



EXECUTIVE
SUMMARY

DISTRICT
WATER
MANAGEMENT
PLAN

NORTHWEST
FLORIDA
WATER
MANAGEMENT
DISTRICT



NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT



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Executive Summary, District Water Management Plan
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TABLE OF CONTENTS

| | |
|--|----|
| FOREWORD | 2 |
| DISTRICT MISSION AND GOALS | 3 |
| AGENCY OVERVIEW | 4 |
| WATERSHED MANAGEMENT | 6 |
| WATER RESOURCES | 8 |
| MAJOR ACCOMPLISHMENTS, TRENDS, AND NEW DIRECTIONS | 11 |
| THE DISTRICT WATER MANAGEMENT PLAN | 16 |
| KEY ISSUES AND STRATEGIES BY AREA OF RESPONSIBILITY | 17 |
| Water Supply | 17 |
| Flood Protection and Floodplain Management | 18 |
| Water Quality | 19 |
| Natural Systems | 20 |
| INTERGOVERNMENTAL COORDINATION ACTIVITIES | 20 |
| FUNDING FOR DISTRICT PROGRAMS | 21 |
| NWFWMD FUNDING BY MAJOR PROGRAM CATAGORY | 22 |
| OVERVIEW OF DISTRICT PROGRAMS, PLANS, AND FUNDING | 23 |
| LIST OF FIGURES | |
| FIGURE 1. Water Management District Boundaries | 5 |
| FIGURE 2. Major Watershed Boundaries | 7 |
| FIGURE 3. District Lands – Acres Acquired | 11 |
| FIGURE 4. District and Other Public Lands | 12 |
| FIGURE 5. DWMP Component Plans and Documents | 16 |
| FIGURE 6. Projected Daily Water Demand Increases from 2000 Through 2025 | 17 |
| FIGURE 7. NWFWMD Funding by Major Program Category | 22 |
| FIGURE 8. District Programs and Related AORs, Documents, and Funding Sources | 23 |



Cover Photograph: Econfina Creek Water Management Area

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FOREWORD

Northwest Florida is diverse in its land and water resources, its people, and its communities. From pristine wilderness to densely populated communities, the region reflects the varying circumstances, opportunities, and needs facing the state as a whole. The District Water Management Plan (DWMP) characterizes water resource challenges confronting the Northwest Florida Water Management District (NFWFMD/District) now and in the future, and it describes the overall strategy of the District to meet these challenges. It outlines the framework for state, regional, and local coordination of water management activities, and identifies goals for each of the District's four statutorily assigned Areas of Responsibility (AORs): water supply, water quality, flood protection and floodplain management, and natural systems. The DWMP also:

- ◆ Communicates the District's mission and the AOR-specific objectives and strategies that address current regional water resource issues, consistent with the directives and policies embodied in state water law.
- ◆ Incorporates new and revised programs, priorities, and plans.
- ◆ Provides a resource for local governments, state agencies, and other stakeholders.
- ◆ Promotes integration and coordination of governmental activities to help resolve water management issues in northwest Florida.
- ◆ Identifies measures intended to gauge the success of District water resource management strategies in order to strengthen accountability to the public.
- ◆ Advances a watershed management approach to addressing regional water resource issues.
- ◆ Provides for a 20-year planning horizon, encompassing 2005-2025.

First adopted in 1994, the District Water Management Plan is updated every five years.

This Executive Summary gives an overview of more detailed information contained in the 2005 update of the DWMP related to northwest Florida's water resources, current and emerging water management issues, the District's responsibilities, and its key strategies to meet the resource needs of the region. The DWMP can be found at: www.nwfwmd.state.fl.us/pubsdata.html.

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ECONFINA BLUE SPRING

DISTRICT MISSION AND GOALS

The District's mission and its goals for each Area of Responsibility are:

MISSION:

Protect and manage the water resources of northwest Florida in a sustainable manner for the continued welfare of its residents and natural systems.

GOALS:

Water Supply



Promote the availability of sufficient water for all existing and future reasonable-beneficial uses and affected natural systems.

- The District will continue to work with local governments, utilities, and state and federal agencies to plan appropriately for and ensure the availability of sufficient water supplies in a manner that meets the needs of the human community and sustains associated natural systems. -

Flood Protection and Floodplain Management



Maintain natural floodplain functions and minimize harm from flooding.

- Emphasizing a non-structural approach, including land acquisition and mapping of flood-prone areas, the District will work to protect and, where necessary, restore natural floodplain functions, and help to protect the health, safety, and welfare of the region's residents and integrity of the region's natural systems. -

Water Quality



Protect and improve the quality of the District's water resources.

- The District will continue to work with local governments, state and federal agencies, and regional stakeholders to protect and, where necessary, restore water quality. -

Natural Systems



Protect and enhance natural systems.

- The District will continue to work in cooperation with state and federal agencies, local governments, and regional stakeholders to protect natural resources of regional significance in a comprehensive, integrated manner, in order to preserve and restore natural systems and maintain public benefits and compatible uses. -



AGENCY OVERVIEW

◆ Jurisdiction

The Northwest Florida Water Management District is one of five water management districts in Florida (see **Figure 1**) created by the Water Resources Act of 1972 (Chapter 373, Florida Statutes) to address regional water resource issues while furthering statewide goals and policies. The District stretches from the St. Marks River Basin in Jefferson County to the Perdido River in Escambia County, covering approximately 11,305 square miles, or 17 percent of the state's geographic area. There are 63 incorporated cities within the District. It is bordered on the north by Georgia and Alabama, on the west by Alabama, on the south by the Gulf of Mexico, and on the east by the Suwannee River Water Management District, which shares Jefferson County with the District.

◆ Governing Board

Appointed by the Governor and confirmed by the Senate, a nine-member Governing Board oversees and guides District activities. Board members serve four-year terms without compensation, and may be reappointed.

◆ District Responsibilities and Operations

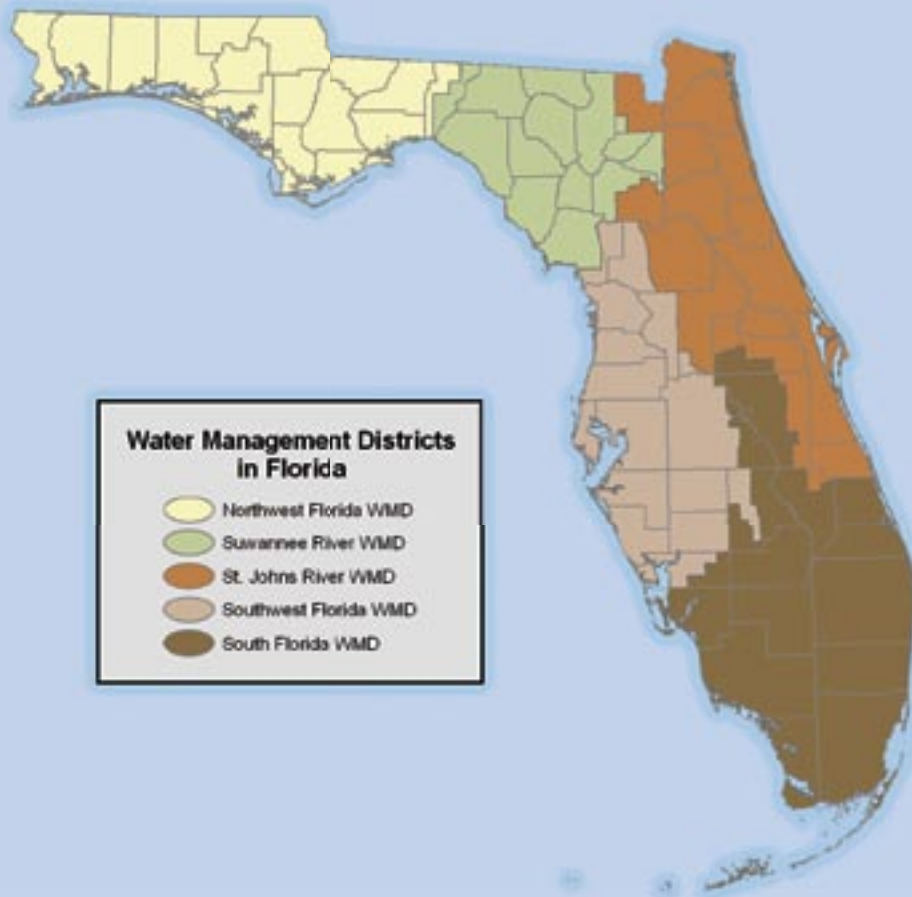
The District is charged by statute with planning for and managing water resources within its jurisdiction to address the needs of humans and natural systems. To meet this charge, the District conducts a variety of regulatory and non-regulatory activities, including:

- ❖ Water Supply Planning
- ❖ Land Acquisition and Management
- ❖ Water Resource Development
- ❖ Water Supply Development Assistance
- ❖ Environmental Resource Permitting
- ❖ Water Use Permitting
- ❖ Well Construction Permitting
- ❖ Surface Water Permitting
- ❖ Surface Water Improvement and Management
- ❖ Regional Wetland Mitigation
- ❖ Water Resource Education and Outreach
- ❖ Floodplain Mapping
- ❖ Technical Assistance
- ❖ Research, Data Collection, Analysis, and Monitoring
- ❖ Establishing Minimum Flows and Levels or Reservations from Use

An Executive Director oversees a staff of approximately 90 that includes hydrologists, geologists, biologists, engineers, planners, foresters, land managers, technicians, computer analysts, and administrative personnel.

FIGURE 1. WATER MANAGEMENT DISTRICT BOUNDARIES

Northwest Florida Water Management District



WATERSHED MANAGEMENT



Watershed management is based on the principle that water resources are most effectively protected and managed according to the natural hydrologic characteristics of the landscape. Northwest Florida has seven major watersheds, all of which cross county boundaries. All except the St. Andrew Bay watershed are shared with Georgia or Alabama (see **Figure 2**). The watershed areas encompassing northwest Florida cover about 33,000 square miles across three states, nearly three times the area of the District.

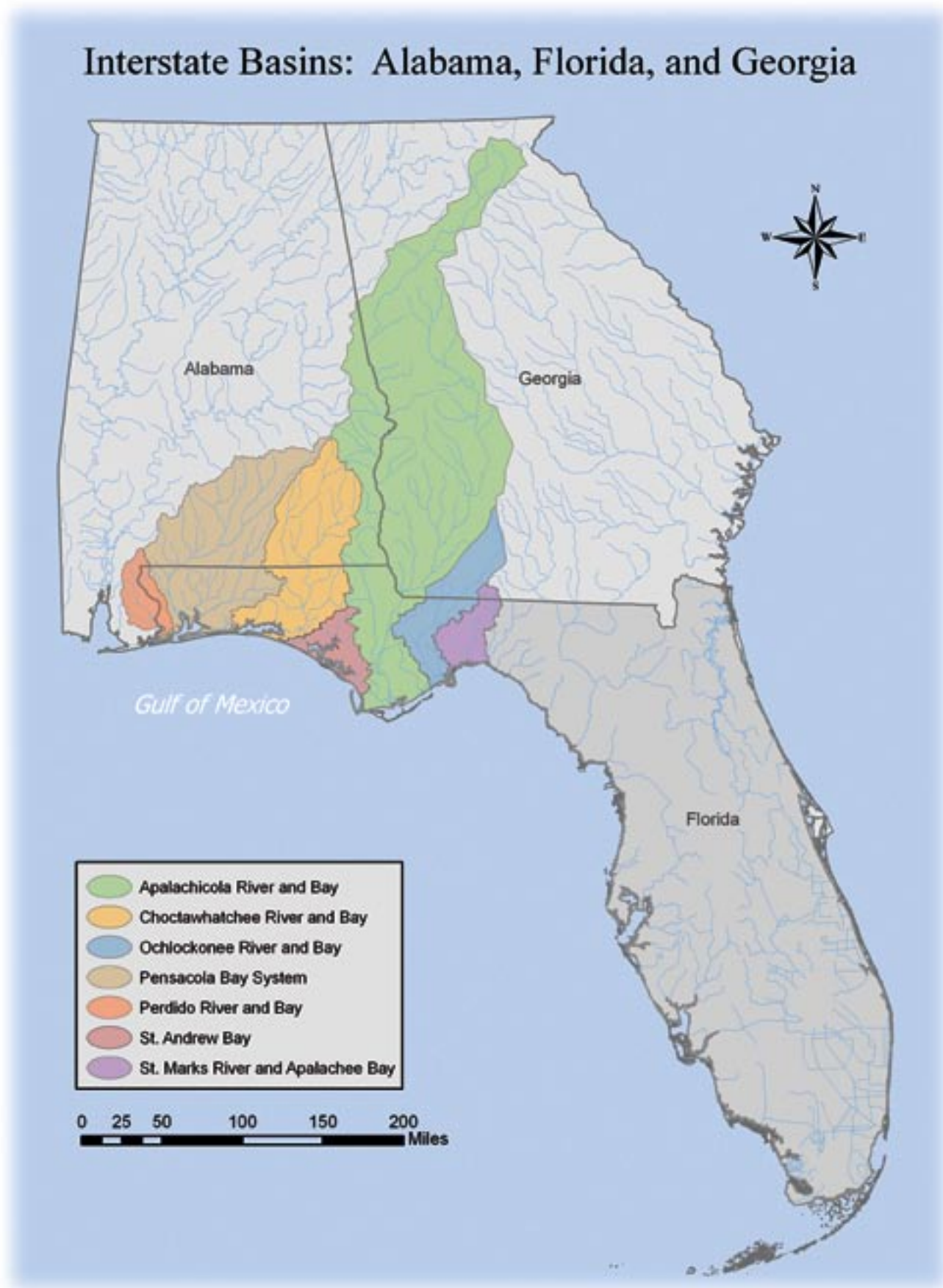
Watershed management involves comprehensive, coordinated management of water resources, and promotes human uses that are compatible with

the preservation of natural systems. It includes the sophisticated analysis of water resources to understand existing conditions and identify priorities for sustainable water resource development, watershed resource protection and restoration, and public education and outreach. Successful watershed management requires cooperation and partnerships among organizations and individuals within a watershed. The District's watershed management approach integrates a variety of state, federal, and local programs, such as Surface Water Improvement and Management, water supply planning, and floodplain map modernization.



LIVE OAK POINT, CHOCTAWHATCHEE BAY

FIGURE 2. MAJOR WATERSHED BOUNDARIES





WATER RESOURCES

Northwest Florida is rich in both surface and ground water resources, and it is important to understand the relationship between them. Rainfall contributes to surface waters and recharges ground water systems, including surficial aquifers and underlying confined aquifers. The same ground water systems may discharge into surface waters through seepage and spring discharges. In addition, much of the District has a karst topography, which includes sinkholes, springs, and openings such as solution holes that result from the dissolution of limestone. Interaction between surface water and ground water in this porous environment can be rapid.

◆ Surface Water

Rivers and Streams

Northwest Florida has over 4,200 miles of rivers and streams, more than any other area of the state. The region also has a greater stream density and larger drainage basins than any other region of the state. In terms of basin area and flow, the District has three of the state's five largest rivers: the Apalachicola, Choctawhatchee, and Escambia rivers. All of these rivers drain large interstate watersheds, encompass varied topography and physical characteristics, and support a rich diversity of life. The Apalachicola River has the largest contributing watershed of



PERDIDO RIVER



RATTLESNAKE LAKE

This surface water-ground water connection has important implications for water supply and water quality. For example, while Bay County relies on surface water for its drinking water supply, ground water and ground water recharge replenish that resource. Also, point and nonpoint source pollution can affect both surface and ground waters, including drinking water supplies, springs, and aquatic ecosystems. Preservation of these vulnerable environmental areas is essential to both water quality and quantity.

any river in Florida – the interstate Apalachicola-Chattahoochee-Flint rivers basin. It also has the greatest discharge of any of Florida's rivers, and, from its headwaters, is the longest river in the state. The six largest rivers in the District have a combined average flow of 27 billion gallons per day.

Lakes

Several distinct concentrations of lakes exist in northwest Florida. For example, the Sand

Hill Lakes region of Washington and Bay counties supports unique floral communities and includes karst lakes and ponds within the Econfina Recharge Area. The Red Hills region of Leon and Jefferson counties also includes a series of large karst and swamp lakes. Lake Jackson, in Leon County, is an Aquatic Preserve and Outstanding Florida Water, and has been a SWIM priority waterbody since 1988. The coastal dune lakes, primarily located in Walton and Bay counties, are geographically rare and ecologically important for both plants and animals. The dune lakes and associated coastal strand, wetland, and forest communities are under significant threat of alteration and loss from development.

River floodplain lakes are also prominent in some areas (for example, Lake Wimico and the Dead Lakes), and there are a number of swamp lakes and ox-bow lakes across the District. There are also numerous sinkholes and small karst ponds, and created ponds are common features in agricultural and developed areas. The District also has several major artificial lakes, including Deer Point Lake Reservoir in Bay County, Lake

and Apalachee Bay estuaries, along with their associated sub-embayments and sounds. The estuarine area within northwest Florida covers approximately 990 square miles.

A wide variety of fish, shellfish, birds, and other wildlife live in or depend upon estuaries, and most commercial and recreational species of fish and shellfish in northwest Florida are dependent upon estuaries at some point in their life cycles. The region's estuaries vary in their physical structure and function, from higher salinity systems such as St. Andrew Bay and St. Joseph Bay, to those dominated by the inflow of large river systems, such as Apalachicola, Pensacola, and Choctawhatchee bays. Some of the important habitats supported by these estuaries are seagrass beds, salt marshes, and oyster beds.

Springs

The District has numerous springs, which provide an important link between surface water and ground water systems and help define the character of many surface waterbodies. There are at least five first-magnitude and 35 second-magnitude springs within the District. First-magni-



APALACHICOLA BAY

Seminole at the top of the Apalachicola River, and Lake Talquin on the Ochlockonee River.

Estuaries

Estuaries are partially enclosed bodies of water where freshwater rivers and streams flow into the ocean, mixing with the seawater. The District encompasses all or part of eight major estuaries and more than 1,500 miles of coastline. These estuaries include the Perdido, Pensacola, Choctawhatchee, St. Andrew, St. Joseph, Apalachicola, Ochlockonee,



CYPRESS SPRING

tude springs discharge 100 cubic feet per second (cfs) or more, while second-magnitude springs discharge between 10 and 100 cfs. Wakulla Springs, a first-magnitude spring near the center of Wakulla County, has been identified as one of the largest natural springs in the world. Springs are essential to the character and quality of many of the District's surface waters, including the Wakulla River, Econfina Creek, the St. Marks River, the Chipola River, Holmes Creek, and the Choctawhatchee River.

◆ Ground Water

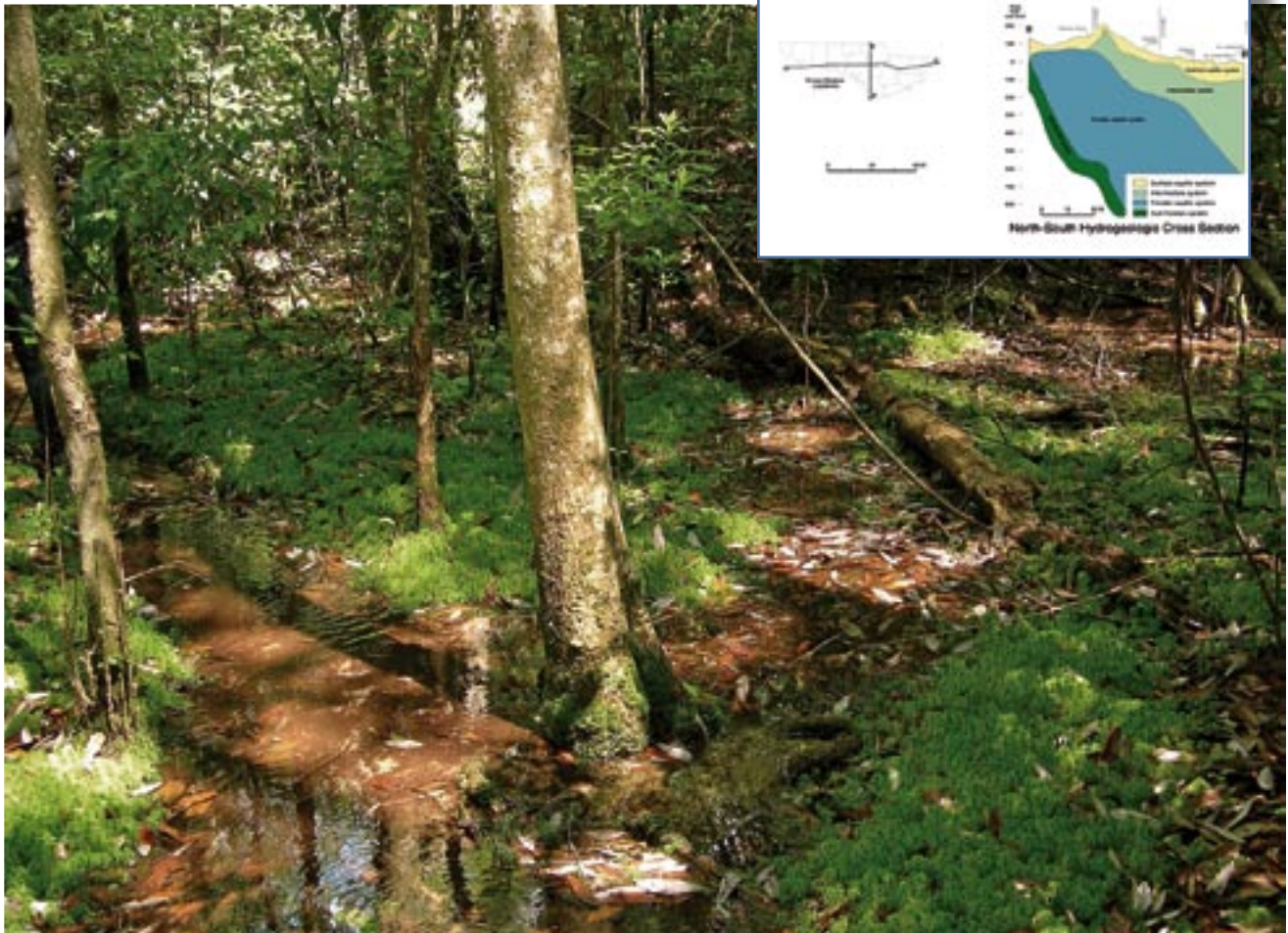
Ground water is a relatively abundant resource in northwest Florida. The principal sources for ground water supply are the *Surficial Aquifer System*, which includes the *Sand-and-Gravel Aquifer*, and the *Floridan Aquifer System*. The *Floridan Aquifer System* supplies more than 90 percent of the potable water needs of the District, and is used in all counties except Escambia. In most of Santa Rosa County and in all of Escambia County, the *Sand-and-Gravel Aquifer* is the primary source of potable water.

Ground Water Recharge

Ground water recharge (replenishment of the aquifer) can occur directly or indirectly. Direct recharge occurs where the aquifer lies at or near the land surface, or where karst features such as sinkholes allow surface runoff to move directly into the aquifer. Indirect recharge occurs when rainfall penetrates the sediments overlying the aquifer.

◆ Natural Systems

The *Water Resources Atlas of Florida* notes that northwest Florida's climate and geologic history have produced perhaps the greatest diversity of plants and animals of any other comparably sized region in the United States or Canada. The region supports a remarkably diverse landscape of interrelated, regionally significant water resources. These include major riverine and estuarine watersheds, large, intact floodplain systems, widespread wetlands, first- and second-magnitude springs, and important ground water recharge areas. The benefits provided by these natural systems are exceptionally important to the well-being of the human community.



STEEPHEAD, WASHINGTON COUNTY

MAJOR ACCOMPLISHMENTS, TRENDS, AND NEW DIRECTIONS



Since the 2000 update of the DWMP, the District has enhanced its existing programs significantly, and also has launched new efforts in land acquisition, water quality improvement, water supply, floodplain mapping, and wetland mitigation to help meet the water resource needs of citizens and natural systems.

◆ Land Acquisition and Management

As of August 2006, the District had preserved more than 212,000 acres of land through fee-simple or less-than-fee acquisition (see **Figure 3**).

These acquisitions are critical to help protect intact natural systems, floodplain functions, water recharge, water quality, and fish and wildlife habitat. The District conducts extensive environmental restoration and management on acquired lands, including prescribed fire, erosion control, thinning, and replanting, as necessary. Another key benefit of land acquisition is that District-owned lands are open to the public for recreational activities that are compatible with water resource protection. District and other public lands are illustrated in **Figure 4**.

FIGURE 3. DISTRICT LANDS – ACRES ACQUIRED

| WATERSHED AREA | FEE | LESS THAN FEE | TOTAL ACRES |
|--------------------------------|----------------|---------------|----------------|
| St. Marks River/ Apalachee Bay | 0 | 1,032 | 1,032 |
| Ochlockonee River and Bay | 516 | 312 | 828 |
| Apalachicola River and Bay | 42,883 | 816 | 43,699 |
| St. Andrew Bay | 41,135 | 2,433 | 43,568 |
| Choctawhatchee River and Bay | 60,595 | 1,444 | 62,039 |
| Pensacola Bay System | 56,269 | 19 | 56,288 |
| Perdido River and Bay | 5,456 | 0 | 5,456 |
| TOTAL | 206,854 | 6,056 | 212,910 |



COWART'S CREEK, JACKSON COUNTY

FIGURE 4. DISTRICT AND OTHER PUBLIC LANDS (2005)



◆ Water Supply

Though northwest Florida has abundant water resources, population growth and accompanying water demand in some areas may exceed the capacity of traditional water supplies. The District continues to work with its state, local, and federal partners to identify alternative water supplies where needed, and to ensure the long-term availability of water for people and natural systems.

- ❖ **Water Resource Investigations** – Years of monitoring, modeling, and evaluation of water resources have enhanced our knowledge of the characteristics and functions of major water resource systems, such as the *Floridan Aquifer*, the *Sand-and-Gravel Aquifer*, the Apalachicola River and Bay system, and the Econfina Recharge Area. As a result, the District and others are able to take effective measures to protect these regional and statewide priority water resources.
- ❖ **Regional Planning and Water Resource Development** – The District has delineated seven water supply planning regions, and conducted a District-wide water supply assessment that evaluated the needs of each region. Based on the assessment, the District developed and is implementing a Regional Water Supply Plan for Region II (Santa

Rosa, Okaloosa, and Walton counties), where traditional water supply sources were determined inadequate to serve the existing and future needs of people and natural systems. The District Governing Board has also directed staff to conduct water supply planning for Region V (Franklin and Gulf Counties).

- ❖ **Water Supply Development Assistance** – The District has:
 - Obtained nearly \$3 million in grant funding from the U.S. Environmental Protection Agency to assist the Fairpoint Regional Utility System, Inc., in developing and constructing an inland *Sand-and-Gravel Aquifer* wellfield to meet the water supply needs of southern Santa Rosa County.
 - Provided funding assistance to the City of Crestview to assist in repairs of an existing public supply well and new construction of another well.
 - Begun a water resource development assistance program in Franklin County, which includes test-well development and aquifer performance testing.
 - Initiated implementation of alternative water supply development assistance through the Water Protection and Sustainability Program.

- ❖ **Regulatory Safeguards** – the NFWFMD continues to protect water resources from over-withdrawal through its statutorily authorized regulatory programs.

◆ Flood Protection and Floodplain Management

The District's flood protection and floodplain management efforts are focused on acquisition and protection of floodplains and floodplain functions, as well as on the development of improved digital floodplain maps. Specifically, the District has:

- ❖ Protected over 212,000 acres of land District-wide through fee-simple or less-than-fee acquisition. The majority of these lands encompass important floodplains along major river systems and estuaries.
- ❖ Entered into a Cooperating Technical Partner Agreement with the Federal Emergency Management Agency (FEMA) to coordinate development of more accurate and complete flood hazard information for counties and communities across the District. It is anticipated that modern Digital Flood Insurance Rate Maps will be developed for all counties within the District by 2009.

◆ Water Quality Protection and Restoration

Through the Surface Water Improvement and Management (SWIM) program, the District has effectively combined District funds with federal, state, and local resources to protect and restore water quality and associated fish and wildlife habitat within priority watersheds. For example, the District has:

- ❖ Developed and implemented SWIM plans for the Pensacola Bay system, Choctawhatchee River and Bay system, St. Andrew Bay watershed, Apalachicola River and Bay system, Lake Jackson watershed, and the St. Marks River-Apalachee Bay watershed.
- ❖ Worked closely with local governments and cooperating agencies to implement major stormwater retrofit projects within the Apalachicola River and Bay, Pensacola, Lake Jackson, St. Marks River, St. Andrew Bay, and Choctawhatchee River and Bay watersheds, among other areas.
- ❖ Completed detailed analyses of threats to water quality to guide future water quality improvement efforts District-wide.



APALACHICOLA

- ❖ Approved, as of November 2005, thirty-two local government capital improvement grants across eleven counties under the Florida Forever program, to address the region's environmental restoration and stormwater challenges.
- ❖ Identified wellhead protection areas for the principal public supply wells in southern Escambia County.

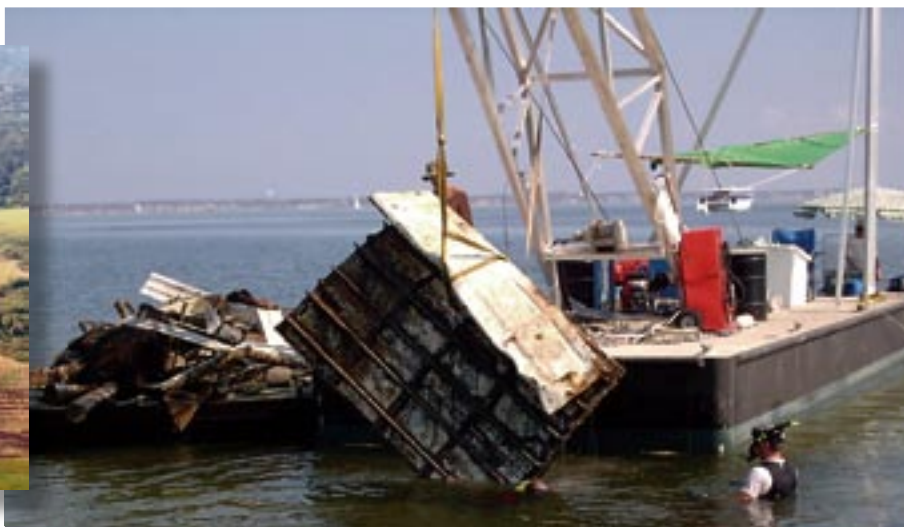
◆ Natural Systems Protection and Enhancement

The District has made considerable progress in the preservation, enhancement, and restoration of natural systems through:

- ❖ Developing and implementing a regional mitigation plan to compensate for Florida Department of Transportation (DOT) wetland impacts. Associated activities have included hydrologic restoration, implementation of proper fire regimes, and restoration of native wetland vegetation. In addition, the District has begun development of an innovative regional mitigation plan and agreement with the U.S. Army Corps of Engineers, which will significantly improve the efficiency of implementing mitigation under the federal Clean Water Act.
- ❖ Implementing priority SWIM projects to protect and restore wetland, aquatic, and riparian habitats.
- ❖ Initiating and participating in major cooperative restoration projects, including the Tates Hell Swamp restoration, Big Escambia Creek restoration, Lake Jackson restoration, Bayou Chico retrofit and restoration, Apalachicola River floodplain restoration, and shoreline restoration.



LAKE JACKSON RESTORATION



POST-HURRICANE DEBRIS CLEANUP, PENSACOLA BAY

- ❖ Working in cooperation with Escambia County to acquire lands for the county's Jones Swamp Preserve.
- ❖ Conducting ecological restoration and protection on District lands. This includes areas within the Econfina Recharge Area and major floodplain forests along the Escambia, Choctawhatchee, and Apalachicola rivers.

◆ Information Sharing and Technical Support

- ❖ *Efficient Transportation Decision-Making (ETDM)* – The District has entered into multi-agency operating and funding agreements to assist DOT with the Efficient Transportation Decision-Making process. This process links land use, transportation, and environmental resource planning. It facilitates interagency coordination, and is intended to involve the District, as early as possible, in the planning and permitting process for DOT transportation projects.
- ❖ *Hydrologic Conditions Reporting* – The District's website continues to be developed to provide the public with current information about hydrologic conditions throughout the District's 16-county area. It also provides detailed information about water resources and suggested water conservation practices.

◆ Looking Ahead

- ❖ *Alternative Water Supply Development Assistance and Water Resource Development* – The 2005 Legislature provided recurring funding for the construction of alternative water supply development projects, which

gives the NFWFMD \$10 million for fiscal year 2005-06, and \$6 million annually in subsequent years for this purpose. District assistance anticipated in the near future includes funding for inland wellfield development and water reuse in Walton, Okaloosa, and Santa Rosa counties.

The District also plans to fund water resource development and spring protection projects, such as a City of Tallahassee public access reuse project for water supply conservation and springshed protection, and development of an inland source of water for coastal Franklin County.

- ❖ **Surface Water Supply** – Through the Regional Water Supply Plan for Region II, the District is working with Okaloosa County to explore the feasibility of identifying and developing surface water sources for water supply. Alternatives under evaluation include direct withdrawal, development of in-line tributary reservoirs, and riverbank filtration wells.
- ❖ **Environmental Resource Permitting (ERP)** – The 2006 Legislature amended the Florida Statutes to require the District to phase in implementation of ERP in northwest Florida. ERP has two general components: stormwater management and wetland resource protection. The stormwater management component will benefit both water quality

protection and flood prevention. The wetland resource protection component will protect functions provided by isolated, as well as connected, wetlands. ERP will also streamline the permitting process. The District and DEP will jointly develop rules and determine how ERP responsibilities will be divided between the agencies. ERP rules are expected to be in place by March 2007 for stormwater, and no earlier than January 2008 for wetlands.

- ❖ **FEMA Map Modernization** – Completion of digital flood insurance rate maps for all 16 counties served by the District is projected for 2009.
- ❖ **Regional Wetland Mitigation** – The District will implement an innovative Regional Mitigation Plan to streamline mitigation for wetland impacts caused by state transportation projects. This plan will incorporate a cooperative mitigation agreement with the U.S. Army Corps of Engineers and provide for continued implementation of state regional mitigation requirements.
- ❖ **Florida Forever Grant Program** – The District will continue to assist communities through the Florida Forever Capital Improvement Grant Program and, in so doing, help address important local challenges while accomplishing regional priorities for water quality and environmental restoration.



WATER QUALITY SAMPLING, YELLOW RIVER



THE DISTRICT WATER MANAGEMENT PLAN

A Comprehensive Response to Water Resource Issues

The District Water Management Plan integrates major programs, including regional water supply planning, water resource development, water supply development assistance, minimum flows and levels, resource regulation, wetland mitigation, special projects, the SWIM program, technical assistance, land acquisition and management, and public outreach and education. Detailed District work plans

and documents (described in **Figure 5**) guide the implementation of these programs.

Collectively, the District’s programs and plans, and its budget, comprise a comprehensive approach to the interrelated issues that span the four Areas of Responsibility (AORs). The DWMP communicates the District’s most pressing water management issues and its key strategies to address them. A summary of key issues, related strategies, and funding sources for implementation follows **Figure 5**.

FIGURE 5. DWMP COMPONENT PLANS AND DOCUMENTS

| PLAN | PURPOSE | HORIZON |
|--|---|------------------|
| DISTRICT WATER MANAGEMENT PLAN | District-wide plan to address and integrate water supply, flood protection, water quality, and natural systems | 20 years |
| INCORPORATES: | | |
| REGIONAL WATER SUPPLY PLANS | Identify water sources, demands, and alternative water supply sources | 20 years |
| WATER RESOURCE DEVELOPMENT WORK PROGRAM DOCUMENT | Development of alternative sources within regional water supply planning areas | 5 years |
| FLORIDA FOREVER LAND ACQUISITION WORK PLAN | District-wide land acquisition plan | 5 years |
| FLORIDA FOREVER CAPITAL IMPROVEMENTS PLAN | Short-range plan for implementation of approved capital improvement projects | 2 years |
| FEMA FLOOD HAZARD MAP MODERNIZATION BUSINESS PLAN | Flood map modernization plan for the NFWFMD | 5 years |
| REGIONAL MITIGATION PLAN | District-wide mitigation plan to address requirements of Section 404, Federal Clean Water Act, and Section 373.4137, Florida Statutes | Updated annually |
| SAND HILL LAKES MITIGATION BANKING INSTRUMENT | Instrument establishing the authority, use, operation, and maintenance of the Sand Hill Lakes Mitigation Bank | Perpetual |
| SWIM PRIORITY LIST | Priority list for development of SWIM plans (Section 373.453, Florida Statutes) | 5 years |
| SWIM PLANS (MULTIPLE) | Watershed protection, management, and restoration | As needed |
| MINIMUM FLOWS AND LEVELS (MFLs) PRIORITY LIST | Priority list for development of MFLs (Section 373.042, Florida Statutes) | Updated annually |
| Annual Budget Report | Identifies funding, authorities, and programmatic priorities | Updated annually |

Key Issues and Strategies by Area of Responsibility

◆ Water Supply

Goal: Promote the availability of sufficient water for all existing and future reasonable-beneficial uses and affected natural systems.

Water Supply Issues

Although northwest Florida has a relatively abundant supply of surface and ground water to serve the needs of the region, existing or anticipated water supply problems in specific areas need to be addressed through development of alternative or new sources. Following the 1998 water supply assessment, the District's Governing Board determined that a regional water supply plan was needed in the planning region that encompasses Santa Rosa, Okaloosa, and Walton counties. In this region, coastal water supplies are vulnerable to saltwater intrusion caused by excessive ground water withdrawals.

In 2000, approximately 312 million gallons per day (Mgal/d) of fresh water were used in the District (see **Figure 6**). The majority of fresh water use is for public water supply. This category accounted for about 166 Mgal/d, or 53 percent, of total water use in the District in 2000. Water use for public supply is projected to increase to 255 Mgal/d by 2025, a much larger increase than is projected for any other water use category. This increase is expected primarily due to growth in population and service areas. The greatest increase in demand for public water supply is anticipated to occur near urban centers and within coastal regions.

Water Supply Strategies

Water supply is a basic need for humans, and for the natural environment on which we rely in many aspects of our lives. The District's focus in managing water supply for the region is to accommodate reasonable human use that is compatible with sustaining natural systems. In order to accomplish its water supply goal, the District has made a continuing commitment to:

- ❖ Conduct water supply monitoring, assessment, and planning on a regional level to address identified or anticipated water resource problems.
- ❖ Acquire lands important to the protection of water supplies.
- ❖ Identify feasible traditional and alternative water supply sources in Santa Rosa, Okaloosa, and Walton counties to meet long-term water supply needs.
- ❖ Assist local governments and utilities in the development of local water supplies within areas with known or anticipated water supply problems.



WAKULLA COUNTY

FIGURE 6. PROJECTED DAILY WATER DEMAND INCREASES FROM 2000 THROUGH 2025*

| WATER USE CATEGORY | 2000 WATER USE (MGAL) | 2025 WATER USE (MGAL) | INCREASE (MGAL) | PERCENT INCREASE |
|-------------------------------------|-----------------------|-----------------------|-----------------|------------------|
| Public Supply | 166.16 | 255.01 | 88.85 | 53.5% |
| Self-supplied/Small Public | 21.63 | 28.86 | 7.23 | 33.4% |
| Self-supplied/Commercial-Industrial | 76.28 | 99.10 | 22.82 | 29.9% |
| Agricultural Irrigation | 30.10 | 36.55 | 6.45 | 21.4% |
| Recreational Irrigation | 12.06 | 16.40 | 4.34 | 36.0% |
| Power Generation | 5.65 | 7.42 | 1.77 | 31.3% |
| TOTAL | 311.88 | 443.34 | 131.46 | 42.2% |

* See Water Supply Projections, 2000 - 2025 (Bonekemper 2003)

- ❖ Promote water conservation and reuse throughout the District, with priority emphasis in growing coastal areas.
- ❖ Regulate water withdrawals and well construction to protect ground water supplies from over-withdrawal and prevent migration of low-quality water into potable water sources.
- ❖ Enhance public awareness, understanding, and participation in the efficient and sustainable management of water supplies District-wide.

◆ Flood Protection and Floodplain Management

Goal: Maintain natural floodplain functions and minimize harm from flooding.

Flood Protection and Floodplain Management Issues

Northwest Florida, with its extensive river networks and coastal zone, has a long history of flooding events, which makes it clear that such events will recur and that it is necessary to plan accordingly. The greatest riverine floods tend to occur along the Choctawhatchee and Apalachicola rivers and their tributaries, although all coastal areas, rivers, streams, wetlands, low-lying areas, and closed basins are subject to significant flooding. Flooding is a particular problem in high-growth and densely populated coastal areas, where development and encroachment into floodprone areas diminishes floodplain functions and may further increase flood hazards and harm natural systems. Existing floodplain maps across the District tend to be outdated or otherwise inaccurate or imprecise.

Flood Protection and Floodplain Management Strategies

Living near water has both practical and aesthetic benefits for people. We are drawn to these areas for their usefulness and beauty. However, building in floodprone areas dramatically increases the threat of destruction to homes, property, and human life. Loss of floodplain area and function also adversely affects water quality and wetland and aquatic habitats. While some flooding dangers can be managed through engineering and construction of impoundments, the District prefers primarily to take a non-structural approach to flood protection and floodplain management. In the long run, this saves time, money, and lives, and it sustains natural systems. The District's key

strategies to prevent and address flooding issues are to:

- ❖ Protect and manage floodprone areas through land acquisition.
- ❖ Restore hydrologic functions on District-owned lands, as needed.
- ❖ Implement regulation of stormwater and wetland resources through the ERP Program.
- ❖ Assist communities in implementing multi-purpose stormwater retrofit projects that include flood hazard protection.
- ❖ Develop digital flood insurance rate maps to provide more accurate and complete flood hazard information to counties and communities across the District.
- ❖ Evaluate proposed developments and comprehensive plan amendments with regard to flood hazards and protection of floodplain functions.
- ❖ Ensure proper construction and management of impoundment structures through existing regulatory programs.
- ❖ Take part in interagency coordination and planning for flood hazard protection and response.
- ❖ Increase public awareness and understanding of flooding issues and the importance of protecting floodplain functions, and enhance public access to detailed floodplain maps and related information.



LAKE JACKSON RESTORATION

◆ **Water Quality**

Goal: Protect and improve the quality of the District's water resources.

Water Quality Issues

Surface and ground water quality throughout the District are relatively good. However, localized problems have occurred, mostly in or near urbanized or industrial areas and where other land use practices have caused widespread nonpoint pollution or disruption of natural hydrology. The larger river basins originate north of the District within Georgia and Alabama, and the affected rivers and streams tend to have water quality problems that result from activities in these states.

Water Quality Strategies

Good water quality is essential to our quality of life. The District's role in water quality protection and restoration intensified beginning in 1987 when the Florida Legislature adopted the progressive SWIM Program. Through this program, the District has identified priority surface waters and has worked in cooperation with local governments and others to conduct water quality and habitat restoration projects. The District also works to protect the quality of ground water and drinking water resources through identifying resource vulnerabilities and protection strategies. The District's primary strategies for improving and protecting water quality include the following:

- ❖ Continue water resource land acquisition and management.
- ❖ Work with local governments and state and federal agencies to retrofit inadequate stormwater treatment systems through the SWIM and Florida Forever programs.
- ❖ Prevent and clean up point and nonpoint sources of pollution going to surface and ground waters, in accordance with the SWIM priority list and SWIM plans.
- ❖ Implement regulation of stormwater and wetland resources through the ERP Program.
- ❖ Continue Deer Point Lake Reservoir protection efforts through the St. Andrew Bay SWIM Plan.
- ❖ Prevent saltwater contamination through source analysis and assistance in the identification and development of alternative water supplies.
- ❖ Monitor surface and ground waters to support retrofit projects and regional assessments.
- ❖ Participate in the interagency ETDM Program in cooperation with DOT.
- ❖ Regulate agricultural and forestry surface water management, well construction, artificial recharge facilities, and consumptive uses of water.
- ❖ Work with local governments, utilities, and water well contractors to accomplish the proper abandonment and plugging of wells.



SAND HILL LAKES

- ❖ Work with Alabama and Georgia to better define the sources of known and potential interstate water quality problems.
- ❖ Enhance public awareness, understanding, and participation in surface and ground water quality protection and management.

◆ **Natural Systems**

Goal: *Protect and enhance natural systems.*

Natural Systems Issues

While their overall quality remains high, the region's natural systems suffer from the cumulative effects of urban stormwater runoff and other nonpoint sources of pollution. This nonpoint pollution significantly degrades or results in losses of wetlands, shorelines, aquatic habitats, and other water-related resources throughout the District. Other threats to the water resource benefits and functions of natural systems include widespread wetland impacts, loss and degradation of shoreline habitats, alterations through past land use, development prior to implementation of current stormwater regulations, cumulative effects of water withdrawals, and impacts from Alabama and Georgia.

Natural Systems Strategies

The interconnected functioning of the landscape, water resources, plants, and animals of the planet means that one component cannot be altered without affecting the others, including people. Therefore, it is in our own interest to consider what effect our activities may have on the environment as a whole. Florida's rapid growth and development have spurred its citizens and legislators to craft some of the most progressive laws and programs in the nation to protect natural systems. District programs and initiatives under all of its Areas of Responsibility are planned and implemented in order to help sustain the underlying natural systems and the important benefits they provide for the residents and communities of northwest Florida. Based on its statutory authorities and directives, the District works to:

- ❖ Evaluate water-related resources to identify priorities for preservation and restoration.
- ❖ Continue its acquisition and management of major river and stream corridors to maintain natural systems, wetlands, floodplain functions, and compatible public access and enjoyment.

- ❖ Implement regulation of stormwater and wetland resources through the ERP Program.
- ❖ Protect wetland resources and other natural systems through wetland mitigation efforts and participation in the Florida Department of Transportation ETDM program.
- ❖ Monitor water flows and levels to facilitate establishment of minimum flows and levels for the protection of watershed and natural system functions.
- ❖ Restore degraded water resources, wetlands, and other related natural systems on a regional watershed and landscape basis.
- ❖ Regulate consumptive uses of water within Water Resource Caution Areas to help prevent depletion of water resources.
- ❖ Provide outreach and technical assistance to citizens, local governments, and locally based watershed initiatives.

Intergovernmental Coordination Activities

Intergovernmental coordination is critical to the District in carrying out its responsibilities. The District forms partnerships with other levels of government that implement water management responsibilities through planning, regulation, land acquisition, and service delivery programs. By maintaining close working ties with federal, state, regional, and local agencies, the District can draw upon and provide important resources, technical expertise, and knowledge to support effective water resource management.

◆ **Information Resources and Technical Assistance**

The NFWFMD provides information and technical assistance to local governments upon request. In addition, the District maintains a website that gives access to:

- ❖ Descriptive and technical information on water resources in northwest Florida, including maps
- ❖ Information on existing hydrologic conditions, including rainfall, stage, and temperature data
- ❖ Water conservation information
- ❖ Permitting rules and forms
- ❖ The District budget
- ❖ Water resource availability studies
- ❖ Water quality studies
- ❖ Water supply and demand projections
- ❖ Planning documents



Funding for District Programs

Funding for District programs comes from a combination of sources, including ad valorem taxes, general revenue appropriations from the Florida Legislature, trust funds, other state programs and grants, and contractual services to local governments, regional utility authorities, and other government agencies (see **Figure 7**).

◆ **Ad Valorem**

The District levies its constitutional ad valorem taxing authority, which is capped at 0.05 mil. This funding cap requires the District to prioritize its efforts carefully in order to address the water management issues of greatest regional importance in an efficient yet effective manner.

◆ **Water Management Lands Trust Fund**

The Water Management Lands Trust Fund, provides funds pursuant to s. 373.59, Florida Statutes, for the Save Our Rivers Program. These funds are used for management, maintenance, and capital improvements on District-owned lands; payment-in-lieu-of-taxes to qualified counties; funding the District's SWIM Program; and regional water supply planning and water resource development.

◆ **Florida Forever Trust Fund**

Pursuant to s. 259.105, Florida Statutes, the District receives funds from the Florida Forever Trust Fund to implement its Five Year Florida Forever Work Plan, developed in accordance with s. 373.199, Florida Statutes. About half of the District's share of Florida Forever funds will go toward land acquisition, with the remainder going to eligible capital improvements and water resource development projects.

◆ **Water Protection and Sustainability Trust Fund**

Created by the 2005 Florida Legislature in s. 403.890, Florida Statutes, the Water Protection and Sustainability Program and Trust Fund make

available cost-share funding for construction of alternative water supply development projects identified in regional water supply plans. In some cases, the Governing Board may allocate funding to address identified water resource development and spring protection needs. The program also provides SWIM funding and has additional provisions related to other water resource programs.

◆ **Florida Department of Transportation**

Through the Regional Mitigation Plan, the District plans and implements wetland mitigation projects funded by the DOT to meet the requirements of s. 373.4137, Florida Statutes, and the federal Clean Water Act. Regional mitigation planning is coordinated with SWIM, other District restoration and preservation programs, and DOT transportation plans. Implementation of these plans and programs includes acquisition and restoration of wetlands for long-term preservation.

Department of Transportation funds are also provided through the ETDM Program for the District to review and comment on proposed DOT projects. District review helps DOT avoid unnecessary wetland and other water resource impacts. DOT funds also allow the District to plan and carry out mitigation for unavoidable impacts.

◆ **Local Government Cost-Sharing Contracts**

Funding partnerships with local governments are an important component of implementing the programs and plans that the DWMP incorporates. The District has implemented numerous agreements with local governments to implement projects for water quality improvement, hydrologic modeling, water resource protection, and related purposes.

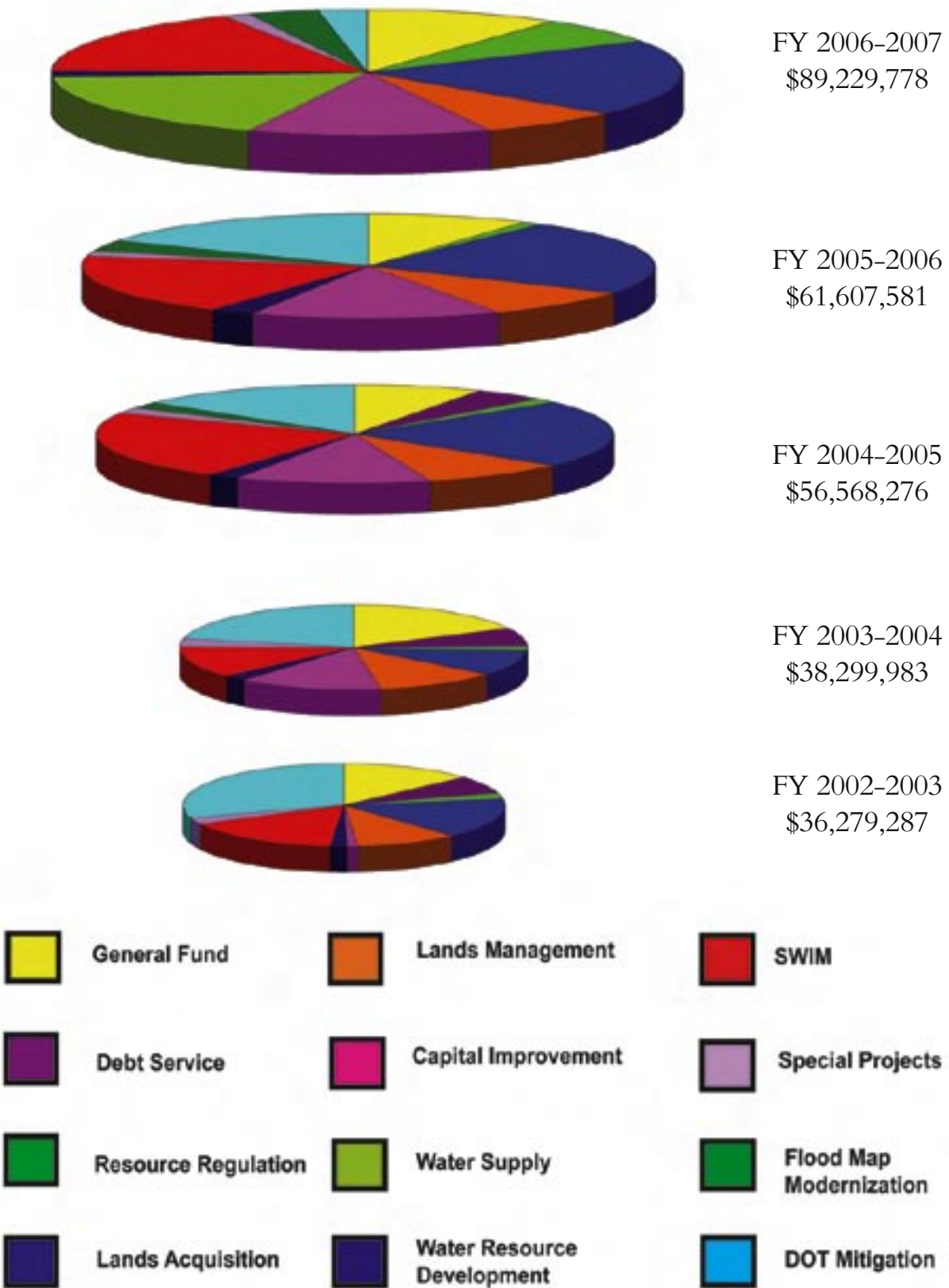
◆ **State Special Appropriations**

The District may receive special appropriations from the State Legislature, which are earmarked for specific water resource projects or programs, including the SWIM Program.

◆ **State Funded Projects**

The District also receives contractual funding from state agencies to implement a variety of special projects. Examples include participation in the Florida Springs Initiative, and surface and ground water monitoring through the Integrated Water Resource Monitoring Network and Surface Water Temporal Variability Network.

FIGURE 7. NFWFMD FUNDING BY MAJOR PROGRAM CATEGORY



Overview of District Programs, Plans, and Funding

The District Water Management Plan provides the framework for interconnecting the District’s water resource programs. **Figure 8** gives an overview of

how District programs relate to the four Areas of Responsibility and key documents, and how the programs are funded. More detailed information can be found in the related documents identified in **Figure 8**.

FIGURE 8. DISTRICT PROGRAMS AND RELATED AORS, DOCUMENTS, AND FUNDING SOURCES









| DISTRICT PROGRAMS | RELATED AREAS OF RESPONSIBILITY | | | | RELATED PLANS AND DOCUMENTS | FUNDING SOURCES |
|--|--|--|---|--|---|---|
| |  Water Supply |  Flood Protection/ Floodplain Management |  Water Quality |  Natural Systems | | |
| LAND ACQUISITION AND MANAGEMENT | ✓ | ✓ | ✓ | ✓ | <ul style="list-style-type: none"> Florida Forever Land Acquisition Work Plan Regional Mitigation Plan | <ul style="list-style-type: none"> Florida Forever Trust Fund Water Mgt. Lands Trust Fund Florida Department of Transportation |
| WATER SUPPLY PLANNING AND SUSTAINABILITY | ✓ | | ✓ | ✓ | <ul style="list-style-type: none"> Florida Forever Capital Improvements Plan | <ul style="list-style-type: none"> Florida Forever Trust Fund |
| WATER RESOURCE DEVELOPMENT | ✓ | | ✓ | ✓ | <ul style="list-style-type: none"> District Water Supply Assessment | <ul style="list-style-type: none"> Water Mgt. Lands Trust Fund |
| LOCAL GOVERNMENT WATER SUPPLY DEVELOPMENT ASSISTANCE | ✓ | | | | <ul style="list-style-type: none"> Regional Water Supply Plans Water Resource Development Work Program | <ul style="list-style-type: none"> Water Protection and Sustainability Trust Fund |
| SURFACE WATER IMPROVEMENT AND MANAGEMENT | | ✓ | ✓ | ✓ | <ul style="list-style-type: none"> Florida Forever Capital Improvements Plan SWIM Priority List SWIM Plans | <ul style="list-style-type: none"> Water Protection and Sustainability Trust Fund Federal Grants |
| MINIMUM FLOWS AND LEVELS | ✓ | | ✓ | ✓ | <ul style="list-style-type: none"> Minimum Flows and Levels Priority List | <ul style="list-style-type: none"> Water Mgt. Lands Trust Fund Water Protection and Sustainability Trust Fund |
| FLOOD HAZARD MAP MODERNIZATION | | ✓ | | ✓ | <ul style="list-style-type: none"> FEMA Business Plan | <ul style="list-style-type: none"> FEMA Local Governments Ad Valorem |

FIGURE 8. DISTRICT PROGRAMS AND RELATED AORS, DOCUMENTS, AND FUNDING SOURCES (CONTINUED)

| DISTRICT PROGRAMS | RELATED AREAS OF RESPONSIBILITY | | | | RELATED PLANS AND DOCUMENTS | FUNDING SOURCES |
|--|---|---|--|---|---|---|
| |  Water Supply |  Flood Protection/ Floodplain Management |  Water Quality |  Natural Systems | | |
| WETLANDS MITIGATION | ✓ | ✓ | ✓ | ✓ | <ul style="list-style-type: none"> • DOT Regional Mitigation Plan • Interagency Agreements • Sand Hill Lakes Mitigation Banking Instrument | <ul style="list-style-type: none"> • Florida Department of Transportation • Sale of Mitigation Credits |
| CONSUMPTIVE USE REGULATION | ✓ | | ✓ | ✓ | <ul style="list-style-type: none"> • 40A-2, F.A.C.* • 40A-21.001, F.A.C. | <ul style="list-style-type: none"> • Ad Valorem |
| WELL CONSTRUCTION AND ARTIFICIAL RECHARGE REGULATION | ✓ | | ✓ | | <ul style="list-style-type: none"> • 40A-3, F.A.C. | <ul style="list-style-type: none"> • Ad Valorem |
| ENVIRONMENTAL RESOURCE PERMITTING | | ✓ | ✓ | ✓ | | <ul style="list-style-type: none"> • Legislative Special Appropriation |
| REGULATION OF SURFACE WATER IMPACTS | | ✓ | ✓ | ✓ | <ul style="list-style-type: none"> • Ch. 40A-44, F.A.C. | <ul style="list-style-type: none"> • Ad Valorem |
| WORKS OF THE DISTRICT | | ✓ | ✓ | ✓ | <ul style="list-style-type: none"> • Ch. 40A-6, F.A.C. | <ul style="list-style-type: none"> • Ad Valorem |
| WATER RESOURCE MONITORING | ✓ | ✓ | ✓ | ✓ | <ul style="list-style-type: none"> • Regional Water Supply Plans • SWIM Plans • FEMA Business Plan • Project Documents | <ul style="list-style-type: none"> • Water Mgt. Lands Trust Fund • Water Protection and Sustainability Trust Fund • Federal Grants |
| EDUCATION, OUTREACH, TECHNICAL ASSISTANCE | ✓ | ✓ | ✓ | ✓ | <ul style="list-style-type: none"> • WaterWays Publications • Cooperative Agreements | <ul style="list-style-type: none"> • Water Mgt. Lands Trust Fund • Water Protection and Sustainability Trust Fund • Federal Grants |

**Web Link for District Plans and Project Reports:
www.nwfwmd.state.fl.us/pubsdata.html**

*Florida Administrative Code





JULY 2006