

Cat Creek Watershed

Berrien and Lowndes Counties

City of Ray City

HUC 10 # 0311020303

TMDL Implementation Plan

The Cat Creek Watershed is located within the Hydrologic Unit Code (HUC) # 0311020303 and includes Berrien and Lowndes Counties as well as the City of Ray City. Within this watershed are Cat Creek and Tributary to the Withlacoochee River. The segment of Cat Creek from Beaver Dam Creek downstream SR 37 to Withlacoochee River near Ray City, and the segment of Tributary to the Withlacoochee River from upstream Morris Pond, Nashville, are both listed on the 303(d)/305(b) list for low dissolved oxygen (DO). Since these segments of Cat Creek and Tributary to the Withlacoochee River are located in primarily forested or agricultural lands, the main cause for the low DO can be contributed to naturally occurring causes, organic matter in the streams, and run-off causing nutrient build-up. Other sources that may cause the low DO are animal waste, failing septic tanks, and improper methods of trash collection and disposal. South Georgia has also been under drought conditions for the past four to six years causing extremely low flow levels in Cat Creek and Tributary to the Withlacoochee River.

In 2001, a Total Maximum Daily Load (TMDL) was prepared for both Cat Creek and Tributary to the Withlacoochee River. A TMDL outlines the amount of pollutants a stream can have and still be classified as healthy. For Cat Creek, the TMDL states that 8 miles are impaired and not supporting the use classification of fishing. It also states that a 39% load reduction is required for Cat Creek to fully support the fishing classification. The TMDL states, for Tributary to the Withlacoochee River, that 2 miles are impaired and partially supporting the use classification of fishing. It also states that a 23% load reduction is required for Tributary to the Withlacoochee River to fully support the fishing classification.

When developing these plans, professional organizations, such as the University of Georgia Extension Service and the Natural Resource Conservation Service (NRCS) were used to gather information about the stream and identify stakeholders. Local residents were used to gather information about the stream segment since stakeholder input was a critical element in developing this plan. A survey form was designed and distributed so that stakeholders had the option to participate in addressing their concerns privately.

The action plan consists of voluntary practices businesses and individuals can do at home and at work to reduce the amount of pollutants coming from nonpoint sources. The management measures are measures that are currently in place such as land development regulations as well as best management practices (BMPs) for agriculture and forestry. These management measures will ensure proper development of land around both Cat Creek and Tributary to the Withlacoochee River, thus controlling the amount of pollutants entering the streams. A few examples of the regulatory measures are Building Codes and Land Subdivision Ordinances and some voluntary measures are controlled burning and streamside management.

One of the key elements of the implementation plans is the monitoring plan, in particular, water quality testing. It is important to continue monitoring Cat Creek and Tributary to the Withlacoochee River to determine if the water quality is improving and the management measures are working. The water quality testing will also determine if the action plans are working or needs to be revised. Currently, there are monitoring plans being done at National Environmentally Sound Production Agriculture Laboratory (NESPAL). NESPAL studies streams in the entire Suwannee Basin, however, the most extensive monitoring programs and studies are on the Little River watershed. This work is in conjunction with the USDA-ARS Southeast Watershed Laboratory.

“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.”

The EPD has set the final project date as 2012 and we feel that the 10 years from the acceptance of the TMDL Implementation Plan is an appropriate timeframe to achieve and maintain a healthier water quality for the Suwannee River Basin.

STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN
WATERSHED APPROACH

Suwannee River Basin

Local Watershed Governments

South Georgia RDC
 Berrien County
 Lowndes County
 Ray City

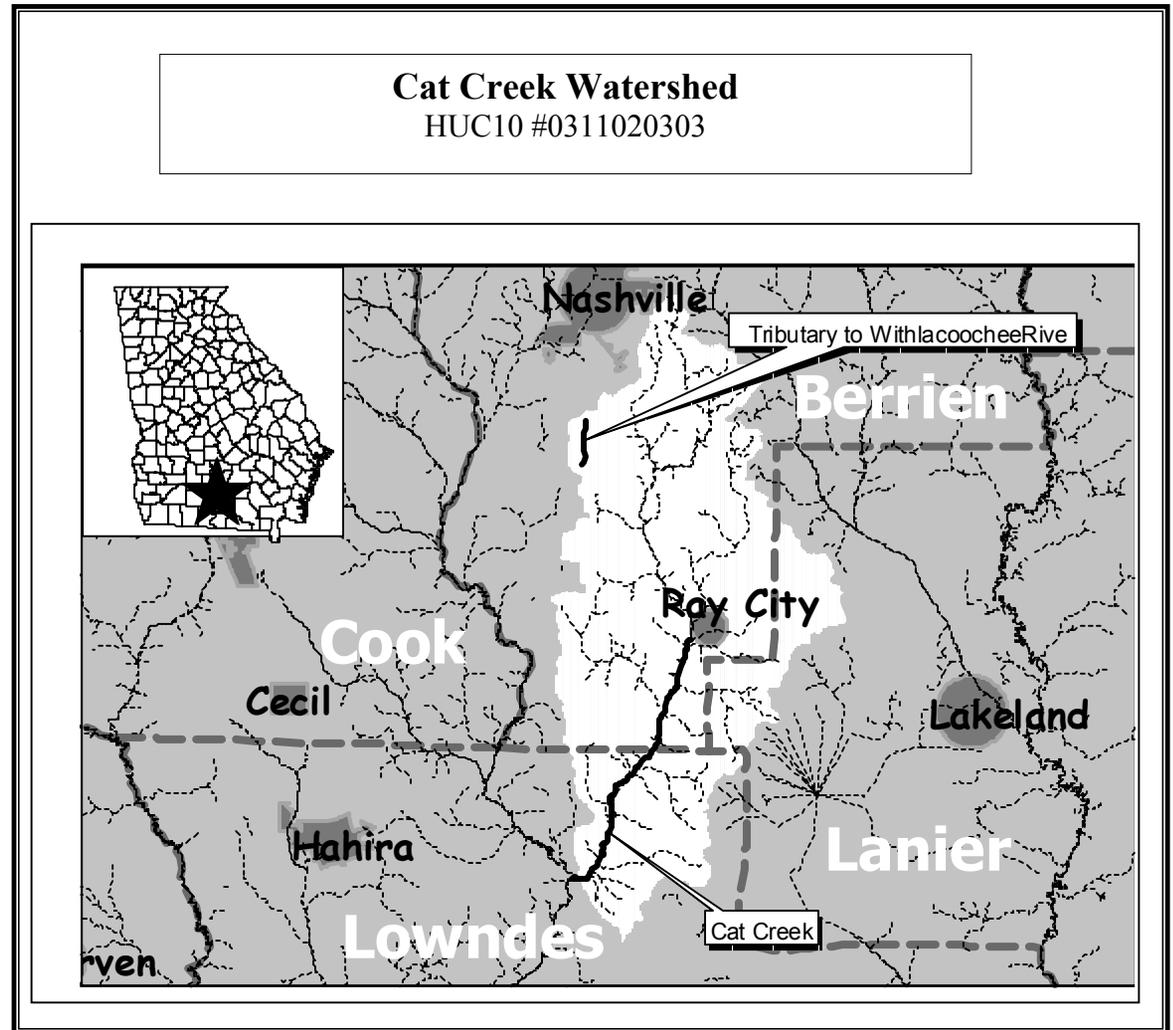


FIGURE 1

Impaired Water body*	Impaired Stream Location	Impairment
1. Cat Creek	Beaver dam Cr. downstream SR 37 to Withlacoochee River near Ray City	Low DO
2. Tributary to Withlacoochee River	Upstream Morris Pond, Nashville	Low DO

*These Water body 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 checked="" type="checkbox"/> Urban <input checked="" type="checkbox"/> Agriculture <input checked="" type="checkbox"/> Forestry <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> Other (Please List) Low flow stream conditions	<input checked="" type="checkbox"/> Habitat <input checked="" type="checkbox"/> Recreation <input type="checkbox"/> Drinking Water <input checked="" type="checkbox"/> Aesthetics <input type="checkbox"/> Other (Please List)	<p>Lawn and Garden Care: Ways to reduce the water demands on landscape:</p> <ul style="list-style-type: none"> • Reduce the size of watered areas in your yard; i.e. Use pine straw or beds of drought-tolerant plants such as English Ivy, Liriope, Blue Rug or Prince of Wales • Place 3-5 inches of mulch on the soil surface around flowers, shrubs, and trees to reduce evaporative water loss from the soil • Place 2-3 sheets thick of newspaper on the soil surface, moisten it, and then place the mulch on top. The newspaper will add a barrier to prevent water loss and will also enrich the soil when it decomposes • Target irrigation to plants that show signs of moisture stress • Use a water hose instead of a sprinkler to water plants that need water • Sweep areas clean instead of washing them off with a water hose • Dispose of pet waste to minimize runoff <p>Household Cleaners:</p> <ul style="list-style-type: none"> • Follow storage and disposal instructions of household chemicals which are usually located on the back of the product • Follow directions on usage of chemicals • Control and cleanup spills according to instruction of manufacturer <p>Automotive Care:</p> <ul style="list-style-type: none"> • Regular maintenance, check for leaks and the proper disposal of fluids at approved locations <p>Trash Pickup:</p> <ul style="list-style-type: none"> • Visually inspect containers and report damage or leaks • Keep container secure at all times • Ensure that trash is picked up on a regular schedule <p>Spill/Discharge Control and Cleanup:</p> <ul style="list-style-type: none"> • Control and cleanup spills according to instruction of manufacturer <p>Miscellaneous:</p> <ul style="list-style-type: none"> • Repair any faucets / pipes that may leak <p>Conservation:</p> <ul style="list-style-type: none"> • Find alternatives to using less water 	<p>Landscaping: Ensure that contracted lawn services adhere to:</p> <ul style="list-style-type: none"> • Reduce the size of watered areas in your yard; i.e. Use pine straw or beds of drought-tolerant plants such as English Ivy, Liriope, Blue Rug or Prince of Wales • Select appropriate plants for a water-use landscape; i.e. Turf grass and ornamental plants: certain ones are drought tolerant while others require regular irrigation • Follow directions on usage of chemical and fertilizers <p>Agricultural:</p> <ul style="list-style-type: none"> • Use Best Management Practices (BMP's) for agricultural such as: tree or grass buffers, cover crops, contour farming and terraces, strip and/or no till, nutrient management, pest management, irrigation water management, pasture management, and agriculture waste management <p>Forestry:</p> <ul style="list-style-type: none"> • Use Best Management Practices (BMP's) for forestry to minimize erosion and stream sedimentation from forestry practices such as: timber harvesting, chemical treatments, controlled burning, and streamside management <p>Commercial Chemical Cleaners:</p> <ul style="list-style-type: none"> • Follow storage and disposal instructions of commercial chemicals • Correct usage of chemicals <p>Automotive Care:</p> <ul style="list-style-type: none"> • Regular maintenance of fleet vehicles, check for leaks and the proper disposal of fluids at approved locations <p>Sewer Management:</p> <ul style="list-style-type: none"> • Routine visual inspections and reports leaks if any noted <p>Trash Pickup:</p> <ul style="list-style-type: none"> • Visually inspect containers and report damage or leaks • Keep container secure at all times • Ensure that trash is picked up on a regular schedule <p>Conservation:</p> <ul style="list-style-type: none"> • Find alternatives to using less water

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)
US Fish and Wildlife	The U.S. Fish and Wildlife Service is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The US Fish and Wildlife has numerous activities that relate to water quality, fish, sedimentation and many more that are available on their website.	1, 2	Everyone	Current
Upper Suwannee River Watershed Initiative (USRWI)	Non-Point organizations charged with education / outreach / water related activities within the Suwannee River Basin	1, 2	Established organizations / clubs / citizens of the Suwannee River Basin	Will depend on group interests and funding sources
National Environmentally Sound Production Agriculture Laboratory (NESPAL)	Research and education efforts to build a better environment for agriculture and rural America	1, 2	Agriculture and rural America	Current
Seven Rivers Resource Conservation & Development	Non-Profit agency that is involved with a variety of programs, i.e. Water quality issues	1, 2	Local government officials / citizens / agricultural organizations	Will depend on group interests and funding sources
South Georgia RDC	The SGRDC offers technical assistance with development regulations	1, 2	Local government officials / Developers	In-progress
South Georgia RDC	To help assist with educational outreach to our local governmental jurisdictions, i.e. City, county and interested individuals	1, 2	Local government officials / citizens	Current
Georgia Adopt-A-Stream	The SGRDC would like to see each school district team up with Georgia Adopt-A-Stream and commit to adopting a stream or streams within their county	1, 2	Established organizations / clubs and/or those interested	Will depend on group interests and funding sources
South Georgia RDC / Lowndes and Berrien County School Districts	The SGRDC would help Lowndes and Berrien County School Districts target a group or club of interested students, educate them on the water issues that they are faced with, and to encourage them to participate in water monitoring	1, 2	Established organizations / clubs and/or those interested	Will depend on group interests and funding sources
South Georgia RDC / Georgia Department of Community Affairs	Facilitate and educate outreach on water resource related activities, i.e. Water Resource Tool Kit and Water First Program	1, 2	Local government officials / citizens	Current

Keep Lowndes / Valdosta Beautiful	A group of volunteers that help to clean, beautify, and improve their neighborhoods. Their mission is to achieve education programs and activities, community wide involvement, and public-private partnerships with citizens, businesses and governments to provide a healthier, safer and livable community environment.	1	Lowndes citizens	County	Current
Lowndes County Greenspace Program	To permanently protect land and water, including agricultural and forestry land that is undeveloped. Some goals are: water quality protection for rivers, streams, and lakes; flood protection; wetlands protection; reduce erosion; and protection of riparian buffers	1	Lowndes citizens	County	Current
Georgia Cooperative Extension Services, Lowndes and Berrien Counties	To provide timely, unbiased research-based information to the public as it relates to agricultural and family consumer science. To improve the quality of the life for all communities in the State of Georgia. The County Extension Agent's duty is to deliver new information and technology from the University of Georgia's Coastal Plain Research Center to the community.	1, 2	Everyone		Current
Natural Resource Conservation Service (NRCS), Lowndes and Berrien Counties	The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.	1, 2	Everyone		Current
University of Georgia 4-H Club, Lowndes and Berrien Counties	The mission of Georgia 4-H is to assist youth in acquiring knowledge, developing life skills, and forming attitudes that will enable them to become self-directing, productive and contributing members of society. This mission is accomplished, through "hands on" learning experiences, focused on agricultural and environmental issues, agriculture awareness, leadership, communication skills, foods and nutrition, health, energy conservation, and citizenship. The Lowndes County 4-H Club participated in a recent competition that required the youth to gain knowledge about waste and the environment. BMP's, point and non-point solutions were learned and causes for poor water quality.	1, 2	Students and youth		Current
City of Valdosta Water, Sewer and Drainage Department	Rehabilitating sewer interceptor along Dukes Bay.	1	City		Current
Georgia Forestry Commission	Conduct forestry Best Management Practices educational training at Master Timber Harvester and continuing logger education programs, civic programs, and landowner meetings.	1, 2	Foresters, timber buyers and loggers, site preparation contractors, landowners		Continuous

Hahira Elementary School	Hahira Middle School has participated in a number of activities to help educate the students on environmental issues. For example, members of Lowndes County, the school system, and a contractor cleaned up the wetland area from debris right beside the Hahira Middle School. The dirt that was removed from the area was used for the school. The students built a boardwalk and now there is a wetland and pond right beside the school. Hahira Middle School also received a \$5000.00 grant from Wal-Mart to build a pavilion for the students. The school has also been involved with the planting of Oak and Pine Trees.	1	Hahira School students	Middle	Current
Moulton-Branch Elementary School	Moulton-Branch Elementary School has participated in a number of activities to help educate the students on environmental issues. For example, Moulton-Branch has an outdoor classroom so that the students can look at soils, the environment, different types of plant life and a fishpond for the students. They also have the Recycling Magician come to teach the students on recycling as well as participate in recycling cans, pop-tops, and paper.	1	Moulton-Branch Elementary students	School	Current
Lake Park Elementary School	Lake Park Elementary School has participated in a number of activities to help educate the students on environmental issues. For example, Lake Park Elementary has built a nature trail for the students that has a number of different stations (e.g. raccoon crossing). The Recycling Magician has also come to teach the students on recycling.	1	Lake Elementary students	Park School	Current
Clyattville Elementary School	Clyattville Elementary has participated in a number of activities to help educate the students on environmental issues. For example, they have a nature trail and also participate in the recycling program sponsored by Keep Lowndes/Valdosta Beautiful.	1	Clyattville Elementary students	School	Current
Lowndes High School	Lowndes High School has participated in a number of activities to help educate the students on environmental issues. For example, the Science Department has created a nature trail and each homeroom is required to have a service project, such as recycling paper and cans.	1	Lowndes School students	High	Current
James L. Dewar Elementary School	James L. Dewar Elementary School has participated in a number of activities to help educate the students on environmental issues. For example, the students have participated in recycling programs.	1	James L. Elementary students	Dewar School	Current
Hahira Middle School	Hahira Middle School has participated in a number of activities to help educate the students on environmental issues. They have an outdoor classroom with a pond and a board trail for environmental awareness	1	Hahira School students	Middle	Current
Pine Grove Elementary School	Pine Grove Elementary School has participated in a number of activities to help educate the students on environmental issues. They have an Outdoor Classroom Grant that provided funds to plant trees, shrubs, flowering plants, etc. They also teach recycling lessons.	1	Pine Elementary students	Grove School	Current
Lowndes Middle School	Lowndes Middle School has participated in a number of activities to help educate the students on environmental issues. They have an outdoor classroom along with lessons on environmental awareness in the Science classes.	1	Lowndes School students	Middle	Current
Parker Mathis Elementary School	Parker Mathis Elementary School has participated in a number of activities to help educate the students on environmental issues. Every Wednesday is Recycling Day. The fifth graders collect items from their parents and students. They also have an environmental club that attend 4-H every year.	1	Parker Elementary students	Mathis School	Current

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
Hon. Gregg McClellan, Chairman, Berrien County	P.O. Box 446	Nashville	GA	31639	(229) 686- 5421	
Hon. James Boone, Mayor, City of Alapaha	P.O. Box 34	Alapaha	GA	31622	(229) 532- 7475	
Hon. Cecil Giddens, Mayor, City of Enigma	P.O. Box 98	Enigma	GA	31749	(229) 533- 4185	
Hon. Carl Camon, Mayor, City of Ray City	P.O. Box 128	Ray City	GA	31645	(229) 455- 2501	
Hon. Thomas Parr, Mayor, City of Nashville	P.O. Box 495	Nashville	GA	31639	(229) 686- 5527	
Dr. Van Whaler, Berrien County Administrator	P.O. Box 446	Nashville	GA	31639	(229) 686- 5421	
Jerry Griner, Street and Sanitation Superintendent, City of Nashville	P.O. Box 495	Nashville	GA	31639	(229) 686- 5527	
Hal Simpson -NRCS District Conservationist	516-A County Farm Road	Nashville	GA	31639	(229) 686- 2363	
Forrest Connelly- Berrien County Extension Coordinator	516-A County Farm Road	Nashville	GA	31639	(229) 686- 5431	
Berrien County Farm Service Agency	Nashville Service Center 516-A County Farm Road Suite 3	Nashville	GA	31639	(229) 686- 2363	
Berrien County 4-H	516-A County Farm Road Suite 1	Nashville	GA	31639	(229) 686- 5431	
Al Browning	P.O. Box 5023	Nashville	GA	31639	(229) 686- 2821	Labfarm1@yahoo.com
Hon. Rod Casey, Chairman, Lowndes County	P.O. Box 1349	Valdosta	GA	31603	(229) 671- 2400	
Hon. Myron Crowe, Mayor, City of Hahira	102 S. Church Street	Hahira	GA	31632	(229) 794- 2330	
Hon. Keith Sandlin, Mayor, City of Lake Park	120 N. Essa Street	Lake Park	GA	31636		
Hon. James Rainwater, Mayor, City of Valdosta	P.O. Box 1190	Valdosta	GA	31603		

Name/Organization	Address	City	State	Zip	Phone	E-Mail
Cheryl George, Packaging Corporation of America	P.O. Box 1048	Valdosta	GA	31603	(229) 559- 2370	Cgeorge@PackagingCorp.com
Bob Hubbard	3750 Creekwood Drive	Valdosta	GA	31602	(229) 247- 8794 (229) 386- 3893	
Hon. Al Brooks, Mayor, City of Remerton	No. 2 Popular Street	Remerton	GA	31601		
Hon. Ronald Hood, Mayor, Town of Dasher	P.O. Box 220	Lake Park	GA	31636		
Joe Pritchard, Lowndes County Manager	P.O. Box 1349	Valdosta	GA	31603		
Larry Hanson, Valdosta City Manager	P.O. Box 1125	Valdosta	GA	31603		
Bonnie Tindall, Hahira City Manager	102 S. Church Street	Hahira	GA	31632		
Leon Weeks, Director of Water and Sewer Services, City of Valdosta	P.O. Box 1125	Valdosta	GA	31603	(229) 259- 3592	
Marvin Lee, Public Works Director, Lowndes County	P.O. Box 1349	Valdosta	GA	31603		
Pete Pyrzenski, Director, City of Valdosta Public Works Department	1017 Myrtle Street	Valdosta	GA	31603	(229) 259- 3592	
Lowndes County Utilities Director, Mike Allen	P.O. Box 1349	Valdosta	GA	31603	(229) 671- 2501	mallen@lowndescounty.com
Lowndes County Community Greenspace Program	325 West Savannah Avenue P.O. Box 1349	Valdosta	GA	31603	(229) 671- 2424	
Keep Lowndes / Valdosta Beautiful	325 West Savannah Avenue	Valdosta	GA	31601	(229) 671- 2499	astrickland@lowndescounty.com Aaron Strickland
The Watershed Group: The University of Georgia and Carter & Sloope, Inc.	608 Driftmier Engineering Center UGA	Athens	GA	30602	(706) 542- 0256	hsmith@engr.uga.edu Hillary Smith
Bobby Mathis- Georgia Forestry Commission	3011 US HWY 84 E	Valdosta	GA	31606	(229) 333-7817	bmathis@gfc.state.ga.us Bobby Mathis
Georgia Farm Services Agency	Federal Building Room 102 355 East Hancock Avenue	Athens	GA	30601	(706) 546- 2266	
Lowndes County Farm Service Agency	Valdosta Service Center 2108 E. Hill Ave	Valdosta	GA	31601	(229) 242- 0575	

South Georgia RDC	327 W. Savannah Ave.	Valdosta	GA	31601	(229) 333- 5277	sgrdc@sgrdc.com
Rory Richardson- NRCS District Conservationist	2108 E Hill Ave	Valdosta	GA	31601	(229) 242-0575 Ex. 3	
Mickey Fourakers- Lowndes County Extension Coordinator	PO Box 639 or Civic Center, HWY 84 E	Valdosta	GA	31603-0639	(229) 333-5185	
National Environmentally Sound Production Agriculture Laboratory (NESPAL)	P.O. Box 748	Tifton	GA	31794	(229) 386- 7274	scrow@tifton.cpes.peachnet.edu Susan Crow
Lowndes County 4-H	P.O. Box 639	Valdosta	GA	31603	(229) 333-5185	
Georgia Forestry Commission	P.O. Box 819	Macon	GA	31202	(478) 751-3485	
Georgia Forestry Association	500 Pinnacle Court, Ste. 505	Norcross	GA	30071	(770) 416-7621	
Southeastern Wood Producers	P.O. Box 9	Hilliard	FL	32046	(904) 845-7133	
The Langdale Company	P.O. Box 1088	Valdosta	GA	31603	(229) 333- 2544	jbarrett@surfsouth.com
Moulton –Branch Elementary School	5725 Perimeter Road	Valdosta	GA	31601	(229) 245- 2294	
Hahira Elementary School	350 Claudia Drive	Hahira	GA	31632		
Clyattville Elementary School	5386 Madison Hwy	Valdosta	GA	31601		
Westside School	2470 James Road	Valdosta	GA	31602		
Lowndes High School	1112 N. St. Augustine Road	Valdosta	GA	31601		
James L. Dewar Elementary School	3539 Mt. Zion Church Road	Valdosta	GA	31605	(229) 219- 1370	
Hahira Middle School	P.O. Box 686	Hahira	GA	31632		
Lowndes Middle School	2379 Copeland Road	Valdosta	GA	31605		
Lake Park Elementary	604 W. Marion Ave	Lake Park	GA	31636	(229) 559- 5153	

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 stream on 303(d) list will be provided upon request.

Waterbody Name #1	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Cat Creek	Beaver dam Cr. downstream SR 37 to Withlacoochee River near Ray City	8	Fishing	Not Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Non-point)	
Berrien	Lowndes		Nonpoint	

Polluants	Water Quality Standards (WQS)	Required Reduction	TMDL ID	Date TMDL Established
Low Dissolved Oxygen	5mg/l (daily average) 4 mg/l (minimum) 2.870 mg/l @ USGS 2317746 (EPA WQS)	39%		December 2001

Waterbody Name #2	Location	Miles/Area Impacted	Use Classification	Partially Supporting/ Not Supporting (PS/NS)
Tributary to Withlacoochee River	Upstream Morris Pond, Nashville	2	Fishing	Partially Supporting
Primary County	Secondary County	Second RDC	Source (Point/ Non-point)	
Berrien			Nonpoint	

Polluants	Water Quality Standards	Required Reduction	TMDL ID	Date TMDL Established
Low Dissolved Oxygen	5mg/l (daily average) 4 mg/l (minimum)	23%		December 2001

POTENTIAL 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	Potential Sources of Pollutants	Description of Contribution To Impairment	Impacted Waterbodies*
Low Dissolved Oxygen	Natural	Stream below critical conditions: High temperatures and low flow contribute to low levels of dissolved oxygen in the stream	1, 2
Low Dissolved Oxygen	Urban Development Runoff	Urban runoff from the City of Ray City that is washed away into nearby water sources, i.e. Chemical runoff from lawns, improper removal of trash, organic material such as leaves and yard trimmings, storm water runoff, fluids from parking areas, roads, and sediment erosion.	1
Low Dissolved Oxygen	Rural Development Runoff	Rural runoff that is washed away into nearby water sources, i.e. Chemical runoff from lawns, improper removal of trash, organic material such as leaves and yard trimmings, storm water runoff, roads, and sediment erosion.	1, 2
Low Dissolved Oxygen	Failing septic tanks	Effluent leakage due to overflowing sewage systems and leaking collection lines	1, 2
Low Dissolved Oxygen	Animal waste	Animal waste that is deposited and then not properly removed or no lagoon is in place and is then washed into water bodies	1, 2
Low Dissolved Oxygen	Organic matter	Organic matter runoff from wetlands / forest accumulates and then builds up when not properly secured or disposed and direct / lateral leaf litter	1, 2
Low Dissolved Oxygen	Agriculture runoff	Pesticides / Fertilizer runoff causes nutrient build-up in water bodies	1, 2
Low Dissolved Oxygen	Improper methods of trash collection and disposal	Spillage and incorrect disposal of substances into the water bodies or on the surface that is washed into drainage systems or water bodies	1, 2
Low Dissolved Oxygen	Silviculture	Possible introduction of sediment from normal practices and stream crossings when BMP's are not followed. Possible cause of decline in available oxygen resulting from removal of over story trees w/in SMZ resulting in increase in stream temperatures. Leaving logging debris in streams. Possible introduction of nitrogen and phosphorous from fertilization practices.	1, 2
Low Dissolved Oxygen	Animal Feeding Operation (AFO) and Confined Animal Feeding Operations (CAFO)	Discharges from the animal confinement or storage and handling areas of concentrated animal feeding operations (CAFO) or from improper use of land application area(s), which enters river, streams, creeks, etc. The discharge must meet water quality standards.	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
NPDES Permit # GAG930000 Animal (Non-Swine) Feeding Operations – More than 1000 Animal Units	GAEPD	General NPDES Permit for owners of existing and new animal (non-swine) feeding operations giving authorization to store and dispose of waste. Regulates discharges from the animal confinement or storage and handling areas of concentrated animal feeding operations (CAFO) or from improper use of land application area(s), which enters river, streams, creeks, etc. The discharge must meet water quality standards.	6/13/02	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Impacted Water Bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	AFO, CAFO	1	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Submission of Comprehensive Nutrient Management Plan (CNMP)	Oct. 31, 2002		Existing Operations New or Expanding Operations
Provide and maintain buffer strips or equivalent practices	Prior to beginning operation		
Divert clean water and floodwaters	According to CNMP		
Prevent direct contact of animals of the United States	Effective date of permit		
Handle and dispose dead animals in a manner that prevents contamination of surface water.	Effective date of permit		
Prevent disposal of chemicals into manure and wastewater storage structures	Effective date of permit		
Implement an operation and maintenance program	Effective date of permit		
Maintain proper storage capacity	Effective date of permit		
Rate and timing of land application of manure and wastewater	Effective date of permit		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Well and Septic Ordinances	Berrien County City of Ray City	Onsite permit process for well and septic tanks.		Enforced Enforced	Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Septic systems	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Continued compliance with well / septic installation / repair / maintenance. Any public service site is tested on a routine basis to maintain a healthy site. Inspections on private services are checked on a complaint basis only.		Continuous	

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Building Codes	Berrien County City of Ray City Lowndes County	Building codes initiate site plan procedures for all forms of land development. This indirectly reduces increased levels of DO in streams, i.e. building front, side, and rear setbacks and voluntary conservation easements on privately owned property. An example of a nonstructural BMP is sediment controls and slope gradient measures.	1999	Enforced Enforced Enforced	Regulatory Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Permit required for construction.		Continuous	SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Land Subdivision Ordinance	Berrien County Lowndes County	Land Subdivision Ordinances initiate plan review for proposed subdivision. This typically includes sedimentation and water control measures. The lot size of land plays an important role in the amount of runoff that comes from urban and rural areas, i.e. storm water runoff, septic tank leaks or overflow, and erosion controls.	2001	Enforced Enforced	Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Periodic reassessment of effectiveness of ordinance. The ordinances are updated on a periodic basis as developments progress. This is done to prevent overgrowth of developments.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Zoning Ordinance	Berrien County City of Ray City Lowndes County	To divide an area into zones or sections reserved for different purposes such as residence, business, and manufacturing to best suit the growth and land uses, also to help with the protection of sensitive areas such as water sources. Promotion of the proper location, height, stories, and size of open spaces along with the density and land uses.	2002	Pending Enforced Enforced	Regulatory Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Periodic reassessment of effectiveness of ordinance.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Groundwater Recharge Area Development ordinance	Berrien County	Georgia Planning Act Part V: Environmental Criteria. This ordinance regulates development of areas designated as high pollution susceptibility due to their location in the regional landscape. A BMP for groundwater protection is sand filters such as vegetation or sand to filter and settle pollutants.	2001	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff and illegal dumping of trash	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Ongoing protection of sensitive land open for development.	Continuous		SGRDC assists with the administration of this code. Groundwater Recharge areas area very sensitive to pollution and directly effect the quality of all water sources that are related to them.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Local Wetlands Policy Ordinance	Berrien County City of Ray City Lowndes County	Georgia Planning Act Part V: Environmental Criteria. This ordinance regulates development of areas designated as wetlands as defined by the U.S. Army Corps of Engineers as jurisdictional wetlands.	2001 2001	Enforced Enforced Enforced	Regulatory Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff and illegal dumping of trash	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Ongoing protection of sensitive land not open for development.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Protected River Corridor Plan Ordinance	Berrien County	Georgia Planning Act Part V: Environmental Criteria. This ordinance regulates development of areas designated as protected river corridors as they related to development and disturbance of land along protected river corridors.	2001	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff and illegal dumping of trash	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Ongoing protection of sensitive land open for development along identified river corridors.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Floodplain Management Ordinance	City of Ray City Lowndes County	100 year / 500 year flood levels are shown on FEMA flood maps		Enforced Enforced	Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
N/A	Continuous		SGRDC assists with the administration of this code

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Local Soil & Sedimentation Ordinance	Berrien County Lowndes County	Regulation of BMP's for development Erosion and Sedimentation Control Act (GESA). Requires permits for "land disturbing activities" and requires buffers to be maintained between the land disturbing activity and waters of the state.		Enforced Enforced	Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Continued enforcement of ordinance will ensure less sedimentation in water bodies.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Storm water Detention / Retention Standards	Lowndes County	An ordinance that regulates the runoff of storm water off of a developed property		Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	1	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
N/A	Continuous		SGRDC assists with the administration of this code

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Suwannee River Basin Management Plan	Georgia Department of Natural Resources	Detailed management plans for the Suwannee River Basin. The purpose of the plan is to develop and implement a basin-planning program to protect, enhance and restore the waters for the State of Georgia, which will provide for effective monitoring, allocation, use, regulation, and management of water resources.	Final draft pending approval March 2002	Pending State approval	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
1. Implement Monitoring Plan and Compile Detailed Information/Data.	2003-	2004	
2. Analyze and Evaluate Detailed Information, Update Basin Assessment and Priority Issues List, Develop Strategies for Priority Issues, and Stakeholder meeting.	2004-	2005	
3. Continue to Develop Strategies for Priority Issues and Prepare and Update Draft River Basin Plan.	2005-	2006	
4. Agency and Public Review and Hearings, Finalize River Basin Plan, Implement River Basin Plan, and Stakeholder meeting.	2006-	2007	
5. Continue to Implement River Basin Plan and Stakeholder meeting.	2007-	Continuous	

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Establish the Natural Range of Dissolved Oxygen Levels in Streams of the South Georgia Coastal Plain	Georgia DNR-EPD	An extensive stream-monitoring program to establish the DO range naturally occurring during critical stream flow conditions in the South Georgia Coastal Plain.	Spring 2003	Grant Applied Conditionally approved per revisions of proposal	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Naturally Occurring	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Three years of bi-weekly water quality and hydrologic parameter monitoring at a maximum of 60 locations. Annual characterization of study stream morphology; semiannual long term BOD; semiannual benthic and periphyton respiration by respirometer. Evaluation and characterization of study watersheds to establish the dynamics affecting DO in each watershed.	Expected start, Spring 2003;	Expected end, Spring 2006	Piscola Creek watershed monitoring data collected in the past four years show that in summer months 8 highly enriched streams in the midst of intensive livestock and row-crop production have much higher DO values than a comparison "reference" stream. These and other data collected by UGA and USDA-ARS scientists have lead the hypothesis that a combination of high summer-time temperatures, low flows, and high loads of organic carbon contributed by riparian vegetation contribute to naturally low DO levels in unimpacted Coastal Plain streams. A proposal to establish an extensive stream-monitoring program to establish the natural range of DO at critical flow conditions has been submitted to Georgia DNR-EPD administered U.S. Environmental Protection Agency's Clean Water Act Section 319(h) Grant Program.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Forestry Commission	State of Georgia	A set of guidelines to better protect Georgia's streams and other water bodies from forestry non-point source pollution (primarily erosion and sedimentation).	Ongoing	Ongoing	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Forestry Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Some Best Management Practices (BMP's) for forestry to minimize erosion and stream sedimentation from forestry practices are: timber harvesting, chemical treatments, controlled burning, and streamside management. In 1998, 98% of the 43,906 acres that were evaluated were in compliance with the BMP's. In 1992, the stream compliance was 95.5%. The goal is to meet 100% compliance with each BMP.	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Federal Clean Water Act Section 404	EPA (situations involving forestry are normally referred to the GFC to determine compliance with this regulation)	Requires normal ongoing agricultural and silvicultural practice to adhere to BMP's and 15 baseline provisions for road construction and maintenance in and across waters of the US including lakes, rivers, perennial and intermittent streams, wetlands, sloughs in order to qualify for the exemption from the permitting process.	June 6, 1988	Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Sediment from dredge or fill activities	Agriculture and silviculture	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC can report status on accomplishments or complaints investigated involving this act to the RDC as needed.	Continuous		EPA identifies silviculture as the lowest contribution source of non-point pollution

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Memo to the Field: Application of BMP's to mechanical silvicultural site preparation activities for the establishment of pine plantations in the Southeast	EPA/ US Army Corps of Engineers - (cases normally referred to GFC to make initial determination)	Identifies certain bottomland hardwood wetlands that should be subject to permitting if converting to pine plantations.	November 1995	Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Biota, habitat	Silviculture	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC can provide status reports as needed	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Federal Farm Bill (Swamp buster)	US Department of Agriculture Natural Resource Conservation Service	Prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture		Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Biota (habitat)	Agriculture	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Status reports can be provided as needed	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Water Quality Control Act (OCGA 12-5-20)	GA DNR EPD	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats.	1964	Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Sediments, nutrients, pesticides, and habitat	Silviculture	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC investigates and mediates silvicultural complaints on behalf of EPD. Unresolved complaints are turned over to EPD for enforcement. Status reports can be provided to RDC as needed.	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
GA Growth Planning Act (OCGA 12-2-8)	GA DNR, Department of Community Affairs, and local units of government	Authorized GA DNR to develop minimum planning standards and procedures that local jurisdictions could adopt and enforce pertaining to the protection of river corridors, mountaintops, water supply watersheds/reservoirs, groundwater recharge areas, and wetlands. Silvicultural activities may be exempted from permitting requirements provided the activity complies with BMP's	1991	Local jurisdictions have to adopt ordinances to address these areas	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Biota, habitat, sediment	Silviculture	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC can determine applicability and BMP implementation for local units of government.	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Farm Bill 2002	Natural Resources Conservation Service (NRCS)	The Farm Security and Rural Investment Act of 2002 is landmark legislation for conservation funding and for focusing on environmental issues. The conservation provisions will assist farmers and ranchers in meeting environmental challenges on their land. This legislation simplifies existing programs and creates new programs to address high priority environmental and production goals. The 2002 Farm Bill enhances the long-term quality of our environment and conservation of our natural resources.	2002	Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
N/A	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Farm Services Agency	State of Georgia / Local FSA	Stabilizing farm income, helping farmers conserve land and water resources, providing credit to new or disadvantaged farmers and ranchers, and helping farm operations recover from the effects of disaster are the missions of the U.S. Department of Agriculture's Farm Service Agency (FSA).	Ongoing	Ongoing	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Agriculture Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
The 1996 Act removed the link between income support payments and farm prices by providing for a one-time sign-up for a Production Flexibility Contract whereby producers receive seven annual fixed but declining production flexibility contract payments through 2002. This program, entitled the Agricultural Market Transition Act (AMTA), reflects FSA's direction over the next seven years whereby farm commodity prices will be largely determined by market factors, rather than government subsidies and production controls. To receive payments and loans on program commodities, producers must have entered into a 7-year contract by August 1, 1996. More than 98 percent of the eligible acres enrolled. Program commodities include wheat, corn, sorghum, barley, oats, upland cotton, and rice. The contract requires producers to comply with existing conservation plans for the farm, wetland provisions, and planting flexibility provisions, as well as to keep the land in agricultural use. Except for fruits and vegetables, any commodity or crop may be planted on contract acreage on a farm.			Continuous

Regulation/Ordinance or Management Measure			Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Conservation Reserve Program (CRP)	Reserve	Program	United States Department of Agriculture (USDA)	The Conservation Reserve Program (CRP) provides technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. The program provides assistance to farmers and ranchers in complying with Federal, State, and tribal environmental laws, and encourages environmental enhancement. The program is funded through the Commodity Credit Corporation (CCC). The Conservation Reserve Program reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices.		Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
CRP is administered by the Farm Service Agency, with NRCS providing technical land eligibility determinations, Environmental Benefit Index Scoring, and conservation planning.	Continuous		Utilized in this region due to high amount of farm production.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Environmental Quality Incentives Program (EQIP)	United States Department of Agriculture (USDA)	The Environmental Quality Incentives Program (EQIP) was reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill) to provide a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.		Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
EQIP offers contracts with a minimum term that ends one year after the implementation of the last scheduled practices and a maximum term of ten years. These contracts provide incentive payments and cost-shares to implement conservation practices. Persons who are engaged in livestock or agricultural production on eligible land may participate in the EQIP program. EQIP activities are carried out according to an environmental quality incentives program plan of operations developed in conjunction with the producer that identifies the appropriate conservation practice or practices to address the resource concerns. The practices are subject to NRCS technical standards adapted for local conditions. The local conservation district approves the plan.	Continuous		NRCS EQIP Funds and provide for cross fencing, paddock development, rotational grazing, and nutrient and pest management. It helps to provide healthier pastures and more efficient use of grasses.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Manure Management Plan	Individual	A manure management plan can help provide the most use of the nutrients in manure while protecting the water quality, and meeting manure-handling requirements.	Ongoing	Ongoing	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Manure	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Keeping records of manure applications and continuous soil samples.	Continuous		Utilized in this region due to high amount of farm production.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Nutrient Management Program	7 Rivers RC & D, NRCS, 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.	1991	In-progress	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Nitrates and Phosphates Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measured amount of DO in impacted waterways.	Continuous		Utilized in this region due to high amount of farm production.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Pesticides Management Program	7 Rivers RC & D, NRCS, and University of Georgia Extension Agent	Encourages and educates farmers on the correct usage and amount of pesticides to reduce the impact of pesticides in the waterways.	1991	In-progress	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Pesticides Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measured amount of DO in impacted waterways.	Continuous		Utilized in this region due to high amount of farm production.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Soil Testing	University of Georgia Cooperative Extension Services and Individual	Soil samples are taken to determine what nutrients are needed for any agricultural or silvicultural use. This reduces or avoids any unnecessary applications of fertilizers, herbicides, pesticides, etc. so to minimize harmful runoff.		Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Nitrates, Phosphates, Pesticides Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Soil samples are taken on a regular basis.	Continuous		Utilized in this region due to high amount of farm production.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Rules and Regulations for Water Quality Control (391-3-6)	GA DNR EPD	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, etc.) into waters of the state in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats.	1964 Revised June 2002	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Industry/Non-industry Runoff	1, 2	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Compliance with rules and various permits issued under rules.	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
South Georgia Multi-Jurisdictional Solid Waste Management Plan	Berrien County Lowndes County	10 Counties participate and currently seek to coordinate solid waste management activities throughout the South Georgia Region and to cooperate in the activities of local Comprehensive Plans. The prime focus here is the collection and disposal of waste in a manner, which prevents pollution of surface and sub-service water resources.	1992 1992	In-progress In-progress	Voluntary Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Impacted Water bodies*	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Solid Waste	1, 2	Effective

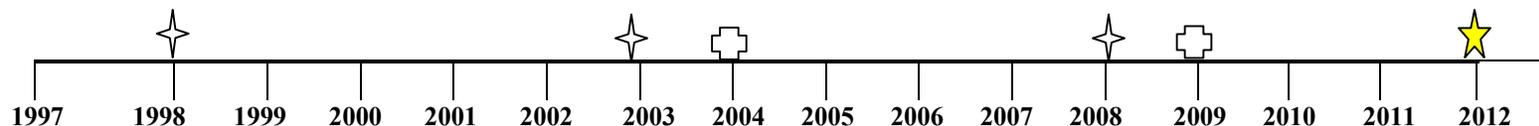
Measurable Milestones	Schedule		Comments
	Start	End	
This management measure is currently being updated.	Continuous		N/A

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*
319 (h) Grant	EPD/State of Georgia	Must Apply	Unknown	1, 2
Greenspace Funds	Georgia Department of Natural Resources	Must Apply	Unknown	1, 2
Conservation Reserve Program	USDA	Must Apply	Unknown	1, 2
Environmental Quality Incentive Program (EQIP)	Natural Resources Conservation Service	Must Apply	Unknown	1, 2
Wildlife Habitat Incentive Program	Natural Resources Conservation Service	Must Apply	Unknown	1, 2
Urban Resources Partnership (URP)	Forest Service, the Natural Resources Conservation Service, the National Park Service, the Environmental Protection Agency, and the Department of Housing and Urban Development	Must Apply	Unknown	1, 2
Toxics Grant	Jessie Smith Noyes Foundation	Must Apply	Unknown	1, 2
Sustainable Agriculture Grant	Jessie Smith Noyes Foundation	Must Apply	Unknown	1, 2
Sustainable Communities Grant	Jessie Smith Noyes Foundation	Must Apply	Unknown	1, 2
Progressive Fund	The Fund for Southern Communities	Must Apply	Unknown	1, 2
Brownfields Assessment Demonstration Pilots	EPA Office of Solid Waste and Emergency Response	Must Apply	Unknown	1, 2
Pollution Prevention Grants	EPA Office of Pollution Prevention and Toxics	Must Apply	Unknown	1, 2
DCA Educational Outreach	Department of Community Affairs	Must Apply	Unknown	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	
Water Quality Monitoring	Georgia Adopt-A-Stream	1, 2	Low Dissolved Oxygen	To help educate and improve/or maintain a streams quality	TBA	TBA	Proposed
Water Quality Testing	USGS	1, 2	Low Dissolved Oxygen	Assess Water Quality	N/A	Continuous	Current
Scrap Tire Management Program	Local government	1, 2	Low Dissolved Oxygen	To reduce the illegal dumping of scrap tires, reduction in solid waste, and other environmental issues by hiring an enforcement / education officer to respond and monitor	TBA	TBA	Proposed
Water Quality Testing	Local / County Governments	1, 2	Low Dissolved Oxygen	Local testing to ensure quality on impaired streams as they relate to effluent discharge	N/A	Continuous	Ongoing

Monitoring Program	National Environmentally Sound Production Agriculture Laboratory (NESPAL) and USDA-ARS Southeast Watershed Laboratory	1, 2	Low Dissolved Oxygen	To study the water quality of the entire Suwannee Basin	N/A	N/A	Current
Monitoring Program	National Environmentally Sound Production Agriculture Laboratory (NESPAL)	1, 2	Low Dissolved Oxygen	319 (h) grant to study dissolved oxygen	2003	2006	Grant applied
Forest Water Quality Program	Georgia Forestry Commission (GFC)	1, 2	Low Dissolved Oxygen, Biota	BMP Education Complaint Investigation BMP Monitoring monthly Assurance Exams	N/A	N/A	Current Current Proposed
NPDES Permit # GAG930000	GAEPD	1	Low Dissolved Oxygen	Refer to Permit for Monitoring Details			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

On behalf of the stakeholders of the Suwannee River Basin, the South Georgia RDC suggest further studies on each of the streams that have been listed on the 303(d) list since there have been numerous concerns about when the samples were taken and the number of samples taken from each stream. We also feel that the natural range of dissolved oxygen levels in the streams of the South Georgia Coastal Plains need to be further studied and established specifically for this region. Until the standard is developed, there are currently several organizations that have been involved with monitoring studies related to this region and their data could be used to help develop a proper standard for this region.

Prepared By: Emily Perry
Agency: South Georgia RDC
Address: 327 W. Savannah Avenue
City: Valdosta ST: GA ZIP: 31601
E-mail: eperry@sgrdc.com
Date Submitted to EPD: November 16, 2002

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

TOGETHER WE CAN MAKE A DIFFERENCE!

ATTACHMENT A:
STREAM APPROACH

Suwannee River Basin
TMDL Implementation Plan
Cat Creek Watershed
HUC10# 0311020303

STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN
SUWANNEE RIVER BASIN

STREAM APPROACH

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. **With input from appropriate stakeholder groups, a TMDL Implementation Plan has been developed for a cluster of impaired streams and the corresponding pollutants.** The impaired streams are located in the same sub-basin identified by a HUC10 code (Figure 1).

This Implementation Plan addresses an action plan, education/outreach activities, stakeholders, pollutant sources, and potential funding sources affecting the 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 water bodies. 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 segments.

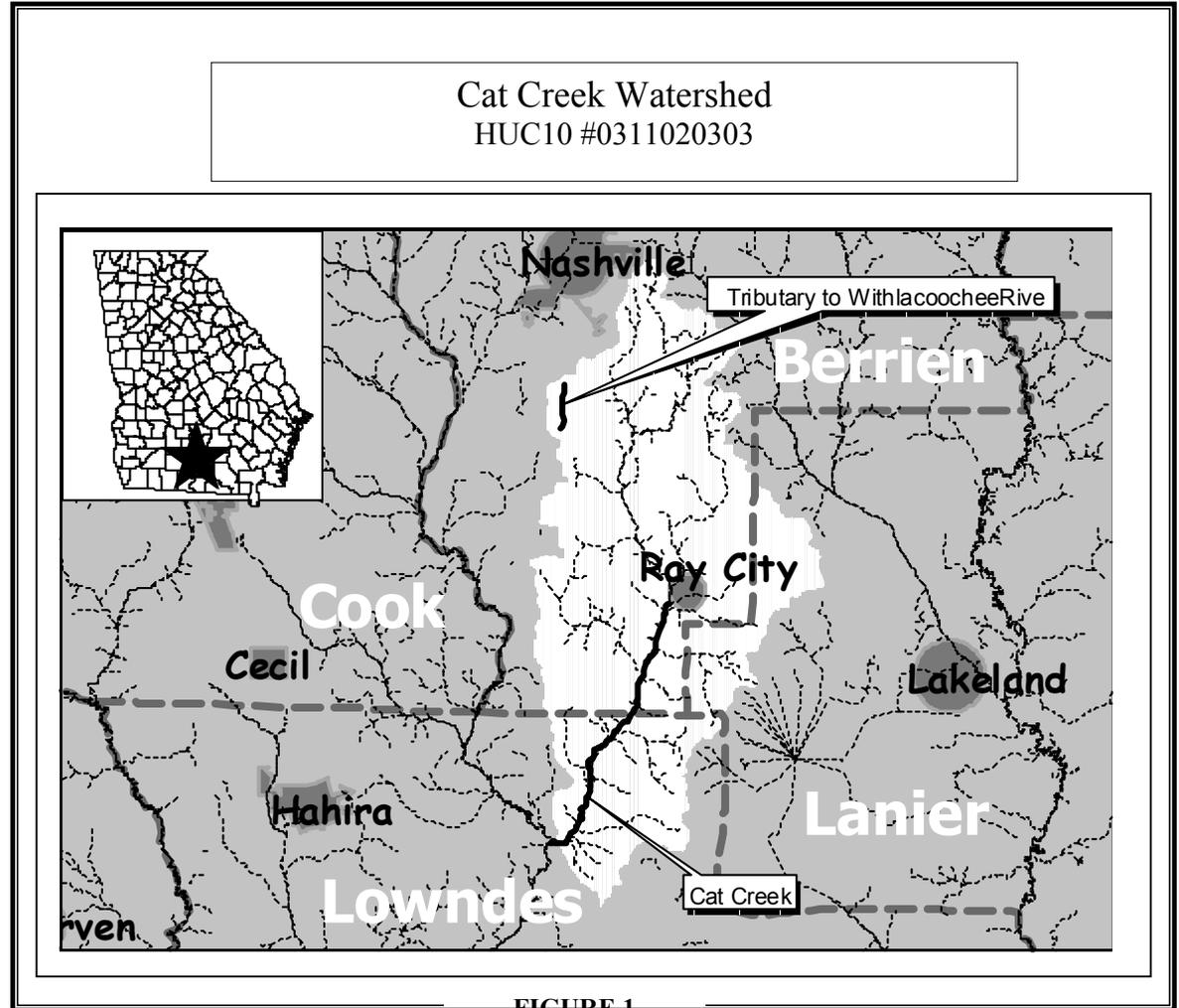


FIGURE 1

Impaired Water body*	Location	Impairment
1. Cat Creek	Beaver dam Cr. downstream SR 37 to Withlacoochee River near Ray City	Low DO
2. Tributary to Withlacoochee River	Upstream Morris Pond, Nashville	Low DO

*These Water body Numbers are referenced throughout the implementation plan.

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Cat Creek

NAME	LOCATION	MILES/AREA IMPACTED	CLASSIFICATION	PARTIALLY SUPPORTING/ NOT SUPPORTING (PS/NS)
Cat Creek	Beaver dam Cr. downstream SR 37 to Withlacoochee River near Ray City	8	Fishing	Not Supporting
PRIMARY COUNTY	SECONDARY COUNTY	SECOND RDC	SOURCE (POINT/NON-POINT)	
Berrien	Lowndes		Nonpoint	

POLLUTANTS	WATER QUALITY STANDARDS (WQS)	REQUIRED REDUCTION	TMDL ID #	DATE TMDL ESTABLISHED
Low Dissolved	5mg/l (daily average) 4 mg/l (minimum)	39%		December 2001
Oxygen	2.870 mg/l @ USGS 2317746 (EPA WQS)			

SIGNIFICANT STAKEHOLDERS

Name/Organization	Address	City	State	Zip	Phone	E-mail
Hon. Gregg McClellan, Chairman, Berrien County	P.O. Box 446	Nashville	GA	31639	(229) 686- 5421	
Hon. James Boone, Mayor, City of Alapaha	P.O. Box 34	Alapaha	GA	31622	(229) 532- 7475	
Hon. Cecil Giddens, Mayor, City of Enigma	P.O. Box 98	Enigma	GA	31749	(229) 533- 4185	
Hon. Carl Camon, Mayor, City of Ray City	P.O. Box 128	Ray City	GA	31645	(229) 455- 2501	
Hon. Thomas Parr, Mayor, City of Nashville	P.O. Box 495	Nashville	GA	31639	(229) 686- 5527	
Dr. Van Whaler, Berrien County Administrator	P.O. Box 446	Nashville	GA	31639	(229) 686- 5421	
Jerry Griner, Street and Sanitation Superintendent, City of Nashville	P.O. Box 495	Nashville	GA	31639	(229) 686- 5527	

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Name/Organization	Address	City	State	Zip	Phone	E-mail
Hal Simpson -NRCS District Conservationist	516-A County Farm Road	Nashville	GA	31639	(229) 686- 2363	
Forrest Connelly- Berrien County Extension Coordinator	516-A County Farm Road	Nashville	GA	31639	(229) 686- 5431	
Berrien County Farm Service Agency	Nashville Service Center 516-A County Farm Road Suite 3	Nashville	GA	31639	(229) 686- 2363	
Berrien County 4-H	516-A County Farm Road Suite 1	Nashville	GA	31639	(229) 686- 5431	
Al Browning	P.O. Box 5023	Nashville	GA	31639	(229) 686- 2821	Labfarm1@yahoo.com
Hon. Rod Casey, Chairman, Lowndes County	P.O. Box 1349	Valdosta	GA	31603	(229) 671- 2400	
Hon. Myron Crowe, Mayor, City of Hahira	102 S. Church Street	Hahira	GA	31632	(229) 794- 2330	
Hon. Keith Sandlin, Mayor, City of Lake Park	120 N. Essa Street	Lake Park	GA	31636		
Hon. James Rainwater, Mayor, City of Valdosta	P.O. Box 1190	Valdosta	GA	31603		
Hon. Al Brooks, Mayor, City of Remerton	No. 2 Popular Street	Remerton	GA	31601		
Hon. Ronald Hood, Mayor, Town of Dasher	P.O. Box 220	Lake Park	GA	31636		
Joe Pritchard, Lowndes County Manager	P.O. Box 1349	Valdosta	GA	31603		
Larry Hanson, Valdosta City Manager	P.O. Box 1125	Valdosta	GA	31603		
Bonnie Tindall, Hahira City Manager	102 S. Church Street	Hahira	GA	31632		
Leon Weeks, Director of Water and Sewer Services, City of Valdosta	P.O. Box 1125	Valdosta	GA	31603	(229) 259- 3592	
Marvin Lee, Public Works Director, Lowndes County	P.O. Box 1349	Valdosta	GA	31603		

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Name/Organization	Address	City	State	Zip	Phone	E-mail
Bob Hubbard	3750 Creekwood Drive	Valdosta	GA	31602	(229) 247- 8794 (229) 386- 3893	
Cheryl George, Packaging Corporation of America	P.O. Box 1048	Valdosta	GA	31603	(229) 559- 2370	Cgeorge@PackagingCorp.com
Pete Pyrzenski, Director, City of Valdosta Public Works Department	1017 Myrtle Street	Valdosta	GA	31603	(229) 259- 3592	
Lowndes County Utilities Director, Mike Allen	P.O. Box 1349	Valdosta	GA	31603	(229) 671- 2501	mallen@lowndescounty.com
Lowndes County Community Greenspace Program	325 West Savannah Avenue P.O. Box 1349	Valdosta	GA	31603	(229) 671- 2424	
Keep Lowndes / Valdosta Beautiful	325 West Savannah Avenue	Valdosta	GA	31601	(229) 671- 2499	astrickland@lowndescounty.com Aaron Strickland
The Watershed Group: The University of Georgia and Carter & Sloope, Inc.	608 Driftmier Engineering Center UGA	Athens	GA	30602	(706) 542- 0256	hsmith@engr.uga.edu Hillary Smith
Bobby Mathis- Georgia Forestry Commission	3011 US HWY 84 E	Valdosta	GA	31606	(229) 333-7817	bmathis@gfc.state.ga.us Bobby Mathis
Georgia Farm Services Agency	Federal Building Room 102 355 East Hancock Avenue	Athens	GA	30601	(706) 546- 2266	
Lowndes County Farm Service Agency	Valdosta Service Center 2108 E. Hill Ave	Valdosta	GA	31601	(229) 242- 0575	
South Georgia RDC	327 W. Savannah Ave.	Valdosta	GA	31601	(229) 333- 5277	sgrdc@sgrdc.com
Rory Richardson- NRCS District Conservationist	2108 E Hill Ave	Valdosta	GA	31601	(229) 242-0575 Ex. 3	
Mickey Fourakers- Lowndes County Extension Coordinator	PO Box 639 or Civic Center, HWY 84 E	Valdosta	GA	31603- 0639	(229) 333-5185	
National Environmentally Sound Production Agriculture Laboratory (NESPAL)	P.O. Box 748	Tifton	GA	31794	(229) 386- 7274	scrow@tifton.cpes.peachnet.edu Susan Crow
Lowndes County 4-H	P.O. Box 639	Valdosta	GA	31603	(229) 333-5185	
Georgia Forestry Commission	P.O. Box 819	Macon	GA	31202	(478) 751-3485	
Georgia Forestry Association	500 Pinnacle Court, Ste. 505	Norcross	GA	30071	(770) 416-7621	

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Name/Organization	Address	City	State	Zip	Phone	E-mail
Southeastern Wood Producers	P.O. Box 9	Hilliard	FL	32046	(904) 845-7133	
Moulton –Branch Elementary School	5725 Perimeter Road	Valdosta	GA	31601	(229) 245- 2294	
Hahira Elementary School	350 Claudia Drive	Hahira	GA	31632		
Clyattville Elementary School	5386 Madison Hwy	Valdosta	GA	31601		
Westside School	2470 James Road	Valdosta	GA	31602		
Lowndes High School	1112 N. St. Augustine Road	Valdosta	GA	31601		
James L. Dewar Elementary School	3539 Mt. Zion Church Road	Valdosta	GA	31605	(229) 219- 1370	
Hahira Middle School	P.O. Box 686	Hahira	GA	31632		
Lowndes Middle School	2379 Copeland Road	Valdosta	GA	31605		
Lake Park Elementary	604 W. Marion Ave	Lake Park	GA	31636	(229) 559- 5153	
The Langdale Company	P.O. Box 1088	Valdosta	GA	31603	(229) 333- 2544	jbarrett@surfsouth.com

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EDUCATION/OUTREACH ACTIVITIES

Responsible Organization or Entity	Description	Target Audience	Anticipated Dates (MM/YY)
US Fish and Wildlife	The U.S. Fish and Wildlife Service is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The US Fish and Wildlife has numerous activities that relate to water quality, fish, sedimentation and many more that are available on their website.	Everyone	Current
Upper Suwannee River Watershed Initiative (USRWI)	Non-Point organizations charged with education / outreach / water related activities within the Suwannee River Basin	Established organizations / clubs / citizens of the Suwannee River Basin	Will depend on group interests and funding sources
National Environmentally Sound Production Agriculture Laboratory (NESPAL)	Research and education efforts to build a better environment for agriculture and rural America	Agriculture and rural America	Current
Seven Rivers Resource Conservation & Development	Non-Profit agency that is involved with a variety of programs, i.e. Water quality issues	Local government officials / citizens / agricultural organizations	Will depend on group interests and funding sources
South Georgia RDC	The SGRDC offers technical assistance with development regulations	Local government officials / Developers	In-progress
South Georgia RDC	To help assist with educational outreach to our local governmental jurisdictions, i.e. City, county and interested individuals	Local government officials / citizens	Current
Georgia Adopt-A-Stream	The SGRDC would like to see each school district team up with Georgia Adopt-A-Stream and commit to adopting a stream or streams within their county	Established organizations / clubs and/or those interested	Will depend on group interests and funding sources
South Georgia RDC / Lowndes and Berrien County School Districts	The SGRDC would help Lowndes and Berrien County School Districts target a group or club of interested students, educate them on the water issues that they are faced with, and to encourage them to participate in water monitoring	Established organizations / clubs and/or those interested	Will depend on group interests and funding sources
South Georgia RDC / Georgia Department of Community Affairs	Facilitate and educate outreach on water resource related activities, i.e. Water Resource Tool Kit and Water First Program	Local government officials / citizens	Current

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Keep Lowndes / Valdosta Beautiful	A group of volunteers that help to clean, beautify, and improve their neighborhoods. Their mission is to achieve education programs and activities, community wide involvement, and public-private partnerships with citizens, businesses and governments to provide a healthier, safer and livable community environment.	Lowndes County citizens	Current
Lowndes County Greenspace Program	To permanently protect land and water, including agricultural and forestry land that is undeveloped. Some goals are: water quality protection for rivers, streams, and lakes; flood protection; wetlands protection; reduce erosion; and protection of riparian buffers	Lowndes County citizens	Current
Georgia Cooperative Extension Services, Lowndes and Berrien Counties	To provide timely, unbiased research-based information to the public as it relates to agricultural and family consumer science. To improve the quality of the life for all communities in the State of Georgia. The County Extension Agent's duty is to deliver new information and technology from the University of Georgia's Coastal Plain Research Center to the community.	Everyone	Current
Natural Resource Conservation Service (NRCS), Lowndes and Berrien Counties	The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.	Everyone	Current
University of Georgia 4-H Club, Lowndes and Berrien Counties	The mission of Georgia 4-H is to assist youth in acquiring knowledge, developing life skills, and forming attitudes that will enable them to become self-directing, productive and contributing members of society. This mission is accomplished, through "hands on" learning experiences, focused on agricultural and environmental issues, agriculture awareness, leadership, communication skills, foods and nutrition, health, energy conservation, and citizenship. The Lowndes County 4-H Club participated in a recent competition that required the youth to gain knowledge about waste and the environment. BMP's, point and non-point solutions were learned and causes for poor water quality.	Students and youth	Current
City of Valdosta Water, Sewer and Drainage Department	Rehabilitating sewer interceptor along Dukes Bay.	City	Current
Georgia Forestry Commission	Conduct forestry Best Management Practices educational training at Master Timber Harvester and continuing logger education programs, civic programs, and landowner meetings.	Foresters, timber buyers and loggers, site preparation contractors, landowners	Continuous
Hahira Elementary School	Hahira Middle School has participated in a number of activities to help educate the students on environmental issues. For example, members of Lowndes County, the school system, and a contractor cleaned up the wetland area from debris right beside the Hahira Middle School. The dirt that was removed from the area was used for the school. The students built a boardwalk and now there is a wetland and pond right beside the school. Hahira Middle School also received a \$5000.00 grant from Wal-Mart to build a pavilion for the students. The school has also been involved with the planting of Oak and Pine Trees.	Hahira Middle School students	Current

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Moulton-Branch Elementary School	Moulton-Branch Elementary School has participated in a number of activities to help educate the students on environmental issues. For example, Moulton-Branch has an outdoor classroom so that the students can look at soils, the environment, different types of plant life and a fishpond for the students. They also have the Recycling Magician come to teach the students on recycling as well as participate in recycling cans, pop-tops, and paper.	Moulton-Branch School students	Elementary	Current
Lake Park Elementary School	Lake Park Elementary School has participated in a number of activities to help educate the students on environmental issues. For example, Lake Park Elementary has built a nature trail for the students that has a number of different stations (e.g. raccoon crossing). The Recycling Magician has also come to teach the students on recycling.	Lake Park Elementary School students	School	Current
Clyattville Elementary School	Clyattville Elementary has participated in a number of activities to help educate the students on environmental issues. For example, they have a nature trail and also participate in the recycling program sponsored by Keep Lowndes/Valdosta Beautiful.	Clyattville Elementary School students	School	Current
Lowndes High School	Lowndes High School has participated in a number of activities to help educate the students on environmental issues. For example, the Science Department has created a nature trail and each homeroom is required to have a service project, such as recycling paper and cans.	Lowndes High School students		Current
James L. Dewar Elementary School	James L. Dewar Elementary School has participated in a number of activities to help educate the students on environmental issues. For example, the students have participated in recycling programs.	James L. Dewar School students	Elementary	Current
Hahira Middle School	Hahira Middle School has participated in a number of activities to help educate the students on environmental issues. They have an outdoor classroom with a pond and a board trail for environmental awareness	Hahira Middle School students		Current
Pine Grove Elementary School	Pine Grove Elementary School has participated in a number of activities to help educate the students on environmental issues. They have an Outdoor Classroom Grant that provided funds to plant trees, shrubs, flowering plants, etc. They also teach recycling lessons.	Pine Grove Elementary School students	School	Current
Lowndes Middle School	Lowndes Middle School has participated in a number of activities to help educate the students on environmental issues. They have an outdoor classroom along with lessons on environmental awareness in the Science classes.	Lowndes Middle School students		Current
Parker Mathis Elementary School	Parker Mathis Elementary School has participated in a number of activities to help educate the students on environmental issues. Every Wednesday is Recycling Day. The fifth graders collect items from their parents and students. They also have an environmental club that attends 4-H every year.	Parker Mathis Elementary School students	School	Current

POTENTIAL POLLUTANT SOURCES

Pollutant	Potential Source	Description of Contribution to Impairment
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Pollutant	Potential Source	Description of Contribution to Impairment
Low Dissolved Oxygen	Natural	Stream below critical conditions: High temperatures and low flow contribute to low levels of dissolved oxygen in the stream
Low Dissolved Oxygen	Urban / Rural Development Runoff	Urban runoff from the City of Ray City and including rural runoff that is washed away into nearby water sources, i.e. Chemical runoff from lawns, improper removal of trash, organic material such as leaves and yard trimmings, storm water runoff, fluids from parking areas, roads, and sediment erosion.
Low Dissolved Oxygen	Failing septic tanks	Effluent leakage due to overflowing sewage systems and leaking collection lines
Low Dissolved Oxygen	Animal waste	Animal waste that is deposited and then not properly removed or no lagoon is in place and is then washed into water bodies
Low Dissolved Oxygen	Organic matter	Organic matter runoff from wetlands / forest accumulates and then builds up when not properly secured or disposed and direct / lateral leaf litter
Low Dissolved Oxygen	Agriculture runoff	Pesticides / Fertilizer runoff causes nutrient build-up in water bodies
Low Dissolved Oxygen	Improper methods of trash collection and disposal	Spillage and incorrect disposal of substances into the water bodies or on the surface that is washed into drainage systems or water bodies
Low Dissolved Oxygen	Silviculture	Possible introduction of sediment from normal practices and stream crossings when BMP's are not followed. Possible cause of decline in available oxygen resulting from removal of over story trees w/in SMZ resulting in increase in stream temperatures. Leaving logging debris in streams. Possible introduction of nitrogen and phosphorous from fertilization practices.
Low Dissolved Oxygen	Animal Feeding Operation (AFO) and Confined Animal Feeding Operations (CAFO)	Discharges from the animal confinement or storage and handling areas of concentrated animal feeding operations (CAFO) or from improper use of land application area(s), which enters river, streams, creeks, etc. The discharge must meet water quality standards.

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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
NPDES Permit # GAG930000 Animal (Non-Swine) Feeding Operations – More than 1000 Animal Units	GAEPD	General NPDES Permit for owners of existing and new animal (non-swine) feeding operations giving authorization to store and dispose of waste. Regulates discharges from the animal confinement or storage and handling areas of concentrated animal feeding operations (CAFO) or from improper use of land application area(s), which enters river, streams, creeks, etc. The discharge must meet water quality standards.	6/13/02	Enforced	Regulatory

Pollutant(s) Affected	Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	AFO, CAFO	Very effective

Measurable Milestones	Schedule		Comments
	Start	End	
Submission of Comprehensive Nutrient Management Plan (CNMP)	Oct. 31, 2002		Existing Operations
Provide and maintain buffer strips or equivalent practices	Prior to beginning operation		New or Expanding Operations
Divert clean water and floodwaters	According to CNMP		
Prevent direct contact of animals of the United States	Effective date of permit		
Handle and dispose dead animals in a manner that prevents contamination of surface water.	Effective date of permit		
Prevent disposal of chemicals into manure and wastewater storage structures	Effective date of permit		
Implement an operation and maintenance program	Effective date of permit		
Maintain proper storage capacity	Effective date of permit		
Rate and timing of land application of manure and wastewater	Effective date of permit		

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Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Well and Septic Ordinances	Berrien County City of Ray City	Onsite permit process for well and septic tanks.		Enforced Enforced	Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Septic systems	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Continued compliance with well / septic installation / repair / maintenance. Any public service site is tested on a routine basis to maintain a healthy site. Inspections on private services are checked on a complaint basis only.	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Building Codes	Berrien County City of Ray City Lowndes County	Building codes initiate site plan procedures for all forms of land development. This indirectly reduces increased levels of DO in streams, i.e. building front, side, and rear setbacks and voluntary conservation easements on privately owned property. An example of a nonstructural BMP is sediment controls and slope gradient measures.	1999	Enforced Enforced Enforced	Regulatory Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Permit required for construction.	Continuous		SGRDC assists with the administration of this code.

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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
Land Subdivision Ordinance	Berrien County Lowndes County	Land Subdivision Ordinances initiate plan review for proposed subdivision. This typically includes sedimentation and water control measures. The lot size of land plays an important role in the amount of runoff that comes from urban and rural areas, i.e. storm water runoff, septic tank leaks or overflow, and erosion controls.	2001	Enforced Enforced	Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Periodic reassessment of effectiveness of ordinance. The ordinances are updated on a periodic basis as developments progress. This is done to prevent overgrowth of developments.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Zoning Ordinance	Berrien County City of Ray City Lowndes County	To divide an area into zones or sections reserved for different purposes such as residence, business, and manufacturing to best suit the growth and land uses, also to help with the protection of sensitive areas such as water sources. Promotion of the proper location, height, stories, and size of open spaces along with the density and land uses.	2002	Pending Enforced Enforced	Regulatory Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Periodic reassessment of effectiveness of ordinance.	Continuous		SGRDC assists with the administration of this code.

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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
Groundwater Recharge Area Development ordinance	Berrien County	Georgia Planning Act Part V: Environmental Criteria. This ordinance regulates development of areas designated as high pollution susceptibility due to their location in the regional landscape. A BMP for groundwater protection is sand filters such as vegetation or sand to filter and settle pollutants.	2001	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff and illegal dumping of trash	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Ongoing protection of sensitive land open for development.	Continuous		SGRDC assists with the administration of this code. Groundwater Recharge areas area very sensitive to pollution and directly effect the quality of all water sources that are related to them.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/Voluntary
Local Wetlands Policy Ordinance	Berrien County	Georgia Planning Act Part V: Environmental Criteria.	2001	Enforced	Regulatory
	City of Ray City		2001	Enforced	Regulatory
	Lowndes County	This ordinance regulates development of areas designated as wetlands as defined by the U.S. Army Corps of Engineers as jurisdictional wetlands.		Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff and illegal dumping of trash	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Ongoing protection of sensitive land not open for development.	Continuous		SGRDC assists with the administration of this code.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status <small>(In-progress, Planning, Enforced)</small>	Regulatory/ Voluntary
Protected River Corridor Plan Ordinance	Berrien County	Georgia Planning Act Part V: Environmental Criteria. This ordinance regulates development of areas designated as protected river corridors as they related to development and disturbance of land along protected river corridors.	2001	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff and illegal dumping of trash	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Ongoing protection of sensitive land open for development along identified river corridors.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status <small>(In-progress, Planning, Enforced)</small>	Regulatory/ Voluntary
Floodplain Management Ordinance	City of Ray City Lowndes County	100 year / 500 year flood levels are shown on FEMA flood maps		Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
N/A	Continuous		SGRDC assists with the administration of this code

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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
Local Soil & Sedimentation Ordinance	Berrien County Lowndes County	Regulation of BMP's for development Erosion and Sedimentation Control Act (GESA). Requires permits for "land disturbing activities" and requires buffers to be maintained between the land disturbing activity and waters of the state.		Enforced Enforced	Regulatory Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Continued enforcement of ordinance will ensure less sedimentation in water bodies.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Stormwater Detention / Retention Standards	Lowndes County	An ordinance that regulates the runoff of storm water off of a developed property		Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
N/A	Continuous		SGRDC assists with the administration of this code

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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
Suwannee River Basin Management Plan	Georgia Department of Natural Resources	Detailed management plans for the Suwannee River Basin. The purpose of the plan is to develop and implement a basin-planning program to protect, enhance and restore the waters for the State of Georgia, which will provide for effective monitoring, allocation, use, regulation, and management of water resources.	Final draft pending approval March 2002	Pending State approval	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
1. Implement Monitoring Plan and Compile Detailed Information/Data.	2003-	2004	
2. Analyze and Evaluate Detailed Information, Update Basin Assessment and Priority Issues List, Develop Strategies for Priority Issues, and Stakeholder meeting.	2004-	2005	
3. Continue to Develop Strategies for Priority Issues and Prepare and Update Draft River Basin Plan.	2005-	2006	
4. Agency and Public Review and Hearings, Finalize River Basin Plan, Implement River Basin Plan, and Stakeholder meeting.	2006-	2007	
5. Continue to Implement River Basin Plan and Stakeholder meeting.	2007-	Continuous	

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status <small>(In-progress, Planning, Enforced)</small>	Regulatory/ Voluntary
Establish the Natural Range of Dissolved Oxygen Levels in Streams of the South Georgia Coastal Plain	Georgia DNR-EPD	An extensive stream-monitoring program to establish the DO range naturally occurring during critical stream flow conditions in the South Georgia Coastal Plain.	Spring 2003	Grant Applied Conditionally approved per revisions of proposal	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Naturally Occurring	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Three years of bi-weekly water quality and hydrologic parameter monitoring at a maximum of 60 locations. Annual characterization of study stream morphology; semiannual long term BOD; semiannual benthic and periphyton respiration by respirometer. Evaluation and characterization of study watersheds to establish the dynamics affecting DO in each watershed.	Expected Spring 2006	start, 2003; end, 2006	Piscola Creek watershed monitoring data collected in the past four years show that in summer months 8 highly enriched streams in the midst of intensive livestock and row-crop production have much higher DO values than a comparison “reference” stream. These and other data collected by UGA and USDA-ARS scientists have lead the hypothesis that a combination of high summer-time temperatures, low flows, and high loads of organic carbon contributed by riparian vegetation contribute to naturally low DO levels in unimpacted Coastal Plain streams. A proposal to establish an extensive stream-monitoring program to establish the natural range of DO at critical flow conditions has been submitted to Georgia DNR-EPD administered U.S. Environmental Protection Agency’s Clean Water Act Section 319(h) Grant Program.

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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
Georgia Forestry Commission	State of Georgia	A set of guidelines to better protect Georgia's streams and other water bodies from forestry non-point source pollution (primarily erosion and sedimentation).	Ongoing	Ongoing	Voluntary

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

Measurable Milestones	Schedule		Comments
	Start	End	
Some Best Management Practices (BMP's) for forestry to minimize erosion and stream sedimentation from forestry practices are: timber harvesting, chemical treatments, controlled burning, and streamside management. In 1998, 98% of the 43,906 acres that were evaluated were in compliance with the BMP's. In 1992, the stream compliance was 95.5%. The goal is to meet 100% compliance with each BMP.	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Federal Clean Water Act Section 404	EPA (situations involving forestry are normally referred to the GFC to determine compliance with this regulation)	Requires normal ongoing agricultural and silvicultural practice to adhere to BMP's and 15 baseline provisions for road construction and maintenance in and across waters of the US including lakes, rivers, perennial and intermittent streams, wetlands, sloughs in order to qualify for the exemption from the permitting process.	June 6, 1988	Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Sediment from dredge or fill activities	Agriculture and silviculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC can report status on accomplishments or complaints investigated involving this act to the RDC as needed.	Continuous		EPA identifies silviculture as the lowest contribution source of non-point pollution

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Memo to the Field: Application of BMP's to mechanical silvicultural site preparation activities for the establishment of pine plantations in the Southeast	EPA/ US Army Corps of Engineers - (cases normally referred to GFC to make initial determination)	Identifies certain bottomland hardwood wetlands that should be subject to permitting if converting to pine plantations.	November 1995	Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Biota, habitat	Silviculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC can provide status reports as needed	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Federal Farm Bill (Swamp buster)	US Department of Agriculture Natural Resource Conservation Service	Prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture		Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Biota (habitat)	Agriculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Status reports can be provided as needed	Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Water Quality Control Act (OCGA 12-5-20)	GA DNR EPD	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats.	1964	Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Sediments, nutrients, pesticides, and habitat	Silviculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC investigates and mediates silvicultural complaints on behalf of EPD. Unresolved complaints are turned over to EPD for enforcement. Status reports can be provided to RDC as needed.	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
GA Growth Planning Act (OCGA 12-2-8)	GA DNR, Department of Community Affairs, and local units of government	Authorized GA DNR to develop minimum planning standards and procedures that local jurisdictions could adopt and enforce pertaining to the protection of river corridors, mountaintops, water supply watersheds/reservoirs, groundwater recharge areas, and wetlands. Silvicultural activities may be exempted from permitting requirements provided the activity complies with BMP's	1991	Local jurisdictions have to adopt ordinances to address these areas	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Biota, habitat, sediment	Silviculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC can determine applicability and BMP implementation for local units of government.	Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Farm Bill 2002	Natural Resources Conservation Service (NRCS)	The Farm Security and Rural Investment Act of 2002 is landmark legislation for conservation funding and for focusing on environmental issues. The conservation provisions will assist farmers and ranchers in meeting environmental challenges on their land. This legislation simplifies existing programs and creates new programs to address high priority environmental and production goals. The 2002 Farm Bill enhances the long-term quality of our environment and conservation of our natural resources.	2002	Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
N/A	Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Farm Services Agency	State of Georgia / Local FSA	Stabilizing farm income, helping farmers conserve land and water resources, providing credit to new or disadvantaged farmers and ranchers, and helping farm operations recover from the effects of disaster are the missions of the U.S. Department of Agriculture's Farm Service Agency (FSA).	Ongoing	Ongoing	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Agriculture Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
The 1996 Act removed the link between income support payments and farm prices by providing for a one-time sign-up for a Production Flexibility Contract whereby producers receive seven annual fixed but declining production flexibility contract payments through 2002. This program, entitled the Agricultural Market Transition Act (AMTA), reflects FSA's direction over the next seven years whereby farm commodity prices will be largely determined by market factors, rather than government subsidies and production controls. To receive payments and loans on program commodities, producers must have entered into a 7-year contract by August 1, 1996. More than 98 percent of the eligible acres enrolled. Program commodities include wheat, corn, sorghum, barley, oats, upland cotton, and rice. The contract requires producers to comply with existing conservation plans for the farm, wetland provisions, and planting flexibility provisions, as well as to keep the land in agricultural use. Except for fruits and vegetables, any commodity or crop may be planted on contract acreage on a farm.	Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Conservation Reserve Program (CRP)	United States Department of Agriculture (USDA)	The Conservation Reserve Program (CRP) provides technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. The program provides assistance to farmers and ranchers in complying with Federal, State, and tribal environmental laws, and encourages environmental enhancement. The program is funded through the Commodity Credit Corporation (CCC). The Conservation Reserve Program reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices.		Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
CRP is administered by the Farm Service Agency, with NRCS providing technical land eligibility determinations, Environmental Benefit Index Scoring, and conservation planning.	Continuous		Utilized in this region due to high amount of farm production.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Environmental Quality Incentives Program (EQIP)	United States Department of Agriculture (USDA)	The Environmental Quality Incentives Program (EQIP) was reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill) to provide a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.		Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
EQIP offers contracts with a minimum term that ends one year after the implementation of the last scheduled practices and a maximum term of ten years. These contracts provide incentive payments and cost-shares to implement conservation practices. Persons who are engaged in livestock or agricultural production on eligible land may participate in the EQIP program. EQIP activities are carried out according to an environmental quality incentives program plan of operations developed in conjunction with the producer that identifies the appropriate conservation practice or practices to address the resource concerns. The practices are subject to NRCS technical standards adapted for local conditions. The local conservation district approves the plan.	Continuous		NRCS EQIP Funds and provide for cross fencing, paddock development, rotational grazing, and nutrient and pest management. It helps to provide healthier pastures and more efficient use of grasses.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Manure Management Plan	Individual	A manure management plan can help provide the most use of the nutrients in manure while protecting the water quality, and meeting manure-handling requirements.	Ongoing	Ongoing	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Manure	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Keeping records of manure applications and continuous soil samples.	Continuous		Utilized in this region due to high amount of farm production.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Nutrient Management Program	7 Rivers RC & D, NRCS, 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.	1991	In-progress	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Nitrates and Phosphates Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measured amount of DO in impacted waterways.	Continuous		Utilized in this region due to high amount of farm production.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Pesticides Management Program	7 Rivers RC & D, NRCS, and University of Georgia Extension Agent	Encourages and educates farmers on the correct usage and amount of pesticides to reduce the impact of pesticides in the waterways.	1991	In-progress	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Pesticides Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measured amount of DO in impacted waterways.	Continuous		Utilized in this region due to high amount of farm production.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Soil Testing	University of Georgia Cooperative Extension Services and Individual	Soil samples are taken to determine what nutrients are needed for any agricultural or silvicultural use. This reduces or avoids any unnecessary applications of fertilizers, herbicides, pesticides, etc. so to minimize harmful runoff.		Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Nitrates, Phosphates, Pesticides Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Soil samples are taken on a regular basis.	Continuous		Utilized in this region due to high amount of farm production.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Rules and Regulations for Water Quality Control (391-3-6)	GA DNR EPD	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, etc.) into waters of the state in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats.	1964 Revised June 2002	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Industry/Non-industry Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Compliance with rules and various permits issued under rules.	Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
South Georgia Multi-Jurisdictional Solid Waste Management Plan	Berrien County Lowndes County	10 Counties participate and currently seek to coordinate solid waste management activities throughout the South Georgia Region and to cooperate in the activities of local Comprehensive Plans. The prime focus here is the collection and disposal of waste in a manner, which prevents pollution of surface and sub-service water resources.	1992 1992	In-progress In-progress	Voluntary Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Solid Waste	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
This management measure is currently being updated.	Continuous	N/A	

POTENTIAL FUNDING SOURCES

Source	Responsible Authority	Status	Anticipated Funding Amount
319 (h) Grant	EPD/State of Georgia	Must Apply	Unknown
Greenspace Funds	Georgia Department of Natural Resources	Must Apply	Unknown
Conservation Reserve Program	USDA	Must Apply	Unknown
Environmental Quality Incentive Program (EQIP)	Natural Resources Conservation Service	Must Apply	Unknown
Wildlife Habitat Incentive Program	Natural Resources Conservation Service	Must Apply	Unknown
Urban Resources Partnership (URP)	Forest Service, the Natural Resources Conservation Service, the National Park Service, the Environmental Protection Agency, and the Department of Housing and Urban Development	Must Apply	Unknown
Toxics Grant	Jessie Smith Noyes Foundation	Must Apply	Unknown
Sustainable Agriculture Grant	Jessie Smith Noyes Foundation	Must Apply	Unknown
Sustainable Communities Grant	Jessie Smith Noyes Foundation	Must Apply	Unknown
Progressive Fund	The Fund for Southern Communities	Must Apply	Unknown
Brownfields Assessment Demonstration Pilots	EPA Office of Solid Waste and Emergency Response	Must Apply	Unknown
Pollution Prevention Grants	EPA Office of Pollution Prevention and Toxics	Must Apply	Unknown
DCA Educational Outreach	Department of Community Affairs	Must Apply	Unknown

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MONITORING PLAN

Organization	Pollutants	Purpose/Description	Time Frame		Status: (Previous, Current, Proposed)
			Start	End	
Georgia Adopt-A-Stream Water Quality Monitoring	Low Dissolved Oxygen	To help educate and improve/or maintain a streams quality	TBA	TBA	Proposed
USGS Water Quality Testing	Low Dissolved Oxygen	Assess Water Quality	N/A	Continuous	Current
Local government Scrap Tire Management Program	Low Dissolved Oxygen	To reduce the illegal dumping of scrap tires, reduction in solid waste, and other environmental issues by hiring an enforcement / education officer to respond and monitor	TBA	TBA	Proposed
Local / County Governments Water Quality Testing	Low Dissolved Oxygen	Local testing to ensure quality on impaired streams as they relate to effluent discharge	N/A	Continuous	Ongoing
National Environmentally Sound Production Agriculture Laboratory (NESPAL) and USDA-ARS Southeast Watershed Laboratory Monitoring Program	Low Dissolved Oxygen	To study the water quality of the entire Suwannee Basin	N/A	N/A	Current
National Environmentally Sound Production Agriculture Laboratory (NESPAL) Monitoring Program	Low Dissolved Oxygen	319 (h) grant to study dissolved oxygen	2003	2006	Grant applied
Georgia Forestry Commission (GFC) Forest Water Quality Program	Low Dissolved Oxygen, Biota	BMP Education Complaint Investigation BMP Monitoring monthly Assurance Exams	N/A	N/A	Current Current Proposed
GAEPD NPDES Permit # GAG930000	Low Dissolved Oxygen	Refer to Permit for Monitoring Details			Current

COMMENTS: On behalf of the stakeholders of the Suwannee River Basin, the South Georgia RDC suggest further studies on each of the streams that have been listed on the 303(d) list since there have been numerous concerns about when the samples were taken and the number of samples taken from each stream. We also feel that the natural range of dissolved oxygen levels in the streams of the South Georgia Coastal Plains need to be further studied and established specifically for this region. Until the standard is developed, there are currently several organizations that have been involved with monitoring studies related to this region and their data could be used to help develop a proper standard for this region.

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Tributary to Withlacoochee River

NAME	LOCATION	MILES/AREA IMPACTED	CLASSIFICATION	PARTIALLY SUPPORTING/ NOT SUPPORTING (PS/NS)
Tributary to Withlacoochee River	Upstream Morris Pond, Nashville	2	Fishing	Partially Supporting
PRIMARY COUNTY	SECONDARY COUNTY	SECOND RDC	SOURCE (POINT/NON-POINT)	
Berrien			Nonpoint	

POLLUANTS	WATER QUALITY STANDARDS	REQUIRED REDUCTION	TMDL ID #	DATE TMDL ESTABLISHED
Low Dissolved Oxygen	5mg/l (daily average) 4 mg/l (minimum)	23%		December 2001

SIGNIFICANT STAKEHOLDERS

Name/Organization	Address	City	State	Zip	Phone	E-mail
Hon. Gregg McClellan, Chairman, Berrien County	P.O. Box 446	Nashville	GA	31639	(229) 686- 5421	
Hon. James Boone, Mayor, City of Alapaha	P.O. Box 34	Alapaha	GA	31622	(229) 532- 7475	
Hon. Cecil Giddens, Mayor, City of Enigma	P.O. Box 98	Enigma	GA	31749	(229) 533- 4185	
Hon. Carl Camon, Mayor, City of Ray City	P.O. Box 128	Ray City	GA	31645	(229) 455- 2501	
Hon. Thomas Parr, Mayor, City of Nashville	P.O. Box 495	Nashville	GA	31639	(229) 686- 5527	
Dr. Van Whaler, Berrien County Administrator	P.O. Box 446	Nashville	GA	31639	(229) 686- 5421	
Jerry Griner, Street and Sanitation Superintendent, City of Nashville	P.O. Box 495	Nashville	GA	31639	(229) 686- 5527	

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Name/Organization	Address	City	State	Zip	Phone	E-mail
South Georgia RDC	327 W. Savannah Ave.	Valdosta	GA	31601	(229) 333- 5277	sgrdc@sgrdc.com
Hal Simpson -NRCS District Conservationist	516-A County Farm Road	Nashville	GA	31639	(229) 686- 2363	
Forrest Connelly- Berrien County Extension Coordinator	516-A County Farm Road	Nashville	GA	31639	(229) 686- 5431	
Bobby Mathis- Georgia Forestry Commission	3011 US HWY 84 E	Valdosta	GA	31606	(229) 333- 7817	bmathis@gfc.state.ga.us
Georgia Farm Services Agency	Federal Building Room 102 355 East Hancock Avenue	Athens	GA	30601	(706) 546- 2266	
Berrien County Farm Service Agency	Nashville Service Center 516-A County Farm Road Suite 3	Nashville	GA	31639	(229) 686- 2363	
National Environmentally Sound Production Agriculture Laboratory (NESPAL)	P.O. Box 748	Tifton	GA	31794	(229) 386- 7274	scrow@tifton.cpes.peachnet.edu
Berrien County 4-H	516-A County Farm Road Suite 1	Nashville	GA	31639	(229) 686- 5431	
Al Browning	P.O. Box 5023	Nashville	GA	31639	(229) 686- 2821	Labfarm1@yahoo.com
Georgia Forestry Commission	P.O. Box 819	Macon	GA	31202	(478) 751-3485	
Georgia Forestry Association	500 Pinnacle Court, Ste. 505	Norcross	GA	30071	(770) 416-7621	
Southeastern Wood Producers	P.O. Box 9	Hilliard	FL	32046	(904) 845-7133	

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EDUCATION/OUTREACH ACTIVITIES

Responsible Organization or Entity	Description	Target Audience	Anticipated Dates (MM/YY)
US Fish and Wildlife	The U.S. Fish and Wildlife Service is the principal Federal agency responsible for conserving, protecting and enhancing fish, wildlife and plants and their habitats for the continuing benefit of the American people. The US Fish and Wildlife has numerous activities that relate to water quality, fish, sedimentation and many more that are available on their website.	Everyone	Current
National Environmentally Sound Production Agriculture Laboratory (NESPAL)	Research and education efforts to build a better environment for agriculture and rural America	Agriculture and rural America	Current
National Environmentally Sound Production Agriculture Laboratory (NESPAL)	319 (h) grant to study dissolved oxygen	River Basins in the Southern Coastal Plain, Georgia	Grant applied
Upper Suwannee River Watershed Initiative (USRWI)	Non-Point organizations charged with education / outreach / water related activities within the Suwannee River Basin	Established organizations / clubs / citizens of the Suwannee River Basin	Will depend on group interests and funding sources
Seven Rivers Resource Conservation & Development	Non-Profit agency who's goal for environmental protection is to improve the water quality and quantity and preservation of the natural resources in the region	Local government officials / citizens / agricultural organizations	Current
South Georgia RDC	The SGRDC offers technical assistance with development regulations	Local government officials / Developers	In-progress
South Georgia RDC	To help assist with educational outreach to our local governmental jurisdictions, i.e. City, county and interested individuals	Local government officials / citizens	Current
Georgia Adopt-A-Stream	The SGRDC would like to see each school district team up with Georgia Adopt-A-Stream and commit to adopting a stream or streams within their county	Established organizations / clubs and/or those interested	Will depend on group interests and funding sources
South Georgia RDC / Berrien County School District	The SGRDC would help Berrien County School District target a group or club of interested students, educate them on the water issues that they are faced with, and to encourage them to participate in water monitoring	Established organizations / clubs and/or those interested	Will depend on group interests and funding sources
South Georgia RDC / Georgia Department of Community Affairs	Facilitate and educate outreach on water resource related activities, i.e. Water Resource Tool Kit and Water First Program	Local government officials / citizens	Current

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University of Georgia 4-H Club, Berrien County	The mission of Georgia 4-H is to assist youth in acquiring knowledge, developing life skills, and forming attitudes that will enable them to become self-directing, productive and contributing members of society. This mission is accomplished, through "hands on" learning experiences, focused on agricultural and environmental issues, agriculture awareness, leadership, communication skills, foods and nutrition, health, energy conservation, and citizenship.	Students and youth	Current
Georgia Cooperative Extension Services, Berrien County	To provide timely, unbiased research-based information to the public as it relates to agricultural and family consumer science. To improve the quality of the life for all communities in the State of Georgia. The County Extension Agent's duty is to deliver new information and technology from the University of Georgia's Coastal Plain Research Center to the community.	Everyone	Current
Natural Resource Conservation Service (NRCS), Berrien County	The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.	Everyone	Current
Georgia Forestry Commission	Conduct forestry Best Management Practices educational training at Master Timber Harvester and continuing logger education programs, civic programs, and landowner meetings.	Foresters, timber buyers and loggers, site preparation contractors, landowners	Continuous

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POTENTIAL POLLUTANT SOURCES

Pollutant	Potential Source	Description of Contribution to Impairment
Low Dissolved Oxygen	Natural	Stream below critical conditions: High temperatures and low flow contribute to low levels of dissolved oxygen in the stream
Low Dissolved Oxygen	Urban / Rural Development Runoff	Urban runoff from the City of Nashville and including rural runoff that is washed away into nearby water sources, i.e. Chemical runoff from lawns, improper removal of trash, organic material such as leaves and yard trimmings, storm water runoff, fluids from parking areas, roads, and sediment erosion.
Low Dissolved Oxygen	Failing septic tanks	Effluent leakage due to overflowing sewage systems and leaking collection lines
Low Dissolved Oxygen	Animal waste	Animal waste that is deposited and then not properly removed or no lagoon is in place and is then washed into water bodies
Low Dissolved Oxygen	Organic matter	Organic matter runoff from wetlands / forest accumulates and then builds up when not properly secured or disposed and direct / lateral leaf litter
Low Dissolved Oxygen	Agriculture runoff	Pesticides / Fertilizer runoff causes nutrient build-up in water bodies
Low Dissolved Oxygen	Improper methods of trash collection and disposal	Spillage and incorrect disposal of substances into the water bodies or on the surface that is washed into drainage systems or water bodies
Low Dissolved Oxygen	Silviculture	Possible introduction of sediment from normal practices and stream crossings when BMP's are not followed. Possible cause of decline in available oxygen resulting from removal of over story trees w/in SMZ resulting in increase in stream temperatures. Leaving logging debris in streams. Possible introduction of nitrogen and phosphorous from fertilization practices.

MANAGEMENT MEASURES, RESPONSIBLE PARTIES, AND MEASURABLE MILESTONES

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Well and Septic Ordinances	Berrien County	Onsite permit process for well and septic tanks.		Enforced	Regulatory
Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness			
Low Dissolved Oxygen	Septic systems	Effective			
Measurable Milestones			Schedule		Comments
			Start	End	
Continued compliance with well / septic installation / repair / maintenance. Any public service site is tested on a routine basis to maintain a healthy site. Inspections on private services are checked on a complaint basis only.			Continuous		

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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
Building Codes	Berrien County	Building codes initiate site plan procedures for all forms of land development. This indirectly reduces increased levels of DO in streams, i.e. building front, side, and rear setbacks and voluntary conservation easements on privately owned property. An example of a nonstructural BMP is sediment controls and slope gradient measures.	1999	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Permit required for construction.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status (In-progress, Planning, Enforced)	Regulatory/ Voluntary
Land Subdivision Ordinance	Berrien County	Land Subdivision Ordinances initiate plan review for proposed subdivision. This typically includes sedimentation and water control measures. The lot size of land plays an important role in the amount of runoff that comes from urban and rural areas, i.e. storm water runoff, septic tank leaks or overflow, and erosion controls.	2001	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Periodic reassessment of effectiveness of ordinance. The ordinances are updated on a periodic basis as developments progress. This is done to prevent overgrowth of developments.	Continuous		SGRDC assists with the administration of this code.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status <small>(In-progress, Planning, Enforced)</small>	Regulatory/ Voluntary
Zoning Ordinance	Berrien County	To divide an area into zones or sections reserved for different purposes such as residence, business, and manufacturing to best suit the growth and land uses, also to help with the protection of sensitive areas such as water sources. Promotion of the proper location, height, stories, and size of open spaces along with the density and land uses.	2002	Pending	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Periodic reassessment of effectiveness of ordinance.	Continuous		SGRDC assists with the administration of this code.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status <small>(In-progress, Planning, Enforced)</small>	Regulatory/ Voluntary
Groundwater Recharge Area Development ordinance	Berrien County	Georgia Planning Act Part V: Environmental Criteria. This ordinance regulates development of areas designated as high pollution susceptibility due to their location in the regional landscape. A BMP for groundwater protection is sand filters such as vegetation or sand to filter and settle pollutants.	2001	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff and illegal dumping of trash	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Ongoing protection of sensitive land open for development.	Continuous		SGRDC assists with the administration of this code. Groundwater Recharge areas are very sensitive to pollution and directly affect the quality of all water sources that are related to them.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status <small>(In-progress, Planning, Enforced)</small>	Regulatory/ Voluntary
Local Wetlands Policy Ordinance	Berrien County	Georgia Planning Act Part V: Environmental Criteria. This ordinance regulates development of areas designated as wetlands as defined by the U.S. Army Corps of Engineers as jurisdictional wetlands.	2001	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff and illegal dumping of trash	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Ongoing protection of sensitive land not open for development.	Continuous		SGRDC assists with the administration of this code.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status <small>(In-progress, Planning, Enforced)</small>	Regulatory/ Voluntary
Protected River Corridor Plan Ordinance	Berrien County	Georgia Planning Act Part V: Environmental Criteria. This ordinance regulates development of areas designated as protected river corridors as they related to development and disturbance of land along protected river corridors.	2001	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff and illegal dumping of trash	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Ongoing protection of sensitive land open for development along identified river corridors.	Continuous		SGRDC assists with the administration of this code.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status <small>(In-progress, Planning, Enforced)</small>	Regulatory/ Voluntary
Local Soil & Sedimentation Ordinance	Berrien County	Regulation of BMP's for development Erosion and Sedimentation Control Act (GESA). Requires permits for "land disturbing activities" and requires buffers to be maintained between the land disturbing activity and waters of the state.		Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Urban/Rural Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Continued enforcement of ordinance will ensure less sedimentation in water bodies.	Continuous		SGRDC assists with the administration of this code.

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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
Suwannee River Basin Management Plan	Georgia Department of Natural Resources	Detailed management plans for the Suwannee River Basin. The purpose of the plan is to develop and implement a basin-planning program to protect, enhance and restore the waters for the State of Georgia, which will provide for effective monitoring, allocation, use, regulation, and management of water resources.	Final draft pending approval March 2002	Pending State approval	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
6. Implement Monitoring Plan and Compile Detailed Information/Data.	2003-	2004	
7. Analyze and Evaluate Detailed Information, Update Basin Assessment and Priority Issues List, Develop Strategies for Priority Issues, and Stakeholder meeting.	2004-	2005	
8. Continue to Develop Strategies for Priority Issues and Prepare and Update Draft River Basin Plan.	2005-	2006	
9. Agency and Public Review and Hearings, Finalize River Basin Plan, Implement River Basin Plan, and Stakeholder meeting.	2006-	2007	
10. Continue to Implement River Basin Plan and Stakeholder meeting.	2007-	Continuous	

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status <small>(In-progress, Planning, Enforced)</small>	Regulatory/ Voluntary
Establish the Natural Range of Dissolved Oxygen Levels in Streams of the South Georgia Coastal Plain	Georgia DNR-EPD	An extensive stream-monitoring program to establish the DO range naturally occurring during critical stream flow conditions in the South Georgia Coastal Plain.	Spring 2003	Grant Applied Conditionally approved per revisions of proposal	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Naturally Occurring	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Three years of bi-weekly water quality and hydrologic parameter monitoring at a maximum of 60 locations. Annual characterization of study stream morphology; semiannual long term BOD; semiannual benthic and periphyton respiration by respirometer. Evaluation and characterization of study watersheds to establish the dynamics affecting DO in each watershed.	Expected Spring 2006	start, 2003; end, 2006	Piscola Creek watershed monitoring data collected in the past four years show that in summer months 8 highly enriched streams in the midst of intensive livestock and row-crop production have much higher DO values than a comparison “reference” stream. These and other data collected by UGA and USDA-ARS scientists have lead the hypothesis that a combination of high summer-time temperatures, low flows, and high loads of organic carbon contributed by riparian vegetation contribute to naturally low DO levels in unimpacted Coastal Plain streams. A proposal to establish an extensive stream-monitoring program to establish the natural range of DO at critical flow conditions has been submitted to Georgia DNR-EPD administered U.S. Environmental Protection Agency’s Clean Water Act Section 319(h) Grant Program.

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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
Georgia Forestry Commission	State of Georgia	A set of guidelines to better protect Georgia's streams and other water bodies from forestry non-point source pollution (primarily erosion and sedimentation).	Ongoing	Ongoing	Voluntary

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

Measurable Milestones	Schedule		Comments
	Start	End	
Some Best Management Practices (BMP's) for forestry to minimize erosion and stream sedimentation from forestry practices are: timber harvesting, chemical treatments, controlled burning, and streamside management. In 1998, 98% of the 43,906 acres that were evaluated were in compliance with the BMP's. In 1992, the stream compliance was 95.5%. The goal is to meet 100% compliance with each BMP.	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Federal Clean Water Act Section 404	EPA (situations involving forestry are normally referred to the GFC to determine compliance with this regulation)	Requires normal ongoing agricultural and silvicultural practice to adhere to BMP's and 15 baseline provisions for road construction and maintenance in and across waters of the US including lakes, rivers, perennial and intermittent streams, wetlands, sloughs in order to qualify for the exemption from the permitting process.	June 6, 1988	Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Sediment from dredge or fill activities	Agriculture and silviculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC can report status on accomplishments or complaints investigated involving this act to the RDC as needed.	Continuous		EPA identifies silviculture as the lowest contribution source of non-point pollution

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Memo to the Field: Application of BMP's to mechanical silvicultural site preparation activities for the establishment of pine plantations in the Southeast	EPA/ US Army Corps of Engineers - (cases normally referred to GFC to make initial determination)	Identifies certain bottomland hardwood wetlands that should be subject to permitting if converting to pine plantations.	November 1995	Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Biota, habitat	Silviculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC can provide status reports as needed	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Federal Farm Bill (Swamp buster)	US Department of Agriculture Natural Resource Conservation Service	Prohibits landowners participating in federal price support programs from converting forested wetlands to agriculture		Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Biota (habitat)	Agriculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Status reports can be provided as needed	Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Water Quality Control Act (OCGA 12-5-20)	GA DNR EPD	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, etc.) into waters of the State in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats.	1964	Current	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Sediments, nutrients, pesticides, and habitat	Silviculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC investigates and mediates silvicultural complaints on behalf of EPD. Unresolved complaints are turned over to EPD for enforcement. Status reports can be provided to RDC as needed.	Continuous		

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
GA Growth Planning Act (OCGA 12-2-8)	GA DNR, Department of Community Affairs, and local units of government	Authorized GA DNR to develop minimum planning standards and procedures that local jurisdictions could adopt and enforce pertaining to the protection of river corridors, mountaintops, water supply watersheds/reservoirs, groundwater recharge areas, and wetlands. Silvicultural activities may be exempted from permitting requirements provided the activity complies with BMP's	1991	Local jurisdictions have to adopt ordinances to address these areas	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Biota, habitat, sediment	Silviculture	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
GFC can determine applicability and BMP implementation for local units of government.	Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Farm Bill 2002	Natural Resources Conservation Service (NRCS)	The Farm Security and Rural Investment Act of 2002 is landmark legislation for conservation funding and for focusing on environmental issues. The conservation provisions will assist farmers and ranchers in meeting environmental challenges on their land. This legislation simplifies existing programs and creates new programs to address high priority environmental and production goals. The 2002 Farm Bill enhances the long-term quality of our environment and conservation of our natural resources.	2002	Current	Voluntary
Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness			
Low Dissolved Oxygen	Various Sources	Effective			
Measurable Milestones			Schedule		Comments
N/A			Start	End	
			Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Farm Services Agency	State of Georgia / Local FSA	Stabilizing farm income, helping farmers conserve land and water resources, providing credit to new or disadvantaged farmers and ranchers, and helping farm operations recover from the effects of disaster are the missions of the U.S. Department of Agriculture's Farm Service Agency (FSA).	Ongoing	Ongoing	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Agriculture Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
The 1996 Act removed the link between income support payments and farm prices by providing for a one-time sign-up for a Production Flexibility Contract whereby producers receive seven annual fixed but declining production flexibility contract payments through 2002. This program, entitled the Agricultural Market Transition Act (AMTA), reflects FSA's direction over the next seven years whereby farm commodity prices will be largely determined by market factors, rather than government subsidies and production controls. To receive payments and loans on program commodities, producers must have entered into a 7-year contract by August 1, 1996. More than 98 percent of the eligible acres enrolled. Program commodities include wheat, corn, sorghum, barley, oats, upland cotton, and rice. The contract requires producers to comply with existing conservation plans for the farm, wetland provisions, and planting flexibility provisions, as well as to keep the land in agricultural use. Except for fruits and vegetables, any commodity or crop may be planted on contract acreage on a farm.	Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Conservation Reserve Program (CRP)	United States Department of Agriculture (USDA)	The Conservation Reserve Program (CRP) provides technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. The program provides assistance to farmers and ranchers in complying with Federal, State, and tribal environmental laws, and encourages environmental enhancement. The program is funded through the Commodity Credit Corporation (CCC). The Conservation Reserve Program reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices.		Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
CRP is administered by the Farm Service Agency, with NRCS providing technical land eligibility determinations, Environmental Benefit Index Scoring, and conservation planning.	Continuous		Utilized in this region due to high amount of farm production.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Environmental Quality Incentives Program (EQIP)	United States Department of Agriculture (USDA)	The Environmental Quality Incentives Program (EQIP) was reauthorized in the Farm Security and Rural Investment Act of 2002 (Farm Bill) to provide a voluntary conservation program for farmers and ranchers that promotes agricultural production and environmental quality as compatible national goals. EQIP offers financial and technical help to assist eligible participants install or implement structural and management practices on eligible agricultural land.		Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Various Sources	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
EQIP offers contracts with a minimum term that ends one year after the implementation of the last scheduled practices and a maximum term of ten years. These contracts provide incentive payments and cost-shares to implement conservation practices. Persons who are engaged in livestock or agricultural production on eligible land may participate in the EQIP program. EQIP activities are carried out according to an environmental quality incentives program plan of operations developed in conjunction with the producer that identifies the appropriate conservation practice or practices to address the resource concerns. The practices are subject to NRCS technical standards adapted for local conditions. The local conservation district approves the plan.	Continuous		NRCS EQIP Funds and provide for cross fencing, paddock development, rotational grazing, and nutrient and pest management. It helps to provide healthier pastures and more efficient use of grasses.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/Projected Date	Status	Regulatory/Voluntary
Manure Management Plan	Individual	A manure management plan can help provide the most use of the nutrients in manure while protecting the water quality, and meeting manure-handling requirements.	Ongoing	Ongoing	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Manure	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Keeping records of manure applications and continuous soil samples.	Continuous		Utilized in this region due to high amount of farm production.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Nutrient Management Program	7 Rivers RC & D, NRCS, 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.	1991	In-progress	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Nitrates and Phosphates Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measured amount of DO in impacted waterways.	Continuous		Utilized in this region due to high amount of farm production.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Pesticides Management Program	7 Rivers RC & D, NRCS, and University of Georgia Extension Agent	Encourages and educates farmers on the correct usage and amount of pesticides to reduce the impact of pesticides in the waterways.	1991	In-progress	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Pesticides Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Reduction in the measured amount of DO in impacted waterways.	Continuous		Utilized in this region due to high amount of farm production.

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Soil Testing	University of Georgia Cooperative Extension Services and Individual	Soil samples are taken to determine what nutrients are needed for any agricultural or silvicultural use. This reduces or avoids any unnecessary applications of fertilizers, herbicides, pesticides, etc. so to minimize harmful runoff.		Current	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Nitrates, Phosphates, Pesticides Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Soil samples are taken on a regular basis.	Continuous		Utilized in this region due to high amount of farm production.

Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
Georgia Rules and Regulations for Water Quality Control (391-3-6)	GA DNR EPD	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, etc.) into waters of the state in amounts harmful to public health, safety, or welfare, or to animals, birds, or aquatic life or the physical destruction of stream habitats.	1964 Revised June 2002	Enforced	Regulatory

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness
Low Dissolved Oxygen	Industry/Non-industry Runoff	Effective

Measurable Milestones	Schedule		Comments
	Start	End	
Compliance with rules and various permits issued under rules.	Continuous		

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Regulation/Ordinance or Management Measure	Responsible Government, Organization or Entity	Description	Enacted/ Projected Date	Status	Regulatory/ Voluntary
South Georgia Multi-Jurisdictional Solid Waste Management Plan	Berrien County	10 Counties participate and currently seek to coordinate solid waste management activities throughout the South Georgia Region and to cooperate in the activities of local Comprehensive Plans. The prime focus here is the collection and disposal of waste in a manner, which prevents pollution of surface and sub-service water resources.	1992	In-progress	Voluntary

Pollutant(s) Affected	Potential Sources of Pollutant(s)	Anticipated or Past Effectiveness	Schedule		Comments
			Start	End	
Low Dissolved Oxygen	Solid Waste	Effective	Continuous	N/A	This management measure is currently being updated.

POTENTIAL FUNDING SOURCES

Source	Responsible Authority	Status	Anticipated Funding Amount
319 (h) Grant	EPD/State of Georgia	Must Apply	Unknown
Greenspace Funds	Georgia Department of Natural Resources	Must Apply	Unknown
Conservation Reserve Program	USDA	Must Apply	Unknown
Environmental Quality Incentive Program (EQIP)	Natural Resources Conservation Service	Must Apply	Unknown
Wildlife Habitat Incentive Program	Natural Resources Conservation Service	Must Apply	Unknown
Urban Resources Partnership (URP)	Forest Service, the Natural Resources Conservation Service, the National Park Service, the Environmental Protection Agency, and the Department of Housing and Urban Development	Must Apply	Unknown
Toxics Grant	Jessie Smith Noyes Foundation	Must Apply	Unknown
Sustainable Agriculture Grant	Jessie Smith Noyes Foundation	Must Apply	Unknown
Sustainable Communities Grant	Jessie Smith Noyes Foundation	Must Apply	Unknown
Progressive Fund	The Fund for Southern Communities	Must Apply	Unknown
Brownfields Assessment Demonstration Pilots	EPA Office of Solid Waste and Emergency Response	Must Apply	Unknown
Pollution Prevention Grants	EPA Office of Pollution Prevention and Toxics	Must Apply	Unknown
DCA Educational Outreach	Department of Community Affairs	Must Apply	Unknown

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MONITORING PLAN

Organization	Pollutants	Purpose/Description	Time Frame		Status: (Previous, Current, Proposed)
			Start	End	
Georgia Adopt-A-Stream Water Quality Monitoring	Low Dissolved Oxygen	To help educate and improve/or maintain a streams quality	TBA	TBA	Proposed
USGS Water Quality Testing	Low Dissolved Oxygen	Assess Water Quality	N/A	Continuous	Current
Local government Scrap Tire Management Program	Low Dissolved Oxygen	To reduce the illegal dumping of scrap tires, reduction in solid waste, and other environmental issues by hiring an enforcement / education officer to respond and monitor	TBA	TBA	Proposed
Local / County Governments Water Quality Testing	Low Dissolved Oxygen	Local testing to ensure quality on impaired streams as they relate to effluent discharge	N/A	Continuous	Ongoing
National Environmentally Sound Production Agriculture Laboratory (NESPAL) and USDA-ARS Southeast Watershed Laboratory Monitoring Program	Low Dissolved Oxygen	To study the water quality of the entire Suwannee Basin	N/A	N/A	Current
National Environmentally Sound Production Agriculture Laboratory (NESPAL) Monitoring Program	Low Dissolved Oxygen	319 (h) grant to study dissolved oxygen	2003	2006	Grant applied
Georgia Forestry Commission (GFC) Forest Water Quality Program	Low Dissolved Oxygen, Biota	BMP Education Complaint Investigation BMP Monitoring monthly Assurance Exams	N/A	N/A	Current Current Proposed

COMMENTS: On behalf of the stakeholders of the Suwannee River Basin, the South Georgia RDC suggest further studies on each of the streams that have been listed on the 303(d) list since there have been numerous concerns about when the samples were taken and the number of samples taken from each stream. We also feel that the natural range of dissolved oxygen levels in the streams of the South Georgia Coastal Plains need to be further studied and established specifically for this region. Until the standard is developed, there are currently several organizations that have been involved with monitoring studies related to this region and their data could be used to help develop a proper standard for this region.

Suwannee River Basin
TMDL Implementation Plan
Cat Creek Watershed
HUC10# 0311020303

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