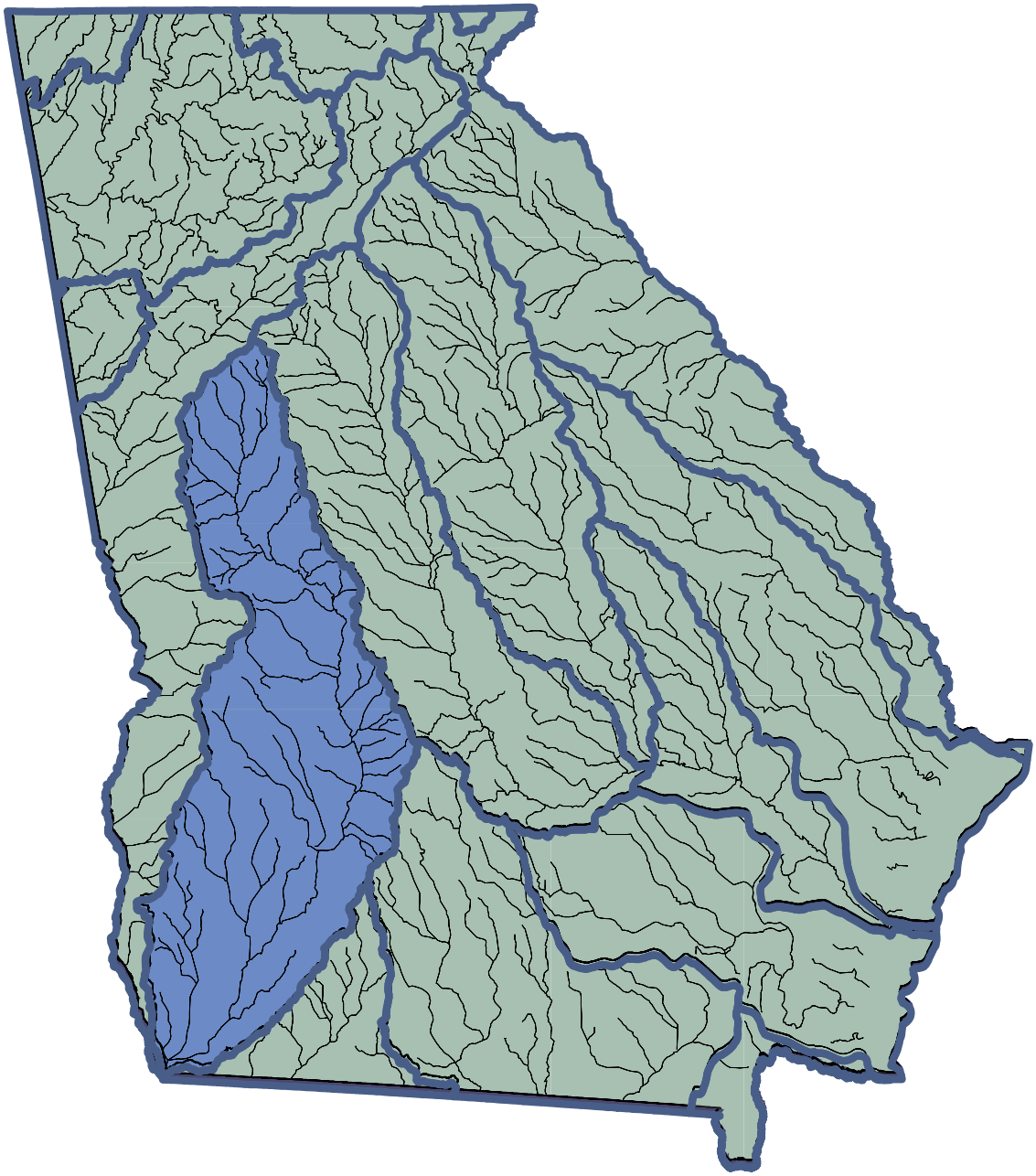
FLINT RIVER BASIN MANAGEMENT PLAN 1997



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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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 undeground 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

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.