6.0	12.2	7.3	124	9	2.8	70	60	0.3	8	69	<0.08	<0.010	<0.010	0.056	0.28	1.76
250	Choccolocco Cr	CHOC-GSA- 4	961204	1115	10.0	1.2	6.3	121	23	4.0	484	4,800	1.0	38	38	<0.08	<0.010	0.144	0.160	0.41	7.59
250	Salt Creek	CHOC-GSA- 5	961204	1210	8.0	2.2	6.8	46	4	0.6	14	7	0.8	<4	38	<0.08	<0.010	<0.010	0.010	0.53	2.17
250	Salt Creek	CHOC-GSA- 5	961231	1120	14.0	10.4	6.8	34	6	0.6	21.1	110	1.2	<4	19	<0.08	<0.010	<0.010	0.013	0.24	1.84
250	Salt Creek	CHOC-GSA- 5	970130	1150	8.0	10.6	6.2	28	3	0.8	52	43	0.4	<4	29	<0.08	<0.010	<0.010	0.023	0.07	1.45
250	Salt Creek	CHOC-GSA- 5	970219	1150	10.0	11.6	6.9	23	4	1.0	34.2	23	0.8	<4	55	<0.08	0.019	<0.010	0.013	<0.07	1.58
250	Salt Creek	CHOC-GSA- 5	970318	1200	14.0	10.8	6.5	22	10	0.6	30.4	44	0.7	<4	25	<0.08	<0.010	<0.010	0.017	0.17	1.74
250	Salt Creek	CHOC-GSA- 5	970422	1130	16.0	9.9	6.8	27	7	0.6	20.2	150	0.5	5	45	<0.08	<0.010	<0.010	0.010	0.12	1.63
250	Salt Creek	CHOC-GSA- 5	970519	1140	19.0	9.4	6.6	32	4	0.4	6.59	97	0.4	4	30	<0.08	0.010	<0.010	0.017	<0.07	1.80
250	Salt Creek	CHOC-GSA- 5	970617	1145	18.0	10.7	6.7	24	28	1.8	55	420	0.3	25	29	<0.08	0.018	<0.010	0.030	0.77	1.25
250	Salt Creek	CHOC-GSA- 5	970729	1150	23.0	8.2	6.7	35	4	0.6	11	370	0.1	<4	25	<0.08	0.013	<0.010	0.018	0.12	1.69
250	Salt Creek	CHOC-GSA- 5	970821	1100	22.0	8.2	6.8	36	6	0.8	3.06	88	0.2	<4	14	<0.08	0.027	<0.010	0.013	<0.07	1.78
250	Salt Creek	CHOC-GSA- 5	970915	1140	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	971029	1045	8.0	11.0	6.9	29	15	0.7	4.73	240	0.3	5	62	<0.08	0.012	<0.010	<0.010	0.25	1.97
250	Salt Creek	CHOC-GSA- 5	971112	1110	5.0	11.2	6.5	36	22	0.6	2.73	150	1.4	13	62	<0.08	0.024	<0.010	<0.010	0.33	2.19
250	Salt Creek	CHOC-GSA- 5	971217	1100	4.0	12.6	6.6	21	15	0.8	17.8	57	0.8	<4	35	<0.08	0.010	<0.010	<0.010	0.20	2.16
250	Salt Creek	CHOC-GSA- 5	980126	1110	6.0	12.0	6.7	19	8	0.9	47	720	0.6	<4	28	<0.08	0.036	0.021	0.027	0.08	1.88
250	Salt Creek	CHOC-GSA- 5	980219	1200	9.0	12.0	6.2	17	6	1.3	84	17	0.9	7	<10	<0.08	0.017	<0.010	0.034	0.08	1.55
250	Salt Creek	CHOC-GSA- 5	980318	1115	11.0	10.8	6.6	24	5	1.0	60	73	0.7	7	38	<0.08	<0.010	0.017	0.027	0.12	1.53
250	Salt Creek	CHOC-GSA- 5	980427	1300	17.0	10.8	6.4	25	17	0.9	40	33	0.4	<4	31	<0.08	0.011	<0.010	0.014	0.23	1.66
250	Salt Creek	CHOC-GSA- 5	980519	1340	23.0	9.1	6.6	31	14	0.8	14	93	0.7	<4	33	<0.08	0.010	0.011	<0.010	0.18	1.73
250	Salt Creek	CHOC-GSA- 5	980623	1300	28.0	7.6	6.5	40	22	0.6	2.7	180	0.4	<4	59	<0.08	<0.010	0.017	0.034	<0.07	1.93
250	Salt Creek	CHOC-GSA- 5	980727	1350	26.5	7.8	7.7	36	8	0.6	2.4	290	0.5	4	41	<0.08	0.023	<0.010	0.022	0.14	1.37
250	Salt Creek	CHOC-GSA- 5	980825	1300	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	980908	1215	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	981026	1130	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	981110	1045	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	981210	1100	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---

Appendix F-8, cont. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	yymmdd	24hr	C	mg/L	s.u.	umhos @25c	NTU	ft	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
250	Salt Creek	CHOC-GSA- 5	990114	1100	10.0	11.2	6.7	37	3	0.9	9.7	57	0.5	<4	29	<0.08	<0.010	0.039	0.010	0.09	2.22
250	Salt Creek	CHOC-GSA- 5	990209	1115	12.0	10.6	6.8	31	2	0.8	11	40	0.4	<4	24	<0.08	<0.010	0.017	0.033	0.07	1.81
250	Salt Creek	CHOC-GSA- 5	990310	1115	10.0	11.7	6.6	35	3	0.8	39	20	0.4	5	41	<0.08	<0.010	0.031	0.012	0.28	1.54
250	Salt Creek	CHOC-GSA- 5	990415	1125	18.0	9.0	7.3	37	27	0.6	23	260	0.8	15	23	<0.08	0.012	0.033	0.031	0.12	1.46
250	Salt Creek	CHOC-GSA- 5	990513	1145	20.0	9.1	7.2	37	18	0.5	6	70	0.4	<4	32	<0.08	0.022	<0.010	0.011	0.12	1.63
250	Salt Creek	CHOC-GSA- 5	990624	1130	23.0	7.5	6.6	31	140	0.6	8.8	7,400	1.6	118	32	<0.08	0.076	0.050	0.200	0.69	1.37
250	Salt Creek	CHOC-GSA- 5	990715	1130	24.0	8.1	6.9	41	17	0.4	6	660	0.5	4	47	<0.08	0.055	0.041	<0.010	0.34	1.62
250	Salt Creek	CHOC-GSA- 5	990817	1101	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	990908	1101	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	991028	1155	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	991109	1204	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	991201	1120	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	000111	1045	9.0	11.3	6.9	33	22	0.8	32	450	0.4	6	65	<0.08	0.010	<0.010	0.056	0.18	2.24
250	Salt Creek	CHOC-GSA- 5	000207	1140	5.0	13.0	6.1	47	17	0.3	4	10	0.5	<4	42	<0.08	<0.010	<0.010	<0.010	0.21	2.22
250	Salt Creek	CHOC-GSA- 5	000328	1155	15.5	11.2	6.4	29	<1	0.6	16	110	0.7	31	55	<0.08	0.012	<0.010	<0.010	<0.07	1.89
250	Salt Creek	CHOC-GSA- 5	000411	1100	14.5	10.4	7.7	34	34	1.2	33	20	0.4	<4	45	<0.08	0.014	<0.010	0.027	0.16	1.70
250	Salt Creek	CHOC-GSA- 5	000510	1035	22.0	8.0	7.1	39	20	0.4	2.2	23	0.6	<4	46	<0.08	0.011	<0.010	<0.010	<0.07	1.89
250	Salt Creek	CHOC-GSA- 5	000607	1045	20.0	9.0	7.5	38	10	0.5	1	140	0.5	11	31	<0.08	0.022	0.043	<0.010	0.46	1.90
250	Salt Creek	CHOC-GSA- 5	000731	1030	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	000822	1110	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	000912	1100	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	001017	1035	---	---	---	---	---	Dry	---	---	---	---	---	---	---	---	---	---	---
250	Salt Creek	CHOC-GSA- 5	001114	1125	10.5	10.4	7.5	50	24	0.5	0.42	190	0.9	<4	73	<0.08	0.019	<0.010	<0.010	0.24	2.66
250	Salt Creek	CHOC-GSA- 5	001205	1130	5.0	12.2	6.9	45	8	0.6	1	100	1.1	<4	52	<0.08	0.017	<0.010	<0.010	0.22	2.46
250	Salt Creek	CHOC-GSA- 5	010108	1215	4.0	12.4	7.4	54	57	1.0	9	140	0.5	52	60	<0.08	0.013	<0.010	0.100	0.30	2.35
250	Choccolocco Cr	CHOC-GSA- 6	961204	1300	11.0	11.1	7.0	139	22	2.5	660	960	1.4	33	83	<0.08	0.041	0.071	0.253	0.83	7.89
250	Choccolocco Cr	CHOC-GSA- 6	961231	1220	15.0	9.7	6.9	141	10	3.0	420	5,200	1.6	21	72	<0.08	0.072	0.042	0.257	0.62	4.11
250	Choccolocco Cr	CHOC-GSA- 6	970130	1240	8.0	11.2	6.8	92	18	3.6	1,680	1,480	1.4	45	56	<0.08	<0.010	0.051	0.268	0.28	2.97
250	Choccolocco Cr	CHOC-GSA- 6	970219	1240	11.0	10.8	7.3	135	10	3.0	904	23	1.0	16	109	<0.08	0.040	0.026	0.370	0.28	5.49
250	Choccolocco Cr	CHOC-GSA- 6	970318	1300	15.0	11.0	6.6	140	14	2.8	656	86	1.0	7	90	0.10	0.124	<0.010	0.351	0.34	7.95
250	Choccolocco Cr	CHOC-GSA- 6	970422	1220	18.0	10.2	6.6	175	8	2.6	500	86	0.8	11	106	<0.08	0.073	<0.010	0.372	0.10	8.65
250	Choccolocco Cr	CHOC-GSA- 6	970519	1230	19.0	9.7	6.8	165	8	3.0	310	86	0.8	12	98	<0.08	0.049	<0.010	0.335	0.25	6.44
250	Choccolocco Cr	CHOC-GSA- 6	970617	1300	20.0	9.2	6.6	95	115	5.5	1,350	24,000	1.4	132	70	<0.08	0.067	0.021	0.251	1.79	3.94
250	Choccolocco Cr	CHOC-GSA- 6	970729	1240	23.0	7.6	6.7	193	35	2.0	360	660	1.0	36	126	<0.08	0.142	0.020	0.583	0.61	10.30
250	Choccolocco Cr	CHOC-GSA- 6	970821	1200	22.0	7.5	6.5	277	15	1.5	230	200	0.7	14	169	0.08	0.233	0.087	1.170	0.65	22.10
250	Choccolocco Cr	CHOC-GSA- 6	970915	1220	18.0	8.5	6.9	280	9	1.4	150	82	0.6	11	161	0.09	0.198	0.014	0.640	0.45	22.60

Appendix F-8, cont. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	yymmdd	24hr	C	mg/L	s.u.	umhos @25c	NTU	ft	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
250	Choccolocco Cr	CHOC-GSA- 6	971029	1130	10.0	10.2	6.9	110	17	2.8	440	340	0.6	19	103	<0.08	0.114	0.030	0.381	0.61	5.77
250	Choccolocco Cr	CHOC-GSA- 6	971112	1200	7.0	10.2	6.7	232	9	1.6	250	80	1.1	5	175	<0.08	0.164	<0.010	0.666	0.36	15.70
250	Choccolocco Cr	CHOC-GSA- 6	971217	1140	7.0	12.0	6.7	210	15	2.0	270	100	0.8	6	140	<0.08	0.100	0.010	0.553	0.23	15.70
250	Choccolocco Cr	CHOC-GSA- 6	980126	1210	9.0	10.8	6.7	96	12	2.8	940	19,000	1.0	21	74	<0.08	0.064	0.035	0.394	0.37	5.79
250	Choccolocco Cr	CHOC-GSA- 6	980219	1245	10.0	11.2	6.5	70	22	6.1	1,800	5,500	1.3	41	38	<0.08	0.041	0.127	0.221	0.59	2.92
250	Choccolocco Cr	CHOC-GSA- 6	980318	1210	12.0	10.1	6.6	111	8	5.0	1,050	29,000	0.7	9	83	<0.08	<0.010	0.070	0.253	0.39	4.61
250	Choccolocco Cr	CHOC-GSA- 6	980427	1410	18.0	9.5	6.7	150	10	5.0	760	33	0.3	10	99	<0.08	0.051	0.020	0.366	0.28	7.91
250	Choccolocco Cr	CHOC-GSA- 6	980519	1410	24.0	7.9	6.6	204	20	2.0	400	53	0.5	9	131	<0.08	0.077	0.034	0.416	0.24	11.70
250	Choccolocco Cr	CHOC-GSA- 6	980623	1400	28.0	7.5	6.8	252	15	2.0	190	100	0.5	15	173	0.13	0.121	0.038	0.574	<0.07	15.40
250	Choccolocco Cr	CHOC-GSA- 6	980727	1440	26.0	7.3	6.9	271	3	2.0	210	200	0.6	16	167	0.12	0.126	0.012	0.612	0.21	15.20
250	Choccolocco Cr	CHOC-GSA- 6	980825	1320	26.0	8.1	6.3	327	17	2.6	110	100	0.5	11	209	0.11	0.121	<0.010	0.535	0.27	21.20
250	Choccolocco Cr	CHOC-GSA- 6	980908	1245	26.0	7.7	6.5	272	7	2.0	110	140	0.8	8	159	0.22	0.192	0.018	0.744	0.37	12.50
250	Choccolocco Cr	CHOC-GSA- 6	981026	1150	14.0	9.4	6.5	429	2	1.4	70	43	0.4	<4	253	0.19	0.195	0.011	1.020	0.19	26.90
250	Choccolocco Cr	CHOC-GSA- 6	981110	1110	16.0	8.6	6.5	380	3	1.4	100	63	0.4	7	219	0.24	0.246	<0.010	1.440	0.20	23.10
250	Choccolocco Cr	CHOC-GSA- 6	981210	1125	14.0	8.9	6.8	236	5	1.2	90	110	0.5	13	134	0.19	0.202	<0.010	1.150	0.18	11.20
250	Choccolocco Cr	CHOC-GSA- 6	990114	1140	10.0	10.4	6.9	267	7	1.5	240	120	0.9	9	140	0.08	0.086	0.110	0.486	0.17	18.30
250	Choccolocco Cr	CHOC-GSA- 6	990209	1200	14.0	9.3	7.0	192	2	2.0	340	83	0.4	11	107	<0.08	0.048	0.033	0.518	0.22	9.94
250	Choccolocco Cr	CHOC-GSA- 6	990310	1150	12.0	10.5	6.8	164	10	3.6	640	910	0.9	120	116	<0.08	0.065	0.039	0.335	0.49	9.61
250	Choccolocco Cr	CHOC-GSA- 6	990415	1210	20.0	8.9	7.0	207	7	2.0	640	170	0.3	6	104	<0.08	0.090	0.043	0.424	0.38	10.80
250	Choccolocco Cr	CHOC-GSA- 6	990513	1230	21.0	8.3	6.7	187	22	2.0	340	130	0.5	15	77	<0.08	0.121	0.036	0.497	0.28	8.44
250	Choccolocco Cr	CHOC-GSA- 6	990624	1220	24.0	7.9	6.9	316	25	1.4	1,020	500	0.7	25	211	0.15	0.247	0.051	0.800	0.43	21.10
250	Choccolocco Cr	CHOC-GSA- 6	990715	1210	24.0	7.5	7.6	171	12	2.0	460	390	0.5	23	119	<0.08	0.076	0.058	0.443	0.44	6.61
250	Choccolocco Cr	CHOC-GSA- 6	990817	1130	26.0	7.5	7.6	326	5	1.8	117	100	0.4	11	209	0.14	0.241	0.038	0.899	0.25	17.40
250	Choccolocco Cr	CHOC-GSA- 6	990908	1135	25.0	7.3	7.6	323	12	2.0	92	30	0.3	7	190	0.22	0.281	0.015	0.839	0.15	17.60
250	Choccolocco Cr	CHOC-GSA- 6	991028	1215	14.0	9.8	6.7	425	0	1.0	86	140	0.7	<4	236	0.27	0.282	0.012	1.450	0.20	27.60
250	Choccolocco Cr	CHOC-GSA- 6	991109	1235	16.0	9.7	6.9	371	9	2.0	90	150	0.7	4	220	0.20	0.242	<0.010	1.030	0.23	27.30
250	Choccolocco Cr	CHOC-GSA- 6	991201	1140	9.0	12.0	6.8	336	17	1.0	90	380	0.5	<4	89	0.19	0.246	<0.010	0.706	0.74	20.90
250	Choccolocco Cr	CHOC-GSA- 6	000111	1130	11.0	10.0	6.8	145	57	2.3	670	1,700	1.1	79	110	0.10	0.147	0.068	0.468	0.87	10.10
250	Choccolocco Cr	CHOC-GSA- 6	000207	1220	7.5	12.6	7.2	286	4	2.5	190	40	0.5	4	157	<0.08	0.089	<0.010	0.552	0.20	17.10
250	Choccolocco Cr	CHOC-GSA- 6	000328	1245	17.0	9.1	7.3	155	4	2.6	400	77	0.3	<4	118	0.11	0.109	0.068	0.465	0.39	4.51
250	Choccolocco Cr	CHOC-GSA- 6	000411	1145	15.5	9.5	7.2	125	17	3.7	890	140	0.5	35	96	<0.08	0.043	0.015	0.318	0.66	4.97
250	Choccolocco Cr	CHOC-GSA- 6	000510	1145	22.5	7.7	7.4	325	3	2.6	210	33	0.6	6	218	0.15	0.152	0.022	0.622	0.17	19.50
250	Choccolocco Cr	CHOC-GSA- 6	000607	1140	21.5	7.4	7.4	281	10	2.0	145	60	0.6	10	165	0.24	0.220	0.056	1.100	0.43	15.60
250	Choccolocco Cr	CHOC-GSA- 6	000731	1055	25.0	6.5	7.2	426	5	1.0	110	270	0.4	5	267	0.45	0.451	0.146	1.690	0.48	27.16
250	Choccolocco Cr	CHOC-GSA- 6	000822	1145	25.5	6.3	7.5	554	0	1.6	60	30	0.5	36	332	0.50	0.436	0.159	1.510	0.80	45.20
250	Choccolocco Cr	CHOC-GSA- 6	000912	1120	24.0	7.5	7.2	605	20	2.0	54	60	1.7	12	366	0.50	0.427	0.049	2.090	0.59	54.20

Appendix F-8, cont. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	yymmdd	24hr	C	mg/L	s.u.	umhos @25c	NTU	ft	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
250	Choccolocco Cr	CHOC-GSA- 6	001017	1155	17.0	9.0	7.9	455	35	1.8	60	47	1.0	10	287	0.40	0.425	0.031	1.610	0.34	34.90
250	Choccolocco Cr	CHOC-GSA- 6	001114	1225	12.5	9.5	7.8	226	35	1.4	130	160	0.9	11	163	0.10	0.137	0.017	0.642	0.38	15.30
250	Choccolocco Cr	CHOC-GSA- 6	001205	1215	8.0	11.0	8.1	281	12	2.2	120	120	0.9	8	166	0.17	0.206	0.042	0.781	0.51	20.30
250	Egoniaga Cr	CHOC-GSA- 6	010108	1300	6.5	12.2	7.7	423	4	1.7	150	10	1.0	7	227	0.32	0.321	0.215	0.431	0.62	29.10
250	Egoniaga Cr	CHOC-GSA- 7	961231	0910	14.0	9.1	6.6	117	1	1.0	7.56	123	0.9	4	58	<0.08	0.011	0.035	0.253	0.55	2.06
250	Egoniaga Cr	CHOC-GSA- 7	970130	0920	8.0	11.4	6.3	82	2	1.4	18.5	70	0.7	5	53	<0.08	<0.010	0.012	0.441	0.22	1.90
250	Egoniaga Cr	CHOC-GSA- 7	970219	0930	10.0	11.0	7.2	98	1	1.5	12.9	73	0.9	5	97	<0.08	0.078	0.020	0.335	0.26	1.98
250	Egoniaga Cr	CHOC-GSA- 7	970318	0950	14.0	11.8	6.2	79	10	1.1	13.1	112	1.4	<4	56	<0.08	0.022	<0.010	0.263	0.10	1.73
250	Egoniaga Cr	CHOC-GSA- 7	970422	0920	16.0	9.4	6.5	82	18	1.0	10.5	630	0.8	14	67	<0.08	0.046	<0.010	0.234	0.10	1.82
250	Egoniaga Cr	CHOC-GSA- 7	970519	0930	17.0	8.7	6.0	116	6	1.0	8.24	530	0.5	9	68	<0.08	0.013	0.016	0.278	0.14	1.81
250	Egoniaga Cr	CHOC-GSA- 7	970617	0930	18.0	9.0	5.9	100	25	1.0	13.6	620	0.9	9	68	<0.08	0.048	0.132	0.422	0.93	2.95
250	Egoniaga Cr	CHOC-GSA- 7	970729	0945	21.0	7.8	6.4	131	5	0.6	4.68	186	0.4	<4	76	<0.08	0.022	<0.010	0.272	0.21	2.12
250	Egoniaga Cr	CHOC-GSA- 7	970821	0900	20.0	7.4	6.2	124	10	0.6	3.64	240	0.3	6	71	<0.08	0.061	0.012	0.265	0.32	2.07
250	Egoniaga Cr	CHOC-GSA- 7	970915	0915	16.0	7.7	6.6	140	12	0.8	2.14	108	0.6	7	61	<0.08	0.135	0.010	0.162	0.32	2.24
250	Egoniaga Cr	CHOC-GSA- 7	971029	0905	8.0	10.0	6.9	102	7	0.7	3.49	120	<0.1	<4	99	<0.08	0.042	<0.010	0.224	0.18	2.30
250	Egoniaga Cr	CHOC-GSA- 7	971112	0915	6.0	10.6	6.7	122	8	0.7	3.22	160	0.6	<4	101	<0.08	0.018	<0.010	0.204	0.20	2.33
250	Egoniaga Cr	CHOC-GSA- 7	971217	0900	5.0	11.6	6.6	91	12	0.8	5.85	110	0.7	<4	74	<0.08	0.015	<0.010	0.253	0.12	2.44
250	Egoniaga Cr	CHOC-GSA- 7	980126	0905	6.0	11.8	6.8	76	11	1.3	14	4,700	0.6	<4	65	<0.08	0.029	0.022	0.358	0.13	2.33
250	Egoniaga Cr	CHOC-GSA- 7	980219	0930	8.0	11.8	6.5	74	7	1.5	24	57	0.7	4	45	<0.08	0.029	0.018	0.253	<0.07	1.85
250	Egoniaga Cr	CHOC-GSA- 7	980318	0910	11.0	10.4	6.6	91	5	1.4	20	170	0.7	21	74	<0.08	<0.010	0.021	0.267	<0.07	1.85
250	Egoniaga Cr	CHOC-GSA- 7	980427	1025	16.0	9.1	6.1	80	3	1.3	15	200	0.3	<4	64	<0.08	0.022	0.011	0.174	0.21	1.95
250	Egoniaga Cr	CHOC-GSA- 7	980519	1030	20.0	8.2	6.4	105	17	1.7	8.4	420	0.7	13	77	<0.08	0.020	0.042	0.234	0.35	1.94
250	Egoniaga Cr	CHOC-GSA- 7	980623	1100	25.0	6.9	6.5	106	30	1.1	5.6	200	1.0	13	107	0.12	0.125	0.050	0.349	0.34	2.13
250	Egoniaga Cr	CHOC-GSA- 7	980727	1115	23.0	6.8	7.2	76	500	4.5	75	50,000	5.4	1,230	66	0.20	0.257	0.422	0.670	4.59	4.50
250	Egoniaga Cr	CHOC-GSA- 7	980825	1050	22.0	7.3	6.9	116	17	1.0	5.7	150	0.4	6	94	<0.08	<0.010	<0.010	0.276	0.14	1.98
250	Egoniaga Cr	CHOC-GSA- 7	980908	1020	23.0	7.5	6.6	140	17	0.9	3.4	410	0.7	6	91	<0.08	0.015	0.012	0.278	0.19	2.73
250	Egoniaga Cr	CHOC-GSA- 7	981026	0930	13.0	9.3	6.6	145	6	0.7	1.8	140	0.4	<4	98	<0.08	<0.010	0.016	0.240	0.12	2.09
250	Egoniaga Cr	CHOC-GSA- 7	981110	0900	15.5	7.8	6.2	133	10	0.8	3.2	110	0.4	7	90	<0.08	<0.010	<0.010	0.272	0.21	3.34
250	Egoniaga Cr	CHOC-GSA- 7	981210	0910	11.0	9.2	6.8	149	3	0.7	2.8	210	0.5	7	78	<0.08	<0.010	0.011	0.211	0.11	2.05
250	Egoniaga Cr	CHOC-GSA- 7	990114	0900	10.0	10.2	6.8	128	6	0.8	5.2	63	0.6	4	72	<0.08	<0.010	0.016	0.295	0.10	<0.02
250	Egoniaga Cr	CHOC-GSA- 7	990209	0905	12.0	9.7	6.8	123	2	1.2	9	100	0.3	5	71	<0.08	<0.010	0.046	0.360	0.09	2.16
250	Egoniaga Cr	CHOC-GSA- 7	990310	0930	10.0	11.2	6.7	84	5	1.2	14	53	0.4	7	74	<0.08	0.013	0.038	0.232	0.19	1.93
250	Egoniaga Cr	CHOC-GSA- 7	990415	0910	17.0	7.7	7.0	125	25	1.1	11	780	0.9	13	60	<0.08	0.022	0.046	0.298	0.29	1.84
250	Egoniaga Cr	CHOC-GSA- 7	990513	0935	19.0	8.0	6.9	127	15	0.8	3	100	0.5	8	112	<0.08	0.033	0.022	0.317	0.21	1.90
250	Egoniaga Cr	CHOC-GSA- 7	990624	0900	21.0	7.1	6.5	167	30	1.2	20	1,900	1.4	115	80	<0.08	0.014	0.056	0.265	2.34	1.73
250	Egoniaga Cr	CHOC-GSA- 7	990715	0915	21.0	7.9	6.9	115	23	1.2	7	130	0.6	4	81	<0.08	0.033	0.054	0.376	0.24	2.08

Appendix F-8, cont. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	*yymmdd*	24hr	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*ft*	*cfs*	*col/100mL*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
250	Egoniaga Cr	CHOC-GSA- 7	990817	0900	24.0	6.3	7.1	172	10	0.7	2	200	0.9	5	117	<0.08	0.031	0.019	0.272	0.17	2.15
250	Egoniaga Cr	CHOC-GSA- 7	990908	0850	22.0	6.2	6.7	112	13	0.5	1.5	100	0.6	<4	112	<0.08	0.016	0.036	0.209	0.10	2.31
250	Egoniaga Cr	CHOC-GSA- 7	991028	0950	12.0	8.9	6.7	161	15	0.8	1.8	150	0.8	23	89	<0.08	0.029	0.040	0.309	0.17	2.32
250	Egoniaga Cr	CHOC-GSA- 7	991109	1000	14.0	8.8	6.9	163	10	0.9	2.2	220	0.5	5	91	<0.08	0.010	<0.010	0.162	<0.07	2.46
250	Egoniaga Cr	CHOC-GSA- 7	991201	0915	6.0	10.7	6.7	149	10	1.0	2.2	170	0.7	<4	85	<0.08	0.037	0.024	0.299	1.28	2.32
250	Egoniaga Cr	CHOC-GSA- 7	000111	0850	8.5	10.2	6.7	85	25	1.3	8.0	330	0.3	12	72	<0.08	0.012	0.031	0.323	0.24	2.10
250	Egoniaga Cr	CHOC-GSA- 7	000207	0910	5.5	12.0	7.0	147	10	0.6	3	120	0.5	<4	90	<0.08	0.020	0.019	0.435	0.11	2.36
250	Egoniaga Cr	CHOC-GSA- 7	000328	0945	15.0	10.4	7.1	129	<1	0.8	4	57	0.5	4	103	<0.08	0.018	<0.010	0.416	0.21	2.41
250	Egoniaga Cr	CHOC-GSA- 7	000411	0900	14.5	9.1	6.5	119	6	0.6	7	190	0.4	9	91	<0.08	0.018	<0.010	0.572	0.40	2.62
250	Egoniaga Cr	CHOC-GSA- 7	000510	0820	20.0	7.1	6.7	155	23	0.7	4	280	0.9	7	102	<0.08	0.028	0.036	0.401	0.17	2.27
250	Egoniaga Cr	CHOC-GSA- 7	000607	0830	18.0	8.3	7.0	157	15	0.6	3	160	0.5	7	87	<0.08	0.039	0.054	0.365	0.53	2.36
250	Egoniaga Cr	CHOC-GSA- 7	000731	0905	22.5	6.6	6.7	175	15	0.5	0.87	290	0.5	7	116	<0.08	0.038	0.117	0.350	0.35	2.71
250	Egoniaga Cr	CHOC-GSA- 7	000822	0900	21.5	7.3	7.4	178	17	0.4	0.90	330	0.5	61	109	<0.08	0.026	0.244	0.379	0.72	2.62
250	Egoniaga Cr	CHOC-GSA- 7	000912	0850	22.0	7.7	7.3	210	9	0.5	0.90	380	0.6	15	125	<0.08	0.032	0.028	0.519	0.43	2.88
250	Egoniaga Cr	CHOC-GSA- 7	001017	0920	15.0	9.1	8.0	190	13	0.7	1.4	220	0.6	13	104	<0.08	0.011	0.061	0.587	0.50	3.00
250	Egoniaga Cr	CHOC-GSA- 7	001114	0920	11.0	9.3	7.3	163	3	0.7	3	100	0.6	7	116	<0.08	0.018	0.039	0.596	0.12	2.95
250	Egoniaga Cr	CHOC-GSA- 7	001205	0915	7.0	11.3	8.0	149	1	0.9	6	200	1.1	5	100	<0.08	0.025	0.026	0.444	0.23	2.57
250	Egoniaga Cr	CHOC-GSA- 7	010108	1010	7.0	12.2	7.6	111	23	2.5	20	250	1.2	18	72	<0.08	<0.010	0.017	0.320	0.47	2.21
260	Cheaha Cr	CHOC-GSA- 8	990817	1225	23.0	8.0	8.0	250	3	0.7	40	50	0.8	5	151	<0.08	0.020	0.016	0.506	0.09	1.76
260	Cheaha Cr	CHOC-GSA- 8	990908	1215	21.0	10.9	8.2	242	3	1.4	49	60	0.5	<4	138	<0.08	0.011	<0.010	0.455	0.07	1.69
260	Cheaha Cr	CHOC-GSA- 8	991028	1240	16.0	11.0	6.6	239	3	1.8	48	67	0.6	<4	122	<0.08	<0.010	<0.010	0.513	0.07	1.80
260	Cheaha Cr	CHOC-GSA- 8	991109	1315	18.0	11.1	7.7	242	9	2.0	50	80	0.4	<4	134	<0.08	0.010	<0.010	0.484	<0.07	1.75
260	Cheaha Cr	CHOC-GSA- 8	991201	1200	12.0	12.2	6.8	228	8	1.5	43	27	0.3	<4	117	<0.08	0.045	<0.010	0.476	1.15	1.76
260	Cheaha Cr	CHOC-GSA- 8	000111	1150	12.0	10.4	7.0	115	8	1.8	80	520	0.4	9	86	<0.08	0.032	0.010	0.284	0.07	1.81
260	Cheaha Cr	CHOC-GSA- 8	000207	1310	12.5	11.2	7.7	225	<1	1.6	57	50	0.2	<4	123	<0.08	0.015	0.059	0.536	0.10	1.80
260	Cheaha Cr	CHOC-GSA- 8	000328	1325	17.5	10.4	7.6	165	1	1.0	78	37	0.3	6	117	<0.08	0.010	<0.010	0.455	0.13	1.93
260	Cheaha Cr	CHOC-GSA- 8	000411	1230	16.0	9.6	7.2	145	3	2.4	270	60	0.5	7	99	<0.08	0.042	<0.010	0.444	0.32	1.89
260	Cheaha Cr	CHOC-GSA- 8	000510	1215	19.0	9.3	7.4	229	8	1.8	63	37	0.3	7	144	<0.08	0.032	<0.010	0.575	<0.07	2.10
260	Cheaha Cr	CHOC-GSA- 8	000607	1215	19.0	11.0	7.7	228	8	1.3	58	17	0.3	<4	128	<0.08	0.010	0.010	0.582	0.28	2.19
260	Cheaha Cr	CHOC-GSA- 8	000731	1120	20.0	8.7	7.2	232	5	2.3	47	120	0.4	<4	141	<0.08	0.015	0.113	0.470	0.23	2.00
260	Cheaha Cr	CHOC-GSA- 8	000822	1215	21.0	8.7	7.3	241	2	1.4	43	23	0.1	<4	135	<0.08	0.057	0.128	0.474	0.36	2.09
260	Cheaha Cr	CHOC-GSA- 8	000912	1205	20.5	9.9	7.2	241	1	1.0	42	140	0.8	8	139	<0.08	0.026	0.017	0.491	0.18	2.24
260	Cheaha Cr	CHOC-GSA- 8	001017	1225	18.0	11.0	8.0	231	9	1.3	41	47	0.4	7	125	<0.08	<0.010	0.016	0.480	0.11	2.30
260	Cheaha Cr	CHOC-GSA- 8	001114	1300	14.0	9.5	8.2	207	10	1.4	45	63	0.5	<4	141	<0.08	0.011	<0.010	0.490	0.08	2.21
260	Cheaha Cr	CHOC-GSA- 8	001205	1255	11.0	10.6	8.2	192	8	1.4	48	23	0.5	<4	123	<0.08	0.025	<0.010	0.422	0.19	2.01
260	Cheaha Cr	CHOC-GSA- 8	010108	1345	11.0	9.7	7.9	220	9	1.3	51	40	0.5	5	114	<0.08	<0.010	<0.010	0.397	0.33	2.10

Appendix F-8, cont. Physical / chemical data collected by Geological Survey of Alabama as part of the mid and lower Choccolocco Creek watershed (0315-0106) monitoring project. (Chandler 2002)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Total Depth	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	PO4-P	Total-P	NH3-N	NO3-N	TKN	Cl-
#		#	yymmdd	24hr	C	mg/L	s.u.	umhos @25c	NTU	ft	cfs	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
270	Choccolocco Cr	CHOC-GSA- 9	991028	1335	15.0	11.3	6.7	335	6	5.5	171	17	0.9	7	183	<0.08	0.144	0.014	0.878	0.15	17.30
270	Choccolocco Cr	CHOC-GSA- 9	000111	1220	12.5	9.8	7.0	142	70	7.2	757	1,800	0.9	54	101	<0.08	0.107	0.074	0.305	0.56	8.07
270	Choccolocco Cr	CHOC-GSA- 9	000411	1300	16.0	9.6	7.2	130	33	7.7	1120	60	0.3	14	91	<0.08	0.048	<0.010	0.333	0.43	3.41
270	Choccolocco Cr	CHOC-GSA- 9	000731	1205	25.0	8.2	7.1	329	20	5.8	168	53	0.5	10	196	0.19	0.191	0.113	0.804	0.53	14.20
270	Choccolocco Cr	CHOC-GSA- 9	001017	1310	18.0	11.4	7.9	319	22	5.6	133	13	0.3	6	184	<0.08	0.200	0.029	0.898	0.14	14.10
270	Choccolocco Cr	CHOC-GSA- 9	010108	1415	7.0	13.0	7.5	371	8	5.0	263	10	0.6	6	199	<0.08	0.057	<0.010	0.390	0.33	21.50

Appendix F-9a. Physical / chemical data collected as part of the Big Wills Creek Water Quality Demonstration Study conducted by ADEM-FOD on June 26-27, 2000. (ADEM 2001a)

Sub-Watershed	Stream Name	Station	Date	Time	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Stream Flow	Fecal Coliform	BOD-5	TSS	TDS	Alkalinity	Hardness	Total-P	NO3+ NO2-N	NH3-N	TKN	TON	Cl-
#		#	*yymmdd*	24hr	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*cfs*	*col/100ml*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
Middle Coosa (0315-0106)																						
050	Big Wills Cr	BWC-1	000627	0840	22	7.0	7.7	317	21	---	340	1.0	26	195	153	164	0.040	0.590	<0.015	0.441	0.29	6.1
050	Big Wills Cr	BWC-2A	000626	1100	24	7.3	7.6	621	23	---	---	---	---	---	---	---	---	---	---	---	---	---
050	Big Wills Cr	BWC-2A	000627	0900	25	6.7	7.8	913	22	---	470.0	4.7	31.0	526.0	203.0	163.0	0.6	0.4	0.5	1.6	1.1	138.7
050	Big Wills Cr	BWC-3A	000626	1430	26	6.3	7.2	652	14	---	---	---	---	---	---	---	---	---	---	---	---	---
050	Big Wills Cr	BWC-3A	000627	0815	24	3.9	7.6	689	11	---	220.0	2.2	14.0	383.0	181.0	154.0	0.9	0.8	0.5	1.4	0.8	92.9
050	Big Wills Cr	BWC-3B	000626	1315	24	7.0	7.2	492	17	35.6	---	---	---	---	---	---	---	---	---	---	---	---
050	Big Wills Cr	BWC-3B	000627	0750	22	6.0	7.6	528	11	---	103.0	1.3	16.0	368.0	188.0	157.0	0.4	0.8	0.1	2.0	1.8	64.1
050	Ft Payne WWTP	WWTP	000627	0900	---	---	7.7	1677	24	6.2	147	14.0	37	1252	340	158	6.380	0.240	2.300	7.340	5.04	446.9

Appendix F-9b. Water column metals and cyanide data collected as part of the Big Wills Creek Water Quality Demonstration Study (WQDS) conducted by ADEM-FOD on June 26-27, 2000. (ADEM 2001a)

Sub-Watershed #	Stream Name	Station #	Date (yymmdd)	Time (24hr)	CN ug/L	As ug/L	Cd mg/L	Cr mg/L	Cu mg/L	Cr +6 mg/L	Pb ug/L	Hg ug/L	Ni mg/L	Ag mg/L	Zn mg/L	Dissolved Zn mg/L
Middle Coosa (0315-0106)																
50	Big Wills Cr	BWC-1	000627	840	<20	<10.0	<0.003	<0.015	<0.020	<0.02	<2.0	<0.3	<0.03	<0.01	<0.03	<0.03
50	Big Wills Cr	BWC-2A	000627	900	<20	<10.0	<0.003	<0.015	<0.020	<0.02	<2.0	<0.3	<0.03	<0.01	<0.03	<0.03
50	Big Wills Cr	BWC-3A	000627	815	<20	<10.0	<0.003	<0.015	<0.020	<0.02	<2.0	<0.3	<0.03	<0.01	<0.03	<0.03
50	Big Wills Cr	BWC-3B	000627	750	<20	<10.0	<0.003	<0.015	<0.020	<0.02	<2.0	<0.3	<0.03	<0.01	<0.03	<0.03
50	Ft Payne WWTP	WWTP	000627	900	<20	<10.0	<0.003	<0.015	<0.020	<0.02	<2.0	<0.3	<0.03	<0.01	0.088	0.08

Appendix F-9c. Physical characteristic and habitat quality estimates for Coosa River Basin sites assessed as part of the Big Wills Creek WQDS (ADEM 2001a). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		BWC-1	BWC-2A	BWC-3A	BWC-3B
CU - Subwatershed #		0106-050	0106-050	0106-050	0106-050
Ecoregion/ Subregion		67f	67f	67f	67f
Date (yymmdd)		000626	000626	000626	000626
Width (ft)		35	40	35	30
Canopy Cover*		O	MS	MS	S
Depth (ft)	Riffle	---	0.5	1.5	1.0
	Run	1.5	1.5	1.5	2.5
	Pool	3.0	4.0	3.0	3.5
Substrate (%)	Bedrock	0	10	60	0
	Boulder	0	15	5	5
	Cobble	15	27	5	20
	Gravel	17	3	5	20
	Sand	40	12	15	35
	Silt	15	20	7	12
	Detritus	3	3	2	8
	Clay	5	0	0	0
	Org. Silt		10	0	0
Geomorphology*		RR	RR	RR	RR
Habitat Survey (% maximum)					
Instream Habitat Quality		56	76	88	78
Sediment Deposition		63	65	80	69
Sinuosity		35	78	78	73
Bank and Vegetative Stability		79	71	90	60
Riparian Measurements		70	68	95	88
Habitat Assessment Score					
% Maximum		65	71	87	75
Assessment		Good	Good	Excellent	Good

Appendix F-9c. Physical characteristic and habitat quality estimates for Coosa River Basin sites assessed as part of the Big Wills Creek WQDS (ADEM 2001a). In order to compare levels of habitat degradation between stations, values given for each of three major habitat parameter categories are presented as percent of maximum score. (* RR - Riffle/Run; GP - Glide/Pool; S - Shaded; MO - Mostly Open; MS - Mostly Shaded; O - Open; 50/50 - Approx 50% Open/Shaded)

Station Number		BWC-1	BWC-2A	BWC-3A	BWC-3B
CU - Subwatershed #		0106-050	0106-050	0106-050	0106-050
Ecoregion/ Subregion		67f	67f	67f	67f
Date (yymmdd)		000626	000626	000626	000626
Width (ft)		35	40	35	30
Canopy Cover*		O	MS	MS	S
Depth (ft)	Riffle	---	0.5	1.5	1.0
	Run	1.5	1.5	1.5	2.5
	Pool	3.0	4.0	3.0	3.5
Substrate (%)	Bedrock	0	10	60	0
	Boulder	0	15	5	5
	Cobble	15	27	5	20
	Gravel	17	3	5	20
	Sand	40	12	15	35
	Silt	15	20	7	12
	Detritus	3	3	2	8
	Clay	5	0	0	0
	Org. Silt		10	0	0
Geomorphology*		RR	RR	RR	RR
Habitat Survey (% maximum)					
Instream Habitat Quality		56	76	88	78
Sediment Deposition		63	65	80	69
Sinuosity		35	78	78	73
Bank and Vegetative Stability		79	71	90	60
Riparian Measurements		70	68	95	88
Habitat Assessment Score					
% Maximum		65	71	87	75
Assessment		Good	Good	Excellent	Good

Appendix F-9d. Aquatic macroinvertebrate community bioassessment results for Coosa River Basin sites assessed as part of the Big Wills Creek WQDS (ADEM 2001a).

Station Number	BWC-1	BWC-2A	BWC-3A	BWC-3B
CU - Subwatershed #	0106-050	0106-050	0106-050	0106-050
Subecoregion #	67f	67f	67f	67f
Macroinvertebrate community				
Assessment Date (yymmdd)	000626	000626	000626	000626
# EPT families	10	9	5	7
Assessment	Excellent	Good	Fair	Good
Fish community				
Assessment Date (yymmdd)	*No fish Community Assessments Were Conducted*			
Time (min)				
Richness measures				
# species				
# darter species				
# minnow species				
# sunfish species				
# sucker species				
# intolerant species				
Composition measures				
% sunfish				
% omnivores and herbivores				
% insectivorous cyprinids				
% top carnivores				
Population measures				
Individuals				
# collected per hour				
% disease and anomalies				
IBI Score				
Assessment				

Appendix F-10. Physical / chemical data from the Coosa River basin collected in April, June and August 2000 as part of the reservoir tributary monitoring conducted by ADEM. (ADEM 2000d)

Sub-Watershed	Stream Name	Station	Date	Time	Secchi Depth	Sample Depth	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Fecal Coliform	Alkalinity	Hardness	TDS	TSS	Total-P	NO3+ NO2-N	NH3-N	TKN	TOC	Chloropyll a
#		#	yymmdd	24hr	m	m	C	mg/L	s.u.	umhos @25c	NTU	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/m3
Upper Coosa (0315-0105)																						
060	Chattooga R	W-6	000418	1258	1.1	1.5	18	12.9	8.4	236	9	1	76	85.0	136	15	0.060	0.017	0.140	0.440	2.83	44.3
060	Chattooga R	W-6	000627	1318	0.7	1.5	29	9.3	8.5	375	16	1	96	82.6	187	21	0.240	0.010	0.027	1.130	5.539	39.0
060	Chattooga R	W-6	000828	1325	0.4	1.5	26	4.2	7.6	629	28	1	98	96.4	310	29	0.270	0.007	0.008	0.566	5.501	47.5
110	Little R	W-5	000418	1214	2.0	1.5	17	9.0	6.7	58	5	3	21	26.0	49	9	0.004	0.261	0.100	0.075	1.72	4.5
110	Little R	W-5	000627	1240	0.8	1.5	29	8.2	8.2	208	16	1	77	64.9	103	20	0.080	0.010	0.008	0.897	4.331	30.0
110	Little R	W-5	000828	1239	0.5	1.5	26	4.9	7.0	274	14	20	78	72.1	162	20	0.070	0.007	0.008	0.594	5.372	59.3
200	Spring Cr	W-7	000418	1020	0.9	1.5	17	9.3	7.3	117	16	18	37	48.0	75	20	0.040	0.118	0.008	0.500	5.11	13.9
200	Spring Cr	W-7	000627	1528	0.9	1.5	31	10.4	8.7	192	11	1	51	60.5	134	12	0.110	0.010	0.024	0.819	4.467	53.9
200	Spring Cr	W-7	000828	1553	0.5	1.5	29	6.7	7.7	218	19	2	71	58.4	118	16	0.150	0.004	0.008	0.601	4.11	65.2
200	Cowan	W-8	000418	1056	1.0	1.5	16	9.1	7.0	104	14	5	39	39.0	62	15	0.050	0.175	0.110	0.380	5.02	28.8
200	Cowan	W-8	000627	1503	1.0	1.6	29	6.1	7.8	190	10	1	60	56.7	104	10	0.090	0.010	0.029	2.280	3.551	39.0
200	Cowan	W-8	000828	1526	0.6	1.5	28	5.9	7.3	213	10	1	73	58.2	117	10	0.090	0.009	0.051	0.581	3.656	36.9
200	Big Nose	W-9	000418	1335	1.1	1.5	17	9.8	7.2	100	11	9	70	39.0	69	12	0.070	0.135	0.060	0.440	4.97	28.8
200	Big Nose	W-9	000627	1409	0.9	1.5	29	6.6	8.2	199	10	17	67	57.1	108	11	0.110	0.010	0.096	1.050	3.571	40.1
200	Big Nose	W-9	000828	1414	0.5	1.5	27	5.6	7.7	236	13	6	69	62.3	134	16	0.080	0.008	0.008	1.130	3.981	45.9
Middle Coosa (0315-0106)																						
010	Ballplay Cr	NH-5	000417	1634	1.0	1.5	17	8.3	6.9	96	20	49	1	39.0	95	9	0.050	0.177	0.100	0.380	5.48	9.6
010	Ballplay Cr	NH-5	000627	1103	0.6	0.7	28	5.3	6.8	185	31	30	73	57.2	103	31	0.080	0.002	0.030	3.370	4.183	22.4
010	Ballplay Cr	NH-5	000828	1051	0.8	1.0	26	5.2	7.0	226	30	11	75	62.7	131	32	0.070	0.036	0.008	0.794	4.224	31.5
070	Big Wills Cr	NH-6	000413	1221	0.6	0.5	15	9.0	7.6	242	25	180	101	105.0	122	79	0.090	0.773	0.100	0.075	1.57	2.1
070	Big Wills Cr	NH-6	000622	1120	0.3	1.5	25	4.9	7.1	371	36	36	106	130.0	207	38	0.350	0.520	0.033	1.500	2.767	25.6
070	Big Wills Cr	NH-6	000824	1048	0.3	1.5	26	6.1	7.3	567	38	28	122	144.0	321	35	0.367	0.231	0.037	0.461	3.033	21.9
080	Black Cr	NH-7	000413	1114	0.3	0.5	17	7.0	7.1	150	48	240	33	51.0	87	30	0.090	0.110	0.320	0.380	3.85	2.1
080	Black Cr	NH-7	000622	1201	0.5	0.8	30	4.8	7.3	305	34	140	102	100.0	128	43	0.160	0.130	0.020	2.060	3.978	24.6
080	Black Cr	NH-7	000824	1006	0.4	0.3	28	6.0	7.2	261	25	180	70	77.9	180	25	0.056	0.126	0.160	0.579	4.183	25.1
130	Big Canoe Cr	NH-8	000413	1402	0.7	1.5	16	9.3	7.5	112	18	10	46	50.0	51	12	0.040	0.180	0.140	0.370	3.93	10.2
130	Big Canoe Cr	NH-8	000622	1345	0.6	1.5	30	9.5	8.3	194	8	1	76	78.6	128	13	0.080	0.004	0.036	0.812	3.142	30.0
130	Big Canoe Cr	NH-8	000824	1230	0.5	1.5	28	7.0	7.8	231	9	1	80	75.7	172	16	0.022	0.009	0.034	0.472	3.975	44.9
130	Greens	NH-9	000413	1444	0.6	1.5	16	8.3	7.3	106	24	13	79	42.0	60	120	0.060	0.158	0.100	0.430	4.99	17.1
130	Greens	NH-9	000622	1423	0.8	1.5	30	8.7	8.3	192	10	1	69	74.5	120	18	0.080	0.010	0.008	1.450	3.267	33.1
130	Greens	NH-9	000824	1304	0.4	1.5	29	9.0	8.3	230	10	9	68	72.2	156	11	0.051	0.009	0.039	0.569	4.114	46.5
140	Beaver	NH-10	000413	1514	0.7	1.5	16	9.3	7.6	156	18	8	111	69.0	89	63	0.040	0.213	0.100	0.320	3.84	16.6
140	Beaver	NH-10	000622	1450	0.7	1.5	30	9.2	8.3	195	10	2	68	77.6	122	18	0.090	0.010	0.054	1.150	3.142	36.8
140	Beaver	NH-10	000824	1334	0.5	1.5	29	8.8	8.1	231	9	1	81	76.7	166	13	0.002	0.007	0.036	0.525	4.176	42.2
190	Cane	LM-4	000412	1629	0.6	1.5	16	7.8	7.2	116	26	39	51	50.0	68	13	0.060	0.250	0.120	0.075	5.02	9.6
190	Cane	LM-4	000621	1610	0.7	1.0	29	8.2	7.8	202	14	7	79	72.5	131	22	0.100	0.030	0.008	1.310	2.862	31.0
190	Cane	LM-4	000823	1640	0.4	1.0	29	8.4	7.9	236	22	21	94	84.6	157	28	0.036	0.020	0.008	0.520	3.2	38.5

Appendix F-10, cont. Physical / chemical data from the Coosa River basin collected in April, June and August 2000 as part of the reservoir tributary monitoring conducted by ADEM. (ADEM 2000d)

Sub-Watershed	Stream Name	Station	Date	Time	Secchi Depth	Sample Depth	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Fecal Coliform	Alkalinity	Hardness	TDS	TSS	Total-P	NO3+ NO2-N	NH3-N	TKN	TOC	Chloropyll a
#		#	*yymmdd*	*24hr*	*m*	*m*	*C*	*mg/L*	*s.u.*	*umhos @25c*	*NTU*	*col/100mL*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/m3*
Middle Coosa (0315-0106), cont.																						
200	Dye	LM-7	000412	1236	0.7	1.5	17	6.9	7.0	117	19	7	119	48.0	95	9	0.060	0.150	0.120	0.140	5.98	27.4
200	Dye	LM-7	000621	1004	0.8	1.5	29	8.0	7.9	183	10	6	57	69.8	126	20	0.090	0.010	0.008	0.922	2.859	23.5
200	Dye	LM-7	000823	0959	0.4	1.5	29	8.3	8.2	227	13	2	72	76.9	77	23	0.056	0.050	0.031	0.570	3.814	35.8
220	Blue	LM-5	000412	1413	0.8	1.5	16	5.8	7.1	140	12	21	78	76.0	53	11	0.040	0.231	0.060	0.075	5.38	17.8
220	Blue	LM-5	000621	1039	0.8	1.5	29	5.2	7.3	194	12	8	72	73.6	126	15	0.100	0.010	0.035	2.080	2.887	23.0
220	Blue	LM-5	000823	1111	0.4	1.5	28	5.1	7.4	233	20	24	81	80.5	90	29	0.059	0.040	0.008	1.179	4.266	47.5
270	Choccolocco Cr	LM-6	000412	1325	0.7	1.5	16	8.5	7.3	121	18	42	99	47.0	57	19	0.060	0.256	0.140	0.075	2.67	5.7
270	Choccolocco Cr	LM-6	000621	0915	0.8	1.5	30	8.2	8.2	196	10	5	71	69.8	187	15	0.120	0.010	0.080	1.360	2.993	22.1
270	Choccolocco Cr	LM-6	000823	0917	0.4	1.5	29	6.3	7.9	262	14	2	79	86.7	99	25	0.076	0.050	0.008	0.527	3.7	42.7
280	Clear	LM-9	000412	0902	1.3	1.5	18	9.6	7.6	117	5	1	47	48.0	65	6	0.050	0.012	0.050	0.075	4.28	19.9
280	Clear	LM-9	000621	1336	1.7	1.5	29	10.4	8.6	150	4	1	54	59.6	111	11	0.090	0.010	0.008	1.300	3.085	22.1
280	Clear	LM-9	000823	1354	1.2	1.5	29	6.1	7.7	199	3	1	72	70.2	102	2	0.029	0.011	0.035	0.173	3.117	18.7
290	Cropwell	LM-8	000412	0952	1.0	1.5	18	10.0	8.0	141	7	4	48	51.0	66	15	0.040	0.031	0.060	0.075	4.53	26.3
290	Cropwell	LM-8	000621	1226	1.5	1.5	30	9.4	8.5	167	4	1	55	65.0	115	11	0.080	0.010	0.060	1.250	3.098	20.8
290	Cropwell	LM-8	000823	1315	0.9	1.5	30	8.4	8.3	223	4	1	77	77.0	147	6	0.046	0.011	0.008	0.218	3.475	33.1
310	Kelly	LAY-6	000411	1814	0.9	1.5	15	8.8	7.3	65	12	510	23	30.0	57	7	0.050	0.206	0.120	0.720	2.62	
310	Kelly	LAY-6	000620	1145	1.3	1.0	24	6.2	6.9	191	8	10	91	84.1	146	9	0.002	0.046	0.029	0.075	2.113	10.2
310	Kelly	LAY-6	000822	1142	1.4	1.0	24	5.2	7.1	234	4	14	84	104.0	93	13	0.002	0.140	0.008	0.075	1.096	1.6
330	Talladega	LAY-7	000411	1209	1.0	1.5	16	8.6	7.4	164	11	49	72	82.0	118	10	0.040	0.402	0.140	0.075	1.37	
330	Talladega	LAY-7	000620	1237	0.8	1.5	26	7.5	7.2	235	13	73	131	109.0	182	16	0.017	0.306	0.031	0.075	1.735	14.6
330	Talladega	LAY-7	000822	1235	0.7	1.5	25	6.7	7.3	284	9	420	99	123.0	100	22	0.042	0.350	0.008	0.349	2.026	21.4
Lower Coosa (0315-0107)																						
010	Tallasseehatch	LAY-8	000411	1243	1.0	1.5	16	7.9	7.5	210	10	55	83	85.0	136	10	0.140	0.437	0.120	0.075	2.7	0.4
010	Tallasseehatch	LAY-8	000620	1311	1.0	1.5	26	7.9	7.2	315	9	55	122	91.8	229	8	0.035	0.135	0.008	0.075	3.069	27.1
010	Tallasseehatch	LAY-8	000822	1306	1.0	1.5	28	7.1	7.5	306	8	12	89	101.0	139	14	0.399	0.150	0.008	0.363	3.111	24.6
030	Yellowleaf	LAY-9	000411	1340	0.7	1.5	14	9.0	7.1	73	19	17	101	37.0	77	11	0.050	0.126	0.180	0.075	3.25	
030	Yellowleaf	LAY-9	000620	1401	1.0	1.5	29	6.2	6.9	187	11	1	101	75.4	156	100	0.285	0.007	0.085	0.075	3.34	22.8
030	Yellowleaf	LAY-9	000822	1355	0.8	1.5	30	5.9	7.1	264	8	4	77	84.1	107	16	0.024	0.060	0.008	0.264	4.535	26.0
070	Peckerwood	LAY-10	000411	1456	0.7	1.5	17	9.0	7.3	91	17	3	125	36.0	61	9	0.040	0.174	0.090	0.140	4.48	10.7
070	Peckerwood	LAY-10	000620	1532	1.2	1.5	32	11.1	8.4	203	5	1	98	68.6	169	8	0.004	0.010	0.008	0.075	4.44	24.2
070	Peckerwood	LAY-10	000822	1516	0.9	1.5	30	4.7	7.1	274	5	1	95	84.3	115	16	0.026	0.050	0.008	0.290	4.702	21.7
100	Waxahatchee	LAY-11	000411	1548	0.7	1.5	17	8.8	7.3	107	17	3	38	41.0	73	11	0.040	0.247	0.070	0.390	4.44	12.1
100	Waxahatchee	LAY-11	000620	1619	1.4	1.5	30	9.7	8.2	178	4	1	96	65.0	157	9	0.032	0.007	0.008	0.075	4.003	24.6
100	Waxahatchee	LAY-11	000822	1607	1.0	1.5	31	6.7	7.6	252	4	3	82	81.2	89	13	0.024	0.060	0.008	0.286	4.144	30.6
150	Hatchet	MIT-4	000410	1637	0.7	1.5	18	9.0	7.3	56	13	19	102	24.0	58	7	0.050	0.107	0.130	0.400	6.25	9.6
150	Hatchet	MIT-4	000619	1512	1.4	1.5	29	11.9	8.7	142	3	1	83	44.8	114	11	0.015	0.008	0.008	0.075	4.486	31.2
150	Hatchet	MIT-4	000821	1458	1.7	1.5	31	6.5	7.6	189	2	1	59	58.1	122	2	0.006	0.040	0.008	0.075	4.158	14.2

Appendix F-10, cont. Physical / chemical data from the Coosa River basin collected in April, June and August 2000 as part of the reservoir tributary monitoring conducted by ADEM. (ADEM 2000d)

Sub-Watershed	Stream Name	Station	Date	Time	Secchi Depth	Sample Depth	Water Temp.	Dissolved Oxygen	pH	Conductivity	Turbidity	Fecal Coliform	Alkalinity	Hardness	TDS	TSS	Total-P	NO3+ NO2-N	NH3-N	TKN	TOC	Chloropyll a
#		#	yymmdd	24hr	m	m	C	mg/L	s.u.	umhos @25c	NTU	col/100mL	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/m3
Middle Coosa (0315-0106), cont.																						
160	Walnut	MIT-3	000410	1549	0.7	1.0	17	8.4	7.1	98	15	10	81	39.0	85	11	0.040	0.258	0.060	0.590	7.08	5.9
160	Walnut	MIT-3	000619	1438	1.6	1.5	29	10.0	8.2	156	3	3	89	37.7	132	4	0.002	0.032	0.008	0.075	4.046	22.7
160	Walnut	MIT-3	000821	1422	1.6	1.6	30	7.7	7.9	223	2	1	76	67.5	129	1	0.002	0.050	0.037	0.284	4.039	17.1
170	Shoal	JOR-3	000410	1015	0.7	1.5	17	9.8	7.2	107	15	9	34	41.0	90	14	0.040	0.214	0.090	0.075	7.41	13.5
170	Shoal	JOR-3	000619	0949	1.4	1.5	29	8.4	7.8	127	4	5	60	31.6	45	14	0.014	0.004	0.008	0.075	3.957	19.2
170	Shoal	JOR-3	000821	0948	1.5	1.5	31	8.2	8.1	187	3	7	68	59.3	121	3	0.020	0.050	0.036	0.456	4.244	23.8
180	Weoka	JOR-4	000410	1104	1.0	1.5	17	9.2	7.2	116	8	11	46	40.0	97	10	0.050	0.168	0.100	0.670	6.37	12.8
180	Weoka	JOR-4	000619	1023	1.2	1.5	29	9.3	8.4	125	4	7	62	30.0	87	12	0.002	0.009	0.008	0.075	4.204	27.8
180	Weoka	JOR-4	000821	1026	1.6	1.5	31	8.4	8.2	174	2	1	60	55.2	108	2	0.004	0.050	0.008	0.260	4.122	18.2
180	Sofkahatchee	JOR-5	000410	1151	1.2	1.5	17	8.9	7.2	112	6	4	79	40.0	88	9	0.040	0.175	0.090	0.500	5.86	10.3
180	Sofkahatchee	JOR-5	000619	1103	1.6	1.5	29	9.0	8.2	121	3	6	59	31.3	114	10	0.002	0.006	0.008	0.075	4.000	27.0
180	Sofkahatchee	JOR-5	000821	1104	1.9	1.5	31	8.3	8.3	170	2	3	65	53.8	103	2	0.012	0.050	0.008	0.075	4.258	13.6

Appendix F-11a. Physical / chemical (General) data collected during 1997 by Geological Survey of Alabama (GSA) from the Hatchet Creek subwatersheds of the Lower Coosa cataloging unit (0315-0107) under contract with ADEM (GSA 1997).

Sub-watershed #	Site # #	Date *yymmdd*	Time *24hr*	Total Depth	Sample Depth	Air Temp. *C*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	Stream Flow *cfs*	Total Alkalinity *mg/L*	Hardness	BOD-5	TSS *mg/L*	TDS *mg/L*	NH3-N *mg/L*	NO2-N *mg/L*	NO3-N *mg/L*	TKN *mg/L*	Total-P *mg/L*	PO4-P *mg/L*
110	EFH-1	09/16/97	10:10	0.4	0.2	21.0	15.0	8.7	6.7	25	13	1.65	9	13	0.8	<4	22	<0.010	<0.006	0.027	0.28	0.050	<0.05
110	EFH-1	09/29/97	10:00	0.5	0.3	16.0	16.0	9.5	6.8	51	13	5.88	15	21	0.2	<4	36	<0.010	<0.006	0.136	0.28	0.024	<0.05
110	EFH-1	10/13/97	9:45	0.4	0.2	19.5	16.0	9.1	6.7	39	8	1.46	16	17	0.7	<4	46	<0.010	<0.006	<0.006	<0.10	6.700	<0.05
110	EFH-1	10/27/97	10:00	0.6	0.3	7.0	10.0	10.2	6.6	56	20	16.8	14	23	1.0	5	65	<0.010	<0.006	0.269	0.28	0.038	<0.05
110	HCT-5	09/16/97	12:30	0.9	0.5	23.0	19.0	8.6	6.7	34	24	22.3	14	15	0.9	<4	26	<0.010	<0.006	0.027	0.22	0.041	<0.05
110	HCT-5	09/29/97	12:40	1.8	0.9	18.0	16.0	9.5	6.9	29	14	83.9	9	14	0.3	<4	33	<0.010	<0.006	0.077	0.41	0.013	<0.05
110	HCT-5	10/13/97	11:50	1.6	0.8	20.5	17.0	9.2	6.7	34	16	26.1	15	16	0.6	<4	51	<0.010	<0.006	<0.006	0.11	<0.010	<0.05
110	HCT-5	10/27/97	12:15	1.5	0.8	5.0	11.0	10.0	6.6	40	23	129	12	14	1.1	7	51	0.010	<0.006	0.058	0.31	0.019	<0.05
110	HCT-6	09/16/97	11:30	1.0	0.5	21.5	18.0	8.5	6.7	33	17	20.7	16	18	0.9	<4	30	<0.010	<0.006	0.025	0.31	0.035	<0.05
110	HCT-6	09/29/97	11:45	1.4	0.7	17.0	16.0	9.4	6.9	31	10	64.1	11	15	0.3	<4	29	<0.010	<0.006	0.068	0.17	0.011	<0.05
110	HCT-6	10/13/97	11:15	0.8	0.4	20.0	16.0	9.1	6.7	39	15	26.6	17	19	0.7	5	50	0.043	<0.006	<0.006	<0.10	<0.010	<0.05
110	HCT-6	10/27/97	11:30	1.5	0.8	5.0	11.0	9.8	6.6	41	22	116	9	13	1.0	8	52	<0.010	<0.006	0.127	0.35	0.233	<0.05
110	WFH-1	09/16/97	9:45	0.4	0.2	21.0	16.0	8.6	6.7	21	20	0.55	5	9	0.7	<4	14	0.014	<0.006	<0.006	<0.10	0.062	<0.05
110	WFH-1	09/29/97	9:40	0.5	0.3	16.0	15.0	9.1	6.8	30	15	5.94	5	11	0.6	<4	26	<0.010	<0.006	0.073	<0.10	0.011	<0.05
110	WFH-1	10/13/97	9:30	0.3	0.2	19.5	15.0	8.4	6.7	25	13	0.92	6	11	0.9	4	40	0.038	<0.006	0.052	<0.10	<0.010	<0.05
110	WFH-1	10/27/97	9:40	0.5	0.3	7.0	10.0	10.2	6.6	35	18	10.6	13	13	0.9	7	61	<0.010	<0.006	0.397	0.27	0.075	<0.05
110	HCT-7	09/16/97	10:45	1.0	0.5	21.5	16.0	8.5	6.5	26	9	6.79	10	13	0.8	<4	26	<0.010	<0.006	0.045	0.31	0.024	<0.05
110	HCT-7	09/29/97	11:00	1.2	0.6	17.0	16.0	8.7	6.8	31	9	24.2	9	14	0.2	<4	32	<0.010	<0.006	0.097	<0.10	<0.010	<0.05
110	HCT-7	10/13/97	10:30	1.4	0.7	19.5	16.0	8.5	6.5	27	3	9.6	12	14	0.6	5	41	0.022	<0.006	0.016	<0.10	<0.010	<0.05
110	HCT-7	10/27/97	10:45	2.0	1.0	7.0	10.0	9.6	6.6	41	22	51.2	9	16	1.1	8	53	<0.010	<0.006	0.244	0.39	0.074	<0.05
120	SPY-1	09/16/97	13:30	0.8	0.4	23.0	20.0	9.8	6.8	39	25	15.4	14	13	0.8	4	36	<0.010	<0.006	0.033	0.14	0.118	<0.05
120	SPY-1	09/29/97	13:40	2.0	1.0	18.0	18.0	9.1	6.8	37	12	24	14	14	0.5	9	46	0.017	<0.006	0.068	0.38	0.027	<0.05
120	SPY-1	10/13/97	12:45	2.0	1.0	20.5	18.0	9.2	6.7	42	21	9.33	21	14	0.8	7	58	<0.010	<0.006	0.017	<0.10	0.021	<0.05
120	SPY-1	10/27/97	13:15	2.0	1.0	6.0	10.0	10.0	6.6	43	65	28.1	10	12	1.4	37	64	<0.010	<0.006	0.057	0.27	0.034	<0.05
130	HCT-1	09/17/97	16:20	5.8	2.9	24.0	23.0	8.1	6.9	37	10	100	14	11	0.7	8	49	<0.010	<0.006	<0.006	0.21	0.033	<0.05
130	HCT-1	09/30/97	9:30	4.6	2.3	14.0	16.0	8.7	6.9	36	8	200	10	13	<0.1	<4	30	<0.010	<0.006	0.057	0.17	0.015	<0.05
130	HCT-1	10/14/97	9:25	2.3	1.2	12.0	18.0	8.7	6.7	45	9	130	13	17	0.6	<4	53	0.024	<0.006	<0.006	0.14	<0.010	<0.05
130	HCT-1	10/28/97	9:35	4.8	2.4	5.0	8.0	11.2	6.8	35	38	270	10	20	0.8	22	52	<0.010	<0.006	0.028	0.33	0.036	<0.05

Appendix F-11a, cont. Physical / chemical (General) data collected during 1997 by Geological Survey of Alabama (GSA) from the Hatchet Creek subwatersheds of the Lower Coosa cataloging unit (0315-0107) under contract with ADEM (GSA 1997).

Sub-watershed #	Site #	Date *yymmdd*	Time *24hr*	Total Depth	Sample Depth	Air Temp. *C*	Water Temp. *C*	Dissolved Oxygen *mg/L*	pH *s.u.*	Conductivity *umhos @25c*	Turbidity *NTU*	Stream Flow *cfs*	Total Alkalinity *mg/L*	Hardness	BOD-5	TSS *mg/L*	TDS *mg/L*	NH3-N *mg/L*	NO2-N *mg/L*	NO3-N *mg/L*	TKN *mg/L*	Total-P *mg/L*	PO4-P *mg/L*
130	HCT-2	09/17/97	15:15	2.5	1.3	25.0	25.0	8.3	6.8	39	7	90	15	12	1.5	8	38	0.011	<0.006	<0.006	0.15	0.026	<0.05
130	HCT-2	09/30/97	8:30	3.0	1.5	10.5	15.0	8.9	6.8	37	12	170	10	13	<0.1	<4	31	<0.010	<0.006	0.048	0.22	0.012	<0.05
130	HCT-2	10/14/97	8:15	2.2	1.1	12.0	17.0	8.7	6.7	41	7	110	13	14	1.0	<4	50	<0.010	<0.006	<0.006	0.16	0.019	<0.05
130	HCT-2	10/28/97	8:25	2.6	1.3	4.0	8.0	11.6	6.8	35	24	230	13	13	1.1	91	49	<0.010	<0.006	0.026	<0.10	0.055	<0.05
130	HCT-3	09/17/97	14:30	0.8	0.4	24.0	22.0	9.2	6.8	43	1	84.6	15	12	0.9	64	38	0.018	<0.006	<0.006	0.16	0.022	<0.05
130	HCT-3	09/30/97	7:45	1.4	0.7	8.0	16.0	9.0	6.8	44	11	157	10	13	<0.1	<4	30	0.023	<0.006	0.045	0.30	0.014	<0.05
130	HCT-3	10/14/97	7:35	0.7	0.4	12.0	17.0	8.8	6.6	43	16	100	13	14	0.6	6	46	0.026	<0.006	<0.006	0.13	0.011	<0.05
130	HCT-3	10/28/97	7:40	1.4	0.7	4.0	8.0	11.4	6.7	41	20	215	13	13	1.1	5	35	<0.010	<0.006	0.012	<0.10	0.078	<0.05
130	HCT-4	09/16/97	14:40	0.9	0.5	23.0	22.0	8.8	6.8	34	28	62.0	13	12	1.1	4	32	<0.010	<0.006	<0.006	0.17	0.206	<0.05
130	HCT-4	09/29/97	14:40	1.8	0.9	19.0	18.0	9.8	6.8	32	13	160	11	13	0.2	<4	37	0.028	<0.006	0.064	0.28	0.016	<0.05
130	HCT-4	10/13/97	13:45	0.7	0.4	21.0	19.0	9.6	6.7	34	8	60.9	13	14	0.8	<4	51	0.017	<0.006	<0.006	0.16	<0.010	<0.05
130	HCT-4	10/27/97	14:15	0.9	0.4	6.0	11.0	10.3	6.7	37	20	190	13	13	1.1	11	54	<0.010	<0.006	0.021	0.12	0.029	<0.05
130	SWP-1	09/17/97	15:45	1.2	0.6	25.0	23.0	8.7	6.9	35	18	12.4	11	8	0.8	7	51	<0.010	<0.006	<0.006	0.11	0.040	<0.05
130	SWP-1	09/17/97	15:45	1.2	0.6	25.0	23.0	8.7	6.9	35	16	12.4	11	8	0.8	<4	36	0.010	<0.006	<0.006	0.21	0.030	<0.05
130	SWP-1	09/30/97	9:00	1.0	0.5	12.5	14.0	8.9	6.8	38	16	25.9	13	10	0.1	<4	50	<0.010	<0.006	0.016	0.23	0.013	<0.05
130	SWP-1	09/30/97	9:00	1.0	0.5	12.5	14.0	8.9	6.8	38	15	25.9	14	10	<0.01	5	42	0.033	<0.006	0.018	<0.10	0.015	<0.05
130	SWP-1	10/14/97	8:45	0.3	0.2	12.0	16.0	9.3	6.8	39	11	21.7	20	10	0.8	4	52	<0.010	<0.006	<0.006	0.36	0.355	<0.05
130	SWP-1	10/14/97	8:45	0.3	0.2	12.0	16.0	9.3	6.8	39	9	21.7	13	9	0.7	7	51	0.023	<0.006	<0.006	<0.10	0.011	<0.05
130	SWP-1	10/28/97	8:50	1.5	0.8	5.0	8.0	11.9	6.8	33	45	34.7	10	9	1.2	23	58	<0.010	<0.006	0.034	0.31	0.092	<0.05
130	SWP-1	10/28/97	8:50	1.5	0.8	5.0	8.0	11.9	6.8	33	45	34.7	7	9	1.3	22	57	<0.010	<0.006	0.029	0.35	0.065	<0.05

Appendix F-11b. Physical / chemical (other) data collected during 1997 by Geological Survey of Alabama (GSA) from the Hatchet Creek subwatersheds of the Lower Coosa cataloging unit (0315-0107) under contract with ADEM (GSA 1997).

Sub-watershed #	Site # #	Date *yymmdd*	Time *24hr*	Cl *mg/L*	SO4 *mg/L*	F *mg/L*	Br *mg/L*	Fecal Strep *#/100 mL*	Fecal Coliform *#/100 mL*	Geometic Mean *#/100 mL*
110	EFH-1	09/16/97	10:10	1.490	2.09	0.020	<0.05	790	620	327
110	EFH-1	09/29/97	10:00	1.970	5.27	<0.020	<0.05	740	530	
110	EFH-1	10/13/97	9:45	1.740	2.55	<0.020	<0.05	440	120	
110	EFH-1	10/27/97	10:00	2.340	6.39	<0.020	<0.05	820	290	
110	HCT-5	09/16/97	12:30	1.560	1.70	<0.020	<0.05	510	400	214
110	HCT-5	09/29/97	12:40	1.540	3.26	<0.020	<0.05	210	170	
110	HCT-5	10/13/97	11:50	1.570	1.85	<0.020	<0.05	240	100	
110	HCT-5	10/27/97	12:15	1.910	2.92	<0.020	<0.05	2900	310	
110	HCT-6	09/16/97	11:30	1.530	1.58	0.020	<0.05	220	490	248
110	HCT-6	09/29/97	11:45	1.520	3.21	<0.020	<0.05	280	280	
110	HCT-6	10/13/97	11:15	1.550	1.79	<0.020	<0.05	350	67	
110	HCT-6	10/27/97	11:30	2.010	3.13	<0.020	<0.05	4500	410	
110	HCT-7	09/16/97	10:45	1.480	1.73	0.023	<0.05	840	1300	523
110	HCT-7	09/29/97	11:00	1.600	3.55	<0.020	<0.05	600	370	
110	HCT-7	10/13/97	10:30	1.580	1.98	<0.020	<0.05	780	330	
110	HCT-7	10/27/97	10:45	2.020	4.41	<0.020	<0.05	1400	470	
110	WFH-1	09/16/97	9:45	1.440	1.45	<0.020	<0.05	520	290	138
110	WFH-1	09/29/97	9:40	2.300	3.74	<0.020	<0.05	720	170	
110	WFH-1	10/13/97	9:30	1.700	1.72	<0.020	<0.05	350	27	
110	WFH-1	10/27/97	9:40	5.080	4.39	<0.020	<0.05	840	270	
120	SPY-1	09/16/97	13:30	2.420	1.60	0.039	<0.05	1500	710	449
120	SPY-1	09/29/97	13:40	2.270	2.51	0.025	<0.05	1200	470	
120	SPY-1	10/13/97	12:45	2.670	1.61	0.032	<0.05	330	200	
120	SPY-1	10/27/97	13:15	2.410	2.61	0.030	<0.05	2400	610	
130	HCT-1	09/17/97	16:20	1.800	1.83	0.028	<0.05	62	40	89
130	HCT-1	09/30/97	9:30	1.720	3.20	<0.020	<0.05	120	67	
130	HCT-1	10/14/97	9:25	1.920	2.14	<0.020	<0.05	650	110	

Appendix F-11b, cont. Physical / chemical (other) data collected during 1997 by Geological Survey of Alabama (GSA) from the Hatchet Creek subwatersheds of the Lower Coosa cataloging unit (0315-0107) under contract with ADEM (GSA 1997).

Sub-watershed *#*	Site # *#*	Date *yymmdd*	Time *24hr*	Cl *mg/L*	SO4 *mg/L*	F *mg/L*	Br *mg/L*	Fecal Strep *#/100 mL*	Fecal Coliform *#/100 mL*	Geometic Mean *#/100 mL*
130	HCT-1	10/28/97	9:35	1.790	2.67	0.024	<0.05	390	210	
130	HCT-2	09/17/97	15:15	1.870	2.03	0.034	<0.05	300	8	78
130	HCT-2	09/30/97	8:30	1.670	3.14	0.020	<0.05	460	160	
130	HCT-2	10/14/97	8:15	1.800	2.20	0.026	<0.05	500	100	
130	HCT-2	10/28/97	8:25	1.690	3.13	<0.020	<0.05	500	290	
130	HCT-3	09/17/97	14:30	1.800	1.92	0.026	<0.05	90	32	115
130	HCT-3	09/30/97	7:45	1.750	3.08	<0.020	<0.05	490	190	
130	HCT-3	10/14/97	7:35	1.870	2.03	<0.020	<0.05	630	190	
130	HCT-3	10/28/97	7:40	1.850	2.72	0.020	<0.05	260	150	
130	HCT-4	09/16/97	14:40	1.810	1.86	0.028	<0.05	660	260	153
130	HCT-4	09/29/97	14:40	1.700	3.05	<0.020	<0.05	180	140	
130	HCT-4	10/13/97	13:45	1.810	1.86	0.021	<0.05	200	43	
130	HCT-4	10/27/97	14:15	1.790	2.64	<0.020	<0.05	760	350	
130	SWP-1	09/17/97	15:45	2.140	1.22	0.036	<0.05	160	94	324
130	SWP-1	09/17/97	15:45	2.140	1.11	0.035	<0.05	160	94	
130	SWP-1	09/30/97	9:00	2.160	1.28	0.027	<0.05	380	160	
130	SWP-1	09/30/97	9:00	2.120	1.12	0.023	<0.05	380	160	
130	SWP-1	10/14/97	8:45	2.340	0.92	0.021	<0.05	820	1600	
130	SWP-1	10/14/97	8:45	2.340	0.92	0.029	<0.05	820	1600	
130	SWP-1	10/28/97	8:50	2.230	1.91	<0.020	<0.05	970	460	
130	SWP-1	10/28/97	8:50	2.290	1.94	0.022	<0.05	970	460	

APPENDIX G

References for Historical Assessments Conducted in the Coosa River Basin as Cited in Table 8

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5. ADEM. 2000b. Alabama Monitoring and Assessment Program (ALAMAP) data collected by ADEM 1997 to 2000 (unpublished). Field Operations Division, Alabama Department of Environmental Management. Montgomery, Alabama.
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8. ADEM. 2000e. Aquatic macroinvertebrate bioassessment quality assurance/quality control assessments 1991 to 2001 (unpublished). Field Operations Division, Alabama Department of Environmental Management. Montgomery, Alabama.
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10. Chandler, R.V., 2002, Results of surface-water sampling in middle and lower Choccolocco Creek watershed, Alabama: open-file contract report to Alabama Department of Environmental Management, Office of Education and Outreach, Montgomery, Alabama. Unnumbered.
11. ADEM. 2000d. Water quality monitoring data from tributaries of the Coosa River basin reservoirs collected by ADEM (2000, unpublished). Field Operations Division, Alabama Department of Environmental Management. Montgomery, Alabama.