STATE OF GEORGIA
TMDL IMPLEMENTATION PLAN FOR: Crooked Creek (Biota Impacted) RIVER BASIN: Oconee
(STREAM) (PARAMETER) PLAN DATE: 8/02

Prepared by: Phil Clark Middle Georgia Regional Development Center Address: 175-C Emery Highway City: Macon State: GA Zip: 31217 e-mail: pclark@mgrdc.org Date Submitted to EPD: 9-15-02	Or Prepared By: Address: City: State: Zip: e-mail: Date Submitted to EPD:

General Information

Obtain this information from the TMDL document or other information. When completed, this document will be a self-contained report independent of the TMDL document.

TMDL ID (to be entered by EPD)	
Water body name	Crooked Creek
HUC basin name	Oconee
HUC number	030701011802
Primary county	Putnam
Secondary county	N/A
Primary RDC	Middle Georgia
Secondary RDC	N/A
Water body location	Putnam County
Miles or area impacted	9 Miles
Parameter addressed in plan	Sediment (Biota Impacted)
Water use classification	Fishing
Degree of impairment	Partially supporting use X
	Not supporting use
Date TMDL approved by EPA	
Impairment due to	Point sources
	Nonpoint sources X
	Both

Point source-Form A; Nonpoint source-Form B; Both-Form A+B+C

Significant Stakeholders

Identify local governments, agricultural organizations or significant landholders, commercial forestry organizations, businesses and industries, and local organizations including environmental groups with a major interest in this water body. (See Appendix A.)

Name/Organization					
Address					
City		State		Zip	
Phone				e-mail	
Name/Organization					
Address					
City		State		Zip	
Phone				e-mail	
Name/Organization					
Address					
City		State		Zip	
Phone				e-mail	
Name/Organization					
Address					
City		State		Zip	
Phone				e-mail	
Name/Organization					
Address					
City		State		Zip	
Phone				e-mail	

If more, add to comments on last page.

SUMMARY OF ALLOCATION MODEL RESULTS FROM TMDL DOCUMENT (existing load, target TMDL, and needed reduction)

EXISTING LOAD	**TARGET TMDL**	**NEEDED REDUCTION**
11,093 tons/year	11,093 tons/year	No net increase in sediment load.

I. IDENTIFY **NONPOINT SOURCE** CATEGORIES AND SUBCATEGORIES OR INDIVIDUAL SOURCES WHICH MUST BE CONTROLLED TO IMPLEMENT LOAD ALLOCATIONS:

List possible nonpoint sources contributing to impairment including those identified in TMDL document.

SOURCE	**DESCRIPTION OF CONTRIBUTION TO IMPAIRMENT**	**RECOMMENDED LOAD REDUCTION (FROM TMDL)**
Silvaculture	Timber harvesting (fire breaks, prescribed boring, layout of access roads, log decks and skidding trails; construction and stabilization of these areas; cutting of trees and tree plantings) and upslope practices.	No net increase.
Cropland	Sheet and soil erosion.	No net increase.
Roads	Loosened soil particles carried away from roadway, ditch or road bank by water, wind, and traffic. Road construction (erosive road-fill soil types, shape and size of coarse surface aggregate; poor soils surface and/or surface drainage, poor roadbed construction, roadway shape, and inadequate runoff discharge outlets).	No net increase.

II. DESCRIBE ANY REGULATORY OR VOLUNTARY ACTIONS INCLUDING MANAGEMENT MEASURES OR OTHER CONTROLS BY GOVERNMENTS OR INDIVIDUALS THAT SPECIFICALLY APPLY TO THE POLLUTANT AND THE WATERBODY FOR WHICH THE TMDL WAS WRITTEN, THAT WILL BE ACCOMPLISHED THROUGH RELIABLE AND EFFECTIVE DELIVERY MECHANISMS, AND THAT WILL HELP ACHIEVE THE LOAD ALLOCATIONS IN THE TMDL:

See the attachment for more instructions.

Existing or required regulatory actions

RESPONSIBLE GOVERNMENT, ORGANIZATION OR ENTITY	NAME OF REGULATION/ORDINANCE	DESCRIPTION	ENACTED OR PROJECTED DATE (mm/yy)	STATUS
Putnam County	Soil/Sedimentation Control Ordinance	Requires soil/sedimentation control plans for certain land disturbance activities.	10/7/97	In effect
Putnam County	Water Supply Watershed Protection Ordinance	Setbacks and buffers along perennial streams within seven-mile radius upstream from water source intake.	1/5/99	In effect
Putnam County	Groundwater Recharge Area Protection Ordinance	Controls agricultural impoundment areas, lot size for septic tanks, etc.	1/5/99	In effect
EPA/Army Corps of Engineers	Clean Water Act/Section 404	Requires permit for dredge and fill activities in the lakes, rivers, and perennial and intermittent streams, wetlands, sloughs and natural ponds. Requires normal forestry practices to adhere to BMPs and 15 baseline provisions for forest road construction and maintenance and agriculture in the above waters in order to qualify for the silvaculture exemption from permitting process.	1972/6-88	In effect
U.S. Department of Agriculture	Federal Farm Bill	Prohibits landowners from converting forested wetlands to agricultural uses.	N/A	In effect

Georgia DNR-EPD	Georgia Water Quality Act	Makes it unlawful to discharge excessive pollutants (sediments, nutrients, pesticides, animal waste, etc.) into waters of the State in amounts harmful to public health.	1964	In effect
Georgia DNR	Georgia Planning Act	Authorized Georgia DNR to develop standards to protect wetlands, groundwater recharge areas, water supply watersheds, protected river corridors and mountains.	1991	In effect
Georgia State Board of Registration for Foresters	Standards of Practice	Failure to practice professional forestry in accordance with standards shall constitute unprofessional conduct and be grounds for disciplinary action.	1993	In effect
Putnam County	Zoning Ordinance	Regulates use, lot size, yard setbacks, etc. for the protection of the health, safety, and general welfare of the citizens of Putnam County.	1991; Updated 6/97	In effect
Putnam County	Floodplain Management Ordinance	Regulates development in 100-year floodplain.	1994	In effect
Putnam County	Wetlands Protection Ordinance	Regulates development near wetlands, refers to Corps of Engineers when possible regulated activities are within 50 feet of wetlands.	12/00	In effect

Existing voluntary actions

RESPONSIBLE ORGANIZATION OR ENTITY	NAME OF ACTION	DESCRIPTION	ENACTED OR PROJECTED DATE (mm/yy)	STATUS
Georgia Forestry Commission	Forestry Water Quality Program	Includes the development of Best Management Practices (BMPs), BMP education programs, and BMP monitoring for BMP compliance.	1978; Manual updated 6/99	In effect
University of Georgia – Cooperative Extension Service	Promotion of Soil and Water Conservation in Agriculture	Provides classroom construction, basic applied research, consulting assistance, preparation of comprehensive nutrient management plans, and information for nonpoint source water quality impacts.	N/A	In effect

Georgia Soil and Water Conservation Commission	Agriculture Non-Point Source Management Lead Agency	Develops non-point source management programs and conducts educational activities to promote protection of land and water devoted to agricultural uses.	1937	In effect
Natural Resources Conservation Service	Financial/Technical Assistance to Farmers	Includes standards and specifications for agriculture BMPs. Implements Environmental Quality Incentives Program, Conservation Reserve Program, and Small Watershed Program. Conducts National Resources Inventory every five years. Provides web-based database application (Performance and Results Measurement System, PRMS).	N/A	In effect
Rock Eagle 4-H Center	Education Programs	Includes numerous environmental programs and workshops for school-age children and adults in a variety of settings.	N/A	In effect
Putnam County 4-H Programs	Agricultural Education for Youth	Provides agricultural and natural resources education.	N/A	In effect
Putnam County	Public Education	(1) A videotape series that identifies significant natural resources in Putnam County, identifies the vulnerability of those resources to land development and other activities, and identifies ways the public can participate in protecting and preserving these resources; (2) a curriculum that focuses on Putnam County's natural resources and the student's role in protecting them; and (3) a speaker's bureau of noted local/state officials who could speak to various groups on the State of Putnam County's natural resources and ways the public can help protect and preserve them.	N/A	In effect

Additional recommended regulatory or other measures which should be implemented to reduce the loads of the TMDL parameter

ENTITY/ORGANIZATION RESPONSIBLE	NAME OF PROPOSED REGULATION/ORDINANCE/ OTHER	DESCRIPTION	ENACTED OR PROJECTED DATE (mm/yy)	STATUS
Putnam County	Buffers/Setbacks along All Perennial Streams	Adhere to existing BMPs and established BMP criteria.	10/03	Proposed
Putnam County	Zoning Ordinance Revisions	Create flexibility that creates incentives to land developers and builders to protect on-site wetlands, steep slopes, erodible soils, etc., i.e. use of innovative land use design and conservation easements.	10/03	Proposed
Putnam County	Establish Partnerships with NRCS, Georgia Forestry Commission, Soil and Water Conservation Commission, University of Georgia Cooperative Extension Service.	Set mutual responsibilities on the monitoring of BMPs, providing assistance to farmers and foresters in implementing BMPs, and providing educational programs to farmers and foresters and the general public.	10/03	Proposed
Georgia DNR-EPD	Georgia Adopt-A-Stream	Expand use of program in the county by enlisting and training new volunteers to conduct visual surveys and stream cleanup on Crooked Creek.	10/03	Expansion of Program to Crooked Creek
Putnam County	Maintenance of Unpaved Roads and Roadside Ditches	Evaluate procedure for maintaining unpaved roads and roadside ditches and utilize the publication entitled, Recommended Practices Manual, A Guideline for Maintenance and Service of Unpaved Roads as a guide in making changes to its procedure.	10/03	Proposed

III. SCHEDULE FOR IMPLEMENTING MANAGEMENT MEASURES OR OTHER CONTROL ACTIONS:

These must be implemented as expeditiously as practicable within five years of when the implementation plan is accepted by EPA.

IMPLEMENTATION ACTION	**YEAR 1 10/02-03**	**YEAR 2 10/03-04**	**YEAR 3 10/04-05**	**YEAR 4 10/05-06**	**YEAR 5 10/06-07**
Form stakeholders group	X				
Organize implementation work with stakeholders and local officials to identify remedial measures and potential funding sources	X				
Identify sources of TMDL parameter	X				
Develop management programs to control runoff including identification and implementation of BMPs (Phase I): Agriculture	X	X	X	X	X
Forestry	X	X	X	X	X
Organize and implement education and outreach programs	X	X	X	X	X
Detect and eliminate illicit discharges		X	X	X	X
Evaluate additional management controls needed					X
Monitor and evaluate results		X	X	X	X
Reassess TMDL allocations		X	X	X	X
Provide periodic status reports on implementation of remedial activities	X	X	X	X	X
If needed, begin process for Phase II (next 5 years) and subsequent phases					X

IV. PROJECTED ATTAINMENT DATE AND BASIS FOR THAT PROJECTION:

The projected attainment date is 10 years from acceptance of the implementation plan by EPA.

V. MEASURABLE MILESTONES:

- Number of management controls and activities already implemented ____17____

- Number of management controls and activities proposed in five-year work program ____5____

- Number of management controls and activities actually implemented in five-year work period _____(to be completed after 5 years)

- Stream sampled to identify areas of concern See monitoring plan

- Other _____ _____

- Other _____ _____

VI. MONITORING PLAN:

Monitoring data that placed stream on 303(d) list will be provided if requested.

Describe previous or current sampling activities or other surveys to detect sources or to measure effectiveness of management measures or other controls.

ORGANIZATION	TIME FRAME	PARAMETERS	PURPOSE	STATUS
DNR – Wildlife Resources Division	1998/99	Biota Index of Integrity (IBI)	Evaluate health of stream's biological system in order to assess degradation from various sources.	Very Poor IBI Rating
DNR – EPD	1999	DO, Temp, Conductivity, pH, Turbidity, BOD, Nitrate-Nitrate, Ammonia, Total Phosphorus, Total Alkalinity, Total Suspended Solids, Total Organic Carbon, Metals, Semi-Volatile Organics, Pesticides, PCBs.	Assess for the presence or absence of chemical pollution.	No Chemical Violations

Describe any planned or proposed sampling activities or other surveys. (Scheduled EPD sampling can be found in the Basin Planning document.)

ORGANIZATION	TIME FRAME	PARAMETERS	PURPOSE	STATUS
DNR – Wildlife Resources Division	2003	IBI	Conduct biotic analysis during period of normal flow.	On-Going
DNR-EPD	2004	Chemical Analysis	Basin Planning	On-Going
Adopt-A-Stream – Crooked Creek	2003-07	Conduct stream cleanup and visual survey.	Assist in evaluating the effectiveness of voluntary and regulatory programs.	Expansion of Program to Crooked Creek

VII. CRITERIA TO DETERMINE WHETHER SUBSTANTIAL PROGRESS IS BEING MADE:

- % concentration or load change (monitoring program)

- 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

1. Monitoring Program – The biota analysis was conducted in 1999 during a period of little or no flow. To properly determine the biotic character of this stream, it is recommended that Georgia DNR Wildlife Preservation Division conduct a biotic analysis during period of normal flow. DNR-EPD will perform chemical testing to determine if violations to state standards have occurred. The newly formed Adopt-A-Stream Program will conduct visual surveys along Crooked Creek on an annual basis that will be used in evaluating the effectiveness of voluntary/ regulatory programs put in place to meet the non-increase in sediment load requirement identified in the TMDL.

2. Regulatory Control Activities Installed (ordinances, laws, education programs) – Monitor the number of regulatory and voluntary programs implemented during the five-year period.

3. Best Management Practices Installed (agriculture and forestry) – Ensure all necessary BMPs are being implemented in the Crooked Creek watershed.