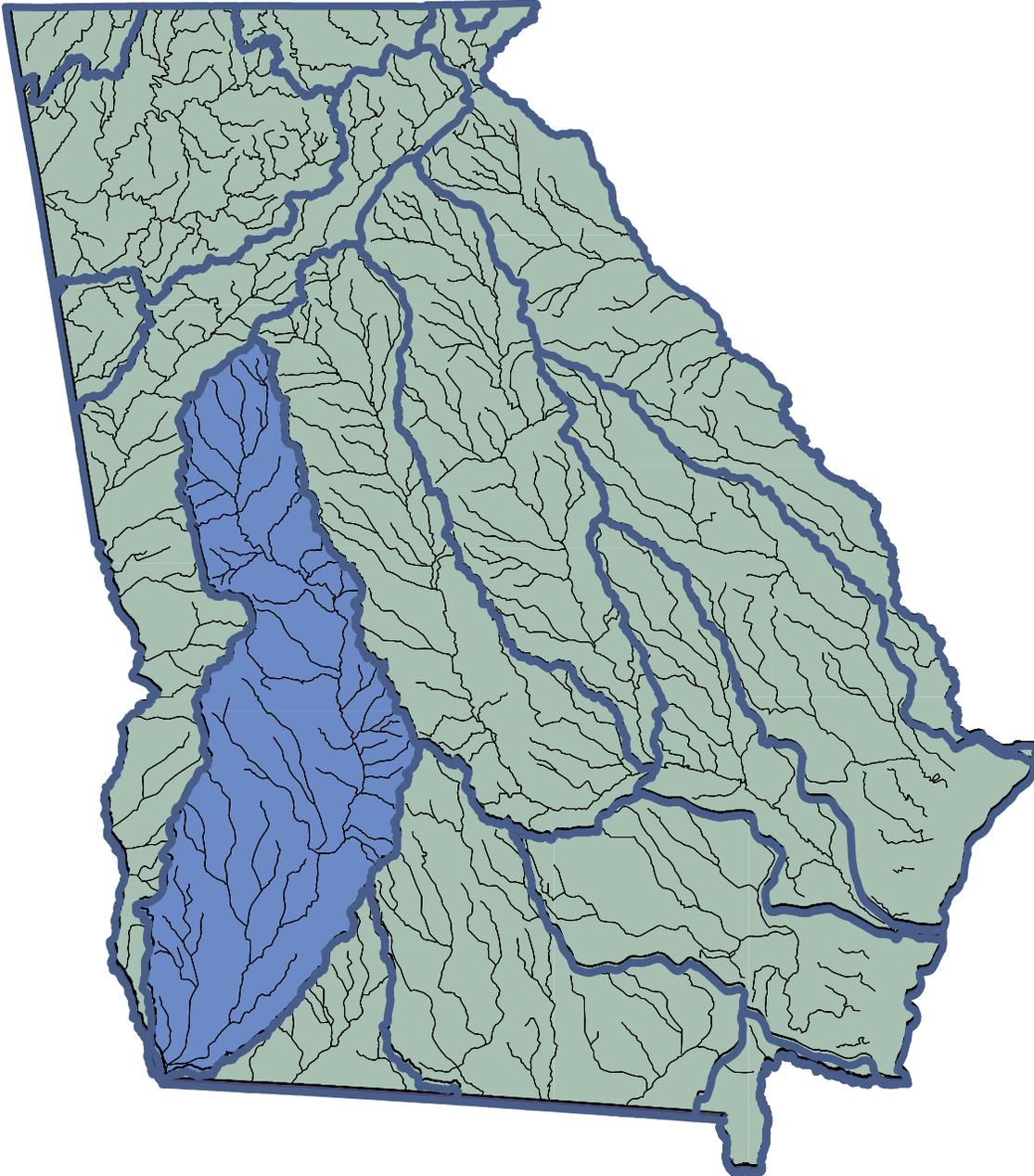

FLINT RIVER BASIN MANAGEMENT PLAN 1997



GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Flint River Basin Management Plan 1997

Preface

This report was prepared by the Environmental Protection Division (EPD), Georgia Department Natural Resources (EPD). It represents a snapshot of the EPD files and, in certain cases, information has been presented in summary form from those files. The reader is therefore advised to use this condensed information with the knowledge that it is a summary document and more detailed information is available in the EPD files.

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Contents

List of Acronyms and Abbreviations xii

Executive Summary ES-1

1. Introduction 1-1

1.1 Purposes and Organization of This Plan 1-1

1.2 Georgia’s Watershed Protection Approach 1-3

 1.2.1 The Beginning of RBMP 1-3

 1.2.2 RBMP Framework Elements 1-7

 1.2.2.1 River Basin Management Units 1-8

 1.2.2.2 RBMP Cycle 1-8

 1.2.2.3 River Basin Groups and Planning Schedule 1-12

 1.2.2.4 Forums for Involving Stakeholders in RBMP 1-13

 1.2.3 Key Benefits of RBMP 1-17

 1.2.4 Making the Transition to RBMP 1-18

1.3 Flint Basin Planning Schedule and Opportunities for Stakeholder Involvement 1-19

 1.3.1 RBMP Activities 1-19

 1.3.2 ACF Comprehensive Study 1-21

2. River Basin Characteristics 2-1

2.1 River Basin Description 2-1

 2.1.1 River Basin Boundaries 2-1

 2.1.2 Climate 2-3

 2.1.3 Physiography and Geology 2-3

 2.1.4 Surface Water Resources 2-7

 2.1.5 Ground Water Resources 2-17

 2.1.6 Biological Resources 2-21

2.2 Population and Land Use 2-26

 2.2.1 Population 2-26

 2.2.2 Employment 2-26

 2.2.3 Land Cover and Use 2-28

2.3	Local Governments and Jurisdictions	2-43
2.3.1	Counties and Municipalities	2-43
2.3.2	Regional Development Centers	2-45
2.4	Water Use Classifications	2-45
2.4.1	Georgia’s Water Use Classification System	2-45
2.4.2	Water Use Classifications for the Flint River Basin	2-48
	References	2-49
3.	Water Quantity	3-1
3.1	Drinking Water Supply	3-1
3.1.1	Drinking Water Sources	3-1
3.1.2	Drinking Water Demands	3-2
3.1.3	Drinking Water Permitting	3-9
	3.1.3.1 <i>Summary of the EPD Drinking Water Program</i>	3-9
3.2	Surface Water Quantity	3-9
3.2.1	Surface Water Supply Sources	3-9
3.2.2	Surface Water Supply Demands and Uses	3-9
3.2.3	Surface Water Withdrawal Permitting	3-15
3.2.4	Flooding and Floodplain Management	3-16
3.3	Ground Water Quantity	3-16
3.3.1	Ground Water Sources	3-16
3.3.2	Ground Water Supply Demands and Uses	3-17
3.3.3	Ground Water Supply Permitting	3-18
	References	3-21
4.	Environmental Stressors	4-1
4.1	Sources and Types of Stressors	4-1
4.1.1	Point Sources	4-1
	4.1.1.1 <i>NPDES Permitted Wastewater Dischargers</i>	4-1
	4.1.1.2 <i>Combined Sewer Overflows (CSO)</i>	4-5
	4.1.1.3 <i>NPDES Permitted Stormwater Discharges</i>	4-12
	4.1.1.4 <i>Non-Discharging Waste Disposal Facilities</i>	4-13
4.1.2	Nonpoint Sources	4-21

4.1.2.1	<i>Nonpoint Sources from Agriculture</i>	4-21
4.1.2.2	<i>Nonpoint Sources from Urban, Industrial, and Residential Lands</i>	4-32
4.1.2.3	<i>Nonpoint Sources from Forestry</i>	4-33
4.1.2.4	<i>Atmospheric Deposition</i>	4-34
4.1.3	Flow And Temperature Modification	4-35
4.1.4	Physical Habitat Alteration	4-35
4.2	Stressor Summary	4-35
4.2.1	Nutrients	4-36
4.2.2	Oxygen Depletion	4-37
4.2.3	Metals	4-39
4.2.4	Fecal Coliform Bacteria	4-47
4.2.5	Synthetic Organic Chemicals	4-48
4.2.6	Stream Flow and Flooding	4-53
4.2.7	Sediment	4-54
4.2.8	Habitat Degradation and Loss	4-54
	References	4-55
5.	Assessment	5-1
5.1	Assessment of Water Quantity	5-1
5.1.1	Municipal and Industrial Water Uses	5-1
5.1.2	Agriculture	5-2
5.1.3	Recreation	5-2
5.1.4	Hydropower	5-2
5.1.5	Navigation	5-2
5.1.6	Waste Assimilation Capacity	5-2
5.2	Assessment of Water Quality	5-3
5.2.1	Water Quality Standards	5-3
5.2.2	Surface Water Quality Monitoring	5-4
5.2.3	Data Analysis	5-10
5.2.4	Assessment of Water Quality and Use Support	5-12
5.2.4.1	<i>Upper Flint River Basin (HUC 03130005)</i>	5-12

5.2.4.2	<i>Middle Flint River Basin (HUC 03130006 and HUC 03130007)</i>	5-19
5.2.4.3	<i>Lower Flint River Basin (HUC 03130008, HUC 03130009 and HUC 03130010)</i>	5-21
	References	5-23
6.	<i>Concerns and Priority Issues</i>	6-1
6.1	Identified Water Quality Planning and Management Concerns	6-1
6.2	Short-term Water Quality Action Priorities for EPD	6-6
6.3	Priorities for Water Quantity Concerns	6-8
6.4	Priorities for Additional Data Collection	6-8
	References	6-10
7.	<i>Implementation Strategies</i>	7-1
7.1	General/basin Wide Management Strategies	7-1
7.1.1	General Surface Water Protection Strategies	7-1
7.1.2	Management of Permitted Point Sources	7-3
7.1.3	Nonpoint Source Management	7-7
7.1.4	Floodplain Management	7-17
7.1.5	Wetlands Management	7-18
7.1.6	Stakeholder Involvement / Stewardship Strategies	7-19
7.1.7	Groundwater Protection Strategies	7-22
7.2	Targeted Management Strategies	7-24
7.2.1	Upper Flint Basin (HUC 03130005)	7-24
7.2.2	Middle Flint Basin (HUC 03130006 and 03130007)	7-36
7.2.3	Lower Flint Basin (HUC 03130008, 03130009, and 03130010)	7-44
	References	7-52
8.	<i>Future Issues and Challenges</i>	8-1
8.1	The Need for Continuing and Adaptive Management	8-1
8.2	Working to Strengthen Planning and Implementation Capabilities	8-2
8.3	Addressing the Impacts from Continued Population Growth and Land Development	8-4
8.4	Entering the Next Iteration of the Basin Cycle	8-4

Appendix A: River Basin Planning Act A-1

Appendix B: Georgia Instream Water Quality Standards For All Waters ... B-1

Appendix C: Point Source Control Efforts in the Flint River Basin C-1

Appendix D: Permitted Discharges in the Flint River Basin D-1

**Appendix E: Support of Designated Uses for Rivers, Streams, and Lakes
in the Flint River Basin, 1994-1995** E-1

Appendix F: Georgia Adopt-A-Stream Program F-1

Figures

1-1.	Georgia River Basin Management Planning Vision, Mission and Goals	1-5
1-2.	Georgia River Basin Management Planning Objectives	1-6
1-3.	Water Resources and Related Environmental Laws and Programs	1-7
1-4.	Major River Basins in Georgia	1-9
1-5.	Georgia River Basin Management Planning Cycle	1-10
1-6.	Major River Basin Groups for River Basin Management Planning in Georgia	1-14
1-7.	Georgia River Basin Management Planning Schedule	1-15
1-8.	Stakeholder Relationships	1-16
1-9.	Flint River Basin Schedule, 1993-1999	1-20
1-10.	Flint River Basin Planning Schedule, 1999-2004	1-21
1-11.	Flint River Basin Local Advisory Committee Members	1-22
2-1.	Location of the Flint River Basin within the Apalachicola-Chattahoochee-Flint River Basin (modified from Couch et al., 1996)	2-2
2-2.	Hydrologic Units and Counties of the Flint River Basin	2-4
2-3.	Major Land-resource Areas in the Apalachicola-Chattahoochee-Flint River Basin (modified from Couch et al., 1996)	2-8
2-4.	Hydrography, Upper Flint River Basin, HUC 03130005	2-10
2-5.	Hydrography, Middle Flint River Basin, HUC 03130006	2-11
2-6.	Hydrography, Kinchafoonee-Muckalee Creeks Basin, HUC 03130007	2-12
2-7.	Hydrography, Lower Flint River Basin, HUC 03130008	2-13
2-8.	Hydrography, Ichawaynochaway Creek Basin, HUC 03130009	2-14
2-9.	Hydrography, Spring Creek Basin, HUC 03130010	2-15
2-10.	Summary of Daily Discharge, Flint River at Newton (station 0235300), 1957-1995 ...	2-16
2-11.	Location of Mainstem Dams and Power-generating Plants in the Flint River Basin (modified from Couch et al., 1996)	2-18

2-12.	Hydrogeologic Units Underlying the Apalachicola-Chattahoochee-Flint River Basin (Outcrop Areas) (modified from Couch et al., 1996)	2-19
2-13.	Population Density in the Apalachicola-Chattahoochee-Flint Basin, 1990 (modified from Couch et al., 1996)	2-27
2-14.	Land Use, Upper Flint River Basin, HUC 03130005, USGS 1972-76 Classification Updated with 1990 Urban Areas	2-29
2-15.	Land Use, Middle Flint River Basin, HUC 03130006, USGS 1972-76 Classification Updated with 1990 Urban Areas	2-30
2-16.	Land Use, Kinchafoonee-Muckalee Creeks Basin, HUC 03130007, USGS 1972-76 Classification Updated with 1990 Urban Areas	2-31
2-17.	Land Use, Lower Flint River Basin, HUC 03130008, USGS 1972-76 Classification Updated with 1990 Urban Areas	2-32
2-18.	Land Use, Ichawaynochaway Creek Basin, HUC 03130009, USGS 1972-76 Classification Updated with 1990 Urban Areas	2-33
2-19.	Land Use, Spring Creek Basin, HUC 03130010, USGS 1972-76 Classification Updated with 1990 Urban Areas	2-34
2-20.	Land Cover, Upper Flint River Basin, HUC 03130005	2-35
2-21.	Land Cover, Middle Flint River Basin, HUC 03130006	2-36
2-22.	Land Cover, Kinchafoonee-Muckalee Creeks Basin, HUC 03130007	2-37
2-23.	Land Cover, Lower Flint River Basin, HUC 03130008	2-38
2-24.	Land Cover, Ichawaynochaway Creek Basin, HUC 03130009	2-39
2-25.	Land Cover, Spring Creek Basin, HUC 03130010	2-40
2-26.	Silvicultural Land in the Flint River Basin (modified from Couch et al., 1996)	2-42
2-27.	Agricultural Land in the Flint River Basin (modified from Couch et al., 1996)	2-44
3-1.	Surface Water Intakes, Upper Flint River Basin, HUC 03130005	3-3
3-2.	Surface Water Intakes, Middle Flint River Basin, HUC 03130006	3-4
3-3.	Surface Water Intakes, Kinchafoonee-Muckalee Creeks Basin, HUC 03130007	3-5
3-4.	Surface Water Intakes, Lower Flint River Basin, HUC 03130008	3-6
3-5.	Surface Water Intakes, Ichawaynochaway Creek Basin, HUC 03130009	3-7
3-6.	Surface Water Intakes, Spring Creek Basin, HUC 03130010	3-8

Contents

4-1.	Location of Municipal Wastewater Treatment Plants in the Flint River Basin	4-3
4-2.	NPDES Sites Permitted by EPD, Upper Flint River Basin, HUC 03130005	4-6
4-3.	NPDES Sites Permitted by EPD, Middle Flint River Basin, HUC 03130006	4-7
4-4.	NPDES Sites Permitted by EPD, Kinchafoonee-Muckalee Creeks Basin, HUC 03130007	4-8
4-5.	NPDES Sites Permitted by EPD, Lower Flint River Basin, HUC 03130008	4-9
4-6.	NPDES Sites Permitted by EPD, Ichawaynochaway Creek Basin, HUC 03130009	4-10
4-7.	NPDES Sites Permitted by EPD, Spring Creek River Basin, HUC 03130010	4-11
4-8.	Land Application Sites, Upper Flint River Basin, HUC 03130005	4-15
4-9.	Land Application Sites, Middle Flint River Basin, HUC 03130006	4-16
4-10.	Land Application Sites, Kinchafoonee-Muckalee Creeks Basin, HUC 03130007	4-17
4-11.	Land Application Sites, Lower Flint River Basin, HUC 03130008	4-18
4-12.	Land Application Sites, Ichawaynochaway Creek Basin, HUC 03130009	4-19
4-13.	Land Application Sites, Spring Creek Basin, HUC 03130010	4-20
4-14.	Landfills, Upper Flint River Basin, HUC 03130005	4-22
4-15.	Landfills, Middle Flint River Basin, HUC 03130006	4-23
4-16.	Landfills, Kinchafoonee-Muckalee Creeks Basin, HUC 03130007	4-24
4-17.	Landfills, Lower Flint River Basin, HUC 03130008	4-25
4-18.	Landfills, Ichawaynochaway Creek Basin, HUC 03130009	4-26
4-19.	Landfills, Spring Creek Basin, HUC 03130010	4-27
4-20.	Total Phosphorus Concentrations, Flint River, Plant Mitchell Intake, South of Albany, 1968-1997	4-38
4-21.	Total Phosphorus Concentrations, Flint River, Georgia Hwys 26 and 49 near Oglethorpe, 1968-1997	4-40
4-22.	Total Phosphorus Concentrations, Flint River, South of Albany, 1968-1997	4-41
4-23.	Total Phosphorus Concentrations, Flint River, State Docks at Lake Seminole, 1968-1997	4-42
4-24.	Dissolved Oxygen Concentrations, Flint River Near Inman, 1968-1997	4-43
4-25.	Dissolved Oxygen Concentrations, Flint River, Near Oglethorpe, 1968-1997	4-44

4-26.	Dissolved Oxygen Concentrations, Flint River, South of Albany, 1968-1997	4-45
4-27.	Dissolved Oxygen Concentrations, Flint River, State Docks at Lake Seminole, 1968-1997	4-46
4-28.	Fecal Coliform Bacteria Concentrations, Flint River near Inman, 1968-1997	4-49
4-29.	Fecal Coliform Bacteria Concentrations, Flint River near Oglethorpe, 1968-1997	4-50
4-30.	Fecal Coliform Bacteria Concentrations, Flint River, South of Albany, 1968-1997	4-51
4-31.	Fecal Coliform Bacteria Concentrations, Flint River, State Docks at Lake Seminole, 1968-1997	4-52
5-1.	Flint Basin Trend Monitoring Network Station Locations, 1994	5-6
5-2.	Flint Basin Trend Monitoring Network Station Locations, 1995	5-7
5-3.	Assessment of Water Quality Use Support in the Upper Flint River Basin, HUC 03130005	5-13
5-4.	Assessment of Water Quality Use Support in the Middle Flint River Basin, HUC 03130006	5-14
5-5.	Assessment of Water Quality Use Support in the Middle Flint River Basin, HUC 03130007	5-15
5-6.	Assessment of Water Quality Use Support in the Lower Flint River Basin, HUC 03130008	5-16
5-7.	Assessment of Water Quality Use Support in the Lower Flint River Basin, HUC 03130009	5-17
5-8.	Assessment of Water Quality Use Support in the Lower Flint River Basin, HUC 03130009	5-18

Tables

2-1.	Hydrologic Unit Codes (HUCs) of the Flint River Basin	2-3
2-2.	Major Dams and Impoundments in the Flint River Basin	2-17
2-3.	Threatened or Endangered Wetland and Aquatic Plant Species in the Flint Basin ...	2-25
2-4.	Population Estimates by HUC Unit (1990)	2-28
2-5.	Land Cover Statistics for the Flint River Basin.....	2-41
2-6.	Agricultural Operations in the Flint River Basin, 1987-1991	2-45
2-7.	Georgia Counties in the Flint River Basin	2-46
2-8.	Georgia Municipalities in the Flint River Basin	2-46
2-9.	Regional Development Centers in the Flint River Basin.....	2-47
2-10.	Georgia Water Use Classifications and Instream Water Quality Standards for Each Use	2-47
2-11.	Waters in the Flint River Basin Classified as Drinking Water or Recreation	2-48
3-1.	Projected Municipal and Industrial Demands Including Percent Returned	3-10
3-2.	Permits for Surface Water Withdrawals in the Flint River Basin	3-11
3-3.	Agricultural Water Demand Including Crops/Orchards, Turf, Nursery, Livestock/Poultry, and Aquaculture (MG per year, including crops/orchards, turf, nursery, livestock/poultry, and aquaculture demand from NRCS, 1996, Based on Medium Demand Projects Without Water Conservatory	3-13
3-4.	Active Municipal and Industrial Ground Water Withdrawal Permits in the Flint River Basin	3-19
4-1.	Major Municipal Wastewater Treatment Facilities in The Flint River Basin	4-2
4-2.	Summary of NPDES Permits in the Flint River Basin	4-4
4-3.	Major Industrial and Federal Wastewater Treatment Facilities in the Flint River Basin	4-5
4-4.	Albany CSOs in the Flint River Basin	4-12
4-5.	Permitted Municipal Separate Storm Sewer System, Flint River Basin	4-13

4-6.	Wastewater Land Application Systems in the Flint Basin	4-14
4-7.	Estimated Loads from Agricultural Lands by County (SCS, 1993)	4-30
4-8.	List of Watersheds Potentially Impacted by Agricultural Nonpoint Source Pollution in the Flint River Basin	4-31
4-9.	Summary of Phosphorus Concentration Data in Flint River Mainstem, 1968-1997 ..	4-39
4-10.	Summary of Dissolved Oxygen Concentration Data in Flint River Mainstem, 1968-1997	4-47
4-11.	Summary of Fecal Coliform Count Data in Flint River Mainstem, 1968-1997	4-53
5-1.	Georgia Water Use Classifications and Instream Water Quality Standards for Each Use	5-3
5-2.	Georgia Narrative Water Quality Standards for All Waters (Excerpt from Georgia Rules and Regulations for Water Quality Control Chapter 391-3-6-.03 - Water Use Classification and Water Quality Standards)	5-4
5-3.	Major Lakes in the Flint River Basin Ranked by Sum of Trophic State Index Values, 1980-1993	5-9
5-4.	Parameters for Fish Tissue Testing	5-9
6-1.	Summary of Concerns in the Flint River Basin	6-2
6-2.	Summary of Sources of Use Impairments in the Flint River Basin	6-2
6-3.	EPD's Short-Term Priorities for Addressing Waters Not Fully Supporting Use	6-7
7-1.	Flint River Basin - Prioritized and General Appropriations under EQIP	7-12

List of Acronyms and Abbreviations

Ac	acre
Ac-ft	acre-feet
ACF	Apalachicola-Chattahoochee-Flint Basin
ACT/ACF	Alabama-Coosa-Tallapoosa/Apalachicola-Chattahoochee Flint Basin
ADEM	Alabama Department of Environmental Management
ARC	Atlanta Regional Commission
ARS	USDA Agricultural Research Service
BMPs	best management practices
BOD	biochemical oxygen demand
CAES	University of Georgia College of Agricultural and Environmental Sciences
Cd	cadmium
CFR	Code of Federal Regulations
COE	U.S. Army Corps of Engineers
CPUE	catch per unit effort (fishing)
CRMP	Chattahoochee River Modeling Project
CRP	Conservation Reserve Program
CSGWPP	Comprehensive State Ground Water Protection Plan
CSMTF	Community Stream Management Task Force
CSO	Combined Sewer Overflow
Cu	copper
CWA	U.S. Clean Water Act
DCA	Georgia Department of Community Affairs
DNR	Georgia Department of Natural Resources
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
EPD	Georgia Environmental Protection Division
EQIP	Environmental Quality Incentives Program
FEMA	Federal Emergency Management Agency
FFY	Federal fiscal year
FIP	Forestry Incentives Program
FSA	Farm Service Agency
ft	feet
ft ² /d	square feet per day
ft ³ /s	cubic feet per second
gal/m	gallons per minute

GDA	Georgia Department of Agriculture
GEMA	Georgia Emergency Management Agency
GFA	Georgia Forestry Association
GFC	Georgia Forestry Commission
GPC	Georgia Power Company
GPD	gallons per day
GSWCC	Georgia Soil and Water Conservation Commission
Hg	mercury
HUC	Hydrologic unit code (USGS)
IBI	Index of Biotic Integrity
kg	kilogram
km ²	square kilometer
kW	kilowatt
LAS	land application system for wastewater
LUST	leaking underground storage tank
MCL	Maximum Contaminant Level for drinking water
meq/l	milliequivalent
mg/l	milligrams per liter
MG	million gallons
MGD	million gallons per day
mi ²	square miles
ml	milliliter
MLMP	Major Lakes Monitoring Project
MOU	memorandum of understanding
MPN	most probable number (for quantification of fecal coliform bacteria)
MS4	municipal separate stormwater system
M&I	municipal and industrial
NFIP	National Flood Insurance Program
NOI	notice of intent
NPDES	National Pollution Discharge Elimination System
NPS	nonpoint source
NRCS	Natural Resources Conservation Service of USDA
NURE	National Uranium Resource Evaluation
NWI	National Wetlands Inventory (USF&WS)
Pb	lead
PCB	polychlorinated biphenyl
ppm	parts per million; equivalent to mg/l
RBMP	River Basin Management Planning

List of Acronyms and Abbreviations

RBP	Rapid Bioassessment Protocol
RC&D	Resource Conservation and Development Council
RDC	Regional Development Center
RM	river mile
SCS	Soil Conservation Service (now NRCS)
SOCs	Synthetic Organic Chemicals
STATSGO	State Soil Geographic Database (USDA)
SWCD	Soil and Water Conservation District
TMDL	Total Maximum Daily Load, as specified in the CWA
TTSI	Georgia combined lake trophic state index
UGA	University of Georgia
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USF&WS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WET	whole effluent toxicity
WHIP	Wildlife Habitat Incentives Program
WPCP	water pollution control plant
WRD	Georgia Wildlife Resources Division
WRP	Wetland Reserve Program
WWTP	wastewater treatment plant
Zn	zinc
µg/l	micrograms per liter
7Q10	7-day average low flow with a once-in-ten-year recurrence interval

Executive Summary

Overview

This document is Georgia's management plan for the Flint River Basin. It has been produced as part of Georgia's new River Basin Management Planning (RBMP) approach to water quality management, begun in 1993. The purposes of this plan are to target and coordinate water quality and quantity management efforts within the Flint River Basin, and to establish a documented basis for future management efforts. This plan provides information on key river basin characteristics, describes the status of water quality and quantity in the Flint River Basin, identifies present and future water resource demands, presents and facilitates the implementation of water protection efforts, and enhances stakeholder understanding and involvement in basin planning.

Georgia's RBMP is an effort to facilitate the protection and enhancement of rivers, streams, lakes, estuaries, and ground water through comprehensive and integrated, regulatory and non-regulatory water resources management. The river basin provides a functional unit for coordinating management efforts that integrate terrestrial, aquatic, geologic, and atmospheric processes. This is the first river basin management plan produced under RBMP for the Flint River Basin. RBMP provides an iterative, cyclical approach to water resources management, and the Flint River Basin plan will be updated every five years. A draft of the plan was reviewed by governmental partners, the Flint River Basin Advisory Committee, and the public. Stakeholder meetings were held in Griffin and Albany in September, 1997 to solicit comments and recommendations regarding the river basin management plan.

It is a basic premise of RBMP that river basin management is more efficient and effective when all stakeholders—government agencies, local governments, farmers, industries, landowners, environmentalists, etc.—participate in the process, and share knowledge and resources. A major purpose of this plan is to provide information to the public and encourage involvement of interested stakeholders in the management of the resources of the Flint River Basin.

Basin Description

The Flint River Basin is located in the south-western part of Georgia. The mainstem of the river flows 349 miles from metropolitan Atlanta to Lake Seminole near the Florida state line, draining an area of 8,460 square miles, and includes the cities of Albany, Bainbridge and Americus, among others. The Flint River Basin contains parts of the Piedmont and Coastal Plain physiographic provinces that extend throughout the southeastern United States.

The Flint River is largely a free-flowing system, with only two moderately-sized impoundments that form Lake Blackshear near Warwick and Lake Worth near Albany. The basin also encompasses important subsurface water resources, contained in five major underground aquifers—the Floridan, Clairborne, Clayton, Providence, and crystalline rock aquifers.

More than 600,000 people live in the Flint River Basin, but the basin remains largely rural in character. Over 50 percent of the area is forested or in wetlands, and another 40 percent is in agricultural use. Agricultural operations in the basin include poultry, dairy, beef, crop, orchard,

and vegetable production. The urban areas include manufacturing and service-related employment.

Water Quantity

Water in the Flint River Basin supports many uses including municipal drinking water, industrial water supply, agricultural irrigation, recreation, hydropower production, navigation, waste assimilation, and habitat for aquatic life. Water withdrawals from surface and ground water sources have increased substantially in the last quarter century, resulting in greater demands on what are essentially finite supplies. This trend is expected to continue, with municipal and industrial demand projected to increase by approximately 30 million gallons per day (MGD) over the next 20 years, and agricultural demand by about 106 MGD for the same period. As demands increase, it may become increasingly difficult to satisfy competing uses.

Concerns about the availability of water for future needs have prompted the States of Alabama, Florida and Georgia to form an interstate compact for management of the Alabama-Coosa-Tallapoosa/ Apalachicola-Chattahoochee-Flint (ACT/ACF) basins. This agreement is expected to establish some form of commitment for Georgia to allow specified quantities of water from the Flint River Basin to pass to Florida. Such a commitment will not establish how water must be used within Georgia, but it is possible that there may be limitations on the total amounts of water that can be utilized within the Flint River Basin.

Water Quality

Water quality within the Flint River Basin is generally good, and has been improving as major point source discharges of wastewater have been placed under stringent controls during the last three decades. For instance, conditions in the Flint below Atlanta have improved dramatically since the early 1970's as more advanced treatment of municipal wastewater was required. Yet, some waters in the basin currently are only partially supporting or not supporting their designated uses, and require additional management.

Protection of water quality in Georgia is regulated by a number of federal and state laws, including the Federal Clean Water Act, and the State Water Quality Control Act. An important component of the state's water quality protection efforts is the promulgation of water quality standards, which consist of water use classifications, numeric standards for water quality parameters and chemical concentrations, and narrative requirements for water quality. Water quality standards serve as a target for water protection efforts and as a baseline for water quality assessment.

Georgia carries out monitoring and assessment of water quality to meet the requirements of state and federal laws and of the state's new RBMP approach. Monitoring includes monthly sampling for a number of parameters at a number of stations each year, sampling of surface water and fish tissues for toxic substances, assessment of toxicity of point source effluents, monitoring of major lakes, facility compliance sampling, and assessment of biological communities. As part of the RBMP approach, many monitoring stations are rotated to focus on different basins each year, on a five-year cycle. Every two years, the state publishes a water quality assessment report, required by section 305(b) of the Clean Water Act. Based upon monitoring results and other evidence, waters of the state are assessed as supporting, partially supporting, or not supporting of designated uses, as described in Section 5 of this river basin

plan. The most recent water quality assessment report was published in 1996; the assessments of waters of the Flint River Basin are provided in Appendix E.

Water quality is affected by changes to the environment (referred to as *stressors*) which adversely affect aquatic life or impair human uses of a waterbody. It may be a direct load of a pollutant, or other source of stress. Identified stressors currently affecting water quality in some segments of the Flint River Basin may include nutrients, oxygen-demanding waste, pathogens, toxic substances (such as metals and pesticides), erosion and sedimentation, reduced stream flow due to water withdrawals, habitat degradation and loss, and flooding (a natural phenomenon exacerbated by loss of wetland areas and conversion of forested land to urban or agricultural uses).

Stressors come from many different sources. In the past, the major focus of management was on concentrated *point sources* of municipal and industrial wastewater discharge. But, the pollution impact on Georgia's streams has radically shifted over the last two decades. Streams are no longer dominated by untreated or partially treated sewage discharges which resulted in little or no aquatic life and threats to human health. The sewage is now treated, oxygen levels have recovered, and fisheries have followed. However, other sources of pollution are now affecting Georgia's streams. These sources are referred to as *nonpoint*, and consist of mud, litter, bacteria, pesticides, fertilizers, metals, oils, grease, and a variety of other pollutants which are washed from rural and urban lands by stormwater. Expected growth in population and employment in the basin will mean more potential stress from stormwater runoff and nonpoint source loading.

Priority Issues and Management Strategies

Within a few localized waterbody segments of the Flint River Basin, water quality problems are attributed to permitted point source discharges from municipal wastewater treatment plants or industries. Georgia's Environmental Protection Division (EPD) has direct regulatory authority over these discharges, and has instituted corrective actions.

The vast majority of identified water quality problems are attributed, in whole or in part, to nonpoint sources. A full list of priority issues for water quality management in the Flint River Basin is provided in Section 6, and proposed management strategies are discussed in Section 7. Among the most important and widespread issues are the following:

- Violations of water quality standards for fecal coliform bacteria, associated with both urban and rural nonpoint runoff;
- Violations of water quality standards for metals associated with nonpoint urban runoff;
- Erosion and sedimentation, variously associated with construction, agriculture, forestry, and unpaved rural roads, leading to degradation of aquatic habitat; and
- Excess loading of nutrients, derived from municipal wastewater treatment plants and urban and agricultural nonpoint sources, which can produce excess algal growth and degraded conditions in impoundments.
- Insufficient dissolved oxygen, due for the most part to inputs of oxygen-demanding waste from nonpoint sources.

Because there are so many small sources of nonpoint loading spread throughout the basin, they are not amenable to control by state agency permitting and enforcement, even where regulatory authority exists. Rather, control of nonpoint loading will require the cooperative efforts of many partners, including state agencies, individual landowners, agricultural and forestry interests, local county and municipal governments, and Regional Development Councils. A key reason for adopting the RBMP approach is to provide the necessary forum for coordinating the activities of these many partners. Key aspects of this management approach include developing equitable management strategies which do not impose an unfair burden on any one sector, and encouraging planning for the future as population increases and land uses change.

The strategies presented in Section 7 recognize the need to develop cooperative management approaches involving all partners. Accordingly, important aspects of these strategies are the identification of key participants and roles, and documentation of an action plan, laying out what each partner will do to address a specific priority issue over the next five year cycle of the basin plan. Because this is the first basin-wide management plan for the Flint River Basin under RBMP, it is fully expected that these strategies will evolve and improve over time.

Next Steps

This plan constitutes another step in management of the water resources in the Flint River Basin, but not the final step. It is important for all to understand that there will never be a final step. Management is ongoing and dynamic because changes in resource use and condition occur continually, as do changes in management resources and perspectives. Therefore, management planning and implementation must remain flexible and adapt to changing needs and capabilities.

Following a brief period for focusing on implementation of this plan, the Flint River Basin will enter into its second iteration of the basin management cycle (scheduled for April, 1999). The next cycle will provide opportunity to review issues that were not fully addressed during the first cycle and to reassess for identification of any new priority issues. Partners will not have to start from scratch during the next iteration. The information in this document provides a historical account of what is known and planned to date. Future management efforts can and should build on the foundation created by previous, ongoing, and already planned management actions, as identified within this document.