

# **TMDL IMPLEMENTATION PLAN**

## **SATILLA RIVER BASIN**

### **Overview of Hog Creek Watershed Plan**

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The Hog Creek watershed (HUC10 # 0307020106) is located in the Satilla River basin in Southeast Georgia's Ware and Coffee Counties. The local governments involved in improving the Hog Creek Watershed are the city of Nicholls and the Ware and Coffee County Commissions. Also involved in the effort are the Southeast Georgia Regional Development Center (SEGa RDC) in Waycross and the Georgia Department of Natural Resources' Environmental Protection Division (GADNR-EPD).

Having been determined to be an impaired water body by the State of Georgia, Hog Creek in Ware and Coffee Counties from Hurricane Creek to the Satilla River south of Nicholls is classified as *not supporting* its designation as fishing water and has an impacted area of fifteen miles. The Total Maximum Daily Load (TMDL) Implementation Plan for the Hog 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 Hog Creek Watershed Total Maximum Daily Load (TMDL) Implementation Plan, the water body suffers from one impairment, Dissolved Oxygen (DO). To improve the water quality of Hog Creek, the TMDL Implementation Plan suggests a 12% reduction in non-point source contamination resulting in a decrease of total organic carbon, total nitrogen, and total phosphorus.

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

There are numerous nonpoint sources of oxygen demanding substances in the Hog 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. 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 Hog Creek.

In addition to the aforementioned sources, many Southeast Georgia streams, including Hog 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 litter-fall. These factors also have an effect on DO.

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

The SEGaRDC has worked closely with GADNR-EPD to develop the TMDL Implementation Plan for the Hog 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 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.

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## **SATILLA RIVER BASIN**

### **Overview of Hog Creek Watershed Plan**

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#### **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 Hog 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

#### **Projected Attainment Date**

The projected date to attain and maintain water quality standards in the Hog 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 Hog 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  
 Ware County  
 Coffee County  
 City of Nicholls

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/sub-basin. 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.

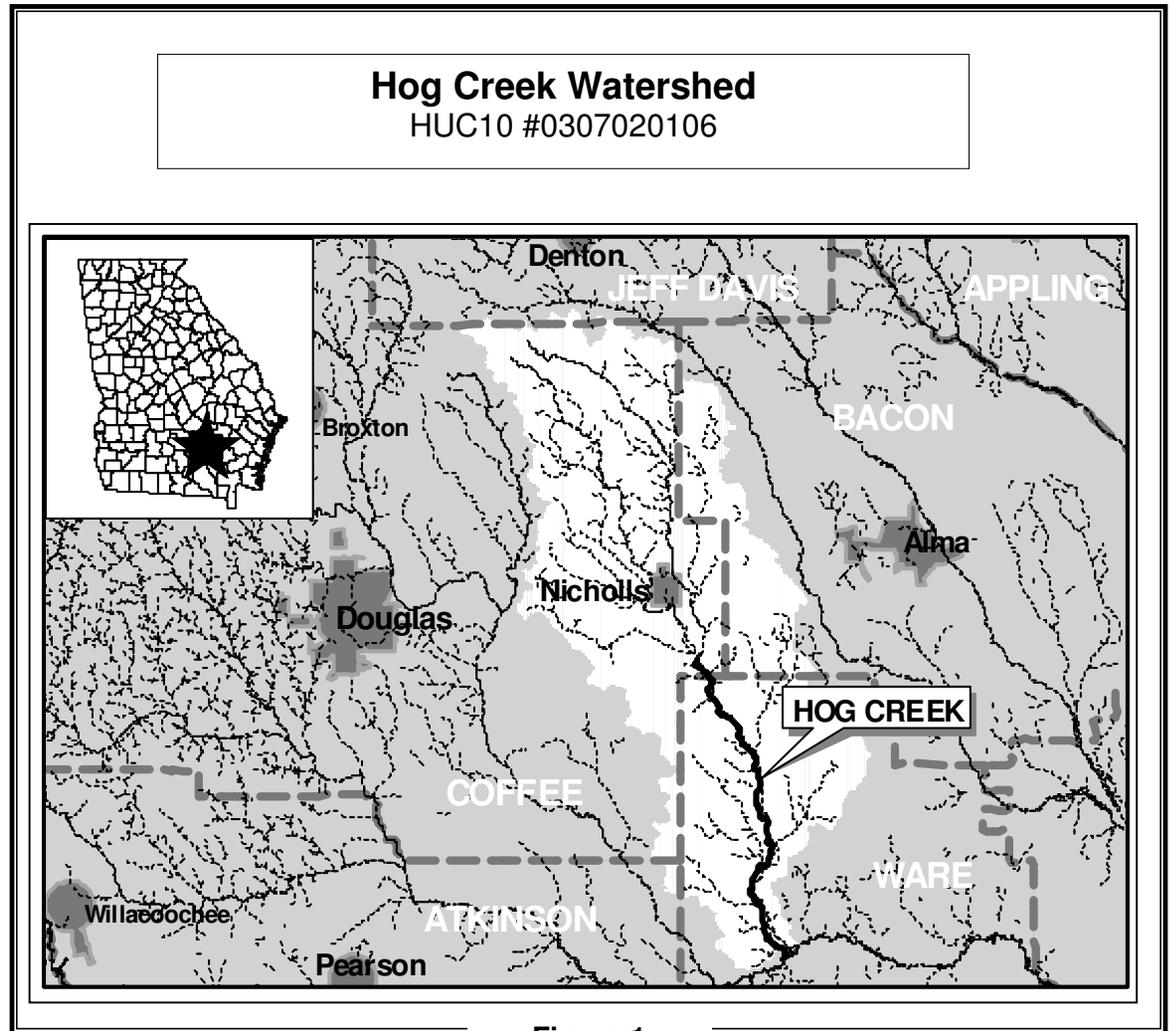


Figure 1

Impaired Waterbody*	Impaired Stream Location	Impairment
1. Hog Creek	Hurricane Creek to Satilla River south of Nicholls	Dissolved Oxygen (DO)

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

# Action Plan for Hog Creek Watershed

Watershed: Hog Creek  
HUC10: #0307020106

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 type="checkbox"/> Industrial <input type="checkbox"/> Urban <input checked="" type="checkbox"/> Agriculture <input checked="" type="checkbox"/> Forestry <input type="checkbox"/> Residential <input type="checkbox"/> Other (Please List)	<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> <ol style="list-style-type: none"> <li>Prevent soil contamination.</li> <li>Prevent waste runoff.</li> <li>Routine and regular maintenance of septic system.</li> </ol> <p><b>Pet Excrement Disposal:</b></p> <ol style="list-style-type: none"> <li>Properly dispose of pet excrement.</li> </ol> <p><b>Automotive Care:</b></p> <ol style="list-style-type: none"> <li>Regular maintenance, check for leaks and the proper disposal of fluids at approved locations.</li> </ol> <p><b>Lawn and Garden Care:</b></p> <ol style="list-style-type: none"> <li>Proper yard maintenance.</li> <li>Proper disposal of organic and non-organic yard by products.</li> <li>Proper precautions and correct usage of chemical and fertilizers.</li> </ol> <p><b>Household Cleaners:</b></p> <ol style="list-style-type: none"> <li>Proper disposal of household chemicals.</li> <li>Correct usage of chemicals.</li> </ol> <p><b>Sewer management:</b></p> <ol style="list-style-type: none"> <li>Routine visual inspections and report leaks if noted.</li> </ol> <p><b>Spill/Discharge Control and Cleanup:</b></p> <ol style="list-style-type: none"> <li>Control and cleanup spills according to instruction of manufacture.</li> </ol> <p><b>Miscellaneous Product Care:</b></p> <ol style="list-style-type: none"> <li>Control and cleanup spills according to instruction of manufacture.</li> </ol> <p><b>Trash Pickup:</b></p> <ol style="list-style-type: none"> <li>Visually inspect containers and report damage or leaks</li> <li>Keep container secure at all times</li> <li>Ensure that trash is picked up on a regular schedule.</li> </ol>	<p><b>Power Equipment Care:</b></p> <ol style="list-style-type: none"> <li>Regular maintenance of fleet vehicles, check for leaks and the proper disposal of fluids at approved locations.</li> </ol> <p><b>Commercial Chemical Cleaners:</b></p> <ol style="list-style-type: none"> <li>Proper disposal of commercial chemicals.</li> <li>Correct usage of chemicals.</li> <li>Inform all employees of MDSS.</li> </ol> <p><b>Spill/Discharge Control and Cleanup:</b></p> <ol style="list-style-type: none"> <li>Control and cleanup spills according to instruction of manufacture.</li> </ol> <p><b>Trash Pickup:</b></p> <ol style="list-style-type: none"> <li>Visually inspect containers and report damage or leaks</li> <li>Keep container secure at all times</li> <li>Ensure that trash is picked up on a regular schedule.</li> </ol> <p><b>Agriculture: Best Management Practices (BMPs)</b></p> <ol style="list-style-type: none"> <li>Waste storage structure-Utilize and store waste</li> <li>Filter Strips-Reduce soil erosion, filter runoff and provide wildlife habitat.</li> <li>Nutrient Management-Prevent over-application of nutrients, protect against soil contamination.</li> </ol> <p><b>Forestry: Best Management Practices (BMPs)</b></p> <ol style="list-style-type: none"> <li>Streamside Management Zones (SMZS)</li> <li>Road building-Prevents soil erosion</li> </ol> <p><b>Manure and Waste: Best Management Practices (BMPs)</b></p> <ol style="list-style-type: none"> <li>Use conservation practices that minimize runoff and erosion on land where waste is applied.</li> <li>Do not allow lagoons to overflow and collect runoff from concentrated animals operations for later land application to protect streams.</li> <li>Adapt new technology which is environmentally friendly.</li> </ol>

## 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 Nicholls	1	Local Government	12/2004
EPD	Best Management Practices for Industry	1	Business Community	Ongoing
EPD	Best Management Practices for Water Quality	1	Business Community	Ongoing
Georgia Forestry Commission	Best Management Practices for Forestry	1	Forestry Industry	Ongoing
NRCS, 7 Rivers RC&D	Best Management Practices for Agricultural	1	Farming Community	Ongoing
University of Georgia Extension Agent	Best Management Practices for Agricultural	1	Farming Community	Ongoing
Nicholls Youth Park	Organization supported by University of Georgia Extension Agent, NRCS (7 Rivers RC7D), Coffee County and the City of Nicholls, Georgia.	1	Youth K-12	12/2004
Save Our Satilla	Satilla River Basin Environmental Group	1	Citizens	Ongoing
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	Local Governments and Citizens	12/2004
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 the Berrien County High School. He can be reached at (229) 686-7428	1	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 Storm Water Pollution Prevention Plan (SWPPP).	1	Local Government	1/2003



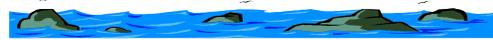
## STAKEHOLDERS

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
Dewayne Streat, Mayor, City of Nicholls	P.O. Box 218	Nicholls	GA	31554	(912) 345-2421	N/A
Ralph Tyson, Chairman, Ware County	P.O. Box 1069	Waycross	GA	31502	(912) 287-4300	N/A
Wayne Kilmark, Planning Director, Waycross-Ware County Planning Commission	902 Grove Avenue	Waycross	GA	31502	(912) 287-4379	<a href="mailto:jshubert@warecounty.com">jshubert@warecounty.com</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) 384-4811 Ext. 3	N/A
Walter James, Natural Resources Conservation Services	601 Tebeau St.	Waycross	GA	31501	(912) 285-5975	N/A
Fredrick E. Carpenter, Southeast Georgia RDC	1725 South GA Parkway, West	Waycross	GA	31503	(912) 285-6097	fecsegardc@accessatc.net
Glynn Mcallister, Rayonier	P.O. 2496	Douglas	GA	31534	(912) 383-8305	Glynn.mcallister@rayonier.com

## 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)
Hog Creek	Hurricane Creek to Satilla River south of Nicholls near Bickley	15 miles	Fishing	NS
Primary County	Secondary County	Second RDC	Source (Point/ Nonpoint)	
Ware	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: 3.735 mg/L (minimum)	Nonpoint: 12% 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
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
Dissolved Oxygen	Lateral Leaf Litter	Decrease in Oxygen due to decomposition of organic materials.	1
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
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 enrich materials are then introduced into the waterway by the above means and aerobic microorganisms are needed to further breakdown the materials lending to decreased oxygen amounts in the waterway.	1
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
Dissolved Oxygen	Manure and other Organic Nutrients from livestock operations	Runoffs from livestock feedlots are introduced into the waterway by rainfall or feedlot maintenance operations.	1
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

<b>Pollutant</b>	<b>Sources of Pollutants</b>	<b>Description of Contribution To Impairment</b>	<b>Impacted Waterbodies*</b>
Dissolved Oxygen	Broadcast Spreading of Inorganic and Organic Materials	Introduced into waterway by runoff and wind. Organic material need aerobic microorganisms are needed to further breakdown the materials lending to decreased oxygen amounts in the waterway. Inorganic materials dissolve in the waterway consuming oxygen.	1
Dissolved Oxygen	Leaking Septic Systems	Effluent leakage due to overflowing sewage systems and leaking collection lines.	1
Dissolved Oxygen	Land Disturbing Activities	Unchecked runoff from developing/developed sites: (1) Improper disposal of waste materials and (2) Introduction of sediments into waterways. (Sediments change the mechanics of the waterway by reducing flow rates)	1
Dissolved Oxygen	Agricultural/Silvicultural/Residential Chemical/Fertilizer Applications of chemicals by aerial and broadcast means.	Agricultural/Silvicultural/Residential chemicals/fertilizer (Nitrates and Phosphates) runoff increases the natural eutrophication rates in streams and creeks, and contributes to DO by producing a carbonaceous chemical reacting with O <sup>2</sup> .	1
Dissolved Oxygen	Spillage of Raw Sewage	Spills that are not properly contained and/or decontaminated correctly are left on surface(s) to be washed away during periods of precipitation.	1
Dissolved Oxygen	Improper Methods of Trash Collection and Disposal	Spillage and incorrect disposal techniques place substances on surfaces to be washed into waterways during precipitation.	1
Dissolved Oxygen	Improper Methods of Collection and Disposal of Petroleum Products and Materials related to the repair of Gasoline and Diesel Equipment	Fluids, materials associated with mechanical repairs and chemical absorbent materials that are not properly disposed of are placed on surfaces to be washed into drainage system(s) or dumped illegal into drainage systems.	1
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
Dissolved Oxygen	Forested Woodlands and Terrain	Heavily forest and wetlands often contribute to high organic (leaf litterfall, decomposing plants) loading and slow flows (due to minimum topographical relief) in a surface water system that result in conditions where the dissolved oxygen is naturally lower and cannot meet the numeric criteria without reductions in the natural nutrient and carbon loads. Usually reduction in natural forest or wetlands is not feasible, practicable or desirable through conventional best management practices.	1
Dissolved Oxygen	GAU020267	Permitted Waste Treatment System. Possible runoff and spillage of untreated raw waste.	



## MANAGEMENT MEASURES, MEASURABLE MILESTONES AND SCHEDULE

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

The following table lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the pollutant and the waterbody for which the TMDL was written. A description is provided of how these management measures are/will be accomplished through reliable and effective delivery mechanisms, and how these management measures are/will help achieve the target TMDL. Included is the source of the pollutant, anticipated/past effectiveness of the management measure (very effective, somewhat effective, not effective), the current status (i.e. enforced, in-progress, planning), and measurable milestones and schedule. Milestones are used to 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
CAFO Regulations	Georgia DNR EPD	Permitting requirements for Concentrated	2002	Pending	Regulatory
Land Application System Permits	General NPDES Permits	Animal Feeding Operations and Land Application Systems with liquid manure			

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Containment lagoons, LAS sprays	1	Effective

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

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
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	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
Septic Tank Management	Individual	Routine septic system maintenance prevents soil contamination, waste runoff and improves soil and water quality.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Effluent from malfunctioning septic systems	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	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
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.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Car washes, mechanical repair and maintenance shops, and individual home auto maintenance and/or repair.	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	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
Lawn and Garden 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, Agricultural & Garden Herbicides and Pesticides.	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	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
Household Cleaner Care Disposal and Management Program	Individual	Encourages individuals to properly dispose of household chemicals.	12/2004	Planning	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Household Chemicals	1	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	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	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	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
Spillage Control and Cleanup Program	Individual	Encourages individuals to cleanup, control and/or to report spills.	12/2004	Planning	Voluntary

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

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	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
Nutrient Management Program	NRCS, Seven Rivers RC&D, and University of Georgia Extension Agent	Encourages and educates farmers on the correct usage and amount of fertilizers to maintain high yield and to lessen the impact of nitrates and phosphates to waterways. Reduces NP sources of pollution.	01/1991	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
DO	Nitrates and Phosphates	1	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	01/1991	Continuous	NRCS and University of Georgia Extension Agent 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
Pesticides Management Program	NRCS, Seven Rivers RC&D, and University of Georgia Extension Agent	Encourages and educates farmers on the correct usage and amount of fertilizers to maintain high yield and to lessen the impact of nitrates and phosphates to waterways. Reduces NP sources of pollution.	01/1991	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
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DO	Pesticides	1	Effective
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Measurable Milestones	Schedule		Comments
	Start	End	

Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	01/1991	Continuous	NRCS and University of Georgia Extension Agent must provide educational opportunities if BMP is to remain effective.
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Watershed: Hog Creek  
HUC10: #0307020106

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 sources of pollution by reducing the amount of leaf litter, wood products and chemicals introduce 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	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	01/1991	Continuous	NRCS and GFC 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
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	Effective if BMP is implemented

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute impaired Dissolved Oxygen in impacted waterway.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become 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	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	Animal facility runoff, pesticide/herbicide management, irrigation runoff management and manure applications.	1	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 impaired Dissolved Oxygen in impacted waterway.	1987	Continuous	NRCS and University of Georgia Extension Agent 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
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	Effective

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



**POTENTIAL FUNDING SOURCES**

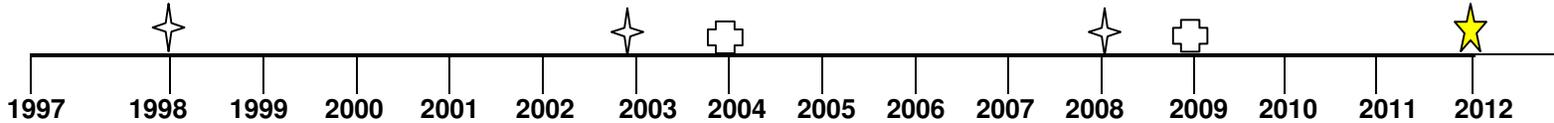
The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

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



# 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	DO	TMDL Evaluation /Monitoring data for Georgia 305(b)/303(d) List	1998	1998	Previous
Water Quality Testing	GA EPD	1	DO	Water Quality Testing/Assessment of water quality.	2003	2003	Proposed
TMDL Evaluation	GA EPD/USGS	1	DO	Monitoring data for GA 305(b)/303(d) list	1998	1998	Previous
BMP Monitoring	GFC	1	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	DO	Component of general CAFO/LAS permits to identify and describe practices that are to be implemented to assure compliance with the limitations and conditions of the permit.	03/2002	03/2007	Current
Storm Water Pollution Prevention Plan	Southeast Georgia RDC, NRCS and Coastal Conservation Resources	1	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

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Watershed: Hog Creek  
HUC10: #0307020106

Prepared By: Fredrick E. Carpenter Jr.  
Agency: Southeast Georgia RDC  
Address: 1725 South Georgia Parkway, West  
City: Waycross ST: GA 31503  
E-mail: fecsegardc@accessatc.net  
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				