

# **TMDL IMPLEMENTATION PLAN**

## **SATILLA RIVER BASIN**

### **Overview of Seventeen Mile River Watershed Plan**

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The Seventeen Mile River watershed (HUC10 #0307020105) is located in the Satilla River basin in Southeast Georgia's Atkinson, Coffee, and Ware Counties. The local governments involved in improving the Seventeen Mile River watershed are the cities of Broxton and Douglas and the counties of Atkinson, Coffee, and Ware. Also involved in the effort are the Southeast Georgia Regional Development Center (SEGa RDC) in Waycross and the Georgia Department of Natural Resources' Environmental Protection Division (GADNR-EPD).

Having been determined to be an impaired water body by the State of Georgia, Seventeen Mile River (upstream) from Twenty Mile Creek north of Douglas to Otter Creek downstream of Gen. Coffee State Park is classified as *not supporting* its designation as fishing water and has an impacted area of seven miles. The Seventeen Mile River (downstream) from Twenty-nine Mile Creek to the Satilla River is classified as *partially supporting* its designation as fishing water and has an impacted area of thirteen miles. The Total Maximum Daily Load (TMDL) Implementation Plan for the Seventeen Mile River watershed is a collaborative effort of the GADNR-EPD and the SEGa RDC. A TMDL is the calculation of the maximum amount of a particular pollutant that a water body, river, or stream can receive and still be safe, healthy, and meet Georgia water quality standards.

According to the Seventeen Mile River Watershed Total Maximum Daily Load (TMDL) Implementation Plan, the water body suffers from two forms of impairments, Fecal Coliform (FC) and Dissolved Oxygen (DO). To meet current water quality standards, the TMDL Implementation Plan notes that a 64% reduction in nonpoint/point source fecal loads is necessary in the Seventeen Mile River (upstream) and a 68% reduction in nonpoint/point source fecal loads is necessary in the Seventeen Mile River (downstream). To address the DO in the Seventeen Mile River, both upstream and downstream, the TMDL Implementation Plan suggests a 24% point source load reduction and a 39% urban runoff and nonpoint source load reduction resulting in a decrease of total organic carbon, total nitrogen, and total phosphorus.

#### **Sources of Fecal Coliform in Seventeen Mile River**

The fecal coliform (FC) in the Seventeen Mile River watershed can be attributed to both point and nonpoint sources. There is one permitted NPDES discharge of FC into Seventeen Mile River; it is the City of Douglas Water Pollution Control Plant (WPCP)/Southeast Pretreatment Permit (NPDES GA0024431).

As for the nonpoint sources of FC, uncovered manure piles, farm animal waste, access to waterways by livestock, urban and rural development, poultry industry runoff, spills/discharge of raw sewage, pet excrement, and leaking septic systems are contributing to the FC contamination.

The aforementioned sources are contributing to impaired dissolved oxygen (DO) as well.

#### **Contributors to Impaired Dissolved Oxygen in Seventeen Mile River**

There are numerous nonpoint sources of oxygen demanding substances in the Seventeen Mile River watershed. These sources include surface storm runoff of chemicals and fertilizers from agricultural areas. Also, industrial, residential, and urban storm water runoff, automotive care products, improper methods of trash collection and disposal, land disturbing activities, and organic material from lawns and city or county right-of-ways are all contributing to the DO impairment in Seventeen Mile River.

In addition to the aforementioned sources, many Southeast Georgia streams, including Seventeen Mile River, are slow-flowing, "blackwater" bodies. The dark water coloration is due to adjacent wetland areas having organically rich bottom sediments that flow to the stream, as well as leaf litter-fall. These factors also have an effect on DO.

#### **Developing the Plan and Stakeholder Involvement**

The SEGaRDC has worked closely with GADNR-EPD to develop the TMDL Implementation Plan for the Seventeen Mile River watershed. Each agency has been diligent in making sure that the strategy includes an action plan, education/outreach activities, stakeholders, pollutant sources, and

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potential funding resources. Stakeholders, including local government officials, landowners, industrial representatives and interest groups, have played a vital role in the plan's preparation. A public meeting was held November 11, 2002, at the Coffee County Courthouse to gather information from stakeholders and/or interest groups. Stakeholders offer valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

#### **Monitoring Plan**

The monitoring plan will determine the effectiveness of the target TMDL and the management measures being implemented to meet water quality standards. Water quality testing by GADNR-EPD is scheduled to begin in 2003. Presently, the City of Douglas is performing water quality testing and GADNR-EPD is participating in a comprehensive nutrient management plan. A storm water pollution prevention plan is proposed to begin development in 2003.

#### **Management Practices**

The Implementation Plan lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the Fecal Coliform and Dissolved Oxygen in the Seventeen Mile River watershed. The following management practices are included in the TMDL Implementation Plan:

- Domesticated and commercial animal/livestock excrement disposal and management program
- CAFO regulations land application system permits
- Herbicide and pesticide poison care disposal and management program
- Stream management zones
- Septic tank management program
- Agricultural and forestry best management practices
- Nutrient management program
- Power equipment, commercial, industrial, and personal product care disposal and management program
- House cleaner disposal and management program
- Sewer management program
- Spill/discharge control and cleanup program
- Best management practices monitoring
- Storm water pollution prevention plan (SWPPP)

#### **Projected Attainment Date**

The projected date to attain and maintain water quality standards in the Seventeen Mile River watershed is 2012, which is within 10 years of the acceptance of the TMDL Implementation Plan by the Environmental Protection Division.

#### **Conclusion**

TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. Through this intergovernmental partnership and the collaboration with the private stakeholders, the Seventeen Mile River watershed TMDL Implementation Plan is sure to succeed.

**STATE OF GEORGIA**  
**TMDL IMPLEMENTATION PLAN**  
**WATERSHED APPROACH**

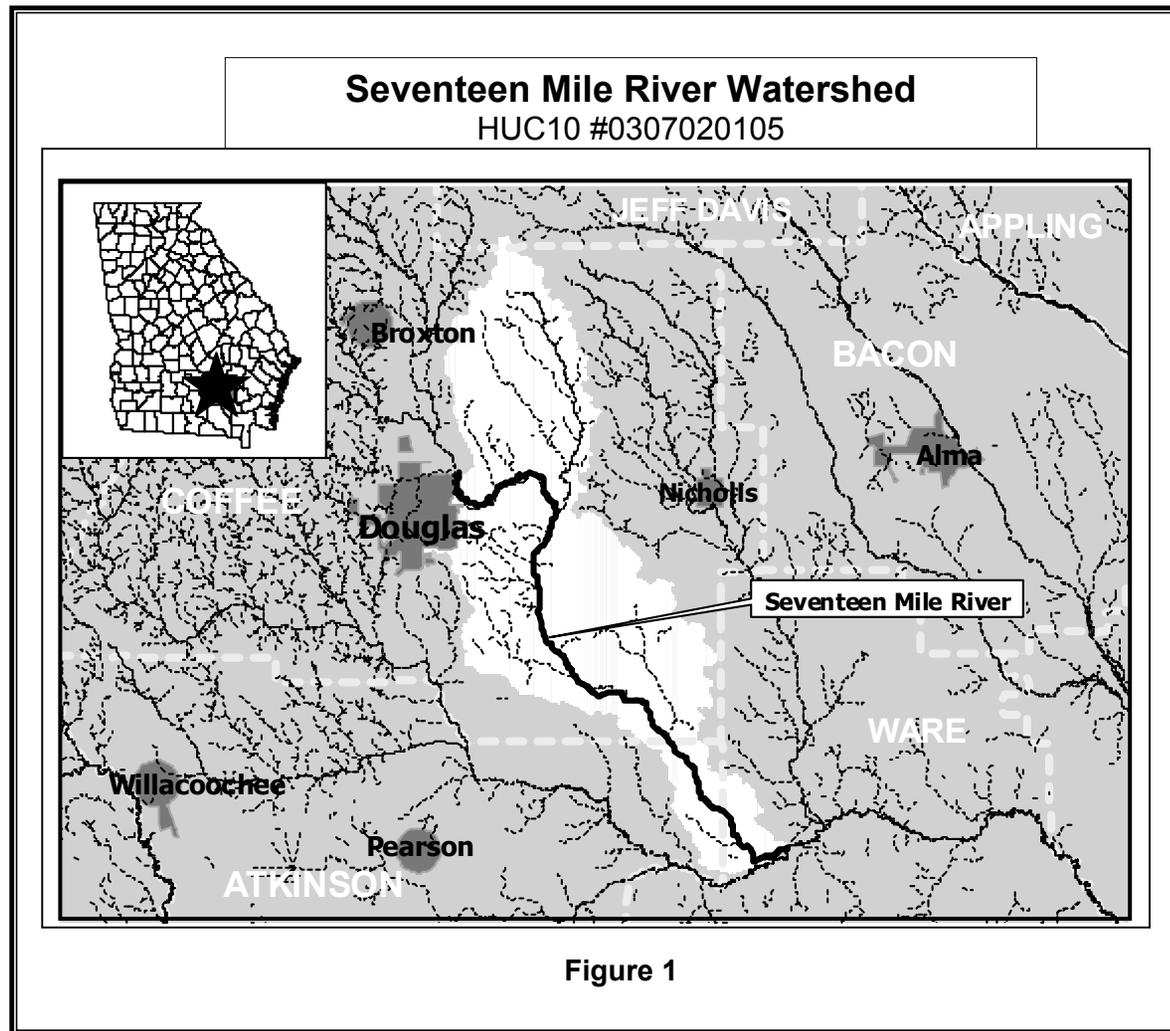
SATILLA RIVER BASIN

Local Watershed Governments

SOUTHEAST GEORGIA RDC  
 Coffee County, Atkinson County  
 Ware County  
 City of Douglas, City of Broxton

TMDL Implementation Plans are platforms for establishing a course of action to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. **With input from appropriate stakeholder groups, a TMDL Implementation Plan has been developed for a cluster of impaired waterbodies and the corresponding pollutants.** The impaired streams are located in the same sub-basin identified by a HUC10 code (Figure 1).

This Implementation Plan addresses an action plan, education/outreach activities, stakeholders, pollutant sources, and potential funding resources affecting the watershed. In addition, the Plan describes (a) regulatory and voluntary practices/control actions (*management measures*) to reduce target pollutants, (b) milestone schedules to show the development of the management measures (*measurable milestones*), (c) a monitoring plan to determine the efficiency of the management measures and measurable milestones, and (d) criteria to determine whether substantial progress is being made towards reducing pollutants in impaired waterbodies. The overall goal of the Plan is to define a set of actions that will help achieve water quality standards in the state of Georgia. Following this section is information regarding individual impaired streams.



Impaired Waterbody*	Impaired Stream Location	Impairment
1. Seventeen Mile River (upstream)	Twenty Mile Creek north of Douglas to Otter Creek downstream of Gen. Coffee State Park	Fecal Coliform (FC) Dissolved Oxygen (DO)
2. Seventeen Mile River (downstream)	Twenty-nine Mile Creek to Satilla River	Fecal Coliform (FC) Dissolved Oxygen (DO)

\*These Waterbody Numbers are referenced throughout the Implementation Plan.

POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
<input checked="" type="checkbox"/> Dissolved Oxygen (DO) <input checked="" type="checkbox"/> Fecal Coliform (FC) <input type="checkbox"/> Sediment <input type="checkbox"/> Metals <input type="checkbox"/> Fish Consumption Guidelines (FCG) <input type="checkbox"/> Other (Please List)	<input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Urban <input checked="" type="checkbox"/> Agriculture <input checked="" type="checkbox"/> Forestry <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> Other (Please List) Wetlands, Forested Areas and Terrain	<input checked="" type="checkbox"/> Habitat <input checked="" type="checkbox"/> Recreation <input checked="" type="checkbox"/> Drinking Water <input checked="" type="checkbox"/> Aesthetics <input type="checkbox"/> Other (Please List)	<p><b>Septic Tank Management:</b>            a. Prevent soil contamination.            b. Prevent waste runoff.            c. Routine and regular maintenance of septic system.</p> <p><b>Pet Excrement Disposal:</b>            a. Properly dispose of pet excrement.</p> <p><b>Automotive Care:</b>            a. Regular maintenance, check for leaks and the proper disposal of fluids at approved locations.</p> <p><b>Lawn and Garden Care:</b>            a. Proper yard maintenance.            b. Proper disposal of organic and non-organic yard by-products.            c. Proper precautions and correct usage of chemical and fertilizers.</p> <p><b>Household Cleaners:</b>            a. Proper disposal of household chemicals.            b. Correct usage of chemicals.</p> <p><b>Sewer management:</b>            a. Routine visual inspections and report leaks if noted.</p> <p><b>Spill/Discharge Control and Cleanup:</b>            a. Control and cleanup spills according to instruction of manufacturer.</p> <p><b>Miscellaneous Product Care:</b>            a. Control and cleanup spills according to instruction of manufacturer.</p> <p><b>Trash Pickup:</b>            a. Visually inspect containers and report damage or leaks.            b. Keep container secure at all times.            c. Ensure that trash is picked up on a regular schedule.</p>	<p><b>Automotive Care:</b>            a. Regular maintenance of fleet vehicles, check for leaks and the proper disposal of fluids at approved locations.</p> <p><b>Commercial Chemical Cleaners:</b>            a. Proper disposal of commercial chemicals.            b. Correct usage of chemicals.            c. Inform all employees of MDSS.</p> <p><b>Sewer management:</b>            a. Routine visual inspections and report leaks if noted.</p> <p><b>Spill/Discharge Control and Cleanup:</b>            a. Control and cleanup spills according to instruction of manufacturer.</p> <p><b>Trash Pickup:</b>            a. Visually inspect containers and report damage or leaks.            b. Keep container secure at all times.            c. Ensure that trash is picked up on a regular schedule.</p> <p><b>Agriculture: Best Management Practices (BMPs)</b>            a. Waste storage structure-Utilize and store waste.            b. Filter Strips-Reduce soil erosion, filter runoff and provide wildlife habitat.            c. Nutrient Management-Prevent over-application of nutrients, protect against soil contamination.</p> <p><b>Forestry: Best Management Practices (BMPs)</b>            a. Streamside Management Zones (SMZS).            b. Road building-Prevents soil erosion.</p> <p><b>Manure and Waste: Best Management Practices (BMPs)</b>            a. Use conservation practices that minimize runoff and erosion on land where waste is applied.            b. Do not allow lagoons to overflow and collect runoff from concentrated animals operation for later land application.            c. Adapt new technology that is environmentally friendly.</p> <p><b>Industrial/Residential/Urban Storm Water Pollution Plan:</b>            Ensure that all pollution prevent plans for storm water are enforced and observed by the company, Follow all EPD and EPA guidelines to reduce the amount of pollutants that enter waterways by stormwater runoff.</p>

## INFORMATION/EDUCATION/OUTREACH ACTIVITIES

An education/outreach component will be used to enhance public understanding of and participation in implementing the TMDL Implementation Plan.

List of all previous and planned information/education/outreach activities.

Responsible Organization or Entity	Description	Impacted Waterbodies*	Target Audience	Anticipated Dates (MM/YY)
Southeast Georgia Regional Development Center	Ordinance/Regulation Review for the City of Ambrose	1, 2	Local Government	12/2004
EPD	Best Management Practices (BMPs) for Industry	1, 2	Business Community	Ongoing
EPD	BMPs for Water Quality	1, 2	Business Community	Ongoing
Georgia Forestry Commission	BMPs for Forestry	1, 2	Forestry Industry	Ongoing
NRCS, 7 Rivers RC&D	BMPs for Agricultural	1, 2	Farming Community	Ongoing
University of Georgia Extension Agent	BMPs for Agricultural	1, 2	Farming Community	Ongoing
Southeast Georgia Regional Development Center	Ordinance/Regulation Review for the City of Broxton	1, 2	Local Government	12/2004
Nicholls Youth Park	Organization supported by University of Georgia Extension Agent, NRCS (7 Rivers RC7D), Coffee County and the City of Nicholls, Georgia.	1, 2	Youth K-12	12/2004
Southeast Georgia Regional Development Center (RDC), DNR/EPD	Southeast Georgia RDC is assisting local governments with a Water Committee. The Committee has been operational for 9 months. One project that the committee would like to undertake is an educational video tape for Residential and Urban BMPs. The committee believes that the key to quality water is behavior modification through education. This will be collaborative effort between DNR/EPD, Southeast Georgia RDC, Water Committee and Local Governments.	1, 2	Local Governments and Citizens	12/2004
Save Our Satilla	Satilla River Basin Environmental Group	1, 2	Citizens	On-going
Southeast Georgia RDC	Southeast Georgia RDC with the help of 7 Rivers RC&D, will assist the City of Broxton, City of Douglas and Coffee County with a 319(h) grant. The grant will be for the delineation of failing septic systems.	1, 2	Citizens	12/2004
Coffee County Green Space Program	Provides for a 100-foot buffer on both sides of the waterway. Education component will educate individuals about the donation of easements to protect waterways.	1, 2	Citizens	12/2001

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Adopt-A-Stream

Will assist Al Browning in the introduction of the Adopt-A-Stream program into Coffee County. Mr. Al Browning is an Ecology teacher at Berrien County High School. He can be reached at (229) 686-7428.

1, 2

Citizens

03/2003

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## STAKEHOLDERS

EPD encourages public involvement and the active participation of stakeholders in the process of improving water quality. Stakeholders can provide valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

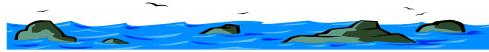
List of local governments, agricultural organizations or significant landholders, commercial forestry organizations, businesses and industries, and local organizations including environmental groups and individuals with a major interest in this watershed.

Name/Organization	Address	City	State	Zip	Phone	E-Mail
Thomas Couch, County Administrator Coffee County	101 South Peterson	Douglas	GA	31533	(912) 384-4799	N/A
James Robert Reynolds, Mayor City of Broxton	P.O. Box 755	Broxton	GA	31519	(912) 359-2060	N/A
J.D. Murray, SR., Chairman, Douglas- Coffee County Planning Commission	P.O. Box 470	Douglas	GA	31534	(912) 384-3302	N/A
Rick Reed, University of Georgia Extension Agent	703 Ward St.	Douglas	GA	31534	(912) 384-3302	N/A
Daniel Lavender, Natural Resources Conservation Services	703 Ward St.	Douglas	GA	31534	(912) 384-3302	N/A
Walter James, Natural Resources Conservation Services	601 Tebeau St.	Waycross	GA	31501	(912) 285-5975	N/A
Fredrick E. Carpenter, Southeast Georgia Regional Development Center	1725 South GA Parkway, West	Waycross	GA	31503	(912) 285-6097	N/A
Jerome Adams	501 Dogwood Ave.	Douglas	GA	31533	(912) 384-4150	N/A
Mark VonWaldner	2002 Apache Trail	Broxton	GA	31519	N/A	N/A
Victor Suttles	411 Greentree Dr.	Broxton	GA	31519	(912) 384-5050	N/A
Thomas Kirkland	1541 Cross Road	Douglas	GA	31533	(912) 384-1675	N/A
Jackie Wilson, City Manager City of Douglas	Lock Drawer 470	Douglas	GA	31534	(912) 389-3401	N/A
Glynn McAllister, Rayonier	P.O. Box 2496	Douglas	GA	31534	(912) 383-8305	<a href="mailto:Glynn.mcallister@rayonier.com">Glynn.mcallister@rayonier.com</a>

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Ralph Tyson, Chairman, Ware County	P.O. Box 1069	Waycross	GA	31502	(912) 287-4300	
Wayne Kilmark, Planning Director, Waycross-Ware County Planning Commission	902 Grove Ave.	Waycross	GA	31502	(912) 287-4379	<a href="mailto:jshubert@warecounty.com">jshubert@warecounty.com</a>
Walter James, Natural Resources Conservation Services	601 Tebeau St.	Waycross	GA	31501	(912) 285-5975	N/A
Edwin Davis, Chairman, Atkinson County	P.O. Box 518	Pearson	GA	31642	(912) 285-5975	N/A

## WATERBODIES/STREAMS COVERED IN THIS PLAN:



These impaired streams are located in the same sub-basin identified by a HUC10 code. Most of the information contained in this section comes from the 303(d) list and has been completed by employees of the EPD Water Protection Branch. Data that placed the streams on the 303(d) list will be provided upon request.

Waterbody Name #1	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Seventeen Mile River (upstream)	Twenty Mile Creek north of Douglas to Otter Creek downstream of Gen. Coffee State Park	7 miles	Fishing	NS
Primary County	Secondary County	Second RDC	Source (Point/Nonpoint)	
Coffee			Douglas Southeast WPCP Urban Runoff (UR)	
Pollutants	Water Quality Standards	Required Load Reduction	TMDL ID	Date TMDL Established
FC	1,000 per 100 ml (geometric mean Nov-April) and 200 per 100 ml (geometric mean May-Oct)	64%		June 2000
Contributing to DO	DO: 5mg/L (daily)-4mg/L (minimum) Natural Water Quality Standard DO: 3.541mg/L (minimum)	WPCP: 24% TOC, TN, TP UR: 39% TOC, TN, TP		June 2002

TOC=Total Organic Carbon (lb/yr), TN=Total Nitrogen (lb/yr), TP=Total Phosphorus (lb/yr)

Waterbody Name #2	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Seventeen Mile River (downstream)	Twenty-nine Mile Creek to Satilla River	13 miles	Fishing	PS
Primary County	Secondary County	Second RDC	Source (Point/Nonpoint)	
Coffee	Atkinson, Ware		Douglas Southeast WPCP Nonpoint (NP)	
Pollutants	Water Quality Standards	Required Load Reduction	TMDL ID	Date TMDL Established
FC	1,000 per 100 ml (geometric mean Nov-April) and 200 per 100 ml (geometric mean May-Oct)	68%		June 2000
Contributing to DO	DO: 5mg/L (daily)-4mg/L (minimum) Natural Water Quality Standard DO: 4.512mg/L (minimum)	WPCP: 24% TOC, TN, TP NP: 39% TOC, TN, TP		June 2002

TOC=Total Organic Carbon (lb/yr), TN=Total Nitrogen (lb/yr), TP=Total Phosphorus (lb/yr)

## POLLUTANT SOURCES



It is important to recognize the potential source(s) causing water quality impairment. Each source must be controlled to comply with target TMDL/Load Allocations for each pollutant. Included is a description of how the sources contribute to the impairment and the waterbody that is impaired.

List of major nonpoint source categories and sub-categories or individual sources (Urban Runoff, Agriculture, Forestry, Municipal Sewage Treatment Plant)

Pollutant	Sources of Pollutants	Description of Contribution to Impairment	Impacted Waterbodies*
DO/FC	GA0024431	NPDES Industrial Permit issued 10/1993-09/1998. After 1998 discharge under City of Douglas WPCP/Southeast Pretreatment Permit.	1, 2
DO	Chemical/Fertilizer Applications, Silvicultural and Farming application of chemicals by aerial and broadcast means.	Chemical/Fertilizer (Nitrates and Phosphates) runoff increases the natural eutrophication rates in streams and creeks, and contributes to impaired DO by producing a carbonaceous chemical reacting with O <sup>2</sup> .	2
DO	Organic Materials from Residential, Agricultural and Silvicultural Developments and Operations.	Runoff from residential yards, city and county mowing operations, hay fields, row crop production, leaves, branches and chipping materials that are not properly secured or disposed are washed away into nearby drainage systems and/or waterways.	1, 2
DO	Lateral Leaf Litter	Decrease in Oxygen due to decomposition of organic materials.	1, 2
DO	Wetlands	Wetland areas often contribute to high organic (leaf litterfall, decomposing plants) loading, slow flows (due to minimum topographical relief) and elevated temperatures in a surface water system that result in conditions where the dissolved oxygen is naturally lower and cannot meet the numeric criteria without reductions in the natural nutrient and carbon loads. Usually reduction in natural forest or wetlands contributions is not feasible, practicable or desirable through conventional best management practices.	1, 2
DO/FC	Uncovered manure piles	Introduced into the waterway by the following methods: (1) Wind, and (2) runoff due to the introduction of water onto the pile. These nutrient enrich materials are then introduced into the waterway by the above means and aerobic microorganisms are needed to further breakdown the materials lending to decreased oxygen amounts in the waterway.	2
DO/FC	Access to waterways by livestock	Manure, feed and other materials are either transported on hooves, introduced into the stream by drinking livestock defecation, and/or feed is introduced into the waterway by runoff due to well traveled paths.	2
DO/FC	Manure from livestock operations	Runoffs from livestock feedlots are introduced into the waterway by rainfall or feedlot maintenance operations.	2

<b>Pollutant</b>	<b>Sources of Pollutants</b>	<b>Description of Contribution to Impairment</b>	<b>Impacted Waterbodies*</b>
DO	Sediments	Sediments slow the rate of flow and increase the temperature of the water, depleting the amount of available oxygen through mechanical alteration of the waterway.	1, 2
DO/FC	Urban Development	Unchecked runoff through storm water sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.	1
DO	Land Disturbing Activities: (1) Construction Sites, (2) Infrastructure Development and Maintenance	Uncheck runoff from construction sites: (1) Leaking portable waste containers, (2) Improperly disposed waste materials, and (3) Introduction of sediments into waterways. (Sediments change the mechanics of the waterway by reducing flow rate and increasing water temperatures)	1, 2
DO	Laundry Care Products	Detergents are emptied into septic systems, onto surface, or deposited into unapproved drainage/septic systems. During periods of precipitation, these chemicals are washed into nearby drainage systems and/or waterways.	1, 2
DO/FC	Spill/Discharges of Raw Sewage	Spillage, unauthorized discharges, and cleansing of contaminated waste vehicles. These untreated materials are left on the surface to be introduced into the drainage system or waterway by precipitation or during the cleansing of equipment or collection apparatuses or containers.	1, 2
DO	Improper Methods of Trash Collection and Disposal	Spillage and incorrect disposal techniques place substances on surfaces to be washed into waterway during precipitation.	1, 2
DO	Collection and Disposal of Petroleum Products and Materials related to the repair of Gasoline and Diesel Equipment.	Fluids and materials associated with mechanical repairs and chemical absorbent materials that are not properly disposed of are left on surfaces to be washed into drainage system or waterways.	1, 2
DO/FC	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.	1, 2
DO	Manufacturing/Industrial Discharges	Thermal discharges raise the temperature of water, lowering its oxygen content.	1
DO/FC	Pet Excrement	Pet excrement is deposited on the ground in residential, urban and rural areas. During routine lawn maintenance (watering) or during periods of precipitation the excrement is washed away into nearby drainage system and/or waterways.	1, 2
DO	Residential, Agricultural and Silvicultural Chemical/Fertilizer applications	Chemical/Fertilizer runoff increases the natural eutrophication rates in streams and creeks, and contributes to DO by producing a carbonaceous chemical reacting with O <sup>2</sup> .	1, 2
DO/FC	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.	1, 2
DO/FC	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.	2

<b>Pollutant</b>	<b>Sources of Pollutants</b>	<b>Description of Contribution to Impairment</b>	<b>Impacted Waterbodies*</b>
DO	Organic Materials From Lawns, City and County Right-of-Ways	Yard trimmings, leaves, branches and chipping materials that are not properly secured or disposed are washed away into nearby drainage systems and/or waterways.	1, 2
DO	Automotive Product Care	Fluids, materials associated with auto repairs and chemical absorbent materials that are not properly disposed of are placed on surfaces to be washed into drainage system or dumped illegally into drainage systems.	1, 2
DO	Organic Materials from Agricultural and Silvicultural Developments and Operations	Runoff from hay fields, row crop production, leaves, branches and chipping materials that are not properly secured or disposed are washed away into nearby drainage systems and/or waterways.	1, 2
DO	Direct Leaf Litter	Direct introduction of leafs falling into waterways from overhanging branches, limbs and trees. These leaves settle at the bottom and require further breakdown by aerobic microorganisms.	1, 2
DO	Industrial, Residential, and Urban Storm Water Runoff	Storm water runoff is part of a natural hydrologic process. However, human activities, particularly urbanization and associated industrial activities, can alter natural drainage patterns and add pollutants to rivers, and streams. Impact is a decline in fish and restrictions on swimming.	1, 2
DO/FC	9-034022	Gold Kist. Possible runoff that would contribute excessive nutrients to waterways.	1
DO/FC	7-000016	Golden Poultry Co. Inc. Possible runoff that would contribute excessive nutrients and fecal matter to waterways.	1
DO	Forested Woodlands	Heavily forested and wetlands areas often contribute to high organic (leaf litterfall, decomposing plants) loading and slow flows (due to minimum topographic relief) in a surface water system that result in conditions where the dissolved oxygen is naturally lower and cannot meet the numeric criteria without reductions in the natural nutrient and carbon loads. Usually reduction in natural forest or wetlands contributions is not feasible, practicable or desirable through conventional best management practices.	1, 2
DO/FC	Feedlot Operations	Animals are confined in large groups in limit space. Large amounts of animals waste are produced. Maintenance, daily cleansing of feedlot, occurs daily to eliminate health problems. Pollutant may enter waterway either by runoff from overflowing lagoons or by runoff from piled manure that is left uncovered.	2



## MANAGEMENT MEASURES, MEASURABLE MILESTONES AND SCHEDULE

(i.e. Local codes and ordinances, Erosion and Sedimentation Control, Storm Water Management, local water resource monitoring)

The following table lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the pollutant and the waterbody for which the TMDL was written. A description is provided of how these management measures are/will be accomplished through reliable and effective delivery mechanisms, and how these management measures are/will help achieve the target TMDL. Included is the source of the pollutant, anticipated/past effectiveness of the management measure (very effective, somewhat effective, not effective), the current status (i.e. enforced, in-progress, planning), and measurable milestones and schedule. Milestones are used to show development in attaining water quality standards and to determine whether management measures are being implemented.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
NPDES Permit GA0024431	Georgia EPD	Modified for 24% load reduction in pollutants	Existing Permit: August 2001	Modified Final: 2002	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Contributing to DO Impairment and FC contamination	City of Douglas Southeast Water Pollution Control Plant	1, 2	24% load reduction expected to result in achievement of water quality standard in three years.  Within 18 months of final TMDL, EPD will modify those permits that need to include TMDL limits.
	City of Douglas Southeast Water Pollution Control Plant	2	

Measurable Milestones	Schedule		Comments
	Start	End	

Refer to Permit GA0024431

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Water Quality Control Act Georgia Groundwater Use Act Georgia Erosion & Sedimentation Act Georgia Comprehensive Planning Act Georgia River Basin Management Planning Act Georgia Storm Water Permitting Program Georgia Zero Tolerance Policy Georgia River Basin Permitting Strategy	Georgia DNR EPD	Laws authorizing Georgia EPD to control water pollution, eliminate phosphate detergents and regulate sludge disposal; to require permits for agricultural ground and surface water withdrawals; to prohibit siltation of state waters by land disturbing activities and require undisturbed buffers along state waters; to require land-use plans that include controls to protect drinking water supply sources and wetlands; to require river basin management plans on a rotation schedule for all major river basins; to require storm water discharge permits for certain industrial activities, construction sites and municipal storm sewer systems; to require enforcement actions for all sanitary sewer system spills/effluent limit violations from wastewater facilities; to review and permit all dischargers with TMDL evaluations and new waste load allocations.	11/64	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO & FC	Ungoverned point source discharge and nonpoint source runoff pollution loads.	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Compliance with regulations to control water pollution including identification and implementation of Best Management Practices.	11/64	Continuous	N/A

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Domesticated and Commercial Animal/Livestock Excrement Disposal and Management Program	Individual	Encourages individuals to correctly dispose and manage excrement from animals/livestock operations.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO/FC	Domesticated animals and Commercial Livestock Production	1, 2	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and FC loading in impacted waterways.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
CAFO Regulations Land Application System Permits	Georgia DNR EPD General NPDES Permits	Permitting requirements for Concentrated Animal Feeding Operations and Land Application Systems with liquid manure.	2002	Pending	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO/FC	Containment lagoons, LAS sprays	2	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Compliance with regulations to control water pollution including identification and implementation of Best Management Practices	2002	Continuous	Comprehensive Nutrient Management Plan

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Herbicide and Pesticide Poison Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of dangerous chemicals	2005	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Non-commercial and commercial application of Herbicides and Pesticides.	1, 2	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	2005	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Stream Management Zones	Georgia Forestry Commission	Encourages Forest Production Operator to Plan and Implement strategies to prevent sediments, fluids and nutrients from entering waterway.	1993	In-Progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Fluids, excessive nutrients and organic materials	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1993	Continuous	N/A

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Septic Tank Management Program	Southeast Georgia RDC, 7 Rivers RC&D and local governments in watershed.	319 grant to delineate failing septic systems	2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO/FC	Effluent leakage from collection lines	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and FC loading in impacted waterways.	2004	Continuous	Southeast Georgia RDC will work with 7 Rivers RC&D, City of Douglas, Coffee County, City of Broxton, Ware County, and Atkinson County to apply for 319(h) grants to delineate and repair or replace malfunctioning septic systems.

Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Agricultural Best Management Practices (BMPs)	NRCS (7 Rivers RC&D) and University of Georgia Extension Service	Leads effort in agricultural water quality program, develops agricultural BMPs educational and monitoring efforts.	1987	In-Progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Waterbodies* Impacted	Anticipated or Past Effectiveness
DO & FC	Animal facility runoff, pesticide/herbicide management, irrigation runoff management and manure applications.	2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and of FC loading in impacted waterways.	1987	Continuous	NRCS and University of Georgia Extension Agent must provide continuous opportunities if BMP is to remain effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Nutrient Management Program	NRCS (7 Rivers RC&D) and University of Georgia Extension Service	Encourages and educates farmers on the correct usage and amount of fertilizers to maintain high yield and to lessen the impacts of nitrates and phosphates to waterways. Reduces NPS of pollution.	1991	In-Progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Waterbodies* Impacted	Anticipated or Past Effectiveness
DO & FC	Natural and manmade fertilizers	2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and FC loading in impacted waterways.	1991	Continuous	NRCS and University of Georgia Extension Agent must provide continuous opportunities if BMP is to remain effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Forestry Best Management Practices (BMPs)	Georgia Forestry Commission	BMP categories include planning for water quality, SMZs, road location, construction, stream crossing and maintenance, timber harvesting, site preparation/reforestation and management/protection.	1999	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*		Anticipated or Past Effectiveness
		Start	End	
DO	Forestry	1, 2		Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1999	Continuous	Georgia Forestry Commission must continuously provide education opportunities for foresters if BMPs are to remain effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Power Equipment, Commercial, Industrial, and Personal Product Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of materials that are related to the repair and routine maintenance of power equipment.	2002	On-going	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Equipment cleansing, mechanical repairs and maintenance shops, and individual home auto maintenance and/or repair.	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO impacted waterways.	2002	Continuous	Local auto part houses encourage and provide opportunities for individual to dispose of fluids and materials that can't be disposed of by normal fluid or trash disposal methods.

<b>Regulation/Ordinance or Management Measure</b>	<b>Responsible Government, Organization or Entity</b>	<b>Description</b>		<b>Enacted/ Projected Date</b>	<b>Status</b>	<b>Regulatory/ Voluntary</b>
House Cleaner Disposal and Management Program	Individual	Encourages individuals to properly dispose of household chemicals		2005	Planned	Voluntary
<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Impacted Waterbodies*</b>	<b>Anticipated or Past Effectiveness</b>			
DO	Household chemicals	1, 2	Effective if program is implemented			
<b>Measurable Milestones</b>	<b>Schedule</b>		<b>Comments</b>			
	<b>Start</b>	<b>End</b>				
Reduction in the measurable amount of pollutants that contribute to impaired DO impacted waterways.	2005	Continuous	Coffee County Waste Disposal must encourage individuals to properly secure and dispose of household chemicals			

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Sewer Management Program	Individual	Encourages individuals to routinely inspect sewage system on property.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO & FC	Leaking Sewage Lines	1, 2	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen and FC loading in the impacted waterways.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Spill/Discharge Control and Cleanup Program	Individual	Encourages individuals to cleanup or control and to report spills.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Surface Spills or Uncontrolled Discharges	1, 2	Effective is BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in the impacted waterways.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
BMP Monitoring	GFC	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP audit	01/2003	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Silviculture Activities	1, 2	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	01/2003	Continuous	N/A

Watershed: Seventeen Mile River  
HUC10: #0307020105

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Storm Water Pollution Prevention Plan (SWPPP)	Southeast Georgia RDC, Coastal Conservation Resources, and NRCS	Storm water runoff is part of a natural hydrologic process. However, human activities, particularly urbanization and associated industrial activities, can alter natural drainage patterns and add pollutants to rivers, and streams. Impact is a decline in fish and restrictions on swimming.	01/2003	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Storm Water Run Off	1, 2	Effective if BMP is implemented

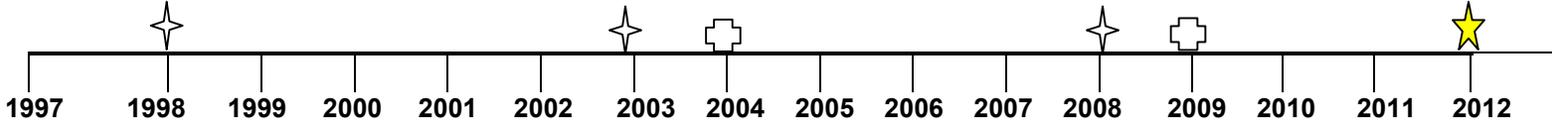
Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in the impacted waterways.	01/2003	Continuous	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources, and NRCS, seek funds to assist Coffee County in the development of Storm Water Pollution Prevention Plan (SWPPP)

**POTENTIAL FUNDING SOURCES** The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

<b>Funding Source</b>	<b>Responsible Authority</b>	<b>Status</b>	<b>Anticipated Funding Amount</b>	<b>Impacted Waterbodies*</b>
Section 319 (h) of the Clean Water Act	EPA/State of Georgia	Must Apply	N/A	1, 2
Greenspace Funds	Georgia Department of Natural Resources	Funded	\$80,000	1, 2
Small Business Technical Assistance Program	Georgia Department of Natural Resources (EPD)	Must Request Assistance	Undetermined-Free Technical Assistance	1, 2
Environmental Quality Incentive Program (EQIP)	NRCS	Must Apply	N/A	1, 2
Unified Watershed Assessment program	NRCS	Must Apply	N/A	1, 2
Conservation Reserve Enhancement Plan	NRCS	Must Apply	N/A	1, 2
Section 604(b) Grants	Georgia Department of Natural Resources	Must Apply	N/A	1, 2

### PROJECTED ATTAINMENT DATE

The projected date to attain and maintain water quality standards in this watershed is 10 years from acceptance of the TMDL Implementation Plan by EPD.



- EPD Monitoring 
- Evaluate TMDL & Attainment Date 
- Project Attainment 

## MONITORING PLAN

The purpose of this monitoring plan is to determine the effectiveness of the target TMDL and the management measures being implemented to meet water quality standards. List of previous, current or planned /proposed sampling activities or other surveys. Monitoring data that placed stream on 303(d) list will be provided if requested.

Name of Regulation/Ordinance or Management Measure	Organization	Impacted Waterbodies*	Pollutants	Purpose/Description	Time Frame		Status (Previous, Current, Proposed)
					Start	End	
TMDL Evaluation/Monitoring Data	GA EPD/USGS	1, 2	DISSOLVED OXYGEN/FC	TMDL Evaluation /Monitoring data for Georgia 305(b)/303(d) List	1998	1998	Previous
Water Quality Testing	GA EPD	1, 2	DO/FC	Water Quality Testing/Assessment of water quality.	2003	2003	Proposed
TMDL Evaluation	GA EPD/USGS	1, 2	DO/FC	Monitoring data for GA 305(b)/303(d) list	1998	1998	Previous
BMP Monitoring	GFC	1, 2	DO	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP.	01/2003	Continuous	Current
Comprehensive Nutrient Management Plan	GA DNR EPD	1, 2	DO	Component of general CAFO/LAS permits to identify and describe practices that are to be implemented to assure compliance with the limitations and conditions of the permit.	03/2002	03/2007	Current
Storm Water Pollution Prevention Plan	Southeast Georgia RDC, NRCS and Coastal Conservation Resources	1, 2	DO/FC	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources and NRCS, seek funds to assist Coffee County in the development of Storm Water Pollution Prevention Plan (SWPPP)	01/2003	01/2004	Proposed
Water Quality Testing	City of Douglas	1, 2	DO/FC	Water Quality Testing/Assessment of water quality.	1990	Continuous	Current

### CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE

The following set of criteria will be used to determine whether any substantial progress is being made towards reducing pollutants in impaired waterbodies and attaining water quality standards. Discussion on each criterion is recorded in the space provided. Additional relevant criteria are presented in Comments.

- Percent of concentration or load change (monitoring program) \_\_\_\_\_

- Categorical change in classification of the stream (delisting the stream is the goal) \_\_\_\_\_

*If monitoring results show that it is unlikely that the TMDL will be adequate to meet water quality standards, revision of the TMDL may be necessary.*

- Regulatory controls or activities installed (ordinances, laws) \_\_\_\_\_

- Best management practices installed (agricultural, forestry, urban) \_\_\_\_\_

### COMMENTS

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Watershed: Seventeen Mile River  
HUC10: #0307020105

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Date Submitted to EPD: 12/16/02

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**Environmental Protection Division of the Department of Natural Resources,  
State of Georgia.**

**TOGETHER WE CAN MAKE A DIFFERENCE!**

**Department Use Only:**

Implementation Plan	Impaired Waterbodies			
	1	2	3	4
Action Plans				
Education/Outreach Activities				
Stakeholders				
Pollutant Sources Identified				
Description of Management Measures				
Measurable Milestones and Schedule				
Potential Funding Sources				
Monitoring Plan				
Criteria To Determine Whether Substantial Progress Is Being Made				
Supporting Documents				

ATTACHMENT A:  
STREAM APPROACH

# TMDL IMPLEMENTATION PLAN

## SATILLA RIVER BASIN

### Overview of Seventeen Mile River Watershed Plan – Stream Approach

The Seventeen Mile River watershed (HUC10 #0307020105) is located in the Satilla River basin in Southeast Georgia's Atkinson, Coffee, and Ware Counties. The local governments involved in improving the Seventeen Mile River watershed are the cities of Broxton and Douglas and the counties of Atkinson, Coffee, and Ware. Also involved in the effort are the Southeast Georgia Regional Development Center (SEGa RDC) in Waycross and the Georgia Department of Natural Resources' Environmental Protection Division (GADNR-EPD).

Having been determined to be an impaired water body by the State of Georgia, Seventeen Mile River (upstream) from Twenty Mile Creek north of Douglas to Otter Creek downstream of Gen. Coffee State Park is classified as *not supporting* its designation as fishing water and has an impacted area of seven miles. The Seventeen Mile River (downstream) from Twenty-nine Mile Creek to the Satilla River is classified as *partially supporting* its designation as fishing water and has an impacted area of thirteen miles. The Total Maximum Daily Load (TMDL) Implementation Plan for the Seventeen Mile River watershed is a collaborative effort of the GADNR-EPD and the SEGa RDC. A TMDL is the calculation of the maximum amount of a particular pollutant that a water body, river, or stream can receive and still be safe, healthy, and meet Georgia water quality standards.

According to the Seventeen Mile River Watershed Total Maximum Daily Load (TMDL) Implementation Plan, the water bodies suffer from two forms of impairments, Fecal Coliform (FC) and Dissolved Oxygen (DO). To meet current water quality standards, the TMDL Implementation Plan notes that a 64% reduction in nonpoint/point source fecal loads is necessary in the Seventeen Mile River (upstream) and a 68% reduction in nonpoint/point source fecal loads is necessary in the Seventeen Mile River (downstream). To address the DO in the Seventeen Mile River, both upstream and downstream, the TMDL Implementation Plan suggests a 24% point source load reduction and a 39% urban runoff and nonpoint source load reduction resulting in a decrease of total organic carbon, total nitrogen, and total phosphorus.

#### **Sources of Fecal Coliform in Seventeen Mile River**

The fecal coliform (FC) in the Seventeen Mile River watershed can be attributed to both point and nonpoint sources. There is one permitted NPDES discharge of FC into Seventeen Mile River; it is the City of Douglas Water Pollution Control Plant (WPCP)/Southeast Pretreatment Permit (NPDES GA0024431).

As for the nonpoint sources of FC, uncovered manure piles, farm animal waste, access to waterways by livestock, urban and rural development, poultry industry runoff, spills/discharge of raw sewage, pet excrement, and leaking septic systems are contributing to the FC contamination.

The aforementioned sources are contributing to impaired dissolved oxygen (DO) as well.

#### **Contributors to Impaired Dissolved Oxygen in Seventeen Mile River**

There are numerous nonpoint sources of oxygen demanding substances in the Seventeen Mile River watershed. These sources include surface storm runoff of chemicals and fertilizers from agricultural areas. Also, industrial, residential, and urban storm water runoff, automotive care products, improper methods of trash collection and disposal, land disturbing activities, and organic material from lawns and city or county right-of-ways are all contributing to the DO impairment in Seventeen Mile River.

In addition to the aforementioned sources, many Southeast Georgia streams, including Seventeen Mile River, are slow-flowing, "blackwater" bodies. The dark water coloration is due to adjacent wetland areas having organically rich bottom sediments that flow to the stream, as well as leaf litter-fall. These factors also have an effect on DO.

#### **Developing the Plan and Stakeholder Involvement**

The SEGaRDC has worked closely with GADNR-EPD to develop the TMDL Implementation Plan for the Seventeen Mile River watershed. Each agency has been diligent in making sure that the strategy includes an action plan, education/outreach activities, stakeholders, pollutant sources, and

# TMDL IMPLEMENTATION PLAN

## SATILLA RIVER BASIN

### **Overview of Seventeen Mile River Watershed Plan – Stream Approach**

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potential funding resources. Stakeholders, including local government officials, landowners, industrial representatives and interest groups, have played a vital role in the plan's preparation. A public meeting was held November 11, 2002, at the Coffee County Courthouse to gather information from stakeholders and/or interest groups. Stakeholders offer valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

#### **Monitoring Plan**

The monitoring plan will determine the effectiveness of the target TMDL and the management measures being implemented to meet water quality standards. Water quality testing by GADNR-EPD is scheduled to begin in 2003. Presently, the City of Douglas is performing water quality testing and GADNR-EPD is participating in a comprehensive nutrient management plan. A storm water pollution prevention plan is proposed to begin development in 2003. Also, the Georgia Forestry Commission plans to begin aerial monitoring of forestry best management practices in 2003.

#### **Management Practices**

The Implementation Plan lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the Fecal Coliform and Dissolved Oxygen in the Seventeen Mile River watershed. The following management practices are included in the TMDL Implementation Plan:

- Domesticated and commercial animal/livestock excrement disposal and management program
- CAFO regulations land application system permits
- Herbicide and pesticide poison care disposal and management program
- Stream management zones
- Septic tank management program
- Agricultural and forestry best management practices
- Nutrient management program
- Power equipment, commercial, industrial, and personal product care disposal and management program
- House cleaner disposal and management program
- Sewer management program
- Spill/discharge control and cleanup program
- Best management practices monitoring
- Storm water pollution prevention plan (SWPPP)

#### **Projected Attainment Date**

The projected date to attain and maintain water quality standards in the Seventeen Mile River watershed is 2012, which is within 10 years of the acceptance of the TMDL Implementation Plan by the Environmental Protection Division.

#### **Conclusion**

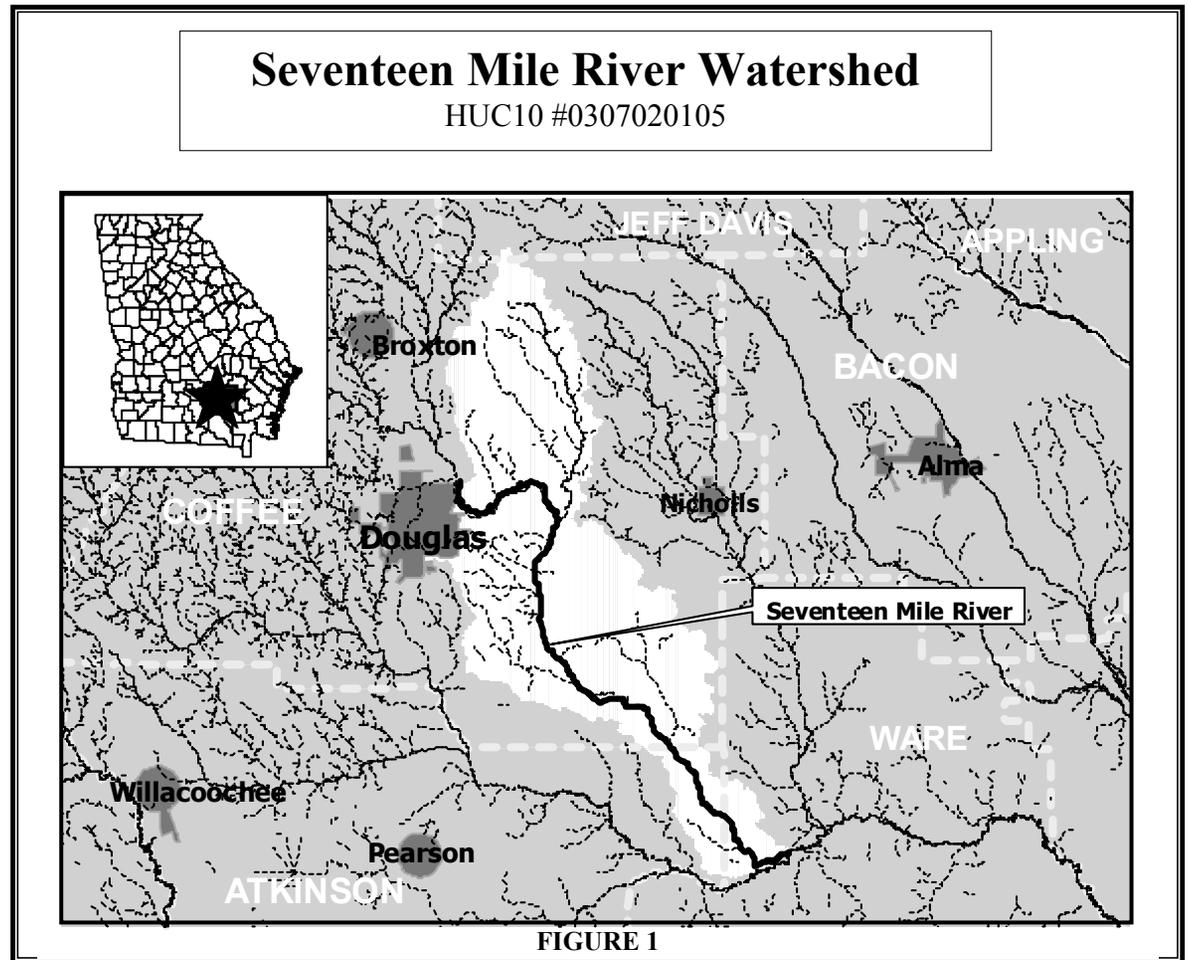
TMDL Implementation Plans are platforms for establishing a course of actions to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. Through this intergovernmental partnership and the collaboration with the private stakeholders, the Seventeen Mile River watershed TMDL Implementation Plan is sure to succeed.

STATE OF GEORGIA  
**TMDL IMPLEMENTATION PLAN**  
 SATILLA RIVER BASIN

**STREAM APPROACH**

TMDL Implementation Plans are platforms for establishing a course of action to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. **With input from appropriate stakeholder groups, a TMDL Implementation Plan has been developed for a cluster of impaired waterbodies and the corresponding pollutants.** The impaired streams are located in the same sub-basin identified by a HUC10 code (Figure 1).

**This portion of the Implementation Plan addresses individual waterbodies** and the corresponding pollutant sources, stakeholders, education/outreach activities, and potential funding sources. In addition, the Plan describes (a) regulatory and voluntary practices/control actions (*management measures*) to reduce target pollutants, (b) milestone schedules to show the development of the management measures on reducing target pollutants (*measurable milestones*), and (c) a monitoring plan to determine the efficiency of the management measures and measurable. The overall goal of the Plan is to define a set of actions that will help achieve water quality standards in the state of Georgia.



<b>Impaired Waterbody*</b>	<b>Location</b>	<b>Impairment</b>
1. Seventeen Mile River (upstream)	Twenty Mile Creek north of Douglas to Otter Creek downstream of Gen. Coffee State Park	Fecal Coliform (FC) Dissolved Oxygen (DO)
2. Seventeen Mile River (downstream)	Twenty-nine Mile Creek to Satilla River	Fecal Coliform (FC) Dissolved Oxygen (DO)

\*These Waterbody Numbers are referenced throughout the implementation plan.

SATILLA RIVER BASIN  
TMDL Implementation Plan  
Seventeen Mile River Watershed  
HUC10 #0307020105

## 1. Seventeen Mile River (upstream)

NAME	LOCATION	MILES/AREA IMPACTED	USE CLASSIFICATION	PARTIALLY SUPPORTING/ NOT SUPPORTING (PS/NS)
Seventeen Mile River	Twenty Mile Creek north of Douglas to Otter Creek downstream of Gen. Coffee State Park	7 miles	Fishing	NS
PRIMARY COUNTY	SECONDARY COUNTY	SECOND RDC	SOURCE (POINT/NON-POINT)	
Coffee			Douglas Southeast WPCP Urban Runoff (UR)	
POLLUTANTS	WATER QUALITY STANDARDS	REQUIRED LOAD REDUCTION	TMDL ID #	DATE TMDL ESTABLISHED
FC	1,000 per 100 ml (geometric mean Nov-April) and 200 per 100 ml (geometric mean May-Oct)	64%		June 2000
Contributing to DO	DO: 5mg/L (daily)-4mg/L (minimum) Natural Water Quality Standard DO: 3.541mg/L (minimum)	WPCP: 24% TOC, TN, TP UR: 39% TOC, TN, TP		June 2002

TOC=Total Organic Carbon (lb/yr), TN=Total Nitrogen (lb/yr), TP=Total Phosphorus (lb/yr)

SATILLA RIVER BASIN  
TMDL Implementation Plan  
Seventeen Mile River Watershed  
HUC10 #0307020105

**SIGNIFICANT STAKEHOLDERS**

<b>Name/Organization</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>	<b>Phone</b>	<b>E-mail</b>
Thomas Couch, County Administrator Coffee County	101 South Peterson	Douglas	GA	31533	(912) 384-4799	N/A
James Robert Reynolds, Mayor City of Broxton	P.O. Box 755	Broxton	GA	31519	(912) 359-2060	N/A
J.D. Murray, SR., Chairman, Douglas- Coffee County Planning Commission	P.O. Box 470	Douglas	GA	31534	(912) 384-3302	N/A
Rick Reed, University of Georgia Extension Agent	703 Ward St.	Douglas	GA	31534	(912) 384-3302	N/A
Daniel Lavender, Natural Resources Conservation Services	703 Ward St.	Douglas	GA	31534	(912) 384-3302	N/A
Walter James, Natural Resources Conservation Services	601 Tebeau St.	Waycross	GA	31501	(912) 285-5975	N/A
Fredrick E. Carpenter, Southeast Georgia Regional Development Center	1725 South GA Parkway, West	Waycross	GA	31503	(912) 285-6097	N/A
Jerome Adams	501 Dogwood Ave.	Douglas	GA	31533	(912) 384-4150	N/A
Mark VonWaldner	2002 Apache Trail	Broxton	GA	31519	N/A	N/A
Victor Suttles	411 Greentree Dr.	Broxton	GA	31519	(912) 384-5050	N/A
Thomas Kirkland	1541 Cross Road	Douglas	GA	31533	(912) 384-1675	N/A
Jackie Wilson, City Manager City of Douglas	Lock Drawer 470	Douglas	GA	31534	(912) 389-3401	N/A
Glynn McAllister, Rayonier	P.O. Box 2496	Douglas	GA	31534	(912) 383-8305	<a href="mailto:Glynn.mcallister@rayonier.com">Glynn.mcallister@rayonier.com</a>
Ralph Tyson, Chairman, Ware County	P.O. Box 1069	Waycross	GA	31502	(912) 287-4300	
Wayne Kilmark, Planning Director, Waycross-Ware County Planning Commission	902 Grove Ave.	Waycross	GA	31502	(912) 287-4379	<a href="mailto:jshubert@warecounty.com">jshubert@warecounty.com</a>
Walter James, Natural Resources Conservation Services	601 Tebeau St.	Waycross	GA	31501	(912) 285-5975	N/A
Edwin Davis, Chairman, Atkinson County	P.O. Box 518	Pearson	GA	31642	(912) 285-5975	N/A

SATILLA RIVER BASIN  
TMDL Implementation Plan  
Seventeen Mile River Watershed  
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**EDUCATION/OUTREACH ACTIVITIES**

<b>Responsible Organization or Entity</b>	<b>Description</b>	<b>Target Audience</b>	<b>Anticipated Dates (MM/YY)</b>
Southeast Georgia Regional Development Center	Ordinance/Regulation Review for the City of Ambrose	Local Government	12/2004
EPD	Best Management Practices (BMPs) for Industry	Business Community	Ongoing
EPD	BMPs for Water Quality	Business Community	Ongoing
Georgia Forestry Commission	BMPs for Forestry	Forestry Industry	Ongoing
NRCS, 7 Rivers RC&D	BMPs for Agricultural	Farming Community	Ongoing
University of Georgia Extension Agent	BMPs for Agricultural	Farming Community	Ongoing
Southeast Georgia Regional Development Center	Ordinance/Regulation Review for the City of Broxton	Local Government	12/2004
Nicholls Youth Park	Organization supported by University of Georgia Extension Agent, NRCS (7 Rivers RC7D), Coffee County and the City of Nicholls, Georgia.	Youth K-12	12/2004
Southeast Georgia Regional Development Center (RDC), DNR/EPD	Southeast Georgia RDC is assisting local governments with a Water Committee. The Committee has been operational for 9 months. One project that the committee would like to undertake is an educational videotape for Residential and Urban BMPs. The committee believes that the key to quality water is behavior modification through education. This will be collaborative effort between DNR/EPD, Southeast Georgia RDC, Water Committee and Local Governments.	Local Governments and Citizens	12/2004
Save Our Satilla	Satilla River Basin Environmental Group	Citizens	On-going
Southeast Georgia RDC	Southeast Georgia RDC with the help of 7 Rivers RC&D, will assist the City of Broxton, City of Douglas and Coffee County with a 319(h) grant. The grant will be for the delineation of failing septic systems.	Citizens	12/2004

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Coffee County Green Space Program	Provides for a 100-foot buffer on both sides of the waterway. Education component will educate individuals about the donation of easements to protect waterways.	Citizens	12/2001
Adopt-A-Stream	Will assist Al Browning in the introduction of the Adopt-A-Stream program into Coffee County. Mr. Al Browning is an Ecology teacher at Berrien County High School. He can be reached at (229) 686-7428.	Citizens	03/2003

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**POLLUTANT SOURCES**

<b>Pollutant</b>	<b>Source</b>	<b>Description of Contribution to Impairment</b>
DO/FC	GA0024431	NPDES Industrial Permit issued 10/1993-09/1998. After 1998 discharge under City of Douglas WPCP/Southeast Pretreatment Permit.
DO	Organic Materials from Residential, Agricultural and Silvicultural Developments and Operations.	Runoff from residential yards, city and county mowing operations, hay fields, row crop production, leaves, branches and chipping materials that are not properly secured or disposed are washed away into nearby drainage systems and/or waterways.
DO	Lateral Leaf Litter	Decrease in Oxygen due to decomposition of organic materials.
DO	Wetlands	Wetland areas often contribute to high organic (leaf litterfall, decomposing plants) loading, slow flows (due to minimum topographical relief) and elevated temperatures in a surface water system that result in conditions where the dissolved oxygen is naturally lower and cannot meet the numeric criteria without reductions in the natural nutrient and carbon loads. Usually reduction in natural forest or wetlands contributions is not feasible, practicable or desirable through conventional best management practices.
DO	Sediments	Sediments slow the rate of flow and increase the temperature of the water, depleting the amount of available oxygen through mechanical alteration of the waterway.
DO/FC	Urban Development	Unchecked runoff through storm water sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
DO	Land Disturbing Activities: (1) Construction Sites, (2) Infrastructure Development and Maintenance	Uncheck runoff from construction sites: (1) Leaking portable waste containers, (2) Improperly disposed waste materials, and (3) Introduction of sediments into waterways. (Sediments change the mechanics of the waterway by reducing flow rate and increasing water temperatures)
DO	Laundry Care Products	Detergents are emptied into septic systems, onto surface, or deposited into unapproved drainage/septic systems. During periods of precipitation, these chemicals are washed into nearby drainage systems and/or waterways.
DO/FC	Spill/Discharges of Raw Sewage	Spillage, unauthorized discharges, and cleansing of contaminated waste vehicles. These untreated materials are left on the surface to be introduced into the drainage system or waterway by precipitation or during the cleansing of equipment or collection apparatuses or containers.

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DO	Improper Methods of Trash Collection and Disposal	Spillage and incorrect disposal techniques place substances on surfaces to be washed into waterway during precipitation.
DO	Collection and Disposal of Petroleum Products and Materials related to the repair of Gasoline and Diesel Equipment.	Fluids and materials associated with mechanical repairs and chemical absorbent materials that are not properly disposed of are left on surfaces to be washed into drainage system or waterways.
DO/FC	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.
DO	Manufacturing/Industrial Discharges	Thermal discharges raise the temperature of water, lowering its oxygen content.
DO/FC	Pet Excrement	Pet excrement is deposited on the ground in residential, urban and rural areas. During routine lawn maintenance (watering) or during periods of precipitation the excrement is washed away into nearby drainage system and/or waterways.
DO	Residential, Agricultural and Silvicultural Chemical/Fertilizer applications	Chemical/Fertilizer runoff increases the natural eutrophication rates in streams and creeks, and contributes to DO by producing a carbonaceous chemical reacting with O <sub>2</sub> .
DO/FC	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.
DO/FC	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
DO	Organic Materials From Lawns, City and County Right-of-Ways	Yard trimmings, leaves, branches and chipping materials that are not properly secured or disposed are washed away into nearby drainage systems and/or waterways.
DO	Automotive Product Care	Fluids, materials associated with auto repairs and chemical absorbent materials that are not properly disposed of are placed on surfaces to be washed into drainage system or dumped illegally into drainage systems.
DO	Organic Materials from Agricultural and Silvicultural Developments and Operations	Runoff from hay fields, row crop production, leaves, branches and chipping materials that are not properly secured or disposed are washed away into nearby drainage systems and/or waterways.
DO	Direct Leaf Litter	Direct introduction of leafs falling into waterways from overhanging branches, limbs and trees. These leaves settle at the bottom and require further breakdown by aerobic microorganisms.
DO	Industrial, Residential, and Urban Storm Water Runoff	Storm water runoff is part of a natural hydrologic process. However, human activities, particularly urbanization and associated industrial activities, can alter natural drainage patterns and add pollutants to rivers, and streams. Impact is a decline in fish and restrictions on swimming.
DO/FC	9-034022	Gold Kist. Possible runoff that would contribute excessive nutrients to waterways.
DO/FC	7-000016	Golden Poultry Co. Inc. Possible runoff that would contribute excessive nutrients and fecal matter to waterways.
DO	Forested Woodlands	Heavily forested and wetlands areas often contribute to high organic (leaf litterfall, decomposing plants) loading and slow flows (due to minimum topographic relief) in a surface water system that result in conditions where the dissolved oxygen is naturally lower and cannot meet the numeric criteria without reductions in the natural nutrient and carbon loads. Usually reduction in natural forest or wetlands contributions is not feasible, practicable or desirable through conventional best management practices.

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**MANAGEMENT MEASURES, RESPONSIBLE PARTIES, AND MEASURABLE MILESTONES**

<b>Regulation/Ordinance or Management Measure</b>	<b>Responsible Government, Organization or Entity</b>	<b>Description</b>	<b>Enacted/ Projected Date</b>	<b>Status (In-progress, Planning, Enforced)</b>	<b>Regulatory/ Voluntary</b>
NPDES Permit GA0024431	Georgia EPD	Modified for 24% load reduction in pollutants	Existing Permit: August 2001	(In-progress) Modified Final: 2002	Regulatory

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Anticipated or Past Effectiveness</b>
Contributing to DO	City of Douglas Southeast Water Pollution Control Plant	24% load reduction expected to result in achievement of water quality standards in three years

<b>Measurable Milestones</b>	<b>Schedule</b>		<b>Comments</b>
	<b>Start</b>	<b>End</b>	
Refer to Permit GA0024431	8/2001	2002	N/A

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Georgia Water Quality Control Act Georgia Groundwater Use Act Georgia Erosion & Sedimentation Act Georgia Comprehensive Planning Act Georgia River Basin Management Planning Act Georgia Storm Water Permitting Program Georgia Zero Tolerance Policy Georgia River Basin Permitting Strategy	Georgia DNR EPD	Laws authorizing Georgia EPD to control water pollution, eliminate phosphate detergents and regulate sludge disposal; to require permits for agricultural ground and surface water withdrawals; to prohibit siltation of state waters by land disturbing activities and require undisturbed buffers along state waters; to require land-use plans that include controls to protect drinking water supply sources and wetlands; to require river basin management plans on a rotation schedule for all major river basins; to require storm water discharge permits for certain industrial activities, construction sites and municipal storm sewer systems; to require enforcement actions for all sanitary sewer system spills/effluent limit violations from wastewater facilities; to review and permit all dischargers with TMDL evaluations and new waste load allocations.	11/64	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO & FC	Ungoverned point source discharge and nonpoint source runoff pollution loads.	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Compliance with regulations to control water pollution including identification and implementation of Best Management Practices.	11/64	Continuous	N/A

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Domesticated and Commercial Animal/Livestock Excrement Disposal and Management Program	Individual	Encourages individuals to correctly dispose and manage excrement from animals/livestock operations.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO/FC	Domesticated animals and Commercial Livestock Production	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and FC loading in impacted waterways.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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<b>Regulation/Ordinance or Management Measure</b>	<b>Responsible Government, Organization or Entity</b>	<b>Description</b>	<b>Enacted/ Projected Date</b>	<b>Status</b>	<b>Regulatory/ Voluntary</b>
Herbicide and Pesticide Poison Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of dangerous chemicals	2005	Planning	Voluntary

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Anticipated or Past Effectiveness</b>
DO	Non-commercial and commercial application of Herbicides and Pesticides.	Effective if BMP is implemented

<b>Measurable Milestones</b>	<b>Schedule</b>		<b>Comments</b>
	<b>Start</b>	<b>End</b>	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	2005	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Stream Management Zones	Georgia Forestry Commission	Encourages Forest Production Operator to Plan and Implement strategies to prevent sediments, fluids and nutrients from entering waterway.	1993	In-Progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Fluids, excessive nutrients and organic materials	Effective

Measurable Milestones	Schedule			Comments
	Start	End		
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1993	Continuous	N/A	

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Septic Tank Management Program	Southeast Georgia RDC, 7 Rivers RC&D and local governments in watershed.	319 grant to delineate failing septic systems	2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO/FC	Effluent leakage from collection lines	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and FC loading in impacted waterways.	2004	Continuous	Southeast Georgia RDC will work with 7 Rivers RC&D, City of Douglas, Coffee County, City of Broxton, Ware County, and Atkinson County to apply for 319(h) grants to delineate and repair or replace malfunctioning septic systems.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Forestry Best Management Practices (BMPs)	Georgia Forestry Commission	BMP categories include planning for water quality, SMZs, road location, construction, stream crossing and maintenance, timber harvesting, site preparation/reforestation and management/protection.	1999	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Forestry	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1999	Continuous	Georgia Forestry Commission must continuously provide education opportunities for foresters if BMPs are to remain effective.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Power Equipment, Commercial, Industrial, and Personal Product Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of materials that are related to the repair and routine maintenance of power equipment.	2002	On-going	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Equipment cleansing, mechanical repairs and maintenance shops, and individual home auto maintenance and/or repair.	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO impacted waterways.	2002	Continuous	Local auto part houses encourage and provide opportunities for individual to dispose of fluids and materials that can't be disposed of by normal fluid or trash disposal methods.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
House Cleaner Disposal and Management Program	Individual	Encourages individuals to properly dispose of household chemicals	2005	Planned	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Household chemicals	Effective if program is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO impacted waterways.	2005	Continuous	Coffee County Waste Disposal must encourage individuals to properly secure and dispose of household chemicals

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Sewer Management Program	Individual	Encourages individuals to routinely inspect sewage system on property.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO & FC	Leaking Sewage Lines	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen and Fecal Coliform loading in the impacted waterways.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Spill/Discharge Control and Cleanup Program	Individual	Encourages individuals to cleanup or control and to report spills.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Surface Spills or Uncontrolled Discharges	Effective is BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in the impacted waterways.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
BMP Monitoring	GFC	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP audit	01/2003	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Silviculture Activities	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	01/2003	Continuous	N/A

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Storm Water Pollution Prevention Plan (SWPPP)	Southeast Georgia RDC, Coastal Conservation Resources, and NRCS	Storm water runoff is part of a natural hydrologic process. However, human activities, particularly urbanization and associated industrial activities, can alter natural drainage patterns and add pollutants to rivers, and streams. Impact is a decline in fish and restrictions on swimming.	01/2003	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Storm Water Run Off	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in the impacted waterways.	01/2003	Continuous	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources, and NRCS, seek funds to assist Coffee County in the development of Storm Water Pollution Prevention Plan (SWPPP).

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**POTENTIAL FUNDING SOURCES**

<b>Source</b>	<b>Responsible Authority</b>	<b>Status</b>	<b>Anticipated Funding Amount</b>
Section 319 (h) of the Clean Water Act	EPA/State of Georgia	Must Apply	N/A
Greenspace Funds	Georgia Department of Natural Resources	Funded	\$80,000
Small Business Technical Assistance Program	Georgia Department of Natural Resources (EPD)	Must Request Assistance	Undetermined-Free Technical Assistance
Environmental Quality Incentive Program (EQIP)	NRCS	Must Apply	N/A
Unified Watershed Assessment program	NRCS	Must Apply	N/A
Conservation Reserve Enhancement Plan	NRCS	Must Apply	N/A
Section 604(b) Grants	Georgia Department of Natural Resources	Must Apply	N/A

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**MONITORING PLAN**

Organization	Pollutants	Purpose/Description	Time Frame		Status: (Previous, Current, Proposed)
			Start	End	
GA EPD/USGS	DO/FC	TMDL Evaluation /Monitoring data for Georgia 305(b)/303(d) List	1998	1998	Previous
GA EPD	DO/FC	Water Quality Testing/Assessment of water quality.	2003	2003	Proposed
GA EPD/USGS	DO/FC	Monitoring data for GA 305(b)/303(d) list	1998	1998	Previous
GFC	DO	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP.	01/2003	Continuous	Current
GA DNR EPD	DO	Component of general CAFO/LAS permits to identify and describe practices that are to be implemented to assure compliance with the limitations and conditions of the permit.	03/2002	03/2007	Current
Southeast Georgia RDC, NRCS and Coastal Conservation Resources	DO/FC	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources and NRCS, seek funds to assist Coffee County in the development of Storm Water Pollution Prevention Plan (SWPPP)	01/2003	01/2004	Proposed
City of Douglas	DO/FC	Water Quality Testing/Assessment of water quality.	1990	Continuous	Current

COMMENTS:

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## 2. Seventeen Mile River (downstream)

NAME	LOCATION	MILES/AREA IMPACTED	CLASSIFICATION	PARTIALLY SUPPORTING/ NOT SUPPORTING (PS/NS)
Seventeen Mile River	Twenty-nine Mile Creek to Satilla River	13 miles	Fishing	PS
PRIMARY COUNTY	SECONDARY COUNTY	SECOND RDC	SOURCE (POINT/NON-POINT)	
Coffee	Atkinson, Ware		Douglas Southeast WPCP Nonpoint (NP)	
POLLUTANTS	WATER QUALITY STANDARDS	REQUIRED LOAD REDUCTION	TMDL ID #	DATE TMDL ESTABLISHED
FC	1,000 per 100 ml (geometric mean Nov-April) and 200 per 100 ml (geometric mean May-Oct)	68%		June 2000
Contributing to DO	DO: 5mg/L (daily)-4mg/L (minimum) Natural Water Quality Standard DO: 4.512mg/L (minimum)	WPCP: 24% TOC, TN, TP NP: 39% TOC, TN, TP		June 2002

TOC=Total Organic Carbon (lb/yr), TN=Total Nitrogen (lb/yr), TP=Total Phosphorus (lb/yr)

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**SIGNIFICANT STAKEHOLDERS**

<b>Name/Organization</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip</b>	<b>Phone</b>	<b>E-mail</b>
Thomas Couch, County Administrator Coffee County	101 South Peterson	Douglas	GA	31533	(912) 384-4799	N/A
James Robert Reynolds, Mayor City of Broxton	P.O. Box 755	Broxton	GA	31519	(912) 359-2060	N/A
J.D. Murray, SR., Chairman, Douglas- Coffee County Planning Commission	P.O. Box 470	Douglas	GA	31534	(912) 384-3302	N/A
Rick Reed, University of Georgia Extension Agent	703 Ward St.	Douglas	GA	31534	(912) 384-3302	N/A
Daniel Lavender, Natural Resources Conservation Services	703 Ward St.	Douglas	GA	31534	(912) 384-3302	N/A
Walter James, Natural Resources Conservation Services	601 Tebeau St.	Waycross	GA	31501	(912) 285-5975	N/A
Fredrick E. Carpenter, Southeast Georgia Regional Development Center	1725 South GA Parkway, West	Waycross	GA	31503	(912) 285-6097	N/A
Jerome Adams	501 Dogwood Ave.	Douglas	GA	31533	(912) 384-4150	N/A
Mark VonWaldner	2002 Apache Trail	Broxton	GA	31519	N/A	N/A
Victor Suttles	411 Greentree Dr.	Broxton	GA	31519	(912) 384-5050	N/A
Thomas Kirkland	1541 Cross Road	Douglas	GA	31533	(912) 384-1675	N/A
Jackie Wilson, City Manager City of Douglas	Lock Drawer 470	Douglas	GA	31534	(912) 389-3401	N/A
Glynn McAllister, Rayonier	P.O. Box 2496	Douglas	GA	31534	(912) 383-8305	<a href="mailto:Glynn.mcallister@rayonier.com">Glynn.mcallister@rayonier.com</a>
Ralph Tyson, Chairman, Ware County	P.O. Box 1069	Waycross	GA	31502	(912) 287-4300	
Wayne Kilmark, Planning Director, Waycross-Ware County Planning Commission	902 Grove Ave.	Waycross	GA	31502	(912) 287-4379	<a href="mailto:jshubert@warecounty.com">jshubert@warecounty.com</a>
Walter James, Natural Resources Conservation Services	601 Tebeau St.	Waycross	GA	31501	(912) 285-5975	N/A
Edwin Davis, Chairman, Atkinson County	P.O. Box 518	Pearson	GA	31642	(912) 285-5975	N/A

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**EDUCATION/OUTREACH ACTIVITIES**

<b>Responsible Organization or Entity</b>	<b>Description</b>	<b>Target Audience</b>	<b>Anticipated Dates (MM/YY)</b>
Southeast Georgia Regional Development Center	Ordinance/Regulation Review for the City of Ambrose	Local Government	12/2004
EPD	Best Management Practices (BMPs) for Industry	Business Community	Ongoing
EPD	BMPs for Water Quality	Business Community	Ongoing
Georgia Forestry Commission	BMPs for Forestry	Forestry Industry	Ongoing
NRCS, 7 Rivers RC&D	BMPs for Agricultural	Farming Community	Ongoing
University of Georgia Extension Agent	BMPs for Agricultural	Farming Community	Ongoing
Southeast Georgia Regional Development Center	Ordinance/Regulation Review for the City of Broxton	Local Government	12/2004
Nicholls Youth Park	Organization supported by University of Georgia Extension Agent, NRCS (7 Rivers RC7D), Coffee County and the City of Nicholls, Georgia.	Youth K-12	12/2004
Southeast Georgia Regional Development Center (RDC), DNR/EPD	Southeast Georgia RDC is assisting local governments with a Water Committee. The Committee has been operational for 9 months. One project that the committee would like to undertake is an educational video tape for Residential and Urban BMPs. The committee believes that the key to quality water is behavior modification through education. This will be collaborative effort between DNR/EPD, Southeast Georgia RDC, Water Committee and Local Governments.	Local Governments and Citizens	12/2004
Save Our Satilla	Satilla River Basin Environmental Group	Citizens	On-going
Southeast Georgia RDC	Southeast Georgia RDC with the help of 7 Rivers RC&D, will assist the City of Broxton, City of Douglas and Coffee County with a 319(h) grant. The grant will be for the delineation of failing septic systems.	Citizens	12/2004

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Coffee County Green Space Program	Provides for a 100-foot buffer on both sides of the waterway. Education component will educate individuals about the donation of easements to protect waterways.	Citizens	12/2001
Adopt-A-Stream	Will assist Al Browning in the introduction of the Adopt-A-Stream program into Coffee County. Mr. Al Browning is an Ecology teacher at Berrien County High School. He can be reached at (229) 686-7428.	Citizens	03/2003

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**POLLUTANT SOURCES**

<b>Pollutant</b>	<b>Source</b>	<b>Description of Contribution to Impairment</b>
DO	Sediments	Sediments slow the rate of flow and increase the temperature of the water, depleting the amount of available oxygen through mechanical alteration of the waterway.
DO/FC	Urban Development	Unchecked runoff through storm water sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
DO	Land Disturbing Activities: (1) Construction Sites, (2) Infrastructure Development and Maintenance	Uncheck runoff from construction sites: (1) Leaking portable waste containers, (2) Improperly disposed waste materials, and (3) Introduction of sediments into waterways. (Sediments change the mechanics of the waterway by reducing flow rate and increasing water temperatures)
DO	Laundry Care Products	Detergents are emptied into septic systems, onto surface, or deposited into unapproved drainage/septic systems. During periods of precipitation, these chemicals are washed into nearby drainage systems and/or waterways.
DO/FC	Spill/Discharges of Raw Sewage	Spillage, unauthorized discharges, and cleansing of contaminated waste vehicles. These untreated materials are left on the surface to be introduced into the drainage system or waterway by precipitation or during the cleansing of equipment or collection apparatuses or containers.
DO	Improper Methods of Trash Collection and Disposal	Spillage and incorrect disposal techniques place substances on surfaces to be washed into waterway during precipitation.
DO	Collection and Disposal of Petroleum Products and Materials related to the repair of Gasoline and Diesel Equipment.	Fluids and materials associated with mechanical repairs and chemical absorbent materials that are not properly disposed of are left on surfaces to be washed into drainage system or waterways.
DO/FC	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.
DO	Manufacturing/Industrial Discharges	Thermal discharges raise the temperature of water, lowering its oxygen content.
DO/FC	Pet Excrement	Pet excrement is deposited on the ground in residential, urban and rural areas. During routine lawn maintenance (watering) or during periods of precipitation the excrement is washed away into nearby drainage system and/or waterways.

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DO	Residential, Agricultural and Silvicultural Chemical/Fertilizer applications	Chemical/Fertilizer runoff increases the natural eutrophication rates in streams and creeks, and contributes to DO by producing a carbonaceous chemical reacting with O <sub>2</sub> .
DO/FC	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.
DO/FC	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
DO	Organic Materials From Lawns, City and County Right-of-Ways	Yard trimmings, leaves, branches and chipping materials that are not properly secured or disposed are washed away into nearby drainage systems and/or waterways.
DO	Automotive Product Care	Fluids, materials associated with auto repairs and chemical absorbent materials that are not properly disposed of are placed on surfaces to be washed into drainage system or dumped illegally into drainage systems.
DO	Organic Materials from Agricultural and Silvicultural Developments and Operations	Runoff from hay fields, row crop production, leaves, branches and chipping materials that are not properly secured or disposed are washed away into nearby drainage systems and/or waterways.
DO	Direct Leaf Litter	Direct introduction of leafs falling into waterways from overhanging branches, limbs and trees. These leaves settle at the bottom and require further breakdown by aerobic microorganisms.
DO	Industrial, Residential, and Urban Storm Water Runoff	Storm water runoff is part of a natural hydrologic process. However, human activities, particularly urbanization and associated industrial activities, can alter natural drainage patterns and add pollutants to rivers, and streams. Impact is a decline in fish and restrictions on swimming.
DO	Forested Woodlands	Heavily forested and wetlands areas often contribute to high organic (leaf litterfall, decomposing plants) loading and slow flows (due to minimum topographic relief) in a surface water system that result in conditions where the dissolved oxygen is naturally lower and cannot meet the numeric criteria without reductions in the natural nutrient and carbon loads. Usually reduction in natural forest or wetlands contributions is not feasible, practicable or desirable through conventional best management practices.
DO/FC	Feedlot Operations	Animals are confined in large groups in limit space. Large amounts of animals waste are produced. Maintenance, daily cleansing of feedlot, occurs daily to eliminate health problems. Pollutant may enter waterway either by runoff from overflowing lagoons or by runoff from piled manure that is left uncovered.

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**MANAGEMENT MEASURES, RESPONSIBLE PARTIES, AND MEASURABLE MILESTONES**

<b>Regulation/Ordinance or Management Measure</b>	<b>Responsible Government, Organization or Entity</b>	<b>Description</b>	<b>Enacted/ Projected Date</b>	<b>Status (In-progress, Planning, Enforced)</b>	<b>Regulatory/ Voluntary</b>
NPDES Permit GA0024431	Georgia EPD	Modified for 24% load reduction in pollutants	Existing Permit: August 2001	(In-progress) Modified Final: 2002	Regulatory

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Anticipated or Past Effectiveness</b>
Contributing to DO	City of Douglas Southeast Water Pollution Control Plant	24% load reduction expected to result in achievement of DO water quality standards in three years

<b>Measurable Milestones</b>	<b>Schedule</b>		<b>Comments</b>
	<b>Start</b>	<b>End</b>	

Refer to Permit GA0024431

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
NPDES Permit GA0024431	Georgia EPD	Modified for 24% load reduction in pollutants	Existing Permit: August 2001	Modified Final: 2002	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Contributing to DO Impairment and FC contamination	City of Douglas Southeast Water Pollution Control Plant City of Douglas Southeast Water Pollution Control Plant	24% load reduction expected to result in achievement of water quality standard in three years. Within 18 months of final TMDL, EPD will modify those permits that need to include TMDL limits.

Measurable Milestones	Schedule		Comments
	Start	End	
Refer to Permit GA0024431	8/2001	2002	N/A

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Georgia Water Quality Control Act Georgia Groundwater Use Act Georgia Erosion & Sedimentation Act Georgia Comprehensive Planning Act Georgia River Basin Management Planning Act Georgia Storm Water Permitting Program Georgia Zero Tolerance Policy Georgia River Basin Permitting Strategy	Georgia DNR EPD	Laws authorizing Georgia EPD to control water pollution, eliminate phosphate detergents and regulate sludge disposal; to require permits for agricultural ground and surface water withdrawals; to prohibit siltation of state waters by land disturbing activities and require undisturbed buffers along state waters; to require land-use plans that include controls to protect drinking water supply sources and wetlands; to require river basin management plans on a rotation schedule for all major river basins; to require storm water discharge permits for certain industrial activities, construction sites and municipal storm sewer systems; to require enforcement actions for all sanitary sewer system spills/effluent limit violations from wastewater facilities; to review and permit all dischargers with TMDL evaluations and new waste load allocations.	11/64	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO & FC	Ungoverned point source discharge and nonpoint source runoff pollution loads.	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Compliance with regulations to control water pollution including identification and implementation of Best Management Practices.	11/64	Continuous	N/A

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Domesticated and Commercial Animal/Livestock Excrement Disposal and Management Program	Individual	Encourages individuals to correctly dispose and manage excrement from animals/livestock operations.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO/FC	Domesticated animals and Commercial Livestock Production	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and FC loading in impacted waterways.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
CAFO Regulations Land Application System Permits	Georgia DNR EPD General NPDES Permits	Permitting requirements for Concentrated Animal Feeding Operations and Land Application Systems with liquid manure.	2002	Pending	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO/FC	Containment lagoons, LAS sprays	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Compliance with regulations to control water pollution including identification and implementation of Best Management Practices	2002	Continuous	Comprehensive Nutrient Management Plan

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<b>Regulation/Ordinance or Management Measure</b>	<b>Responsible Government, Organization or Entity</b>	<b>Description</b>	<b>Enacted/ Projected Date</b>	<b>Status</b>	<b>Regulatory/ Voluntary</b>
Herbicide and Pesticide Poison Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of dangerous chemicals	2005	Planning	Voluntary

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Anticipated or Past Effectiveness</b>
DO	Non-commercial and commercial application of Herbicides and Pesticides.	Effective if BMP is implemented

<b>Measurable Milestones</b>	<b>Schedule</b>		<b>Comments</b>
	<b>Start</b>	<b>End</b>	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	2005	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Stream Management Zones	Georgia Forestry Commission	Encourages Forest Production Operator to Plan and Implement strategies to prevent sediments, fluids and nutrients from entering waterway.	1993	In-Progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Fluids, excessive nutrients and organic materials	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1993	Continuous	N/A

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Septic Tank Management Program	Southeast Georgia RDC, 7 Rivers RC&D and local governments in watershed.	319 grant to delineate failing septic systems	2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO/FC	Effluent leakage from collection lines	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and FC loading in impacted waterways.	2004	Continuous	Southeast Georgia RDC will work with 7 Rivers RC&D, City of Douglas, Coffee County, City of Broxton, Ware County, and Atkinson County to apply for 319(h) grants to delineate and repair or replace malfunctioning septic systems.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Agricultural Best Management Practices (BMPs)	NRCS (7 Rivers RC&D) and University of Georgia Extension Service	Leads effort in agricultural water quality program, develops agricultural BMPs educational and monitoring efforts.	1987	In-Progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO & FC	Animal facility runoff, pesticide/herbicide management, irrigation runoff management and manure applications.	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and of FC loading in impacted waterways.	1987	Continuous	NRCS and University of Georgia Extension Agent must provide continuous opportunities if BMP is to remain effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Nutrient Management Program	NRCS (7 Rivers RC&D) and University of Georgia Extension Service	Encourages and educates farmers on the correct usage and amount of fertilizers to maintain high yield and to lessen the impacts of nitrates and phosphates to waterways. Reduces NPS of pollution.	1991	In-Progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO & FC	Natural and manmade fertilizers	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants contributing to impaired DO and FC loading in impacted waterways.	1991	Continuous	NRCS and University of Georgia Extension Agent must provide continuous opportunities if BMP is to remain effective.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Forestry Best Management Practices (BMPs)	Georgia Forestry Commission	BMP categories include planning for water quality, SMZs, road location, construction, stream crossing and maintenance, timber harvesting, site preparation/reforestation and management/protection.	1999	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Forestry	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1999	Continuous	Georgia Forestry Commission must continuously provide education opportunities for foresters if BMPs are to remain effective.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Power Equipment, Commercial, Industrial, and Personal Product Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of materials that are related to the repair and routine maintenance of power equipment.	2002	On-going	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Equipment cleansing, mechanical repairs and maintenance shops, and individual home auto maintenance and/or repair.	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO impacted waterways.	2002	Continuous	Local auto part houses encourage and provide opportunities for individual to dispose of fluids and materials that can't be disposed of by normal fluid or trash disposal methods.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
House Cleaner Disposal and Management Program	Individual	Encourages individuals to properly dispose of household chemicals	2005	Planned	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Household chemicals	Effective if program is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO impacted waterways.	2005	Continuous	Coffee County Waste Disposal must encourage individuals to properly secure and dispose of household chemicals

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Sewer Management Program	Individual	Encourages individuals to routinely inspect sewage system on property.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO & FC	Leaking Sewage Lines	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen and Fecal Coliform loading in the impacted waterways.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Spill/Discharge Control and Cleanup Program	Individual	Encourages individuals to cleanup or control and to report spills.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Surface Spills or Uncontrolled Discharges	Effective is BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in the impacted waterways.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
BMP Monitoring	GFC	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP audit	01/2003	Current	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Silviculture Activities	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	01/2003	Continuous	N/A

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/Voluntary
Storm Water Pollution Prevention Plan (SWPPP)	Southeast Georgia RDC, Coastal Conservation Resources, and NRCS	Storm water runoff is part of a natural hydrologic process. However, human activities, particularly urbanization and associated industrial activities, can alter natural drainage patterns and add pollutants to rivers, and streams. Impact is a decline in fish and restrictions on swimming.	01/2003	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
DO	Storm Water Run Off	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in the impacted waterways.	01/2003	Continuous	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources, and NRCS, seek funds to assist Coffee County in the development of Storm Water Pollution Prevention Plan (SWPPP)

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**POTENTIAL FUNDING SOURCES**

<b>Source</b>	<b>Responsible Authority</b>	<b>Status</b>	<b>Anticipated Funding Amount</b>
Section 319 (h) of the Clean Water Act	EPA/State of Georgia	Must Apply	N/A
Greenspace Funds	Georgia Department of Natural Resources	Funded	\$80,000
Small Business Technical Assistance Program	Georgia Department of Natural Resources (EPD)	Must Request Assistance	Undetermined-Free Technical Assistance
Environmental Quality Incentive Program (EQIP)	NRCS	Must Apply	N/A
Unified Watershed Assessment program	NRCS	Must Apply	N/A
Conservation Reserve Enhancement Plan	NRCS	Must Apply	N/A
Section 604(b) Grants	Georgia Department of Natural Resources	Must Apply	N/A

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**MONITORING PLAN**

Organization	Pollutants	Purpose/Description	Time Frame		Status: (Previous, Current, Proposed)
			Start	End	
GA EPD/USGS	DO/FC	TMDL Evaluation /Monitoring data for Georgia 305(b)/303(d) List	1998	1998	Previous
GA EPD	DO/FC	Water Quality Testing/Assessment of water quality.	2003	2003	Proposed
GA EPD/USGS	DO/FC	Monitoring data for GA 305(b)/303(d) list	1998	1998	Previous
GFC	DO	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP.	01/2003	Continuous	Current
GA DNR EPD	DO	Component of general CAFO/LAS permits to identify and describe practices that are to be implemented to assure compliance with the limitations and conditions of the permit.	03/2002	03/2007	Current
Southeast Georgia RDC, NRCS and Coastal Conservation Resources	DO/FC	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources and NRCS, seek funds to assist Coffee County in the development of Storm Water Pollution Prevention Plan (SWPPP)	01/2003	01/2004	Proposed
City of Douglas	DO/FC	Water Quality Testing/Assessment of water quality.	1990	Continuous	Current

COMMENTS:

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State of Georgia.**