

TMDL IMPLEMENTATION PLAN

SATILLA RIVER BASIN

Overview of Red Bluff Creek Watershed Plan

The Red Bluff Creek watershed (HUC10 # 0307020103) is located in the Satilla River basin in Southeast Georgia's Atkinson and Ware Counties. The local governments involved in improving the Red Bluff Creek Watershed are the counties of Atkinson and Ware and the city of Pearson. 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 Red Bluff Creek watershed, the State of Georgia has determined sections of both Red Bluff Creek and the Satilla River to be impaired water bodies. Red Bluff Creek from Little Red Bluff Creek to the Satilla River east of Pearson is classified as *not supporting* its designation as fishing water and has an impacted area of seven miles. The Satilla River from Pudding Creek to Smut Branch northeast of Pearson is classified as *partially supporting* its designation as fishing water and has an impacted area of eight miles. The Total Maximum Daily Load (TMDL) Implementation Plan for the Red Bluff 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 Red Bluff 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 Red Bluff Creek, the TMDL Implementation Plan suggests a 25% reduction in nonpoint source contamination in Little Red Bluff Creek and a 32% reduction in nonpoint source contamination in Pudding Creek to Smut Branch. 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 Red Bluff Creek

There are numerous nonpoint sources of oxygen demanding substances in the Red Bluff 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 and access to the waterway by livestock are contributing to the DO in Red Bluff Creek. The Atkinson County Landfill [Permit# D02-D09D (MSWL)] and Corbitts Peat Mine [Permit # 1162-97] are possibly contributing to the dissolved oxygen impairment via storm-water runoff.

In addition to the aforementioned sources, many Southeast Georgia streams, including Red Bluff 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.

Developing the Plan and Stakeholder Involvement

The SEGaRDC has worked closely with GADNR-EPD to develop the TMDL Implementation Plan for the Red Bluff 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. A Public Meeting was held November 11, 2002 to collect information from stakeholders and/or interest groups. Stakeholders offer valuable information and data regarding their community and the impaired water bodies and can provide insight and/or implement management measures.

Monitoring Plan

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Overview of Red Bluff Creek Watershed 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 Red Bluff Creek watershed. The following management practices are included in the TMDL Implementation Plan:

- Domesticated and commercial animal/livestock excrement disposal and management program
- Herbicide and pesticide poison care disposal and management care program
- Stream management zones
- Agriculture and forestry best management practices
- Nutrient management program

Projected Attainment Date

The projected date to attain and maintain water quality standards in the Red Bluff 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 Red Bluff 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
 Atkinson County
 Coffee County
 Ware County
 City of Pearson

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.

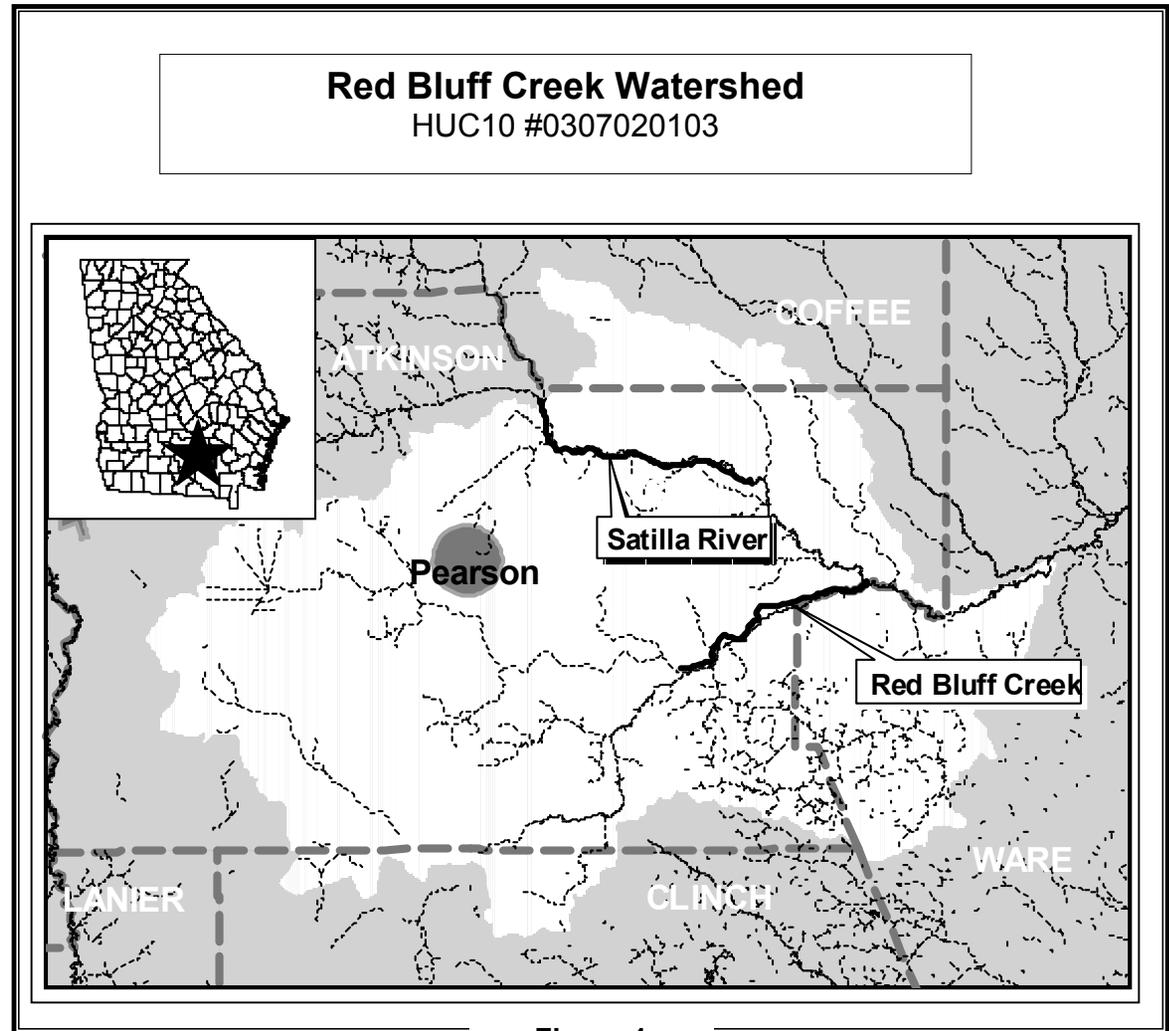


Figure 1

Impaired Waterbody*	Impaired Stream Location	Impairment
1. Red Bluff Creek	Little Red Bluff Creek to Satilla River east of Pearson	Dissolved Oxygen (DO)
2. Satilla River	Pudding Creek to Smut Branch northeast of Pearson	Dissolved Oxygen (DO)

*These Waterbody Numbers are referenced throughout the Implementation Plan.

POLLUTANT:	SOURCE:	EFFECT:	WHAT CAN I DO?	
			At Home: Community, School	At Work: Business, Government
<input checked="" type="checkbox"/> Dissolved Oxygen (DO) <input 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 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>Septic Tank Management: a. Prevent soil contamination. b. Prevent waste runoff. c. Routine and regular maintenance of septic system.</p> <p>Pet Excrement Disposal: a. Properly dispose of pet excrement.</p> <p>Automotive Care: a. Regular maintenance, check for leaks and the proper disposal of fluids at approved locations.</p> <p>Lawn and Garden Care: a. Proper yard maintenance. b. Proper disposal of organic and non-organic yard by products. c. Proper precautions and correct usage of chemical and fertilizers.</p> <p>Household Cleaners: a. Proper disposal of household chemicals. b. Correct usage of chemicals.</p> <p>Sewer management: a. Routine visual inspections and report leaks if noted.</p> <p>Spill/Discharge Control and Cleanup: a. Control and cleanup spills according to instruction of manufacture.</p> <p>Miscellaneous Product Care: a. Control and cleanup spills according to instruction of manufacture.</p> <p>Trash Pickup: a. Visually inspect containers and report damage or leaks b. Keep container secure at all times c. Ensure that trash is picked up on a regular schedule.</p>	<p>Automotive Care: a. Regular maintenance of fleet vehicles, check for leaks and the proper disposal of fluids at approved locations.</p> <p>Lawn and Garden Care: Ensure that contracted lawn services adhere to: a. Proper yard maintenance. b. Proper disposal of organic and non-organic yard by products. c. Proper precautions and correct usage of chemical and fertilizers.</p> <p>Commercial Chemical Cleaners: a. Proper disposal of commercial chemicals. b. Correct usage of chemicals. c. Inform all employees of MDSS.</p> <p>Sewer management: a. Routine visual inspections and report leaks if noted.</p> <p>Spill/Discharge Control and Cleanup: a. Control and cleanup spills according to instruction of manufacture.</p> <p>Trash Pickup: a. Visually inspect containers and report damage or leaks b. Keep container secure at all times c. Ensure that trash is picked up on a regular schedule.</p> <p>Agriculture: Best Management Practices (BMPs) a. Waste storage structure-Utilize and store waste b. Filter Strips-Reduce soil erosion, filter runoff and provide wildlife habitat. c. Nutrient Management-Prevent over-application of nutrients, protect against soil contamination.</p> <p>Forestry: Best Management Practices (BMPs) a. Streamside Management Zones (SMZS) b. Road building-Prevents soil erosion</p>

INFORMATION/EDUCATION/OUTREACH ACTIVITIES

An education/outreach component will be used to enhance public understanding of and participation in implementing the TMDL Implementation Plan.
List of all previous and planned information/education/outreach activities.

Responsible Organization Or Entity	Description	Impacted Waterbodies*	Target Audience	Anticipated Dates (MM/YY)
Southeast Georgia Regional Development Center	Part V Ordinance/Regulation Review for the City of Pearson, Atkinson County, Coffee County, and Ware County	1, 2	Local Government	12/2004
EPD	Best Management Practices for Industry	1, 2	Business Community	Ongoing
EPD	Best Management Practices for Water Quality	1, 2	Business Community	Ongoing
Georgia Forestry Commission	Best Management Practices for Forestry	1, 2	Forestry Industry	Ongoing
NRCS, 7 Rivers RC&D	Best Management Practices for Agricultural	1, 2	Farming Community	Ongoing
University of Georgia Extension Agent, Rick Reed Coffee County	Best Management Practices for Agricultural	1, 2	Farming Community	Ongoing
Save Our Satilla	Satilla River Basin Environmental Group	1, 2	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 videotape for Residential and Urban BMPs. The committee believes that the key to quality water is behavior modification through education. This will be collaborative effort between DNR/EPD, Southeast Georgia RDC, Water Committee and Local Governments.	1, 2	Local Governments and Citizens	12/2004
Adopt-A-Stream	Will assist Al Browning in the introduction of the Adopt-A-Stream program into Atkinson 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	Will assist local governments in seeking grants to delineate malfunctioning septic systems, lagoons and other wastewater systems.	1, 2	Citizens and local governments	06/2004
Coffee County Greenspace Program	Coffee County Greenspace Program provides a 100 foot barrier on the Satilla River. This barrier will prevent buildup and reduce impact on the river.	1	Citizens	12/2002



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
Ralph Tyson, Chairman, Ware County	P.O. Box 1069	Waycross	GA	31502	(912) 287-4300	N/A
Edwin Davis, Chairman, Atkinson County	P.O. Box 518	Pearson	GA	31642	(912) 534-5972	jjatco@planttel.net
Lamars Parks, Solid Waste Mgt. Authority, Atkinson County	P.O. Box 518	Pearson	GA	31642	(912) 534-5972	N/A
Walter James, Natural Resources Conservation Services	601 Tebeau	Waycross	GA	31501	(912) 285-5975	N/A
Ellie Morris, Mayor, City of Pearson	P.O. Box 295	Pearson	GA	31642	(912) 422-3397	N/A
Wayne Kilmark, Waycross-Ware Planning Commission	902 Grove St.	Waycross	GA	31502	(912) 287-4379	jshubert@warecounty.com
Fredrick E. Carpenter Jr., Southeast Georgia RDC	1725 South Georgia Parkway, West	Waycross	GA	31502	(912) 285-6097	fecsegardc@accessatc.net
Thomas Couch, County Administrator, Coffee County	101 South Peterson	Douglas	GA	31533	(912) 384-4799	N/A
Glynn Mcallister, Rayonier	P.O. 2496	Douglas	GA	31534	(912) 383-8305	Glynn.mcallister@rayonier.com
Bill Wikoff, International Paper	6508 New Jesup Highway	Brunswick	GA	31523	(912) 265-1378	Bill.wikoff@ipaper.co

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)
Red Bluff Creek	Little Red Bluff Creek to Satilla River east of Pearson	7 miles	Fishing	NS
Primary County	Secondary County	Second RDC		Source (Point/ Nonpoint)
Atkinson	Ware			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: 2.140 mg/L (minimum)	Nonpoint: 25% 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)
Satilla River	Pudding Creek to Smut Branch northeast of Pearson	8 miles	Fishing	PS
Primary County	Secondary County	Second RDC		Source (Point/ Nonpoint)
Atkinson				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: 4.247 mg/L (minimum)	Nonpoint: 32% 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 ² .	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 is 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 enriched 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, 2
Dissolved Oxygen	Access to waterways by livestock	Manure, feed and other materials are either transported on hooves, introduced into the stream by drinking livestock defecation, and/or feed is introduced into the waterway by runoff due to well traveled paths.	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

Pollutant	Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
Dissolved Oxygen	Atkinson County Landfill Permit Number D02-D09D (MSWL)	Possible runoff during periods of heavy precipitation, and/or wind-blown materials that are not properly secured. Inorganically introduced materials may release carbonous materials that dissolve oxygen.	1, 2
Dissolved Oxygen	Corbitts Peat Mine-Permit Number 1162-97	Sediments are a possible runoff. 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
Dissolved Oxygen	Direct Leaf Litter	Direct introduction of leafs falling into waterways from overhanging branches, limb and trees. These leaves settle at the bottom and require further breakdown by aerobic microorganisms.	1, 2
Dissolved Oxygen	Broadcasting of Organic Materials	Introduced into waterways by runoff and wind. Organic materials need aerobic microorganisms to further breakdown the materials lending to decreased oxygen in the impacted waterway.	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	Land Disturbing Activities	Unchecked runoff from developing/developed sites: (1) Discharges of sanitary waste, (2) Improper disposal of waste materials and (3) Introduction of sediments into waterways. (Sediments change the mechanics of the waterway by reducing flow rates).	1, 2
Dissolved Oxygen	Spill/Discharge of Raw Sewage	Spillage and unauthorized discharges that are not properly contained and/or decontaminated correctly are left on surface(s) to be washed away during periods of precipitation or routine maintenance (washing) of manure spreading vehicles or other collection apparatuses or containers.	1, 2
Dissolved Oxygen	Forested Woodlands and Terrain	Heavily forest and wetland 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 contributions is not feasible, practicable or desirable through conventional best management practices.	1, 2



MANAGEMENT MEASURES, MEASURABLE MILESTONES AND SCHEDULE

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

The following table lists management measures that have been or will be implemented to achieve water quality standards and the load reductions established in the TMDL. The management measures, including regulatory or voluntary actions or other controls by governments or individuals, specifically apply to the pollutant and the waterbody for which the TMDL was written. A description is provided of how these management measures are/will be accomplished through reliable and effective delivery mechanisms, and how these management measures are/will help achieve the target TMDL. Included is the source of the pollutant, anticipated/past effectiveness of the management measure (very effective, somewhat effective, not effective), the current status (i.e. enforced, in-progress, planning), and measurable milestones and schedule. Milestones are used to 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.	11/1964	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	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.	11/1964	Continuous	N/A

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

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	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 DO in impacted waterways.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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

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

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

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Stream Management Zones	Georgia Forestry Commission	Educates foresters to identify sensitive areas and applicable BMPs to be used during stream crossing, harvesting, site preparation, reforestation, and herbicide applications. Reducing NP source of pollution by reducing the amount of leaf litter, wood products and chemicals introduced into the waterways.	1991	In-progress	Voluntary

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

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

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
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
Dissolved Oxygen	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 DO in impacted waterways.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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

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

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

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)	Impacted Waterbodies*	Anticipated or Past Effectiveness
Dissolved Oxygen	Natural fertilizers and Manmade fertilizers	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1991	Continuous	University of Georgia Extension Agent must provide continuous 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
Dissolved Oxygen	Silvicultural	1, 2	Effective

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

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Silviculture BMP Monitoring/Auditing	GFC	GFC will conduct monthly fly over operations within watershed to identify recent forestry practices and conduct BMP auditing.	1/2003	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies	Anticipated or Past Effectiveness
Dissolved Oxygen	Silvicultural Activity	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1/2003	Continuous	N/A

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Greenspace Plan	Coffee County	Coffee County has established a 100-foot protective barrier along the Satilla River. This is to prevent buildup of the riverbank.	12/2002	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Waterbodies	Anticipated or Past Effectiveness
Dissolved Oxygen	Rural Buildup, Silvicultural and Farming Activities	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1/2003	Continuous	N/A



POTENTIAL FUNDING SOURCES

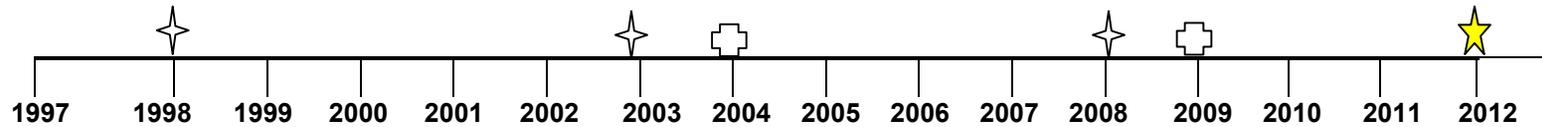
The identification and discussion of dedicated funding is important in determining the economic feasibility of the above-mentioned management measures.

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, 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
Comprehensive Nutrient Management Plan	Georgia 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.	2002	Continuous	Current
Tire Program	EPD	1, 2	DO	Reduces illegal dumping of tires, provides opportunities for increased code enforcement, improves water quality.	12/2003	12/2004	Proposed
BMP Monitoring	GFC	1, 2	DO	GFC will conduct monthly fly over operations within watershed to identify recent forestry practices and conduct BMP auditing.	01/2003	Continuous	Current

CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE

The following set of criteria will be used to determine whether any substantial progress is being made towards reducing pollutants in impaired waterbodies and attaining water quality standards. Discussion on each 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

Watershed: Red Bluff Creek
HUC10: #0307020103

Prepared By: Fredrick E. Carpenter Jr.
Agency: Southeast Georgia RDC
Address: 1725 South Georgia Parkway, West
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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

STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN
SATILLA RIVER BASIN

STREAM APPROACH

TMDL Implementation Plans are platforms for establishing a course of action to restore the quality of impaired water bodies in a watershed. They are intended as a continuing process that may be revised as new conditions and information warrant. Procedures will be developed to track and evaluate the implementation of the management practices and activities identified in the plans. Once restored, appropriate management practices and activities will be continued to maintain the water bodies. **With input from appropriate stakeholder groups, a TMDL Implementation Plan has been developed for a cluster of impaired waterbodies/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.

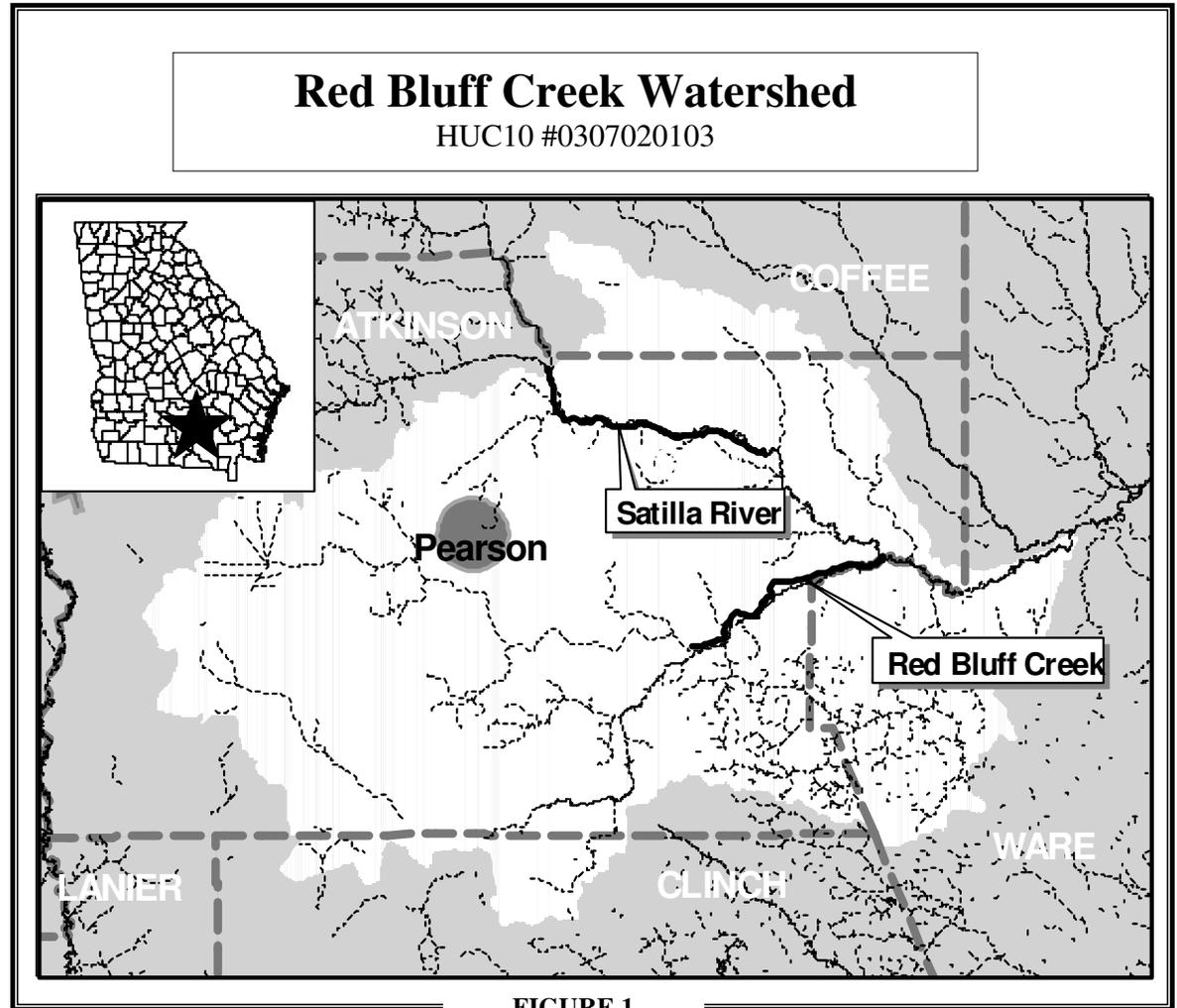


FIGURE 1

Impaired Waterbody*	Location	Impairment
1. Red Bluff Creek	Little Red Bluff Creek to Satilla River east of Pearson	Dissolved Oxygen (DO)
2. Satilla River	Padding Creek to Smut Branch northeast of Pearson	Dissolved Oxygen (DO)

*These Waterbody Numbers are referenced throughout the implementation plan.

Satilla River Basin
TMDL Implementation Plan
Red Bluff Creek Watershed
HUC10 #0307020103

1. Red Bluff Creek

NAME	LOCATION	MILES/AREA IMPACTED	USE CLASSIFICATION	PARTIALLY SUPPORTING/ NOT SUPPORTING (PS/NS)
Red Bluff Creek	Little Red Bluff Creek to Satilla River east of Pearson	7 miles	Fishing	NS
PRIMARY COUNTY	SECONDARY COUNTY	SECOND RDC	SOURCE (POINT/NON-POINT)	
Atkinson	Ware		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: 2.140 mg/L (minimum)	Nonpoint: 25% 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
Red Bluff Creek Watershed
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SIGNIFICANT STAKEHOLDERS

Name/Organization	Address	City	State	Zip	Phone	E-mail
Ralph Tyson, Chairman, Ware County	P.O. Box 1069	Waycross	GA	31502	(912) 287-4300	N/A
Edwin Davis, Chairman, Atkinson County	P.O. Box 518	Pearson	GA	31642	(912) 534-5972	jjatco@planttel.net
Lamars Parks, Solid Waste Mgt. Authority, Atkinson County	P.O. Box 518	Pearson	GA	31642	(912) 534-5972	N/A
Walter James, Natural Resources Conservation Services	601 Tebeau	Waycross	GA	31501	(912) 285-5975	N/A
Ellie Morris, Mayor, City of Pearson	P.O. Box 295	Pearson	GA	31642	(912) 422-3397	N/A
Wayne Kilmark, Waycross-Ware Planning Commission	902 Grove St.	Waycross	GA	31502	(912) 287-4379	jshubert@warecounty.com
Fredrick E. Carpenter Jr., Southeast Georgia RDC	1725 South Georgia Parkway, West	Waycross	GA	31502	(912) 285-6097	fecsegardc@accessatc.net
Thomas Couch, County Administrator, Coffee County	101 South Peterson	Douglas	GA	31533	(912) 384-4799	N/A
Glynn Mcallister, Rayonier	P.O. 2496	Douglas	GA	31534	(912) 383-8305	Glynn.mcallister@rayonier.com
Bill Wikoff, International Paper	6508 New Jesup Highway	Brunswick	GA	31523	(912) 265-1378	Bill.wikoff@ipaper.co.

Satilla River Basin
TMDL Implementation Plan
Red Bluff Creek Watershed
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EDUCATION/OUTREACH ACTIVITIES

Responsible Organization or Entity	Description	Target Audience	Anticipated Dates (MM/YY)
Southeast Georgia Regional Development Center	Part V Ordinance/Regulation Review for the City of Pearson, Atkinson County, Coffee County, and Ware County	Local Government	12/2004
EPD	Best Management Practices for Industry	Business Community	Ongoing
EPD	Best Management Practices for Water Quality	Business Community	Ongoing
Georgia Forestry Commission	Best Management Practices for Forestry	Forestry Industry	Ongoing
NRCS, 7 Rivers RC&D	Best Management Practices for Agricultural	Farming Community	Ongoing
University of Georgia Extension Agent, Rick Reed Coffee County	Best Management Practices for Agricultural	Farming Community	Ongoing
Save Our Satilla	Satilla River Basin Environmental Group	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 videotape for Residential and Urban BMPs. The committee believes that the key to quality water is behavior modification through education. This will be collaborative effort between DNR/EPD, Southeast Georgia RDC, Water Committee and Local Governments.	Local Governments and Citizens	12/2004

Satilla River Basin
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Adopt-A-Stream	Will assist Al Browning in the introduction of the Adopt-A-Stream program into Atkinson County. Mr. Al Browning is an Ecology teacher at Berrien County High School. He can be reached at (229) 686-7428.	Citizens	03/2003
Southeast Georgia Regional Development Center	Will assist local governments in seeking grants to delineate malfunctioning septic systems, lagoons and other wastewater systems.	Citizens and local governments	06/2004
Coffee County Greenspace Program	Coffee County Greenspace Program provides a 100 foot barrier on the Satilla River. This barrier will prevent buildup and reduce impact on the river.	Citizens	12/2002

Satilla River Basin
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Red Bluff Creek Watershed
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POLLUTANT SOURCES	Sources of Pollutants	Description of Contribution To Impairment
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 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 is washed away into nearby drainage systems and/or waterways.
Dissolved Oxygen	Lateral Leaf Litter	Decrease in Oxygen due to decomposition of organic materials.
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.
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 enriched 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.
Dissolved Oxygen	Access to waterways by livestock	Manure, feed and other materials are either transported on hooves, introduced into the stream by drinking livestock defecation, and/or feed is introduced into the waterway by runoff due to well traveled paths.
Dissolved Oxygen	Manure from livestock operations	Runoffs from livestock feedlots are introduced into the waterway by rainfall or feedlot maintenance operations.
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.
Dissolved Oxygen	Atkinson County Landfill Permit Number D02-D09D (MSWL)	Possible runoff during periods of heavy precipitation, and/or wind-blown materials that are not properly secured. Inorganically introduced materials may release carbonous materials that dissolve oxygen.
Dissolved Oxygen	Corbitts Peat Mine-Permit Number 1162-97	Sediments are a possible runoff. 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.
Dissolved Oxygen	Direct Leaf Litter	Direct introduction of leafs falling into waterways from overhanging branches, limb and trees. These leaves settle at the bottom and require further breakdown by aerobic microorganisms.
Dissolved Oxygen	Broadcasting of Organic Materials	Introduced into waterways by runoff and wind. Organic materials need aerobic microorganisms to further breakdown the materials leading to decreased oxygen in the impacted waterway.

Satilla River Basin
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Red Bluff Creek Watershed
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POLLUTANT SOURCES	Sources of Pollutants	Description of Contribution To Impairment
Dissolved Oxygen	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
Dissolved Oxygen	Land Disturbing Activities	Unchecked runoff from developing/developed sites: (1) Discharges of sanitary waste, (2) Improper disposal of waste materials and (3) Introduction of sediments into waterways. (Sediments change the mechanics of the waterway by reducing flow rates).
Dissolved Oxygen	Spill/Discharge of Raw Sewage	Spillage and unauthorized discharges that are not properly contained and/or decontaminated correctly are left on surface(s) to be washed away during periods of precipitation or routine maintenance (washing) of manure spreading vehicles or other collection apparatuses or containers.
Dissolved Oxygen	Forested Woodlands and Terrain	Heavily forest and wetland 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 contributions is not feasible, practicable or desirable through conventional best management practices.

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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.	11/1964	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.	11/1964	Continuous	N/A

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

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
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 DO in impacted waterways.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Containment lagoons, LAS sprays	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

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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 implemented

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

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Stream Management Zones	Georgia Forestry Commission	Educates foresters to identify sensitive areas and applicable BMPs to be used during stream crossing, harvesting, site preparation, reforestation, and herbicide applications. Reducing NP source of pollution by reducing the amount of leaf litter, wood products and chemicals introduced into the waterways.	1991	In-progress	Voluntary

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

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

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
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 DO in impacted waterways.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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

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

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1987	Continuous	University of Georgia Extension Agent must provide continuous 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 (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 DO in impacted waterways.	1991	Continuous	University of Georgia Extension Agent must provide continuous 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	Silvicultural	Effective

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

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Silviculture BMP Monitoring/Auditing	GFC	GFC will conduct monthly fly over operations within watershed to identify recent forestry practices and conduct BMP auditing.	1/2003	In-progress	Voluntary

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

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1/2003	Continuous	N/A

Satilla River Basin
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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
Greenspace Plan	Coffee County	Coffee County has established a 100-foot protective barrier along the Satilla River. This is to prevent buildup of the riverbank.	12/2002	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Rural Buildup, Silvicultural and Farming Activities	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1/2003	Continuous	N/A

Satilla River Basin
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Red Bluff Creek Watershed
HUC10 #0307020103

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

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Red Bluff Creek Watershed
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MONITORING PLAN

Organization	Pollutants	Purpose/Description	Time Frame		Status: (Previous, Current, Proposed)
			Start	End	
GA EPD/USGS	DO	TMDL Evaluation/Monitoring Data	1998	1998	Previous
GA EPD	DO	Water Quality Testing	2003	2003	Proposed
Georgia DNR EPD	DO	Comprehensive Nutrient Management Plan. 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.	2002	Continuous	Current
EPD	DO	Tire Program	12/2003	12/2004	Proposed
GFC	DO	BMP Monitoring. GFC will conduct monthly fly over operations within watershed to identify recent forestry practices and conduct BMP auditing.	01/2003	Continuous	Current

COMMENTS:

Satilla River Basin
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Red Bluff Creek Watershed
HUC10 #0307020103

2. Satilla River

NAME	LOCATION	MILES/AREA IMPACTED	USE CLASSIFICATION	PARTIALLY SUPPORTING/ NOT SUPPORTING (PS/NS)
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Satilla River	Pudding Creek to Smut Branch northeast of Pearson	8 miles	Fishing	PS
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PRIMARY COUNTY	SECONDARY COUNTY	SECOND RDC	SOURCE (POINT/NON-POINT)
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Atkinson			Nonpoint
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POLLUTANTS	WATER QUALITY STANDARDS	REQUIRED LOAD REDUCTION
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Contributing to DO	DO: 5 mg/L (daily)-4 mg/L (minimum) Natural Water Quality Standard DO: 4.247 mg/L (minimum)	Nonpoint: 32% TOC, TN, TP
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TMDL ID #	DATE TMDL ESTABLISHED
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	December 2001
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TOC=Total Organic Carbon (lb/yr), TN=Total Nitrogen (lb/yr), TP=Total Phosphorus (lb/yr)

Satilla River Basin
TMDL Implementation Plan
Red Bluff Creek Watershed
HUC10 #0307020103

SIGNIFICANT STAKEHOLDERS

Name/Organization	Address	City	State	Zip	Phone	E-mail
Ralph Tyson, Chairman, Ware County	P.O. Box 1069	Waycross	GA	31502	(912) 287-4300	N/A
Edwin Davis, Chairman, Atkinson County	P.O. Box 518	Pearson	GA	31642	(912) 534-5972	jjatco@planttel.net
Lamars Parks, Solid Waste Mgt. Authority, Atkinson County	P.O. Box 518	Pearson	GA	31642	(912) 534-5972	N/A
Walter James, Natural Resources Conservation Services	601 Tebeau	Waycross	GA	31501	(912) 285-5975	N/A
Ellie Morris, Mayor, City of Pearson	P.O. Box 295	Pearson	GA	31642	(912) 422-3397	N/A
Wayne Kilmark, Waycross-Ware Planning Commission	902 Grove St.	Waycross	GA	31502	(912) 287-4379	jshubert@warecounty.com
Fredrick E. Carpenter Jr., Southeast Georgia RDC	1725 South Georgia Parkway, West	Waycross	GA	31502	(912) 285-6097	fecsegardc@accessatc.net
Thomas Couch, County Administrator, Coffee County	101 South Peterson	Douglas	GA	31533	(912) 384-4799	N/A
Glynn Mcallister, Rayonier	P.O. 2496	Douglas	GA	31534	(912) 383-8305	Glynn.mcallister@rayonier.com
Bill Wikoff, International Paper	6508 New Jesup Highway	Brunswick	GA	31523	(912) 265-1378	Bill.wikoff@ipaper.co

Satilla River Basin
TMDL Implementation Plan
Red Bluff Creek Watershed
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EDUCATION/OUTREACH ACTIVITIES

Responsible Organization or Entity	Description	Target Audience	Anticipated Dates (MM/YY)
Southeast Georgia Regional Development Center	Part V Ordinance/Regulation Review for the City of Pearson, Atkinson County, Coffee County, and Ware County	Local Government	12/2004
EPD	Best Management Practices for Industry	Business Community	Ongoing
EPD	Best Management Practices for Water Quality	Business Community	Ongoing
Georgia Forestry Commission	Best Management Practices for Forestry	Forestry Industry	Ongoing
NRCS, 7 Rivers RC&D	Best Management Practices for Agricultural	Farming Community	Ongoing
University of Georgia Extension Agent, Rick Reed Coffee County	Best Management Practices for Agricultural	Farming Community	Ongoing
Save Our Satilla	Satilla River Basin Environmental Group	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 videotape for Residential and Urban BMPs. The committee believes that the key to quality water is behavior modification through education. This will be collaborative effort between DNR/EPD, Southeast Georgia RDC, Water Committee and Local Governments.	Local Governments and Citizens	12/2004

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Adopt-A-Stream	Will assist Al Browning in the introduction of the Adopt-A-Stream program into Atkinson County. Mr. Al Browning is an Ecology teacher at Berrien County High School. He can be reached at (229) 686-7428.	Citizens	03/2003
Southeast Georgia Regional Development Center	Will assist local governments in seeking grants to delineate malfunctioning septic systems, lagoons and other wastewater systems.	Citizens and local governments	06/2004
Coffee County Greenspace Program	Coffee County Greenspace Program provides a 100 foot barrier on the Satilla River. This barrier will prevent buildup and reduce impact on the river.	Citizens	12/2002

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POLLUTANT SOURCES	Sources of Pollutants	Description of Contribution To Impairment
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 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 is washed away into nearby drainage systems and/or waterways.
Dissolved Oxygen	Lateral Leaf Litter	Decrease in Oxygen due to decomposition of organic materials.
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.
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 enriched 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.
Dissolved Oxygen	Access to waterways by livestock	Manure, feed and other materials are either transported on hooves, introduced into the stream by drinking livestock defecation, and/or feed is introduced into the waterway by runoff due to well traveled paths.
Dissolved Oxygen	Manure from livestock operations	Runoffs from livestock feedlots are introduced into the waterway by rainfall or feedlot maintenance operations.
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.
Dissolved Oxygen	Atkinson County Landfill Permit Number D02-D09D (MSWL)	Possible runoff during periods of heavy precipitation, and/or wind-blown materials that are not properly secured. Inorganically introduced materials may release carbonous materials that dissolve oxygen.
Dissolved Oxygen	Corbitts Peat Mine-Permit Number 1162-97	Sediments are a possible runoff. 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.
Dissolved Oxygen	Direct Leaf Litter	Direct introduction of leafs falling into waterways from overhanging branches, limb and trees. These leaves settle at the bottom and require further breakdown by aerobic microorganisms.
Dissolved Oxygen	Broadcasting of Organic Materials	Introduced into waterways by runoff and wind. Organic materials need aerobic microorganisms to further breakdown the materials leading to decreased oxygen in the impacted waterway.

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POLLUTANT SOURCES	Sources of Pollutants	Description of Contribution To Impairment
Dissolved Oxygen	Rural Development	Unchecked runoff through stormwater sewers: (1) Discharges of sanitary waste and (2) Improper disposal of waste materials.
Dissolved Oxygen	Land Disturbing Activities	Unchecked runoff from developing/developed sites: (1) Discharges of sanitary waste, (2) Improper disposal of waste materials and (3) Introduction of sediments into waterways. (Sediments change the mechanics of the waterway by reducing flow rates).
Dissolved Oxygen	Spill/Discharge of Raw Sewage	Spillage and unauthorized discharges that are not properly contained and/or decontaminated correctly are left on surface(s) to be washed away during periods of precipitation or routine maintenance (washing) of manure spreading vehicles or other collection apparatuses or containers.
Dissolved Oxygen	Forested Woodlands and Terrain	Heavily forest and wetland 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 contributions is not feasible, practicable or desirable through conventional best management practices.

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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.	11/1964	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.	11/1964	Continuous	N/A

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

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
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 DO in impacted waterways.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Containment lagoons, LAS sprays	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

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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 implemented

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

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Stream Management Zones	Georgia Forestry Commission	Educates foresters to identify sensitive areas and applicable BMPs to be used during stream crossing, harvesting, site preparation, reforestation, and herbicide applications. Reducing NP source of pollution by reducing the amount of leaf litter, wood products and chemicals introduced into the waterways.	1991	In-progress	Voluntary

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

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

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
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 DO in impacted waterways.	2006	Continuous	University of Georgia Extension Agent must provide educational opportunities if BMP is to become effective.

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

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

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1987	Continuous	University of Georgia Extension Agent must provide continuous 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 (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 DO in impacted waterways.	1991	Continuous	University of Georgia Extension Agent must provide continuous 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	Silvicultural	Effective

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

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Silviculture BMP Monitoring/Auditing	GFC	GFC will conduct monthly fly over operations within watershed to identify recent forestry practices and conduct BMP auditing.	1/2003	In-progress	Voluntary

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

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1/2003	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
Greenspace Plan	Coffee County	Coffee County has established a 100-foot protective barrier along the Satilla River. This is to prevent buildup of the riverbank.	12/2002	In-progress	Voluntary

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Dissolved Oxygen	Rural Buildup, Silvicultural and Farming Activities	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measurable amount of pollutants that contribute to impaired DO in impacted waterways.	1/2003	Continuous	N/A

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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

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MONITORING PLAN

Organization	Pollutants	Purpose/Description	Time Frame		Status: (Previous, Current, Proposed)
			Start	End	
GA EPD/USGS	DO	TMDL Evaluation/Monitoring Data	1998	1998	Previous
GA EPD	DO	Water Quality Testing	2003	2003	Proposed
Georgia DNR EPD	DO	Comprehensive Nutrient Management Plan. 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.	2002	Continuous	Current
EPD	DO	Tire Program	12/2003	12/2004	Proposed
GFC	DO	BMP Monitoring. GFC will conduct monthly fly over operations within watershed to identify recent forestry practices and conduct BMP auditing.	01/2003	Continuous	Current

COMMENTS:

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State of Georgia.**