

# **TMDL IMPLEMENTATION PLAN**

## **SATILLA RIVER BASIN**

### **Overview of Broxton Creek Watershed Plan**

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The Broxton Creek watershed (HUC10 # 0307020104) is located in the Satilla River basin in Southeast Georgia's Coffee County. The local governments involved in improving the Broxton Creek Watershed are Coffee County and the cities of Ambrose, Broxton, and Douglas. 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).

Within the Broxton Creek watershed, the State of Georgia has determined sections of both Broxton Creek and Roses Creek to be impaired water bodies. Broxton Creek from Seven Creek to the Seventeen Mile River near Broxton is classified as *not supporting* its designation as fishing water and has an impacted area of six miles. Roses Creek from upstream of Georgia Highway 206 to the Seventeen Mile River south of Broxton is classified as *not supporting* its designation as fishing water and has an impacted area of nine miles. The Total Maximum Daily Load (TMDL) Implementation Plan for the Broxton Creek 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 Broxton Creek Watershed Total Maximum Daily Load (TMDL) Implementation Plan, the water bodies suffer from one impairment, Dissolved Oxygen (DO). To improve the water quality of the watershed, the TMDL Implementation Plan suggests a 37% reduction in nonpoint source contamination in Broxton Creek and a 39% reduction in nonpoint source contamination in Roses Creek. These reductions will result in a decrease in the water bodies' total organic carbon, total nitrogen, and total phosphorus.

#### **Contributors to Impaired Dissolved Oxygen in Broxton Creek**

There are numerous nonpoint sources of oxygen demanding substances in the Broxton Creek watershed. These sources include surface storm runoff of agriculture and residential fertilizer and chemicals as well as runoff from hay fields, row crop production, and feedlots. Runoff from silviculture operations washes leaves, branches, and chipping materials that are not properly secured or disposed of into the waterway. Other sources include urban development, land disturbing activities, laundry care products, spill/discharges of raw sewage, and improper methods of trash and petroleum products collection and disposal. Also, uncovered manure piles, access to the waterway by livestock, and broadcast spreading of inorganic and organic materials are contributing to the DO impairment in Broxton Creek.

In addition to the aforementioned sources, many Southeast Georgia streams, including Broxton Creek, 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 litterfall. These factors also have an effect on DO impairment.

Point sources adversely affecting Broxton Creek's DO include a retired county landfill (GAD981024938) and known leaking underground storage tanks at Broxton-Mary Hayes School (0-340119) and Pridgen Corner Grocery (0-340110).

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

The SEGaRDC has worked closely with GADNR-EPD to develop the TMDL Implementation Plan for the Broxton Creek watershed. Each agency has been diligent in making sure that the strategy includes an action plan, education/outreach activities, stakeholders, pollutant sources, and potential funding resources. Stakeholders, including local government officials, landowners, industrial representatives and interest groups, have played a vital role in the plan's preparation. SEGa RDC staff hosted a public meeting in Douglas on November 11, 2002. Stakeholders offer

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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 is scheduled to begin 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 Dissolved Oxygen in the Broxton Creek watershed. The following management practice is included in the TMDL Implementation Plan:

- Domesticated and commercial animal/livestock excrement disposal and management program
- Herbicide and pesticide poison care disposal and management program
- Stream management zones
- 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

#### **Projected Attainment Date**

The projected date to attain and maintain water quality standards in the Broxton Creek 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 Broxton Creek watershed TMDL Implementation Plan is sure to succeed.

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

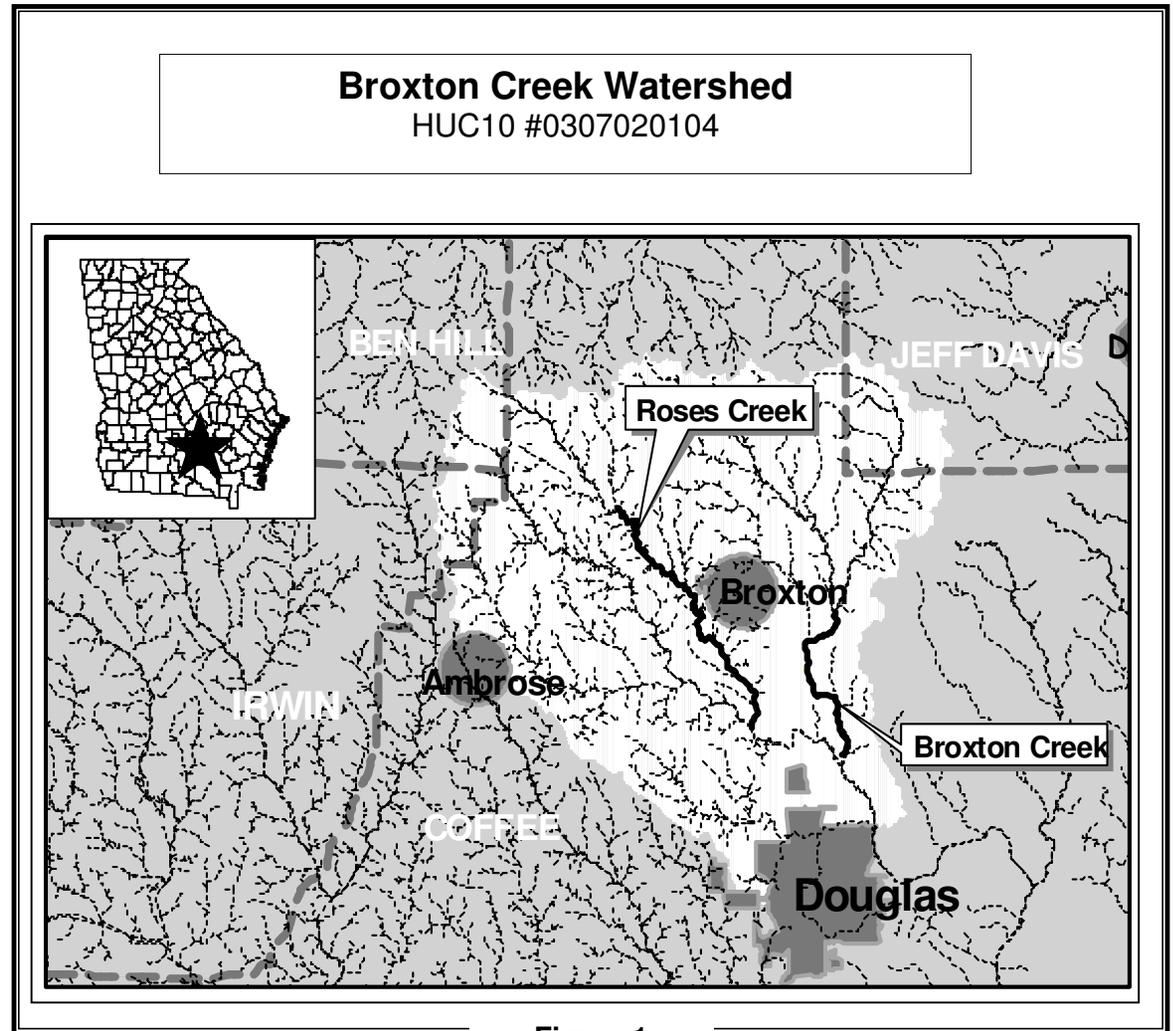
Local Watershed Governments

SOUTHEAST GEORGIA RDC

Coffee County  
 City of Broxton  
 City of Ambrose

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/streams and the corresponding pollutants.** The impaired waterbodies are located in the same watershed/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.



**Figure 1**

Impaired Waterbody*	Impaired Stream Location	Impairment
1. Broxton Creek	Seven Creek to Seventeen Mile River near Broxton	Dissolved Oxygen (DO)
2. Roses Creek	Upstream of Ga. Hwy. 206 to Seventeen Mile River south of Broxton	Dissolved Oxygen (DO)

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

# Action Plan for Broxton Creek Watershed

Watershed: Broxton Creek  
HUC10: #0307020104

POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
<input checked="" type="checkbox"/> Dissolved Oxygen (DO) <input 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	<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></p> <ul style="list-style-type: none"> <li>a. Prevent soil contamination.</li> <li>b. Prevent waste runoff.</li> <li>c. Routine and regular maintenance of septic system.</li> </ul> <p><b>Pet Excrement Disposal:</b></p> <ul style="list-style-type: none"> <li>a. Properly dispose of pet excrement.</li> </ul> <p><b>Automotive Care:</b></p> <ul style="list-style-type: none"> <li>a. Regular maintenance, check for leaks and the proper disposal of fluids at approved locations.</li> </ul> <p><b>Lawn and Garden Care:</b></p> <ul style="list-style-type: none"> <li>a. Proper yard maintenance.</li> <li>b. Proper disposal of organic and non-organic yard by products.</li> <li>c. Proper precautions and correct usage of chemical and fertilizers.</li> </ul> <p><b>Household Cleaners:</b></p> <ul style="list-style-type: none"> <li>a. Proper disposal of household chemicals.</li> <li>b. Correct usage of chemicals.</li> </ul> <p><b>Sewer management:</b></p> <ul style="list-style-type: none"> <li>a. Routine visual inspections and report leaks if noted.</li> </ul> <p><b>Spill/Discharge Control and Cleanup:</b></p> <ul style="list-style-type: none"> <li>a. Control and cleanup spills according to instruction of manufacture.</li> </ul> <p><b>Miscellaneous Product Care:</b></p> <ul style="list-style-type: none"> <li>a. Control and cleanup spills according to instruction of manufacture.</li> </ul> <p><b>Trash Pickup:</b></p> <ul style="list-style-type: none"> <li>a. Visually inspect containers and report damage or leaks</li> <li>b. Keep container secure at all times</li> <li>c. Ensure that trash is picked up on a regular schedule.</li> </ul>	<p><b>Automotive Care:</b></p> <ul style="list-style-type: none"> <li>a. Regular maintenance of fleet vehicles, check for leaks and the proper disposal of fluids at approved locations.</li> </ul> <p><b>Lawn and Garden Care:</b> Ensure that contracted lawn services adhere to:</p> <ul style="list-style-type: none"> <li>a. Proper yard maintenance.</li> <li>b. Proper disposal of organic and non-organic yard by products.</li> <li>c. Proper precautions and correct usage of chemical and fertilizers.</li> </ul> <p><b>Commercial Chemical Cleaners:</b></p> <ul style="list-style-type: none"> <li>a. Proper disposal of commercial chemicals.</li> <li>b. Correct usage of chemicals.</li> <li>c. Inform all employees of MDSS.</li> </ul> <p><b>Sewer management:</b></p> <ul style="list-style-type: none"> <li>a. Routine visual inspections and report leaks if noted.</li> </ul> <p><b>Spill/Discharge Control and Cleanup:</b></p> <ul style="list-style-type: none"> <li>a. Control and cleanup spills according to instruction of manufacture.</li> </ul> <p><b>Trash Pickup:</b></p> <ul style="list-style-type: none"> <li>a. Visually inspect containers and report damage or leaks</li> <li>b. Keep container secure at all times</li> <li>c. Ensure that trash is picked up on a regular schedule.</li> </ul> <p><b>Agriculture: Best Management Practices (BMPs)</b></p> <ul style="list-style-type: none"> <li>a. Waste storage structure-Utilize and store waste</li> <li>b. Filter Strips-Reduce soil erosion, filter runoff and provide wildlife habitat.</li> <li>c. Nutrient Management-Prevent over-application of nutrients, protect against soil contamination.</li> </ul> <p><b>Forestry: Best Management Practices (BMPs)</b></p> <ul style="list-style-type: none"> <li>a. Streamside Management Zones (SMZS)</li> <li>b. Road building-Prevents soil erosion</li> </ul>

## 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. Coffee County, because of Rick Reed, has one of the best water conservation programs in the state of Georgia. The water programs revolve around water quality and the use of water. Dr. Gary Hawkins, is very active within the farming community and uses 319(h) grants to aide Rick Reed with implement of these programs.	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
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
Southeast Georgia Regional Development Center	Southeast Georgia RDC will, with the assistance of Julie Vann, Coastal Conservation Resources, and NRCS, seek funds to assist Coffee County in the development of Strom Water Pollution Prevention Plan (SWPPP)	1, 2	Local Government	1/2003



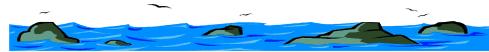
## STAKEHOLDERS

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
Shelton Paulk, Mayor, City of Ambrose	P.O. Box 147	Ambrose	GA	31512	(912) 359-2783	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. 2496	Douglas	GA	31534	(912) 383-8305	<a href="mailto:Glynn.mcallister@rayonier.com">Glynn.mcallister@rayonier.com</a>
Bill Wikoff, International Paper	6508 New Jesup Highway	Brunswick	GA	31523	(912) 265-1378	<a href="mailto:Bill.wikoff@ipaper.co">Bill.wikoff@ipaper.co</a>

## WATER BODIES/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)
Broxton Creek	Seven Creek to Seventeen Mile River near Broxton	6 miles	Fishing	NS
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Coffee			Nonpoint	
Pollutants	Water Quality Standards	Required Load Reduction	TMDL ID	Date TMDL Established
Contributing to DO	DO: 5 mg/L (daily)-4 mg/L (minimum) Natural Water Quality Standard DO: 2.290mg/L (minimum)	Nonpoint: 37% TOC, TN, TP		December 2001

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)
Roses Creek	Upstream of Ga. Hwy. 206 to Seventeen Mile River south of Broxton	9 miles	Fishing	NS
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Coffee			Nonpoint	
Pollutants	Water Quality Standards	Required Load Reduction	TMDL ID	Date TMDL Established
Contributing to DO	DO: 5 mg/L (daily)-4 mg/L (minimum) Natural Water Quality Standard DO: 3.432mg/L (minimum)	Nonpoint: 39% TOC, TN, TP		December 2001

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*
Dissolved Oxygen	Chemical/Fertilizer Applications, Silvicultural and Farming application of chemicals by aerial and broadcast means.	Residential 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> .	1, 2
Dissolved Oxygen	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
Dissolved Oxygen	Lateral Leaf Litter	Decrease in Oxygen due to decomposition of organic materials.	1, 2
Dissolved Oxygen	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
Dissolved Oxygen	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 rich materials are then introduced into the waterway by the above means and aerobic microorganisms are needed to further breakdown the materials leading to decreased oxygen amounts in the waterway.	1, 2
Dissolved Oxygen	Access to waterways by livestock	Manure, feed and other materials are either transport on hoofs, introduced into the stream by drinking livestock defecation, and/or feed is introduced into the waterway by runoff due to well traveled paths.	1, 2
Dissolved Oxygen	Manure from livestock operations	Runoffs from livestock feedlots are introduced into the waterway by rainfall or feedlot maintenance operations.	1, 2
Dissolved Oxygen	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

<b>Pollutant</b>	<b>Sources of Pollutants</b>	<b>Description of Contribution To Impairment</b>	<b>Impacted Waterbodies*</b>
Dissolved Oxygen	Urban Development	Unchecked runoff through storm water sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.	1, 2
Dissolved Oxygen	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
Dissolved Oxygen	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
Dissolved Oxygen	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
Dissolved Oxygen	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
Dissolved Oxygen	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
Dissolved Oxygen	GAD981024938	Possible contaminated sediment runoff from retired county landfill. Landfill is located approximately 1000 ft. west of Broxton Creek. Has auto salvage yard located on retired landfill.	1, 2
Dissolved Oxygen	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.	1, 2
Dissolved Oxygen	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.	1, 2
Dissolved Oxygen	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
Dissolved Oxygen	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
Dissolved Oxygen	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
Dissolved Oxygen	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

Pollutant	Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
Dissolved Oxygen	0-340110	Known leaking underground storage tank located at Pridgen Corner Grocery.	1, 2
Dissolved Oxygen	GA02-124	Possible runoff creating excessive nutrients. LAS permit 03/2002-03/2007 issued to City of Broxton.	1, 2
Dissolved Oxygen	GA0038296	Possible wastewater runoff creating excessive nutrients. NPDES Permit 12/2000-11/2005 issued to Gold Kist Feed Mill, City of Ambrose.	1, 2
Dissolved Oxygen	9-034024	UST located at Golden Poultry Feed Mill. Closed 1994 with confirmed release of detectable petroleum levels.	1, 2
Dissolved Oxygen	0-340119	Known leaking underground storage tank located at Broxton Mary Hayes School.	1, 2
Dissolved Oxygen	Industrial 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



## MANAGEMENT MEASURES, MEASURABLE MILESTONES AND SCHEDULE

**(Reduction in the measured amount of FC and pollutants that contribute to impaired DO in the impacted waterway)** 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 measure progress 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
Georgia Water Quality Control Act Georgia Groundwater Use Act Georgia Erosion & Sedimentation Act Georgia Comprehensive Planning Act Georgia River Basin Management Planning Act	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.	11/64	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	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 excrement.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	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 that contribute to impaired Dissolved Oxygen in the 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
Septic Tank Management Program	Southeast Georgia Regional Development Center (RDC), & Rivers RC&D, City of Ambrose, City of Broxton, and Coffee County Governmental	Routine septic system maintenance prevents soil contamination, waste runoff and improves soil and water quality.	12/2003	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Effluent from malfunctioning septic systems	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.	12/2004	Continuous	Southeast Georgia RDC will work with 7 Rivers RC&D, City of Ambrose, City of Broxton, and Coffee County Governmental to apply for 319(h) grants to delineate and repair or replace malfunctioning septic systems.

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 implement

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the 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
Streamside Management Zones	NRCS and Georgia Forestry Commission	Educates foresters to identify sensitive areas and applicable BMPs to be used during stream crossing, harvesting, site preparation, reforestation, and herbicide applications. Reduces NP source of pollution by reducing the amount of leaf litter, wood products and chemicals introduced into the waterways.	01/1991	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Leaf litter, wood products and oxygen dissolving chemical.	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	01/1991	Continuous	NRCS and GFC must provide educational opportunities if BMP is to remain effective.

<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>
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	Inprogress	Voluntary

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Impacted Waterbodies*</b>	<b>Anticipated or Past Effectiveness</b>
DO	Animal facility runoff, pesticide/herbicide management, irrigation runoff management and manure applications.	1, 2	Effective

<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 Dissolved Oxygen in the impacted waterways.	1987	Continuous	University of Georgia Extension Agent must provide continuous opportunities if BMP is to remain effective.

<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>
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

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Impacted Waterbodies*</b>	<b>Anticipated or Past Effectiveness</b>
DO	Natural fertilizers and Manmade fertilizers	1, 2	Effective

<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 Dissolved Oxygen in the impacted waterways.	1991	Continuous	University of Georgia Extension Agent and NRCS must provide educational 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/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
DO	Forestry	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	1999	Continuous	Georgia Forestry Commission must provide educational opportunities for 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 Dissolved Oxygen in the 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.

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)	Impacted Waterbodies*	Anticipated or Past Effectiveness				
DO	Household chemicals	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.		
		2005	Continuous	Waste Disposal Company 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
Septic Tank Management Program		Southeast Georgia Regional Development Center (RDC), 7 River RC&D, City of Ambrose, City of Broxton and Coffee County Governmental		Routine septic system maintenance prevents soil contamination, waste runoff and improves soil and water quality.	12/2003	Planning	Voluntary
Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness				
Dissolved Oxygen	Effluent from malfunctioning septic systems	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.		
		12/2003	Continuous	Southeast Georgia RDC will work with 7 Rivers RC&D, City of Ambrose, City of Broxton and Coffee County to apply for 319(h) grants to delineate and repair or replace malfunctioning septic systems.			

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Lawn, Garden and Agricultural Poison Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of lawn and garden chemicals.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Lawn, Garden and Agricultural 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 Dissolved Oxygen 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
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	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 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

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Strom 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
Dissolved Oxygen	Strom 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 Dissolved Oxygen 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 Strom Water Pollution Prevention Plan (SWPPP)

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
Dissolved Oxygen	Strom 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 Dissolved Oxygen in the impacted waterways.	12/2004	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

## POTENTIAL FUNDING SOURCES



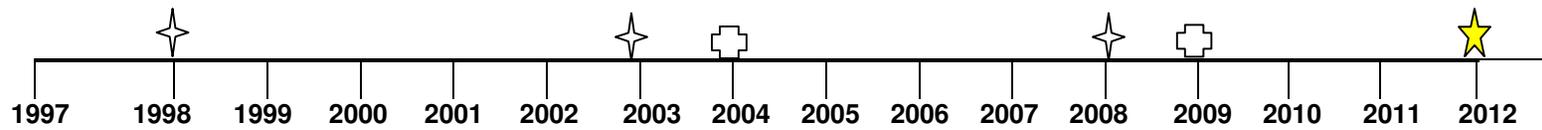
The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

<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	DO	TMDL Evaluation /Monitoring data for Georgia 305(b)/303(d) List	1998	1998	Previous
Water Quality Testing	GA EPD	1, 2	DO	Water Quality Testing/Assessment of water quality.	2003	2003	Proposed
TMDL Evaluation	GA EPD/USGS	1, 2	DO	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
Strom Water Pollution Prevention Plan	Southeast Georgia RDC, NRCS and Coastal Conservation Resources	1, 2	DO	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources and NRCS, seek funds to assist Coffee County in the development of Strom Water Pollution Prevention Plan (SWPPP)	01/2003	01/2004	Proposed

## 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 criteria is recorded in the space provided. Additional relevant criteria are presented in comments.

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

*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.*

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

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

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

## COMMENTS

Broxton Creek is a wet weather creek. This means that the creek has water flowing only during heavy periods of precipitation. Roses creeks appear to be damned. This conclusion is drawn from the present condition of the creek and specific findings. Water in the creek appears to be slowly backing up. Leaves appear to be slowly but surely following the path of least resistance, which is north. A thin film is observable on the surface of the water. The firm appears to slowly flow north. It is possible that beavers migrated to Roses Creek.

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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 Plan				
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 Broxton Creek Watershed Plan – Stream Approach**

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The Broxton Creek watershed (HUC10 # 0307020104) is located in the Satilla River basin in Southeast Georgia's Coffee County. The local governments involved in improving the Broxton Creek Watershed are Coffee County and the cities of Ambrose, Broxton, and Douglas. 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).

Within the Broxton Creek watershed, the State of Georgia has determined sections of both Broxton Creek and Roses Creek to be impaired water bodies. Broxton Creek from Seven Creek to the Seventeen Mile River near Broxton is classified as *not supporting* its designation as fishing water and has an impacted area of six miles. Roses Creek from upstream of Georgia Highway 206 to the Seventeen Mile River south of Broxton is classified as *not supporting* its designation as fishing water and has an impacted area of nine miles. The Total Maximum Daily Load (TMDL) Implementation Plan for the Broxton Creek 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 Broxton Creek Watershed Total Maximum Daily Load (TMDL) Implementation Plan, the water bodies suffer from one impairment, Dissolved Oxygen (DO). To improve the water quality of the watershed, the TMDL Implementation Plan suggests a 37% reduction in nonpoint source contamination in Broxton Creek and a 39% reduction in nonpoint source contamination in Roses Creek. These reductions will result in a decrease in the water bodies' total organic carbon, total nitrogen, and total phosphorus.

#### **Contributors to Impaired Dissolved Oxygen in Broxton Creek**

There are numerous nonpoint sources of oxygen demanding substances in the Broxton Creek watershed. These sources include surface storm runoff of agriculture and residential fertilizer and chemicals as well as runoff from hay fields, row crop production, and feedlots. Runoff from silviculture operations washes leaves, branches, and chipping materials that are not properly secured or disposed of into the waterway. Other sources include urban development, land disturbing activities, laundry care products, spill/discharges of raw sewage, and improper methods of trash and petroleum products collection and disposal. Also, uncovered manure piles, access to the waterway by livestock, and broadcast spreading of inorganic and organic materials are contributing to the DO impairment in Broxton Creek.

In addition to the aforementioned sources, many Southeast Georgia streams, including Broxton Creek, 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 litterfall. These factors also have an effect on DO.

Point sources adversely affecting Broxton Creek's DO impairment include a retired county landfill (GAD981024938) and known leaking underground storage tanks at Broxton-Mary Hayes School (0-340119) and Pridgen Corner Grocery (0-340110).

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

The SEGaRDC has worked closely with GADNR-EPD to develop the TMDL Implementation Plan for the Broxton Creek watershed. Each agency has been diligent in making sure that the strategy includes an action plan, education/outreach activities, stakeholders, pollutant sources, and potential funding resources. Stakeholders, including local government officials, landowners, industrial representatives and interest groups, have played a vital role in the plan's preparation. SEGa RDC staff hosted a public meeting in Douglas on November 11, 2002. Stakeholders offer

# **TMDL IMPLEMENTATION PLAN**

## **SATILLA RIVER BASIN**

### **Overview of Broxton Creek Watershed Plan – Stream Approach**

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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 is scheduled to begin in 2003 and monthly aerial monitoring of forestry BMPs.

#### **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 Dissolved Oxygen in the Broxton Creek watershed. The following management practice is included in the TMDL Implementation Plan:

- Domesticated and commercial animal/livestock excrement disposal and management program
- Herbicide and pesticide poison care disposal and management program
- Stream management zones
- 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
- Septic tank management program
- Automotive product care disposal and management program
- Sewer management program
- Spill/discharge control and cleanup program
- Best management practices monitoring
- Lawn, garden, and agricultural poison care disposal and management program

#### **Projected Attainment Date**

The projected date to attain and maintain water quality standards in the Broxton Creek 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 Broxton Creek 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 waterbodies 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 waterbodies. **With input from appropriate stakeholder groups, a TMDL Implementation Plan has been developed for a cluster of impaired waterbodies/streams and the corresponding pollutants.** The impaired waterbodies are located in the same watershed/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 resources. 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*), and (c) a monitoring plan to determine the efficiency of the management measures and measurable milestones taken 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.

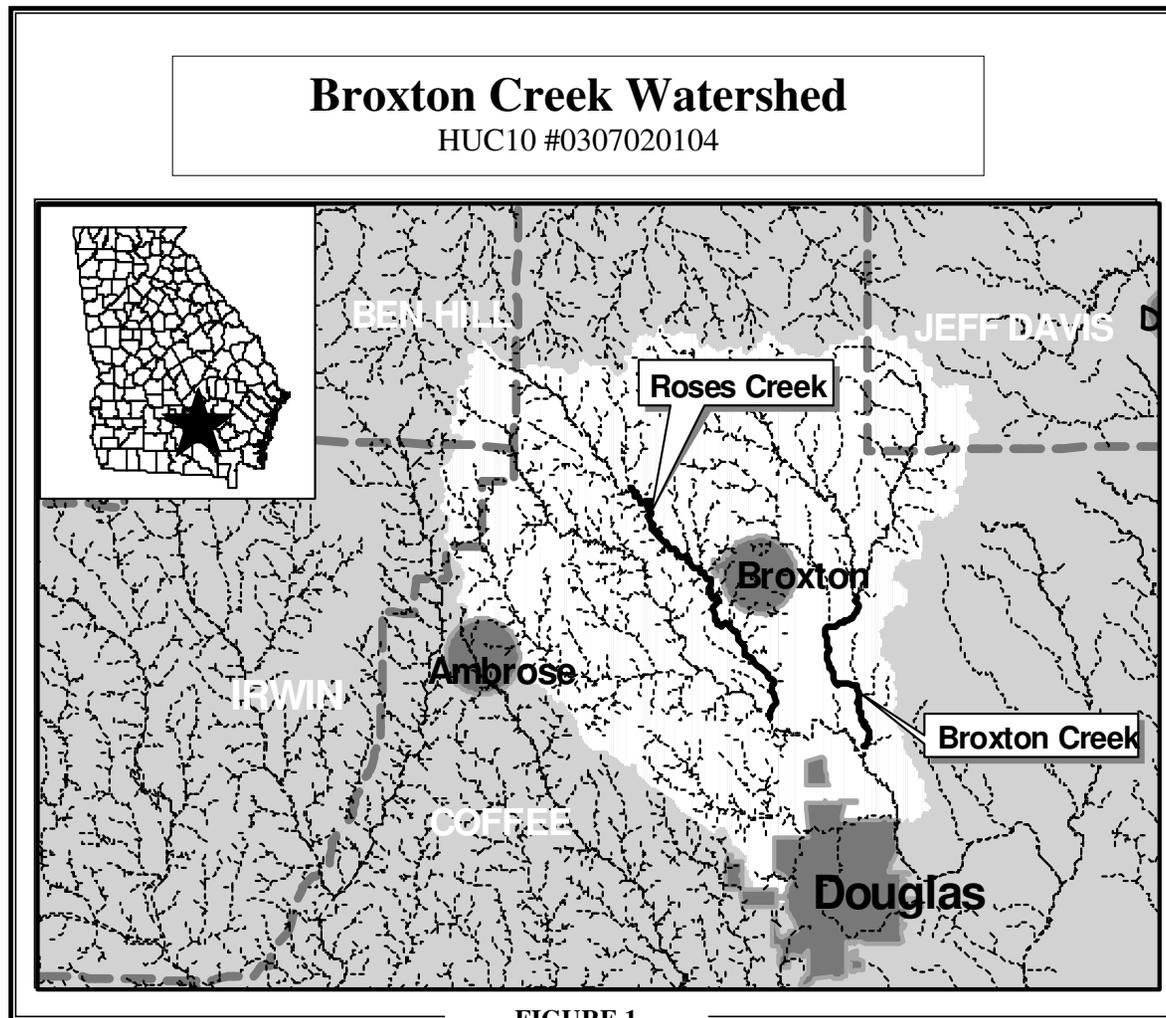


FIGURE 1

Impaired Waterbody*	Location	Impairment
1. Broxton Creek	Seven Creek to Seventeen Mile River near Broxton	Dissolved Oxygen (DO)
2. Roses Creek	Upstream of Ga. Hwy. 206 to Seventeen Mile River south of Broxton	Dissolved Oxygen (DO)

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

Satilla River Basin  
TMDL Implementation Plan  
Broxton Creek Watershed  
HUC10 #0307020104

# 1. Broxton Creek

NAME	LOCATION	MILES/AREA IMPACTED	USE CLASSIFICATION	PARTIALLY SUPPORTING/ NOT SUPPORTING (PS/NS)
Broxton Creek	Seven Creek to Seventeen Mile River near Broxton	6 miles	Fishing	NS
PRIMARY COUNTY	SECONDARY COUNTY	SECOND RDC	SOURCE (POINT/NON-POINT)	
Coffee			Nonpoint	

POLLUTANTS	WATER QUALITY STANDARDS	REQUIRED LOAD REDUCTION	TMDL ID #	DATE TMDL ESTABLISHED
Contributing to DO	DO: 5 mg/L (daily)-4 mg/L (minimum) Natural Water Quality Standard DO: 2.290 mg/L (minimum)	Nonpoint: 37% TOC, TN, TP		December 2001

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

Satilla River Basin  
TMDL Implementation Plan  
Broxton Creek Watershed  
HUC10 #0307020104

**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
Shelton Paulk, Mayor, City of Ambrose	P.O. Box 147	Ambrose	GA	31512	(912) 359-2783	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. 2496	Douglas	GA	31534	(912) 383-8305	<a href="mailto:Glynn.mcallister@rayonier.com">Glynn.mcallister@rayonier.com</a>
Bill Wikoff, International Paper	6508 New Jesup Highway	Brunswick	GA	31523	(912) 265-1378	Bill.wikoff@ipa per.co.

**POLLUTANT SOURCES**

Satilla River Basin  
TMDL Implementation Plan  
Broxton Creek Watershed  
HUC10 #0307020104

<b>Pollutant</b>	<b>Sources of Pollutants</b>	<b>Description of Contribution To Impairment</b>
Dissolved Oxygen	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)
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	Improper Methods of Trash Collection and Disposal	Spillage and incorrect disposal techniques place substances on surfaces to be washed into waterway during precipitation.
Dissolved Oxygen	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.
Dissolved Oxygen	GAD981024938	Possible contaminated sediment runoff from retired county landfill. Landfill is located approximately 1000 ft. west of Broxton Creek. Has auto salvage yard located on retired landfill.
Dissolved Oxygen	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.
Dissolved Oxygen	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	0-340110	Known leaking underground storage tank located at Pridgen Corner Grocery.
Dissolved Oxygen	GA02-124	Possible runoff creating excessive nutrients. LAS permit 03/2002-03/2007 issued to City of Broxton.
Dissolved Oxygen	0-340119	Known leaking underground storage tank located at Broxton Mary Hayes School.

Satilla River Basin  
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Dissolved Oxygen	Industrial 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.
Dissolved Oxygen	Urban Development	Unchecked runoff through storm water sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
Dissolved Oxygen	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)
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	Improper Methods of Trash Collection and Disposal	Spillage and incorrect disposal techniques place substances on surfaces to be washed into waterway during precipitation.
Dissolved Oxygen	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.
Dissolved Oxygen	GAD981024938	Possible contaminated sediment runoff from retired county landfill. Landfill is located approximately 1000 ft. west of Broxton Creek. Has auto salvage yard located on retired landfill.
Dissolved Oxygen	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.
Dissolved Oxygen	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
Dissolved Oxygen	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.
Dissolved Oxygen	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.

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

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 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.	11/64	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	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 excrement.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Domesticated animals and Commercial Livestock Production	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.	2006	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
Septic Tank Management Program	Southeast Georgia Regional Development Center (RDC), & Rivers RC&D, City of Ambrose, City of Broxton, and Coffee County Governmental	Routine septic system maintenance prevents soil contamination, waste runoff and improves soil and water quality.	12/2003	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Effluent from malfunctioning septic systems	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.	12/2004	Continuous	Southeast Georgia RDC will work with 7 Rivers RC&D, City of Ambrose, City of Broxton, and Coffee County Governmental 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
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)	Anticipated or Past Effectiveness
Dissolved Oxygen	Non-commercial and commercial application of Herbicides and Pesticides.	Effective if BMP is implement

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the 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
Streamside Management Zones	NRCS and Georgia Forestry Commission	Educates foresters to identify sensitive areas and applicable BMPs to be used during stream crossing, harvesting, site preparation, reforestation, and herbicide applications. Reduces NP source of pollution by reducing the amount of leaf litter, wood products and chemicals introduced into the waterways.	01/1991	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Leaf litter, wood products and oxygen dissolving chemical.	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	01/1991	Continuous	NRCS and GFC must provide educational 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
Domesticated and Commercial Animal/Livestock Excrement Disposal and Management Program	Individual	Encourages individuals to correctly dispose and manage excrement from animals/livestock excrement.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Domesticated animals and Commercial Livestock Production	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.	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 (In-progress, Planning, Enforced)</b>	<b>Regulatory/ Voluntary</b>
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	Inprogress	Voluntary

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Anticipated or Past Effectiveness</b>
Dissolved Oxygen	Animal facility runoff, pesticide/herbicide management, irrigation runoff management and manure applications.	Effective

<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 Dissolved Oxygen in the impacted waterways.	1987	Continuous	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 (In-progress, Planning, Enforced)	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
Dissolved Oxygen	Natural fertilizers and Manmade fertilizers	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	1991	Continuous	University of Georgia Extension Agent and NRCS must provide educational 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/maintenance, timber harvesting, site preparation/reforestation and management/protection.	1999	In-progress	Voluntary

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

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	1999	Continuous	Georgia Forestry Commission must provide educational opportunities for 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
Dissolved Oxygen	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 Dissolved Oxygen in the 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 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.	2005	Continuous	Waste Disposal Company 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
Septic Tank Management Program	Southeast Georgia Regional Development Center (RDC), 7 River RC&D, City of Ambrose, City of Broxton and Coffee County Governmental	Routine septic system maintenance prevents soil contamination, waste runoff and improves soil and water quality.	12/2003	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Effluent from malfunctioning septic systems	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.	12/2003	Continuous	Southeast Georgia RDC will work with 7 Rivers RC&D, City of Ambrose, City of Broxton and Coffee 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
Automotive Product Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of materials that are related to the repair and routine maintenance of automobiles.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Car washes, mechanical repair and maintenance shops, and individual home auto maintenance and/or repair.	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.	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
Lawn, Garden and Agricultural Poison Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of lawn and garden chemicals.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Lawn, Garden and Agricultural Herbicides and Pesticides.	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.	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
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
Dissolved Oxygen	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 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
Dissolved Oxygen	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 Dissolved Oxygen 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
Domesticated and Commercial Animal/Livestock Excrement Disposal and Management Program	Individual	Encourages individuals to correctly dispose and manage excrement from animals/livestock excrement.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Domesticated animals and Commercial Livestock Production	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.	2006	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
Dissolved Oxygen	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 (In-progress, Planning, Enforced)	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
Dissolved Oxygen	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 Dissolved Oxygen 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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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
Dissolved Oxygen	Strom 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 Dissolved Oxygen 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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**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
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	Dissolved Oxygen	TMDL Evaluation /Monitoring data for Georgia 305(b)/303(d) List	1998	1998	Previous
GA EPD	Dissolved Oxygen	Water Quality Testing/Assessment of water quality.	2003	2003	Proposed
GA EPD/USGS	Dissolved Oxygen	Monitoring data for GA 305(b)/303(d) list	1998	1998	Previous
GFC	Dissolved Oxygen	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP.	01/2003	Continuous	Current
GA DNR EPD	Dissolved Oxygen	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	Dissolved Oxygen	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources and NRCS, seek funds to assist Coffee County in the development of Strom Water Pollution Prevention Plan (SWPPP)	01/2003	01/2004	Proposed

COMMENTS: Broxton Creek is a wet weather creek. This means that the creek has water flowing only during heavy periods of precipitation.

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**2. Roses Creek**

NAME	LOCATION	MILES/AREA IMPACTED	USE CLASSIFICATION	PARTIALLY SUPPORTING/ NOT SUPPORTING (PS/NS)
Roses Creek	Upstream of Ga. Hwy. 206 to Seventeen Mile River south of Broxton	9 miles	Fishing	NS
PRIMARY COUNTY	SECONDARY COUNTY	SECOND RDC	SOURCE (POINT/NON-POINT)	
Coffee			Nonpoint	

POLLUTANTS	WATER QUALITY STANDARDS	REQUIRED LOAD REDUCTION
Contributing to DO	DO: 5 mg/L (daily)-4 mg/L (minimum) Natural Water Quality Standard DO: 3.432 mg/L (minimum)	Nonpoint: 39% TOC, TN, TP

TMDL ID #	DATE TMDL ESTABLISHED
	December 2001

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
Shelton Paulk, Mayor, City of Ambrose	P.O. Box 147	Ambrose	GA	31512	(912) 359-2783	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. 2496	Douglas	GA	31534	(912) 383-8305	<a href="mailto:Glynn.mcallister@rayonier.com">Glynn.mcallister@rayonier.com</a>
Bill Wikoff, International Paper	6508 New Jesup Highway	Brunswick	GA	31523	(912) 265-1378	Bill.wikoff@ipaper.co.

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<b>Pollutant</b>	<b>Sources of Pollutants</b>	<b>Description of Contribution To Impairment</b>
Dissolved Oxygen	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)
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	Improper Methods of Trash Collection and Disposal	Spillage and incorrect disposal techniques place substances on surfaces to be washed into waterway during precipitation.
Dissolved Oxygen	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.
Dissolved Oxygen	GAD981024938	Possible contaminated sediment runoff from retired county landfill. Landfill is located approximately 1000 ft. west of Broxton Creek. Has auto salvage yard located on retired landfill.
Dissolved Oxygen	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.
Dissolved Oxygen	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	GA0038296	Possible wastewater runoff creating excessive nutrients. NPDES Permit 12/2000-12/2005 issued to Gold Kist Feed Mill, City of Ambrose.
Dissolved Oxygen	Industrial 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.
Dissolved Oxygen	Urban Development	Unchecked runoff through storm water sewers: (1) Discharges of santary waste and (2) Improper disposal of waste materials.

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Dissolved Oxygen	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)
Dissolved Oxygen	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.
Dissolved Oxygen	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.
Dissolved Oxygen	Improper Methods of Trash Collection and Disposal	Spillage and incorrect disposal techniques place substances on surfaces to be washed into waterway during precipitation.
Dissolved Oxygen	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.
Dissolved Oxygen	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.
Dissolved Oxygen	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
Dissolved Oxygen	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.
Dissolved Oxygen	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.

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

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 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.	11/64	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	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 excrement.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Domesticated animals and Commercial Livestock Production	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.	2006	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
Septic Tank Management Program	Southeast Georgia Regional Development Center (RDC), & Rivers RC&D, City of Ambrose, City of Broxton, and Coffee County Governmental	Routine septic system maintenance prevents soil contamination, waste runoff and improves soil and water quality.	12/2003	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Effluent from malfunctioning septic systems	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.	12/2004	Continuous	Southeast Georgia RDC will work with 7 Rivers RC&D, City of Ambrose, City of Broxton, and Coffee County Governmental 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
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)	Anticipated or Past Effectiveness
Dissolved Oxygen	Non-commercial and commercial application of Herbicides and Pesticides.	Effective if BMP is implement

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the 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
Streamside Management Zones	NRCS and Georgia Forestry Commission	Educates foresters to identify sensitive areas and applicable BMPs to be used during stream crossing, harvesting, site preparation, reforestation, and herbicide applications. Reduces NP source of pollution by reducing the amount of leaf litter, wood products and chemicals introduced into the waterways.	01/1991	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Leaf litter, wood products and oxygen dissolving chemical.	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	01/1991	Continuous	NRCS and GFC must provide educational 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
Domesticated and Commercial Animal/Livestock Excrement Disposal and Management Program	Individual	Encourages individuals to correctly dispose and manage excrement from animals/livestock excrement.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Domesticated animals and Commercial Livestock Production	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.	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 (In-progress, Planning, Enforced)</b>	<b>Regulatory/ Voluntary</b>
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	Inprogress	Voluntary

<b>Pollutant(s) Affected</b>	<b>Sources of Pollutant(s)</b>	<b>Anticipated or Past Effectiveness</b>
Dissolved Oxygen	Animal facility runoff, pesticide/herbicide management, irrigation runoff management and manure applications.	Effective

<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 Dissolved Oxygen in the impacted waterways.	1987	Continuous	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 (In-progress, Planning, Enforced)	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
Dissolved Oxygen	Natural fertilizers and Manmade fertilizers	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	1991	Continuous	University of Georgia Extension Agent and NRCS must provide educational 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/maintenance, timber harvesting, site preparation/reforestation and management/protection.	1999	In-progress	Voluntary

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

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired Dissolved Oxygen in the impacted waterways.	1999	Continuous	Georgia Forestry Commission must provide educational opportunities for 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
Dissolved Oxygen	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 Dissolved Oxygen in the 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 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.	2005	Continuous	Waste Disposal Company 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
Septic Tank Management Program	Southeast Georgia Regional Development Center (RDC), 7 River RC&D, City of Ambrose, City of Broxton and Coffee County Governmental	Routine septic system maintenance prevents soil contamination, waste runoff and improves soil and water quality.	12/2003	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Effluent from malfunctioning septic systems	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.	12/2003	Continuous	Southeast Georgia RDC will work with 7 Rivers RC&D, City of Ambrose, City of Broxton and Coffee 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
Automotive Product Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of materials that are related to the repair and routine maintenance of automobiles.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Car washes, mechanical repair and maintenance shops, and individual home auto maintenance and/or repair.	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.	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
Lawn, Garden and Agricultural Poison Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of lawn and garden chemicals.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Lawn, Garden and Agricultural Herbicides and Pesticides.	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.	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
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
Dissolved Oxygen	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 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
Dissolved Oxygen	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 Dissolved Oxygen 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
Domesticated and Commercial Animal/Livestock Excrement Disposal and Management Program	Individual	Encourages individuals to correctly dispose and manage excrement from animals/livestock excrement.	2006	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Domesticated animals and Commercial Livestock Production	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.	2006	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
Dissolved Oxygen	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 (In-progress, Planning, Enforced)	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
Dissolved Oxygen	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 Dissolved Oxygen 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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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
Dissolved Oxygen	Strom 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 Dissolved Oxygen 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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**POTENTIAL FUNDING SOURCES**

Source	Responsible Authority	Status	Anticipated Funding Amount
Section 319 (h) of the Clean Water Act	EPA/State of Georgia	Must Apply	N/A
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

**MONITORING PLAN**

Organization	Pollutants	Purpose/Description	Time Frame		Status: (Previous, Current, Proposed)
			Start	End	
GA EPD/USGS	Dissolved Oxygen	TMDL Evaluation /Monitoring data for Georgia 305(b)/303(d) List	1998	1998	Previous
GA EPD	Dissolved Oxygen	Water Quality Testing/Assessment of water quality.	2003	2003	Proposed
GA EPD/USGS	Dissolved Oxygen	Monitoring data for GA 305(b)/303(d) list	1998	1998	Previous
GFC	Dissolved Oxygen	Within watershed will conduct monthly aerial BMP evaluations to identify recent forestry practices and conduct BMP.	01/2003	Continuous	Current
GA DNR EPD	Dissolved Oxygen	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	Dissolved Oxygen	Southeast Georgia RDC will, with the assistance of Coastal Conservation Resources and NRCS, seek funds to assist Coffee County in the development of Strom Water Pollution Prevention Plan (SWPPP)	01/2003	01/2004	Proposed

COMMENTS: Roses creeks appear to be dammed. This conclusion is drawn from the present condition of the creek and specific findings. Water in the creek appears to be slowly backing up. Leaves appear to be slowly but surely following the path of least resistance, which is north. A thin film is observable on the surface of the water. The firm appears to slowly flow north. It is possible that beavers migrated to Roses Creek.

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

**TOGETHER WE CAN MAKE A DIFFERENCE!**

