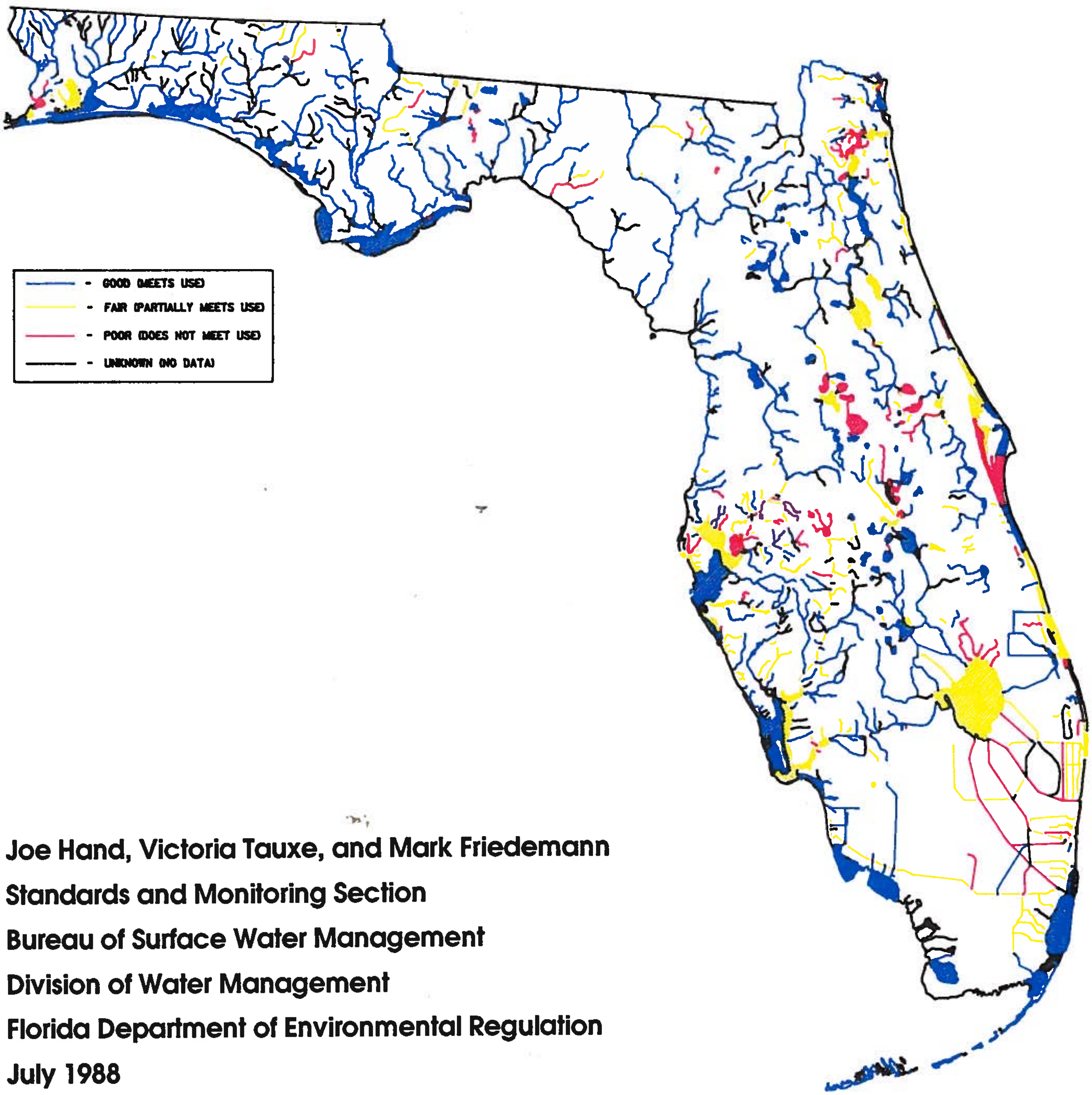
1988 FLORIDA WATER QUALITY ASSESSMENT
305(b) TECHNICAL APPENDIX



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Standards and Monitoring Section
Bureau of Surface Water Management
Division of Water Management
Florida Department of Environmental Regulation
July 1988

WATER QUALITY ASSESSMENT
FOR THE
STATE OF FLORIDA

TECHNICAL APPENDIX

Submitted in accordance with the
Federal Clean Water Act
Section 305(b)

JULY 1988

JOE HAND, VICTORIA TAUXE AND MARK FRIEDEMANN
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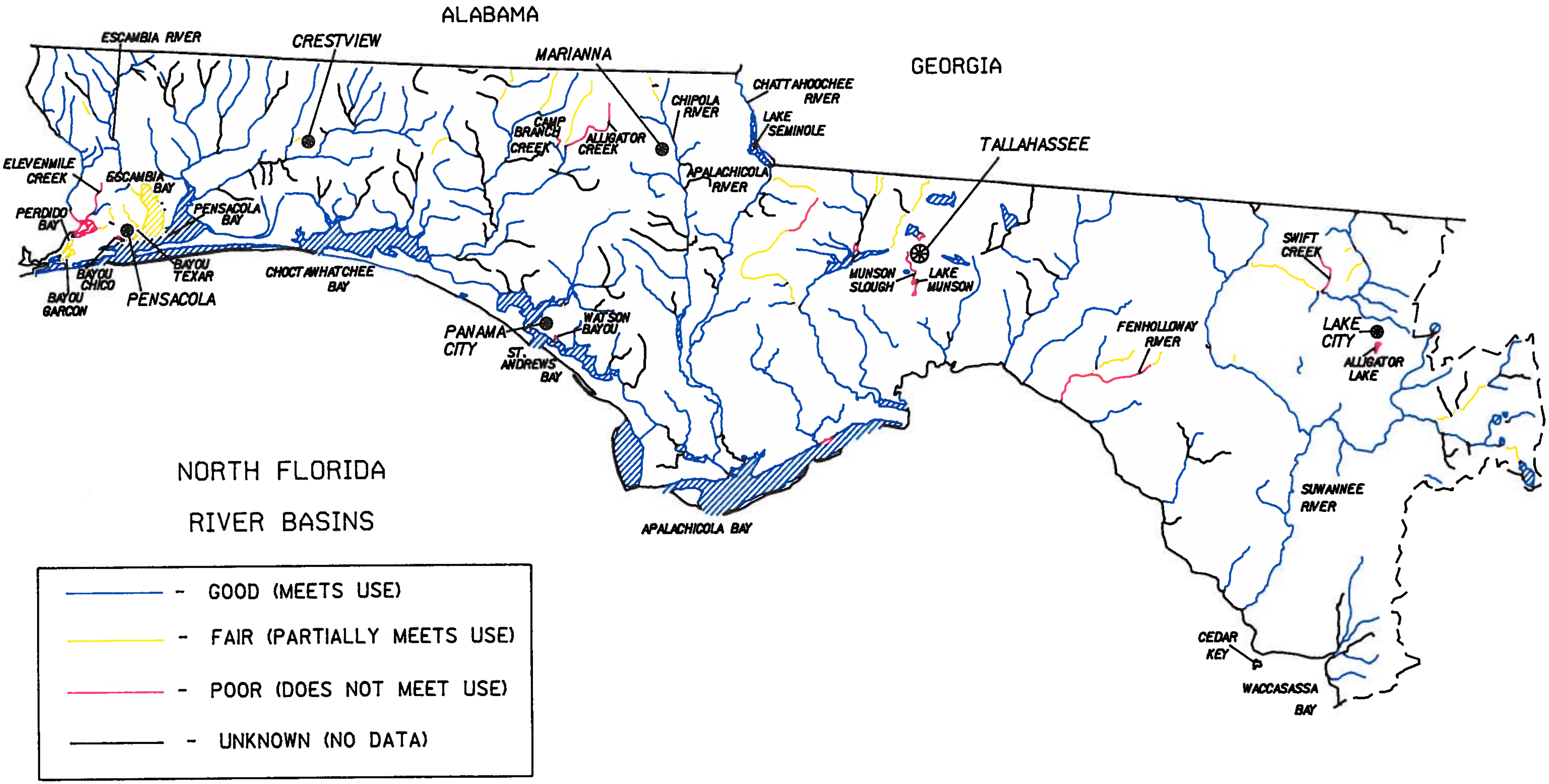
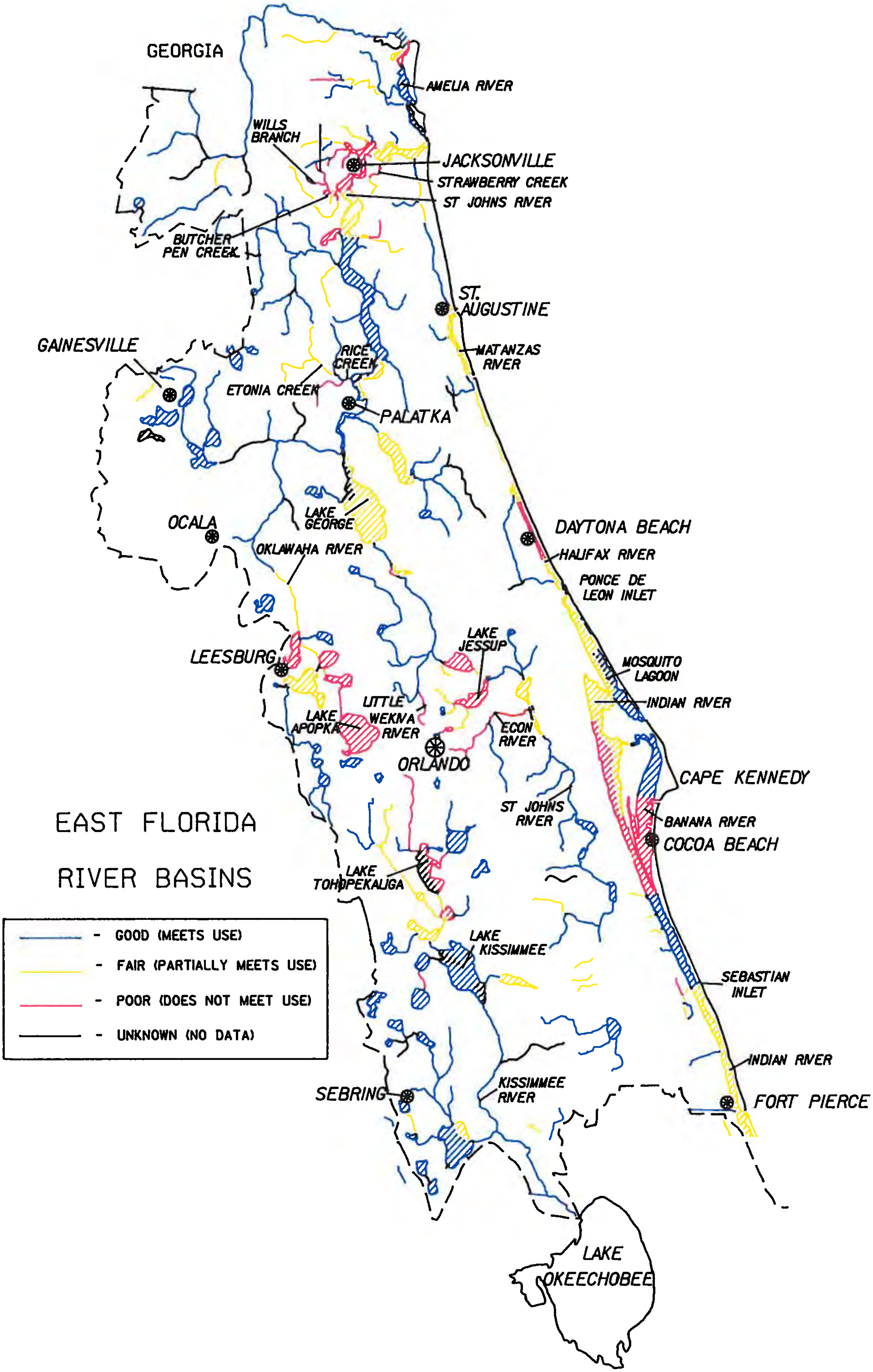
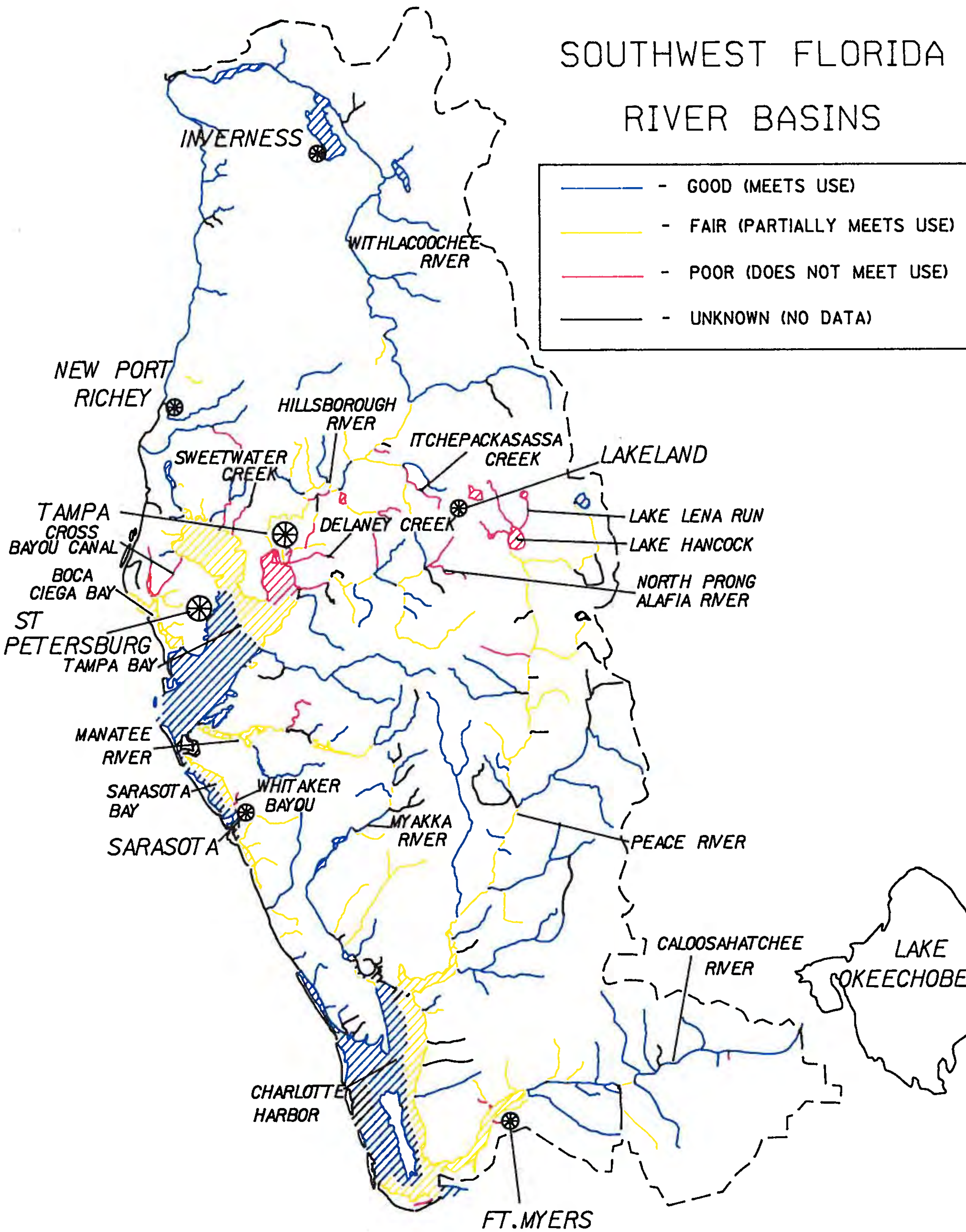
DIVISION OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL REGULATION

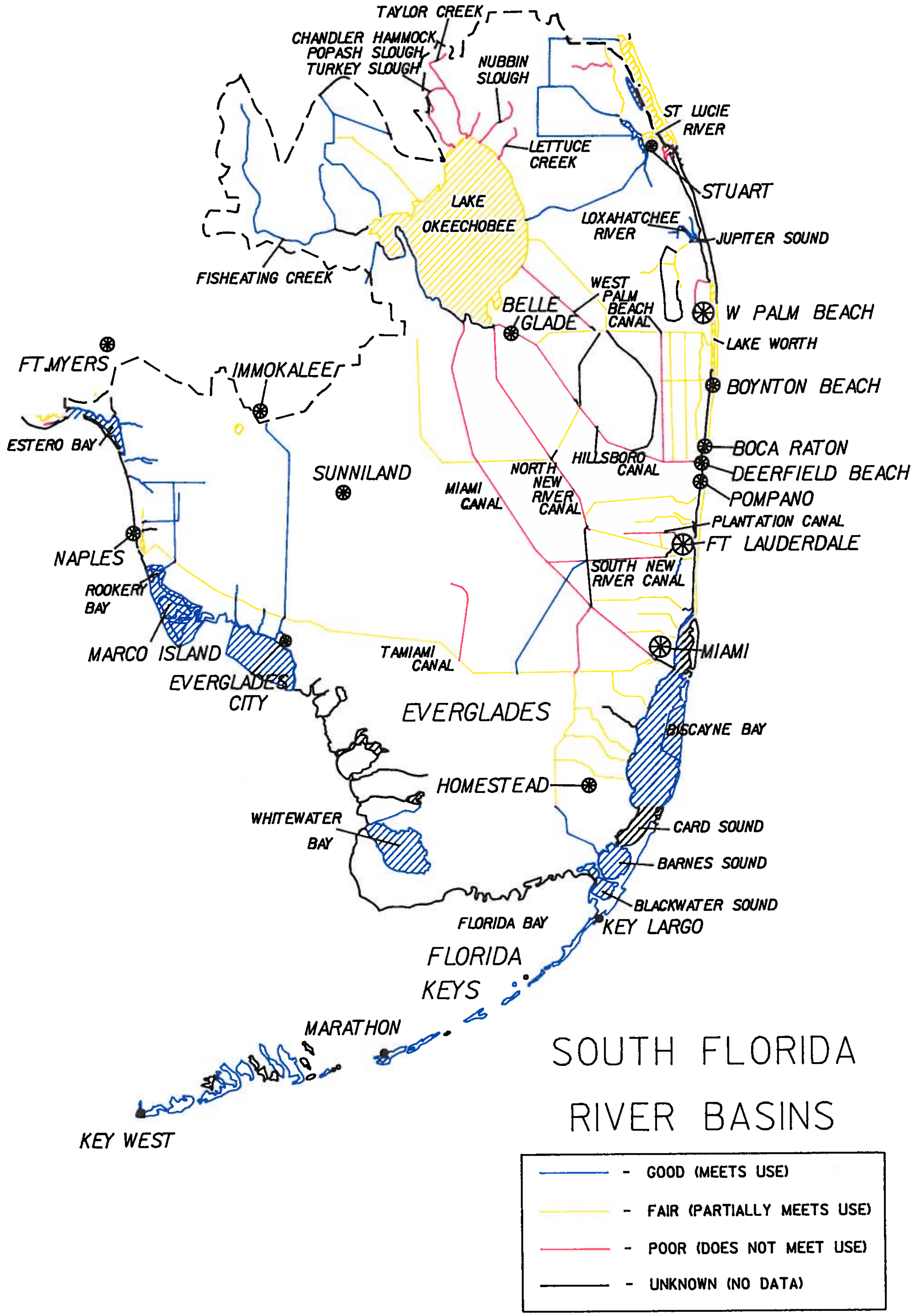


ALABAMA
GEORGIA
ESCAMBIA RIVER
CRESTVIEW
MARIANNA
CHIPOLA RIVER
CHATTAHOOCHEE RIVER
LAKE SEMINOLE
CAMP BRANCH CREEK
ALLIGATOR CREEK
APALACHICOLA RIVER
TALLAHASSEE
ELEVENMILE CREEK
ESCAMBIA BAY
PERDIDO BAY
PENSACOLA BAY
BAYOU TEXAR
BAYOU CHICO
BAYOU GARCON
PENSACOLA
CHOCTAWHATCHEE BAY
MUNSON SLOUGH
LAKE MUNSON
SWIFT CREEK
LAKE CITY
ALLIGATOR LAKE
FENHOLLOWAY RIVER
PANAMA CITY
WATSON BAYOU
ST. ANDREWS BAY
APALACHICOLA BAY
SUWANNEE RIVER
CEDAR KEY
WACCASASSA BAY
NORTH FLORIDA
RIVER BASINS
- GOOD (MEETS USE)
- FAIR (PARTIALLY MEETS USE)
- POOR (DOES NOT MEET USE)
- UNKNOWN (NO DATA)



EAST FLORIDA RIVER BASINS


SOUTHWEST FLORIDA
RIVER BASINS
- GOOD (MEETS USE)
- FAIR (PARTIALLY MEETS USE)
- POOR (DOES NOT MEET USE)
- UNKNOWN (NO DATA)
INVERNESS
WITHLACOOCHEE RIVER
NEW PORT RICHEY
HILLSBOROUGH RIVER
ITCHEPACKASASSA CREEK
LAKELAND
SWEETWATER CREEK
TAMPA
CROSS BAYOU CANAL
DELANEY CREEK
LAKE LENA RUN
LAKE HANCOCK
BOCA CIEGA BAY
NORTH PRONG ALAFIA RIVER
ST PETERSBURG
TAMPA BAY
MANATEE RIVER
SARASOTA BAY
WHITAKER BAYOU
SARASOTA
MYAKKA RIVER
PEACE RIVER
CALOOSAHATCHEE RIVER
LAKE OKEECHOBEE
CHARLOTTE HARBOR
FT. MYERS


TAYLOR CREEK
CHANDLER HAMMOCK
POPASH SLOUGH
TURKEY SLOUGH
NUBBIN SLOUGH
ST LUCIE RIVER
LETTUCE CREEK
STUART
LAKE OKEECHOBEE
LOXAHATCHEE RIVER
JUPITER SOUND
FISHEATING CREEK
WEST PALM BEACH CANAL
BELLE GLADE
W PALM BEACH
LAKE WORTH
FT.MYERS
IMMOKALEE
BOYNTON BEACH
ESTERO BAY
BOCA RATON
HILLSBORO CANAL
DEERFIELD BEACH
SUNNILAND
NORTH NEW RIVER CANAL
MIAMI CANAL
POMPANO
PLANTATION CANAL
NAPLES
FT LAUDERDALE
SOUTH NEW RIVER CANAL
ROOKERY BAY
MARCO ISLAND
TAMIAMI CANAL
MIAMI
EVERGLADES CITY
EVERGLADES
BISCAYNE BAY
HOMESTEAD
WHITEWATER BAY
CARD SOUND
BARNES SOUND
BLACKWATER SOUND
FLORIDA BAY
KEY LARGO
FLORIDA KEYS
MARATHON
KEY WEST
SOUTH FLORIDA RIVER BASINS
- GOOD (MEETS USE)
- FAIR (PARTIALLY MEETS USE)
- POOR (DOES NOT MEET USE)
- UNKNOWN (NO DATA)

ACKNOWLEDGEMENTS

We would like to express our gratitude to all of the professionals that supplied us with water quality data and reports, responded to surveys, and answered telephone inquiries concerning the status of waterbodies in their area. The quality of this report has been greatly enhanced by their efforts.

The DER district staff were particularly helpful, especially Don Ray and Bob Brazzell of the Northwest District, Lee Banks of the Northeast District, Guy Hadley in the Central Florida District, Don Moores and Doug Farrell of the Southwest District, Harvey Rudolph of the Southeast District, Bob Rutter and Ron McGregor of the South Florida District and Gus Rios in the Marathon Office.

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Several of Tallahassee DER staff were also very helpful. Karolyn Hudson of the Bureau of Information Systems provided indispensable assistance in the operation of the Intergraph system. Notable among staff in the Bureau of Surface Water Management were Ellen McCarron and Mike Scheinkman in the Stormwater and Nonpoint Source Management Section and several of the Point Source Evaluation Section staff. Also thanks to Carolyn Lewis and Roxane Dow for their support and their review of the final document. Finally, we are indebted to our chief typist, Diane Miller, who quickly and efficiently produced this text out of our numerous drafts.

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY/OVERVIEW

Surface Water Quality

The 305(b) Technical Report identifies the quality and trends of Florida's surface waters, the causes of water quality problems and the present cleanup activities conducted by DER and EPA to improve the problem areas. The assessment was accomplished by analyzing the available STORET water quality data for the 1970-1987 time period (STORET is EPA's computerized water quality database). Data from approximately 6,500 stations are assessed in this report which necessitated the extensive use of computerized assessment techniques. Water quality assessment techniques used to identify problem areas included: water quality indices, screening level exceedances, statistical trend analysis, information from special studies and interviewing local experts. The 305(b) assessment was broadened this year to include more information on nonpoint sources by using a DER nonpoint source assessment survey (which is based on the responses of 150 Florida agencies). By the combined use of these information sources, 90% of Florida's river REACH miles, 96% of the estuary REACH area and 99% of Florida lake REACH area was assessed.

Florida's surface water quality is displayed on the cover map and the four enlargements of the cover map. Two conclusions can be drawn from these figures: first the majority of Florida's surface water quality was good, and second, the distribution of water quality problem areas closely followed the distribution of Florida's population (Figure 1). The sparsely populated northwest and west-central sections of the state had very good water quality. Water quality problem areas in the state are evident around the densely populated, major urban areas including: Jacksonville, Orlando, Tampa, the Cape Kennedy area and the southeastern Florida Coast. A quantitative summary of the state's water quality was accomplished by determining the degree of designated use support for the different waterbody types. The vast majority of Florida waterbodies meet or partially meet their designated use (89% of the river REACH miles, 90% of the lake REACH miles and 89% of the estuary REACH miles) and about 10% of the river, lake and estuary REACH mileages do not meet their uses.

Florida has not had a history as a highly industrialized area and thus, difficult and persistent industrial types of pollution are not widespread. However, Florida has undergone an extensive population growth in the last two decades resulting in more pollution sources associated with development.

Florida's major surface water quality problems can be summarized into five general categories which are listed below, in order of severity.

1) Agricultural runoff. The major pollutants involved include nutrients, BOD, bacteria and herbicides/pesticides. These pollutants generally do their worst damage in lakes and slow moving rivers and canals. Problems are concentrated in the central and southern parts of the state. Traditionally, agricultural operations have had far more lenient regulation than point sources; however, there is increasing recognition, even within the agricultural industry, of the need for improved treatment of runoff water.

Figure 1. The distribution of Florida's population, 1980.

Source: Water Resources Atlas of Florida. 1984.
Institute of Science and Public Affairs,
Florida State University.

2) Urban stormwater. Stormwater carries a wide variety of pollutants from nutrients to toxic metals. Problem areas are obviously concentrated around urban centers and mimic, quite well, the population map of the state (Figure 1). Current stormwater rules and growth management laws address this problem but are difficult to monitor and enforce. Furthermore, the option of redesigning existing stormwater systems is left up to local governments.

3) Domestic wastewater. This is an area that has shown significant improvement in the last decade. Most of the waterbodies with improving water quality trends can be traced to WWTP upgrades. Further advancements are being encouraged with design inovations such as wastewater discharge to wetlands, water reuse and advanced treatment. Still, a problem exists in the more rural areas in the state where financial and technological resources are limited. Consequently, several of these poorly operating facilities are polluting some of the state's most pristine waterbodies. Also septic tank leachate is a problem in many of Florida's waterbodies.

4) Industrial wastewater. Most notable among these are the pulp and paper mills. Because of the volume and nature of their discharge, all of the pulp and paper mills operating in the state seriously impact the receiving waters. In addition, the phosphate and fertilizer industries are major pollution sources (both point and nonpoint) in several of Florida's hydrologic basins.

5) Hydrological modifications. This is not strictly a pollution source. However, in most cases where the natural hydrological situation was modified (mostly for water quantity purposes) water quality problems have ensued.

It is very important to address both the sources of pollution and trends in water quality. In previous years, the majority of water quality problems in the state were caused by point sources, including both domestic and industrial sources. Recently, however, nonpoint sources accounted for the majority of the state's water quality problems. This is due to the fact that: 1) point source treatment processes have improved; and 2) there has been an increase in acreage of agricultural and urban developed land.

Water quality trend analysis was performed on problem reaches which had sufficient data for analysis (about one third of the REACHES). The majority of these waterbodies exhibited no significant trends. This is an important point because it indicates that despite Florida's tremendous population growth, its water quality is generally not worsening. Twice as many waterbodies had improving water quality trends as degrading trends. The improved water quality trends were generally the result of wastewater treatment plant upgrades or the additions of new regional WWTPs and nonpoint source controls in Tampa, Orlando and several other cities. Sixteen percent of the REACHES assessed for trends showed degrading trends; however, there are no areawide patterns of degrading trends similar to the improving trends. The causes for degrading trends included point sources and nonpoint sources.

This technical report was used in the production of the 305(b) main report. Information in this report was condensed in the main report and combined with statewide information on public health/aquatic life concerns, ground water status, lake and estuary status, and various state programs concerning point and nonpoint source pollution, wetlands, surface water monitoring, and special state concerns. The following tables and figures from the main report summarize the surface water assessment. After the tables a brief basin by basin summary is presented.

Table 1. Percent of Florida Waterbody Reaches Which Were Assessed

Waterbody	% of Miles Assessed: Quanitative Assessment (1970-1987 STORET Data)	Qualitative Assessment	Total Assessed	Unknown	Total Miles
Rivers	77%	13%	90%	10%	8873 miles
Lakes	90%	9%	99%	1%	1513 sq. mi.
Estuaries	89%	7%	96%	4%	2768 sq. mi.
Oceans	61%	6%	67%	33%	1291 sq. mi.

Table 2. Water Quality Summary

DESIGNATED USE SUPPORT
Type of Waterbody: River (miles)

Degree of Use Support	Assessment Basis: Evaluated*	Monitored	Total Assessed	(% of Total)
Size fully supporting	1651	3636	5287	(67%)
Size partially supporting	401	1620	2021	(25%)
Size not supporting	88	547	635	(8%)
TOTAL	2140	5803	7943	

* Evaluated includes old STORET data (<1980) and qualitative assesments.

DESIGNATED USE SUPPORT
Type of Waterbody: Lakes (square miles)

Degree of Use Support	Assessment Basis: Evaluated*	Monitored	Total Assessed	(% of Total)
Size fully supporting	42	442	484	(33%)
Size partially supporting	143	695	838	(57%)
Size not supporting	4	154	158	(10%)
TOTAL	189	1291	1480	

Table 2. Water Quality Summary (continued)

DESIGNATED USE SUPPORT
Type of Waterbody: Estuary (square miles)

Degree of Use Support	Assessment Basis Evaluated*	Monitored	Total Assessed	(% of Total)
Size fully supporting	243	1306	1549	(58%)
Size partially supporting	110	705	815	(31%)
Size not supporting	3	288	291	(11%)
TOTAL	356	2299	2655	

DESIGNATED USE SUPPORT
Type of Waterbody: Ocean (square miles)

Degree of Use Support	Assessment Basis Evaluated*	Monitored	Total Assessed	(% of Total)
Size fully supporting	131	630	761	(91%)
Size partially supporting	0	74	74	(9%)
Size not supporting	--	--	--	
TOTAL	131	704	835	

* Evaluated includes old STORET data (<1980) and qualitative assessment.

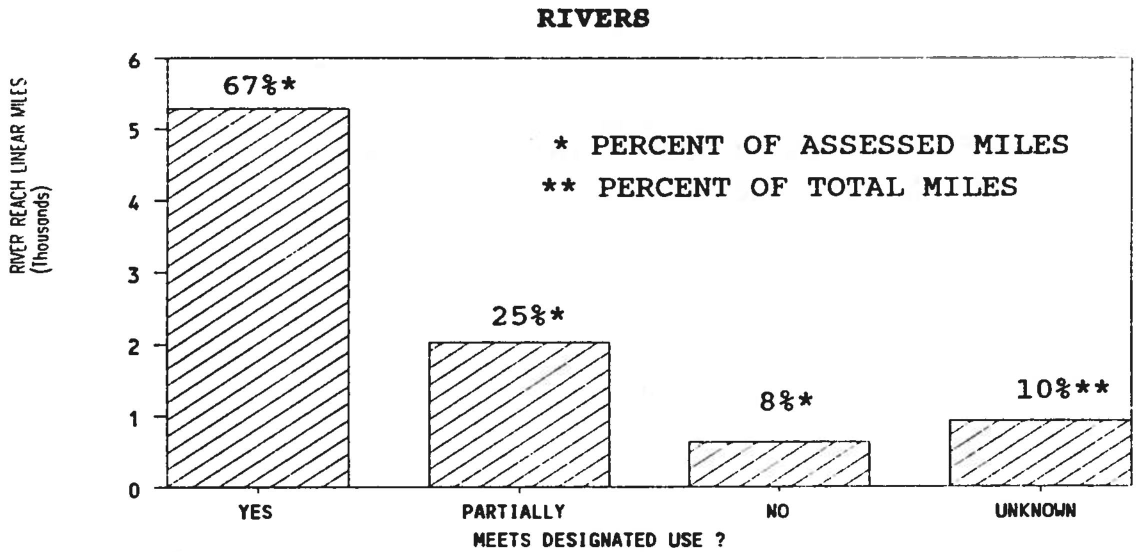
Table 3. Attainment of CWA Fishable/Swimmable Goals

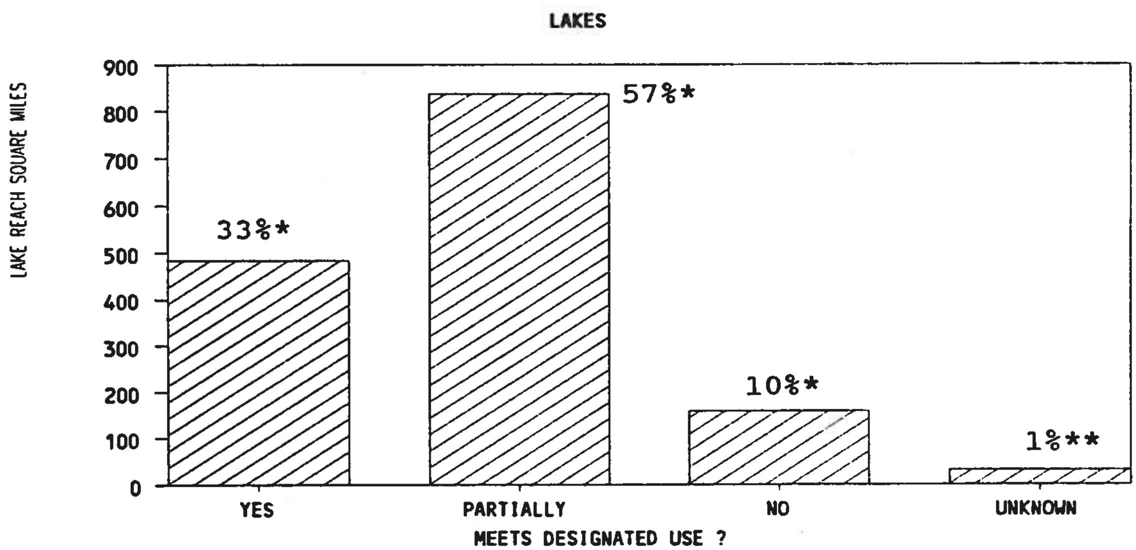
Goal Attainment	Type of Water Body: River Mile	Lakes Sq.Mi.	Estuarine Sq.Mi.	Ocean Sq.Mi.
Size Meeting	7308	1322	2364	835
Size not Meeting	635	158	291	--
Size not Attainable	35	--	--	--

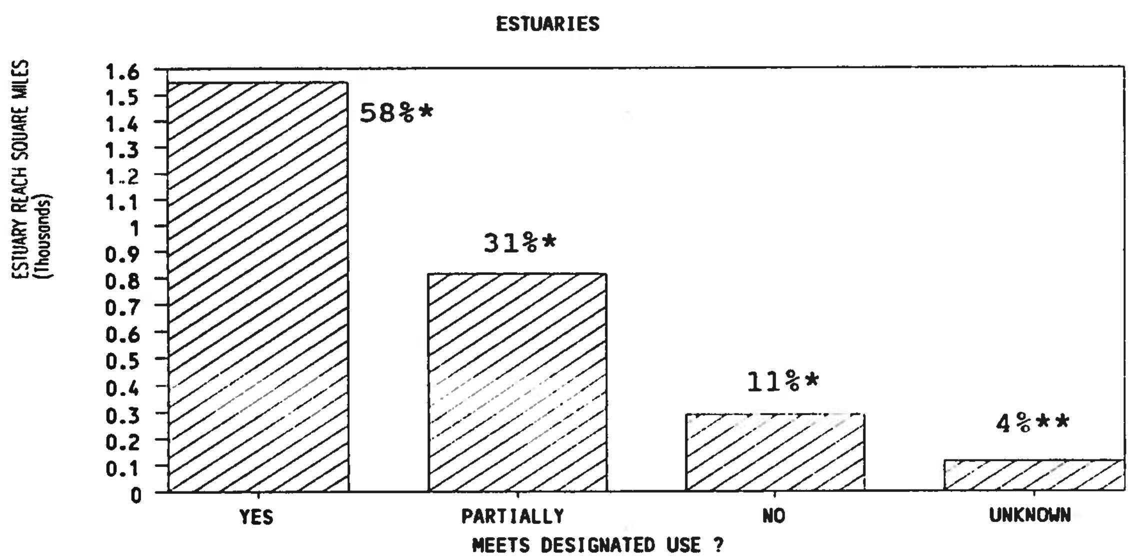
Basin by Basin Evaluation of Florida Waters

The quality of Florida waters is graphically depicted on color area section maps at the beginning of this report and on basin maps which follow each basin description. Areas of good, fair and poor quality are readily discernible on these maps. The following is a summary of the status of the quality of waters in four geographic sections of the state.

Figure 3. Designated use support of Florida rivers, lakes, and estuaries.







North

The Perdido Bay basin has water quality problems in two major areas: Elevenmile Creek and Bayou Marcus Creek. The former has severe nutrient, DO, color and BOD problems and depressed biological diversity. Champion Paper Company discharges into its headwaters. This industry's recent permit request is being contested by local environmental groups. Bayou Marcus Creek receives urban runoff and discharge from a waste treatment facility. The upper section of the bay is degraded due to the paper mill effluent and some urbanization in its northeastern drainage. Perdido River has good water quality except for the area near its mouth that is affected by the bay waters.

The Escambia, Blackwater and Yellow Rivers all drain into Pensacola Bay. They have very good water quality except for localized areas downstream of point sources. In the Escambia River, these areas are in the northernmost reaches, with mostly domestic dischargers, and in the southernmost reaches where there are industrial dischargers. The lower reaches of Blackwater River have historically been impacted by WWTPs which have recently been upgraded. Trammel Creek in the Yellow River basin shows somewhat degraded conditions due to domestic discharge. The Pensacola Bay basin has water quality problems associated with urbanization around the City of Pensacola. The western bay receives the bulk of the treated wastewater and urban runoff, while Escambia Bay has industrial discharges.

Although the Choctawhatchee River generally has good water quality, several of the tributary systems within the basin have problems associated with domestic or industrial discharge. Alligator, Holmes, and Camp Branch Creeks receive discharge from Chipley, Graceville and Bonifay WWTPs, respectively, and exhibit high nutrient and low DO concentrations. West Sandy Creek and Bruce Creek in the western basin show similar problems due to DeFuniak Springs WWTP and the Showell Farm poultry processing plant, respectively. Most of these small treatment plants have recently been upgraded or are in the process of being upgraded. Choctawhatchee Bay has good water quality except for the areas that receive spray field and/or urban runoff from the more highly developed areas around Ft. Walton and Destin beaches.

St. Andrews Bay has fairly good water quality. Some exceptions are Watson Bayou, previous discharge point of Millville WWTP; Beatty Bayou, previous discharge point of Lynn Haven WWTP; and Deer Point Lake, drinking water source for Panama City, which has nutrient and aquatic weed problems. Powell Lake is of special ecological interest and should receive the highest level of environmental protection.

The Chipola River has some areas of fair quality in the uppermost and lowermost reaches due to WWTPs and rangeland runoff. A tributary to Chipola River is a Superfund site due to a battery reclaiming industry and is currently undergoing a cleanup. The Apalachicola River basin has very good water quality except for two upstream tributaries which are impacted by domestic discharge and Scipio Creek at the mouth of the river which is impacted by shrimping and marina activities and historic wastewater loading. The WWTP at Scipio Creek has been converted to wetlands discharge. The New River basin's main problem area is in St. George Sound adjacent to the discharge point of the Carabelle WWTP, which is scheduled to

The Wekiva River joins the St. Johns just below Lake Monroe. The Little Wekiva River, a tributary of the Wekiva has a large nutrient load, high coliform levels, and low biological diversity. Water quality improves downstream of the Wekiva River to Lake George, which, because of its shallowness and degree of upstream loading, exhibits some eutrophication and is rated as 'fair'. The Sellars and Blue Cypress Lakes and their tributaries have good water quality.

Downstream of Lake George, the St. Johns River is wide, shallow and sluggish with frequent, tidally-influenced reverse flows. Many of the tributary systems have water quality problems which impact the river. Agricultural runoff and domestic discharge affect the Haw Creek/Crescent Lake tributary drainage. A large paper mill and other industrial and domestic dischargers cause high nutrient and color levels and low biological diversity and DO values in the Rice Creek tributary system. Agricultural and dairy runoff affect Black Creek and Peters Creek. The Julington Creek, Durbin Creek and Doctors Lake area watersheds are highly developed and water quality problems due to urban runoff and septic tank leachage are evident.

Water quality problems from septic tank leachate and WWTP discharge are common throughout the Jacksonville area of the river and its tributaries. In addition, numerous industries discharge to the river system. As a result most of the tributaries, notably the Ortega, Cedar and Trout Rivers, have fair to poor water quality. The St. Johns River itself has fair to poor water quality from Lake George to its mouth due to the polluted tributaries, direct discharge and significant urban runoff.

With the exception of the nearly pristine Palatlakaha Chain of Lakes, the Oklawaha River has poor water quality in its upper reaches, particularly in Lake Apopka. Lake Apopka is highly eutrophic (with high concentrations of chlorophyll and nutrients, widely fluctuating dissolved oxygen levels and low biological diversity). Point source nutrient loads to Lake Apopka have been reduced, but the lake remains eutrophic due to nutrient resuspension from the sediments and continued intensive farming in the lake's drainage areas. Downstream lakes are also eutrophic, but less so than Apopka. Water quality improves considerably in the lower Oklawaha River, although low DO levels are common because of swamp drainage and low DO in the ground water inflow below Silver River. Hogtown Creek in Gainesville also has water quality problems due to urban runoff and organic toxic materials which come from a Superfund site. The site is undergoing a major cleanup project.

The Kissimmee River has its headwaters near Orlando, and its upper reaches (Shingle Creek and Reedy Creek) have water quality problems from WWTP and urban runoff pollution sources. The domestic sources have been considerably reduced, and water quality is improving. Lake Tohopekaliga is also showing improvements due to a reduction in WWTP discharge and lake drawdown. The lower Kissimmee River was channelized by the Army Corps of Engineers and consequently flushes its agricultural and dairy runoff derived loadings directly to Lake Okeechobee where it adds to the lake's eutrophication problems. Recently an isolated de-channelization project has achieved very favorable results, and funds are being sought to extend the project.

The east coast estuarine waters from Jacksonville to Ft. Pierce are impacted by domestic discharge, stormwater runoff, causeways which reduce hydraulic convert to alternative discharge methods this summer. Apalachicola Bay has very good water quality and supports Florida's largest commercial oyster fishery. Both of these basins have localized problems due to nonpoint source pollution from fish houses and marinas.

The upper Ochlockonee River has some bacteria, nutrient and turbidity problems from WWTPs, fuller's earth mining, and out-of-state point sources. The lower river, Lake Talquin and the Sopchoppy River maintain good water quality.

The St. Marks, Wakulla and Aucilla Rivers have excellent water quality except for a small stretch in the lower St. Marks that has oil polluted sediments from oil spills, Seminole Asphalt discharge and marina activities. Munson Slough and Lake Munson in Tallahassee have nutrient, DO and metals pollution problems from past domestic discharges (now routed to spray irrigation) and current stormwater runoff. Lake Munson has shown marked improvement in water quality since the diversion.

The Steinhatchee River basin's major water quality problem is the Fenholloway River which is seriously affected by the effluent from a large paper mill (Buckeye Cellulose). Although the discharge quality improved in the early seventies, the river still has high nutrients and color and low DO and biological diversity.

The upper and lower Suwannee River basins, which receive a considerable quantity of ground water spring flow, have excellent water quality except for some of the upper river tributaries which receive Occidental Chemical Company's phosphate mining wastewater. The river reach immediately downstream of Swift Creek is also impacted. The North Withlacoochee River receives effluent from a paper mill and poultry processing plant in Georgia, but generally has good water quality at its confluence with the Suwannee. The Alapaha River basin also has good water quality. The Sante Fe River has several major springs and very good water quality. Alligator Lake in the upper basin is degraded from the Lake City WWTP discharge and urban runoff.

Northeast

The St. Marys River has very good water quality. A tributary (Turkey Creek) shows water quality problems below two WWTP outfall. A tributary at the mouth of the St. Marys (North River) has water quality problems below a Georgia paper company outfall. Amelia River frequently has high coliform levels and low biological diversity. Pulp mill operations are located along this river. Nassau River has good water quality except for Mills Creek which receives dairy farm runoff.

Both the upper and lower St. Johns River basins have water quality problems. The uppermost reaches have good quality although DO is naturally low. Lakes Harney, Jessup and Monroe and many of their tributaries have severe water quality problems, primarily as a result of historical nutrient, BOD and toxic loadings from Orlando area WWTPs and urban runoff. Water quality in these reaches is improving due to improved, centralized treatment of domestic wastewater; however, because of the historic loading and continued nonpoint source input, the recovery process is slow.

flushing, and shoreline vegetation disruption. Areas of greatest impact are the intracoastal waterway near Palm Valley, the Matanzas River around St. Augustine, the Halifax River between Ormond Beach and Daytona Beach, the Indian River and Banana River from Titusville to Melbourne and the Indian River at Vero Beach and Ft. Pierce. Many of the WWTPs in the middle basin are shifting to deep well injection of treated wastewater. Sykes Creek in the Newfound Harbor area has shown improvement due to reduced domestic discharge.

Southwest

The rivers along the West Coast of Florida from Crystal River to the Anclote River are mostly springfed and have excellent water quality. Boca Ceiga Bay, its feeder creeks, and canals between the bay and Tampa Bay generally have nigh nutrient and low DO values.

The Hillsborough River has a considerable number of problems in its upper reaches and tributaries to these reaches. High nutrient concentrations, particularly phosphorus, and/or high levels of coliform bacteria occur in Itchepackasassa Creek, Pemberton Creek, Big Ditch and the upper Hillsborough River. A citrus processing plant, wastewater treatment plant and phosphate processing plant discharge to the upper Hillsborough River system. The lower portion of the Hillsborough River is dammed to form a drinking water reservoir and has fishkills during certain periods of the year. These appear to be caused by low DO concentrations resulting from algal blooms.

The Alafia River, particularly the North Prong, has very poor water quality, including high concentrations of nutrients and coliform bacteria, low levels of dissolved oxygen, and low biological diversity. Phosphate mining and processing plants, WWTP effluents and rangeland runoff contribute to these problems. The lower Alafia has problems attributed to Tampa Bay tidal flow and to accidental and permitted discharges from the Gardinier fertilizer company.

Both the Little Manatee River and the Manatee River have good water quality although there are high nutrient levels from nonpoint sources. Lake Manatee has severe eutrophication problems. An intensive survey and wasteload allocation for the estuarine portion of the Manatee River showed high nutrient and chlorophyll levels and low DO levels attributed to nonpoint sources as well as the domestic and industrial discharge loadings.

The Hillsborough and Alafia Rivers empty into Hillsborough Bay and contribute to its excessive nutrient loading. Other pollution sources include Delaney Creek and Sixmile Creek. The former receives effluent from Nitram (a fertilizer company), and the latter receives WWTP and nonpoint source nutrient loading. Hillsborough Bay also receives the city of Tampa's urban runoff and effluent from an advanced wastewater treatment plant located on Hooker's Point. The bay exhibits high levels of bacteria, nutrients and chlorophyll. However, there are improving trends in the bay (particularly for nutrients) probably due to the upgrading of the Hooker's Point plant. The bay still has relatively heavily polluted sediments (notably with BOD and metals).

Old Tampa Bay also has eutrophication problems primarily caused by numerous small treatment plants operating under temporary permits and by urban runoff from Tampa and St. Petersburg. All of the tributaries and canals of Old Tampa Bay are developed and are impacted by these pollution sources. Tampa Bay proper exhibits better water quality than Old Tampa Bay or Hillsborough Bay because it has greater mixing and dilution with the Gulf of Mexico waters and less concentrated pollution sources. Development is fairly intense along its shoreline, and there are both domestic and industrial discharges.

The Sarasota Bay basin has fair to good water quality. The major pollution sources are urban runoff, which affects both the tributaries and the bay, and the Sarasota WWTP which discharges to Whitaker Bayou. This facility is frequently in violation of permit conditions, but there are plans for its conversion to upland discharge.

The Peace River has several problems, most of which originate in the upper reaches of the system. Tributaries to the upper Peace River originate from lakes which have eutrophic conditions. Sources of discharge to the upper Peace include phosphate mining, fertilizer and other chemical manufacturing, effluents from wastewater treatment facilities, citrus processing, and runoff from agriculture and urban areas. Water quality in the middle and lower Peace River improves although it still has very high phosphorus values. Unmined tributaries are important sources of high quality water and benthic fauna for recolonizing the main channel when it becomes stressed.

The Myakka River has good water quality although it has naturally low DO concentrations from swamp drainage and has nutrient loading from agricultural runoff. Its flow varies greatly during the year, sometimes falling to zero net flow in the dry spring season. The Caloosahatchee River has no major pollution problems. It has somewhat elevated nutrient levels and depressed oxygen levels from agricultural runoff. Biological diversities are slightly lower in the river than in its triburaries. The estuarine portion receives urban runoff and some domestic discharge and exhibits water quality problems. Recent upgrading of several of the area's treatment facilities should help to improve water quality.

Charlotte Harbor and associated estuaries have generally good water quality. Phosphorus loading is high as a result of the contribution from the Peace River which is impacted by phosphate mining, and from the Myakka and Caloosahatchee Rivers' nonpoint nutrient loading. The harbor is also affected by urbanization, but supports a healthy estuarine habitat.

<u>South</u>

The Fisheating Creek basin has no major pollution problems, although agricultural runoff has resulted in some depressed DO concentrations in the C-40 canal. The five streams that compose the Taylor Creek Basin (north of Lake Okeechobee) have some of the poorest water quality in the state. They are heavily impacted by dairy farm runoff with extremely large loading of nutrients, bacteria and BOD. This loading causes frequent violation of state standards for DO. Lake Okeechobee exhibits fair overall quality, and there are degrading trends. The northern section of the lake is impacted by excessive nutrient loads from Kissimmee River and from the streams in the

Taylor Creek basin. The southern section of the lake is impacted by excessive nutrient loads coming from the backpumping of agricultural lands. These lands are heavily fertilized row crop farms (primarily sugar case farms). Backpumping, which must now go through the permitting process, occurs mostly during the warm, rainy season. There is a conserted effort by DER and the South Florida Water Management District to reverse the trend of worsening water quality in Lake Okeechobee.

Lake Okeechobee serves as the hub of a flood control system that involves five major canals that run from the east and southeast of the lake through water conservation areas and the Everglades to the Atlantic Ocean. These major canals are greatly subdivided and dammed for flood control purposes. The canals, along with the residential finger canal systems which are located along the intracoastal water and the Biscayne Bay area, make up most of the water systems of the Southeast Coast basin. The canals are characterized by high nutrient levels, low DO concentrations and poor flushing. Water quality in the western reaches of these canals near the lake is poor due to agricultural runoff. The water quality of the canals in the eastern section of the basin is directly related to the degree of urbanization surrounding them and domestic point sources. Areas of relatively good water quality in the Southeast Coast basin are the Savannas near Ft. Pierce, portions of the St. Lucie and Loxahatchee Rivers and their estuaries, portions of Lake Worth, and the more open areas of Biscayne Bay. The marshes constituting the water conservation areas and most of the Everglades National Park are also included in this basin and have good water quality but are threatened by the nutrient loading from agricultural areas.

The rest of the Everglades is included in the West Coast basin which generally has good water quality. The Tamiami Canal which traverses the entire peninsula has fair water quality due to poor flushing and detrital breakdown which depletes dissolved oxygen.

The Florida Keys have excellent water quality except for problems in some of the manmade canals, in the marina areas, and in the port at Key West. There are also localized problems around some of the wastewater outfalls, particularly that of the city of Key West.

INTRODUCTION AND METHODS

This document describes the water quality assessment procedures used by the Bureau of Surface Water Management to prepare the 1988 Florida Water Quality Inventory [305(b)]. The procedures are:

1. Inventory STORET data;
2. Calculate Stream Water Quality Index (WQI);
3. Calculate Lake/Estuary Trophic State Index (TSI);
4. Apply Screening Levels;
5. Trend Analysis;
6. Toxic Pollutant Assessment; and
7. Nonpoint Source Assessment

A water quality inventory was performed on EPA's STORET database. The inventory included the years 1970 through 1987. Tables of water quality data were prepared for each of Florida's 52 basins. Keys to these tables can be found on page 7. Three procedures were then used to assess the water quality data. A Water Quality Index was calculated to determine the overall quality of Florida streams and rivers. The Water Quality Index summarizes information from six categories including water clarity (turbidity and total suspended solids), dissolved oxygen, oxygen demanding substances (biochemical oxygen demand, chemical oxygen demand, and total organic carbon), nutrients (total nitrogen and total phosphorus), bacteria (total coliform and fecal coliform), and macroinvertebrate diversity index (based on natural substrate samples, artificial substrate samples and Beck's Biotic Index). The water quality of lakes and estuaries is described by the Trophic State Index which is a measure of the potential for algal growth. The components which make up the Trophic State Index include total nitrogen, total phosphorus, chlorophyll and Secchi depth. Screening levels for 19 water quality parameters were also used to determine the quality of Florida lakes, estuaries and streams.

The water quality indices and screening levels have all been tailored to Florida's water quality by using the actual distribution of Florida data to determine the water quality criteria used by the procedures. Specific information on each of the procedures is described in the following sections.

Inventory of STORET Data

An inventory of data was retrieved from STORET for the 1970-1987 time period. Fifty STORET parameter codes representing 21 different water quality parameters were inventoried (Table 1). There are about 6500 Florida stations in STORET representing 1000 EPA REACHES. Annual average water quality data were calculated for these stations and the average data were stored on a local IBM AT (26,000 annual averages). A Water Quality Index value was calculated for each stream/river annual average and a Trophic State Index value was calculated for each lake/estuary annual average.

TABLE 1.

STORET WATER QUALITY ASSESSMENT PARAMETERS

CATEGORY	STORET PARAMETER NAME		STORET CODE NUMBER
COLIFORM	FECAL COLI	MFM-FCBR /100ML	31616
COLIFORM	FECAL COLI	MPNECMED /100ML	31615
COLIFORM	TOTAL COLI	MFIMENDO /100ML	31501
COLIFORM	TOTAL COLI	MPN CONF /100ML	31505
CONDUCTIVITY	CONDUCTIVITY	AT 25C MICROMHO	95
CONDUCTIVITY	CONDUCTIVITY	FIELD MICROMHO	94
DISSOLVED OXYGEN	DISSOLVED OXYGEN	% SATURATION	301
DISSOLVED OXYGEN	DISSOLVED OXYGEN	MG/L	300
DISSOLVED OXYGEN	DISSOLVED OXYGEN	PROBE MG/L	299
DIVERSITY INDEX	BIOTIC INDEX	BI	82256
DIVERSITY INDEX	DIVERSTY INDEX	ARTIFICIAL SUBSTRATE	82251
DIVERSITY INDEX	DIVERSTY INDEX	NATURAL SUBSTRATE	82246
FLOW	STREAM FLOW	CFS	60
FLOW	STREAM FLOW	INST-CFS	61
OXYGEN DEMAND	BOD 5 DAY	MG/L	310
OXYGEN DEMAND	COD HI LEVEL	MG/L	340
OXYGEN DEMAND	TOT ORGANIC CARBON	C MG/L	680
PH-ALKALINITY	PH SU		400
PH-ALKALINITY	PH SU	LAB	403
PH-ALKALINITY	TOTAL ALKALINITY	CACO3 MG/L	410
TEMPERATURE	TEMPERATURE WATER	CENT	10
TROPHIC STATUS	CHLOROPHYLL A	MG/L	32230
TROPHIC STATUS	CHLOROPHYLL A	UG/L	32217
TROPHIC STATUS	CHLOROPHYLL A	UG/L	32210
TROPHIC STATUS	CHLOROPHYLL A	UG/L CORRECTD	32211
TROPHIC STATUS	CHLOROPHYLL TOTAL	MG/L	32234
TROPHIC STATUS	CHLORRPHYLL	TOTAL UG/L	32216
TROPHIC STATUS	NITROGEN AMMONIA	DISS-NH4 MG/L	71846
TROPHIC STATUS	NITROGEN NH3+NH4-	N DISS MG/L	608
TROPHIC STATUS	NITROGEN NH3+NH4-	N TOTAL MG/L	610
TROPHIC STATUS	NITROGEN NITRATE	DISS-NO3 MG/L	71851
TROPHIC STATUS	NITROGEN NITRATE	TOT-NO3 MG/L	71850
TROPHIC STATUS	NITROGEN NO2&NO3	N-DISS MG/L	631
TROPHIC STATUS	NITROGEN NO2&NO3	N-TOTAL MG/L	630
TROPHIC STATUS	NITROGEN NO3-N	DISS MG/L	618
TROPHIC STATUS	NITROGEN NO3-N	TOTAL MG/L	620
TROPHIC STATUS	NITROGEN ORG N	N MG/L	605
TROPHIC STATUS	NITROGEN TOT KJEL	N MG/L	625
TROPHIC STATUS	NITROGEN TOTAL N	AS NO3 MG/L	71887
TROPHIC STATUS	NITROGEN TOTAL N	N MG/L	600
TROPHIC STATUS	PHOSPHORUS	ORTHOPO4 PO4 MG/L	660
TROPHIC STATUS	PHOSPHORUS TOTAL	AS PO4 MG/L	71886
TROPHIC STATUS	PHOSPHORUS TOTAL	MG/L P	665
TROPHIC STATUS	TRANSPARENCY	SECCHI INCHES	77
TROPHIC STATUS	TRANSPARENCY	SECCHI METERS	78
WATER CLARITY	COLOR	PT-CO UNITS	80
WATER CLARITY	COLOR-AP	PT-CO UNITS	81
WATER CLARITY	RESIDUE TOT NFLT	MG/L	530
WATER CLARITY	TURBIDITY	JKSN JTU	70
WATER CLARITY	TURBIDITY	TRBIDMTR HACH FTU	76

Florida Stream Water Quality Index Procedure

To assess Florida stream water quality, a Florida stream Water Quality Index (WQI) was developed. The WQI is based on the quality of water as measured by six water quality categories (water clarity, dissolved oxygen, oxygen demanding substances, bacteria, nutrients and biological diversity). Each category may have more than one parameter as shown in Table 2. Raw (annual average) data are converted into index values which range from 0 to 90 for the six categories. Index values correspond to the percentile distribution of stream water quality data in Florida (Table 2). [The percentile distribution of STORET water quality data were determined for all 2,000 ambient, stream STORET locations in Florida. For example, Table 2 shows the BOD concentrations ranged from 0.8 mg/l (10 percentile) to 5.1 mg/l (90 percentile) with a median value of 1.5 mg/l (50 percentile). A BOD concentration of 0 to less than .8 mg/l is assigned an index value of 0; a BOD concentration of 1.5 to less than 1.9 mg/l is assigned an index value of 50, etc.]

The overall WQI is the arithmetic average of the six water quality index categories. The index for each category is determined by averaging its component parameter index values. Missing water quality parameters and missing water quality categories are ignored in the final calculation. Therefore, the final WQI is based on an average of anywhere from 1 to 6 water quality index categories. Table 3 shows an example calculation of the WQI.

In order to determine the range of values of the WQI which correspond to good, fair and poor quality the WQI was correlated with the EPA National Profiles Water Quality Index data for Florida data. (The EPA WQI was used in the 1986 305(b).) Based on this correlation the cutoff values for the WQI were determined as follows: 0 to less than 45 represents good quality, 45 to less than 60 represents fair quality, and 60 to 90 represents poor quality.

The Florida stream Water Quality Index has several advantages over other indices historically used by this section. First, the index is tailored to Florida water quality data, since it is based on the percentile distribution of Florida stream data. Second, it uses the water quality categories which are felt to be the most important measures of water quality: water clarity, dissolved oxygen, oxygen demanding substances, nutrients, bacteria and biological diversity. Third, it is simple to understand and calculate and does not require a mainframe computer or any complex data transformations or averaging schemes. Finally, the index works; it nicely identifies areas of good, fair and poor water quality.

A toxics category would be a nice addition to the index; however, toxics were not included in the index since there are relatively few toxics data in Florida. The pH category which has been used in previous indices was dropped from the index this year because of the lack of pH problems in Florida and the fact that low pH is a natural condition in many Florida waterbodies.

TABLE 2.

FLORIDA STREAM WATER QUALITY INDEX CRITERIA
PERCENTILE DISTRIBUTION OF STORET DATA

PARAMETER	UNIT	BEST QUALITY 10%	20%	30%	40%	MEDIAN VALUE 50%	60%	70%	80%	WORST QUALITY 90%
** CATEGORY: WATER CLARITY										
TURBIDITY	JTU	1.50	3.00	4.00	4.50	5.20	8.80	12.20	16.50	21.00
TOTAL SUSPENDED SOLIDS	MG/L	2.00	3.00	4.00	5.50	6.50	9.50	12.50	18.00	26.50
** CATEGORY: DISSOLVED OXYGEN										
DISSOLVED OXYGEN	MG/L	8.00	7.30	6.70	6.30	5.80	5.30	4.80	4.00	3.10
** CATEGORY: OXYGEN DEMAND										
BIOCHEMICAL OXYGEN DEMAND	MG/L	0.80	1.00	1.10	1.30	1.50	1.90	2.30	3.30	5.10
CHEMICAL OXYGEN DEMAND	MG/L	16.00	24.00	32.00	38.00	46.00	58.00	72.00	102.00	146.00
TOTAL ORGANIC CARBON	MG/L	5.00	7.00	9.50	12.00	14.00	17.50	21.00	27.50	37.00
** CATEGORY: NUTRIENTS										
TOTAL NITROGEN	MG/L AS N	0.55	0.75	0.90	1.00	1.20	1.40	1.60	2.00	2.70
TOTAL PHOSPHORUS	MG/L AS P	0.02	0.03	0.05	0.07	0.09	0.16	0.24	0.46	0.89
** CATEGORY: BACTERIA										
TOTAL COLIFORM	#/100 ML	100.00	150.00	250.00	425.00	600.00	1100.00	1600.00	3700.00	7600.00
FECAL COLIFORM	#/100 ML	10.00	20.00	35.00	55.00	75.00	135.00	190.00	470.00	960.00
** CATEGORY: BIOLOGICAL DIVERSITY										
DIVERSITY INDEX NAT. SUBSTRATE	INDEX	3.50	3.10	2.80	2.60	2.40	2.15	1.95	1.50	1.20
DIVERSITY INDEX ART. SUBSTRATE	INDEX	3.55	3.35	3.20	3.05	2.90	2.65	2.40	1.95	1.35
BECKS BIOTIC INDEX	INDEX	32.00	28.00	23.00	18.50	14.00	11.00	8.00	5.50	3.50

Table 3. An Example Calculation of the Florida Stream Water Quality Index (WQI).

Water Quality Category[1]	Water Quality Parameter[2]	Value[3]	Parameter Index Value[4]	Index Average[5]
Water Clarity	Turbidity	3.9 mg/l	20	35
Water Clarity	Total Suspended Solids	7.0 mg/l	50	
Dissolved Oxygen	Dissolved Oxygen	5.4 mg/l	50	50
Oxygen Demanding Substances	BOD	2.8 mg/l	70	
Oxygen Demanding Substances	COD	31.0 mg/l	20	45
Oxygen Demanding Substances	TOC	-1	--	
Nutrients	Total Nitrogen	1.87 mg/l	70	75
Nutrients	Total Phosphorus	0.56 mg/l	80	
Bacteria	Total Coliform	1800 MPN/100 ml	70	70
Bacteria	Fecal Coliform	190 MPN/100 ml	70	
Macroinvertebrate Diversity	Natural Substrate	1.7	70	
Macroinvertebrate Diversity	Artificial Substrate	2.3	70	67
Macroinvertebrate Diversity	Beck's Biotic Index	11.0	60	
				WQI = 57[6]

1 - These are the 6 water quality categories.
2 - These are the 13 water quality parameters which make up the 6 categories.
3 - These are the actual data values (-1 indicates no measurement was taken for this parameter).
4 - The index value is based on the percentile distribution values shown in Table 2.
5 - The category average is based on an average of each of the water quality parameter values.
6 - The WQI is an average of the category index values, i.e., WQI = (35+50+45+75+70+67)/6=57.

KEY

```
                         WATER QUALITY ASSESSMENT REPORT
                  SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
            '*'=PROBLEM OR DEGRADING TREND  '0'=NO TREND  '.'=NO DATA
             '-'= NO PROBLEM OR IMPROVING TREND  (SEE LEGEND PAGE 7)

                                        MEETS  WQI | SCREENING PROBLEMS  | | 1980-1987 TRENDS  | |  SOURCES   | PRESENT CONDITIONS AND CLEANUP EFFORTS
REACH REACH NAME                         USE   RANK|---------------------| |-------------------| |------------|
----- -------------------------------- ------- ----|NPSS|BDBD|CSTT|AMB|FAB| |W|TFTT|BODT|CSTT|TF| |IM|ASCU|MLHS|
                                                   |PHIA|OOAI|HDNP|MEI|KWL| |Q|CCUS|OOSO|HDNP|EL| |NU|GVNR|NDMT|
```

Screening Problems

Nutrients
pH
Silt=Turbidity or Total Suspended Solids
Salt=Conductivity
BOD=BOD, COD or TOC
Dissolved Oxygen
Bacteria = Total of Fecal Coliform
Diversity Index = Natural, Artifical
  or Beck's
Chlorophyll a
Secchi Depth
Total Nitrogen
Total Phosphorus
Ammonia (unionized)
Metal
Bioassay
Fishkill
Aquatic Weed
Algal Bloom

Trends

Water Quality Index
Total Coliform
Fecal Coliform
Turbidity
Total Suspended Solids
BOD
Dissolved Oxygen
Dissolved Oxygen Percent
  Saturation
TOC
Chlorophyll a
Secchi Depth
Total Nitrogen
Total Phosphorus
Temperature
Flow

Sources

Industrial
Municipal
Agricultural
Silviculture
Construction
Urban
Mining
Land Disposal
Hydrologic Modification
Septic Tank

Note: abbreviated parameter codes should be read vertically.

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L   -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
** USGS HYDROLOGIC UNIT: 03110202 ALAPAHA RIVER																										
* WATER BODY TYPE: STREAM																										
1.00	ALAPAHA RIVER AB SUWANNEE RIVE	31	66	82	10.2	0.9	119	11	7.6	90	1.5	41	17	6.0	20	0.95	0.18	-1	2088	338	-1.0	-1.0	-1	141	574	-1

KEY TO THE WATER QUALITY TABLES

MAX #OBS = MAXIMUM POSSIBLE NUMBER OF OBSERVATIONS
BEG YR = FIRST YEAR SAMPLED
END YR = LAST YEAR SAMPLED
TURB = TURBIDITY (JTU's or FTU's)
SD = SECCHI DEPTH (M)
COLOR = COLOR (PTU's)
TSS = TOTAL SUSPENDED SOLIDS (MG/L)
DO = DISSOLVED OXYGEN (MG/L)
%SAT = DISSOLVED OXYGEN PERCENT SATURATION
BOD = BIOCHEMICAL OXYGEN DEMAND (MG/L)
COD = CHEMICAL OXYGEN DEMAND (MG/L)
TOC = TOTAL ORGANIC CARBON (MG/L)
PH = pH (STANDARD UNITS)
ALK = TOTAL ALKALINITY (MG/L)
NITRO = TOTAL NITROGEN (MG/L as N)
PHOS = TOTAL PHOSPHORUS (MG/L as P)
CHLA = CHLOROPHYLL a (UG/L)
TOTAL = TOTAL COLIFORM (MPN/100 ML)
FECL = FECAL COLIFORM (MPN/100 ML)
NAT = DIVERSITY INDEX,NATURAL SUBSTRATE
ART = DIVERSITY INDEX,ARTIFICIAL SUBSTRATE
BECK = BECK's BIOTIC INDEX
COND = CONDUCTIVITY (MICROMHO)
FLOW = FLOW (CFS)
WQI = WATER QUALITY INDEX

Trophic State Index Procedure

The Trophic State Index procedure provides an effective method of classifying lakes based on the lake's chlorophyll, Secchi depth, nitrogen and phosphorus concentrations. The index was developed in response to the EPA Clean Lakes Program and is documented in the classification of Florida Lakes Report by the University of Florida, Department of Environmental Engineering Sciences (1982). This index remains unchanged from the 1986 305(b) report.

The index is based on a trophic classification scheme developed by R. E. Carlson (1977). He relied on three trophic indicators to describe the trophic status of a lake. His goal was to have each indicator relate to algal biomass such that a 10 unit change in the index would represent a doubling or halving of algal biomass. Carlson developed indices based on Secchi disc transparency, chlorophyll concentration and total phosphorus concentration. The Florida Trophic State Index (TSI) is based on the same rationale, but also includes total nitrogen concentration as a fourth index. Criteria were developed for Florida lakes from a regression analysis of data on 313 Florida lakes. The desirable upper limit for the index is set at 20 ug/l chlorophyll which corresponds to an index of 60. Doubling the chlorophyll concentration to 40 ug/l results in an index increase to 70 which is the cutoff for undesirable (or poor) lake quality. The criteria for chlorophyll, Secchi depth, total phosphorous and total nitrogen concentrations are shown in Table 4.

A nutrient index is also calculated based on phosphorus and nitrogen concentrations and the limiting nutrient concept. The limiting nutrient concept identifies a lake as phosphorus limited if the nitrogen to phosphorus concentration ratio is greater than 30, as nitrogen limited if the ratio is less than 10, and balanced (depending on both nitrogen and phosphorus) if the ratio is 10-30. Thus, the nutrient TSI is based solely on phosphorus if the ratio is greater than 30, solely on nitrogen if less than 10, or based on both nitrogen and phosphorus if the ratio is between 10 and 30.

An overall index (TSI) is calculated based on the average of the chlorophyll TSI, the Secchi depth TSI and the nutrient TSI. For this index to be calculated, both nitrogen and phosphorus measurements are required for the sample. The lake trophic state index was also applied to Florida estuaries to describe estuarine water quality. The criteria for the estuary quality ratings is 10 less than the lake ratings (i.e., good estuarine water quality is a TSI value of 0-49, fair quality is 50-59, and poor quality is a value of 60-100). Table 5 shows an example TSI calculation.

Screening Levels

Screening levels were used to determine whether water quality problems were being caused by each of nineteen water quality parameters (Table 6). Screening levels were based on either Florida criteria or on criteria established by professional judgement when the Florida criteria are qualitative. Different screening levels were developed for streams, lakes and estuaries to take into account the natural differences of these water-

Table 4. Trophic State Index (TSI) for Lakes and Estuaries

For Lakes: 0-59 is good, 60-69 is fair, 70-100 is poor
For Estuaries: 0-49 is good, 50-59 is fair, 60-100 is poor

TSI	CHLA (ug/l)	SD (m)	TP (mgP/l)	TN (mgN/l)
0	0.3	7.4	.003	0.06
10	0.6	5.3	.005	0.10
20	1.3	3.8	.009	0.16
30	2.5	2.7	.01	0.27
40	5.0	2.0	.02	0.45
50	10.0	1.4	.04	0.70
60	20.0	1.0	.07	1.2
70	40	0.7	.12	2.0
80	80	0.5	.20	3.4
90	160	0.4	.34	5.6
100	320	0.3	.58	9.3

TSI equations which generate the above criteria

CHLA = 16.8 + 14.4 x LOG (CHLA)

SD = 60 - 30 x LOG (SD)

TN = 56 + 19.8 x LOG (TN)

TP = 18.6 x LOG (TP x 1000) - 18.4

TSI = (CHLA + SD + NUTR*)/3

Where LOG = Natural Log

* Limiting Nutrient Considerations for Calculating TSI - NUTR:

If TN/TP > 30 then NUTR = TP

If TN/TP < 10 then NUTR = TN

If 10<TN/TP<30 then NUTR = (TP+TN)/2, where TN/TP is the limiting nutrient ratio of total nitrogen divided by total phosphorus

Table 5. An Example Calculation of the Trophic State Index (TSI)
(See Table 4 for Formulas)

	Annual Average	TSI Calculation	Average TSI
Chlorophyll	6.0 ug/l	42.6[1]	42.6
Secchi Depth	1.8 meters	42.3[2]	42.3
Phosphorous	0.04 mgP/l	50.2[3]	49.2[5]
Nitrogen	0.67 mgN/l	48.1[4]	
			45. [6]

1. CHLA = 16.8 + 14.1 x LOG (6.0) = 42.6

2. SD = 60 - 30 x LOG (1.9) = 42.3

3. TP = 18.6 x LOG (0.04 * 1000) - 18.4 = 50.2

4. TN = 56 + 19.8 * LOG (0.67) = 48.1

5. TN/TP Ratio = 0.67/0.04 = 16.7 therefore, TSI NUTR = an average of TSI Phosphorus and TSI Nitrogen = (50.2 + 48.1)/2 = 49.2

6. (42.6 + 42.3 + 49.2)/(3 = 45)

TABLE 6.

WATER QUALITY ASSESSMENT PARAMETERS
FOR FLORIDA STREAMS, LAKES, AND ESTUARIES

SCREENING LEVELS-TYPICAL VALUES-FLORIDA CRITERIA

PARAMETER	UNITS	SCREENING LEVEL	TYPICAL VALUES 10%	(MEDIAN)	90%	FLORIDA CRITERIA (17-3) CLASS III
** WATERBODY TYPE: STREAM						
ALKALINITY	CACO3 MG/L		13	(75)	150	20.0 MG/L MIN.
BECKS BIOTIC INDEX	INDEX #	<5.5	4	(14)	32	
BOD 5 DAY	MG/L	>3.3	.8	(1.5)	5.1	NOT CAUSE DO<5 MG/L
CHLOROPHYLL	UG/L		1	(6)	30	
COD	MG/L	>102	16	(46)	146	
COLIFORM-FECAL	#/100 ML	>470	10	(75)	960	200/100 ML
COLIFORM-TOTAL	#/100 ML	>3700	100	(600)	7600	1000/100 ML
COLOR	PLATINUM-COLOR UNITS		21	(71)	235	NO NUISANCE CONDITIONS
CONDUCTIVITY	MICROMHO	>1275	100	(335)	1300	1275 OR 50% ABV BACKGR
DISSOLVED OXYGEN	MG/L	<4.0	3.1	(5.8)	8.0	5.0 MG/L
DIVERSITY ARTIFICIAL SUB	INDEX	<1.95	1.4	(2.9)	3.6	MIN. 75% OF DI
DIVERSITY NATURAL SUBSTR	INDEX	<1.50	1.2	(2.4)	3.5	MIN. 75% OF DI(MARINE)
DO % SATURATION	%		36	(68)	90	
FECAL STREP	#/100 ML		20	(150)	1700	
FLUORIDE	MG/L		.1	(.2)	.8	10.0 MG/L
NITROGEN-TOTAL	MG/L AS N	>2.0	.5	(1.2)	2.7	NOT CAUSE IMBALANCE
PH	STANDARD UNITS		6.1	(7.1)	7.9	<6.0 >8.5
PHOSPHORUS-TOTAL	MG/L AS P	>.46	.02	(.09)	.89	NOT CAUSE IMBALANCE
SECCHI DISC DEPTH	METERS		.4	(.8)	1.7	MIN. 90% BACKGROUND
TEMPERATURE	CENTEGRADE		19	(23)	28	NO NUISANCE CONDITIONS
TOTAL ORGANIC CARBON	MG/L	>27.5	5	(14)	37	
TOTAL SUSPENDED SOLIDS	MG/L	>18.0	2	(7)	26	
TURBIDITY	JTU FTU	>16.5	1.5	(5)	21	29 NTU ABOVE BACKGR
** WATERBODY TYPE: LAKE						
ALKALINITY	CACO3 MG/L	<20.	2	(28)	116	20.0 MG/L MIN.
CHLOROPHYLL	UG/L	>40.	1	(12)	70	
NITROGEN-TOTAL	MG/L AS N	>2.0	.4	(1.1)	2.5	NOT CAUSE IMBALANCE
PHOSPHORUS-TOTAL	MG/L AS P	>.12	.01	(.05)	.29	NOT CAUSE IMBALANCE
SECCHI DISC DEPTH	METERS	<.7	.4	(.9)	2.7	MIN. 90% BACKGROUND
** WATERBODY TYPE: ESTUARY						
CHLOROPHYLL	UG/L	>40	1	(9)	36	
NITROGEN-TOTAL	MG/L AS N	>2.0	.3	(.8)	1.6	NOT CAUSE IMBALANCE
PHOSPHORUS-TOTAL	MG/L AS P	>.12	.01	(.07)	.20	NOT CAUSE IMBALANCE
SECCHI DISC DEPTH	METERS	<.7	.6	(1.1)	3.0	MIN. 90% BACKGROUND

bodies. The criteria which were established by professional judgement were based on the percentile distribution of Florida data. The eightieth percentile was chosen as the cutoff between acceptable and unacceptable water quality. This means that 80% of Florida's water quality stations will have acceptable water quality levels for each parameter and 20% will have unacceptable levels. Table 6 identifies the screening levels used, the typical values measured and the Florida criteria for streams, lakes and estuaries.

Trend Analysis

Water quality trend analysis was performed on 12 water quality parameters (plus the overall water quality index) for 424 REACHES. The time frame for the analysis is from 1980 to 1987. The analysis was quite simple, a nonparametric correlation analysis (Spearman's Ranked Correlation) was used to analyze the eight-year trend of the annual STORET station averages for each reach. There may have been only one station analyzed within a REACH resulting in a maximum of 8 years of data or there may have been many stations within the REACH resulting in many more years of station annual averages and a more meaningful trend analysis.

The overall trend of each REACH was determined by comparing the number of improved water quality parameters to the number of degraded water quality parameters. Some REACHES showed quite strong trends. The Halifax River REACH (# 0308020116.00) had five water quality parameters plus the overall index show degrading trends so the overall trend was classified as "worse", while the Lake Howell REACH (# 0308010126.25) had five water quality parameters plus the overall index show improved water quality (due to the diversion of wastewater discharge from the lake) so the overall trend was classified as "better". If a REACH showed no trends or just one parameter showed a trend (or the number of improved trends minus the number of degraded trends is zero or one) then the trend is classified as "none". This trend analysis must be considered preliminary due to the simplicity of the technique.

Toxic Pollutant Assessment

Three sources of information were used in this report to assess the impacts of toxic pollutants including STORET measurements of un-ionized ammonia, STORET measurements of 6 toxic metals and the measurements of effluent toxicities as conducted by our Bioassay program. Un-ionized ammonia calculations are available from STORET and are based on ammonia concentrations, pH and temperature. The state standard for un-ionized is 0.02 mg/l (in freshwater) and exceedances of this standard were identified. Six toxic metal concentrations were also assessed (cadmium, chromium, copper, lead, mercury and zinc) by determining whether the median concentration of each metal found at a site during the 1980-1987 time period exceeded either the state criteria for the EPA acute toxicity level (whichever is greater). Five hundred STORET sites were monitored for at least one metal during the time period. Results of our effluent bioassay program were also assessed in this report. The information from the above three sources is available in the REACH assessment tables for each basin. (See the legend on page 7 which describes these tables.)

Nonpoint Source Assessment

An extensive assessment of nonpoint source impacts on Florida's waters was conducted through the use of a questionnaire to all major State agencies (Water Management Districts, Division of Forestry, Game and Fresh Water Fish Commission), city and county offices, U.S. Soil Conservation Service, National Forestry Service, Regional Planning Councils, local Soil and Water Conservation Districts, citizen environmental groups (Sierra Clubs, Audubon Society and others) and professional trail and fishing guides. The respondents (approximately 150 agencies and 350-400 participants) to the questionnaire identified nonpoint sources of pollution, environmental pollution symptoms (fishkills, algal blooms, etc.) pollutants and miscellaneous comments. The respondents also indicated whether the evaluation was qualitative or quantitative. When supporting documentation for the evaluation was provided, the references were also entered into the database. The results of the survey were computerized and merged with the STORET REACH file information. The nonpoint source assessment survey identified the water quality and sources of pollution of approximately 900 REACHES. The end result of combining the information from the survey and from STORET is that an assessment can now be performed on 1116 of the 1322 Florida REACHES.

KEY

Abbreviation Definitions

AWT	advanced wastewater treatment facility
BOD	biochemical oxygen demand
BOD_5	five day laboratory test for BOD
CFS	cubic feet per second
DER	Florida Department of Environmental Regulation
DO	dissolved oxygen
EPA	Environmental Protection Agency
MGD	millions of gallons per day
NPS	nonpoint source
STORET	EPA's water quality data storage and retrieval system
TKN	total Kjeldahl nitrogen (organic nitrogen and ammonia)
TSI	trophic state index
WLA	wasteload allocation
WQI	water quality index
WWTP	wastewater treatment plant

ALAFIA RIVER BASIN

General Description of the Basin

The Alafia River is located in Hillsborough and Polk Counties, and drains approximately 460 square miles. From the headwaters the river flows 24 miles from Polk County westward through coastal lowlands prior to entering the southern end of Hillsborough Bay. The discharge of the Alafia River averages 330 cfs near Lithia Springs. Surface runoff contributes a substantial portion of the flow. Major tributaries of the Alafia River include the North Prong, South Prong, and Little Alafia River. Lithia Springs enters the main river at an average flow of 51 cfs. Land use categories in the Alafia River basin include agriculture, rangeland, and barren land (12%). The relatively high percentage of barren land reflects the fact that the basin includes an area of extensive phosphate mining and processing operations. The lower basin also has considerable urban development.

Specific Water Quality Problems and Pollution Source

The major pollution sources in this basin are the phosphate mining and processing industries. Phosphorus loading occurs through point source discharge, runoff from mined and barren lands, and occasional spills of water from settling pools (slime ponds). Most of the phosphate processers are located along the North Prong, whereas mining areas are generally in the South Prong drainage. The processing operations cause the worse pollution problems with a discharge extremely high in ammonia and sulfates as well as phosphates. Both the North and South Prong reaches exhibit high nutrient concentrations, frequent DO sags, and relatively high levels of inorganic toxic metals (predominantly copper and zinc); however, the North Prong of the Alafia has considerably poorer water quality. A recent biological study of the upper Alafia Basin also indicates severe stress to both macroinvertebrates and floodplain vegetation in the North Prong. The report suggested that a significant problem in the river was toxicity from hydrogen sulfide, a reduced form of sulfate found when oxygen levels are low. The South Prong also showed stress, though not as pronounced.

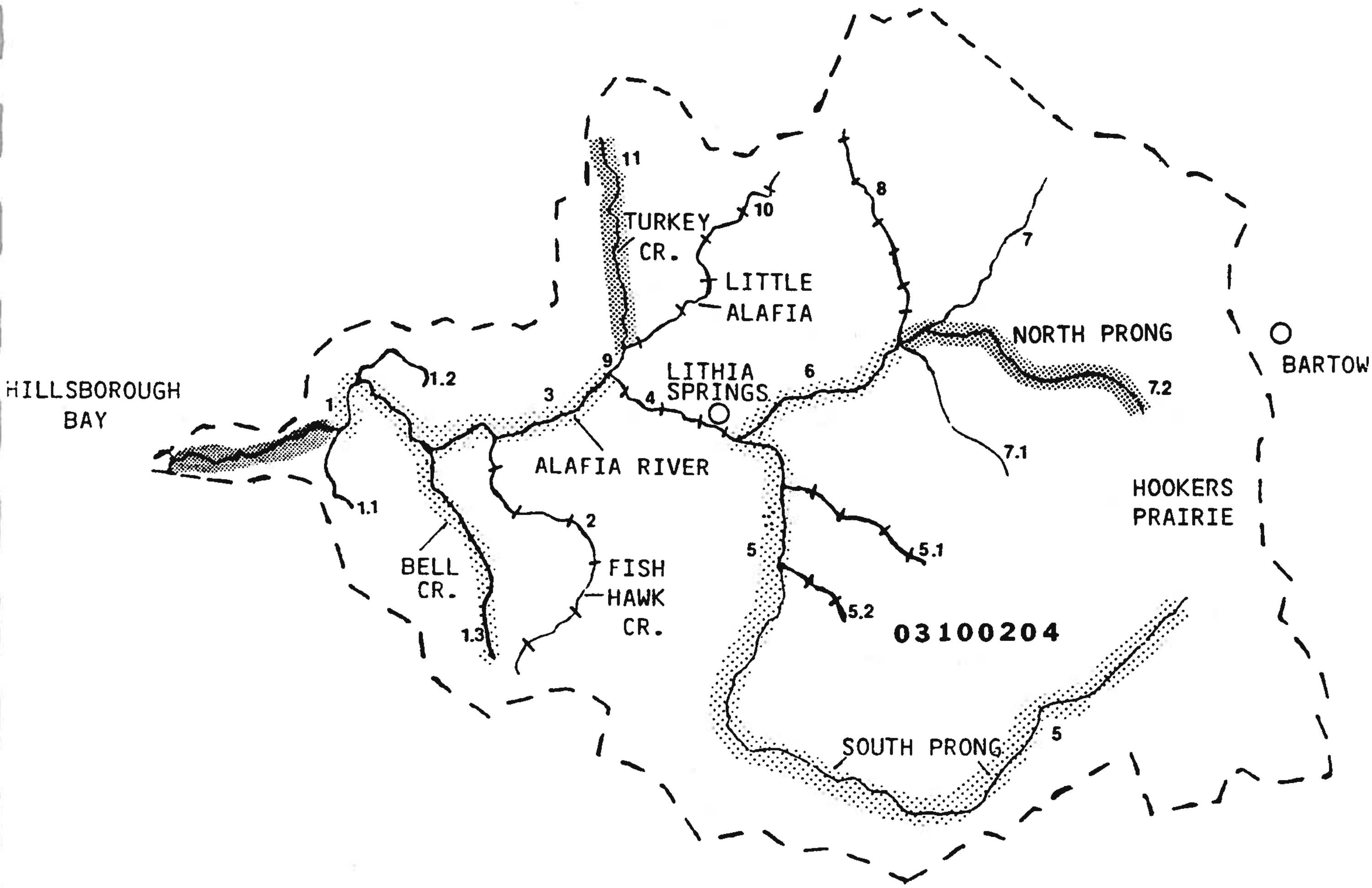
Both reaches flow through heavily vegetated wetlands which serve to take up nutrients and dilute sulfates so that water quality is much improved at their confluence. The water quality, however, is variable because the nature of the discharge tends to be in slugs of highly polluted waters as well as some continuous flow. The effect of these slugs on the lower river and bay is poorly documented. The river below the confluence of the North and South Prongs is used recreationally for tubing and canoeing.

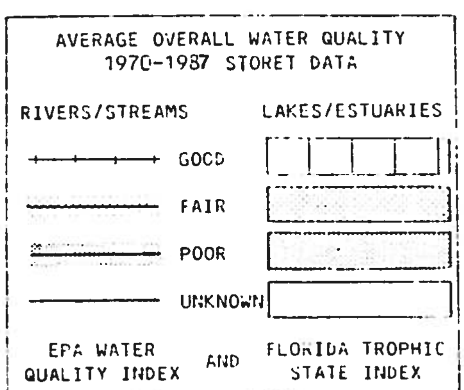
The lower Alafia River also exhibits poor water quality with elevated nutrients, depressed DOs, and occasional algal blooms and fishkills. These problems appear to be caused by urban runoff, nutrient loading upstream, the tidal influx of Hillsborough Bay waters, and the discharges of Gardinier, a phosphate processing facility. Another contributing factor to the poor rating is that historical discharges from gypsum stacks has built up a layer of calcium fluoride at the mouth of the river and in the bay. These sediments are not supporting a viable flora or faunal community, and the company has submitted plans for their cleanup.

Other reaches that have historically exhibited water quality problems include Bell Creek with high nutrient and bacteria levels, but this reach has not been sampled since 1977. Turkey Creek exhibits very poor water quality because of high nutrient and bacteria levels. High bacteria counts in this reach are attributed to runoff from rangeland.

Finally, it should be noted that radium levels in the Alafia River are higher than any other stream on the west coast of Florida. The radium source is presently unknown.

ALAFIA RIVER BASIN





WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT: 03100204 ALAFIA RIVER

* WATER BODY TYPE: STREAM

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
1.00	ALAFIA RIVER AB TAMPA BAY	1517	51	85	4.0	0.9	22	8	5.7	64	1.8	621	7	7.7	64	1.44	2.66	11	650	200	2.0	-1.0	22	12070	321	50
1.10	RICE CREEK AB ALAFIA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
1.20	BUCKHORN CREEK AB ALAFIA RIVER	2	72	74	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
1.30	BELL CREEK AB ALAFIA RIVER	34	55	77	3.0	-1.0	70	7	7.8	85	1.9	-1	13	7.2	-1	2.07	0.34	9	7350	1525	-1.0	-1.0	-1	267	-1	50
2.00	FISHHAWK CREEK AB ALAFIA RIVER	16	76	77	1.5	-1.0	48	3	7.3	82	0.9	-1	9	7.3	-1	0.65	0.53	3	2225	300	-1.0	-1.0	-1	183	-1	29
3.00	ALAFIA RIVER AB FISHHAWK CREEK	842	55	86	3.0	0.7	35	5	7.2	83	1.6	-1	12	7.2	46	1.63	4.95	2	510	300	2.6	-1.0	-1	531	197	41
4.00	ALAFIA RIVER AB TURKEY CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	ALAFIA RIVER, SOUTH PRONG AB A	515	65	86	2.5	0.6	57	4	7.3	84	1.1	-1	14	7.2	41	0.95	2.10	2	775	300	3.5	2.3	-1	310	68	36
5.10	MIZELLE CREEK AB ALAFIA R, S P	51	70	81	1.9	-1.0	5	-1	8.1	92	-1.0	-1	3	6.7	49	0.84	0.38	-1	-1	-1	-1.0	-1.0	-1	190	2	0
5.20	HALLS BRANCH AB ALAFIA R, S PR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	ALAFIA RIVER, NORTH PRONG AB A	502	55	86	4.0	0.8	30	5	6.9	77	1.4	-1	9	7.0	46	2.22	6.30	3	1100	200	1.8	2.7	17	657	79	48
7.00	ALAFIA RIVER, NORTH PRONG AB P	7	65	70	25.0	-1.0	30	-1	-1.0	-1	-1.0	-1	-1	7.8	57	0.67	-1.00	-1	-1	-1	-1.0	-1.0	-1	200	-1	50
7.20	ALAFIA RIVER, NORTH PRONG AB H	177	61	77	6.5	0.2	28	23	5.6	52	3.1	-1	7	6.5	0	7.53	6.30	14	4800	200	-1.0	-1.0	-1	1075	-1	73
8.00	POLEY CREEK AB ALAFIA R, N PRO	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	TURKEY CREEK AB ALAFIA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
10.00	LITTLE ALAFIA AB TURKEY CREEK	149	67	81	4.1	-1.0	50	-1	7.0	83	1.4	-1	14	7.0	58	0.37	0.70	-1	-1	-1	-1.0	-1.0	-1	250	1	38
11.00	TURKEY CREEK AB LITTLE ALAFIA	245	59	85	10.0	0.3	66	18	5.3	62	5.9	-1	14	7.5	32	3.96	2.25	11	11000	3500	-1.0	-1.0	-1	601	-1	72

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03100204 ALAFIA RIVER																	
* WATER BODY TYPE: STREAM																	
1.00	ALAFIA RIVER ABOVE TAMPA BAY	NO	FAIR	*--*	*---	....	-**	*	0	0000	0000	0000	0.	*	* *	*	ELEVATED NUTRIENTS FROM UPSTREAM INDUSTRIAL SOURCES. 1981 WLA AND 1982 BIOASSAY.NO TRENDS .HEAVY MINING OPERATIONS IN NORTH AND SOUTH PRONG HEADWATERS. SOME DECLINE IN FISHERIES REPORTED.
1.10	RICE CREEK ABOVE ALAFIA RIVER	UNKNOWN	UNKN	....	....	....	.										
1.20	BUCKHORN CREEK ABOVE ALAFIA RIVER	UNKNOWN	UNKN	....	....	....	...		.	....	....	....	..				
1.30	BELL CREEK ABOVE ALAFIA RIVER	PARTIAL	FAIR	*---	--*.	....	-..		.	....	....	....	..				ELEVATED NUTRIENT AND BACTERIA PROBLEM IN 1976-1977 FROM UNKNOWN SOURCE. THERE HAS BEEN NO RECENT SAMPLING.NO APPARENT NPS POLLUTION.
2.00	FISHHAWK CREEK ABOVE ALAFIA RIVER	YES	GOOD	*---	---.	....	-..		.	....	....	....	..				
3.00	ALAFIA RIVER ABOVE FISHHAWK CREEK	PARTIAL	GOOD	*---	----	....	--.	*	0	0.0.	.000	..-0	00	*	* *	*	WATER QUALITY WAS WORSE FROM 1971-1980, POSSIBLY BETTER RECENTLY. ELEVATED NUTRIENTS FROM UPSTREAM FERTILIZER PLANTS AND MINING ACTIVITIES. 1981 WLA.HEAVY MINING OPERATIONS IN NO. AND SO. PRONG HEADWATERS. SOME DECLINE IN FISHERIES.
4.00	ALAFIA RIVER ABOVE TURKEY CREEK	YES	UNKN	....	....	....	.	*							* *	*	HEAVY MINING OPERATIONS IN NORTH AND SOUTH PRONGS. SOME DECLINE IN FISHERIES.
5.00	ALAFIA RIVER, SOUTH PRONG ABOVE ALA	PARTIAL	GOOD	*---	----	....	--.	*	*	000*	0000	0**-	00	*	* *	*	PREDOMINATELY MINING OPERATIONS UPSTREAM IN SOUTH PRONG. WETLANDS PROVIDE SOME CLEANSING ACTION TO HELP REDUCE NUTRIENT LEVELS.RECENT TREND DATA SHOWS A DECLINE IN WATER QUALITY DUE TO INCREASED TSS,TN AND TURBIDITY.
5.10	MIZELLE CREEK ABOVE ALAFIA R, S PRO	YES	GOOD	----	--..	....	...	*	.	....	....	....	..			*	SOME DECLINE IN FISHERIES.
5.20	HALLS BRANCH ABOVE ALAFIA R, S PRON	YES	UNKN	....	....	....	.										
6.00	ALAFIA RIVER, NORTH PRONG ABOVE ALA	PARTIAL	FAIR	*---	----	....	-*.	*	-	0000	---*	-000	-0	*	* *	*	THERE ARE MANY MINING AND FERTILIZER PROCESSING OPERATIONS LOCATED IN THIS WATERSHED.VERY HIGH LEVELS OF NUTRIENTS. SEVERAL SPECIAL STUDIES INCLUDING 1985 WLA.IMPROVEMENTS IN DO AND BOD TRENDS HAVE BEEN NOTED IN THIS REACH.
7.00	ALAFIA RIVER, NORTH PRONG ABOVE POL	NO	FAIR	--*-	....	....	...		.	....	....	....	..	*			THERE ARE MANY INDUSTRIES LOCATED IN THIS WATERSHED. MINING AND FERTILIZER PROCESSORS. THERE ARE VERY HIGH LEVELS OF NUTRIENTS. SEVERAL SPECIAL STUDIES INCLUDING 1985 WLA.
7.20	ALAFIA RIVER, NORTH PRONG ABOVE HEA	NO	POOR	*-*-	--*.	....	-..		.	....	....	....	..	*			THERE ARE MANY INDUSTRIES LOCATED IN THIS WATERSHED. MINING AND FERTILIZER PROCESSORS. THERE ARE VERY HIGH LEVELS OF NUTRIENTS. SEVERAL SPECIAL STUDIES INCLUDING 1985 WLA.
8.00	POLEY CREEK ABOVE ALAFIA R, N PRONG	YES	UNKN	....	....	....	.										
9.00	TURKEY CREEK ABOVE ALAFIA RIVER	YES	UNKN	....	....	....	.										
10.00	LITTLE ALAFIA ABOVE TURKEY CREEK	YES	GOOD	*---	--..	....	...		.	....	....	....	..				
11.00	TURKEY CREEK ABOVE LITTLE ALAFIA	NO	POOR	*---	*-*.	....	-..		0	000.	0000	.0*0	0.				RANGELAND RUNOFF IS THE SOURCE OF ELEVATED NUTRIENT AND BACTERIA VALUES.NO TRENDS.SOME DECLINE IN FISHERY.

ALAPAHA RIVER BASIN

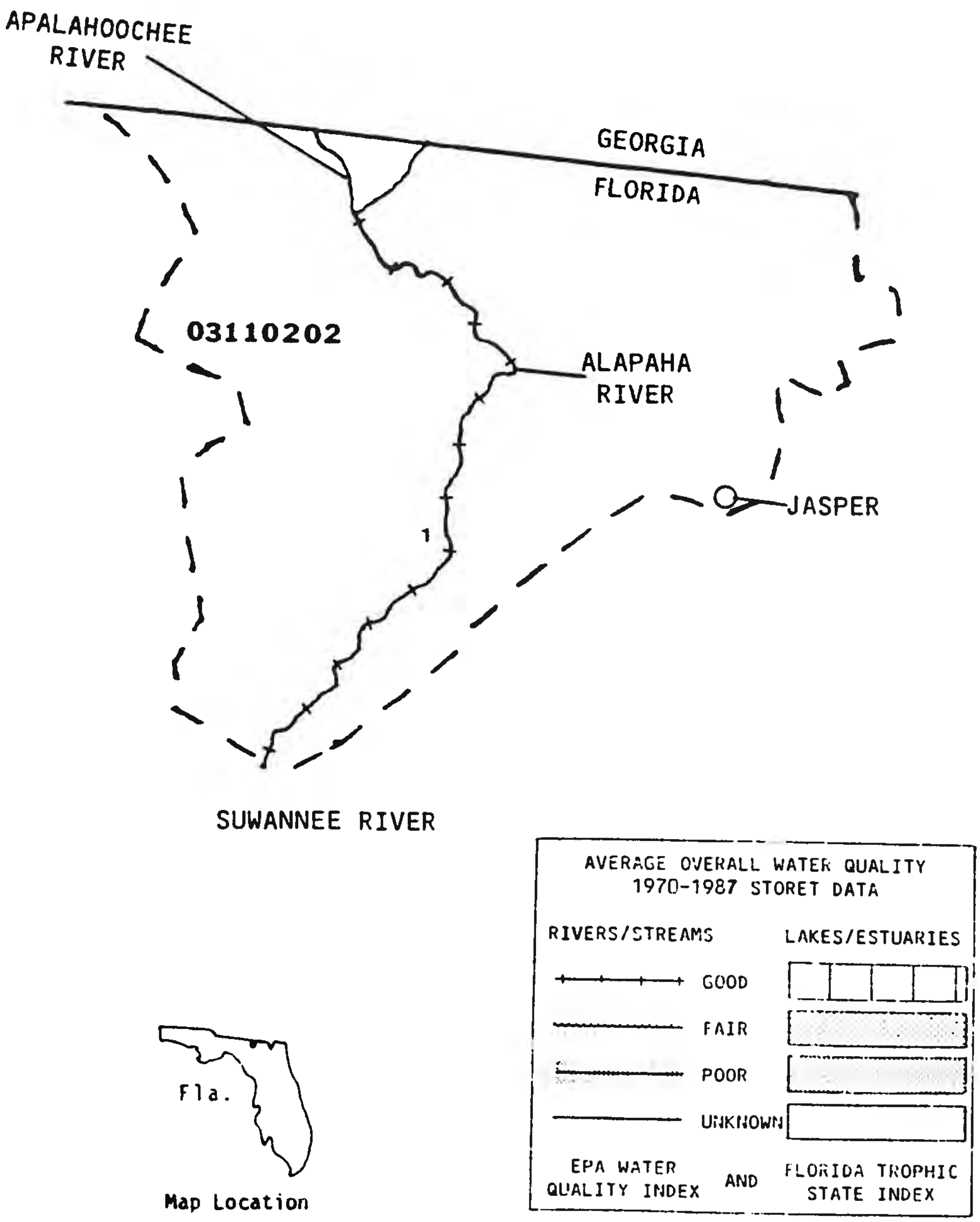
General Description of the Basin

The Alapaha River basin originates in Georgia and terminates at the Suwannee River just below the Georgia-Florida state boundary. The basin drains 1840 square miles with 376 river reach miles, but only 18 river reach miles are in Florida. The Florida portion of the basin is mostly forest and agricultural land.

Specific Water Quality Problems and Pollution Sources

The Alapaha River appears to have good water quality in the Florida reach. However, the river has not been sampled since 1979. It is an intermittent stream.

ALAPAHA RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	SAMPLE RECORD BEG YR	SAMPLE RECORD END YR	WATER CLARITY TURB	WATER CLARITY SD	WATER CLARITY COLOR	WATER CLARITY TSS	DISSOLVED OXYGEN DO	DISSOLVED OXYGEN %SAT	OXYGEN DEMAND BOD	OXYGEN DEMAND COD	OXYGEN DEMAND TOC	PH ALKALINITY PH	PH ALKALINITY ALK	TROPHIC STATUS NITRO	TROPHIC STATUS PHOS	TROPHIC STATUS CHLA	COLIFORM TOTAL	COLIFORM FECL	SPECIES DIVERSITY NAT	SPECIES DIVERSITY ART	SPECIES DIVERSITY BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03110202 ALAPAHA RIVER																										
* WATER BODY TYPE: STREAM																										
1.00	ALAPAHA RIVER AB SUWANNEE RIVE	31	66	82	9.1	1.0	130	11	7.6	88	1.4	45	17	6.7	10	0.94	0.20	-1	1070	195	-1.0	-1.0	-1	36	745	40

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
** USGS HYDROLOGIC UNIT CODE: 03110202 ALAPAHA RIVER																	
* WATER BODY TYPE: STREAM																	
1.00	ALAPAHA RIVER ABOVE SUWANNEE RIVER	YES	GOOD	----	---.	....	-..		.	....	....	....	..		**		FLA. DEPT. OF TRANSPORTATION BRIDGE CONSTRUCTION.

APALACHICOLA BAY BASIN

General Description of the Basin

The Apalachicola Bay Basin encompasses approximately 200 square miles of estuary area including St. Vincent Sound, East Bay, Apalachicola Bay and St. George Sound. The bay system is the terminus of a 20,000 square mile basin which extends to a point north of Atlanta, Georgia. The major inflow into the bay is the Apalachicola River with an average flow of 25,000 cfs varying seasonally from less than 15,000 to greater than 40,000 cfs. The basin is primarily the bay water, but also encompasses drainage from the City of Apalachicola and the barrier islands. The bay system supports a very productive fishery and is famous for its oysters.

Specific Water Quality Problems and Pollution Sources

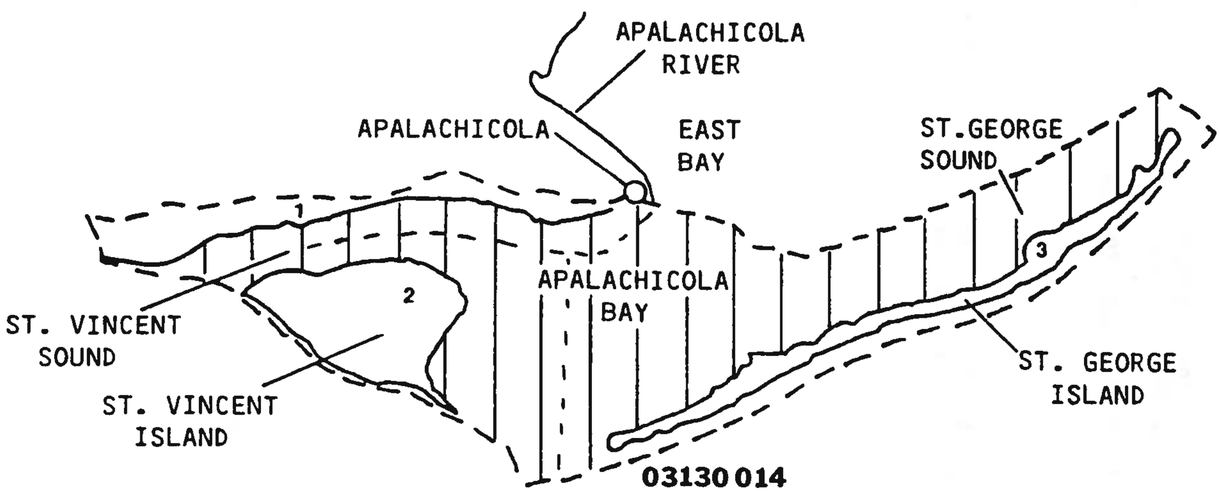
The entire bay as well as the Apalachicola River has been declared an Outstanding Florida Water. It is also the largest National Estuarine Sanctuary. In addition, it is an Area of Critical State Concern which requires more intensive regulation of planning and development in the area. The Bay has very good water quality.

The most serious threats to the water quality in the bay are associated with nonpoint sources from the more urbanized areas in the basin. In the northern part of the bay, untreated stormwater runoff from the City of Apalachicola and nearby fish-houses has had a localized impact on the bay. Problems associated with fish-houses include high BOD from fishing wastes and pollutants due to boat traffic, docking and fueling. These problems are also found in Eastpoint which is covered in the New River Basin.

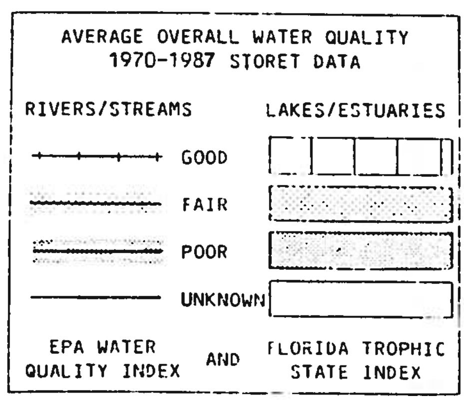
In the southern bay area, there has been rapid development of St. George Island, and there is concern over septic tank drainage into the bay. The Department of Health and Rehabilitative Services recently conducted a study of septic tanks on the island and found that 23% of the 724 tanks were failing, and that many of them were located poorly with respect to water tables and the required 50 foot setback. The state (DNR) is currently involved in a legal suit to force the construction of an adequate centralized wastewater treatment facility. Finally, on the island, there is a boat basin connected with the bay that receives runoff from a shopping area and wastes associated with the mooring, fueling, and off-loading activities of oyster boats.

The most extensive damage to the bay recently has been through the action of Hurricane Elena and Hurricane Kate in 1985. The entire bay was closed to oystering to allow recovery from damage due to siltation and burial. Complete recovery of bay oystering has been hampered by overfishing and poaching due, in part, to the economic depression of the area.

APALACHICOLA BAY BASIN



Map Location



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	

** USGS HYDROLOGIC UNIT: 03130014 APALACHICOLA B

* WATER BODY TYPE: ESTUARY

REACH	REACH NAME	MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	WQI
1.00	APALACHICOLA BAY AB GULF OF ME	115	71	87	9.0	0.8	30	18	8.6	99	1.1	16	4	7.8	60	0.63	0.04	8	115	35	2.8	2.4	-1	21000	-1	52
2.00	ST VINCENT ISLAND AB APALACHIC	4	73	74	8.5	-1.0	25	48	8.0	104	1.1	-1	-1	8.3	70	0.96	0.03	-1	2	-1	-1.0	-1.0	-1	20850	-1	56
3.00	ST GEORGE SOUND/ISLAND AB APAL	59	71	87	5.0	0.8	20	22	8.5	108	1.0	-1	2	7.9	84	0.57	0.04	9	33	49	3.2	-1.0	-1	30000	-1	55

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03130014 APALACHICOLA B																	
* WATER BODY TYPE: ESTUARY																	
1.00	APALACHICOLA BAY ABOVE GULF OF MEXI	YES	FAIR	----	----	----	-*.		0	0-00	0-0.	0*00	0.		**	*	NUMEROUS POORLY FLUSHING CANAL SYSTEMS, FAILING SEPTIC TANKS TOO CLOSE TO WATER. LODGE MARINA. RUNOFF FROM SEAFOOD PROCESSING HOUSES.
2.00	ST VINCENT ISLAND ABOVE APALACHICOL	YES	FAIR	--*-	---.	..--	-..		.	....	....	....	..				
3.00	ST GEORGE SOUND/ISLAND ABOVE APALAC	YES	FAIR	--*-	----	----	--.		.	....	....	....	..		*	*	GOOD OVERALL QUALITY.NUMEROUS POORLY FLUSHING CANAL SYSTEMS, FAILING SEPTIC TANKS TOO CLOSE TO WATER.

APALACHICOLA RIVER BASIN

General Description of the Basin

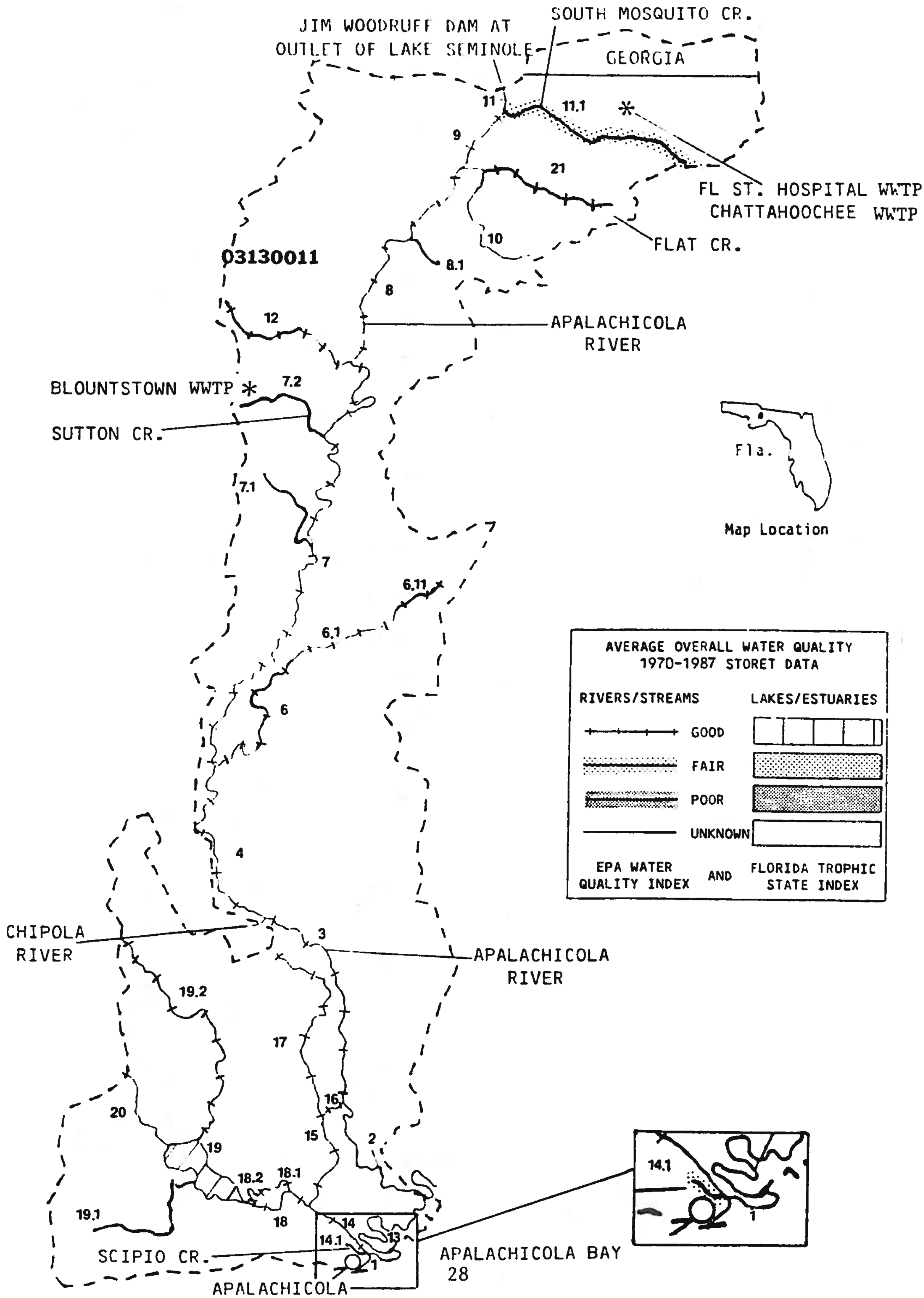
The Apalachicola River is formed by the confluence of the Flint and Chattahoochee Rivers at Lake Seminole. In Florida, the Apalachicola River flows 107 miles southward from the Jim Woodruff Dam (near the City of Chattahoochee) to the Gulf of Mexico at Apalachicola. The entire drainage area encompasses over 20,000 square miles with only 10% in Florida. The Apalachicola, with an average flow of 25,000 cfs, has a greater flow than any other Florida river. Land use in the upper Apalachicola (above the Chipola River confluence) consists primarily of forest and agriculture; in the lower Apalachicola, land use is mostly forest and wetlands. The largest cities in this basin are Chattahoochee and Apalachicola. Apalachicola Bay, at the mouth of the river, is the site of one of Florida's major fishing and shellfishing industries. The river is dredged and maintained for barge navigation by the US Army Corps of Engineers. Prior to entering Florida, the river system receives numerous discharges from Atlanta and other urbanized areas (textile mills, paper mills, wastewater treatment plants, steam power plants, and a nuclear power plant) and extensive runoff from agricultural areas of Alabama and Georgia.

Specific Water Quality Problems and Pollution Sources

Water quality in the majority of the Apalachicola River Basin is very good. It is, together with the Bay, an Outstanding Florida Water and a National Estuarine Sanctuary. In fact, biological samples from some of the tributaries to the river indicate near pristine conditions. These tributaries are Rock Creek, Flat Creek, Crooked Creek and Sweetwater Creek (not shown on map). In addition to the dischargers located in the upper basin in Georgia and Alabama, there are several point sources of pollution within the basin in Florida.

Both Florida State Hospital and the City of Chattahoochee WWTP discharge to Mosquito Creek, the former having been found to be toxic in two bioassays. The City of Blountstown WWTP discharges to Sutton Creek which has had problems in the past, as noted in a DER intensive survey and wasteload allocation in 1981. The facility has since been upgraded, but still has problems and has been under consent orders in the last two years. The river has also had local water quality problems in the industrial ship channel near Blountstown. The problems of low DO, low pH (from Buturic acid), and high BODs were caused by runoff and leaching from the stormwater ponds of Southeastern Fiberboard, an industrial facility. A construction permit has been issued to correct the problem. Finally, the Apalachicola City WWTP, which previously discharged to Scipio Creek, has also been upgraded and now discharges to wetlands of the bay. Scipio Creek is subject to pollution from considerable shrimp and fishing boat traffic and a marina. The marina is currently making renovations including a pump-out facility. These upgrades should help to improve the conditions in this creek.

APALACHICOLA RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT: 03130011 APALACHICOLA R

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
* WATER BODY TYPE: ESTUARY																										
1.00	APALACHICOLA BAY AB GULF OF ME	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.00	APALACHICOLA BAY AB GULF OF ME	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: STREAM																										
2.00	EAST RIVER AB APALACHICOLA BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	APALACHICOLA RIVER AB EAST RIV	41	76	83	19.0	0.6	60	20	7.1	80	1.0	-1	6	7.1	41	0.70	0.07	-1	230	48	-1.0	3.3	-1	94	-1	30
4.00	APALACHICOLA RIVER AB CHIPOLA	27	79	83	40.0	0.6	-1	-1	7.7	84	-1.0	-1	6	6.8	-1	0.77	0.08	-1	-1	-1	-1.0	-1.0	-1	98	35000	23
6.00	FLORIDA RIVER AB APALACHICOLA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.10	EQUALOXIC CREEK AB APALACHICOL	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.11	BIG GULLY CREEK AB EQUALOXIC C	13	78	85	3.4	-1.0	323	3	-1.0	-1	-1.0	-1	-1	5.2	2	0.73	0.02	-1	-1	-1	-1.0	-1.0	-1	33	-1	15
7.00	APALACHICOLA RIVER AB FLORIDA	77	57	86	9.0	0.7	43	10	7.8	84	0.7	-1	5	7.1	13	0.68	0.06	-1	290	32	3.1	3.6	12	118	71750	25
7.10	AMMONIA RIVER SLOUGH AB APALAC	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.20	SUTTON CREEK AB APALACHICOLA R	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.00	APALACHICOLA RIVER AB STAFFORD	4	64	86	29.0	0.2	220	26	6.3	90	4.3	-1	56	7.0	-1	3.16	0.18	-1	3150	365	-1.0	-1.0	-1	488	-1	60
8.10	ROCK CREEK AB APALACHICOLA RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	FLAT CREEK AB APALACHICOLA RIV	5	82	83	-1.0	0.4	-1	-1	9.1	89	-1.0	-1	-1	6.8	-1	-1.00	0.13	-1	-1	-1	-1.0	-1.0	-1	50	-1	25
10.00	CROOKED CREEK AB FLAT CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.00	APALACHICOLA RIVER AB FLAT CRE	2593	24	87	10.0	0.6	20	13	8.4	93	1.4	-1	5	7.2	36	0.68	0.04	6	185	19	-1.0	-1.0	-1	100	21800	25
11.10	SOUTH MOSQUITO CREEK AB FLAT C	14	73	86	22.5	0.7	50	38	7.8	88	1.7	-1	4	7.2	10	0.83	0.16	4	920	380	-1.0	-1.0	-1	64	49	44
12.00	STAFFORD CREEK AB APALACHICOLA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	APALACHICOLA RIVER AB APALACHI	21	71	76	15.0	0.6	58	23	6.8	78	1.0	-1	-1	7.0	40	0.67	0.04	-1	315	74	-1.0	-1.0	-1	100	-1	33
14.10	SCIPIO CREEK AB APALACHICOLA R	18	71	86	11.0	1.0	50	20	5.0	59	1.1	-1	-1	6.8	48	0.81	0.06	8	1500	460	-1.0	-1.0	-1	330	-1	41
15.00	APALACHICOLA RIVER AB JACKSON	119	71	87	15.8	0.6	58	17	6.9	80	0.8	13	5	7.1	33	0.70	0.05	7	200	50	2.0	3.0	16	105	2	32
16.00	APALACHICOLA RIVER AB BROTHERS	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	BROTHERS RIVER AB APALACHICOLA	20	73	83	39.2	0.6	56	100	5.8	67	0.8	-1	-1	7.0	35	1.00	0.07	-1	460	-1	-1.0	3.3	-1	95	-1	36
18.00	JACKSON RIVER AB APALACHICOLA	15	71	76	18.0	0.8	60	15	6.0	71	0.9	-1	-1	6.8	31	0.57	0.05	-1	350	8	-1.0	-1.0	-1	100	-1	35
18.10	CLARK CREEK AB INDIAN SWAMP	23	73	76	8.0	0.8	95	27	4.6	53	0.5	-1	-1	6.4	28	1.14	0.03	-1	240	8	-1.0	-1.0	-1	240	-1	41
18.20	MURPHY CREEK AB INDIAN SWAMP	22	73	76	13.3	0.1	69	16	5.1	60	0.8	-1	-1	6.5	32	0.79	0.04	-1	240	33	-1.0	-1.0	-1	180	-1	40
19.00	LAKE WIMICO AB JACKSON RIVER	18	73	80	12.8	0.6	90	5	6.8	78	0.6	-1	-1	6.9	30	0.59	0.03	4	49	2	2.7	-1.0	-1	110	-1	20
19.10	DEPOT CREEK AB LAKE WIMICO	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
19.20	CYPRESS CREEK AB LAKE WIMICO	2	86	86	-1.0	-1.0	-1	-1	4.0	46	-1.0	-1	-1	5.7	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	1900	-1	70
20.00	ICWW AB LAKE WIMICO	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	FLAT CREEK AB CROOKED CREEK	12	67	77	25.0	-1.0	35	-1	8.3	85	-1.0	-1	6	6.7	12	0.80	0.20	-1	-1	1163	-1.0	-1.0	-1	43	34	49

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONOITIONS AND CLEANUP EFFORTS
	** USGS HYDROLOGIC UNIT CODE: 03130011 APALACHICOLA R																
	* WATER BODY TYPE: ESTUARY																
1.00	APALACHICOLA BAY ABOVE GULF OF MEXI	UNKNOWN	UNKN	....	....	....	.										
13.00	APALACHICOLA BAY ABOVE GULF OF MEXI	UNKNOWN	UNKN	....	....	....	.										
	* WATER BODY TYPE: STREAM																
2.00	EAST RIVER ABOVE APALACHICOLA BAY	UNKNOWN	UNKN	....	....	....	.										
3.00	APALACHICOLA RIVER ABOVE EAST RIVER	YES	GOOD	--*-	----	....	--.	*	.	....	....	....	..		**		
4.00	APALACHICOLA RIVER ABOVE CHIPOLA RI	YES	GOOD	--*-	--..	....	-..		.	....	....	....	..		**	*	STREAM BANK EROSION.
6.00	FLORIDA RIVER ABOVE APALACHICOLA RI	YES	UNKN	....	....	....	.	* *							**		AGRICULTURAL OPERATIONS LACKING BMPS.
6.10	EQUALDXIC CREEK ABOVE APALACHICOLA	YES	UNKN	....	....	....	.										
6.11	BIG GULLY CREEK ABOVE EQUALOXIC CRE	YES	GOOD	----	....	....	.-.		.	....	....	....	..				
7.00	APALACHICOLA RIVER ABOVE FLORIDA RI	YES	GOOD	----	----	....	-.*	*	.	....	....	....	..		** *		OVERFLOW FROM SOUTHEAST FIBER BOARD SETTLING POND.GULLY EROSION.
7.10	AMMONIA RIVER SLOUGH ABOVE APALACHI	UNKNOWN	UNKN	....	....	....	.										
7.20	SUTTON CREEK ABOVE APALACHICOLA RIV	UNKNOWN	UNKN	....	....	....	.										
8.00	APALACHICOLA RIVER ABOVE STAFFORD C	YES	POOR	*-*-	*--.	....	-..	*	.	....	....	....	..		**		ONLY 4 SAMPLES NOT REPRESENTATIVE OF GOOD OVERALL QUALITY OF THIS REACH.OVERFLOW FROM SOUTHEAST FIBER BOARD SETTLING POND.
8.10	ROCK CREEK ABOVE APALACHICOLA RIVER	UNKNOWN	UNKN	....	....	....	.										
9.00	FLAT CREEK ABOVE APALACHICOLA RIVER	YES	GOOD	--.-	.-..	....	...		.	....	....	....	..				
10.00	CROOKED CREEK ABOVE FLAT CREEK	UNKNOWN	UNKN	....	....	....	.										
11.00	APALACHICOLA RIVER ABOVE FLAT CREEK	YES	GOOD	----	---.	....	---		*	..0.	.00.	..00	00				GRAVEL PROCESSING AND BARGE PORT.
11.10	SOUTH MOSQUITO CREEK ABOVE FLAT CRE	PARTIAL	GOOD	--*-	---.	....	-.*	*	.	....	....	....	..	*	*		DISTRICT REPORTS ELEVATED NUTRIENTS DUE TO 2 WWTP DISCHARGES. STEEP TOPOGRAPHY AND LACK OF BMPS. DIRT ROAD RUNOFF.
12.00	STAFFORD CREEK ABOVE APALACHICOLA R	YES	UNKN	....	....	....	.										
14.00	APALACHICOLA RIVER ABOVE APALACHICO	YES	GOOD	--*-	---.	....	-..	*	.	....	....	....	..		*		
14.10	SCIPIO CREEK ABOVE APALACHICOLA RIV	PARTIAL	GOOD	--*-	---.	....	--.	***	.	....	....	....	..	*	*		WATER QUALITY PROBLEMS DUE TO WWTP DISCHARGE AND MARINA TRAFFIC.INDUSTRIAL RUNOFF FROM SEAFOOD HOUSE, SCIPIO CREEK MARINA, BAY CITY LODGE MARINA.
15.00	APALACHICOLA RIVER ABOVE JACKSON RI	YES	GOOD	----	----	....	--.	*	0	0000	000.	0000	0.		*	*	ENTIRE APALACHICOLA RIVER AFFECTED BY BOAT TRAFFIC & CHANNEL MAINTENANCE.
16.00	APALACHICOLA RIVER ABOVE BROTHERS R	YES	UNKN	....	....	....	.	*							*	*	ENTIRE APALACHICOLA RIVER AFFECTED BY BOAT TRAFFIC & CHANNEL MAINTENANCE.
17.00	BROTHERS RIVER ABOVE APALACHICOLA R	YES	GOOD	--*-	----	....	-..		.	....	....	....	..				
18.00	JACKSON RIVER ABOVE APALACHICOLA RI	YES	GOOD	--*-	---.	....	--.		.	....	....	....	..				
18.10	CLARK CREEK ABOVE INDIAN SWAMP	YES	GOOD	--*-	---.	....	-..		.	....	....	....	..				
18.20	MURPHY CREEK ABOVE INDIAN SWAMP	YES	GOOD	----	---.	....	--.		.	....	....	....	..				
19.00	LAKE WIMICO ABOVE JACKSON RIVER	YES	GOOD	----	----	....	--.		.	....	....	....	..			*	BARGE TRAFFIC AND CANAL MAINTENANCE.
19.10	DEPOT CREEK ABOVE LAKE WIMICO	UNKNOWN	UNKN	....	....	....	.										
19.20	CYPRESS CREEK ABOVE LAKE WIMICO	YES	POOR	.-.*	.-..	....	.-.		.	....	....	....	..		*		INSUFFICIENT PARAMETER COVERAGE TO CLASSIFY REACH.TIMBER HARVEST OPERATIONS.
20.00	ICWW ABOVE LAKE WIMICO	UNKNOWN	UNKN	....	....	....	.										
21.00	FLAT CREEK ABOVE CROOKED CREEK	YES	FAIR	--*-	--*.	....	-..		.	....	....	....	..				SLIGHT BACTERIA AND NUTRIENT PROBLEM MAY BE DUE TO RUNOFF FROM INTERSTATE 10 AND REST AREA.

AUCILLA RIVER BASIN

General Description of the Basin

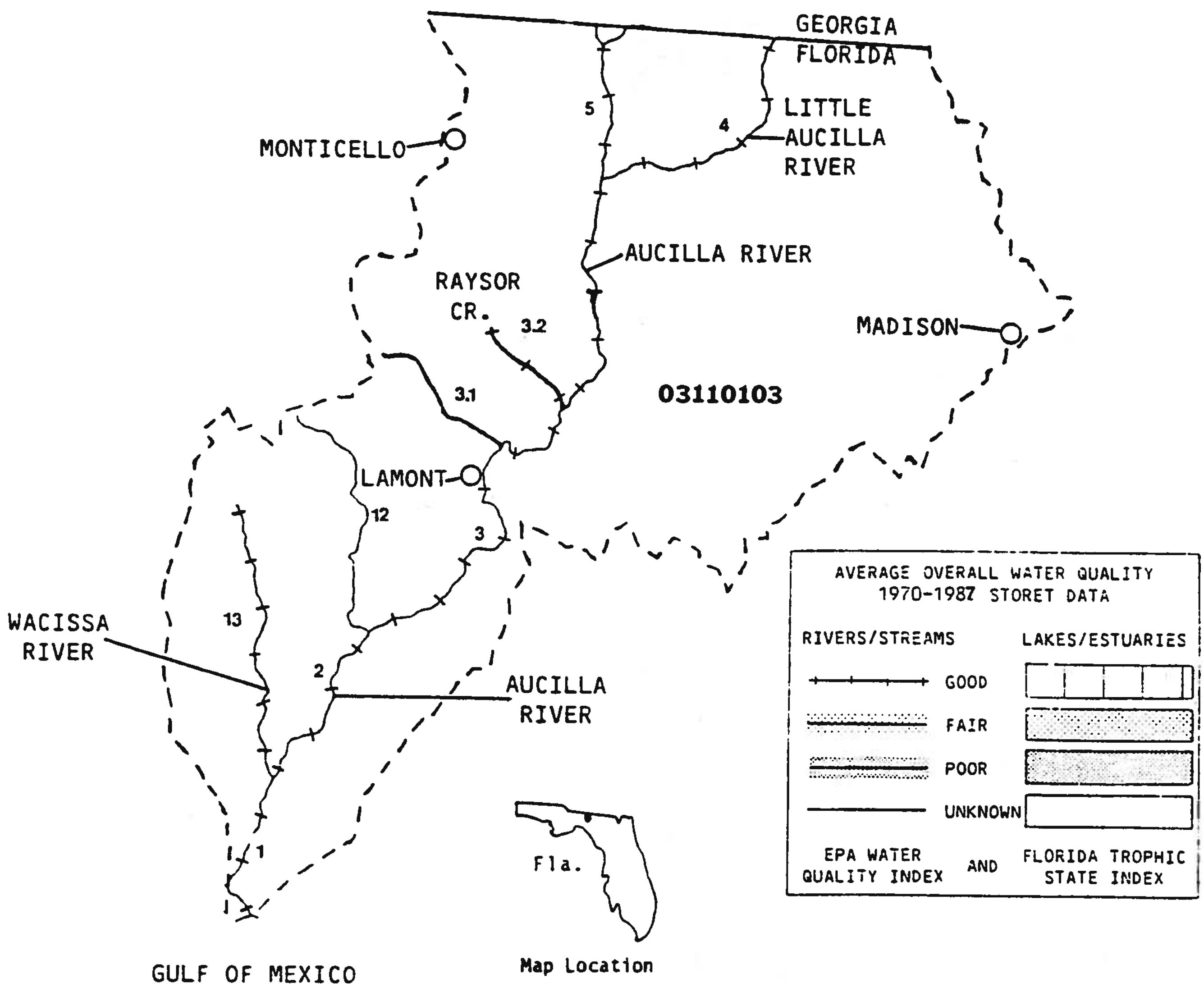
The Aucilla River originates in southern Georgia, flowing approximately 69 miles south to the Gulf of Mexico. The Aucilla River basin drains 733 square miles of northern Florida and the river has an average discharge rate of 360 cfs at Lamont, Florida. The spring-fed Wacissa River is the major tributary in this basin. The Wacissa River traverses approximately 12 miles and discharges at an average rate of 390 cfs. Land use in the Aucilla River basin is primarily forest and agriculture. There are no major urban areas in the Aucilla River Basin.

Specific Water Quality Problems and Pollution Sources

Water quality is generally good in this basin. The Aucilla River is designated an Outstanding Florida Water. The upper reaches of the Aucilla River originate in swampy areas. These waters are naturally low in pH and dissolved oxygen. The Little Aucilla has very low DO, pH and slightly elevated nutrients. An industrial point source is located above this area, however, the water quality problems are probably of natural origin. All reaches below this area normally have levels of pH and DO consistent with unpolluted flowing streams.

The river is currently being sampled as part of a Big Bend Coastal Area Basin Assessment, and preliminary results indicate excellent water quality.

AUCILLA RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT: 03110103 AUCILLA RIVER

* WATER BODY TYPE: STREAM

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
1.00	AUCILLA RIVER AB GULF OF MEXIC	11	71	83	1.8	0.8	123	5	6.4	71	0.2	64	-1	7.4	73	0.42	0.17	-1	350	41	-1.0	-1.0	-1	196	-1	31
2.00	AUCILLA RIVER AB WACISSA RIVER	61	56	86	1.2	-1.0	-1	-1	7.0	73	-1.0	-1	17	7.0	60	0.92	0.06	-1	-1	-1	-1.0	-1.0	-1	120	317	25
3.00	AUCILLA RIVER AB JONES MILL CR	172	56	85	2.0	0.9	210	2	5.8	63	0.8	68	22	6.3	14	0.92	0.07	1	330	94	3.2	3.4	20	74	186	34
3.10	BEASELY CREEK AB AUCILLA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.20	RAYSOR CREEK AB AUCILLA RIVER	18	71	74	2.2	-1.0	358	4	3.7	40	0.8	101	-1	4.3	0	-1.00	0.11	-1	117	34	-1.0	-1.0	-1	75	-1	39
4.00	LITTLE AUCILLA RIVER AB AUCILL	26	69	83	1.0	0.5	205	1	2.6	31	0.8	97	24	4.0	0	1.64	0.10	1	405	33	2.8	0.3	11	48	-1	46
5.00	AUCILLA RIVER AB LITTLE AUCILL	20	71	83	1.9	1.0	90	3	3.7	40	0.7	25	-1	5.8	6	-1.00	0.04	-1	140	58	-1.0	-1.0	-1	121	-1	32
12.00	JONES MILL CREEK AB AUCILLA RI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.00	WACISSA RIVER AB AUCILLA RIVER	39	71	80	2.0	-1.0	20	5	7.2	76	1.0	0	8	7.6	148	0.20	0.08	-1	410	120	-1.0	1.9	-1	300	372	24

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03110103 AUCILLA RIVER

* WATER BODY TYPE: STREAM

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
1.00	AUCILLA RIVER ABOVE GULF OF MEXICO	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
2.00	AUCILLA RIVER ABOVE WACISSA RIVER	YES	GOOD	----	--..	....	--.		0	..0.	.00.	..00	00				
3.00	AUCILLA RIVER ABOVE JONES MILL CREE	YES	GOOD	----	----	....	-..	*	0	000-	-00.	.0.0	0.		*		
3.10	BEASELY CREEK ABOVE AUCILLA RIVER	UNKNOWN	UNKN	....	....	....	.										
3.20	RAYSOR CREEK ABOVE AUCILLA RIVER	YES	GOOD	-*--	-*-.	....	...		.	....	....	....	..				NATURALLY LOW DO.
4.00	LITTLE AUCILLA RIVER ABOVE AUCILLA	YES	FAIR	-*--	-*-*	....	-..	*	-	-00-	---.	.--0	-.		*		DO, pH PROBLEM PROBABLY NATURAL ORIGIN. THERE IS AN INDUSTRIAL POINT SOURCE IN AREA, BUT PROBABLY DOES NOT CONTRIBUTE TO PROBLEM.IMPROVING TREND IN DO,BOD,TN AND SECCHI DEPTH NOTEO RECENTLY.
5.00	AUCILLA RIVER ABOVE LITTLE AUCILLA	YES	GOOD	----	-*-.	....	-..	*	.	....	....	....	..		*		NATURALLY LOW DO.
12.00	JONES MILL CREEK ABOVE AUCILLA RIVE	UNKNOWN	UNKN	....	....	....	.										
13.00	WACISSA RIVER ABOVE AUCILLA RIVER	YES	GOOD	----	---*	....	-..		.	....	....	....	..				

BLACKWATER RIVER BASIN

General Description of the Basin

The Blackwater River originates north of Bradley, Alabama and flows approximately 58 miles prior to entering Blackwater Bay in northwestern Florida. The river flows through portions of Santa Rosa and Okaloosa Counties draining about 860 square miles. Average discharge of the Blackwater River is approximately 400 cfs, at a location 35 miles upstream of the mouth. Groundwater provides the principle source of water in this river system. Salt water encroachment has been reported six miles upstream from the mouth of the river. Major tributaries of the Blackwater River include Juniper Creek, Big Coldwater Creek, and Pond Creek. Land use in the Blackwater River Basin is primarily forest with some agriculture. There are no major urban areas in this basin.

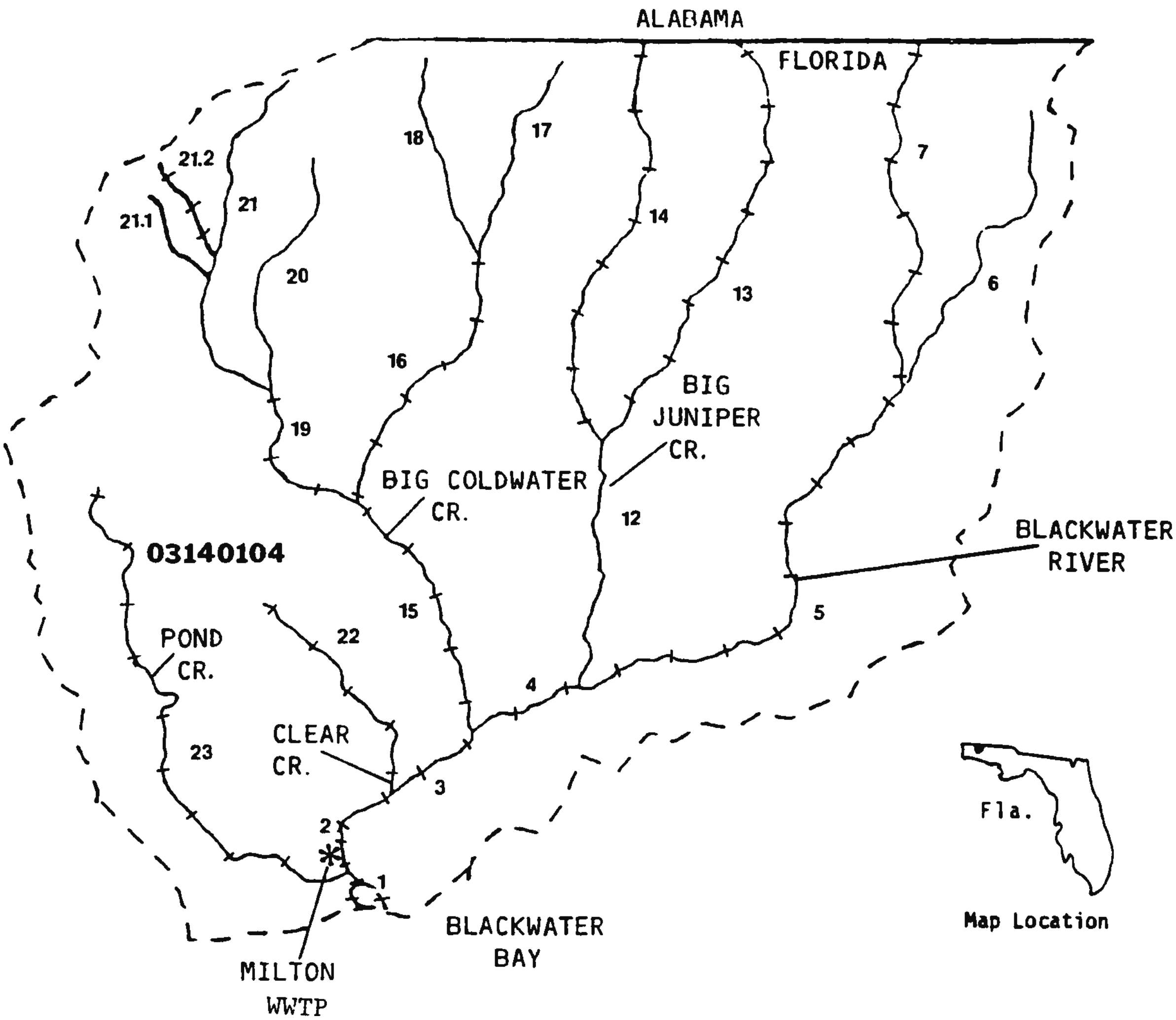
Specific Water Quality Problems and Pollution Sources

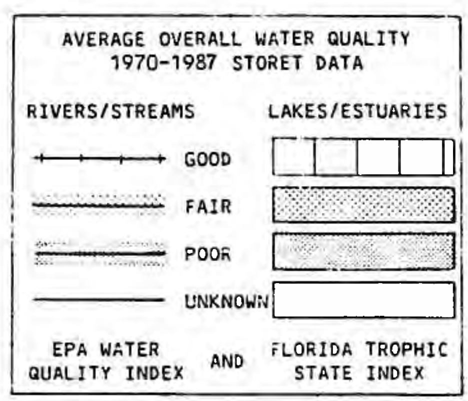
Overall water quality in this basin is good, and the Blackwater River is designated an Outstanding Florida Water. There are two domestic point sources of pollution in the basin.

The Whiting Field WWTP discharges to Clear Creek. Our most recent sampling of Clear Creek below Whiting Field WWTP discharge shows low concentrations of nutrients, chlorophyll and BOD. Treatment at Whiting has been upgraded during recent years. The plant design capacity is 1.5 MGD, but it is treating only about 0.3 MGD. Analysis of effluent shows good treatment and adequate chlorination. Water quality in Clear Creek is considered good with the exception of local siltation and turbidity problems near State Road 87 north of Whiting Field.

The Milton WWTP discharges to Blackwater River near Blackwater Bay. In summer, oxygen depletion is experienced in the Blackwater/East Bay area. The macroinvertebrate fauna of these waters is usually limited to fewer than ten pollution tolerant species. The Milton WWTP, which was contributing to these water quality problems, has undergone extensive modification, and water quality is expected to improve. Although sampling has been limited in the bay area, the absence of fishkills and water quality complaints suggest that conditions are not worsening.

BLACKWATER RIVER BASIN





WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT: 03140104 BLACKWATER RIV

* WATER BODY TYPE: STREAM

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
1.00	BLACKWATER RIVER AB PENSACOLA	19	70	76	4.2	1.4	50	-1	7.2	82	0.6	-1	5	5.8	4	0.39	0.02	3	490	33	-1.0	-1.0	-1	120	-1	18
2.00	BLACKWATER RIVER AB POND CREEK	124	70	86	7.0	1.6	36	6	7.1	81	0.8	-1	6	6.5	14	0.73	0.03	4	920	152	3.5	-1.0	-1	1610	-1	25
3.00	BLACKWATER RIVER AB CLEAR CREE	7	72	80	5.0	1.2	5	9	8.4	89	0.8	-1	-1	7.0	5	0.65	0.01	-1	230	23	-1.0	-1.0	-1	16	-1	20
4.00	BLACKWATER RIVER AB BIG COLDWA	2	70	72	4.5	-1.0	20	-1	8.9	87	1.0	67	-1	7.2	16	1.56	0.03	-1	1158	-1	-1.0	-1.0	-1	-1	-1	28
5.00	BLACKWATER RIVER AB BIG JUNIPE	175	66	87	5.0	0.8	44	5	8.5	90	0.8	23	5	5.8	4	0.39	0.02	3	355	57	3.3	3.7	40	24	308	15
6.00	PANTHER CREEK AB BLACKWATER RI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	BLACKWATER RIVER AB PANTHER CR	4	70	75	4.0	-1.0	50	-1	8.6	82	1.0	67	-1	5.5	1	0.65	0.01	-1	1780	-1	-1.0	-1.0	-1	-1	-1	24
12.00	BIG JUNIPER CREEK AB BLACKWATE	3	76	77	-1.0	-1.0	-1	-1	8.6	95	-1.0	-1	-1	5.8	-1	-1.00	0.02	-1	-1	-1	-1.0	-1.0	-1	22	-1	0
13.00	SWEETWATER CREEK AB BIG JUNIPE	18	70	77	3.0	-1.0	35	4	8.4	92	1.0	39	-1	5.8	2	0.50	0.02	-1	780	9	-1.0	-1.0	-1	23	-1	13
14.00	BIG JUNIPER CREEK AB SWEETWATE	20	70	77	3.2	-1.0	35	2	8.6	92	0.9	29	-1	5.8	4	0.41	0.02	-1	1118	130	-1.0	-1.0	-1	23	-1	13
15.00	BIG COLDWATER CREEK AB BLACKWA	115	58	81	6.0	1.4	22	8	8.3	93	0.6	19	7	6.2	5	0.77	0.02	-1	560	43	-1.0	-1.0	-1	31	310	23
16.00	BIG COLDWATER CREEK, EAST FORK	25	70	78	3.0	-1.0	28	4	9.1	96	1.0	20	0	6.1	3	0.53	0.02	-1	1070	79	-1.0	-1.0	-1	22	-1	14
17.00	BIG COLDWATER CREEK, EAST FORK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	DIXON CREEK AB BIG COLDWATER,E	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
19.00	BIG COLDWATER CREEK, WEST FORK	2	80	80	4.0	-1.0	18	5	7.4	84	0.5	-1	-1	7.0	-1	-1.00	0.01	-1	490	345	-1.0	-1.0	50	200	-1	20
20.00	JUNIPER CREEK AB BIG COLDWATER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	BIG COLDWATER CREEK, WEST FORK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.10	COBB BRANCH AB BIG COLDWATER,W	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.20	MALLOY BRANCH AB BIG COLDWATER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
22.00	CLEAR CREEK AB BLACKWATER RIVE	20	71	80	5.2	0.9	25	5	8.4	89	0.9	-1	-1	6.2	3	0.51	0.03	-1	130	103	-1.0	-1.0	-1	73	-1	15
23.00	POND CREEK AB BLACKWATER RIVER	60	58	82	4.2	1.8	30	6	8.2	86	1.0	-1	-1	6.2	3	0.48	0.02	-1	445	110	-1.0	-1.0	-1	29	51	21

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03140104 BLACKWATER RIV

* WATER BODY TYPE: STREAM

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
1.00	BLACKWATER RIVER ABOVE PENSACOLA (E	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
2.00	BLACKWATER RIVER ABOVE POND CREEK	YES	GOOD	---*	----	....	-..		0	0000	0--.	.0*0	0.	*			TIDAL CONDITIONS MAKE TREND ANALYSIS DIFFICULT. THIS REACH EXHIBITS THE WORST WATER QUALITY IN THE BASIN, HOWEVER OVERALL QUALITY IS FAIRLY GOOD. AREA SHOULD SHOW IMPROVEMENT DUE TO MILTON WWTP UPGRADE.
3.00	BLACKWATER RIVER ABOVE CLEAR CREEK	YES	GOOD	----	---.	....	-..		.	....	....	....	..				BMPS IN PLACE.
4.00	BLACKWATER RIVER ABOVE BIG COLDWATE	YES	GOOD	---.	---.	....	-..		.	....	....	....	..				BMPS IN PLACE
5.00	BLACKWATER RIVER ABOVE BIG JUNIPER	YES	GOOD	----	----	....	-*.		*	00*0	000.	..00	0.		*		GULLY EROSION FROM AGRICULTURAL FIELDS CAUSING SEVERE SEDIMENTATION. CATTLE AND EXTENSIVE FRUIT/NUT PRODUCTION MAY EVENTUALLY CAUSE NUTRIENTS AND PESTICIDES INPUTS.
6.00	PANTHER CREEK ABOVE BLACKWATER RIVE	UNKNOWN	UNKN	....	....	....	.										
7.00	BLACKWATER RIVER ABOVE PANTHER CREE	YES	GOOD	---.	---.	....	-..		.	....	....	....	..				
12.00	BIG JUNIPER CREEK ABOVE BLACKWATER	UNKNOWN	GOOD	--.-	.-..	....	...		.	....	....	....	..				
13.00	SWEETWATER CREEK ABOVE BIG JUNIPER	YES	GOOD	----	---.	....	-..		.	....	....	....	..				BMPS IN PLACE
14.00	BIG JUNIPER CREEK ABOVE SWEETWATER	YES	GOOD	----	---.	....	-..		.	....	....	....	..				BMPS IN PLACE
15.00	BIG COLDWATER CREEK ABOVE BLACKWATE	YES	GOOD	----	---.	....	--.		.	....	....	....	..				
16.00	BIG COLDWATER CREEK, EAST FORK ABOV	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
17.00	BIG COLDWATER CREEK, EAST FORK ABOV	UNKNOWN	UNKN	....	....	....	.										
18.00	DIXON CREEK ABOVE BIG COLDWATER,E F	UNKNOWN	UNKN	....	....	....	.										
19.00	BIG COLDWATER CREEK, WEST FORK ABOV	YES	GOOD	----	----	....	-..		.	....	....	....	..				
20.00	JUNIPER CREEK ABOVE BIG COLDWATER,W	UNKNOWN	UNKN	....	....	....	.										
21.00	BIG COLDWATER CREEK, WEST FORK ABOV	UNKNOWN	UNKN	....	....	....	.										
21.10	COBB BRANCH ABOVE BIG COLDWATER,W F	UNKNOWN	UNKN	....	....	....	.										
21.20	MALLOY BRANCH ABOVE BIG COLDWATER,W	YES	UNKN	....	....	....	.								*		WASHOUT FROM ADJACENT FARMS AND DIRT ROAD TERRACE.
22.00	CLEAR CREEK ABOVE BLACKWATER RIVER	YES	GOOD	----	---.	....	--.		.	....	....	....	..				
23.00	POND CREEK ABOVE BLACKWATER RIVER	YES	GOOD	----	---.	....	-..		.	....	....	....	..		**		CLEARCUT FOLLOWED BY BRINGING FILL DIRT FOR FUTURE DEVELOPMENT.

CALOOSAHATCHEE RIVER BASIN

General Description of the Basin

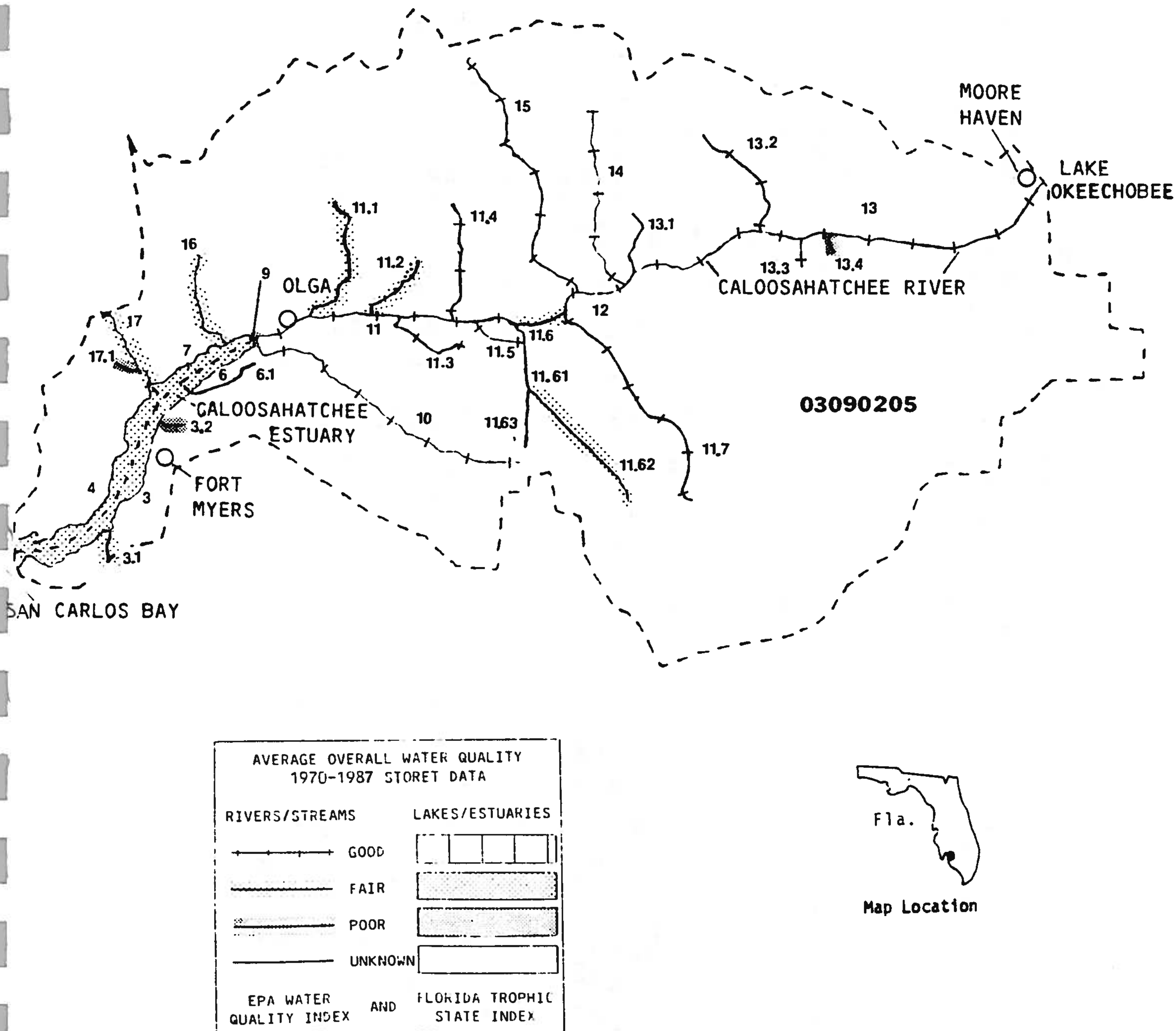
The Caloosahatchee River flows approximately 45 miles from the Moore Haven locks on western Lake Okeechobee to the Franklin locks at the Town of Olga, Florida. It serves as the only flood control waterway running west from Lake Okeechobee. From Olga to the Gulf, approximately 30 miles, the river broadens into a tidally influenced estuarine system. Land use in the Caloosahatchee basin is dominated by rangeland with some agriculture, particularly in the upper portion. Wetlands also constitute a major land use category in this basin. Major urban centers are not present in the upper basin; however, the Cities of Fort Myers, North Fort Myers and Cape Coral are located on the estuarine portion of the Caloosahatchee River.

Specific Water Quality Problems and Pollution Sources

Generally the upper basin water quality is rated as good, based mostly on somewhat historical data. However, the basin is currently being assessed by the South Florida DER district. The first quarter's data indicate a relatively low macroinvertebrate biotic index in the river itself suggesting some DO problems and/or habitat reduction. The most likely source for any problems is runoff from the rangelands and the influence of nutrient laden waters from the agricultural (sugarcane) areas near Lake Okeechobee. Most of the river's tributaries have higher biotic indices, probably due to their less sluggish and less modified conditions.

The estuarine segment of the river and some of its tributaries have had problems with elevated nutrient concentrations, particularly phosphorus, and with low Secchi transparencies. In addition, the most recent Intensive Survey (1987) revealed high chlorophyll values. The domestic waste dischargers in the estuary have either been eliminated or significantly upgraded (Ft. Myers WWTP), and new wasteload allocations are being developed for the dischargers based on summer and fall intensive surveys. However, the area is highly developed and nonpoint source pollution will continue to impact water quality.

CALOOSAHATCHEE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L   -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
** USGS HYDROLOGIC UNIT: 03090205 CALOOSAHATCHEE																										
* WATER BODY TYPE: ESTUARY																										
3.00	CALOOSAHATCHEE RIVER AB GULF O	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	CALOOSAHATCHEE RIVER AB GULF O	117	72	87	2.9	0.8	35	8	6.8	81	1.7	-1	10	8.0	140	1.06	0.12	9	30	4	2.9	-1.0	-1	28000	-1	57
6.00	CALOOSAHATCHEE RIVER AB BILLY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	CALOOSAHATCHEE RIVER AB YELLOW	54	71	85	3.0	0.5	45	10	7.6	87	2.0	-1	15	8.0	0	1.16	0.16	13	2125	4	-1.0	-1.0	-1	14650	-1	63
* WATER BODY TYPE: STREAM																										
3.10	DEEP LAGOON AB CALOOSAHATCHEE	12	72	75	3.0	0.0	150	18	3.1	33	1.7	-1	-1	7.6	190	2.38	0.64	8	89	-1	-1.0	-1.0	-1	33000	-1	59
3.20	MANUEL BRANCH AB CALOOSAHATCHE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.10	BILLY CREEK AB CALOOSAHATCHEE	31	72	80	2.0	-1.0	80	2	4.5	51	2.0	-1	14	7.5	175	1.91	0.26	-1	50150	85	-1.0	-1.0	-1	2423	-1	50
9.00	CALOOSAHATCHEE RIVER AB ORANGE	7	85	85	-1.0	-1.0	40	-1	3.0	37	-1.0	-1	19	-1.0	-1	-1.00	0.19	-1	-1	-1	-1.0	-1.0	-1	14600	-1	70
10.00	ORANGE RIVER AB CALOOSAHATCHEE	93	39	80	3.0	1.5	65	3	5.8	69	1.2	29	11	7.7	202	1.32	0.13	-1	275	66	-1.0	-1.0	-1	666	-1	34
11.00	CALOOSAHATCHEE RIVER AB ORANGE	488	45	87	2.0	1.5	75	2	6.6	75	1.4	50	20	7.7	158	1.46	0.12	8	78	12	2.2	3.0	6	620	291	37
11.10	TROUT CREEK AB CALOOSAHATCHEE	7	72	75	4.0	-1.0	52	-1	4.8	58	1.4	78	14	7.2	122	1.43	0.14	-1	-1	-1	-1.0	-1.0	-1	2350	-1	45
11.20	TELEGRAPH CREEK AB CALOOSAHATC	7	72	75	2.2	-1.0	120	-1	5.3	63	1.4	58	13	7.0	119	1.50	0.15	-1	-1	-1	-1.0	-1.0	-1	8325	-1	48
11.30	HICKEY CREEK AB CALOOSAHATCHEE	53	72	80	1.6	2.4	30	-1	5.6	69	1.1	-1	4	7.7	186	0.57	0.04	-1	108	-1	-1.0	-1.0	15	772	8	25
11.40	CYPRESS CREEK AB CALOOSAHATCHE	44	72	79	2.5	1.3	70	-1	4.8	58	2.0	22	9	7.4	150	0.88	0.03	-1	-1	-1	-1.0	-1.0	-1	700	11	38
11.50	BEDMAN CREEK AB CALOOSAHATCHEE	31	72	79	3.0	1.7	50	-1	6.3	74	1.0	-1	10	7.8	196	0.88	0.02	-1	132	54	-1.0	-1.0	-1	730	35	20
11.60	DOG CANAL AB ORANGE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.61	DOG CANAL AB BEDMAN CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.62	TOWNSEND CANAL AB CALOOSAHATCH	33	72	80	2.7	1.5	95	-1	6.1	75	-1.0	-1	20	7.7	152	1.63	0.11	-1	-1	-1	-1.0	-1.0	-1	616	-1	42
11.63	DOG CANAL AB TOWNSEND CANAL	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.70	ROBERTS CANAL AB CALOOSAHATCHE	72	72	79	3.0	0.7	98	-1	5.8	67	1.6	-1	20	7.6	105	1.64	0.07	-1	-1	14	-1.0	-1.0	-1	626	20	35
12.00	CALOOSAHATCHEE RIVER AB JACKS	78	45	81	2.5	1.1	90	2	6.3	72	1.3	-1	22	7.5	145	1.35	0.12	1	62	16	-1.0	-1.0	-1	560	0	38
13.00	CALOOSAHATCHEE CANAL AB BEE BR	1351	23	85	3.0	1.0	88	6	5.5	64	2.3	-1	23	7.5	135	1.79	0.11	16	95	13	2.7	3.0	4	540	96	46
13.10	POLLYWOG CREEK AB BEE BRANCH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.20	CYPRESS BRANCH AB BEE BRANCH	23	76	79	2.5	0.8	-1	-1	6.4	71	-1.0	-1	41	6.7	-1	1.50	0.09	-1	-1	-1	-1.0	-1.0	-1	95	39	34
13.30	GOODNO CANAL AB BEE BRANCH	82	77	79	2.0	0.8	93	-1	6.7	77	-1.0	-1	24	7.7	167	1.42	0.05	-1	-1	-1	-1.0	-1.0	-1	508	17	32
13.40	LONG HAMMOCK CREEK AB BEE BRAN	46	77	79	2.5	1.1	70	-1	3.6	41	-1.0	-1	28	7.3	157	1.41	0.14	-1	-1	-1	-1.0	-1.0	-1	549	2	55
14.00	CALOOSAHATCHEE RIVER,BEE BRANC	49	76	79	1.8	0.6	75	-1	5.5	59	-1.0	-1	28	6.7	43	1.02	0.04	-1	-1	-1	-1.0	-1.0	-1	624	2	39
15.00	CALOOSAHATCHEE RIVER, JACKS BR	36	73	79	1.0	1.0	123	-1	5.4	61	1.1	-1	18	7.3	73	1.12	0.04	-1	-1	-1	-1.0	-1.0	-1	515	4	35
16.00	DAUGHTREY CREEK AB CALOOSAHATC	10	72	80	2.0	-1.0	65	-1	4.2	53	1.6	22	12	7.3	56	1.42	0.25	-1	140	-1	-1.0	-1.0	-1	1775	-1	46
17.00	YELLOW FEVER CREEK AB CALOOSAH	9	72	77	2.0	-1.0	53	-1	3.7	42	1.3	42	15	7.2	108	1.52	0.21	-1	-1	-1	-1.0	-1.0	-1	1550	-1	51
17.10	HANCOCK CREEK AB YELLOW FEVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03090205 CALOOSAHATCHEE

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
* WATER BODY TYPE: ESTUARY																	
3.00	CALOOSAHATCHEE RIVER ABOVE GULF OF	PARTIAL	UNKN	....	....	....	.	**						*	* **	**	ESTUARY REACH IS RANKED AS PARTIAL BASED ON REACH NUMBER 4 WHICH HAS DATA COVERAGE.
4.00	CALOOSAHATCHEE RIVER ABOVE GULF OF	PARTIAL	FAIR	----	----	----	-*-	**	0	.*0.	.00.	000*	0.	*	* **	**	ELEVATED LEVELS OF TP AND REDUCED SECCHI DEPTH.AGRICULTURAL AND URBAN RUNOFF. CHANNELIZATION. POLLUTED TRIBUTARIES FLOW INTO CALOOSAHATCHEE.
6.00	CALOOSAHATCHEE RIVER ABOVE BILLY CR	PARTIAL	UNKN	....	....	....	.	**						*	* **	**	REACH IS CLASSIFIED AS PARTIAL BASED ON DISTRICT OFFICE ANALYSIS AND WLA STUDY. POLLUTED TRIBUTARY INPUT. CHANNELIZED. URBAN AND AGRICULTURAL POLLUTION.
7.00	CALOOSAHATCHEE RIVER ABOVE YELLOW F	PARTIAL	POOR	----	---.	-*-*	--.	**	.	....	....	....	..	*	* **	**	REACH IS CLASSIFIED AS PARTIAL DUE TO DISTRICT ASSESSMENT AND WLA STUDY. ELEVATED LEVELS OF TP AND REDUCED SECCHI DEPTH.CHANNELIZED. POLLUTED TRIBUTARY INPUT.
* WATER BODY TYPE: STREAM																	
3.10	DEEP LAGOON ABOVE CALOOSAHATCHEE RI	PARTIAL	FAIR	*--*	-*-.	....	-..		.	....	....	....	..	*		*	DO PROBLEMS DOCUMENTED IN HISTORICAL DATA. LAGOON RECEIVES WWTP EFFLUENT. 1981 WLA.LOCAL CITIZEN QUANTITATIVE DOCUMENTATION OF WATER CHEMISTRY EVIDENCE SHOWING LONG TERM DECLINE IN WATER QUALITY.
3.20	MANUEL BRANCH ABOVE CALOOSAHATCHEE	NO	UNKN	....	....	....	.	**							*	*	CHANNELIZED.
6.10	BILLY CREEK ABOVE CALOOSAHATCHEE RI	PARTIAL	FAIR	---*	--*.	....	-..	**	.	....	....	....	..		* **	**	ELEVATED BACTERIA AND CONDUCTIVITY.CHANNELIZED.
9.00	CALOOSAHATCHEE RIVER ABOVE ORANGE R	NO	POOR	-..*	-*..	....	...	**	.	....	....	....	..		* **	**	PROBLEMS ASSOCIATED WITH LOW DO.CHANNELIZED.
10.00	ORANGE RIVER ABOVE CALOOSAHATCHEE R	YES	GOOD	----	---.	....	-.-		.	....	....	....	..		* *	*	
11.00	CALOOSAHATCHEE RIVER ABOVE ORANGE R	YES	GOOD	----	----	....	--.	**	-	0*0.	.---	.000	0.		* **	**	CHANNELIZED.
11.10	TROUT CREEK ABOVE CALOOSAHATCHEE RI	PARTIAL	FAIR	---*	--..	....	-..		.	....	....	....	..				ELEVATED CONDUCTIVITY AND REDUCED DO CONCENTRATIONS.
11.20	TELEGRAPH CREEK ABOVE CALOOSAHATCHE	PARTIAL	FAIR	---*	--..	....	-..		.	....	....	....	..		*		VERY SLIGHT DO PROBLEM DUE TO NATURAL CONDITION AND AGRICULTURAL RUNOFF.
11.30	HICKEY CREEK ABOVE CALOOSAHATCHEE R	YES	GOOD	----	----	....	-..		.	....	....	....	..		* **	*	
11.40	CYPRESS CREEK ABOVE CALOOSAHATCHEE	YES	GOOD	----	--..	....	-..		.	....	....	....	..				
11.50	BEDMAN CREEK ABOVE CALOOSAHATCHEE R	YES	GOOD	----	---.	....	-..		.	....	....	....	..		* **	*	
11.60	DOG CANAL ABOVE ORANGE RIVER	PARTIAL	UNKN	....	....	....	.	***							* **	***	AGRICULTURAL DISCHARGING FROM ADJACENT FARMS. CHANNELIZED.
11.61	DOG CANAL ABOVE BEDMAN CREEK	UNKNOWN	UNKN	....	....	....	.										
11.62	TOWNSEND CANAL ABOVE CALOOSAHATCHEE	PARTIAL	GOOD	----	--..	....	-..	*	.	....	....	....	..		* *	*	SLIGHTLY DEPRESSED DO LEVELS.
11.63	DOG CANAL ABOVE TOWNSEND CANAL	UNKNOWN	UNKN	....	....	....	.										
11.70	ROBERTS CANAL ABOVE CALOOSAHATCHEE	YES	GOOD	----	---.	....	-..	*	.	....	....	....	..		* *	*	
12.00	CALOOSAHATCHEE RIVER ABOVE JACKS BR	YES	GOOD	----	---.	....	-..	***	.	....	....	....	..		* *	***	UNAUTHORIZED TRASH DUMP IN CREEK 1/2 MILE FROM RIVER. CHANNELIZED. ADJACENT AGRICULTURAL AREAS DISCHARGING UNTREATED RUNOFF.
13.00	CALOOSAHATCHEE CANAL ABOVE BEE BRAN	YES	FAIR	----	---*	....	--.	***	0	..0.	.00.	.000	0.		* *	* **	FAIR WATER QUALITY ACCORDING TO TOTAL COLIFORM AND BECK'S BIOLOGIC INDEX,HOWEVER FECAL COLIFORM RESULTS AND SUBSTRATE INDICIES INDICATE GOOD QUALITY.ADJACENT AGRICULTURAL AREAS DISCHARGING UNTREATED RUNOFF. CHANNELIZED. SOME FUEL SPILLS FROM BOATS.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS WQ	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
13.10	POLLYWOG CREEK ABOVE BEE BRANCH	UNKNOWN	UNKN	....	....	....	.										
13.20	CYPRESS BRANCH ABOVE BEE BRANCH	YES	GOOD	----	*-..	....	-..		.	....	....	....	..				
13.30	GOODNO CANAL ABOVE BEE BRANCH	YES	GOOD	----	--..	....	-..		.	....	....	....	..				
13.40	LONG HAMMOCK CREEK ABOVE BEE BRANCH	NO	FAIR	----	**..	....	-..		.	....	....	....	..				DO RELATED PROBLEMS.
14.00	CALOOSAHATCHEE RIVER,BEE BRANCH ABO	YES	GOOD	----	*-..	....	-..		.	....	....	....	..				
15.00	CALOOSAHATCHEE RIVER, JACKS BR ABOV	YES	GOOD	----	--..	....	-..		.	....	....	....	..				
16.00	DAUGHTREY CREEK ABOVE CALOOSAHATCHE	PARTIAL	FAIR	---*	---.	....	-..	**	.	....	....	....	..		*	*	VERY SLIGHT DO AND NUTRIENT PROBLEM.CHANNELIZED.
17.00	YELLOW FEVER CREEK ABOVE CALOOSAHAT	PARTIAL	FAIR	---*	-*..	....	-..	**	.	....	....	....	..		*	*	DO PROBLEM IN THIS CREEK DOCUMENTED IN MID-1970'S.CHANNELIZED.
17.10	HANCOCK CREEK ABOVE YELLOW FEVER CR	NO	UNKN	....	....	....	.	**							*	*	CHANNELIZED.

CHARLOTTE HARBOR BASIN

General Description of the Basin

Charlotte Harbor and the associated estuaries between it and the Caloosahatchee River compose an area of critical concern due to its rapidly expanding population. Water quality is generally good, but the potential for severe damage to this important body of water is high. The estuaries now serve as a sportfishery and nursery area for the very productive marine life of the area. The three major freshwater inputs to the estuary are the Peace River, Myakka River, and Caloosahatchee River. The Charlotte Harbor Basin consists of Charlotte Harbor (119 square miles), Pine Island Sound (71 square miles), San Carlos Bay (23 square miles), and Matlacha Pass (23 square miles).

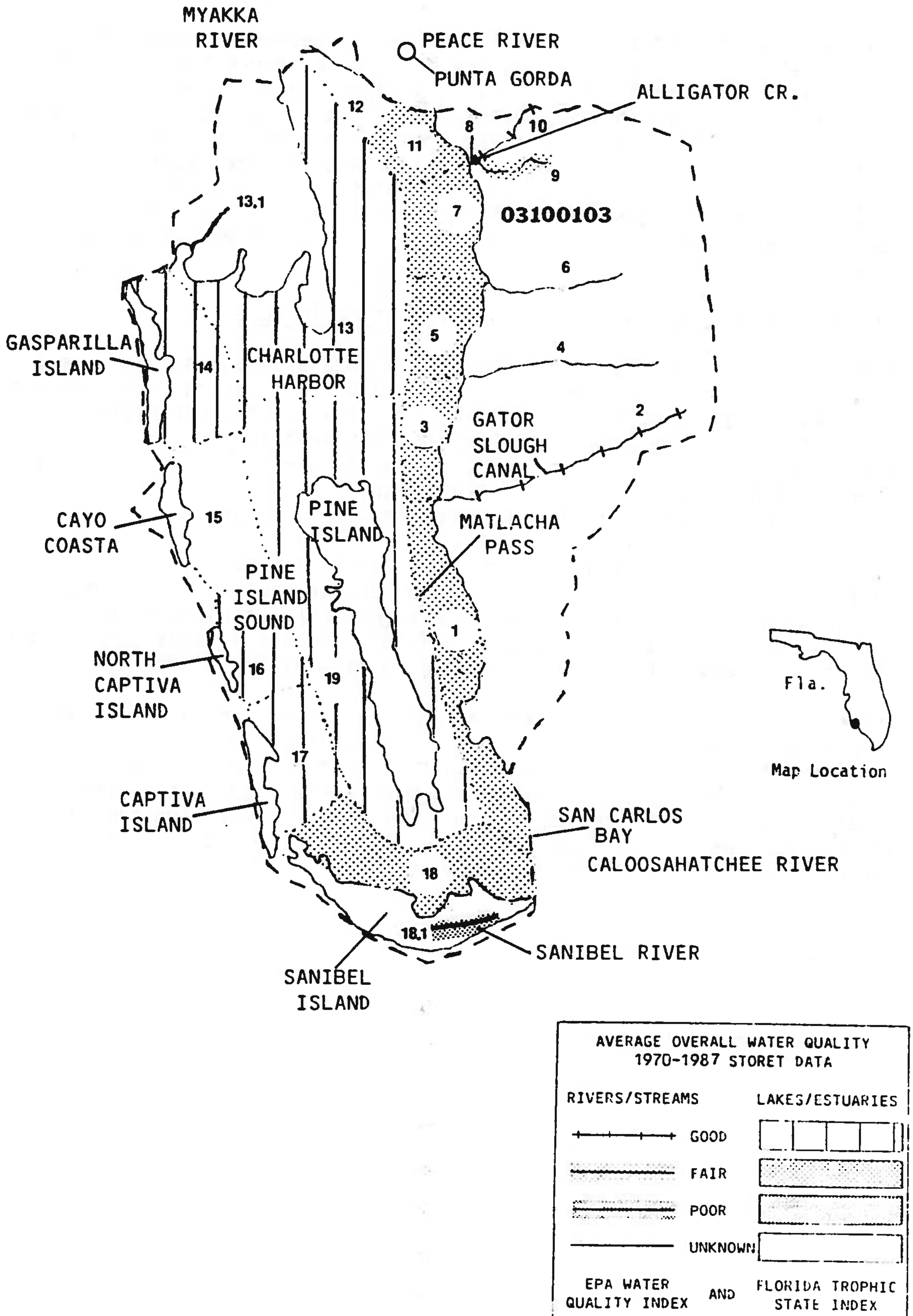
Specific Water Quality Problems and Pollution Sources

Water quality in the estuary is generally good although nutrient levels, particularly phosphorus, are elevated, and Secchi readings are somewhat low in areas. High phosphorus levels result primarily from nutrient loads originating from the Peace River basin. Nutrient loading in San Carlos Bay may be resulting from urban runoff in the Ft. Myers area of the lower Caloosahatchee River. Upper Charlotte Harbor is probably impacted to some degree by urbanization at the mouth of the Peace River.

Because of the rapid urbanization occurring in the basin, a technical advisory committee, formed to recommend necessary planning actions, asked the USGS to prepare a comprehensive environmental assessment of the area. This has been an ongoing project since 1982 and has already generated two reports. Investigations will continue for at least two more years.

The only serious pollution problem in the basin was in Sanibel River located on Sanibel Island at the mouth of Charlotte Harbor. It has previously received domestic wastewater and runoff from the island's more developed areas. Leachate from local WWTPs has been controlled, but stormwater runoff remains a problem. Samples in the mid-seventies showed significant nutrient and DO problems in the river; however, there are no recent data to verify the continued existence of this problem.

CHARLOTTE HARBOR BASIN

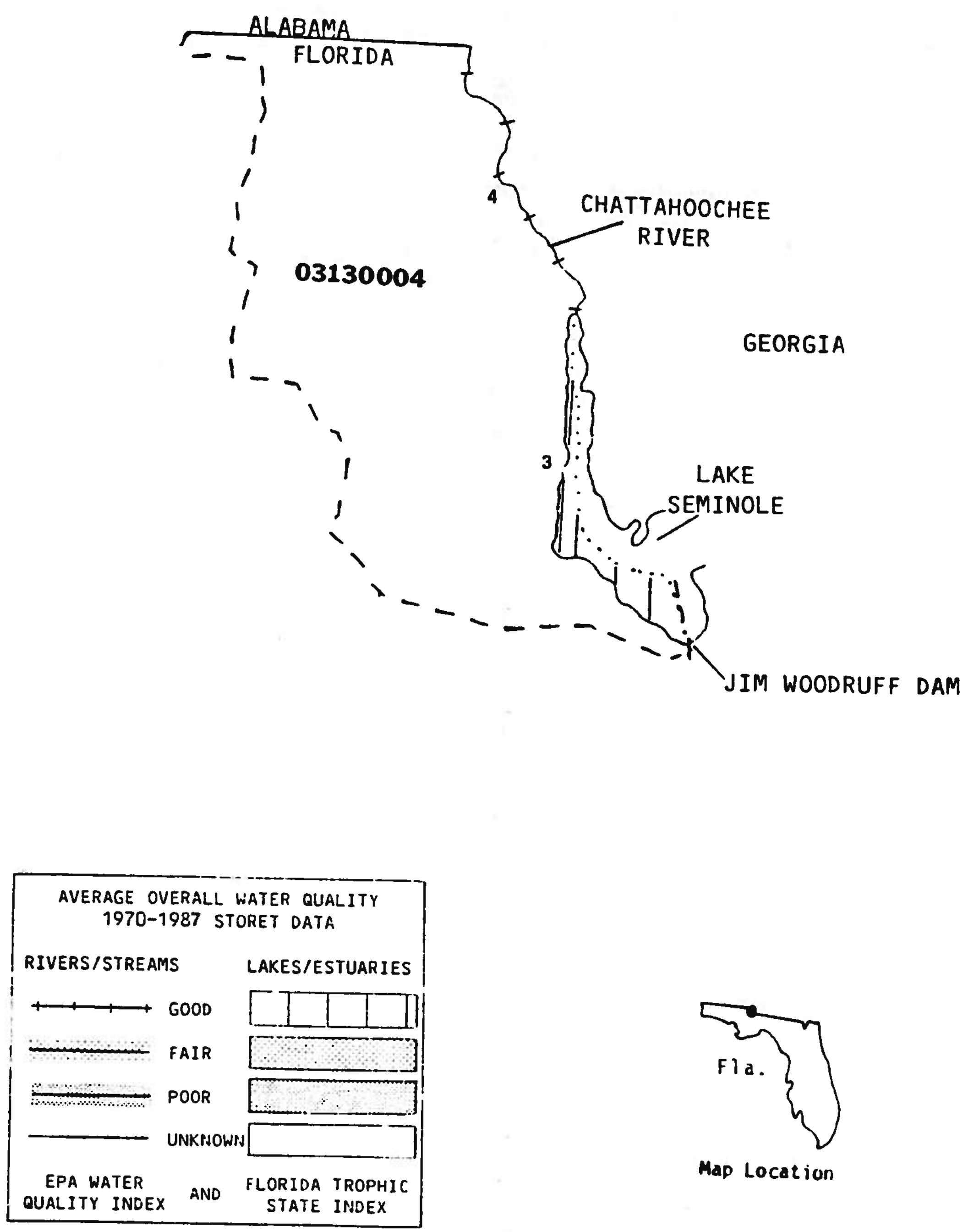


WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
** USGS HYDROLOGIC UNIT: 03100103 CHARLOTTE HARBO																										
* WATER BODY TYPE: ESTUARY																										
1.00	CHARLOTTE HARBOR AB CALOOSAHAT	113	71	85	3.5	0.7	33	22	6.4	85	2.6	-1	9	8.0	117	0.96	0.07	5	12	4	-1.0	-1.0	-1	33500	-1	57
3.00	CHARLOTTE HARBOR AB GATOR SLOU	6	84	85	-1.0	-1.0	-1	-1	9.7	126	-1.0	-1	13	8.2	-1	0.87	0.09	-1	-1	-1	-1.0	-1.0	-1	21300	-1	55
5.00	CHARLOTTE HARBOR AB YUCCA PEN	32	76	84	1.7	1.5	20	-1	6.8	88	-1.0	-1	7	8.2	-1	0.85	0.14	-1	-1	-1	3.3	-1.0	-1	39455	-1	51
7.00	CHARLOTTE HARBOR AB WINEGARD C	11	84	84	1.5	1.7	28	-1	-1.0	-1	-1.0	-1	7	-1.0	-1	0.76	0.21	-1	-1	-1	-1.0	-1.0	-1	32000	-1	47
11.00	CHARLOTTE HARBOR AB ALLIGATOR	500	71	86	2.0	1.4	40	12	6.4	78	1.5	-1	7	8.0	-1	0.73	0.32	7	30	19	3.3	-1.0	-1	33050	-1	51
12.00	CHARLOTTE HARBOR AB PEACE RIVE	25	73	84	-1.0	-1.0	-1	-1	4.4	52	-1.0	-1	-1	8.0	-1	0.67	0.28	-1	11	8	-1.0	-1.0	-1	28700	-1	48
13.00	CHARLOTTE HARBOR AB MYAKKA RIV	238	71	86	1.9	2.0	30	15	7.0	85	1.5	-1	5	7.9	-1	0.70	0.15	6	2	2	3.9	-1.0	-1	38870	-1	47
14.00	GASPARILLA ISLAND AB LEMON BAY	59	73	85	2.2	2.0	5	-1	6.4	78	-1.0	-1	4	8.2	-1	0.51	0.09	-1	-1	5	-1.0	-1.0	-1	50300	-1	42
15.00	LA COSTA KEY AB CHARLOTTE HARB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.00	NORTH CAPTIVA ISLAND AB CHARLO	5	84	84	4.2	1.3	5	-1	6.8	84	-1.0	-1	4	-1.0	-1	0.74	0.07	-1	-1	-1	-1.0	-1.0	-1	49700	-1	54
17.00	CAPTIVA ISLAND AB CHARLOTTE HA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	SANIBEL ISLAND AB CHARLOTTE HA	137	73	85	7.0	0.8	28	11	6.3	81	2.1	330	26	8.1	203	2.23	0.05	10	2400	10	-1.0	-1.0	-1	43500	-1	51
19.00	PINE ISLAND AB CHARLOTTE HARBO	171	73	87	2.5	1.3	10	10	6.9	84	1.8	-1	5	8.1	-1	0.71	0.07	8	10	-1	4.6	-1.0	-1	48000	-1	53
* WATER BODY TYPE: STREAM																										
2.00	GATOR SLOUGH CANAL AB CHARLOTT	27	79	84	0.8	-1.0	30	2	6.8	86	-1.0	-1	11	7.8	134	0.88	0.03	-1	-1	-1	-1.0	-1.0	-1	580	-1	23
4.00	YUCCA PEN CREEK AB CHARLOTTE H	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	WINEGARD CREEK AB CHARLOTTE HA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.00	ALLIGATOR CREEK AB CHARLOTTE H	5	71	75	2.0	-1.0	45	-1	5.2	68	1.3	-1	-1	8.0	-1	0.29	-1.00	-1	16	-1	-1.0	-1.0	-1	25600	-1	25
9.00	ALLIGATOR CREEK, SOUTH PRONG A	30	66	83	3.0	-1.0	60	-1	5.2	60	1.9	-1	-1	7.2	146	1.00	0.13	8	94	40	-1.0	-1.0	-1	1310	20	48
10.00	ALLIGATOR CREEK AB ALLIGATOR C	55	62	79	4.0	0.9	50	-1	6.9	75	2.1	-1	-1	7.5	130	1.12	0.06	31	154	20	-1.0	3.5	24	915	1	33
13.10	CATFISH CREEK AB LEMON BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.10	SANIBEL RIVER AB SANIBEL ISLAN	151	71	77	6.5	0.0	120	-1	4.7	54	5.7	181	46	7.9	233	4.64	0.29	-1	57	152	-1.0	-1.0	-1	4450	0	61

CHATTAHOOCHEE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
** USGS HYDROLOGIC UNIT: 03130004 CHATTAHOOCHEE R																										
* WATER BODY TYPE: LAKE																										
3.00	LAKE SEMINOLE AB APALACHICOLA	135	60	79	11.3	0.7	47	15	7.5	87	0.9	-1	6	7.3	23	0.71	0.04	6	1300	16	-1.0	-1.0	-1	87	-1	59
* WATER BODY TYPE: STREAM																										
4.00	CHATTAHOOCHEE RIVER AB LAKE SE	3355	60	81	13.0	0.8	50	8	8.8	94	1.2	-1	3	6.7	23	0.72	0.03	20	290	7	2.4	1.8	12	73	5760	31

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03130004 CHATTAHOOCHEE R																	
* WATER BODY TYPE: LAKE																	
3.00	LAKE SEMINOLE ABOVE APALACHICOLA RI	YES	GOOD	----	---.	----	-..		.	....	....	....	..				
* WATER BODY TYPE: STREAM																	
4.00	CHATTAHOOCHEE RIVER ABOVE LAKE SEMI	YES	GOOD	----	---*	....	-..	*	.	....	....	....	..	*			HOG FARM RUNOFF.

CHIPOLA RIVER BASIN

General Description of the Basin

The Chipola River system drains approximately 1,025 square miles and is the largest Florida tributary to the Apalachicola River. The average flow of the Chipola is 1,500 cfs. Land use in the basin consists primarily of forest, agriculture and some rangeland. The basin is sparsely populated with the largest city being Marianna. The river's main course runs approximately 110 miles from its mouth near Sumatra, Florida to the upper end of Cowarts Creek in Alabama. It is primarily a spring-fed river and actually disappears underground at Florida Caverns State Park and emerges shortly downstream at Marianna.

Specific Water Quality Problems and Pollution Sources

Water quality in the Chipola River basin generally appears to be good; however, only about one-half of the stream reach mileages have been sampled for water quality. A basin assessment of the Chipola River has been performed recently by Northwest District DER, and two WLA studies of point sources have been performed. The upper reaches have relatively high nitrates, BOD and siltation predominantly from agricultural and silvicultural nonpoint sources, and may not warrant their "good" WQI rating. The river has the highest levels of nitrogen in the district but low phosphorus levels. A recent algal assay also indicates the river is severely phosphorus limited. Any increase in phosphorous loading could greatly enhance algal growth of the river and downstream lake.

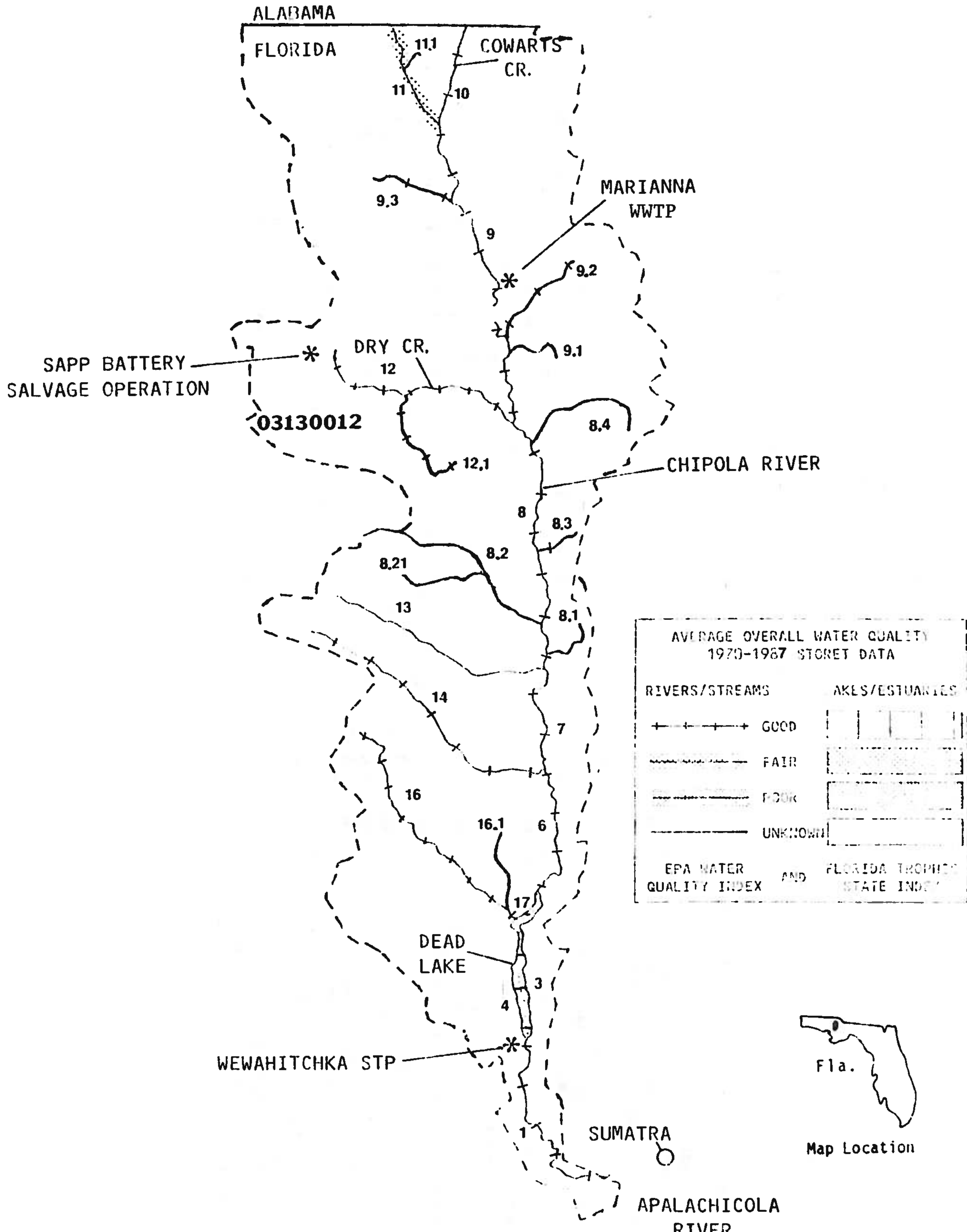
The middle reaches have several small WWTPs. The Sunland WWTP has historically had problems with water quality violations in their discharge tributary near the State Park. This facility will now pipe their effluent to the Marianna WWTP which will be required to meet higher standards. The basin assessment found high coliform counts below the Marianna WWTP, and reported a trend of increasing nitrate levels in the river over the last 10 years. These reaches also have seasonally high nutrient and chlorophyll values, and are considered to have fair to good water quality.

The basin assessment also indicates there have been aquatic weed and eutrophication problems in Dead Lake due to agricultural runoff. Macroinvertebrate diversity is reported to be seasonally low downstream of the lake. The Dead Lake dam has recently been opened to allow natural stream flow. The water level of Dead Lake naturally fluctuates depending on flow in the Apalachicola River. The river water level has been high since the removal of the dam so little differences in the lake levels have been noted. It is unknown how the change will affect the lower Chipola and Apalachicola Rivers.

Although the STORET data do not show evidence of problems in reach 12-Dry Creek, there is an area in the upper end of a tributary to this reach which has heavy metal contamination from a battery salvage operation. This contamination is now being cleaned up through the use of federal funds. The basin assessment also found high mercury levels below Marianna which are attributed to either the WWTP discharge or agricultural runoff (fungicides). A DER task force investigation of bioaccumulation of metals in finfish and mollusks found that they approached maximum acceptable limits for human consumption.

A tributary to the river, Juniper Creek, shows good water quality and is of special biological importance. It has one of the three populations in the world of the rare dragonfly, _Stylurus potulentus_.

CHIPOLA RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
** USGS HYDROLOGIC UNIT: 03130012 CHIPOLA RIVER																										
* WATER BODY TYPE: LAKE																										
3.00	DEAD LAKE AB CHIPOLA RIVER	11	69	80	13.0	1.6	59	-1	12.9	143	-1.0	-1	-1	6.9	42	0.38	0.02	3	-1	-1	-1.0	-1.0	-1	108	-1	39
4.00	DEAD LAKE AB CHIPOLA RIVER	21	65	74	4.9	-1.0	5	-1	5.0	60	-1.0	-1	-1	7.3	68	0.43	0.03	-1	-1	-1	-1.0	-1.0	-1	150	-1	42
17.00	DEAD LAKE AB CYPRESS CREEK	2	75	78	3.0	1.9	70	4	8.2	80	0.6	-1	-1	6.6	-1	0.63	0.02	-1	13	5	2.4	-1.0	-1	31	-1	39
* WATER BODY TYPE: STREAM																										
1.00	CHIPOLA RIVER AB APALACHICOLA	33	74	87	5.0	1.8	40	7	6.6	80	0.9	-1	7	6.9	35	0.63	0.04	-1	33	233	3.2	-1.0	-1	121	5820	21
6.00	CHIPOLA RIVER AB DEAD LAKE	6	70	84	8.0	1.2	35	-1	8.5	80	0.9	-1	-1	6.7	35	0.79	0.04	-1	2750	190	-1.0	-1.0	-1	110	-1	34
7.00	CHIPOLA RIVER AB JUNIPER CREEK	2	75	75	2.0	-1.0	40	-1	6.9	79	1.0	-1	-1	7.4	69	1.64	0.04	-1	720	-1	-1.0	-1.0	-1	-1	-1	29
8.00	CHIPOLA RIVER AB FOURMILE CREE	250	57	87	5.0	1.5	18	6	7.8	85	0.8	15	4	7.7	85	0.98	0.03	2	790	97	3.2	3.5	32	191	1300	22
8.10	FARLEY CREEK AB CHIPOLA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.20	TENMILE CREEK AB CHIPOLA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.21	WHITEWATER CREEK AB TENMILE CR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.30	HOLLIS BRANCH AB CHIPOLA RIVER	3	69	71	7.8	-1.0	10	-1	6.9	76	-1.0	-1	-1	6.6	5	1.54	0.01	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.40	ROCKY CREEK AB CHIPOLA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	44	1	34
9.00	CHIPOLA RIVER AB DRY CREEK	57	68	86	7.2	0.8	20	10	7.1	79	1.0	-1	1	7.7	70	1.07	0.04	2	1450	205	2.5	3.1	20	148	-1	34
9.10	BRIDGE CREEK AB CHIPOLA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.20	SPRING CREEK AB CHIPOLA RIVER	2	84	86	3.0	-1.0	8	-1	10.7	121	0.5	-1	-1	8.3	-1	1.74	0.02	-1	550	60	-1.0	-1.0	-1	-1	-1	26
9.30	WADDELLS MILL CREEK AB CHIPOLA	5	84	86	8.0	-1.0	15	22	7.5	81	0.7	-1	-1	8.1	-1	0.89	0.04	-1	1113	153	-1.0	-1.0	-1	-1	-1	32
10.00	COWARTS CREEK AB BIG CREEK	5	84	86	10.5	-1.0	15	11	7.3	78	0.8	-1	-1	7.9	-1	1.38	0.04	-1	2628	245	-1.0	-1.0	-1	-1	-1	41
11.00	MARSHALL CREEK AB COWARTS CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.10	FREEMAN BRANCH AB MARSHALL CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	DRY CREEK AB CHIPOLA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.10	FOXWORTH MILL CREEK AB DRY CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.00	FOURMILE CREEK AB CHIPOLA RIVE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	JUNIPER CREEK AB CHIPOLA RIVER	2	77	79	1.0	2.0	50	-1	9.9	-1	0.3	-1	3	5.8	8	-1.00	-1.00	-1	1325	33	-1.0	3.8	46	41	-1	30
16.00	CYPRESS CREEK AB CHIPOLA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.10	CROOKED CREEK AB CYPRESS CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BOBO OOAI	CSTT HONP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDOT OOSO	CSTT HONP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03130012 CHIPOLA RIVER																	
* WATER BODY TYPE: LAKE																	
3.00	DEAD LAKE ABOVE CHIPOLA RIVER	YES	GOOD	----	.-..	----	-..	*	.	....	....	....	..		**	**	DEAD END CANALS AND LOGGING OPERATIONS.
4.00	DEAD LAKE ABOVE CHIPOLA RIVER	YES	GOOD	----	.-..	..--	...	*	.	....	....	....	..		**	**	DEAD END CANALS ANO LOGGING OPERATIONS.
17.00	DEAD LAKE ABOVE CYPRESS CREEK	YES	GOOD	----	----	.---	--.		.	....	....	....	..				
* WATER BODY TYPE: STREAM																	
1.00	CHIPOLA RIVER ABOVE APALACHICOLA RI	YES	GOOD	----	----	....	--.		.	....	....	....	..				
6.00	CHIPOLA RIVER ABOVE DEAD LAKE	YES	GOOD	----	---.	....	--.		.	....	....	....	..		** *		
7.00	CHIPOLA RIVER ABOVE JUNIPER CREEK	YES	GOOD	---.	---.	....	-..		.	....	....	....	..		** *		
8.00	CHIPOLA RIVER ABOVE FOURMILE CREEK	YES	GOOD	----	----	....	--.		0	0000	000.	.0*0	-0		****	*	POSSIBLE INCREASING NITROGEN CONCENTRATION TREND.RIVERFRONT HOMES.
8.10	FARLEY CREEK ABOVE CHIPOLA RIVER	UNKNOWN	UNKN	....	....	....	.										
8.20	TENMILE CREEK ABOVE CHIPOLA RIVER	UNKNOWN	UNKN	....	....	....	.										
8.21	WHITEWATER CREEK ABOVE TENMILE CREE	UNKNOWN	UNKN	....	....	....	.										
8.30	HOLLIS BRANCH ABOVE CHIPOLA RIVER	YES	GOOD	----	.-..	....	...		.	....	....	....	..				
8.40	ROCKY CREEK ABOVE CHIPOLA RIVER	YES	UNKN	....	....	....	.	*							*	*	DOLOMITE OPERATIONS.
9.00	CHIPOLA RIVER ABOVE DRY CREEK	YES	GOOD	----	----	....	--*		0	0--*	0*0.	..*-	+.		* **	*	POSSIBLE INCREASING NITROGEN AND TSS CONCENTRATIONS,ACCOMPANIED BY A REDUCTION IN DO LEVELS.ETHYLENE OIBROMIDE USAGE JACKSON COUNTY NORTH OF I-10 AND WEST OF CHIPOLA RIVER. RENDERING PLANT. RIVERFRONT HOMES. SHOPPING CENTER AND SCHOOL RUNOFF.
9.10	BRIDGE CREEK ABOVE CHIPOLA RIVER	UNKNOWN	UNKN	....	....	....	.										
9.20	SPRING CREEK ABOVE CHIPOLA RIVER	YES	GOOD	---.	---.	....	-..	**	.	....	....	....	..		**	*	RAPID DEVELOPMENT OF THE EAST SIDE IN RECENT YEARS.
9.30	WADDELLS MILL CREEK ABOVE CHIPOLA R	YES	GOOD	--*.	---.	....	-..		.	....	....	....	..				
10.00	COWARTS CREEK ABOVE BIG CREEK	YES	GOOD	---.	---.	....	-..		.	....	....	....	..				
11.00	MARSHALL CREEK ABOVE COWARTS CREEK	PARTIAL	UNKN	....	....	....	.								*		USE OF CHEMICAL (EBD) FOR AGRICULTURAL PURPOSES.
11.10	FREEMAN BRANCH ABOVE MARSHALL CREEK	UNKNOWN	UNKN	....	....	....	.										
12.00	DRY CREEK ABOVE CHIPOLA RIVER	YES	UNKN	....	....	....	.	*							*	*	FARMLANDS OPERATIONS. DISPOSED BATTERY OPERATION.
12.10	FOXWORTH MILL CREEK ABOVE DRY CREEK	YES	UNKN	....	....	....	.								*		FARMLANOS OPERATIONS.
13.00	FOURMILE CREEK ABOVE CHIPOLA RIVER	UNKNOWN	UNKN	....	....	....	.										
14.00	JUNIPER CREEK ABOVE CHIPOLA RIVER	YES	GOOD	.---	----	....	...		.	....	....	....	..				
16.00	CYPRESS CREEK ABOVE CHIPOLA RIVER	YES	UNKN	....	....	....	.										ABANDONED BORROW PIT.
16.10	CROOKED CREEK ABOVE CYPRESS CREEK	UNKNOWN	UNKN	....	....	....	.										

CHOCTAWHATCHEE BAY BASIN

General Description of the Basin

Choctawhatchee Bay basin encompasses 699 square miles with the bay itself covering 129 square miles. The major land use within the basin is silviculture, however, urban development is occurring rapidly along the coast and in the northwestern bay area. The major inflow into the bay is the Choctawhatchee River with an average annual flow of 7000 cfs. The river carries a large sediment and organic load from throughout the basin, and deposits it into the eastern-most end of the bay.

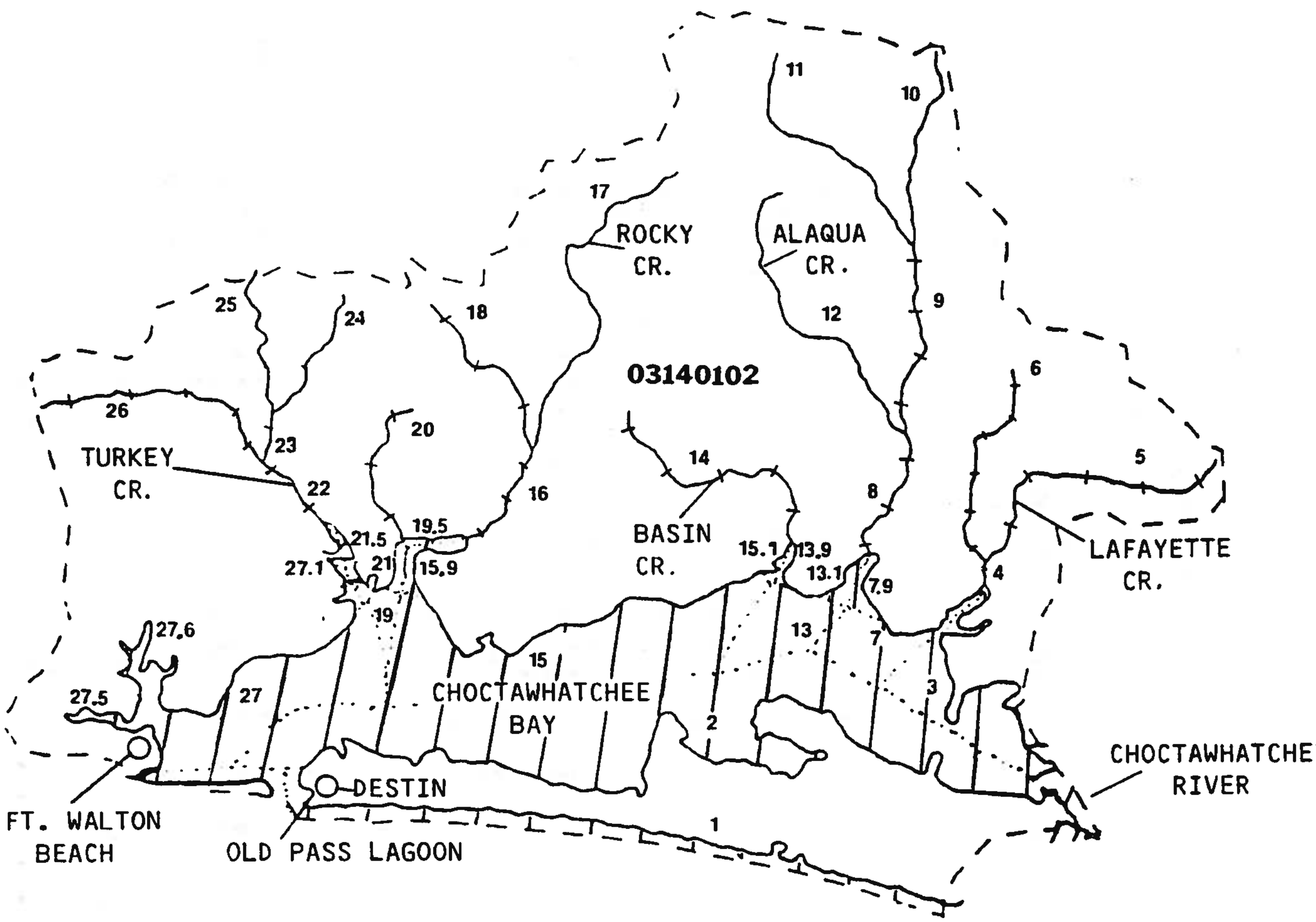
Specific Water Quality Problems and Sources

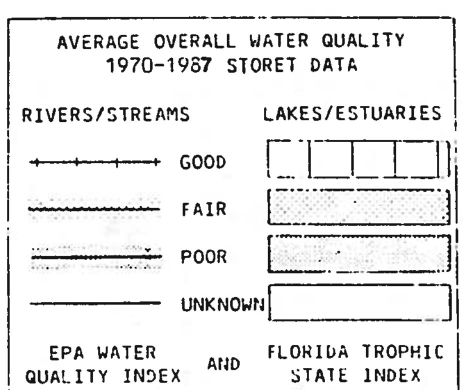
Historically water quality in this basin has been good. However, there have been several problem areas associated with rapid development occurring along the coast. In the 1970's, treated wastewater effluents caused eutrophication, fishkills and grass bed die offs in portions of the bay. The WWTPs have since been converted to spray irrigation discharge . A basin assessment conducted by the Northwest District DER in 1984 indicated that water quality did improve since the WWTPs were upgraded.

Recently, however, water quality in the bay is again being degraded due to the continued development of the watershed area. The nonpoint pollution sources associated with this development include highway runoff, ditching and draining of water-cleansing swampland, and surficial water table seepage from package plant perc-ponds and WWTP sprayfields. In particular, the poorly circulating Old Pass Lagoon at Destin, Florida is experiencing eutrophication and fishkills. Also, Dons Bayou near Ft. Walton has experienced a low grade, chronic fishkill from unknown sources. Recent studies indicate localized metals contamination in sediments near urban areas. Other sources of pollution in the bay include discharge from meat and poultry processing plants and runoff from agricultural areas in the upper basin.

Another major area of concern for the basin is a proposed bridge from White Point across the bay to Piney Point. Potential sources of ecological damage include: destruction of grass beds, decreased circulation of bay waters, destruction of wetlands from Piney Point to the connecting highway, and construction associated turbidity.

CHOCTAWHATCHEE BAY BASIN





Map Location

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03140102 CHOCTAWHATCHE B																										
* WATER BODY TYPE: ESTUARY																										
2.00	CHOCTAWHATCHEE BAY AB GULF OF	164	71	87	2.0	1.8	18	9	8.2	94	0.9	16	4	8.0	79	0.38	0.02	6	20	270	3.1	1.9	-1	24850	-1	36
3.00	CHOCTAWHATCHEE BAY AB CHOCTAWH	14	71	74	4.6	1.3	50	6	7.4	90	0.8	-1	5	7.6	43	0.41	0.04	9	26	-1	-1.0	-1.0	-1	2070	-1	46
7.00	CHOCTAWHATCHEE BAY AB LAFAYETT	5	74	74	2.5	0.9	-1	-1	7.2	92	-1.0	-1	2	7.7	-1	0.09	0.03	6	-1	-1	-1.0	-1.0	-1	-1	-1	38
7.90	ALAQUA BAYOU AB CHOCTAWHATCHEE	3	74	74	3.0	0.9	-1	-1	5.5	70	-1.0	-1	4	7.3	-1	0.11	0.01	6	-1	-1	-1.0	-1.0	-1	-1	-1	41
13.00	CHOCTAWHATCHEE BAY AB ALAQUA C	8	71	74	10.0	1.4	20	7	6.8	86	1.0	-1	6	7.5	49	0.58	0.02	8	350	-1	-1.0	-1.0	-1	6600	-1	42
13.10	ALAQUA BAYOU AB CHOCTAWHATCHEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.90	BASIN BAYOU AB CHOCTAWHATCHEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
15.00	CHOCTAWHATCHEE BAY AB BASIN CR	30	71	81	2.1	2.3	15	18	7.1	90	1.0	-1	3	8.0	79	0.47	0.02	5	25	-1	-1.0	-1.0	-1	25050	-1	32
15.10	BASIN BAYOU AB CHOCTAWHATCHEE	2	72	72	11.0	-1.0	30	-1	5.8	78	1.7	-1	-1	8.0	47	0.97	-1.00	-1	281	-1	-1.0	-1.0	-1	-1	-1	-1
15.90	ROCKY BAYOU AB CHOCTAWHATCHEE	6	71	84	3.7	2.2	20	24	8.1	98	1.4	-1	-1	8.1	130	2.31	0.02	6	8	-1	-1.0	-1.0	-1	24665	-1	32
19.00	CHOCTAWHATCHEE BAY AB ROCKY CR	3	71	71	8.0	-1.0	-1	-1	10.0	117	2.1	-1	-1	7.7	41	1.50	0.79	-1	17	-1	-1.0	-1.0	-1	-1	-1	64
19.50	ROCKY BAYOU AB CHOCTAWHATCHEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	CHOCTAWHATCHEE BAY AB SWIFT CR	18	70	75	5.5	2.3	10	35	8.9	102	0.6	-1	-1	8.0	69	0.61	0.01	-1	62	-1	-1.0	-1.0	-1	22000	-1	24
21.50	BOGGY BAYOU AB CHOCTAWHATCHEE	23	70	74	8.0	2.6	13	6	8.5	100	1.1	-1	-1	8.0	79	0.86	0.03	6	250	-1	-1.0	-1.0	-1	18050	-1	38
27.00	CHOCTAWHATCHEE BAY AB TURKEY C	72	70	87	2.2	2.0	10	4	8.6	102	1.0	-1	2	8.0	70	0.59	0.02	2	23	8	-1.0	-1.0	-1	27000	-1	34
27.10	BOGGY BAYOU AB CHOCTAWHATCHEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
27.50	CINCO BAYOU AB CHOCTAWHATCHEE	36	70	77	5.2	3.5	5	17	8.1	104	1.1	-1	-1	8.2	78	0.80	0.02	-1	24	11	-1.0	-1.0	-1	29500	-1	30
27.60	GARNIERS BAYOU AB CHOCTAWHATCH	36	70	76	5.0	3.5	5	26	9.2	106	0.9	-1	5	8.0	77	0.45	0.02	4	23	10	-1.0	-1.0	-1	29000	-1	35
* WATER BODY TYPE: OCEAN																										
1.00	GULF OF MEXICO AB	26	71	87	4.0	2.1	10	13	8.2	97	1.1	-1	2	8.1	76	0.36	0.02	6	85	32	2.8	-1.0	-1	32732	-1	30
* WATER BODY TYPE: STREAM																										
4.00	LAFAYETTE CREEK AB CHOCTAWHTCH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	LAFAYETTE CREEK AB FIVEMILE CR	31	69	86	2.0	-1.0	20	2	7.7	90	0.6	-1	-1	6.1	3	2.41	0.02	-1	795	130	-1.0	-1.0	36	59	82	26
6.00	FIVEMILE CREEK AB LAFAYETTE CR	1	81	81	-1.0	-1.0	-1	-1	7.1	81	0.9	-1	-1	5.7	-1	0.35	0.04	-1	800	360	-1.0	-1.0	-1	34	-1	25
8.00	ALAQUA CREEK AB CHOCTAWHATCHEE	9	71	82	16.0	0.9	70	12	7.0	84	0.7	6	-1	6.3	18	0.96	0.03	290	1070	135	-1.0	-1.0	-1	165	-1	38
9.00	ALAQUA CREEK AB LITTLE ALAQUA	13	66	74	10.0	-1.0	10	-1	8.7	92	-1.0	-1	-1	6.2	2	1.15	0.03	-1	-1	-1	-1.0	-1.0	-1	12	91	17
10.00	SCONIERS MILL CREEK AB ALAQUA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.00	ALAQUA CREEK AB SCONIERS MILL	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	LITTLE ALAQUA CREEK AB ALAQUA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	BASIN CREEK AB CHOCTAWHATCHEE	5	69	82	4.3	2.0	20	-1	8.3	85	0.2	-1	-1	5.5	1	0.30	0.02	-1	70	40	-1.0	-1.0	-1	35	21	11
16.00	ROCKY CREEK AB CHOCTAWHATCHEE	18	65	77	3.1	-1.0	10	-1	-1.0	-1	-1.0	-1	-1	6.2	2	0.15	0.02	-1	-1	-1	-1.0	-1.0	-1	13	-1	10
17.00	E ROCKY CREEK AB MIDDLE ROCKY	9	65	77	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	MIDDLE ROCKY CREEK AB ROCKY CR	6	69	77	3.5	-1.0	5	-1	9.3	102	-1.0	-1	-1	6.1	2	0.17	0.02	-1	-1	-1	-1.0	-1.0	-1	12	12	8
20.00	SWIFT CREEK AB CHOCTAWHATCHEE	5	66	77	2.0	0.8	20	8	7.0	99	1.0	-1	-1	8.1	81	0.92	0.06	-1	79	-1	-1.0	-1.0	-1	31000	-1	20
22.00	TURKEY CREEK AB CHOCTAWHATCHEE	5	67	79	2.5	-1.0	30	-1	8.6	85	0.5	10	5	5.0	1	0.25	0.01	-1	-1	-1	-1.0	-1.0	-1	13	317	3
23.00	JUNIPER CREEK AB TURKEY CREEK	21	66	79	5.0	-1.0	13	6	7.6	88	0.6	7	5	6.3	3	0.44	0.01	-1	540	-1	-1.0	-1.0	-1	15	87	20
24.00	POINT LOOKOUT CREEK AB JUNIPER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
25.00	JUNIPER CREEK AB POINT LOOKOUT	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
26.00	TURKEY CREEK AB JUNIPER CREEK	14	66	77	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BOBD OOAI	CSTT HONP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BOOT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NOMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03140102 CHOCTAWHATCHE B																	
* WATER BODY TYPE: ESTUARY																	
2.00	CHOCTAWHATCHEE BAY ABOVE GULF OF ME	YES	GOOD	----	---*	----	-*.		0	-.00	000.	-000	0.		*		HIGH HEAVY METALS CONCENTRATIONS IN SEDIMENTS IN VICINITY OF SANDESTIN MARINA. HIGH COLIFORM COUNTS FOLLOWING HEAVY RAINS.
3.00	CHOCTAWHATCHEE BAY ABOVE CHOCTAWHAT	YES	GOOD	----	---.	----	-..	***	.	....	....	....	..		* *	*	
7.00	CHOCTAWHATCHEE BAY ABOVE LAFAYETTE	YES	GOOD	---.	--..	----	-..	***	.	....	....	....	..		* *	*	HIGH COLIFORM COUNTS FOLLOWING HEAVY RAINS.
7.90	ALAQUA BAYOU ABOVE CHOCTAWHATCHEE B	YES	GOOD	---.	--..	----	-..	*	.	....	....	....	..		*	*	
13.00	CHOCTAWHATCHEE BAY ABOVE ALAQUA CRE	YES	GOOD	----	---.	----	-..		.	....	....	....	..		*		HAS ELEVATED COLIFORM COUNTS FOLLOWING HEAVY RAINS.
13.10	ALAQUA BAYOU ABOVE CHOCTAWHATCHEE B	YES	UNKN	....	....	....	.	*							*	*	
13.90	BASIN BAYOU ABOVE CHOCTAWHATCHEE BA	UNKNOWN	UNKN	....	....	....	.										
15.00	CHOCTAWHATCHEE BAY ABOVE BASIN CREE	YES	GOOD	----	---.	----	-..		.	....	....	....	..		*		HAS ELEVATED COLIFORM COUNTS FOLLOWING HEAVY RAINS.
15.10	BASIN BAYOU ABOVE CHOCTAWHATCHEE BA	YES	UNKN	---.	---.	..-.	-..		.	....	....	....	..				GOOD OVERALL WATER QUALITY.
15.90	ROCKY BAYOU ABOVE CHOCTAWHATCHEE BA	YES	GOOD	*-*-	---.	--*-	-..		.	....	....	....	..				GOOD OVERALL WATER QUALITY.
19.00	CHOCTAWHATCHEE BAY ABOVE ROCKY CREE	YES	POOR	*--.	---.	..-*	-..		.	....	....	....	..				GOOD OVERALL QUALITY. LIMITED, OLD SAMPLES.
19.50	ROCKY BAYOU ABOVE CHOCTAWHATCHEE BA	UNKNOWN	UNKN	....	....	....	.										
21.00	CHOCTAWHATCHEE BAY ABOVE SWIFT CREE	YES	GOOD	--*-	---.	.---	-..		.	....	....	....	..				
21.50	BOGGY BAYOU ABOVE CHOCTAWHATCHEE BA	YES	GOOD	----	---.	----	-..		.	....	....	....	..			*	OUTFLOW POINT FOR SEWAGE.
27.00	CHOCTAWHATCHEE BAY ABOVE TURKEY CRE	YES	GOOD	----	---.	----	-..		.	....	....	....	..				AN IMPROVING TREND IN WATER QUALITY WAS NOTED DURING 1970-1976. TWO YEARS OF RECENT DATA INDICATE POSSIBLE DEGRADING WATER QUALITY. REACH SHOULD BE SUBDIVIDED INTO SMALLER ENTITIES.
27.10	BOGGY BAYOU ABOVE CHOCTAWHATCHEE BA	YES	UNKN	....	....	....	.									*	
27.50	CINCO BAYOU ABOVE CHOCTAWHATCHEE BA	YES	GOOD	----	---.	.---	-..		.	....	....	....	..		**		SURROUNDING UPLANDS ARE DEVELOPED WITH DIRECT DISCHARGES OF UNTREATED STROMWATER INTO BAYOU.
27.60	GARNIERS BAYOU ABOVE CHOCTAWHATCHEE	YES	GOOD	--*-	---.	----	-..		.	....	....	....	..				
* WATER BODY TYPE: OCEAN																	
1.00	GULF OF MEXICO ABOVE	YES	GOOD	----	----	----	-*-	*	0	...0	000.	...0	-.		*	*	DUMPING OF BOAT WASTES, INCLUDING OILS AND GREASE. INTENSE DEVELOPMENT AROUND A POORLY FLUSHED LAGOON.
* WATER BODY TYPE: STREAM																	
4.00	LAFAYETTE CREEK ABOVE CHOCTAWHTCHEE	YES	UNKN	....	....	....	.	***							**	*	UNSTABILIZED CONSTRUCTION OF CLAY ROADWAY CAUSING EROSION IN WATERWAY.
5.00	LAFAYETTE CREEK ABOVE FIVEMILE CREE	YES	GOOD	*---	----	....	-..	*	0	....	.00.	..00	+0		**	*	UNSTABILIZED CLAY ROADWAY CONSTRUCTION CAUSING EROSION IN WATERWAY.
6.00	FIVEMILE CREEK ABOVE LAFAYETTE CREE	YES	GOOD	--.-	---.	....	-..		.	....	....	....	..		**	*	UNSTABILIZED CLAY ROADWAY CONSTRUCTION CAUSING EROSION IN WATERWAY.
8.00	ALAQUA CREEK ABOVE CHOCTAWHATCHEE B	YES	GOOD	----	---.	....	-..		.	....	....	....	..		*	*	
9.00	ALAQUA CREEK ABOVE LITTLE ALAQUA CR	YES	GOOD	----	.-..	....	...		.	....	....	....	..				
10.00	SCONIERS MILL CREEK ABOVE ALAQUA CR	UNKNOWN	UNKN	....	....	....	.										
11.00	ALAQUA CREEK ABOVE SCONIERS MILL CR	UNKNOWN	UNKN	....	....	....	.										
12.00	LITTLE ALAQUA CREEK ABOVE ALAQUA CR	UNKNOWN	UNKN	....	....	....	.										
14.00	BASIN CREEK ABOVE CHOCTAWHATCHEE BA	YES	GOOD	----	---.	....	-..		.	....	....	....	..				

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
16.00	ROCKY CREEK ABOVE CHOCTAWHATCHEE BA	YES	GOOD	----	....	....	...		.	....	....	....	..				
17.00	E ROCKY CREEK ABOVE MIDDLE ROCKY CR	UNKNOWN	UNKN	....	....	....	...		.	....	....	....	..				
18.00	MIDDLE ROCKY CREEK ABOVE ROCKY CREE	YES	GOOD	----	.-..	....	...		.	....	....	....	..				
20.00	SWIFT CREEK ABOVE CHOCTAWHATCHEE BA	YES	GOOD	---*	---.	....	-..		.	....	....	....	..				
22.00	TURKEY CREEK ABOVE CHOCTAWHATCHEE B	YES	GOOD	-*--	--..	....	-..		.	....	....	....	..			*	SANITARY LANDFILL IN NICEVILLE.
23.00	JUNIPER CREEK ABOVE TURKEY CREEK	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
24.00	POINT LOOKOUT CREEK ABOVE JUNIPER C	UNKNOWN	UNKN	....	....	....	.										
25.00	JUNIPER CREEK ABOVE POINT LOOKOUT C	UNKNOWN	UNKN	....	....	....	.										
26.00	TURKEY CREEK ABOVE JUNIPER CREEK	YES	UNKN	....	....	....	...		.	....	....	....	..			*	INSUFFICIENT PARAMETER COVERAGE.SPRAY IRRIGATION FIELD AND SANITARY LANDFILL IN NICEVILLE NEARBY.

CHOCTAWHATCHEE RIVER BASIN

General Description of the Basin

The Choctawhatchee River originates in northern Alabama, entering Florida near New Hope, and flows approximately 89 miles from the Florida-Alabama line to Choctawhatchee Bay. The Choctawhatchee River basin drains roughly 3,300 square miles of northwest Florida. The remainder of the 4,646 square miles of total drainage area is located in Alabama. The average flow of the Choctawhatchee River (21 miles upstream from the mouth) is estimated as 7,000 cfs. The river carries a relatively high suspended sediment load throughout the basin, depositing it in Choctawhatchee Bay. Numerous streams, springs, and lakes characterize this river basin. Holmes Creek is the largest tributary of the Choctawhatchee River discharging an average of 1050 cfs. The Floridan Aquifer also provides a major source of inflow to the Choctawhatchee River system. The largest cities in the Florida portion of the Choctawhatchee River Basin are Chipley, Bonifay and DeFuniak Springs. Major land uses in this basin are silviculture and agriculture.

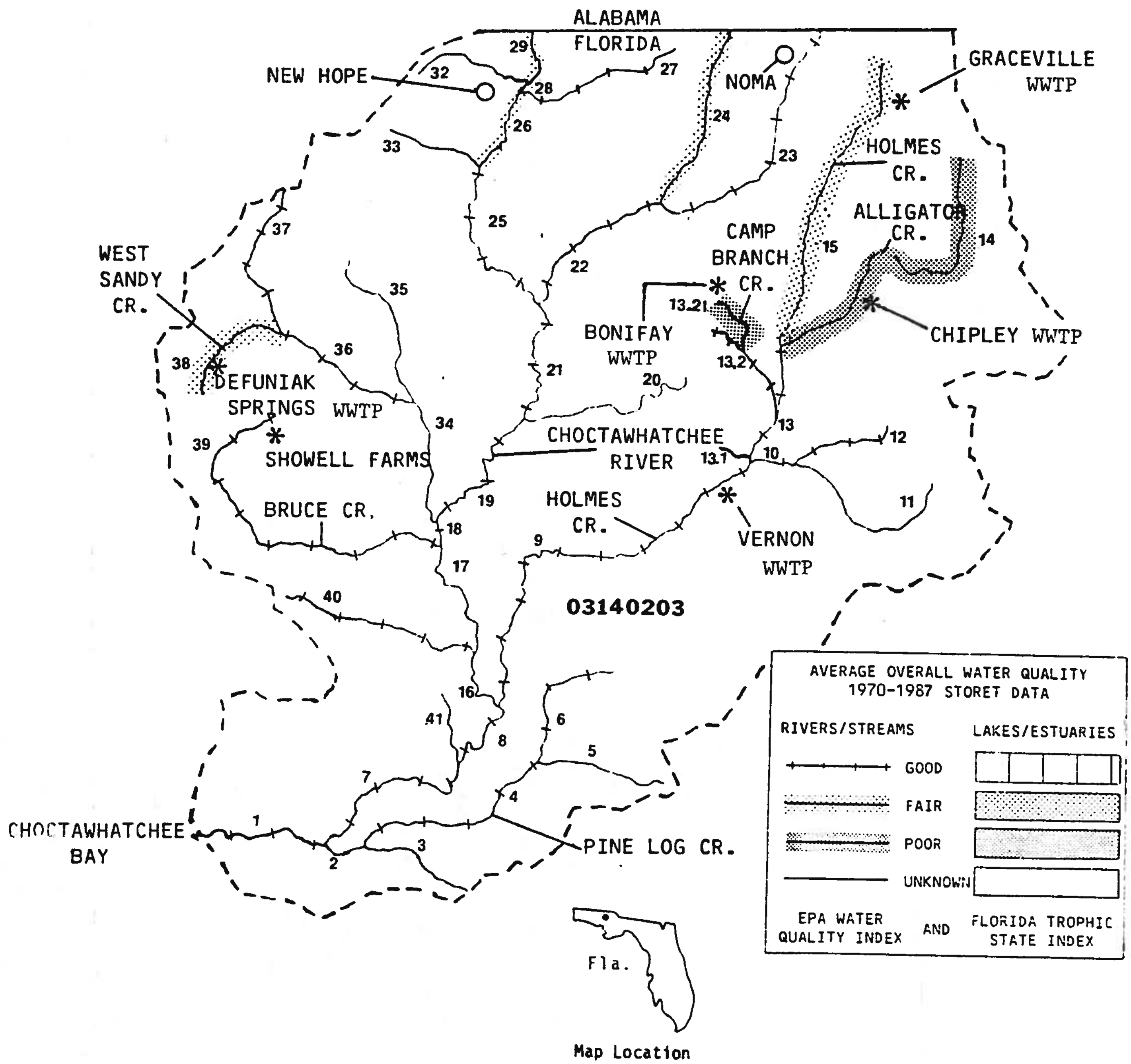
Specific Water Quality Problems and Sources

The Choctawhatchee River basin exhibits more water quality problem areas than other low population density, northwest Florida basins. Overall water quality ranking is good; however, several small tributaries exhibit fair to poor quality. Sampling of the upper Choctawhatchee River in the early seventies showed only fair water quality due to Alabama domestic and industrial discharges as well as agricultural runoff in Florida.
There are no recent samples for this area, but local water quality managers indicate that agricultural and logging runoff is still a problem. Wrights Creek, also in the upper basin, suffers from similar nonpoint pollution. In addition, the City of Noma WWTP, which was originally recommended to use upland disposal, was recently permitted to discharge to Wrights Creek. This area should be monitored more frequently now.

Upper Holmes Creek and its tributaries also have water quality problems primarily due to WWTP point sources. Four small municipalities, Graceville, Vernon, Chipley and Bonifay have historically had problems with their wastewater treatment systems which have lead to the degradation of the receiving waters. All have been under enforcement. Although they have made upgrades since the last report, the financial resources have been too limited to completely correct the situation. Particularly problematic are the Chipley and Bonifay plants, the latter of which has recently been permitted to increase its discharge to accommodate a new federal prison being built there. In addition to these WWTPs, Holmes Creek receives runoff from agricultural areas and hog farms that occasionally spill waste from their highly eutrophic impoundments to the creek. Finally, Reedy Branch, which empties into Holmes Creek, has only been sampled in 1971, but showed poor water quality then, perhaps due to heavy agricultural runoff. Water quality in lower Holmes Creek improves, partially due to the input of several springs near Vernon.

Problems in the southwestern portion of the basin center around West Sandy Creek and Bruce Creek. West Sandy Creek is affected from the DeFuniak Springs WWTP. This facility has recently been upgraded, but still has some problems. Bruce Creek receives effluent from a chicken processing plant (Showell Farms). A DER intensive survey in 1983 showed violations of DO, ammonia, bacteria, and BOD. More recently, biological data still indicate stress. However, the plant has met its monthly discharge limits for several months now and is not under any enforcement actions. In another area of Bruce Creek, a tributary near the 331 Truck Stop was reported to be polluted with oils and diesel fuel. Finally Bruce Creek receives sediment loads from the local county roads. The lower Choctawhatchee River reaches show biological degradation with a low number of macroinvertebrate species found in recent samples.

CHOCTAWHATCHEE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03140203 CHOCTAWHATCHE R																										
* WATER BODY TYPE: STREAM																										
1.00	CHOCTAWHATCHEE RIVER AB CHOCTA	4	74	82	12.6	0.7	-1	6	5.1	61	0.9	-1	8	6.7	-1	0.47	0.04	-1	200	60	-1.0	-1.0	-1	150	-1	35
2.00	PINE LOG CREEK AB CHOCTAWHATCH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	OTTER CREEK AB PINE LOG CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	PINE LOG CREEK AB OTTER CREEK	3	71	72	13.5	-1.0	50	-1	9.0	92	1.4	-1	-1	6.7	16	0.80	0.05	-1	540	-1	-1.0	-1.0	-1	-1	-1	31
5.00	BOTHERATION CREEK AB BEAR BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	BEAR BAY CREEK AB BOTHERATION	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	CHOCTAWHATCHEE RIVER AB PINE L	201	66	87	14.0	0.6	56	10	7.2	80	0.6	18	4	7.0	30	0.54	0.04	6	635	93	1.4	-1.0	34	88	6130	26
8.00	CHOCTAWHATCHEE RIVER AB BIG CY	1	74	74	7.0	1.3	50	-1	8.0	92	0.8	-1	-1	7.9	43	0.41	0.04	-1	490	-1	-1.0	-1.0	-1	18	-1	22
9.00	HOLMES CREEK AB CHOCTAWHATCHEE	38	66	84	4.0	2.2	25	4	5.8	65	0.9	-1	-1	7.2	89	0.50	0.04	-1	715	43	2.8	3.8	40	185	401	30
10.00	HARD LABOR CREEK AB HOLMES CRE	1	72	72	20.0	-1.0	75	-1	7.2	77	0.2	-1	-1	5.8	2	0.76	0.02	-1	540	-1	-1.0	-1.0	-1	-1	-1	31
11.00	HARD LABOR CREEK AB FLAT CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	FLAT CREEK AB HARD LABOR CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.00	HOLMES CREEK AB HARD LABOR CRE	7	70	85	23.0	0.3	65	7	6.8	74	1.0	-1	-1	6.6	15	0.87	0.06	-1	920	120	-1.0	-1.0	-1	80	-1	38
13.10	REEDY BRANCH AB HOLMES CREEK	3	69	71	6.8	-1.0	140	-1	2.1	24	-1.0	-1	-1	5.4	2	0.82	0.08	-1	-1	-1	-1.0	-1.0	-1	22	3	74
13.20	OPEN CREEK AB HOLMES CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.21	CAMP BRANCH AB OPEN CREEK	3	71	71	37.0	-1.0	120	-1	4.0	51	3.3	-1	-1	6.8	-1	2.94	0.63	-1	49950	-1	-1.0	-1.0	-1	-1	-1	81
14.00	ALLIGATOR CREEK AB HOLMES CREE	6	68	84	16.0	-1.0	70	23	2.0	25	2.2	-1	-1	6.5	42	3.12	1.20	19	25460	30000	-1.0	-1.0	-1	318	-1	67
15.00	HOLMES CREEK AB ALLIGATOR CREE	18	68	82	13.3	0.4	58	5	7.7	82	1.6	-1	-1	6.8	16	0.82	0.07	-1	2100	195	-1.0	2.4	26	48	-1	44
16.00	CHOCTAWHATCHEE RIVER AB HOLMES	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	CHOCTAWHATCHEE RIVER AB SEVEN	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	CHOCTAWHATCHEE RIVER AB GUM CR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
19.00	CHOCTAWHATCHEE RIVER AB SANDY	21	70	82	24.8	0.5	81	13	8.8	86	0.9	19	-1	6.7	20	0.73	0.05	-1	890	23	-1.0	-1.0	-1	54	-1	38
20.00	GUM CREEK AB CHOCTAWHATCHEE RI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	CHOCTAWHATCHEE RIVER AB GUM CR	97	60	76	26.3	-1.0	50	-1	7.2	80	0.8	-1	4	7.0	21	0.58	0.04	-1	3500	-1	-1.0	-1.0	-1	75	4995	32
22.00	WRIGHTS CREEK AB CHOCTAWHATCHE	9	75	87	4.0	1.8	41	5	7.2	74	0.8	-1	-1	6.9	38	0.58	0.03	-1	295	49	-1.0	-1.0	-1	190	-1	26
23.00	WRIGHTS CREEK AB TENMILE CREEK	8	71	87	8.5	0.9	55	2	6.9	74	1.1	-1	-1	6.5	38	0.96	0.04	-1	400	105	-1.0	-1.0	-1	251	-1	38
24.00	TENMILE CREEK AB WRIGHTS CREEK	2	68	75	5.0	-1.0	110	-1	-1.0	-1	0.3	-1	-1	6.5	30	0.53	0.03	-1	350	-1	-1.0	-1.0	-1	-1	-1	20
25.00	CHOCTAWHATCHEE RIVER AB WRIGHT	2	73	73	29.0	-1.0	62	-1	7.2	84	1.0	-1	-1	6.3	18	1.21	0.04	-1	-1	-1	-1.0	-1.0	-1	60	-1	41
26.00	CHOCTAWHATCHEE RIVER AB WEST P	2	73	73	51.0	-1.0	125	-1	7.0	82	0.9	-1	-1	6.3	14	1.00	0.07	-1	-1	-1	-1.0	-1.0	-1	40	-1	39
27.00	EAST PITTMAN CREEK AB CHOCTAWH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
28.00	CHOCTAWHATCHEE RIVER AB EAST P	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
29.00	CHOCTAWHATCHEE RIVER AB PARROT	6	73	73	55.5	-1.0	175	-1	7.4	88	1.0	-1	-1	6.3	15	1.07	0.12	-1	-1	-1	-1.0	-1.0	-1	40	-1	40
32.00	PARROT CREEK AB CHOCTAWHATCHEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
33.00	WEST PITTMAN CREEK AB CHOCTAWH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
34.00	SANDY CREEK AB CHOCTAWHATCHEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
35.00	BLUE CREEK AB SANDY CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
36.00	SANDY CREEK AB BLUE CREEK	21	67	83	7.4	-1.0	40	-1	9.2	89	0.6	-1	-1	6.9	8	0.47	0.09	-1	260	140	-1.0	-1.0	-1	37	53	25
37.00	SANDY CREEK AB WEST SANDY CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
38.00	WEST SANDY CREEK AB SANDY CREE	6	68	85	5.5	-1.0	40	-1	8.0	88	1.1	-1	-1	6.2	3	4.03	2.04	-1	-1	-1	-1.0	-1.0	-1	-1	-1	42
39.00	BRUCE CREEK AB CHOCTAWHATCHEE	18	68	82	12.0	0.6	60	8	8.1	79	0.8	-1	-1	5.8	3	0.68	0.08	11	540	80	-1.0	-1.0	8	64	45	42
40.00	SEVEN RUNS CREEK AB CHOCTAWHAT	18	68	82	2.5	1.2	45	4	8.6	86	0.5	-1	-1	5.8	4	2.15	0.02	-1	920	82	-1.0	-1.0	-1	51	53	26
41.00	BIG CYPRESS CREEK AB CHOCTAWHA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03140203 CHOCTAWHATCHE R

* WATER BODY TYPE: STREAM

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
1.00	CHOCTAWHATCHEE RIVER ABOVE CHOCTAWH	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
2.00	PINE LOG CREEK ABOVE CHOCTAWHATCHEE	UNKNOWN	UNKN	....	....	....	.										
3.00	OTTER CREEK ABOVE PINE LOG CREEK	UNKNOWN	UNKN	....	....	....	.										
4.00	PINE LOG CREEK ABOVE OTTER CREEK	YES	GOOD	---.	---.	....	-..		.	....	....	....	..				
5.00	BOTHERATION CREEK ABOVE BEAR BAY CR	UNKNOWN	UNKN	....	....	....	.										
6.00	BEAR BAY CREEK ABOVE BOTHERATION CR	YES	UNKN	....	....	....	.										
7.00	CHOCTAWHATCHEE RIVER ABOVE PINE LOG	YES	GOOD	----	---*	....	--.		0	..0.	.00.	..*0	00				POSSIBLE TREND TOWARD INCREASING NITROGEN.
8.00	CHOCTAWHATCHEE RIVER ABOVE BIG CYPR	YES	GOOD	----	---.	....	-..		.	....	....	....	..		* **	*	AGRICULTURE AND URBAN RUNOFF FROM ALONG BANKS AND FROM MAJOR TRIBUTARIES.
9.00	HOLMES CREEK ABOVE CHOCTAWHATCHEE R	YES	GOOD	----	----	....	-..		.	....	....	....	..				
10.00	HARD LABOR CREEK ABOVE HOLMES CREEK	YES	GOOD	--*.	---.	....	-..		.	....	....	....	..				
11.00	HARD LABOR CREEK ABOVE FLAT CREEK	UNKNOWN	UNKN	....	....	....	.								**		SITE PREPARATION ACTIVITIES. HEAVY SEDIMENTATION FROM STEEPLY GRADED ROADS.
12.00	FLAT CREEK ABOVE HARD LABOR CREEK	YES	UNKN	....	....	....	.										
13.00	HOLMES CREEK ABOVE HARD LABOR CREEK	YES	GOOD	--*-	---.	....	-..		.	....	....	....	..		* **	*	AGRICULTURE AND URBAN RUNOFF FROM ALONG STREAM BANKS AND FROM MAJOR TRIBUTARIES.
13.10	REEDY BRANCH ABOVE HOLMES CREEK	UNKNOWN	POOR	----	.*..	....	...	* *	.	....	....	....	..		* *	*	DITCH DUG FOR DRAINAGE. DAIRY FARM AND NEW PRISON CONSTRUCTION ACTIVITIES.
13.20	OPEN CREEK ABOVE HOLMES CREEK	YES	UNKN	....	....	....	.										
13.21	CAMP BRANCH ABOVE OPEN CREEK	NO	POOR	*-*.	--*.	....	-..		.	....	....	....	..	*		*	BONIFAY WWTP HAS PROBLEMS WITH ITS TREATMENT PLANT AND COLLECTION SYSTEM. WLA STUDY IN 1979 GAVE TWO TREATMENT ALTERNATIVES.DITCH DUG FOR DRAINAGE.
14.00	ALLIGATOR CREEK ABOVE HOLMES CREEK	NO	POOR	*-*-	-**.	....	-..	*	.	....	....	....	..	*	* *		CHIPLEY WWTP EFFLUENT CAUSES WATER QUALITY PROBLEMS. 1984 WLA STUDY RECOMMENDS ADVANCED SECONDARY TREAMENT LEVELS.CONCENTRATED ANIMAL RUNOFF
15.00	HOLMES CREEK ABOVE ALLIGATOR CREEK	PARTIAL	GOOD	----	----	....	-.-	* *	.	....	....	....	..	*	* **	*	GRACEVILLE WWTP RECENTLY RENOVATED FACILITY, BUT OLD COLLECTION SYSTEM CAUSING INFILTRATION PROBLEMS. 1985 BIOASSAY OF TOXIC EFFLUENT.HOG FARM. AGRICULTURE AND URBAN RUNOFF FROM ALONG STREAM BANKS AND FROM MAJOR TRIBUTARIES.
16.00	CHOCTAWHATCHEE RIVER ABOVE HOLMES C	UNKNOWN	UNKN	....	....	....	.										
17.00	CHOCTAWHATCHEE RIVER ABOVE SEVEN RU	UNKNOWN	UNKN	....	....	....	.								*		URBAN DEVELOPMENT AND LOGGING OPERATIONS.
18.00	CHOCTAWHATCHEE RIVER ABOVE GUM CREE	YES	UNKN	....	....	....	.	*							**		RUN OFF FROM AGRICULTURE AND LOGGING OPERATIONS.
19.00	CHOCTAWHATCHEE RIVER ABOVE SANDY CR	YES	GOOD	--*-	---.	....	-..	*	.	....	....	....	..				
20.00	GUM CREEK ABOVE CHOCTAWHATCHEE RIVE	UNKNOWN	UNKN	....	....	....	.								**		
21.00	CHOCTAWHATCHEE RIVER ABOVE GUM CREE	YES	GOOD	--*-	---.	....	-..	*	.	....	....	....	..				
22.00	WRIGHTS CREEK ABOVE CHOCTAWHATCHEE	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
23.00	WRIGHTS CREEK ABOVE TENMILE CREEK	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
24.00	TENMILE CREEK ABOVE WRIGHTS CREEK	PARTIAL	GOOD	---.	-.-.	....	-..		.	....	....	....	..				RECENT WATER QUALITY PROBLEMS REPORTED DUE TO UPSTREAM SOURCES.
25.00	CHOCTAWHATCHEE RIVER ABOVE WRIGHTS	YES	GOOD	--*-	--..	....	-..	*	.	....	....	....	..		**		RUN OFF FROM AGRICULTURE AND LOGGING OPERATIONS.
26.00	CHOCTAWHATCHEE RIVER ABOVE WEST PIT	PARTIAL	GOOD	--*-	--..	....	-..	*	.	....	....	....	..		**		RUN OFF FROM AGRICULTURE AND LOGGING OPERATIONS. RECENT WATER QUALITY PROBLEMS REPORTED DUE TO UPSTREAM SOURCES.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
27.00	EAST PITTMAN CREEK ABOVE CHOCTAWHAT	YES	UNKN	....	....	....	.								*		
28.00	CHOCTAWHATCHEE RIVER ABOVE EAST PIT	PARTIAL	UNKN	....	....	....	.	*							**		RUN OFF FROM AGRICULTURE AND LOGGING OPERATIONS.
29.00	CHOCTAWHATCHEE RIVER ABOVE PARROT C	PARTIAL	GOOD	--*-	--..	....	-..		.	....	....	....	..				RECENT WATER QUALITY PROBLEMS REPORTED DUE TO UPSTREAM SOURCES.
32.00	PARROT CREEK ABOVE CHOCTAWHATCHEE R	UNKNOWN	UNKN	....	....	....	.										
33.00	WEST PITTMAN CREEK ABOVE CHOCTAWHAT	UNKNOWN	UNKN	....	....	....	.										
34.00	SANDY CREEK ABOVE CHOCTAWHATCHEE RI	UNKNOWN	UNKN	....	....	....	.										
35.00	BLUE CREEK ABOVE SANDY CREEK	UNKNOWN	UNKN	....	....	....	.										
36.00	SANDY CREEK ABOVE BLUE CREEK	YES	GOOD	----	---.	....	-..		.	....	....	....	..		*		
37.00	SANDY CREEK ABOVE WEST SANDY CREEK	YES	UNKN	....	....	....	.								*		
38.00	WEST SANDY CREEK ABOVE SANDY CREEK	PARTIAL	GOOD	*--.	--..	....	-..		.	....	....	....	..	*			DEFUNIAK SPRINGS WWTP RECENTLY UPGRADED, CREEK WATER QUALITY SHOULD IMPROVE.
39.00	BRUCE CREEK ABOVE CHOCTAWHATCHEE RI	YES	GOOD	----	----	....	-.*	**	.	....	....	....	..				MOST COUNTY RAODS THAT CROSS BRUCE CREEK CONTIBUTE HEAVY LOADS OF SEDIMENT INTO CREEK.
40.00	SEVEN RUNS CREEK ABOVE CHOCTAWHATCH	YES	GOOD	*---	---.	....	-..		.	....	....	....	..				
41.00	BIG CYPRESS CREEK ABOVE CHOCTAWHATC	UNKNOWN	UNKN	....	....	....	.										

CRYSTAL RIVER TO ST. PETERSBURG BEACH BASIN

General Description of the Basin

This coastal basin stretches from Crystal River on the north to Tampa Bay on the south and consists of many short meandering streams in the northern portion of the basin. Many of these have tidal characteristics and three, the Weekiwatchee, Homossasa and Crystal Rivers, have headwaters which are major Florida springs. Crystal River is designated an an Outstanding Florida Water. There are two streams in the central portion of the basin, the Pithlachascotee and Anclote Rivers, with a length of over twenty miles. Both of these are affected by urban growth especially in the lower segments of their reaches. The southernmost reaches of the basin includes Boca Ciega Bay and several St. Petersburg area feeder creeks and canals.

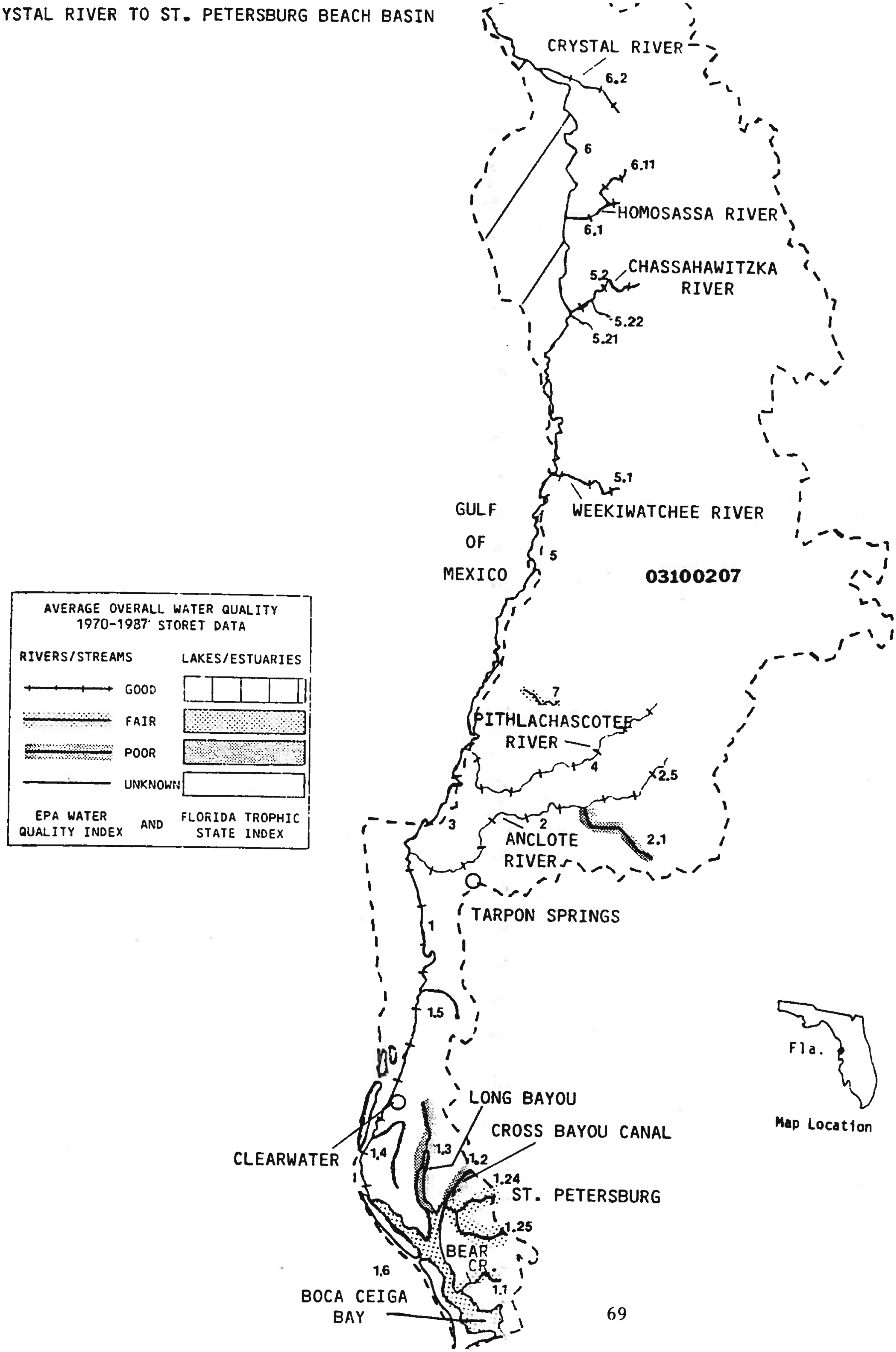
Specific Water Quality Problems and Pollution Sources

The springfed rivers in the northern basin generally have very good water quality, although some have naturally low DO levels. Crystal River is also subject to summertime algal blooms and mats in the King's Bay area possibly due to the Crystal River WWTP discharge and stormwater runoff. A 205(j) study of the area is being considered. In addition, the Homasassa River has some bacterial problems of unknown source. The lower Pithlachascotee also has some bacteria problems presumably from septic tank drainage and/or New Port Richey runoff.

The worst water quality in the basin is found in the highly developed southern portion. Although only one station in Boca Ciega Bay has been consistently sampled, it appears that the bay has extremely high phosphorus values and moderately high nitrogen and chlorophyll values. All of the feeder creeks in the area have pollution problems usually with elevated coliform and nutrient concentrations and depressed DO values. Two of these problem creeks, Long Bayou and the Cross Bayou Canal have not been sampled recently, but the point and nonpoint pollution sources have not changed significantly since the last sampling. Bear Creek (Reach 1.1), which also receives urban drainage, appears to have organic and metal toxicity problems.

Although there is no STORET data for the area, a DER intensive study has been conducted in Clearwater Harbor and St. Joseph Sound. It indicated elevated chlorophyll values in the estuary and poor quality in some of the feeder creeks.

CRYSTAL RIVER TO ST. PETERSBURG BEACH BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03100207 CRYSTAL-ST PETE																										
* WATER BODY TYPE: ESTUARY																										
1.00	GULF OF MEXICO AB TAMPA BAY	93	71	80	4.1	-1.0	5	15	6.8	75	2.0	-1	2	8.2	-1	0.66	0.21	1	-1	10	-1.0	-1.0	-1	48750	-1	42
1.60	BOCA CIEGA BAY AB TAMPA BAY	156	74	86	9.5	1.4	8	15	6.8	80	1.6	-1	4	7.8	120	0.97	0.13	8	200	100	3.2	-1.0	-1	42000	-1	54
* WATER BODY TYPE: OCEAN																										
3.00	GULF OF MEXICO AB ANCLOTE RIVE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	GULF OF MEXICO AB GULF OF MEXI	37	66	78	1.6	-1.0	5	-1	7.4	87	-1.0	-1	-1	7.8	130	0.37	0.02	-1	-1	-1	-1.0	-1.0	-1	10430	143	37
6.00	GULF OF MEXICO AB GULF OF MEXI	85	84	86	-1.0	1.7	10	6	6.9	82	-1.0	-1	-1	8.2	-1	0.39	0.09	3	-1	-1	-1.0	-1.0	-1	32642	-1	38
* WATER BODY TYPE: STREAM																										
1.10	BEAR CREEK AB BOCA CIEGA BAY	29	74	80	6.0	-1.0	22	-1	6.0	69	2.2	33	12	6.3	66	1.17	0.13	-1	9800	16	-1.0	-1.0	-1	271	5	51
1.20	CROSS BAYOU CANAL AB LONG BAYO	28	74	75	17.6	-1.0	-1	24	3.8	48	9.0	53	-1	7.7	228	7.86	2.40	78	20200	3000	-1.0	-1.0	-1	10800	-1	81
1.24	BONN CREEK AB JOE CREEK	34	82	84	-1.0	-1.0	-1	26	5.1	64	2.0	35	14	7.4	-1	1.00	0.15	-1	-1	-1	-1.0	-1.0	-1	-1	1	49
1.25	JOE CREEK AB CROSS BAYOU CANAL	64	73	86	10.0	-1.0	32	14	5.3	62	2.4	53	22	7.4	71	1.51	0.21	69900	3000	3400	-1.0	-1.0	-1	342	3	64
1.30	LONG BAYOU AB LAKE SEMINOLE	43	73	75	24.8	-1.0	-1	17	4.5	57	7.5	-1	-1	7.8	148	3.00	0.30	61	11675	3000	-1.0	-1.0	-1	25593	-1	69
1.40	MCKAY CREEK AB GULF OF MEXICO	5	66	70	9.0	-1.0	80	-1	-1.0	-1	-1.0	-1	-1	6.6	26	0.70	0.03	-1	-1	-1	-1.0	-1.0	-1	200	-1	35
1.50	CURLEW CREEK AB GULF OF MEXICO	32	65	71	-1.0	-1.0	-1	-1	7.0	89	-1.0	-1	76	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	288	3	63
2.00	ANCLOTE RIVER AB GULF OF MEXIC	277	62	86	4.0	1.1	40	17	5.4	61	1.6	-1	15	7.3	110	0.69	0.05	4	1178	28	2.0	-1.0	-1	5606	14	37
2.10	SOUTH BRANCH, ANCLOTE RIVER AB	60	66	86	9.5	-1.0	240	-1	4.8	51	1.9	-1	35	5.9	13	1.95	0.05	-1	-1	-1	-1.0	-1.0	-1	99	1	68
2.50	ANCLOTE RIVER AB S BR, ANCLOTE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	PITHLACHASCOTEE RIVER AB GULF	432	64	86	3.0	1.0	100	-1	5.7	63	1.0	-1	22	7.1	66	0.72	0.04	-1	-1	-1	1.7	-1.0	35	150	7	42
5.10	WEEKIWATCHEE RIVER AB GULF OF	315	66	86	-1.0	2.0	3	3	6.9	82	-1.0	-1	2	8.0	130	0.35	0.05	1	430	36	-1.0	-1.0	-1	1397	-1	20
5.20	CHASSAHOWITZKA RIVER AB GULF O	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.21	BLIND CREEK AB CHASSAHOWITZKA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.22	CRAWFORD CREEK AB CHASSAHOWITZ	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.10	HOMOSASSA RIVER AB GULF OF MEX	110	64	78	2.0	-1.0	2	-1	6.7	77	0.8	-1	1	7.7	142	0.31	0.03	-1	-1	-1	-1.0	-1.0	-1	1105	113	15
6.11	HALLS RIVER AB HOMOSASSA RIVER	2	74	75	-1.0	-1.0	3	-1	2.0	24	0.6	-1	0	7.2	142	0.24	0.04	-1	-1	50	-1.0	-1.0	-1	6815	-1	16
6.20	CRYSTAL RIVER AB GULF OF MEXIC	249	63	86	7.0	1.8	5	6	7.2	82	0.5	-1	1	8.1	106	0.42	0.04	4	65	16	2.1	-1.0	6	2850	-1	20
7.00	BEAR CREEK AB	73	65	77	29.0	-1.0	50	-1	5.5	63	1.0	-1	25	6.3	97	0.56	0.04	-1	-1	-1	-1.0	-1.0	-1	236	3	55

WATER QUALITY ASSESSMENT REPORT

SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP

'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA

'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
** USGS HYDROLOGIC UNIT CODE: 03100207 CRYSTAL-ST PETE																	
* WATER BODY TYPE: ESTUARY																	
1.00	GULF OF MEXICO ABOVE TAMPA BAY	YES	GOOD	----	---.	-.-*	-.*		.	....	....	....	..		*		ELEVATED TP,BUT OTHERWISE GOOD OVERALL WATER QUALITY.
1.60	BOCA CIEGA BAY ABOVE TAMPA BAY	PARTIAL	FAIR	----	----	---*	--.	***	-	..0.	.00.	000-	+.	*	*	*	HIGHLY DEVELOPED URBAN BAY AREA EXHIBITS PROBLEMS FROM WWTP EFFLUENT AND ST. PETE NONPOINT SOURCE RUNOFF.BEACHES CLOSED TO SWIMMING AFTER STORMS. HEAVY BOAT TRAFFIC.
* WATER BODY TYPE: OCEAN																	
3.00	GULF OF MEXICO ABOVE ANCLOTE RIVER	UNKNOWN	UNKN	....	....	....	.										
5.00	GULF OF MEXICO ABOVE GULF OF MEXICO	YES	GOOD	----	.-..	..--	...		.	....	....	....	..		*		
6.00	GULF OF MEXICO ABOVE GULF OF MEXICO	YES	GOOD	----	.-..	----	-.-		.	....	....	....	..		**		
* WATER BODY TYPE: STREAM																	
1.10	BEAR CREEK ABOVE BOCA CIEGA BAY	PARTIAL	FAIR	----	--*.	....	-..	*	.	....	....	....	..		*	*	ELEVATED TOTAL COLIFORM
1.20	CROSS BAYOU CANAL ABOVE LONG BAYOU	NO	POOR	*-**	***.	....	-..		.	....	....	....	..	*	*		DO AND NUTRIENT PROBLEMS ADDRESSED IN 1980 WLA.
1.24	BONN CREEK ABOVE JOE CREEK	PARTIAL	FAIR	--*.	--..	....	-*.		*	...0	000.	..00	+.				SLIGHT DO PROBLEM, EITHER A NATURAL PROBLEM OR AN UNKNOWN SOURCE.
1.25	JOE CREEK ABOVE CROSS BAYOU CANAL	PARTIAL	POOR	----	--*.	....	-**		.	....	....	....	..	**			WATER QUALITY PROBLEMS IN ST. PETE AREA. 1982 BIOASSAY OF SOUTH CROSS BAYOU WWTP.
1.30	LONG BAYOU ABOVE LAKE SEMINOLE	NO	POOR	*-**	*-*.	....	-..		.	....	....	....	..				DO AND BACTERIA PROBLEM OF UNKNOWN SOURCE.
1.40	MCKAY CREEK ABOVE GULF OF MEXICO	YES	GOOD	----	....	....	...		.	....	....	....	..		*	*	
1.50	CURLEW CREEK ABOVE GULF OF MEXICO	YES	POOR	...-	*-..	....	...		.	....	....	....	..		**	**	INSUFFICIENT PARAMETER COVERAGE.
2.00	ANCLOTE RIVER ABOVE GULF OF MEXICO	YES	GOOD	---*	----	....	--.	* *	0	....	.000	..00	-0		* **	**	
2.10	SOUTH BRANCH, ANCLOTE RIVER ABOVE A	NO	POOR	----	*-..	....	...		*	....	.**.	....	0.				OXYGEN DEMAND RISING ACCOMPANIED BY A DECLINING TREND RELATED TO DO, NUTRIENTS,AND TURBIDITY.
2.50	ANCLOTE RIVER ABOVE S BR, ANCLOTE R	YES	UNKN	....	....	....	.	*							* **	**	
4.00	PITHLACHASCOTEE RIVER ABOVE GULF OF	YES	GOOD	----	--.-	....	--.	* *	0	....	.000	..00	0+		* **	*	EXCESSIVE OFF-ROAD VEHICLE USE. BATHING AREA CLOSED. AREA OF HEAVY SEPTIC TANK USE. NEW PORT RICHEY URBAN RUNOFF.
5.10	WEEKIWATCHEE RIVER ABOVE GULF OF ME	YES	GOOD	---*	---.	....	-..	*	*	...0	.**.	0.0*	+.		*	*	EXCELLENT OVERALL QUALITY IN SPRING RUN, BUT A TREND TOWARD DECLINING WATER QUALITY RELATED TO DO,AND TP CONCENTRATIONS IS NOTED.SWIMMING AREA CLOSED SEVERAL YEARS AGO DUE TO HIGH BACTERIAL COUNTS BUT HAS SINCE BEEN RE-OPENED.
5.20	CHASSAHOWITZKA RIVER ABOVE GULF OF	YES	UNKN	....	....	....	.	**							*	**	HIGH BAC-T COUNTS AND DOCUMENTED SEPTIC TANK FAILURES.
5.21	BLIND CREEK ABOVE CHASSAHOWITZKA RI	UNKNOWN	UNKN	....	....	....	.										
5.22	CRAWFORD CREEK ABOVE CHASSAHOWITZKA	UNKNOWN	UNKN	....	....	....	.										
6.10	HOMOSASSA RIVER ABOVE GULF OF MEXIC	YES	GOOD	----	--..	....	-..	**	.	....	....	....	..		**	**	SEPTIC TANK FAILURES AND SUBSTANDARD ROADS. HIGH BACT-T COUNTS.
6.11	HALLS RIVER ABOVE HOMOSASSA RIVER	YES	GOOD	--.*	-*-.	....	-..	**	.	....	....	....	..		* **	**	AGRICULTURAL ACTIVITIES NEAR HOMOSASSA ATTRACTION.
6.20	CRYSTAL RIVER ABOVE GULF OF MEXICO	YES	GOOD	---*	----	....	-..	**	0	...0	.**.	0.00	+.		**	*	WATER QUALITY STUDY ADMINISTERED BY PUBLIC UTILITIES. EXTENSIVE HYDRILLA,ALGAL BLOOMS,CLOSED SHELLFISHING & SWIMMING AREAS.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
7.00	BEAR CREEK ABOVE	PARTIAL	FAIR	--*-	--..	....	...		.	....	....	....	..				HIGH TURBIDITY AND DEPRESSED DO OF UNKNOWN ORIGIN.

MIDDLE EAST COAST BASIN

General Description of the Basin

The Middle East Coast basin extends from Ponce de Leon Inlet at New Smyrna Beach south to Sebastian Inlet and contains 3 major bodies of water: Mosquito Lagoon, Indian River and Banana River. All three are generally lagoonal in character with tidal influence extending only approximately 10 miles north and south of the inlets. Many causeways serve to partition these bodies of water causing considerable localization of wind and tidal mixing effects. Mosquito Lagoon connects with Indian River through Haulover Canal, part of the Intracoastal Waterway. The Indian River connects with Banana River through the deep, narrow Barge Canal, which connects to Port Canaveral through a system of locks. Sykes Creek connects Newfound Harbor to the Barge Canal, and receives drainage from several large canals and freshwater tributaries. The land portion of the basin is dominated by urban developments, rangeland and wetlands.

Specific Water Quality Problems and Pollution Sources

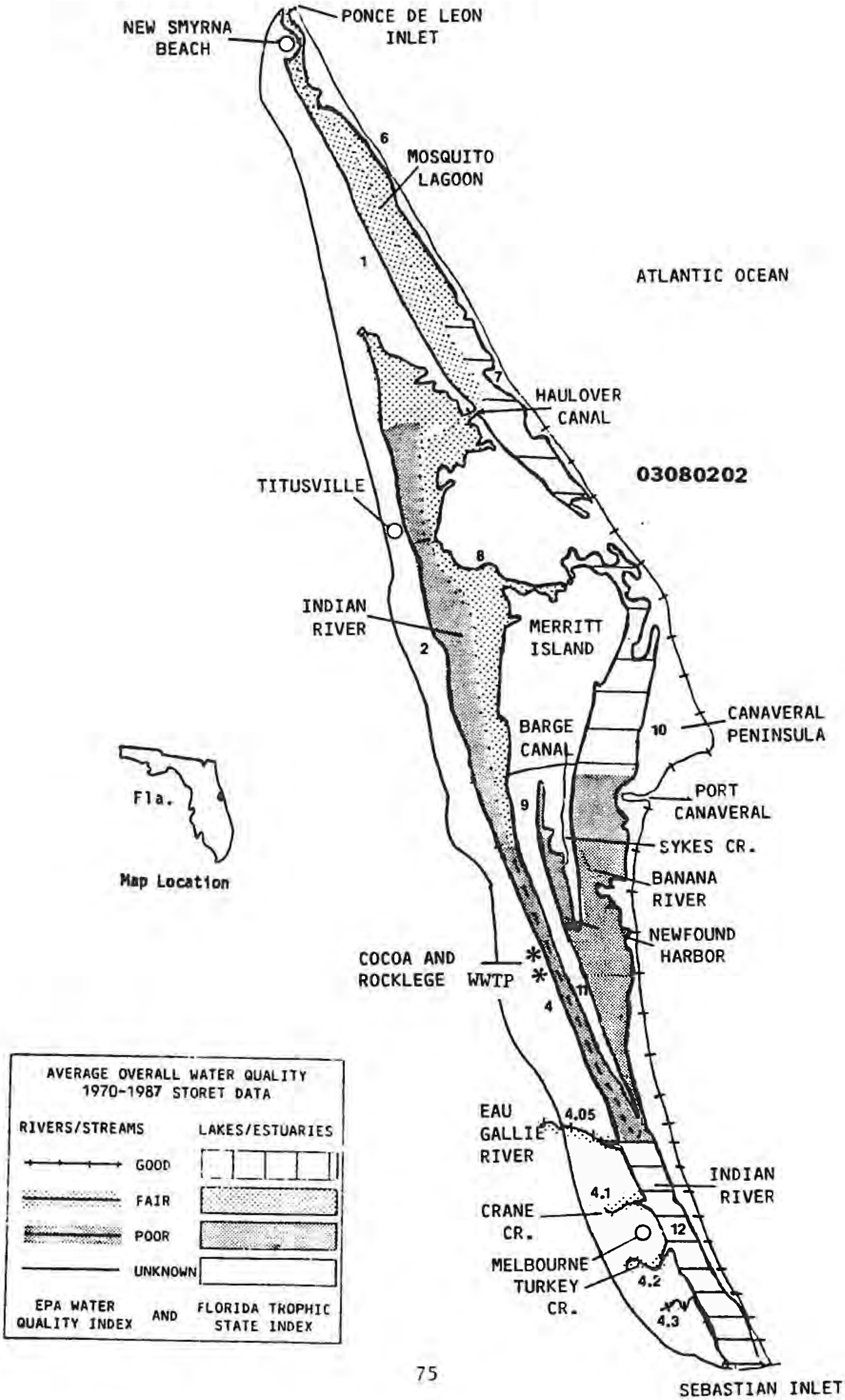
There are several difficulties with the analysis of this basin. First, the reach units are too large to really point out localized areas of water quality problems. Second, there is not a firm consensus of opinion among the surveyed water quality professionals in the area. The following analysis and water quality map represent the best assessment of available data, state criteria and professional opinion.

The southernmost reach of Indian River has very good water quality except for the immediate vicinity of Turkey Creek, Crane Creek and Eau Gallie River. Turkey Creek has a variety of pollution sources including a drainage canal from the St. Johns River, an industrial discharger, and urban runoff from the Melbourne area. Crane Creek is degraded from Melbourne's two WWTPs which are scheduled to switch to deep well injection. Eau Gallie River also receives Melbourne WWTP discharge and urban runoff. Other major pollution sources in Indian River include the Rockledge/Cocoa development area with nutrient and BOD loading from WWTPs and urban runoff. The middle portion of Indian River from Titusville to Cocoa has poor water quality along the developed western side. Water quality is degraded due to two Titusville WWTPs' effluents, significant urban runoff from a labarynthic canal system, and several causeway bridges which severely limit circulation. Development and associated pollution is significantly reduced north of Titusville.

The worst water quality problem in the Banana River area is with the Sykes Creek/Newfound Harbor area located in southern Merritt Island. The area is heavily developed and has historically had several poorly operating WWTPs discharging to Sykes Creek. These plants have all upgraded and are no longer discharging. Already improvements are being made in Sykes Creek; however, it still exhibits high concentrations of nutrients and chlorophyll and low Secchi depth values. The southern end of the Banana River also receives effluent from WWTPs associated with Cocoa Beach and the Patrick Air Force Station complex on the Canaveral Peninsula. Several of the treatment plants in the area are scheduled to shift to deep well discharge in the next few years which should help to improve the surface water quality. Port Canaveral, a manmade harbor which connects the Banana River to the Atlantic

Ocean through a series of locks, receives pollution from both shipping traffic discharges and from the effluent of three seafood (mostly scallop) processing industries. The northern areas of Merritt Island and Banana River are sparsely developed and water quality is good here.

Mosquito Lagoon is wide and shallow and, thus fairly well mixed through wind action. This mixed condition accounts for the low Secchi disc transparency and high nutrient values. There are few point sources in this region, and development is relatively sparse. Most of the area is classified as Class II waters, but has recently been reclassified from approved for shellfish harvesting to conditionally approved. This is why it received a "fair" rating since it only partially meets its designated use.


NEW SMYRNA BEACH
PONCE DE LEON INLET
MOSQUITO LAGOON
ATLANTIC OCEAN
HAULOVER CANAL
03080202
TITUSVILLE
INDIAN RIVER
MERRITT ISLAND
BARGE CANAL
CANAVERAL PENINSULA
PORT CANAVERAL
SYKES CR.
BANANA RIVER
NEWFOUND HARBOR
COCOA AND ROCKLEGE WWTP
Fla.
Map Location
EAU GALLIE RIVER
INDIAN RIVER
CRANE CR.
MELBOURNE
TURKEY CR.
SEBASTIAN INLET
AVERAGE OVERALL WATER QUALITY
1970-1987 STORET DATA
RIVERS/STREAMS
LAKES/ESTUARIES
GOOD
FAIR
POOR
UNKNOWN
EPA WATER QUALITY INDEX
AND
FLORIDA TROPHIC STATE INDEX

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND COND	FLOW FLOW	WQI
** USGS HYDROLOGIC UNIT: 03080202 EAST COAST (M)																										
* WATER BODY TYPE: ESTUARY																										
1.00	MOSQUITO LAGOON AB ICWW	152	70	87	14.3	0.9	15	17	6.4	77	1.5	-1	6	8.0	136	0.36	0.09	8	10	0	2.8	-1.0	-1	45000	-1	50
2.00	INDIAN RIVER AB MOSQUITO LAGOO	117	53	87	4.6	1.2	16	11	6.8	77	2.3	-1	16	8.2	135	1.35	0.08	8	3	0	2.3	-1.0	-1	38100	-1	60
4.00	INDIAN RIVER AB BANANA RIVER	418	71	87	4.6	1.1	15	9	7.0	83	2.0	-1	6	8.1	124	1.00	0.08	9	9	1	3.9	2.9	-1	41413	-1	54
6.00	MOSQUITO LAGOON AB ICWW	12	82	83	27.0	1.0	-1	-1	7.2	90	-1.0	-1	-1	8.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	42625	-1	-1
7.00	MOSQUITO LAGOON AB PONCE DE LE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.00	INDIAN RIVER AB MOSQUITO LAGOO	152	71	87	12.3	1.1	15	13	6.7	77	2.0	-1	13	8.2	134	1.40	0.09	10	8	0	4.0	0.8	-1	35000	-1	60
9.00	INDIAN/BANANA RIVER/SYKES CREE	335	71	87	5.7	1.0	20	9	6.7	79	3.5	-1	8	8.2	137	1.77	0.12	17	19	5	-1.0	-1.0	-1	33350	-1	63
10.00	BANANA RIVER AB BANANA CREEK	256	71	87	4.8	1.0	11	9	5.8	68	2.9	-1	-1	8.1	140	1.57	0.10	15	60	14	-1.0	-1.0	-1	41200	-1	61
11.00	INDIAN RIVER AB BANANA RIVER	278	71	87	7.0	1.1	15	10	6.3	74	1.8	-1	14	8.1	122	1.31	0.09	10	13	0	4.7	-1.0	-1	33870	-1	55
12.00	INDIAN RIVER AB BANANA RIVER	50	71	87	4.0	1.4	20	12	7.2	85	2.1	-1	-1	8.0	118	1.26	0.12	8	9	-1	-1.0	-1.0	-1	35100	-1	53
* WATER BODY TYPE: STREAM																										
4.05	EAU GALLIE RIVER AB INDIAN RIV	77	74	85	31.0	-1.0	43	9	6.8	78	4.2	-1	-1	7.8	137	1.41	0.30	53	79	-1	-1.0	-1.0	-1	17275	-1	45
4.10	CRANE CREEK AB INDIAN RIVER	82	73	85	32.0	-1.0	45	10	4.2	51	2.6	28	-1	7.4	148	1.67	0.56	8	42	-1	-1.0	-1.0	-1	2985	-1	57
4.20	TURKEY CREEK AB INDIAN RIVER	825	79	87	4.7	0.9	40	9	6.1	73	1.1	-1	-1	7.6	157	0.97	0.14	7	48	-1	-1.0	-1.0	-1	6375	55	40
4.30	GOAT CREEK AB INDIAN RIVER	214	70	81	-1.0	0.7	30	30	6.2	79	-1.0	-1	-1	8.0	130	-1.00	0.09	11	-1	-1	-1.0	-1.0	-1	35000	-1	50

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03080202 EAST COAST (M)																	
* WATER BODY TYPE: ESTUARY																	
1.00	MOSQUITO LAGOON ABOVE ICWW	PARTIAL	FAIR	----	----	----	--.	*	0	..-*	-00.	000*	0.	*	* *	*	NEW SMYRNA BEACH AND EDGEWATER WWTP ON NORTHERN END OF MOSQUITO LAGOON. FAIRLY GOOD WATER QUALITY EXCEPT FOR LOW SECCHI DEPTH, HIGH TP AND A POOR FLUSHING RATE.SHELLFISH HARVESTING AREA CONVERTED FROM APPROVED TO CONDITIONAL, LAGOON SYSTEM IS DECLINING.
2.00	INDIAN RIVER ABOVE MOSQUITO LAGOON	NO	POOR	----	----	----	--*		-	..--	-00.	0-00	0.	*	*		TITUSVILLE WWTP AND URBAN DEVELOPMENT CAUSING HIGH NUTRIENTS AND LOW SECCHI DEPTH, THERE IS ALSO A POOR FLUSHING RATE. RECENT BIOASSAY.LOGOON SYSTEM IS DECLINING.
4.00	INDIAN RIVER ABOVE BANANA RIVER	NO	FAIR	----	----	----	-**	*	0	0.0*	00*.	-000	+.	*	* *	*	NORTHERN SECTION OF REACH 4.0 IS IMPACTED BY COCOA AND ROCKLEDGE WWTP'S. DEVELOPMENT IN THE AREA CAUSES NONPOINT SOURCE PROBLEMS.
6.00	MOSQUITO LAGOON ABOVE ICWW	PARTIAL	UNKN	.-*-	.-..	.-..	...	*	.	....	....	....	..		**	*	INSUFFICIENT PARAMETER COVERAGE.SHELLFISHING CLOSURES AFTER HEAVY RAINS.
7.00	MOSQUITO LAGOON ABOVE PONCE DE LEON	YES	UNKN	....	....	....	.								*		LOGOON SYSTEM IS DECLINING.
8.00	INDIAN RIVER ABOVE MOSQUITO LAGOON	PARTIAL	POOR	----	---*	----	-*.	*	0	..-0	000.	0-00	0.	*	* *	*	SEE REACH 2.00, EAST SIDE OF INDIAN RIVER.LAGOON SYSTEM IS DECLINING.
9.00	INDIAN/BANANA RIVER/SYKES CREEK ABO	NO	POOR	----	*--.	----	-.*	* *	-	-.-0	--0.	-00-	-.	*	* *		WORST PROBLEM AREA IN BASIN. SYKES CREEK HEAVILY DEVELOPED AND HAS EFFLUENT FROM SEVERAL WWTP'S. RECENT BIOASSAY OF FORTENBERRY WWTP.
10.00	BANANA RIVER ABOVE BANANA CREEK	YES	POOR	----	---.	----	--*	*	0	..00	0--.	0*0-	+.	*	*		WWTP'S AND URBAN RUNOFF FROM COCOA BEACH. LOWER BANANA RIVER AFFECTS THIS SECTION AND POOR HYDRAULIC CIRCULATION.
11.00	INDIAN RIVER ABOVE BANANA RIVER	PARTIAL	FAIR	----	----	----	-**	*	0	..-0	000.	0-0*	+.	*	* *		BIOASSAYS. FAIR OVERALL QUALITY DUE TO PATRICK AIR FORCE BASE.
12.00	INDIAN RIVER ABOVE BANANA RIVER	YES	FAIR	----	---.	----	...	*	0	..-0	*--.	0000	+.		* *		
* WATER BODY TYPE: STREAM																	
4.05	EAU GALLIE RIVER ABOVE INDIAN RIVER	PARTIAL	FAIR	--**	*--.	....	-.-	*	0	-...	000.	0.00	0.		*		
4.10	CRANE CREEK ABOVE INDIAN RIVER	PARTIAL	FAIR	*-**	---.	....	-.*	*	0	0...	000.	0.00	0.	*	*		BIOASSAY. IMPACT BY MELBOURNE WWTP, SHOULD GO TO DEEP WELL INJECTION.
4.20	TURKEY CREEK ABOVE INDIAN RIVER	PARTIAL	GOOD	---*	---.	....	-.*	*	0	0..0	-**.	-000	-.		* *		NO STORMWATER TREATMENT PRACTICES APPARENT.
4.30	GOAT CREEK ABOVE INDIAN RIVER	YES	FAIR	--**	.-..	....	-..		-	...0	.00.	00.0	0.				

UPPER EAST COAST BASIN

General Description of the Basin

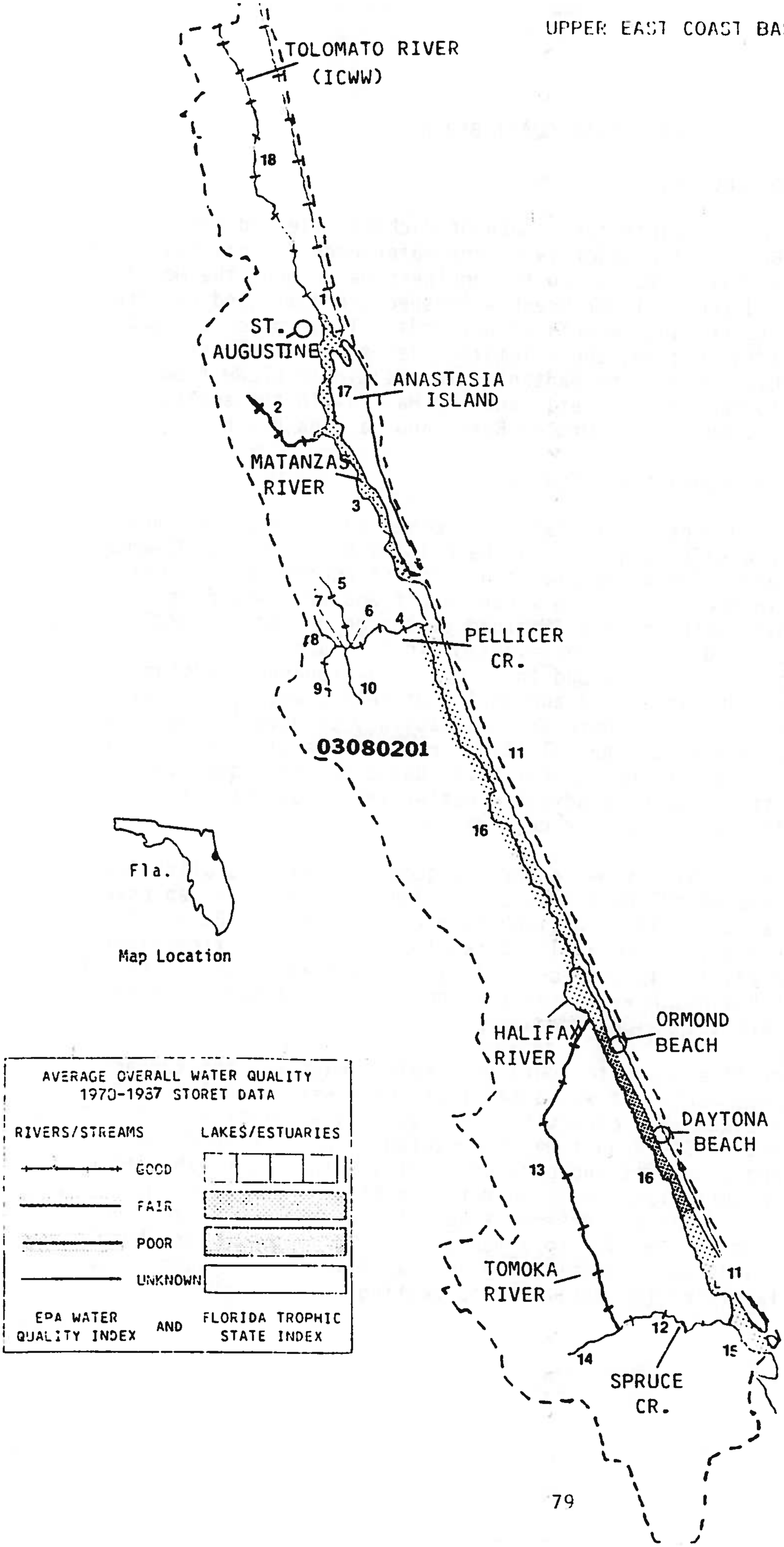
The Upper East Coast basin starts just south of Jacksonville and extends south to New Smyrna Beach. The majority of the watersheds in this basin are drained by relatively small creeks. In the northern watershed, the Moultrie Creek drainage area and the Pellicer Creek watershed are dominated by forest land, but also have significant amounts of wetlands. Three major estuarine rivers drain this coastal region, the Tolomato River to the north (from St. Augustine to Jacksonville), the Mantanzas in the middle (ICWW from St. Augustine Inlet to Mantanzas Inlet), and the Halifax in the south. Urban areas include St. Augustine, Ormond Beach and Daytona Beach.

Specific Water Quality Problems and Sources

A basin assessment of the East Coast Basin performed by district personnel indicated major water quality problems in the Halifax River between Ormond Beach and Daytona Beach. There are elevated nutrient concentrations and excessive turbidity in the area due to urban runoff and effluent from several municipal WWTPs which have a combined discharge of about 30 MGD. There is suspected oil and grease contamination in this area from the numerous auto service businesses along the river. Maintenance dredging of the ICWW acts to resuspend sediments and their nutrients, metals and oxygen demanding substances. Finally, there are six causeway bridges in the area which serve to compartmentalize the pollution and decrease circulation. A wasteload allocation study of the Halifax River based on water quality data and tidal measurements recommended advanced wastewater treatment was necessary in order to prevent further degradation.

Other areas in the basin which show borderline good-fair water quality are Spruce Creek with elevated coliform levels, and Tomoka River with depressed oxygen, low biological diversity and slightly elevated metals. Both receive agricultural runoff, and the Tomoka also gets airport runoff. Attempts are under way in these areas to improve the quality of stormwater runoff through the use of treatment basins; however, as yet, no significant water quality trends have been apparent in STORET data.

The ICWW from Jacksonville Beach to south of Flagler Beach was the subject of a recent basin assessment. It was noted that there was a consistent DO sag near Ponte Vedra Beach, but otherwise water quality was fairly good. The Matanzas River around St. Augustine is impacted by urban runoff, WWTPs, two scallop processing companies and port activities. The river exhibits elevated nutrient concentrations and some metals contamination problems. The scallop processing companies' effluents were found to be toxic to bioassay test organisms in 1985 due to ammonia and high metal levels, but this industry's discharge has significantly decreased in recent years. The Matanzas River is classified for shellfish harvesting and as such only partially meets its use.


TOLOMATO RIVER
(ICWW)
18
1
ST. AUGUSTINE
17
ANASTASIA ISLAND
2
MATANZAS RIVER
3
5
7
6
4
8
PELLICER CR.
9
10
03080201
11
16
Fla.
Map Location
HALIFAX RIVER
ORMOND BEACH
DAYTONA BEACH
13
16
TOMOKA RIVER
11
12
14
15
SPRUCE CR.
AVERAGE OVERALL WATER QUALITY
1970-1987 STORET DATA
RIVERS/STREAMS
LAKES/ESTUARIES
GOOD
FAIR
POOR
UNKNOWN
EPA WATER QUALITY INDEX
AND
FLORIDA TROPHIC STATE INDEX

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L   -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND COND	FLOW FLOW	WQI
** USGS HYDROLOGIC UNIT: 03080201 EAST COAST (UP)																										
* WATER BODY TYPE: ESTUARY																										
3.00	MATANZAS RIVER (ICWW) AB ATLAN	140	71	87	7.1	1.0	30	41	6.8	83	1.1	99	5	7.8	118	0.75	0.11	4	33	12	3.7	2.8	-1	39900	-1	50
15.00	PONCE DE LEON INLET AB ATLANTI	17	73	83	31.0	0.8	15	16	6.2	62	1.1	-1	-1	7.9	121	0.55	0.14	12	100	18	-1.0	-1.0	-1	40950	-1	61
16.00	ICWW AB ATLANTIC OCEAN	674	41	87	26.3	0.6	40	17	6.7	79	1.5	-1	9	7.9	111	0.89	0.20	9	40	4	2.8	-1.0	-1	32200	-1	59
17.00	ANASTASIA ISLAND AB ATLANTIC O	12	85	87	18.0	1.0	50	27	6.7	83	1.0	-1	-1	7.8	-1	1.04	0.33	2	60	40	-1.0	-1.0	-1	42995	-1	53
* WATER BODY TYPE: OCEAN																										
1.00	ATLANTIC OCEAN AB ST JOHNS RIV	69	73	87	7.0	1.0	20	24	6.7	83	1.0	28	7	7.9	81	0.69	0.10	5	72	33	3.4	-1.0	-1	41000	-1	51
11.00	ATLANTIC OCEAN AB	213	71	87	7.5	0.9	30	26	7.2	87	1.1	227	-1	7.9	120	1.11	0.12	3	70	20	3.7	-1.0	-1	39000	-1	58
* WATER BODY TYPE: STREAM																										
2.00	MOULTRIE CREEK AB ICWW	40	66	86	2.0	0.5	303	2	4.8	55	1.0	-1	23	6.5	52	0.96	0.15	1	-1	-1	-1.0	-1.0	-1	317	2	39
4.00	PELLICER CREEK AB ICWW	9	84	86	-1.0	0.3	260	3	4.8	51	1.3	-1	-1	6.9	50	0.65	0.07	1	-1	-1	-1.0	-1.0	-1	396	-1	35
5.00	STEVENS BRANCH AB PELLICER CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	PELLICER CREEK AB STEVENS BRAN	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	PELLICER CREEK AB HULETT BRANC	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.00	PELLICER CREEK AB PELLICER CR,	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	PELLICER CREEK, PRINGLE BRANCH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
10.00	HULETT BRANCH AB PELLICER CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	SPRUCE CREEK AB ICWW	147	64	86	3.5	0.4	350	-1	6.2	70	1.4	-1	33	7.2	101	1.10	0.10	-1	-1	260	-1.0	-1.0	-1	331	4	43
13.00	TOMOKA RIVER AB SPRUCE CREEK	304	62	87	4.2	0.5	175	4	5.0	57	1.5	49800	16	7.3	89	1.00	0.09	4	80	36	1.3	-1.0	-1	10000	3	45
14.00	SPRUCE CREEK AB TOMOKA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	ICWW AB ATLANTIC OCEAN	127	73	87	8.4	0.9	60	38	5.5	73	1.5	-1	-1	7.6	81	0.73	0.11	5	85	33	-1.0	-1.0	-1	38500	-1	43

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03080201 EAST COAST (UP)																	
* WATER BODY TYPE: ESTUARY																	
3.00	MATANZAS RIVER (ICWW) ABOVE ATLANTI	PARTIAL	FAIR	--*-	----	----	-**		0	000-	-0-.	00-0	0.	**	****	* *	LOW SECCHI DEPTH AND ELEVATED TOTAL PHOSPHORUS, BUT GOOD CHL a. SEVERAL SPECIAL STUDIES INCLUDING TOXIC BIOASSAY OF SCALLOP PROCESSING PLANT EFFLUENT.DESIGNATED CLASS II WATERS HAVE DECLINED IN THE PAST 7 YEARS AND CONTINUE TO WORSEN.
15.00	PONCE DE LEON INLET ABOVE ATLANTIC	PARTIAL	POOR	--*-	---.	---*	-..	*	.	....	....	....	..	*	*	*	SHOWS PROBLEMS DUE TO POLLUTION RECIEVED BY UPSTREAM HALIFAX RIVER, HOWEVER, ONLY THREE 1973 SAMPLES.
16.00	ICWW (HALIFAX RIVER) ABOVE ATLANTIC	NO	FAIR	--*-	----	-*-*	-**	***	*	..**	*00.	0**0	0.	*	**	*	AT LEAST 5 MAJOR WWTP'S AND URBAN DEVELOPMENT FROM ORMOND BEACH TO DAYTONA BEACH. SEVEN DER SPECIAL STUDIES AND 1986 WLA. MOST OF THE HALIFAX HAS FAIR QUALITY, EXCEPT THE SECTION BETWEEN ORMOND AND DAYTONA WHICH IS POOR.GAS STATION AND CONSTRUCTION RUNO
17.00	ANASTASIA ISLAND ABOVE ATLANTIC OCE	PARTIAL	FAIR	--*-	---.	---*	-..		0	-.-0	-00.	00.0	-.		****	* *	WATER QUALITY PROBLEMS ASSOCIATED WITH INCREASED TN,TP,AND TURBIDITY.BOAT BUILDING PLANTS MAY CONTRIBUTE TO THE PROBLEM. DESIGNATED CLASS II WATERS HAVE DECLINED OVER THE PAST 7 YEARS AND CONTINUE TO WORSEN.
* WATER BODY TYPE: OCEAN																	
1.00	ATLANTIC OCEAN ABOVE ST JOHNS RIVER	YES	FAIR	--*-	----	----	-*.		-	*00-	---.	0-00	0.		****	* *	HAZARDOUS CHEMICAL STORAGE FACILITY NEARBY.AIRPORT AND AIRCRAFT REPAIR PLANT RUNOFF TO CLASS II DESIGNATED WATERS.A DECLINE IN WATER QUALITY OVER THE PAST 7 YEARS CONTINUES TO WORSEN.
11.00	ATLANTIC OCEAN ABOVE	PARTIAL	FAIR	--*-	*---	----	-..		-	0*0-	0--.	0-00	-.	*			SECCHI DEPTH AND TOTAL PHOSPHORUS PROBLEMS AROUND FLAGLER-ICWW.
* WATER BODY TYPE: STREAM																	
2.00	MOULTRIE CREEK ABOVE ICWW	YES	GOOD	----	--..	....	--.		.	....	....	....	..		* **	*	DECLINING DO TREND FROM 1973-1980. NO RECENT DATA PROBABLY A NATURAL PROBLEM.SEPTIC TANKS, SLUDGE DISPOSAL SITE AND TOXIC CHEMICAL SPILL NEAR CREEK CONSTITUTE A THREAT TO WATER QUALITY.
4.00	PELLICER CREEK ABOVE ICWW	YES	GOOD	----	--..	....	-..		.	....	....	....	..		* *		MARGINAL BMPS.
5.00	STEVENS BRANCH ABOVE PELLICER CREEK	YES	UNKN	....	....	....	.								*		
6.00	PELLICER CREEK ABOVE STEVENS BRANCH	YES	UNKN	....	....	....	.								*		
7.00	PELLICER CREEK ABOVE HULETT BRANCH	YES	UNKN	....	....	....	.	**							*	*	
8.00	PELLICER CREEK ABOVE PELLICER CR, P	UNKNOWN	UNKN	....	....	....	.										
9.00	PELLICER CREEK, PRINGLE BRANCH ABOV	YES	UNKN	....	....	....	.								*		WATERBODY IS AN OFW.
10.00	HULETT BRANCH ABOVE PELLICER CREEK	UNKNOWN	UNKN	....	....	....	.										
12.00	SPRUCE CREEK ABOVE ICWW	YES	GOOD	----	*--.	....	--.		0	..0.	.00.	..00	00				
13.00	TOMOKA RIVER ABOVE SPRUCE CREEK	PARTIAL	FAIR	---*	*--*	....	-*.	**	0	..00	*00.	0000	+.		* *		PROBABLY A NATURAL DO PROBLEM.1980 WLA DONE ON SMALL WWTP.LOW DIVERSITY INDEX.AIRPORT RUNOFF CONTRIBUTES TO THE PROBLEM.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BOBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS WQ	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IMNU	ASCU GVNR	MLHS NOMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
14.00	SPRUCE CREEK ABOVE TOMOKA RIVER	UNKNOWN	UNKN	....	....	....	.										
18.00	ICWW ABOVE ATLANTIC OCEAN	YES	GOOD	--**	---.	....	-..		-	0*0-	0--.	0000	-.		****	* *	UNTREATED URBAN STORMWATER AND HORSE RANCH SLUDGE SITE IN CLOSE PROXIMITY. DESIGNATED CLASS II WATERS HAVE DECLINED IN THE PAST 7 YEARS AND CONTINUE TO WORSEN.

ESCAMBIA RIVER BASIN

General Description of the Basin

Just north of the Florida-Alabama state line, Conecuh River and Escambia Creek join to form the Escambia River. The Escambia River flows approximately 92 miles south from the Florida-Alabama state line to Escambia Bay. The drainage basin encompasses a total of 4200 miles, only 10% of which is located in Florida. The average flow of the Escambia is 6500 cfs; however, the flow rate is highly variable. From the town of Molino, Florida to Escambia Bay, the Escambia River flows through a generally low, swampy area with many sloughs and backwaters. During low flow, a saltwater wedge penetrates 8 miles upstream. Land use in this basin is primarily forest and agriculture.

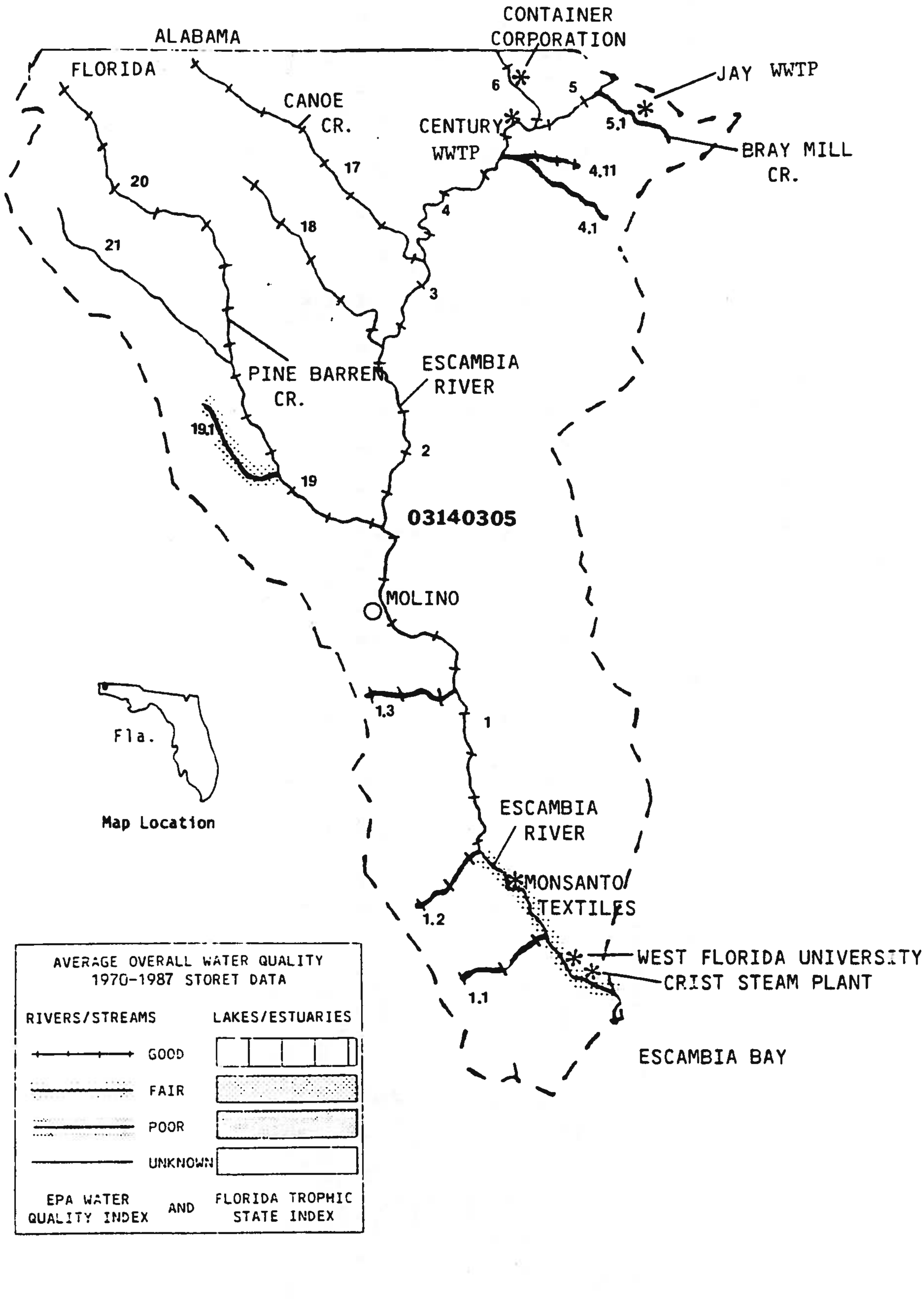
Specific Water Quality Problems and Pollution Sources

Water quality in this basin is generally good. In the upper portion of the basin point sources include the Container Corporation (a paper company in Alabama at the state border), and the WWTPs of the cities of Century and Jay. In addition, there is a gravel mining operation near Century. Near the mouth of the river effluent discharges include Monsanto Textiles Company, the West Florida University WWTP and thermal effluent from a power plant.

The DER Northwest District office is currently conducting a basin assessment on the river. Preliminary results indicate elevated bacteria values downstream of Century. The Soil Conservation Service is designing a cropland watershed plan to alleviate agricultural runoff in the Canoe Creek drainage and much of the Escambia River.

The areas of concern in this basin are the upper reaches affected by point sources and the gravel mines, and the lower river reach where there is increasing urbanization as well as point sources.

ESCAMBIA RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT: 03140305 ESCAMBIA RIVER

* WATER BODY TYPE: STREAM

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
1.00	ESCAMBIA RIVER AB ESCAMBIA BAY	2736	52	86	15.0	0.8	72	9	6.7	75	1.1	29	7	6.8	18	0.63	0.04	5	670	113	2.7	3.0	17	100	3169	35
1.10	CLEAR CREEK AB ESCAMBIA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
1.20	SPANISH MILL CREEK AB ESCAMBIA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
1.30	PRETTY BRANCH AB ESCAMBIA RIVE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
2.00	ESCAMBIA RIVER AB PINE BARREN	76	68	79	13.5	-1.0	70	8	8.1	80	1.3	8	-1	6.6	22	0.61	0.04	-1	950	74	-1.0	-1.0	-1	37	-1	36
3.00	ESCAMBIA RIVER AB MITCHELL CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	ESCAMBIA RIVER AB CANOE CREEK	5020	52	87	14.3	0.6	70	16	7.5	84	1.0	21	6	6.8	20	0.53	0.04	1	1600	330	2.7	3.2	38	85	3905	30
4.10	HOLLY CREEK AB ESCAMBIA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.11	WILSON BRANCH AB HOLLY CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	ESCAMBIA RIVER AB BIG ESCAMBIA	91	68	80	10.0	4.0	71	13	8.3	88	1.2	29	-1	6.6	20	0.47	0.04	-1	1028	81	2.7	-1.0	-1	50	-1	33
5.10	BRAY MILL CREEK AB ESCAMBIA RI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	BIG ESCAMBIA CREEK AB ESCAMBIA	33	68	76	11.0	-1.0	60	-1	8.2	82	0.9	8	6	6.4	6	0.70	0.03	-1	1600	540	-1.0	-1.0	-1	-1	-1	31
17.00	CANOE CREEK AB ESCAMBIA RIVER	68	70	86	5.0	0.2	28	8	8.5	88	0.8	19	9	6.3	6	0.84	0.03	-1	920	191	-1.0	-1.0	-1	26	-1	27
18.00	MITCHELL CREEK AB ESCAMBIA RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
19.00	PINE BARREN CREEK AB ESCAMBIA	135	52	86	5.5	-1.0	25	6	8.2	88	0.6	2	3	6.2	5	0.71	0.02	-1	793	125	-1.0	-1.0	-1	26	100	26
19.10	BLUE WATER CREEK AB PINE BARRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
20.00	PINE BARREN CREEK AB BLUE WATE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	LITTLE PINE BARREN CREEK AB PI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BOBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03140305 ESCAMBIA RIVER																	
* WATER BODY TYPE: STREAM																	
1.00	ESCAMBIA RIVER ABOVE ESCAMBIA BAY	YES	GOOD	----	----	....	--*	*	0	0000	000.	00-0	0.	*	****	* *	DISTRICT INDICATES FAIR WATER QUALITY IN LOWER REACH ABOVE BAY. INDUSTRIAL AND WWTP SOURCES IMPACT THIS PORTION OF THE REACH.URBANIZING AREA. SELECTIVE TREE THINNING ADJACENT TO ESCAMBIA RIVER.ROADWAY RUNOFF AND HOUSEBOATS ALSO CONTRIBUTE TO PROBLEM.
1.10	CLEAR CREEK ABOVE ESCAMBIA RIVER	YES	UNKN	....	....	....	.								****	*	URBANIZING AREA.
1.20	SPANISH MILL CREEK ABOVE ESCAMBIA R	YES	UNKN	....	....	....	.								****	*	URBANIZING AREA.
1.30	PRETTY BRANCH ABOVE ESCAMBIA RIVER	YES	UNKN	....	....	....	.								****	*	URBANIZING AREA.
2.00	ESCAMBIA RIVER ABOVE PINE BARREN CR	YES	GOOD	----	---.	....	-..	*	.	....	....	....	..		***		CROPLANDS IN WATERSHED BEING TREATED UNDER SCS CANOE CREEK PROJECT.
3.00	ESCAMBIA RIVER ABOVE MITCHELL CREEK	YES	UNKN	....	....	....	.	*							***		CROPLANDS IN WATERSHED BEING TREATED UNDER SCS CANOE CR PROJECT.
4.00	ESCAMBIA RIVER ABOVE CANOE CREEK	YES	GOOD	----	----	....	--*		0	..*.	.00.	..*0	00		***		CROPLANDS IN WATERSHED BEING TREATED UNDER SCS CANOE CREEK WATERSHED PROJECT.
4.10	HOLLY CREEK ABOVE ESCAMBIA RIVER	UNKNOWN	UNKN	....	....	....	.										
4.11	WILSON BRANCH ABOVE HOLLY CREEK	YES	UNKN	....	....	....	.								*		SELECTIVE THINNING ADJACENT TO WATER.
5.00	ESCAMBIA RIVER ABOVE BIG ESCAMBIA C	YES	GOOD	----	----	....	-..		.	....	....	....	..		***	*	CROPLANDS IN WATERSHED BEING TREATED UNDER SCS CANOE CREEK WATERSHED PROJECT. GRAVEL MINING OPERATIONS.
5.10	BRAY MILL CREEK ABOVE ESCAMBIA RIVE	UNKNOWN	UNKN	....	....	....	.										
6.00	BIG ESCAMBIA CREEK ABOVE ESCAMBIA R	YES	GOOD	---.	--*.	....	-..		.	....	....	....	..		***	*	CROPLANDS IN WATERSHED BEING TREATED UNDER SCS CANOE CREEK WATERSHED PROJECT. GRAVEL MINING OPERATIONS.
17.00	CANOE CREEK ABOVE ESCAMBIA RIVER	YES	GOOD	----	---.	....	-..		0	0-0.	0--.	..00	0.		***		DIRT ROAD RUNOFF. CROPLANDS IN WATERSHED BEING TREATED UNDER SCS CANOE CREEK PROJECT.
18.00	MITCHELL CREEK ABOVE ESCAMBIA RIVER	YES	UNKN	....	....	....	.	*							***		CROPLANDS IN WATERSHED BEING TREATED UNDER SCS CANOE CR PROJECT.
19.00	PINE BARREN CREEK ABOVE ESCAMBIA RI	YES	GOOD	----	---.	....	-..		0	000.	.0-.	..00	0.		***	*	
19.10	BLUE WATER CREEK ABOVE PINE BARREN	PARTIAL	UNKN	....	....	....	.								***	*	
20.00	PINE BARREN CREEK ABOVE BLUE WATER	YES	UNKN	....	....	....	.								***	*	DIRT ROAD RUNOFF.
21.00	LITTLE PINE BARREN CREEK ABOVE PINE	PARTIAL	UNKN	....	....	....	.								***	*	

EVERGLADES - WEST COAST BASIN

General Description of the Basin

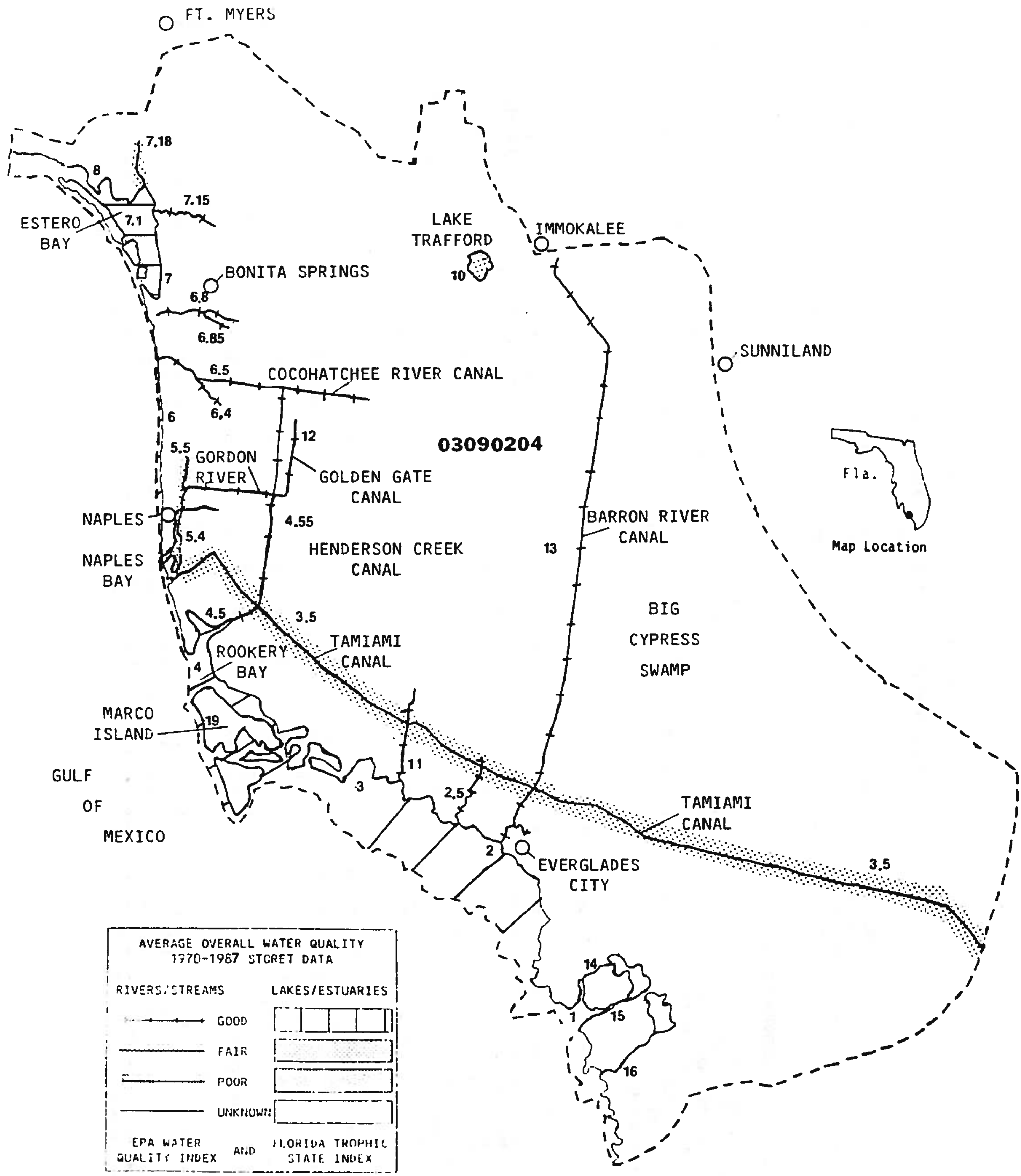
This basin consists of 2657 square miles of land south and east of the City of Ft. Myers. It can be characterized as land with very little topographic relief and is primarily wetland in the southeast portion of the basin and mixed dry and wetland in the northwestern portion of the area. A considerable amount of farming, including cattle ranching and vegetable growing, is done in the quadrangle formed by the Cities of Naples, Sunniland, Immokalee and to Ft. Myers. There is pressure from the citrus and ranching industries to extend this area southward. The area east of Naples has been extensively drained through a network of canals into a group of natural drainage channels which lead in a west to southwesterly direction to the Gulf of Mexico. Water flows very sluggishly in this area because of the small difference between land and sea levels. The waters in these manmade canals and natural streams are typically low in dissolved oxygen and are often below state criteria. Although these low values are considered a natural condition in many southern Florida waters, care must be taken to prevent further lowering of dissolved oxygen through non-point source or point source discharges.

Specific Water Quality Problems and Pollution Sources

This basin has very limited STORET water quality data The Golden Gate Canal/Gordon River area was the subject of a wasteload allocation study in 1983. It was observed that DO fluctuated widely and had a large percent of readings below 5.0 mg/l; however, these low values are present both upstream and downstream of effluents. The major discharger studied, the City of Naples WWTP, has subsequently been upgraded and is due to go entirely to spray irrigation. Most canals in this basin show DO patterns similar to those in the Gordon River. Low DOs account for the 'fair' rating of the reaches in this basin. Lake Trafford also has aquatic weed problems from enrichment due to agricultural runoff.

Probably the most serious problem in the area is the extensive freshwater drainage into the relatively pristine estuaries south of Naples. The drainage comes from canals which have inadequate control structures or none at all. Furthermore, there are proposals to expand the existing canals and/or create new ones to alleviate flooding in developed and developing areas. The potential to disturb the character and productivity of Rookery Bay, Naples Bay and Faka-Union Bay is great.

EVERGLADES - WEST COAST BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND COND	FLOW FLOW	WQI
** USGS HYDROLOGIC UNIT: 03090204 EVERGLADES																										
* WATER BODY TYPE: ESTUARY																										
2.50	FERGUSON RIVER AB TAMIAMI CANA	5	70	71	11.1	-1.0	110	-1	4.8	56	-1.0	-1	19	7.7	155	0.63	0.03	-1	-1	-1	-1.0	-1.0	-1	9100	-1	46
4.50	ROOKERY BAY AB HENDERSON CREEK	8	73	74	9.0	-1.0	40	-1	6.0	72	2.0	-1	-1	8.1	139	0.50	0.04	-1	2	2	-1.0	-1.0	-1	49700	-1	52
5.40	NAPLES BAY AB GULF OF MEXICO	67	72	79	3.5	1.0	50	7	4.6	64	1.5	-1	1	7.5	169	1.15	0.08	-1	380	30	1.9	-1.0	-1	35600	-1	61
7.10	ESTERO BAY AB GULF OF MEXICO	125	73	87	6.2	1.0	18	30	6.4	77	2.7	-1	5	8.0	124	0.35	0.07	7	9	6	4.3	0.9	-1	39900	-1	41
17.00	HUSTON BAY AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	CHEVELIER BAY AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: LAKE																										
10.00	LAKE TRAFFORD AB CORKSCREW SWA	77	39	78	3.2	1.1	49	2	7.2	85	2.8	-1	18	8.2	84	2.14	0.09	18	178	16	1.8	-1.0	1	250	0	60
* WATER BODY TYPE: OCEAN																										
1.00	GULF OF MEXICO AB LOSTMANS RIV	1	70	70	8.1	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	0.35	0.02	-1	-1	-1	-1.0	-1.0	-1	-1	-1	36
2.00	GULF OF MEXICO AB TURKEY RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	GULF OF MEXICO AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	GULF OF MEXICO AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	GULF OF MEXICO AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	GULF OF MEXICO AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	GULF OF MEXICO AB	2	73	73	8.5	-1.0	15	-1	10.0	158	4.1	-1	-1	8.2	-1	-1.00	-1.00	-1	-1	50	-1.0	-1.0	-1	-1	-1	-1
8.00	GULF OF MEXICO AB	10	73	73	5.5	-1.0	13	-1	8.9	137	3.2	-1	-1	8.2	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
19.00	MARCO ISLAND AB GULF OF MEXICO	198	75	75	-1.0	-1.0	-1	-1	5.6	75	-1.0	-1	6	-1.0	-1	0.44	0.09	-1	-1	-1	-1.0	-1.0	-1	-1	-1	39
* WATER BODY TYPE: STREAM																										
3.50	TAMIAMI CANAL AB GULF OF MEXIC	324	50	87	1.4	0.8	32	3	3.7	44	1.8	-1	12	7.5	149	0.94	0.02	-1	20500	80	-1.0	-1.0	-1	352	50	39
4.55	HENDERSON CREEK CANAL AB TAMIA	109	69	87	1.3	-1.0	63	2	5.2	64	2.0	-1	15	7.7	250	1.12	0.01	-1	32	8	-1.0	-1.0	-1	923	3	30
5.50	GORDON RIVER AB GOLDEN GATE CA	144	70	80	2.7	1.0	46	-1	2.6	32	1.7	-1	12	7.5	210	1.00	0.05	-1	294	40	-1.0	-1.0	-1	1143	0	45
6.40	COCOHATCHEE RIVER AB COCOHATCH	20	71	75	3.7	-1.0	30	-1	5.4	69	2.1	-1	-1	7.8	-1	0.95	0.04	-1	30	6	-1.0	-1.0	-1	47325	-1	42
6.50	COCOHATCHEE RIVER CANAL AB HEN	64	65	79	25.0	-1.0	39	-1	6.0	84	-1.0	-1	-1	8.1	229	0.53	0.02	-1	-1	-1	-1.0	-1.0	-1	550	3	45
6.80	IMPERIAL RIVER AB OAK CREEK	36	73	80	1.5	-1.0	78	5	4.2	50	1.7	50	14	7.2	154	1.11	0.03	-1	430	260	-1.0	-1.0	-1	550	-1	40
6.85	OAK CREEK AB	12	73	75	2.0	-1.0	58	-1	1.6	21	1.6	-1	-1	7.5	-1	-1.00	0.07	-1	48	68	-1.0	-1.0	-1	655	-1	42
7.15	ESTERO RIVER AB ESTERO BAY	21	62	76	2.0	-1.0	40	-1	4.8	57	2.1	76	12	7.3	146	1.66	0.03	-1	185	123	-1.0	-1.0	-1	6250	-1	40
7.18	HENDRY CREEK AB MULLOCK CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.00	FAKA UNION CANAL AB FAKA UNION	216	70	87	1.0	1.4	30	2	7.3	80	1.7	-1	11	7.5	225	0.86	0.02	-1	40	10	-1.0	-1.0	-1	628	77	26
12.00	GOLDEN GATE CANAL AB CORK SWAM	276	65	87	5.2	-1.0	85	3	5.2	62	1.2	-1	17	7.5	250	0.94	0.02	-1	250	15	-1.0	-1.0	-1	650	177	39
13.00	BARRON RIVER CANAL AB CHOKOLOS	189	66	87	1.5	-1.0	49	3	3.8	45	-1.0	-1	12	7.2	230	0.99	0.02	-1	17250	84	-1.0	-1.0	-1	529	78	35
14.00	HUSTON RIVER AB HUSTON BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
15.00	CHATHAM RIVER AB HUSTON BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.00	CHARLEY CREEK AB CHEVELIER BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03090204 EVERGLADES

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HONP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
* WATER BODY TYPE: ESTUARY																	
2.50	FERGUSON RIVER ABOVE TAMIAMI CANAL	YES	GOOD	----	--..	..--	...		.	....	....	....	..				
4.50	ROOKERY BAY ABOVE HENDERSON CREEK	YES	FAIR	----	---.	..--	-..		.	....	....	....	..		* *	* **	ROOKERY BAY IS A NATIONAL ESTUARINE SANCTUARY AND AN OFW. SEPTIC TANKS FROM TRAILER PARKS ON HENDERSON CREEK POLLUTE THE BAY.
5.40	NAPLES BAY ABOVE GULF OF MEXICO	PARTIAL	POOR	----	----	.---	-..	* *	.	....	....	....	..	*	*	**	SECCHI DEPTH AND NUTRIENT PROBLEM IN NAPLES BAY. 1983 WLA STUDY OF NAPLES WWTP.DRAINS LARGE AREA ON SEPTIC TANKS AND NAPLES AIRPORT. CAUSE OF FISHKILL UNDETERMINED.
7.10	ESTERO BAY ABOVE GULF OF MEXICO	YES	GOOD	--*-	---*	----	--.	*	0	..-.	.00.	.*..	0.		* *		DIVERSITY INDICIES REFLECTED GOOD OVERALL WATER QUALITY.
17.00	HUSTON BAY ABOVE	UNKNOWN	UNKN	....	....	....	.										
18.00	CHEVELIER BAY ABOVE	UNKNOWN	UNKN	....	....	....	.										
* WATER BODY TYPE: LAKE																	
10.00	LAKE TRAFFORD ABOVE CORKSCREW SWAMP	PARTIAL	FAIR	*---	---.	--*-	-..	***	.	....	....	....	..		* *	*	WATER QUALITY DECLINE DUE TO BOD AND TN CONCENTRATIONS.
* WATER BODY TYPE: OCEAN																	
1.00	GULF OF MEXICO ABOVE LOSTMANS RIVER	UNKNOWN	GOOD	-.-.	....	..--	...		.	....	....	....	..				
2.00	GULF OF MEXICO ABOVE TURKEY RIVER	YES	UNKN	....	....	....	.								*	*	SOME NEGATIVE IMPACTS FROM INPUT FROM BARRON CANAL.
3.00	GULF OF MEXICO ABOVE	UNKNOWN	UNKN	....	....	....	.								*	*	NEGATIVELY AFFECTED FROM INPUT FROM FAKA UNION CANAL (AGRICULTURAL RUNOFF).
4.00	GULF OF MEXICO ABOVE	YES	UNKN	....	....	....	.								*		NATIONAL ESTUARINE SANCTUARY. MARINA CONSTRUCTION AT GOODLAND.
5.00	GULF OF MEXICO ABOVE	UNKNOWN	UNKN	....	....	....	.	* *							* *	***	TYPICAL URBAN/RESIDENTIAL IMPACT ON BAY (UNTREATED STREET RUNOFF, FERTILIZERS, SILTATION). HEAVILY AFFECTED BY CITY OF NAPLES (URBAN) AND GOLDEN GATE (RESIDENTIAL) RUNOFF.
6.00	GULF OF MEXICO ABOVE	YES	UNKN	....	....	....	.								* *	**	BERMED FROM INLAND AREAS BY THE PELICAN BAY DEVELOPMENT.
7.00	GULF OF MEXICO ABOVE	UNKNOWN	UNKN	.--.	*--.	....	-..		.	....	....	....	..				
8.00	GULF OF MEXICO ABOVE	UNKNOWN	UNKN	.--.	--..	....	-..		.	....	....	....	..				
19.00	MARCO ISLAND ABOVE GULF OF MEXICO	YES	GOOD	-...	--..	..--	...	* *	.	....	....	....	..		**	*	WATER WAYS CREATED FOR LARGE PERCENTAGE OF HOMESITES. RAPID DEVELOPMENT OCCURRING. FINGERFILL AND SEAWALLS EXISTING ON A VERY LARGE SCALE.
* WATER BODY TYPE: STREAM																	
3.50	TAMIAMI CANAL ABOVE GULF OF MEXICO	PARTIAL	GOOD	----	-**.	....	--.	***	-	..0.	.-00	..*0	-.		*	*	DO PROBLEM, WHICH IS NATURAL FOR CANALS IN THIS AREA.ROADSIDE CANAL SYSTEM ADJACENT TO FARM FIELDS.
4.55	HENDERSON CREEK CANAL ABOVE TAMIAMI	YES	GOOD	----	---.	....	-..	***	0	..00	.00.	..00	0.		* *	* **	GOLDEN GATE CITY ON SEPTIC TANKS.DEVELOPMENT IS RAPIDLY OCCURRING. D.O. STRATIFICATION DUE TO RUNOFF FROM HIGHWAY, URBAN AND INDUSTRIAL AREAS.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
5.50	GORDON RIVER ABOVE GOLDEN GATE CANA	PARTIAL	FAIR	----	-*-.	....	--.		.	....	....	....	..	*	* *	**	DO PROBLEM WORSE FROM 1970-1980. 1983 WLA STUDY OF NAPLES WWTP.SEDIMENTATION EVIDENT.RECEIVES GOLDEN GATE CANAL DISCHARGE.
6.40	COCOHATCHEE RIVER ABOVE COCOHATCHEE	YES	GOOD	---*	---.	....	-.-	*	.	....	....	....	..		* *	* *	
6.50	COCOHATCHEE RIVER CANAL ABOVE HENDE	YES	FAIR	--*-	.-..	....	...	**	.	....	....	....	..		* *	****	ADJACENT TO WWTP PERC. PONDS. RECEIVES OUTFALL FROM 2 LARGE FARMS.
6.80	IMPERIAL RIVER ABOVE OAK CREEK	YES	GOOD	----	---.	....	-..		.	....	....	....	..		* *	**	QUICKLY URBANIZING DRAINAGE BASIN WITH LIMITED WATER MANAGEMENT.
6.85	OAK CREEK ABOVE	YES	GOOD	----	-*-.	....	-..		.	....	....	....	..		*	*	
7.15	ESTERO RIVER ABOVE ESTERO BAY	YES	GOOD	---*	---.	....	-..		.	....	....	....	..				
7.18	HENDRY CREEK ABOVE MULLOCK CREEK	PARTIAL	UNKN	....	....	....	.	*							* *	**	
11.00	FAKA UNION CANAL ABOVE FAKA UNION B	YES	GOOD	----	---.	....	-..	***	0	..0-	.00.	..00	0.		*	*	FAKA UNION BAY THREATENED FROM EXCESS OF FRESHWATER RUNOFF. DRAINS LARGE WETLAND HAMMOCK TRANSITION AREA, CHOKED WITH AQUATIC WEEDS. MANY UNPAVED ROADS.
12.00	GOLDEN GATE CANAL ABOVE CORK SWAMP/	YES	GOOD	----	---.	....	-..	**	0	..0-	.00.	..00	0.		* **	**	DIRT ROAD RUNOFF. DRAINS LARGE RESIDENTIAL AREA WHICH IS SOLELY ON SEPTIC TANKS SITUATED IN HIGH WATER TABLE AREA.
13.00	BARRON RIVER CANAL ABOVE CHOKOLOSKE	YES	GOOD	----	-**.	....	-..	***	0	..00	.00.	..00	0.		* *	*	BACTERIA FROM NATURAL WETLANDS SOURCES, DRAINS SWAMP AREA. THIS IS THE MAJOR AGRICULTURAL DRAINAGE CANAL IN COLLIER COUNTY.
14.00	HUSTON RIVER ABOVE HUSTON BAY	UNKNOWN	UNKN	....	....	....	.										
15.00	CHATHAM RIVER ABOVE HUSTON BAY	UNKNOWN	UNKN	....	....	....	.										
16.00	CHARLEY CREEK ABOVE CHEVELIER BAY	UNKNOWN	UNKN	....	....	....	.										

FISHEATING CREEK BASIN

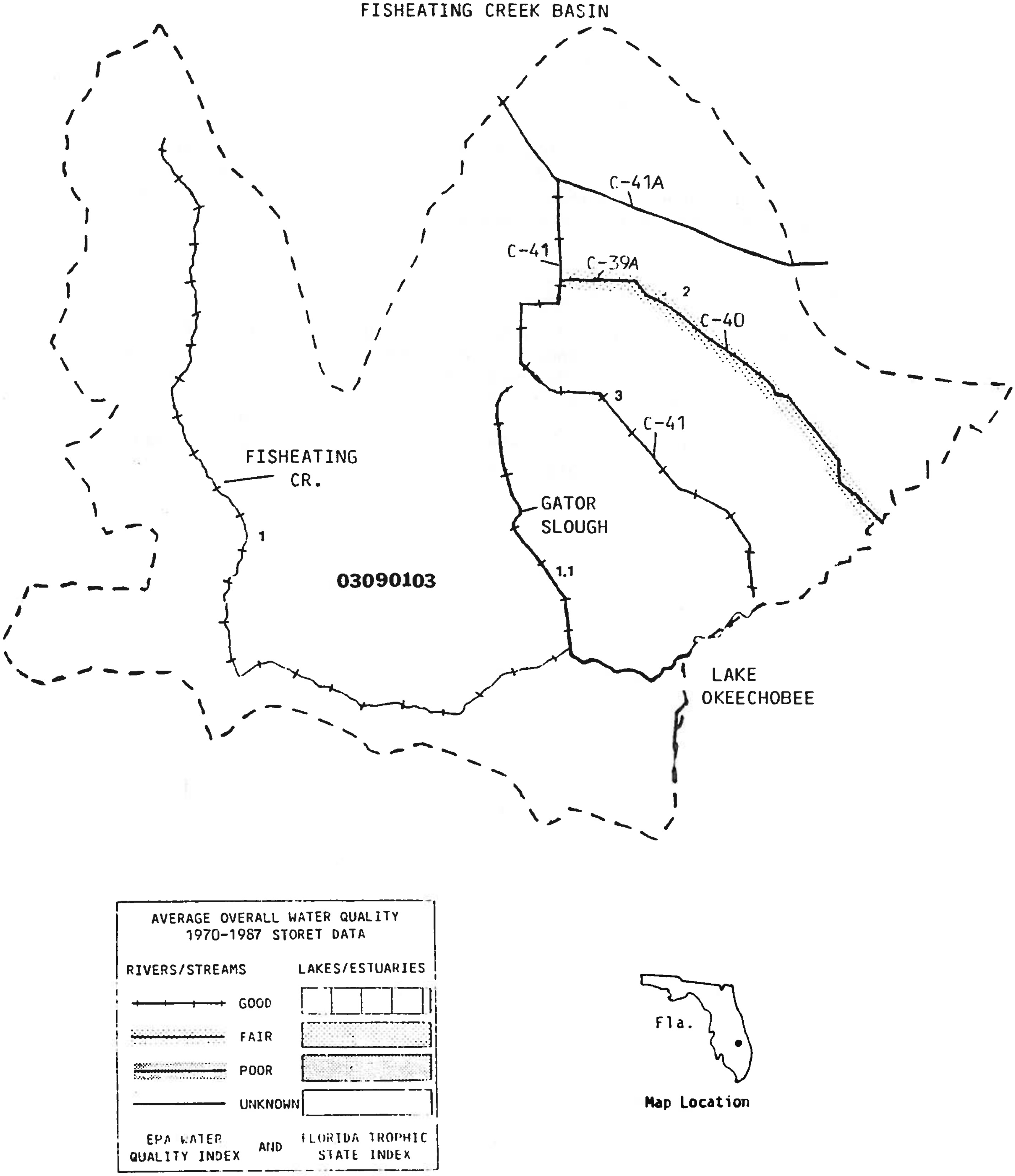
General Description of the Basin

The Fisheating Creek basin forms part of the northwest drainage basin of Lake Okeechobee. The basin drains 918 square miles and is primarily rangeland and agriculture. Fisheating Creek has an average flow of 260 cfs 16 miles above its mouth at Lake Okeechobee. There are no major urban areas in the basin.

Specific Water Quality Problems and Pollution Sources

Fisheating Creek itself has generally good water quality with several remote segments used for recreational canoeing and swimming. However, runoff from the rangeland and agricultural areas provides the creek and canals with a fairly high rate of nutrient loading. Stream areas which have low flow velocities, such as the upper part of Fisheating Creek and the canals, usually have low dissolved oxygen levels. This basin is one of the many sources of nutrient loading to Lake Okeechobee.

FISHEATING CREEK BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	SAMPLE RECORD BEG YR	SAMPLE RECORD END YR	WATER CLARITY TURB	WATER CLARITY SD	WATER CLARITY COLOR	TSS	DISSOLVED OXYGEN DO	DISSOLVED OXYGEN %SAT	OXYGEN DEMAND BOD	OXYGEN DEMAND COD	OXYGEN DEMAND TOC	PH ALKALINITY PH	PH ALKALINITY ALK	TROPHIC STATUS NITRO	TROPHIC STATUS PHOS	TROPHIC STATUS CHLA	COLIFORM TOTAL	COLIFORM FECL	SPECIES DIVERSITY NAT	SPECIES DIVERSITY ART	SPECIES DIVERSITY BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03090103 FISHEATING CR																										
* WATER BODY TYPE: STREAM																										
1.00	FISHEATING CREEK AB GATOR SLOU	406	61	87	1.5	0.7	190	2	5.6	65	1.7	68	27	6.7	16	1.59	0.21	5	240	35	3.5	3.3	18	210	40	42
1.10	GATOR SLOUGH AB FISHEATING CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
2.00	INDIAN PRAIRIE CANAL/C-39,40 A	416	54	84	5.5	1.2	100	-1	4.6	56	1.3	-1	17	6.7	33	1.51	0.11	-1	-1	-1	-1.0	-1.0	-1	261	0	50
3.00	HARNEY POND CANAL/C-41 AB CANA	792	54	87	3.2	0.5	159	4	5.5	65	3.1	-1	26	6.8	36	1.78	0.14	-1	-1	-1	-1.0	-1.0	-1	295	0	47

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03090103 FISHEATING CR																	
* WATER BODY TYPE: STREAM																	
1.00	FISHEATING CREEK ABOVE GATOR SLOUGH	YES	GOOD	----	----	....	--.	*	0	.00.	*00.	00*-	00	*		*	LOW BIOTIC INDEX.
1.10	GATOR SLOUGH ABOVE FISHEATING CREEK	YES	UNKN	....	....	....	.	*						*		*	NEEDS ADEQUATE AGRICULTURAL CONTROLS.
2.00	INDIAN PRAIRIE CANAL/C-39,40 ABOVE	PARTIAL	FAIR	----	--..	....	-..	*	.	....	....	....	..	*		*	SLIGHT DO PROBLEM. CAUSED BY NATURAL CONDITIONS AND AGRICULTURAL RUNOFF.LOW FLA. BIOTIC INDEX, WATERBODY UNABLE TO FILTER POLLUTANTS.
3.00	HARNEY POND CANAL/C-41 ABOVE CANAL-	YES	FAIR	----	--..	....	-..	**	-	..0-	.00.	..00	0.	*		*	SLIGHT PROBLEM CAUSED BY NATURAL CONDITIONS AND AGRICULTURAL RUNOFF.LOW FLA. BIOTIC INDEX.

FLORIDA KEYS BASIN

General Description of the Basin

The Florida Keys located south of Miami consist of a 100 mile string of islands which extend in a west-southwesterly direction. To the north and west, the Keys are open to the Gulf of Mexico; to the south and east is the Atlantic Ocean. The islands form many lagoons, predominantly on the Gulf side. Due to the rapid flushing of the lagoons, water quality is generally similar to open sea water. There are no reaches of freshwater on the islands. The three main urban areas, Key Largo, Marathon and Key West are connected by one long highway, U.S. 1, and a chain of small municipalities.

Specific Water Quality Problems and Pollution Sources

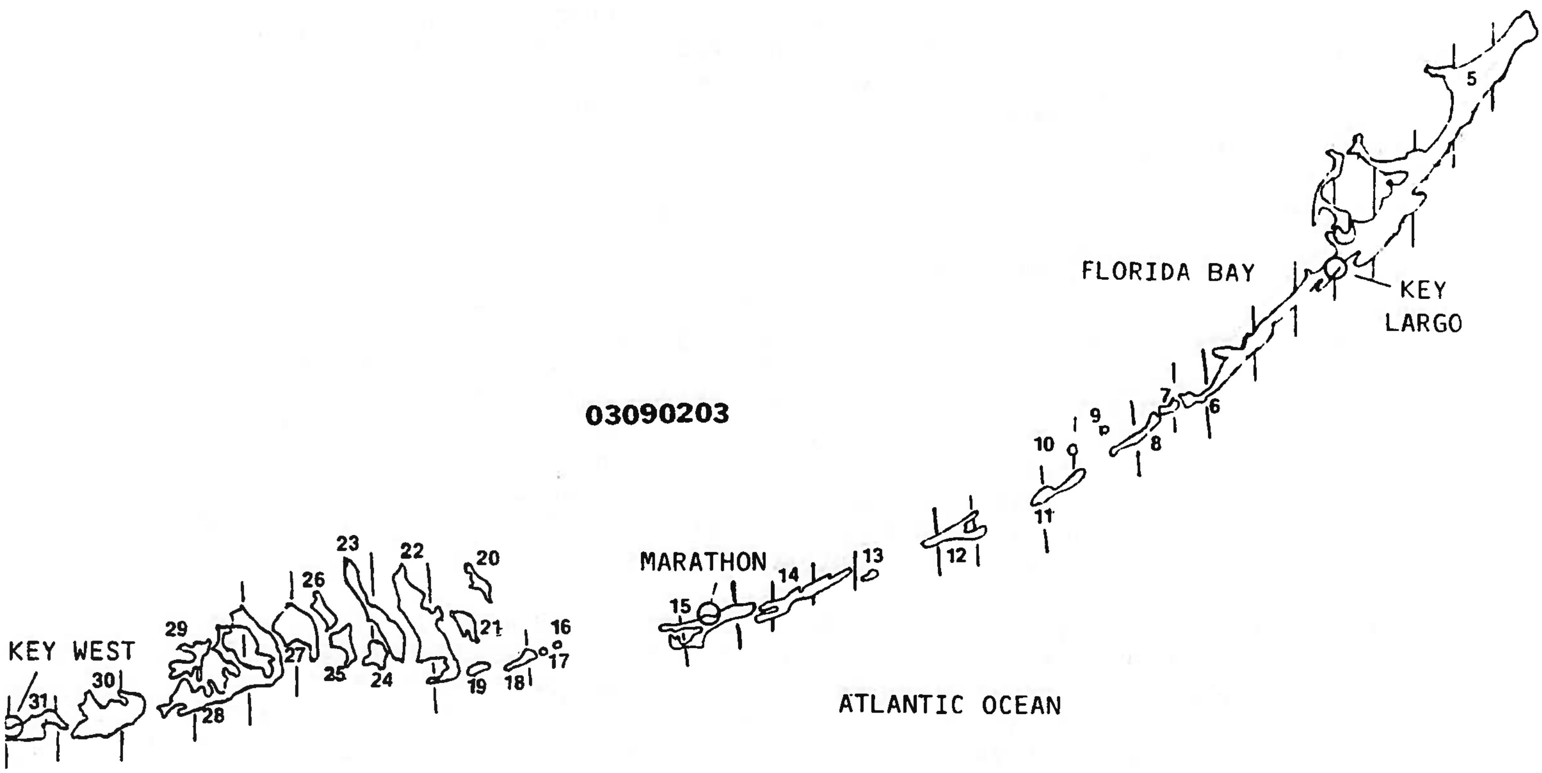
Due to the rapid flushing and dilution, the island waters open to the ocean or gulf have excellent water quality and are designated as Outstanding Florida Waters, and as such are afforded legal protection against any significant change in water quality. However, many of the manmade canals and marinas exhibit some water quality problems which are exacerbated by decreased flushing. A recent 205(j) study in the Keys indicated that the major sources of pollution were: 1) WWTPs and "package plants" discharging to poorly flushed manmade waterways; 2) thousands of septic tanks and cesspools; 3) marinas with no pump out facilities; 4) fish processors; and 5) stormwater runoff especially into the canals.

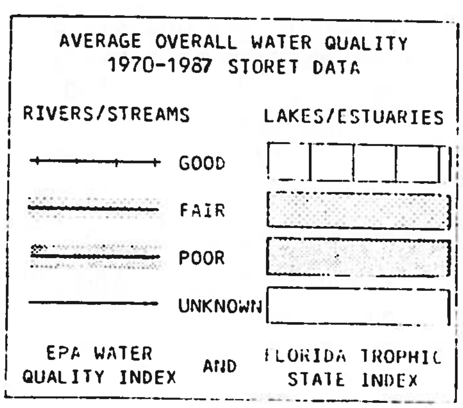
Due to the extremely high quality oceanic waters surrounding the Keys, water quality standards are rarely violated. However, the report points out the importance of superior water quality to the coral reefs and other resources of the Keys and warns against treating pollution with dilution. It cannot be overemphasized that even minute changes in nutrient, turbidity or toxics concentrations can have a severe impact on the highly fragile coral reef communities. Therefore, the report questions the validity of using only water quality standards and criteria to assess the need for treatment facilities in this special area.

In general, the report suggests that the need for wastewater treatment facilities and collection systems be based on population density, and that the facilities should discharge to the unconsolidated, non-potable aquifer that underlies the Keys. Several of the existing WWTPs have already shifted from surface water discharge to underground injection. It was also recommended that the waters and particularly the sediments be more carefully monitored to detect any "significant change" in quality.

Another major pollution source is associated with sewage disposal in the urbanized areas, particularly Key Largo and Key West. The City of Key West discharges raw sewage directly to the ocean. The district DER and EPA have issued a consent order to the city requiring that a treatment facility be built. The current deadline for operation is March 1989. A bioassay of the present discharge conducted in 1986 indicated toxicity. There are also localized problems (high fecal coliform counts, sediment contamination with metals, oils, etc.) in some of the marinas and the port at Key West.

FLORIDA KEYS BASIN





WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
** USGS HYDROLOGIC UNIT: 03090203 FLORIDA KEYS																										
* WATER BODY TYPE: OCEAN																										
5.00	KEY LARGO AB FLORIDA BAY	78	85	85	-1.0	2.1	-1	-1	6.8	73	-1.0	-1	-1	7.8	-1	0.54	0.02	-1	-1	1	-1.0	-1.0	-1	54300	-1	35
6.00	PLANTATION KEY AB FLORIDA BAY	3	85	85	-1.0	0.9	-1	-1	9.3	98	-1.0	-1	-1	8.0	-1	0.45	0.01	-1	-1	1	-1.0	-1.0	-1	55000	-1	44
7.00	WINDLEY KEY AB FLORIDA BAY	3	85	85	-1.0	1.5	-1	-1	8.0	74	-1.0	-1	-1	7.8	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	57500	-1	-1
8.00	UPPER MATECUMBE KEY AB FLORIDA	6	85	85	-1.0	1.6	-1	-1	8.1	75	-1.0	-1	-1	7.8	-1	0.30	0.01	-1	-1	-1	-1.0	-1.0	-1	58450	-1	36
9.00	SHELL KEY AB FLORIDA BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
10.00	LIGNUMVITAE KEY AB FLORIDA BAY	16	76	80	2.0	2.1	-1	-1	5.3	70	1.3	-1	17	8.3	-1	0.18	0.01	-1	-1	-1	5.1	-1.0	-1	52000	-1	27
11.00	LOWER MATECUMBE KEY AB FLORIDA	4	85	85	-1.0	1.2	-1	-1	-1.0	-1	-1.0	-1	-1	7.9	-1	0.38	0.01	-1	-1	-1	-1.0	-1.0	-1	51500	-1	39
12.00	LONG KEY AB FLORIDA BAY	3	85	85	-1.0	2.7	-1	-1	-1.0	-1	-1.0	-1	-1	7.7	-1	0.40	0.02	-1	-1	-1	-1.0	-1.0	-1	47500	-1	34
13.00	DUCK KEY AB FLORIDA BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	GRASSY KEY/MARATHON SHORES AB	372	84	85	-1.0	2.1	-1	5	6.6	73	0.8	-1	-1	7.7	-1	0.48	0.02	3	5	3	-1.0	-1.0	-1	55700	-1	39
15.00	MARATHON KEY\VACA KEY AB FLORI	13	85	85	-1.0	3.0	-1	-1	6.9	75	-1.0	-1	-1	7.8	-1	0.29	0.02	-1	-1	2	-1.0	-1.0	-1	54000	-1	27
16.00	PACET KEY AB FLORIDA BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	OHIO KEY AB FLORIDA BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	BAHIA HONDA KEY AB FLORIDA BAY	20	82	85	-1.0	6.3	-1	-1	6.5	73	-1.0	-1	2	7.9	-1	0.32	0.03	-1	-1	-1	4.0	-1.0	-1	55500	-1	15
19.00	SPANISH HARBOR KEYS AB FLORIDA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
20.00	LITTLE PINE KEY AB GULF OF MEX	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	NONAME KEY AB GULF OF MEXICO	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
22.00	BIG PINE KEY AB GULF OF MEXICO	10	85	85	-1.0	2.0	-1	-1	7.5	77	-1.0	-1	-1	7.7	-1	0.37	0.01	-1	-1	-1	-1.0	-1.0	-1	56500	-1	33
23.00	TORCH KEYS(BIG,MIDDLE,LITTLE)	41	82	87	2.2	2.0	2	3	6.4	74	-1.0	-1	3	7.9	-1	0.64	0.02	0	2	1	5.5	-1.0	-1	54450	-1	28
24.00	SUMMERLAND KEY COVE AB GULF OF	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
25.00	SUMMERLAND KEY AB GULF OF MEXI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
26.00	KNOCKEMDOWN KEYS AB GULF OF ME	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
27.00	CUDJOE KEY AB GULF OF MEXICO	7	85	85	-1.0	1.5	-1	-1	7.5	83	-1.0	-1	-1	7.8	-1	0.29	0.02	-1	-1	-1	-1.0	-1.0	-1	57300	-1	38
28.00	SUGARLOAF KEY AB GULF OF MEXIC	11	85	85	-1.0	1.3	-1	-1	7.9	86	-1.0	-1	-1	7.8	-1	0.30	0.01	-1	-1	-1	-1.0	-1.0	-1	58275	-1	41
29.00	SADDLEBUNCH KEY AB GULF OF MEX	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
30.00	BOCA CHICA KEY AB GULF OF MEXI	3	85	85	-1.0	2.3	-1	-1	6.8	76	-1.0	-1	-1	7.9	-1	0.18	0.00	-1	-1	-1	-1.0	-1.0	-1	56300	-1	29
31.00	KEY WEST AB GULF OF MEXICO	35	83	85	-1.0	3.2	-1	-1	6.8	77	-1.0	-1	-1	7.8	-1	0.25	0.01	-1	-1	98	5.2	-1.0	-1	53700	-1	26

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
** USGS HYDROLOGIC UNIT CODE: 03090203 FLORIDA KEYS																	
* WATER BODY TYPE: OCEAN																	
5.00	KEY LARGO ABOVE FLORIDA BAY	YES	GOOD	--.-	.--.	.---	--*		.	....	....	....	..		*	*	LARGE MARINA AND CANAL SYSTEM.
6.00	PLANTATION KEY ABOVE FLORIDA BAY	YES	GOOD	--.-	.--.	.---	-..		.	....	....	....	..			*	
7.00	WINDLEY KEY ABOVE FLORIDA BAY	YES	UNKN	.-.-	.-..	.-..	...		.	....	....	....	..		*		
8.00	UPPER MATECUMBE KEY ABOVE FLORIDA B	YES	GOOD	--.-	.-..	.---	-..		.	....	....	....	..				
9.00	SHELL KEY ABOVE FLORIDA BAY	UNKNOWN	UNKN	....	....	....	.										
10.00	LIGNUMVITAE KEY ABOVE FLORIDA BAY	YES	GOOD	----	--.-	.---	...		.	....	....	....	..				
11.00	LOWER MATECUMBE KEY ABOVE FLORIDA K	YES	GOOD	--.-	....	.---	...		.	....	....	....	..				
12.00	LONG KEY ABOVE FLORIDA BAY	YES	GOOD	--.-	....	.---	-..		.	....	....	....	..			*	LANDFILL VERY CLOSE TO WATER.
13.00	DUCK KEY ABOVE FLORIDA BAY	UNKNOWN	UNKN	....	....	....	.										
14.00	GRASSY KEY/MARATHON SHORES ABOVE FL	YES	GOOD	----	---.	----	--.		.	....	....	....	..				
15.00	MARATHON KEY\VACA KEY ABOVE FLORIDA	YES	GOOD	--.-	.--.	.---	-.*		.	....	....	....	..		*	*	MULTIPLE SOURCES DISCHARGING INTO CANAL SYSTEMS.
16.00	PACET KEY ABOVE FLORIDA BAY	UNKNOWN	UNKN	....	....	....	.										
17.00	OHIO KEY ABOVE FLORIDA BAY	UNKNOWN	UNKN	....	....	....	.										
18.00	BAHIA HONDA KEY ABOVE FLORIDA BAY	YES	GOOD	--.-	--.-	.---	-..		.	....	....	....	..				
19.00	SPANISH HARBOR KEYS ABOVE FLORIDA B	UNKNOWN	UNKN	....	....	....	.										
20.00	LITTLE PINE KEY ABOVE GULF OF MEXIC	UNKNOWN	UNKN	....	....	....	.										
21.00	NONAME KEY ABOVE GULF OF MEXICO	UNKNOWN	UNKN	....	....	....	.										
22.00	BIG PINE KEY ABOVE GULF OF MEXICO	YES	GOOD	--.-	.-..	.---	-..		.	....	....	....	..				
23.00	TORCH KEYS(BIG,MIDDLE,LITTLE) * ABO	YES	GOOD	----	----	----	--.		0	..--	.00.	...*	0.				
24.00	SUMMERLAND KEY COVE ABOVE GULF OF M	UNKNOWN	UNKN	....	....	....	.										
25.00	SUMMERLAND KEY ABOVE GULF OF MEXICO	UNKNOWN	UNKN	....	....	....	.										
26.00	KNOCKEMDOWN KEYS ABOVE GULF OF MEXI	UNKNOWN	UNKN	....	....	....	.										
27.00	CUDJOE KEY ABOVE GULF OF MEXICO	YES	GOOD	--.-	.-..	.---	-..		.	....	....	....	..				
28.00	SUGARLOAF KEY ABOVE GULF OF MEXICO	YES	GOOD	--.-	.-..	.---	-..		.	....	....	....	..				
29.00	SADDLEBUNCH KEY ABOVE GULF OF MEXIC	UNKNOWN	UNKN	....	....	....	.										
30.00	BOCA CHICA KEY ABOVE GULF OF MEXICO	YES	GOOD	--.-	.-..	.---	-..		.	....	....	....	..				
31.00	KEY WEST ABOVE GULF OF MEXICO	YES	GOOD	--.-	.---	.---	-.-		.	....	....	....	..		*	***	VERY URBANIZED. POLLUTION FROM LIVEABOARD BOATS IN LARGE BOAT BASIN.

HILLSBOROUGH RIVER BASIN

General Description of the Basin

Originating in the Green Swamp in Pasco County, the Hillsborough River flows southwesterly for approximately 55 miles through coastal lowlands and discharges to the northern end of Hillsborough Bay. It drains approximately 650 square miles and has flow rates near the mouth averaging 400 cfs. A portion of the Hillsborough River is used as a potable water supply by the City of Tampa. The drinking water reservoir is located approximately 10 miles upstream of Hillsborough Bay. Land use in the Hillsborough River Basin is mostly agricultural and rangeland and about 20% urban. The primary sources of pollution in the upper river are urban and agricultural runoff, treated wastewater effluent, and industrial discharges from citrus processing plants. There are also some phosphate and rock mining activities in the upper basin. Surface runoff is the major pollution source in the lower river.

Specific Water Quality Problems and Pollution Sources

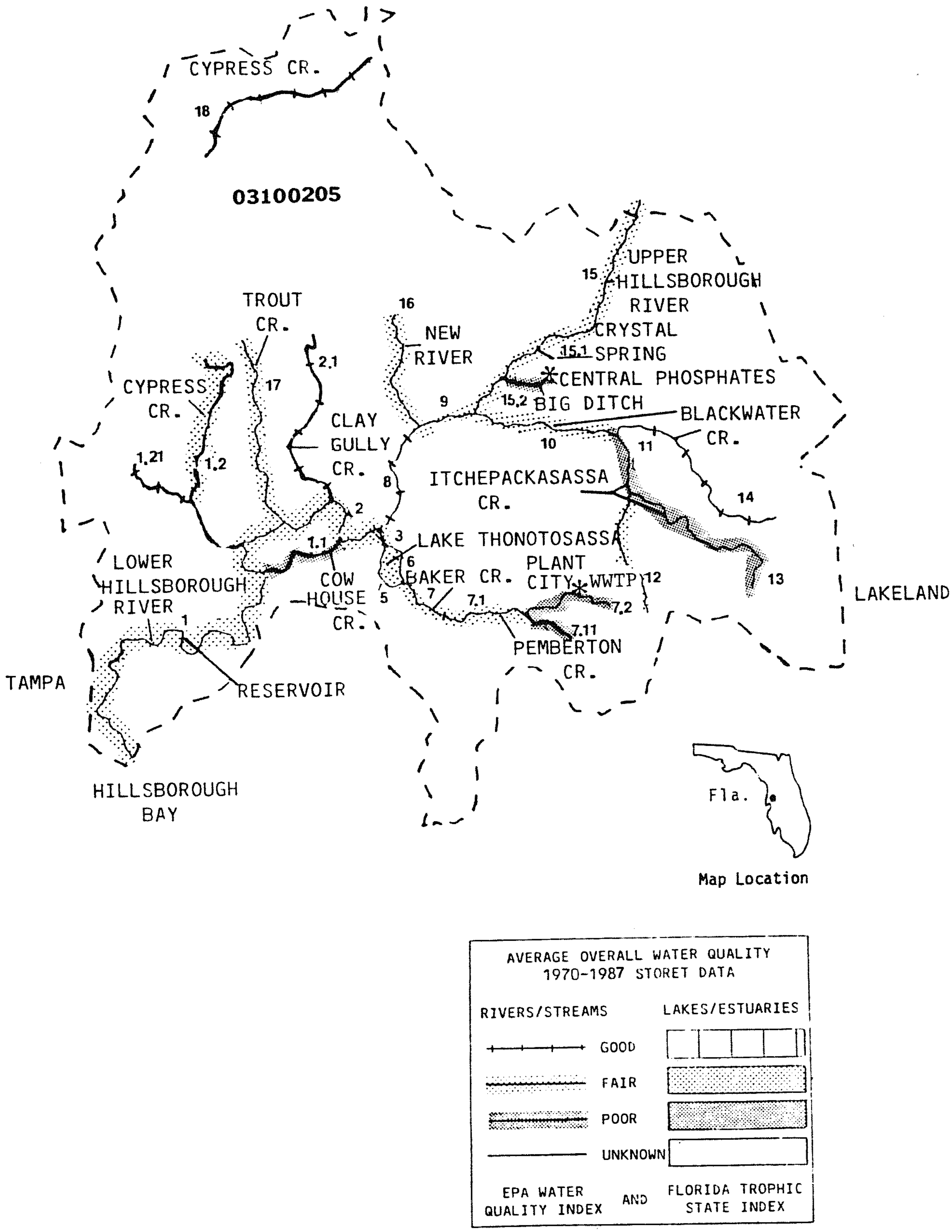
There are several problem reaches in this drainage system. The area is probably naturally low in DO as exhibited by Cypress Creek, a stream which has relatively few pollution sources. The upper reach of the Hillsborough River is another example of this detrital based, swampy drainage type of river system, although nutrient levels are slightly higher than expected. There is also some cattle grazing in the area which is at least partially responsible for elevated coliform counts.

A major area of pollution problems is in the Blackwater Creek basin. Itchepackasassa Creek (a tributary of Blackwater Creek) has historically had high nutrient, bacteria and toxics levels as well as low DO concentrations and several fishkills. The source of the problem may be discharge from two citrus processing companies and runoff from a pesticide packing and shipping company. The latter company has undergone significant cleanup and drainage improvements. There are several other small dischargers to the creek as well as runoff from rangeland and dairy operations. Blackwater Creek, itself, also suffers from range and agricultural runoff. Despite these problems, the upgrades at the pesticide company and at other industrial dischargers has lead to optimistic reports of water quality in this basin. Just upstream of the confluence with Blackwater Creek, the Hillsborough River also receives some phosphate and sulfate polluted waters from Big Ditch.

Lake Thonotosassa and its tributaries (Baker Creek and Pemberton Creek) receive excessive nutrient loads resulting in algae blooms and eutrophic conditions in the lake. There were also high bacterial counts in the creeks. Dischargers into this system include phosphate processors and two WWTPs. The Plant City WWTP which also receives industrial wastes, has historically used water hyacinths for nutrient removal. Periodically, a disturbance in the treatment plant kills off the water hyacinths so that effluent nutrient concentrations are fairly high.

The lower section of Hillsborough River up to the reservoir, although affected by the upstream pollution sources, has improved water quality. At the reservoir, however, nutrient loads from upstream Hillsborough River and recreational use have caused severe aquatic weed problems and some algae bloom problems. These problems are of particular concern as the reservoir is a drinking water source of Tampa. Below the dam, the river is tidal and receives a large sediment load with metals and other typical runoff pollutants from Tampa. Portions of the river bed are under investigation to determine if they need to be restored.

HILLSBOROUGH RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03100205 HILLSBOROUGH R																										
* WATER BODY TYPE: LAKE																										
5.00	LAKE THONOTOSASSA AB FLINT CRE	489	69	79	7.0	0.7	33	16	7.4	76	4.3	24	17	7.9	53	0.39	0.73	40	450	100	-1.0	-1.0	-1	185	-1	60
6.00	LAKE THONOTOSASSA AB FLINT CRE	765	65	85	7.0	0.6	57	16	9.3	107	5.0	24	17	8.6	65	1.42	0.67	48	500	200	1.8	-1.0	9	298	-1	67
* WATER BODY TYPE: STREAM																										
1.00	HILLSBOROUGH RIVER AB NORTH TA	2195	23	86	2.0	1.1	36	6	5.0	57	1.4	1	12	7.4	102	0.93	0.36	7	1100	250	2.9	-1.0	-1	335	479	45
1.10	COW HOUSE CREEK AB HILLSBOROUG	77	66	80	4.5	-1.0	18	-1	4.7	53	1.4	-1	14	6.8	107	1.37	0.43	-1	-1	-1	-1.0	-1.0	-1	300	2	45
1.20	CYPRESS CREEK AB HILLSBOROUGH	339	64	86	2.0	0.9	138	4	3.4	38	1.3	-1	28	7.0	84	1.24	0.07	2	1050	200	-1.0	-1.0	-1	206	28	58
1.21	THIRTEENMILE RUN AB CYPRESS CR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
2.00	HILLSBOROUGH RIVER AB TROUT CR	229	67	86	1.6	0.6	30	4	5.8	66	1.2	-1	12	7.2	130	1.12	0.39	4	1050	200	-1.0	-1.0	-1	333	135	38
2.10	CLAY GULLY CREEK AB HILLSBOROU	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	FLINT CREEK AB HILLSBOROUGH RI	230	7	86	8.0	-1.0	56	-1	7.8	89	4.2	-1	18	8.0	65	1.62	0.71	-1	-1	-1	-1.0	-1.0	-1	270	14	50
7.00	BAKER CREEK AB LAKE THONOTOSAS	375	59	85	5.0	0.6	49	8	5.5	65	1.6	32	12	7.5	121	1.06	0.60	4	2850	550	-1.0	-1.0	-1	362	21	52
7.10	PEMBERTON CREEK AB BAKER CREEK	119	66	86	5.0	-1.0	240	25	7.5	88	1.3	54	15	7.5	-1	2.31	0.59	-1	33000	700	-1.0	-1.0	-1	440	44	45
7.11	SPARTMAN BRANCH AB MILL CREEK	5	70	70	150.0	-1.0	200	-1	-1.0	-1	-1.0	-1	220	7.0	14	0.83	0.59	-1	-1	-1	-1.0	-1.0	-1	88	16	77
7.20	MILL CREEK AB PEMBERTON CREEK	6	70	70	125.0	-1.0	70	-1	-1.0	-1	-1.0	-1	117	8.0	130	2.37	1.49	-1	-1	-1	-1.0	-1.0	-1	343	25	70
8.00	HILLSBOROUGH RIVER AB FLINT CR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	HILLSBOROUGH RIVER AB NEW RIVE	566	56	86	2.0	0.9	22	3	6.3	73	0.9	36	6	7.6	120	1.64	0.47	4	850	200	-1.0	-1.0	-1	317	101	37
10.00	BLACKWATER CREEK AB HILLSBOROU	222	59	86	4.0	0.4	68	5	6.0	67	1.6	31	19	7.3	106	1.86	1.55	6	3675	600	2.5	-1.0	17	350	20	56
11.00	ITCHEPACKASASSA CREEK AB BLACK	34	76	77	5.7	0.3	58	13	7.0	86	4.2	-1	15	7.7	-1	1.31	2.23	11	20225	700	-1.0	-1.0	-1	635	-1	58
12.00	CANAL E AB ITCHEPACKASSA CR	9	72	74	-1.0	-1.0	-1	0	1.8	20	1.0	13	-1	7.8	197	1.65	-1.00	-1	11250	1000	-1.0	-1.0	-1	-1	-1	52
13.00	ITCHEPACKASASSA CREEK AB CANAL	251	62	83	-1.0	-1.0	100	15	5.4	68	4.5	31	-1	7.5	122	3.18	2.21	-1	34000	3450	-1.0	-1.0	-1	299	4	63
14.00	BLACKWATER CREEK AB ITCHEPACK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
15.00	HILLSBOROUGH RIVER AB BLACKWAT	345	59	86	2.1	1.0	34	2	5.1	58	1.1	24	7	7.6	140	1.45	0.43	1	1150	200	3.3	3.0	22	317	14	43
15.10	CRYSTAL SPRINGS AB HILLSBOROUG	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
15.20	BIG DITCH AB HILLSBOROUGH RIVE	150	65	77	15.0	-1.0	-1	30	5.7	65	3.2	50	8	7.5	166	1.90	2.30	-1	19000	800	-1.0	-1.0	-1	709	4	62
16.00	NEW RIVER AB HILLSBOROUGH RIVE	67	51	79	4.5	0.3	128	11	6.2	70	2.1	-1	15	6.9	-1	0.60	0.18	5	9750	2025	-1.0	-1.0	-1	119	4	52
17.00	TROUT CREEK AB HILLSBOROUGH RI	149	64	83	1.5	0.6	72	6	4.6	50	1.4	-1	21	7.0	-1	0.32	0.07	3	2350	250	-1.0	-1.0	-1	247	4	57
18.00	CYPRESS CREEK AB BEE TREE BRAN	173	64	86	3.0	-1.0	120	-1	4.5	52	0.9	-1	23	6.7	53	1.15	0.12	-1	1062	76	-1.0	-1.0	-1	163	6	48

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03100205 HILLSBOROUGH R																	
* WATER BODY TYPE: LAKE																	
5.00	LAKE THONOTOSASSA ABOVE FLINT CREEK	PARTIAL	FAIR	*---	*--.	---*	-..	***	.	....	....	....	..		* *		PLANT CITY AND I-4 RUNOFF.
6.00	LAKE THONOTOSASSA ABOVE FLINT CREEK	PARTIAL	FAIR	*---	*---	**-*	**.	***	-	000-	-00-	0-00	0.	**	* *		LAKE HAS EUTROPHICATION PROBLEMS DUE TO POINT SOURCES OF PHOSPHATE PROCESSORS AND WWTP EFFLUENT. SOME PROBLEMS IN THE PLANT CITY WWTP ARE BEING CORRECTED.SOME RECENT IMPROVEMENT IN BOD,TOC,AND SECCHI DEPTH ARE NOTED.
* WATER BODY TYPE: STREAM																	
1.00	HILLSBOROUGH RIVER ABOVE NORTH TAMP	PARTIAL	FAIR	----	----	....	-**	***	0	0-00	0000	000-	0.		* **	****	THIS SECTION OF THE HILLSBOROUGH RIVER FORMS TAMPA'S DRINKING WATER RESERVOIR AND HAS SLIGHTLY REDUCED DO VALUES. 1985 BIOASSAY OF TAMPA WTP ALUM DISCHARGE, WHICH DISCHARGES DOWNSTREAM OF THE DAM.
1.10	COW HOUSE CREEK ABOVE HILLSBOROUGH	NO	FAIR	----	--..	....	--.		.	....	....	....	..				SLUGGISH NATURE OF STREAM AND URBAN RUNOFF CAUSE NUTRIENT PROBLEMS.
1.20	CYPRESS CREEK ABOVE HILLSBOROUGH RI	PARTIAL	FAIR	----	**-.	....	--.	*	*	00*.	0000	0000	0+		*	*	NATURAL DO PROBLEM DUE TO SWAMPY CONDITIONS.
1.21	THIRTEENMILE RUN ABOVE CYPRESS CREE	YES	UNKN	....	....	....	.										
2.00	HILLSBOROUGH RIVER ABOVE TROUT CREE	PARTIAL	GOOD	----	---.	....	--.	***	*	..0.	0000	..00	0.	*	* **	****	ELEVATED NUTRIENT LEVELS ARE CAUSED BY UPSTREAM POINT SOURCES.
2.10	CLAY GULLY CREEK ABOVE HILLSBOROUGH	YES	UNKN	....	....	....	.										
3.00	FLINT CREEK ABOVE HILLSBOROUGH RIVE	PARTIAL	FAIR	*---	*-..	....	--.		0	....	.000	..00	00	*	*		PROBLEMS ASSOCIATED WITH BOD AND NUTRIENTS BELOW LAKE THONOTOSASSA.PLANT CITY AND I-4 RUNOFF CONTRIBUTE TO THE PROBLEM.
7.00	BAKER CREEK ABOVE LAKE THONOTOSASSA	PARTIAL	FAIR	*---	--*.	....	-..	***	0	000.	0000	.000	0.	**	* *		BIOASSAY STUDY IN 1981. BACTERIA AND NUTRIENT PROBLEM DUE TO THE WWTP AND INDUSTRIAL DISCHARGES.PLANT CITY AND HIGHWAY RUNOFF CONTRIBUTE TO THE PROBLEM.
7.10	PEMBERTON CREEK ABOVE BAKER CREEK	PARTIAL	FAIR	*-*-	--*.	....	-.*	***	0	....	.000	..00	0.	**	* *		BACTERIA AND NUTRIENT PROBLEMS DUE TO SEWAGE AND INDUSTRIAL DISCHARGES. WORSE NUTRIENT LEVELS FROM 1981-1984.PLANT CITY AND HIGHWAY RUNOFF ARE CONTRIBUTING FACTORS.
7.11	SPARTMAN BRANCH ABOVE MILL CREEK	NO	POOR	*-*-	*...	....	-..	*	.	....	....	....	..		*		OLD DATA (1970) INDICATES POOR QUALITY.PLANT CITY AND HIGHWAY RUNOFFARE CONTRBUTING FACTORS.
7.20	MILL CREEK ABOVE PEMBERTON CREEK	NO	POOR	*-*-	*...	....	-.-	*	.	....	....	....	..		*		OLD DATA (1970) INDICATES POOR QUALITY.PLANT CITY AND I-4 RUNOFF ARE CONTRIBUTING FACTORS.
8.00	HILLSBOROUGH RIVER ABOVE FLINT CREE	YES	UNKN	....	....	....	.	***							**	***	IMPOUNDED FOR CLASS I USE.
9.00	HILLSBOROUGH RIVER ABOVE NEW RIVER	PARTIAL	GOOD	*---	---.	....	--.	***	0	000.	0000	.000	00	*	**	***	ELEVATED NUTRIENT LEVELS FROM PHOSPHATE MINING AND RUNOFF FROM CATTLE GRAZING AREA.IMPOUNDED FOR CLASS I USE.
10.00	BLACKWATER CREEK ABOVE HILLSBOROUGH	PARTIAL	FAIR	*---	--*-	....	--.	*	0	....	.000	..00	00	*	**	**	SEE REACH 11.00
11.00	ITCHEPACKASASSA CREEK ABOVE BLACKWA	NO	FAIR	*---	*-*.	....	-..		.	....	....	....	..	*			INDUSTRY AND PERIODIC DEFORESTATION MAY CONTRIBUTE TO HIGH NUTRIENT,AND BACTERIA LEVELS WHICH MAY CAUSE FISH KILLS . PESTICIDE CO. REQUIRED TO IMPROVE DRAINAGE SYS. AND IS BEING MONITORED CLOSELY.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
12.00	CANAL E ABOVE ITCHEPACKASSA CR	PARTIAL	FAIR	---.	-**.	....	-..		.	....	....	....	..				
13.00	ITCHEPACKASASSA CREEK ABOVE CANAL E	NO	POOR	*---	*-*.	....	-.-	*	.	....	....	....	..	*	**	**	SEE REACH 11.00
14.00	BLACKWATER CREEK ABOVE ITCHEPACK CR	YES	UNKN	....	....	....	.	*							**	**	
15.00	HILLSBOROUGH RIVER ABOVE BLACKWATER	PARTIAL	GOOD	----	----	....	--.	***	0	....	.000	....	00	*	**	***	ELEVATED NUTRIENT AND BACTERIA VALUES CAUSED BY PHOSPHATE MINING ACTIVITIES AND RUNOFF FROM CATTLE GRAZING AREA.
15.10	CRYSTAL SPRINGS ABOVE HILLSBOROUGH	UNKNOWN	UNKN	....	....	....	.										
15.20	BIG DITCH ABOVE HILLSBOROUGH RIVER	NO	POOR	*-*-	--*.	....	-..		.	....	....	....	..	*			HIGH NUTRIENT LEVELS FROM PHOSPHATE MINING OPERATION, NO RECENT DATA.
16.00	NEW RIVER ABOVE HILLSBOROUGH RIVER	PARTIAL	FAIR	----	--*.	....	-..		.	....	....	....	..				ELEVATED VALUES OF BACTERIA, NUTRIENTS, NO DATA SINCE 1979.
17.00	TROUT CREEK ABOVE HILLSBOROUGH RIVE	PARTIAL	FAIR	----	---.	....	-..		.	....	....	....	..				REDUCED DO FROM SOME UNKNOWN SOURCE.HIGH COLOR POSSIBLY NATURAL.
18.00	CYPRESS CREEK ABOVE BEE TREE BRANCH	YES	FAIR	----	---.	....	--.		0	....	.000	..0*	00				NATURALLY LOW DO.

SOUTH INDIAN RIVER BASIN

General Description of the Basin

The South Indian River basin extends from Sebastian Inlet south to Stuart. The drainage basin covers 670 square miles and is dominated by agricultural land and rangeland. It is also becoming rapidly urbanized. The South Indian River is linked to the Atlantic by Sebastian Inlet, Ft. Pierce Inlet and St. Lucie Inlet. There are 2 major urban areas in the basin, Vero Beach and Ft. Pierce, and development is continuing along the coast.

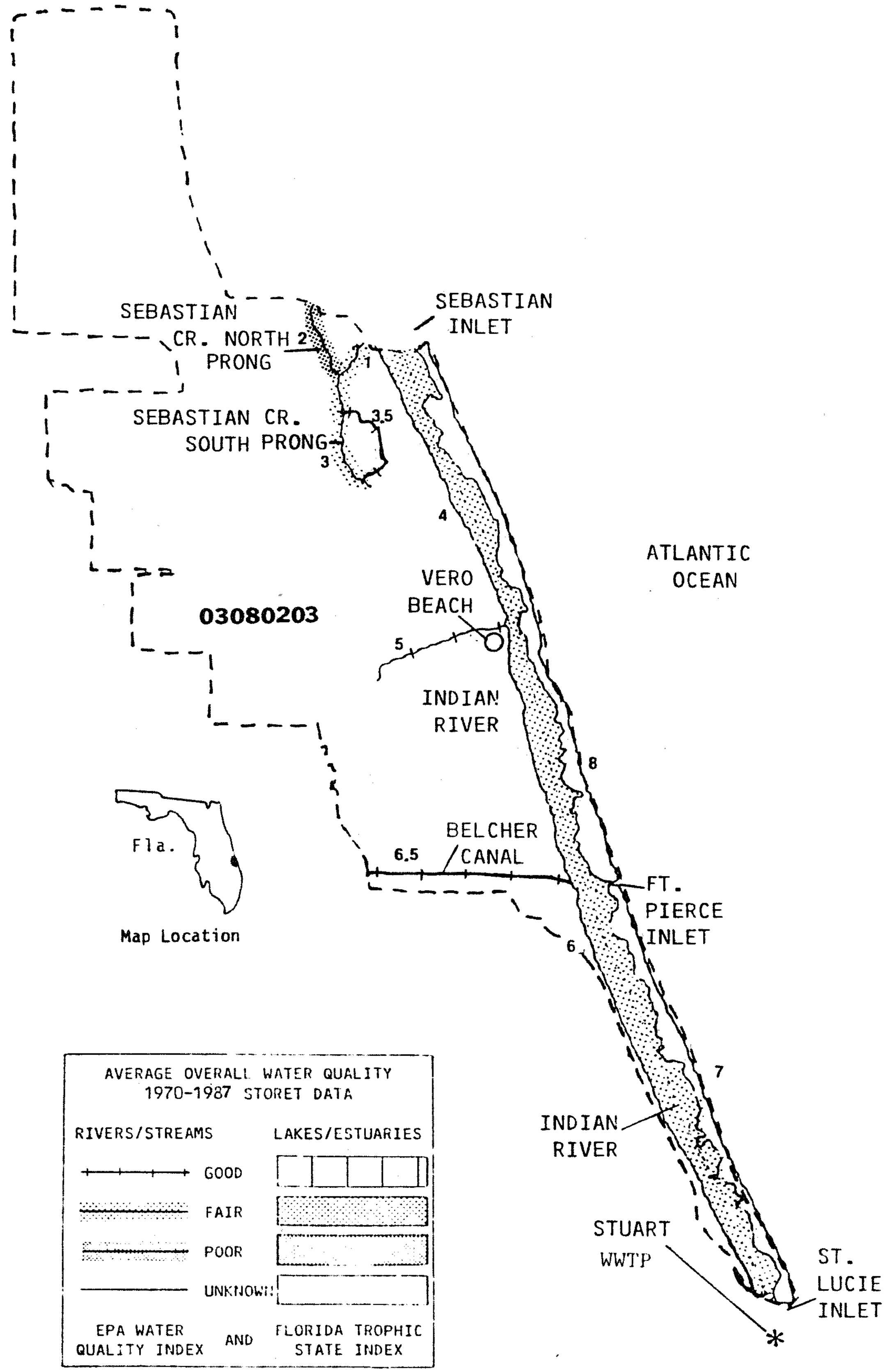
Specific Water Quality Problems and Pollution Sources

Much of the Indian River is classified as shellfish harvesting waters, and as Outstanding Florida Waters. Although water quality has been generally good especially south of Ft. Pierce Inlet, there is growing concern over the degrading condition of the estuary. There are increasing trends in turbidity, phosphorus and chlorophyll which together with some limited dredging has lead to a decline in the grass beds. In the southern portion of the basin, the main source of pollution is urban runoff from water front developments. At Ft. Pierce the estuary also receives water from Belcher Canal, which drains orange groves, rangeland and urban areas. Ft. Pierce operates a WWTP which discharges to the western edge of Ft. Pierce inlet.

Pollution problems, mainly in the form of increased nutrients, are encountered in the Vero Beach area of Indian River. Effluents from three WWTPs, urban runoff, and drainage from septic tanks along with restricted flushing (inlets are 15 miles north and south of the city) account for these higher levels.

The poorest water quality in the basin is found in Sebastian Creek. The South Prong of Sebastian Creek has a history of elevated bacteria and BOD loads from dairy farm and rangeland runoff. The North Prong, which runs through a more urbanized area in addition to the dairy farms, has high bacteria and low DO concentrations.

INDIAN RIVER SOUTH



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03080203 INDIAN RIV (S)																										
* WATER BODY TYPE: ESTUARY																										
4.00	SOUTH INDIAN RIVER AB SEBASTIA	253	66	87	7.5	0.8	10	18	6.1	74	1.7	-1	30	7.8	130	0.69	0.11	13	210	14	-1.0	-1.0	-1	40800	0	55
6.00	SOUTH INDIAN RIVER AB MAIN CAN	939	72	85	4.8	1.0	10	22	6.8	75	1.2	-1	5	7.9	128	0.45	0.08	1	10	14	-1.0	-1.0	-1	45200	-1	51
7.00	HUTCHINSON ISLAND AB ST LUCIE	972	73	85	4.2	1.1	5	-1	6.6	76	-1.0	-1	4	7.9	122	0.34	0.06	5	216	8	3.8	-1.0	-1	49300	-1	46
8.00	PRANG ISLAND AB FT PIERCE INLE	733	72	87	5.6	0.9	15	16	6.3	74	1.7	39	4	7.8	130	0.61	0.10	10	8	10	3.3	-1.0	-1	42850	63	53
* WATER BODY TYPE: STREAM																										
1.00	SEBASTIAN CREEK AB ICWW	1005	71	87	4.2	0.8	55	10	5.8	70	2.1	-1	-1	7.6	137	1.07	0.10	11	220	120	-1.0	-1.0	-1	26813	0	49
2.00	SEBASTIAN CREEK, NORTH PRONG A	66	80	86	5.0	0.7	58	7	4.1	47	1.9	-1	-1	7.4	167	1.23	0.16	10	-1	1290	-1.0	-1.0	-1	21095	-1	57
3.00	SEBASTIAN CREEK, SOUTH PRONG A	245	54	86	5.4	0.6	75	9	4.7	56	1.8	-1	-1	7.2	155	1.25	0.21	7	1760	1125	-1.0	-1.0	-1	1535	27	56
3.50	SEBASTIAN CREEK DRAIN CANAL AB	57	71	83	6.1	-1.0	110	-1	5.8	67	-1.0	-1	-1	7.1	168	0.93	0.13	-1	180	310	-1.0	-1.0	-1	648	-1	50
5.00	MAIN CANAL AB ICWW	272	54	87	4.0	0.6	55	9	5.8	70	1.1	-1	14	7.4	169	1.19	0.16	1	-1	95	-1.0	-1.0	-1	1348	30	40
6.50	BELCHER CANAL/CANAL-25 AB CANA	109	79	87	1.9	0.8	82	2	5.0	58	-1.0	-1	14	7.2	156	1.29	0.08	-1	-1	35	-1.0	-1.0	-1	1092	-1	39

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS WQ	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03080203 INDIAN RIV (S)																	
* WATER BODY TYPE: ESTUARY																	
4.00	SOUTH INDIAN RIVER ABOVE SEBASTIAN	PARTIAL	FAIR	----	*--.	----	-..	* *	0	.0-0	*00.	.000	0.	*	* **	***	POORLY FLUSHED ESTUARY AROUND VERO BEACH.INLET DREDGING,POOR SEPTIC TANK DRAINAGE CONDITIONS,BOAT TRAFFIC,RUNOFF FROM ROADS AND URBAN AREAS,A 7000 GPD DISCHARGE INTO STORMWATER DRAINAGE SYSTEM DIRECTLY INTO INDIAN RIVER LAGOON EXASCERBATES PROBLEM.
6.00	SOUTH INDIAN RIVER ABOVE MAIN CANAL	PARTIAL	FAIR	--*-	---.	----	-..		-	.0-.	.-0.	.---	-.	*	* **	*	VERY CLOSE TO GOOD WATER QUALITY. FORT PIERCE AREA HAS GOOD QUALITY DUE TO FLUSHING FROM INLET. SOME WWTP AND NONPOINT SOURCE INPUT. WLA AND RECENT BIOASSAY STUDIES.
7.00	HUTCHINSON ISLAND ABOVE ST LUCIE RI	PARTIAL	GOOD	----	----	----	-..		-	.0-.	.-0.	.0-0	-.		* **	*	BORDERING ON GOOD QUALITY.FORT PIERCE AREA HAS GOOD QUALITY DUE TO FLUSHING FROM INLET.SOME WWTP AND NONPOINT SOURCE INPUT.WLA AND RECENT BIOASSAY STUDIES.RESTRICTIONS ON SHELLFISHING.
8.00	PRANG ISLAND ABOVE FT PIERCE INLET	PARTIAL	FAIR	----	----	----	--.	***	0	.0-*	*-0.	*00*	0.	*	* **	***	EAST SIDE OF INDIAN RIVER AT VERO BEACH (REACH 4.00). POSSIBLE RECENT IMPROVEMENT.RESTRICTIONS ON SHELLFISHING.INLET DREDGING,DIRT ROAD RUNOFF,DIRECT DISCHARGES FROM RELIEF CANALS,SEPTIC TANKS,RAPID DEVELOPMENT,AND CITRUS GROVES CONTRIBUTE TO PROBLEM.
* WATER BODY TYPE: STREAM																	
1.00	SEBASTIAN CREEK ABOVE ICWW	PARTIAL	FAIR	---*	---.	....	-..		0	..0-	*00.	0***	0.	*	* **	*	UPSTREAM POLLUTION FROM DAIRY FARMS AND SMALL WWTP'S.EXTENSIVE DAIRY FARMING IN HEADWATERS. RAPID HOUSING GROWTH ALONG RIVER. AIRPORT RUNOFF, DAIRY AND RANCH OPERATIONS CONTRIBUTE TO THE PROBLEM.
2.00	SEBASTIAN CREEK, NORTH PRONG ABOVE	NO	FAIR	---*	--*.	....	-..		0	...*	.00.	.0.0	0.	*	* **	*	BACTERIA AND DO PROBLEMS DUE TO URBAN RUNOFF AND SMALL WWTP'S.AIRPORT RUNOFF, DAIRY AND RANCH OPERATIONS ALSO CONTRIBUTE TO THE PROBLEM.
3.00	SEBASTIAN CREEK, SOUTH PRONG ABOVE	PARTIAL	FAIR	---*	--*.	....	-..	*	0	.-0*	*00.	0*00	0.		* **	*	BACTERIA AND BOD LOADING FROM DAIRY FARMS AND RANGELAND RUNOFF.RUNOFF FROM A NEARBY AIRPORT ALSO CONTRIBUTES TO THE PROBLEM.
3.50	SEBASTIAN CREEK DRAIN CANAL ABOVE S	YES	FAIR	----	.--.	....	...		0	.00.	.00.	..*0	0.		* **	*	AIRPORT RUNOFF, DAIRY AND RANCH OPERATIONS IN CLOSE PROXIMITY TO THECREEK.
5.00	MAIN CANAL ABOVE ICWW	YES	GOOD	---*	---.	....	---	***	0	..*.	.00.	..0*	+0		* **	*	DIRECT DISCHARGE FROM MAIN RELIEF CANAL TO INDIAN RIVER LAGOON AT VERO BEACH.
6.50	BELCHER CANAL/CANAL-25 ABOVE CANAL-	YES	GOOD	----	---.	....	-..		-	.00-	.00.	.-00	0.				

KISSIMMEE RIVER BASIN

General Description of the Basin

The Kissimmee River has its origin in the southern outskirts of the highly urbanized Orlando area. Shingle Creek and Reedy Creek are the two principle streams making up the headwaters. They are sluggish streams that travel through swampy land and eventually empty into Lake Tohopekaliga and Cypress Lake, respectively. From here, the river flows southward through two more lakes and 150 miles of lowlands consisting of rangeland, agricultural lands and wetlands to its mouth at Lake Okeechobee. The Arbuckle Creek drainage area which forms the western edge of the Kissimmee River basin begins near Reedy Lake in Polk County. This lake drains via Reedy Creek and Livingston Creek to Lake Arbuckle and from Lake Arbuckle to Lake Istokpoga. The Istokpoga Canal connects Lake Istokpoga to the Kissimmee River 35 miles above Lake Okeechobee.

Specific Water Quality Problems and Pollution Sources

The two most notable water quality problem areas in the Kissimmee River basin are Lake Tohopekaliga (Toho) and the lower Kissimmee River. Lake Toho has eutrophication problems due to excessive nutrient loads, while the lower Kissimmee River water quality problems are associated with the Army Corps of Engineers channelization project.

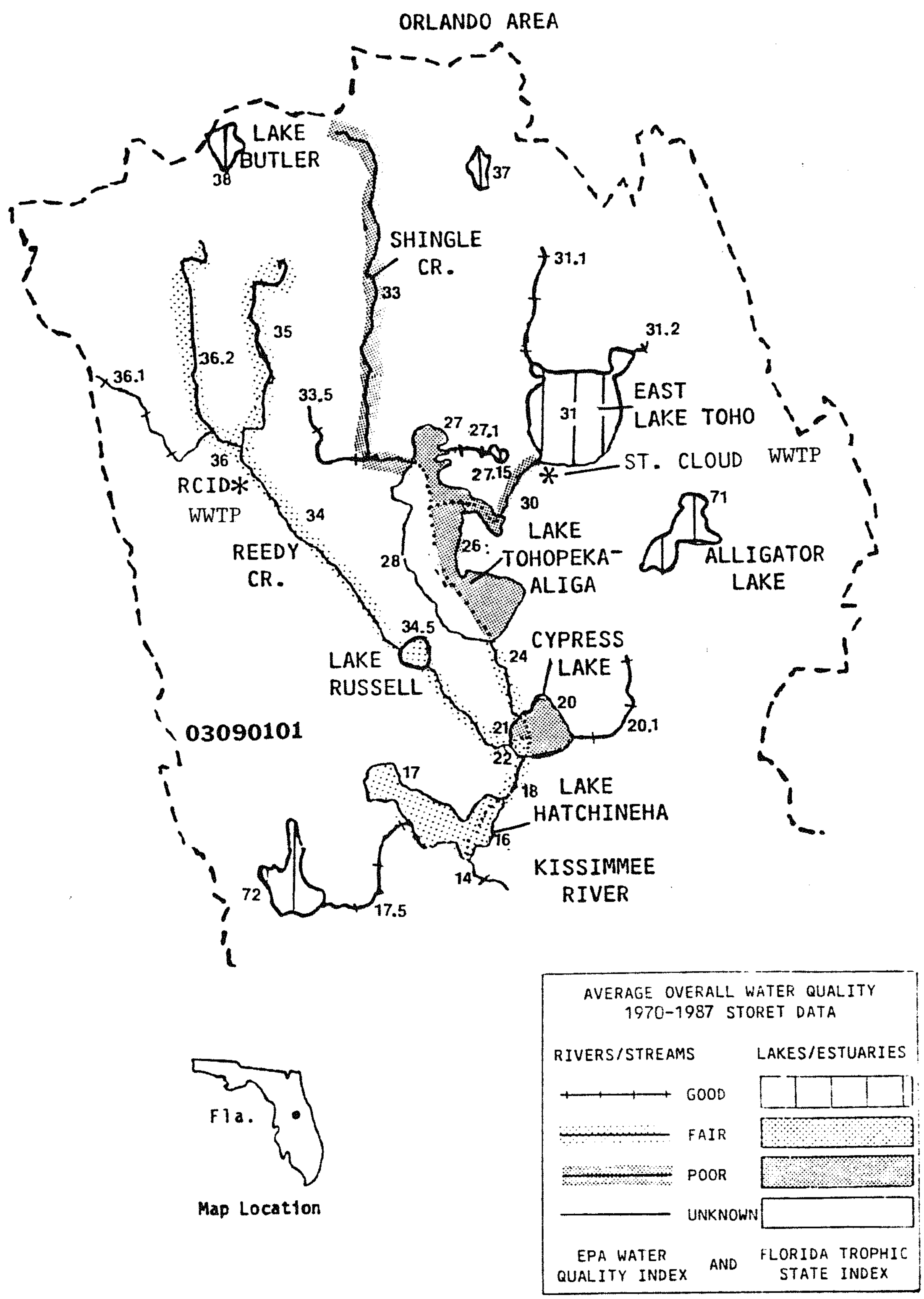
Lake Toho water quality degraded significantly in the 1970's due to an overload of nutrients originating primarily from WWTP discharge and nonpoint source urban and agricultural runoff. Two lake drawdown projects by the Florida Game and Fish Commission in the 1970's temporarily improved fishing in the lake; however, the continued excessive nutrient loading quickly negated the benefits of the lake drawdowns. In 1980, a governmental task force identified the sources of Lake Toho's water quality problems. Reduction of nutrient loads from point and nonpoint sources was advised. Some of the WWTPs pulled out the discharge and others reduced the phosphorus loads to the lake. In the last few years, Lake Toho has shown improvements in chlorophyll and phosphorus concentrations. The Lake Toho project continues to be a noteworthy news item as an example of a success story. Shingle Creek's flow is significantly reduced after the removal of WWTP discharge, but water quality should begin to improve.

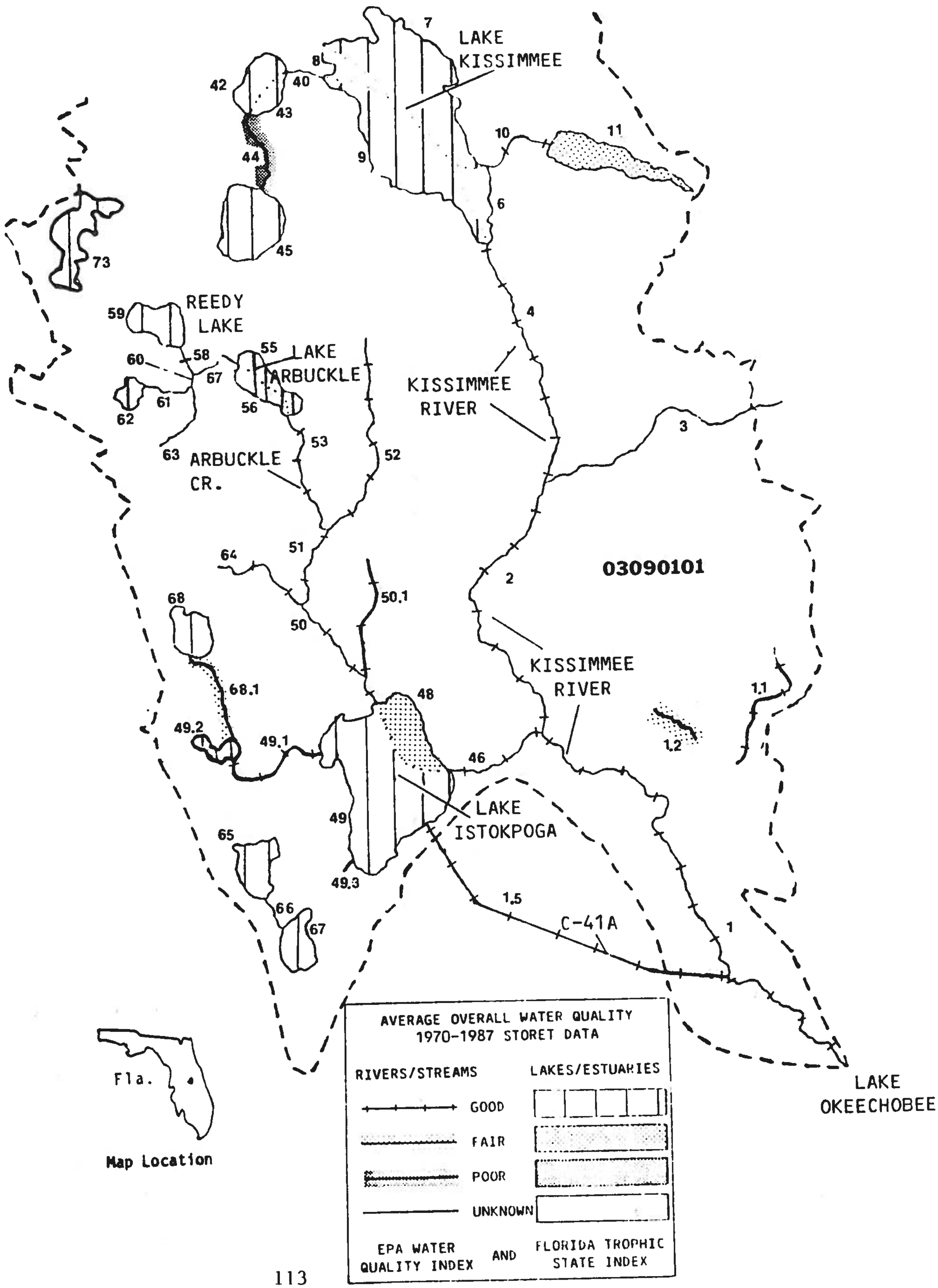
An offshoot of the Lake Toho problem was the location of a new discharge point for the City of Kissimmee WWTP, which had been going to the lake. An alternative discharge site is the Reedy Creek-Lake Russell watershed which is located west of Lake Toho. The Department has performed several studies on the adequacy of this system to assimilate treated wastewater. In 1985 the Department signed a consent order with five parties who need the continued use of Reedy Creek as a discharge system. Among these, the Reedy Creek Improvement District (Disneyworld), operating the largest volume plant, discharges through the wetlands. The Department will allow very low levels of nitrogen (2 mg/l) and phosphorus (0.5 mg/l) to be discharged to Reedy Creek, and is continuing to monitor the receiving waters for problems. The City of Kissimmee will be using land spreading of the effluent rather than Reedy Creek. Lake Russell, downstream of Reedy Creek, has shown an increase in phosphorus over the last several years, a trend which may be reversed due to the more stringent wasteload allocations.

Water quality suffers downstream of Lake Toho (Cypress Lake, Lake Hatchineha and, to some degree, Lake Kissimmee) due to the large nutrient loads leaving Lake Toho. These lakes are showing improving trends in several water quality parameters in recent years. The other lakes and reaches in the upper basin not affected by Reedy Creek, Shingle Creek or West Lake Tohopekaliga generally have very good water quality.

From Lake Kissimmee to Lake Okeechobee, the Kissimmee River is a deep channel with little or no floodplain as a result of a channelization project by the Army Corps of Engineers in the late 1960s. Although the water quality in the channel does not appear to be poor, nutrient and BOD rich runoff from agricultural and rangeland areas flows quickly through the river to Lake Okeechobee and exacerbates eutrophication problems there. Recently, efforts have been made to restore parts of the river to its natural, meandering course by strategically placing weirs in the channel. In those sections the river has returned to its original floodplain, effectively recreating the buffering wetlands. Land purchases, design plans and monitoring are being continued toward this restoration goal.

KISSIMMEE RIVER BASIN (UPPER)





LAKE KISSIMMEE
REEDY LAKE
LAKE ARBUCKLE
ARBUCKLE CR.
KISSIMMEE RIVER
KISSIMMEE RIVER
03090101
LAKE ISTOKPOGA
C-41A
LAKE OKEECHOBEE
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Map Location
AVERAGE OVERALL WATER QUALITY
1970-1987 STORET DATA
RIVERS/STREAMS
LAKES/ESTUARIES
GOOD
FAIR
POOR
UNKNOWN
EPA WATER QUALITY INDEX
AND
FLORIDA TROPHIC STATE INDEX

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03090101 KISSIMMEE RIVER																										
* WATER BODY TYPE: LAKE																										
6.00	LAKE KISSIMMEE AB KISSIMMEE RI	53	73	85	5.2	0.7	71	10	8.0	97	-1.0	-1	18	7.3	19	1.55	0.06	25	-1	-1	-1.0	-1.0	-1	127	-1	63
7.00	LAKE KISSIMMEE AB JACKSON CANA	189	69	87	5.9	0.8	53	9	8.4	95	2.0	44	19	7.7	20	1.38	0.05	26	65	-1	-1.0	-1.0	-1	134	-1	63
8.00	LAKE KISSIMMEE AB KISSIMMEE RI	89	73	80	-1.0	0.7	-1	-1	8.0	94	-1.0	-1	-1	7.2	14	1.60	0.10	16	-1	-1	-1.0	-1.0	-1	128	-1	56
9.00	LAKE KISSIMMEE AB ROSALIE CANA	594	70	87	5.3	0.7	70	8	7.7	90	2.3	42	19	7.2	24	1.44	0.06	24	93	25	2.1	-1.0	-1	137	-1	65
11.00	LAKE MARIAN AB JACKSON CANAL	281	59	85	7.7	0.7	44	18	8.1	94	2.7	-1	21	7.2	22	1.69	0.09	45	-1	-1	1.7	-1.0	-1	120	0	67
16.00	LAKE HATCHINEHA AB KISSIMMEE R	34	70	85	12.6	0.5	91	9	7.2	79	1.3	59	27	7.8	23	1.75	0.13	35	160	25	-1.0	-1.0	-1	142	-1	68
17.00	LAKE HATCHINEHA AB KISSIMMEE R	410	54	87	5.2	0.6	110	6	7.6	89	1.4	50	26	7.2	24	1.50	0.08	24	60	22	2.8	-1.0	-1	140	-1	67
20.00	CYPRESS LAKE AB HATCHINEHA CAN	356	54	87	8.0	0.5	72	14	8.6	97	1.6	54	22	7.6	17	1.69	0.14	56	95	5	-1.0	-1.0	-1	142	0	74
21.00	CYPRESS LAKE AB SOUTH PORT CAN	23	70	85	14.6	0.4	80	6	8.2	92	1.2	-1	30	7.2	39	1.72	0.22	57	110	0	-1.0	-1.0	-1	134	-1	80
22.00	CYPRESS LAKE AB REEDY CREEK	2	72	75	9.0	0.6	-1	-1	7.8	93	-1.0	-1	18	6.6	-1	1.54	0.06	5	-1	-1	-1.0	-1.0	-1	146	-1	59
26.00	LAKE TOHOPEKALIGA AB SOUTH POR	556	68	87	10.1	0.5	60	16	8.4	95	3.5	40	20	8.1	25	1.81	0.23	71	55	10	1.9	2.4	-1	168	0	74
27.00	LAKE TOHOPEKALIGA AB ST CLOUD	384	54	87	6.8	0.6	90	10	7.6	87	2.4	53	19	7.4	34	1.53	0.34	26	210	115	-1.0	-1.0	-1	180	0	66
27.15	FISH LAKE AB LAKE TOHOPEKALIGA	4	73	73	-1.0	-1.0	60	4	6.8	88	1.0	31	-1	7.3	17	1.18	0.15	-1	50	0	-1.0	-1.0	-1	203	-1	59
28.00	LAKE TOHOPEKALIGA AB SOUTH POR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
31.00	EAST LAKE TOHOPEKALIGA AB ST C	353	54	87	2.0	1.5	52	4	7.9	92	1.2	23	9	6.5	5	0.83	0.03	5	22	0	2.1	-1.0	-1	110	-1	48
34.50	LAKE RUSSELL AB REEDY CREEK	48	72	85	1.2	0.5	392	2	7.0	78	0.9	-1	48	6.7	20	2.00	0.08	1	340	5	2.3	2.3	-1	113	-1	54
37.00	LAKE CONWAY AB BOGGY CREEK	149	62	82	2.3	2.6	5	8	8.7	97	0.8	-1	5	7.7	45	0.58	0.02	8	50	0	-1.0	-1.0	-1	205	-1	38
38.00	LAKE BUTLER AB LAKE DOWN	235	62	85	1.0	2.7	15	2	8.2	93	0.6	-1	-1	6.1	2	0.45	0.01	1	106	40	3.7	-1.0	-1	236	-1	32
42.00	LAKE ROSALIE AB ROSALIE CANAL	177	59	82	7.0	1.2	65	-1	8.3	99	-1.0	-1	14	6.9	9	0.73	0.04	6	-1	-1	-1.0	-1.0	-1	96	-1	50
43.00	LAKE ROSALIE AB ROSALIE CANAL	1	72	72	-1.0	1.7	-1	-1	9.6	117	-1.0	-1	-1	7.3	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	105	-1	-1
45.00	LAKE WEOHYAKAPKA AB WEOHYAKAPK	210	58	83	5.5	1.0	39	-1	7.8	98	1.1	-1	12	6.8	11	0.64	0.05	6	110	0	2.6	-1.0	-1	89	-1	50
48.00	LAKE ISTOKPOGA AB ISTOKPOGA CA	49	72	81	3.0	0.6	160	-1	8.1	93	1.1	-1	-1	6.9	-1	1.75	0.06	-1	38	33	-1.0	-1.0	-1	110	-1	58
49.00	LAKE ISTOKPOGA AB ISTOKPOGA CA	307	65	87	4.0	0.6	100	12	7.6	92	1.1	250	16	6.9	9	1.23	0.06	12	31	13	2.8	3.5	6	115	-1	56
49.20	LAKE JOSEPHINE AB JACKSON CREE	135	47	86	4.0	0.8	80	10	8.5	101	2.0	-1	17	6.4	2	0.77	0.06	15	33	4	-1.0	-1.0	1	76	-1	56
55.00	LAKE ARBUCKLE AB ARBUCKLE CREE	189	54	83	4.0	0.9	65	-1	8.9	97	-1.0	-1	18	6.8	17	0.98	0.03	19	-1	-1	3.1	-1.0	15	117	-1	51
56.00	LAKE ARBUCKLE AB ARBUCKLE CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
59.00	REEDY LAKE AB REEDY CREEK	197	65	81	8.2	0.8	15	12	8.4	96	5.6	39	10	8.1	47	1.63	0.04	29	335	100	1.5	1.9	2	211	-1	59
62.00	LIVINGSTON LAKE AB LIVINGSTON	40	72	79	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
65.00	LAKE JUNE IN WINTER AB PLACID-	236	47	85	2.0	2.0	10	-1	8.1	99	1.1	-1	7	7.0	9	0.54	0.02	11	50	2	3.0	-1.0	2	124	-1	38
67.00	LAKE PLACID AB PLACID-JUNE CAN	217	66	85	1.4	2.2	8	-1	9.0	101	1.1	-1	4	6.9	6	0.50	0.01	7	5	3	2.7	-1.0	5	69	-1	36
68.00	LAKE JACKSON AB JACKSON CREEK	266	49	85	1.0	2.4	10	-1	7.8	94	0.9	-1	9	6.7	4	0.50	0.03	4	6	2	-1.0	-1.0	0	100	-1	41
71.00	ALLIGATOR LAKE AB LIVE OAK LAK	241	54	86	1.7	1.7	50	3	7.9	94	0.5	19	12	6.2	4	0.69	0.02	3	0	0	-1.0	-1.0	-1	108	-1	40
72.00	LAKE PIERCE AB CATFISH CREEK	178	65	83	3.7	1.0	21	18	8.7	101	2.5	-1	14	7.9	35	1.22	0.03	22	-1	-1	-1.0	-1.0	-1	140	-1	55
73.00	CROOKED LAKE AB	188	57	81	2.0	2.1	2	-1	9.5	96	0.3	-1	4	6.3	3	0.44	0.02	-1	-1	-1	1.6	-1.0	11	79	-1	32
* WATER BODY TYPE: STREAM																										
1.00	KISSIMMEE RIVER AB LAKE OKEECH	1162	39	87	3.0	1.1	93	4	6.3	75	1.1	47	16	7.1	34	1.22	0.06	2	49	8	2.5	1.3	6	180	633	34
1.10	CYPRESS SLOUGH AB ASH SLOUGH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
1.20	ASH SLOUGH AB CYPRESS SLOUGH	9	84	85	3.7	1.2	275	-1	4.2	46	-1.0	-1	-1	6.5	-1	1.45	0.19	-1	-1	105	-1.0	-1.0	-1	321	-1	47
1.50	CANAL-41A AB LAKE ISTOKPOGA	751	63	87	2.8	0.6	80	4	6.9	81	1.1	-1	17	6.6	12	1.23	0.04	-1	120	16	-1.0	-1.0	-1	160	60	28
2.00	KISSIMMEE RIVER AB ISTOKPOGA C	301	71	87	2.2	1.0	100	3	6.0	68	1.7	41	16	6.6	28	1.27	0.05	16	48	16	2.7	2.6	4	148	-1	34
3.00	PINE ISLAND SLOUGH AB KISSIMME	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
4.00	KISSIMMEE RIVER AB PINE ISLAND	129	52	87	3.5	0.9	70	6	6.5	76	1.6	51	16	7.0	27	1.28	0.04	11	235	9	3.1	2.8	-1	138	437	34
10.00	JACKSON CANAL AB KISSIMMEE RIV	14	73	85	1.6	0.5	105	5	6.3	68	1.1	-1	11	6.5	18	1.40	0.04	7	200	40	-1.0	-1.0	-1	112	-1	30
14.00	KISSIMMEE RIVER AB LAKE KISSIM	56	70	85	5.7	0.6	60	9	6.4	73	1.7	57	22	7.2	21	1.55	0.09	30	135	20	-1.0	-1.0	-1	148	-1	48
17.50	CATFISH CREEK AB LAKE PIERCE	92	66	85	3.6	0.2	38	11	7.1	80	-1.0	-1	13	7.0	35	1.79	0.05	15	-1	75	-1.0	-1.0	-1	146	8	35
18.00	HATCHINEHA CANAL AB LAKE HATCH	19	70	85	14.8	0.6	90	12	7.5	79	1.7	54	16	7.0	25	1.39	0.14	33	170	0	-1.0	-1.0	-1	131	-1	41
20.10	CANOE CREEK AB LAKE GENTRY	52	72	86	3.0	0.8	80	4	6.8	78	1.1	52	12	6.8	10	1.30	0.11	8	140	10	-1.0	-1.0	-1	130	-1	41
24.00	SOUTH PORT CANAL AB CYPRESS LA	52	64	85	7.5	0.6	50	14	7.3	78	2.2	48	14	7.3	26	1.92	0.11	54	1835	10	-1.0	-1.0	-1	157	0	42
27.10	FISH LAKE CANAL AB FISH LAKE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
30.00	ST CLOUD CANAL AB LAKE TOHOPEK	98	62	85	3.9	1.9	41	8	4.5	51	1.9	23	14	6.8	43	2.62	0.10	31	370	29	-1.0	-1.0	-1	296	-1	50
31.10	BOGGY CREEK AB EAST LAKE TOHO	223	59	87	2.0	0.1	108	2	6.5	74	1.1	45	19	6.6	18	0.88	0.23	3	530	10	-1.0	-1.0	-1	129	17	34
31.20	LAKE AJAY-E LAKE TOHO CANAL AB	11	65	85	2.6	0.6	160	6	7.2	83	1.2	53	-1	6.1	6	1.36	0.05	2	50	0	-1.0	-1.0	-1	121	-1	31
33.00	SHINGLE CREEK AB LAKE TOHOPEKA	911	59	87	4.0	0.8	90	6	5.6	64	1.2	58	24	7.0	63	1.48	0.75	3	800	134	2.7	3.4	11	285	72	52
33.50	REEDY CANAL AB SHINGLE CREEK	7	80	85	2.2	0.6	200	3	7.1	80	0.9	-1	-1	7.3	32	1.55	0.19	1	-1	-1	-1.0	-1.0	-1	156	0	31
34.00	REEDY CREEK AB CYPRESS LAKE	502	59	87	1.3	0.6	245	3	3.0	33	1.5	321	39	6.4	23	1.93	0.11	0	390	46	-1.0	-1.0	-1	138	36	55
35.00	BONNET CREEK AB REEDY CREEK	234	61	87	4.4	1.0	140	4	5.2	60	1.4	1376	20	6.5	25	1.04	0.07	3	500	70	-1.0	-1.0	-1	123	18	45
36.00	REEDY CREEK AB BONNET CREEK	252	61	87	2.1	0.4	245	3	5.0	55	1.9	114	29	6.6	26	1.83	0.53	1	840	105	2.8	3.7	22	164	20	55
36.10	DAVENPORT CREEK AB DAVENPORT L	146	65	87	1.0	0.3	225	4	7.0	73	1.0	-1	33	6.8	31	2.34	0.05	0	2200	-1	-1.0	-1.0	-1	136	6	40
36.20	REEDY CREEK AB DAVENPORT CREEK	200	68	86	6.2	-1.0	179	15	6.1	73	3.8	95	3	6.5	33	1.62	0.06	-1	2650	10	-1.0	-1.0	-1	95	0	45
40.00	ROSALIE CANAL AB LAKE KISSIMME	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
44.00	WEOHYAKAPKA CREEK AB LAKE ROSA	12	73	74	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	0.73	0.05	-1	-1	-1	-1.0	-1.0	-1	-1	-1	20
46.00	ISTOKPOGA CANAL AB KISSIMMEE R	20	73	76	2.0	1.9	120	5	6.8	68	1.0	-1	15	6.0	-1	1.24	0.07	4	70	15	-1.0	-1.0	-1	108	-1	30
49.10	JOSEPHINE CREEK AB LAKE JOSEPH	92	66	86	1.1	-1.0	50	-1	4.4	53	1.0	-1	11	6.0	19	0.83	0.06	-1	-1	-1	-1.0	-1.0	-1	134	28	36
49.30	BOGGY BRANCH AB LAKE ISTOKPOGA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
50.00	ARBUCKLE CREEK AB LAKE ISTOKPO	217	39	84	2.0	-1.0	100	-1	6.3	75	1.2	-1	30	6.3	12	1.01	0.05	-1	100	28	-1.0	-1.0	-1	119	103	30
50.10	ARBUCKLE BRANCH AB ARBUCKLE CR	6	71	76	4.0	-1.0	100	-1	8.3	96	1.6	-1	10	6.8	32	2.51	0.17	-1	50035	103	-1.0	-1.0	-1	470	-1	35
51.00	ARBUCKLE CREEK AB CARTER CREEK	125	71	87	2.0	0.9	120	4	4.7	56	1.6	-1	18	6.3	12	1.36	0.11	4	230	43	3.0	3.1	12	113	247	39
52.00	MORGAN HOLE CREEK AB ARBUCKLE	33	71	84	2.0	-1.0	-1	-1	7.2	91	-1.0	-1	-1	-1.0	-1	0.72	0.02	-1	-1	-1	-1.0	-1.0	-1	125	0	12
53.00	ARBUCKLE CREEK AB MORGAN HOLE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
57.00	LIVINGSTON CREEK AB LAKE ARBUC	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
58.00	REEDY CREEK AB LIVINGSTON CREE	26	66	78	13.3	-1.0	8	-1	8.8	109	-1.0	-1	22	7.0	42	1.54	0.03	-1	-1	-1	-1.0	-1.0	-1	219	8	40
60.00	LIVINGSTON CREEK AB REEDY CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
61.00	LIVINGSTON CREEK AB GRASSY CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
63.00	GRASSY CREEK AB LIVINGSTON CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
64.00	CARTER CREEK AB ARBUCKLE CREEK	37	71	87	1.6	1.0	45	-1	7.9	89	1.1	-1	13	6.5	-1	0.93	0.03	2	76	236	-1.0	3.5	39	107	-1	18
66.00	PLACID-JUNE CANAL AB LAKE JUNE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
68.10	JACKSON CREEK AB LAKE JACKSON	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03090101 KISSIMMEE RIVER

* WATER BODY TYPE: LAKE

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
6.00	LAKE KISSIMMEE ABOVE KISSIMMEE RIVE	YES	FAIR	----	--..	----	-..		.	....	....	....	..		* *		
7.00	LAKE KISSIMMEE ABOVE JACKSON CANAL	YES	FAIR	----	---.	----	-..		0	..00	.-0.	0-00	-.		* *		BORDERING ON GOOD WATER QUALITY.
8.00	LAKE KISSIMMEE ABOVE KISSIMMEE RIVE	YES	GOOD	--.-	.-..	----	-..	*	.	....	....	....	..		* *		
9.00	LAKE KISSIMMEE ABOVE ROSALIE CANAL	YES	FAIR	----	----	----	--.	*	0	0000	.000	0000	+.		* *		BORDERING ON GOOD WATER QUALITY.
11.00	LAKE MARIAN ABOVE JACKSON CANAL	PARTIAL	FAIR	----	--.-	*---	--.		-	..0.	.0-0	.000	+.	*	*		HIGH CHL a, LOW WATER CLARITY AND HIGH NUTRIENTS. WWTP (.4 MGD) DISCHARGES TO LAKE MARIAN.
16.00	LAKE HATCHINEHA ABOVE KISSIMMEE RIV	PARTIAL	FAIR	----	---.	-*-*	--.	*	-	....	.00.	00.0	-.	*	* *		DEGRADED IN 70'S BUT HAS IMPROVED RECENTLY. RECEIVES NUTRIENT LOAD FROM LAKE TOHO VIA CYPRESS LAKE. IF LAKE TOHO IMPROVES THEN LAKE HATCHNEHA IMPROVES. FOLLOWUP STUDY OF LAKES CYPRESS,HATCHNEHA AND RUSSELL DUE IN 1986.
17.00	LAKE HATCHINEHA ABOVE KISSIMMEE RIV	PARTIAL	FAIR	----	----	-*--	---	*	-	.000	.00*	--0-	0.	*	* *		DEGRADED IN 70'S BUT HAS IMPROVED IN RECENT YEARS. RECEIVES NUTRIENT LOAD FROM LAKE TOHO VIA CYPRESS LAKE. IF LAKE TOHO IMPROVES THEN LAKE HATCHNEHA IMPROVES. FOLLOWUP STUDY OF LAKES CYPRESS,HATCHNEHA AND RUSSELL DUE IN 1986.
20.00	CYPRESS LAKE ABOVE HATCHINEHA CANAL	NO	POOR	----	---.	**-*	--.	**	0	..**	.---	000-	0.	*	* *		DEGRADED IN 70'S, POSSIBLE IMPROVEMENT IN TP LEVELS RECENTLY, RECEIVES MOST INPUT FROM LAKE TOHO AND REEDY CREEK. WORST AREA IS AT SOUTHPORT CANAL WHICH DRAINS LAKE TOHO. FOLLOWUP STUDY OF LAKES DUE IN 1986.
21.00	CYPRESS LAKE ABOVE SOUTH PORT CANAL	NO	POOR	----	*--.	**-*	-..	**	.	....	....	....	..	*	* *		DEGRADED IN 70'S, POSSIBLE IMPROVEMENT IN RECENT YEARS, RECEIVES MOST INPUT FROM LAKE TOHO AND REEDY CREEK. WORST AREA IS AT SOUTHPORT CANAL WHICH DRAINS LAKE TOHO. FOLLOWUP STUDY OF LAKES DUE IN 1986.
22.00	CYPRESS LAKE ABOVE REEDY CREEK	PARTIAL	GOOD	----	--..	-*--	...	**	.	....	....	....	..	*	* *		DEGRADED IN 70'S, POSSIBLE IMPROVEMENT IN RECENT YEARS.
26.00	LAKE TOHOPEKALIGA ABOVE SOUTH PORT	NO	POOR	----	*---	**-*	--.	**	-	..**	*000	000-	0.	*	* *	**	DEGRADED IN 70'S BUT HAS IMPROVED RECENTLY DUE TO PHOSPHORUS CONTROLS AT 2 MAJOR WWTP'S. WILL HAVE NO DISCHARGE IN FUTURE, SHOULD CONTINUE TO IMPROVE. 1986 SEWAGE SUCCESS STORY AND 1981 WLA.INADEQUATE URBAN STORMWATER MANAGEMENT.
27.00	LAKE TOHOPEKALIGA ABOVE ST CLOUD CA	NO	FAIR	----	---.	-*-*	-..	**	-	..**	0000	**0-	0.	*	* *	**	DEGRADED IN 70'S BUT HAS IMPROVED IN RECENT YEARS DUE TO PHOSPHORUS CONTROLS AT 2 MAJOR WWTP'S. WILL HAVE NO DISCHARGE IN FUTURE, SHOULD CONTINUE TO IMPROVE. 1986 SEWAGE SUCCESS STORY AND 1981 WLA.INADEQUATE URBAN STORMWATER MANAGEMENT.
27.15	FISH LAKE ABOVE LAKE TOHOPEKALIGA	PARTIAL	GOOD	----	---.	..-*	-..	**	.	....	....	....	..		* *	**	INADEQUATE URBAN STORMWATER MANAGEMENT.
28.00	LAKE TOHOPEKALIGA ABOVE SOUTH PORT	UNKNOWN	UNKN	....	....	....	.										
31.00	EAST LAKE TOHOPEKALIGA ABOVE ST CLO	YES	GOOD	----	----	----	--.	**	0	..00	0000	0000	-.		* **		
34.50	LAKE RUSSELL ABOVE REEDY CREEK	PARTIAL	GOOD	----	*---	-*--	--.	*	0	....	.0*.	000*	0.	*	*		PHOSPHORUS INCREASED OVER LAST SEVERAL YEARS. WLA IN 1985 TO DISCHARGE TO REEDY CREEK (POINCIANA, DISNEYWORLD,ETC.)THE ENTIRE KISSIMMEE RIVER CHAIN OF LAKES IS THREATENED

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
37.00	LAKE CONWAY ABOVE BOGGY CREEK	YES	GOOD	----	---.	----	-..	**	.	....	....	....	..		*		
38.00	LAKE BUTLER ABOVE LAKE DOWN	YES	GOOD	----	----	----	-..	*	0	..0.	000.	-0.0	0.		* **	*	MASSIVE DEVELOPMENT THREATENS OFW DESIGNATION, GOLF COURSES ARE A MAJOR NUTRIENT SOURCE.
42.00	LAKE ROSALIE ABOVE ROSALIE CANAL	YES	GOOD	----	--..	----	-..	***	.	....	....	....	..		** *	*	
43.00	LAKE ROSALIE ABOVE ROSALIE CANAL	YES	UNKN	.-.-	.-..	.-..	...		.	....	....	....	..		* *		
45.00	LAKE WEOHYAKAPKA ABOVE WEOHYAKAPKA	YES	GOOD	----	----	----	-..	***	.	....	....	....	..		* *	*	GRAVITY CANAL FROM DEVELOPMENT. CATTLE AND CITRUS RUNOFF.
48.00	LAKE ISTOKPOGA ABOVE ISTOKPOGA CANA	PARTIAL	GOOD	----	---.	.*--	-..	*	.	....	....	....	..		* *	**	SECCHI DEPTH PROBLEMS, MAY BE NATURAL.CALADIUM AND VEGATABLE FARMS DITCHED.STRUCTURE ON C-41A HAS LOWERED LAKE LEVELS. AIRPORT RUNOFF CONTRIBUTES TO THE PROBLEM.
49.00	LAKE ISTOKPOGA ABOVE ISTOKPOGA CANA	YES	GOOD	----	*---	-*--	--.	*	0	00-.	.00.	0000	0.		* *	**	BIOLOGICAL INDICIES REFLECT GOOD CONDITIONS.STRUCTURE ON C-41A LOWERED LAKE LEVELS, CALADIUM AND VEGETABLE FARMS DITCHED.
49.20	LAKE JOSEPHINE ABOVE JACKSON CREEK	YES	GOOD	----	---*	----	--.	**	0	..0.	.0*.	00.0	-.		* *	**	LARGE MOBILE HOME AND RV PARK LOCATED ON EASTERN SHORE.
55.00	LAKE ARBUCKLE ABOVE ARBUCKLE CREEK	YES	GOOD	----	--.-	----	-..		0	....	....	....	..				
56.00	LAKE ARBUCKLE ABOVE ARBUCKLE CREEK	YES	UNKN	....	....	....	.										
59.00	REEDY LAKE ABOVE REEDY CREEK	YES	GOOD	----	*--*	----	-*.	*	.	....	....	....	..		* *	*	LOW BIOLOGICAL INDICIES,AND ELEVATED BOD LEVELS.
62.00	LIVINGSTON LAKE ABOVE LIVINGSTON CR	YES	UNKN	....	....	....	...		.	....	....	....	..		*		INSUFFICIENT PARAMETER COVERAGE.
65.00	LAKE JUNE IN WINTER ABOVE PLACID-JU	YES	GOOD	----	---*	----	--.	**	0	..0.	.-0.	.0.0	0.		* *	**	AIRPORT RUNOFF.
67.00	LAKE PLACID ABOVE PLACID-JUNE CANAL	YES	GOOD	----	---*	----	---	**	*	..*.	.00.	0000	0.		* *	*	AIRPORT RUNOFF
68.00	LAKE JACKSON ABOVE JACKSON CREEK	YES	GOOD	----	---*	----	-.-		-	..-.	.0-.	0000	0.		*	*	STORMWATER RUNOFF FROM SEBRING AND U.S. 27. SOME SEWER MALFUNCTIONS.
71.00	ALLIGATOR LAKE ABOVE LIVE OAK LAKE	YES	GOOD	----	---.	----	-..	*	0	..*0	000.	00*0	0.		* *		
72.00	LAKE PIERCE ABOVE CATFISH CREEK	YES	GOOD	----	--..	----	-..	*	0	..0.	.00.	.000	0.		* *	*	
73.00	CROOKED LAKE ABOVE	YES	GOOD	----	--.-	.---	-..		.	....	....	....	..		* *	**	WATERBODY IS AN OFW. SERIOUS WATER LEVEL DECREASES OVER THE PAST 20 YEARS.

* WATER BODY TYPE: STREAM

REACH	REACH NAME	MEETS USE	WQI RANK	NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
1.00	KISSIMMEE RIVER ABOVE LAKE OKEECHOB	YES	GOOD	----	---*	....	--.	***	0	..*.	000.	..00	00		* *	**	RANCHLAND AND HOUSING ALONG RIVER CONTRIBUTING TO DECLINE IN WATER QUALITY, LAKE EUTROPHICATION DUE IN PART TO DAIRY FARMS ABOVE RIVER. ORANGE CO. WWTP DISCHARGE VIA WETLANDS,LARGE INDUSTRIAL PARK TO BEGIN CONSTRUCTION.
1.10	CYPRESS SLOUGH ABOVE ASH SLOUGH	YES	UNKN	....	....	....	.	*									
1.20	ASH SLOUGH ABOVE CYPRESS SLOUGH	PARTIAL	FAIR	----	.--.	....	...	*	.	....	....	....	..				MINOR DO PROBLEM MAY BE NATURAL BACKGROUND CONDITION.
1.50	CANAL-41A ABOVE LAKE ISTOKPOGA	YES	GOOD	----	---.	....	-..	*	-	..0-	.00.	..00	-.		*	*	
2.00	KISSIMMEE RIVER ABOVE ISTOKPOGA CAN	YES	GOOD	----	---*	....	--.	***	-	.00.	0--.	000-	-.		* *	**	CHANNELIZED RIVER,RANCHLAND AND HOUSING ALONG RIVER CONTRIBUTING TO DECLINE.
3.00	PINE ISLAND SLOUGH ABOVE KISSIMMEE	UNKNOWN	UNKN	....	....	....	.										
4.00	KISSIMMEE RIVER ABOVE PINE ISLAND S	YES	GOOD	----	----	....	-..	***	-	..0.	000.	0.-0	0.		* *	**	CHANNELIZED RIVER,RANCHLAND AND HOUSING ALONG RIVER CONTRIBUTING TO DECLINE.
10.00	JACKSON CANAL ABOVE KISSIMMEE RIVER	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
14.00	KISSIMMEE RIVER ABOVE LAKE KISSIMME	YES	FAIR	----	---.	....	-..	***	0	..-.	.00.	.0-0	0.		*	*	CHANNELIZED RIVER.

WATER QUALITY ASSESSMENT REPORT
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REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
17.50	CATFISH CREEK ABOVE LAKE PIERCE	YES	GOOD	----	---.	....	-..		0	..0.	.00.	..00	0.				
18.00	HATCHINEHA CANAL ABOVE LAKE HATCHIN	PARTIAL	GOOD	----	---.	....	-..		.	....	....	....	..				WATER QUALITY DECLINE RELATED TO TURBIDITY.
20.10	CANOE CREEK ABOVE LAKE GENTRY	YES	GOOD	----	---.	....	-..		-	....	....	00.-	0.				
24.00	SOUTH PORT CANAL ABOVE CYPRESS LAKE	PARTIAL	GOOD	----	---.	....	-..		.	....	....	....	..	*			DIRECTLY IMPACTED BY LAKE TOHO POLLUTION SOURCES, KISSIMMEE WWTP, ST. CLOUD WWTP AND SHINGLE CREEK NPS PROBLEMS.
27.10	FISH LAKE CANAL ABOVE FISH LAKE	YES	UNKN	....	....	....	.	**							* *	*	INADEQUATE URBAN STORMWATER MANAGEMENT.
30.00	ST CLOUD CANAL ABOVE LAKE TOHOPEKAL	NO	FAIR	*---	---.	....	-.*		0	..00	.00.	.000	0.	*			ST.CLOUD WWTP DISCHARGES NUTRIENT LOAD TO THIS CANAL. THERE ARE FOUR BIOASSAYS.
31.10	BOGGY CREEK ABOVE EAST LAKE TOHO	YES	GOOD	----	---.	....	--.	**	-	..00	.0*0	..0-	0.		* **	**	AIRPORT RUNOFF INTO SWAMPS AND LAKES IN THIS AREA. RESIDENTIAL CONSTRUCTION ACTIVITIES.
31.20	LAKE AJAY-E LAKE TOHO CANAL ABOVE L	YES	GOOD	----	---.	....	-..	**	.	....	....	....	..		* **		
33.00	SHINGLE CREEK ABOVE LAKE TOHOPEKALI	NO	FAIR	*---	----	....	--*	***	-	.0**	***0	000-	-0	*	* **	**	UPPER PORTION RECEIVES 2 MAJOR ORANGE CO. WWTP'S EFFLUENT.DO AND NUTRIENT PROBLEMS.SIX SPECIAL STUDIES,1981 WLA.TP LEVELS HAVE IMPROVED RECENTLY.LOWER SECTION IMPROVED.PROBLEMS RELATED TO DO,BOD,TSS,AND TURBIDITY STILL EXIST.
33.50	REEDY CANAL ABOVE SHINGLE CREEK	YES	GOOD	----	--..	....	-..		0	....	.**.	..-0	0.				
34.00	REEDY CREEK ABOVE CYPRESS LAKE	PARTIAL	FAIR	----	**-.	....	--.	*	0	.0-*	.000	*000	0+		* **		PRIMARILY DO PROBLEMS DUE TO NATURAL SWAMPY CONDITIONS.INADEQUATE STORMWATER MANAGEMENT.
35.00	BONNET CREEK ABOVE REEDY CREEK	PARTIAL	FAIR	----	*--.	....	--.		0	..0.	.000	.000	00				SOME DO PROBLEMS, MAY BE NATURAL.
36.00	REEDY CREEK ABOVE BONNET CREEK	PARTIAL	FAIR	*---	*---	....	-*.	*	0	..-0	.**0	-0*0	0+	*	* **		WORSE FROM 1971 TO 1979, IMPROVED 1981, WORSE RECENTLY DUE TO DO, NUTRIENTS AND INORGANIC TOXICS.INADEQUATE STORMWATER MANAGEMENT.
36.10	DAVENPORT CREEK ABOVE DAVENPORT LAK	YES	GOOD	*---	*--.	....	--.		0	..0.	.000	..00	0+				
36.20	REEDY CREEK ABOVE DAVENPORT CREEK	PARTIAL	FAIR	----	*--.	....	-.*	*	.	....	....	....	..		* **		WATER QUALITY DECLINE RELATED TO TURBIDITY AND BOD LEVELS.INADEQUATE STORMWATER MANAGEMENT.
40.00	ROSALIE CANAL ABOVE LAKE KISSIMMEE	UNKNOWN	UNKN	....	....	....	.										
44.00	WEOHYAKAPKA CREEK ABOVE LAKE ROSALI	PARTIAL	GOOD	-...	....	....	...	***	.	....	....	....	..		* *	*	INSUFFICIENT DATA.GRAVITY CANAL FROM DEVELOPMENT. CATTLE AND CITRUS RUNOFF CONTRIBUTE TO THE PROBLEM.
46.00	ISTOKPOGA CANAL ABOVE KISSIMMEE RIV	YES	GOOD	----	---.	....	-..	* *	.	....	....	....	..		*		ENTIRE RIVER'S WATER QUALITY HAS BEEN DECLINING. CHANNELIZED.
49.10	JOSEPHINE CREEK ABOVE LAKE JOSEPHIN	YES	GOOD	----	--..	....	-..	***	0	....	.000	....	00			*	
49.30	BOGGY BRANCH ABOVE LAKE ISTOKPOGA	UNKNOWN	UNKN	....	....	....	.										
50.00	ARBUCKLE CREEK ABOVE LAKE ISTOKPOGA	YES	GOOD	----	*--.	....	-.*	* *	.	....	....	....	..		* *		ENTIRE RIVER'S WATER QUALITY HAS BEEN DECLINING.
50.10	ARBUCKLE BRANCH ABOVE ARBUCKLE CREE	YES	GOOD	*---	--*.	....	-..		.	....	....	....	..				
51.00	ARBUCKLE CREEK ABOVE CARTER CREEK	YES	GOOD	----	----	....	--.	*	0	.0..	.*..	00.0	0.		*		DO PROBLEMS, MAY BE NATURAL.LOW BIOTIC INDEX.
52.00	MORGAN HOLE CREEK ABOVE ARBUCKLE CR	YES	GOOD	-.--	.-..	....	...		.	....	....	....	..				
53.00	ARBUCKLE CREEK ABOVE MORGAN HOLE CR	YES	UNKN	....	....	....	.										
57.00	LIVINGSTON CREEK ABOVE LAKE ARBUCKL	UNKNOWN	UNKN	....	....	....	.										
58.00	REEDY CREEK ABOVE LIVINGSTON CREEK	YES	GOOD	----	--..	....	...		.	....	....	....	..				GOOD OVERALL WATER QUALITY
60.00	LIVINGSTON CREEK ABOVE REEDY CREEK	UNKNOWN	UNKN	....	....	....	.										
61.00	LIVINGSTON CREEK ABOVE GRASSY CREEK	UNKNOWN	UNKN	....	....	....	.										
63.00	GRASSY CREEK ABOVE LIVINGSTON CREEK	UNKNOWN	UNKN	....	....	....	.										
64.00	CARTER CREEK ABOVE ARBUCKLE CREEK	YES	GOOD	----	----	....	-..		.	....	....	....	..				
66.00	PLACID-JUNE CANAL ABOVE LAKE JUNE I	UNKNOWN	UNKN	....	....	....	.										

WATER QUALITY ASSESSMENT REPORT
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REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
68.10	JACKSON CREEK ABOVE LAKE JACKSON	PARTIAL	UNKN	....	....	....	.	***							* *	* *	CHANNELIZED REACH. CALADIUM FARMING, TRAILER PARKS,AND PEAT MINES CONTRIBUTE TO THE PROBLEM.

LAKE OKEECHOBEE BASIN

General Description of the Basin

Lake Okeechobee encompasses 600-700 square miles, depending on the lake level. The lake receives drainage from numerous sources including the Kissimmee River, Indian Prairie Canal, Fisheating Creek, and the Taylor Creek/Nubbin Slough area. The primary land use adjacent to the northeast edge of the lake is dairy farming. Land use south of the lake is intensive row crop farming of sugar cane and vegetables. There are also some citrus groves and wetlands in this area. Urbanization in this basin is minimal. On the south end of Lake Okeechobee, a levee some 85 miles long allows for nearly total control of lake elevation through a system of gates and pumps connecting the 6 major flood control canals.

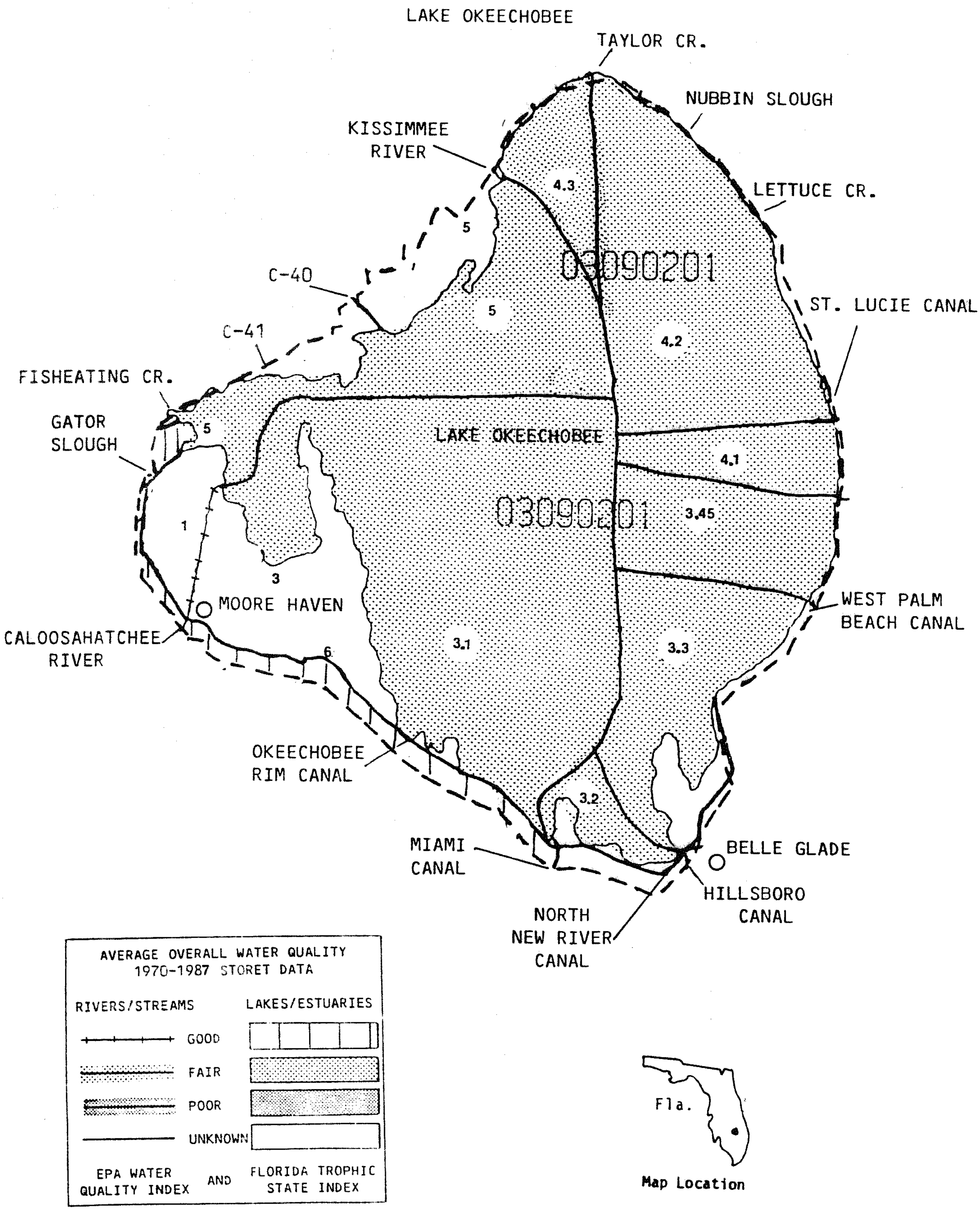
Specific Water Quality Problems and Pollution Sources

Major sources of pollution to the lake include agriculture runoff from ranch and dairy operations in the northern drainage and from back pumping of runoff from row crops and sugar cane in the southern drainage. Kissimmee River also delivers nutrients to the lake from WWTP discharges in the upper portion of the Kissimmee River basin.

Water quality problems in the north end of the lake include elevated phosphorus and coliform concentrations, and in the south part of the lake increased nutrients and pesticides problems are caused by back pumping. Consequently, at different locations and different season of rainfall or drought, the lake receives varying amounts of nutrient, BOD, bacteria and toxic materials. The total phosphorus levels in the lake have doubled in the last decade. Considering the lake's volume, this increase represents a tremendous loading.

During the last two years there have been several wide-spread algal blooms (one covered about 100 square miles) and at least one major fishkill. These widely publicized events launched the environmental community and governmental agencies into a period of intense investigation and analysis. The Lake Okeechobee Technical Advisory Committee (LOTAC) was formed to assess the situation and make recommendations. LOTAC determined that phosphorus loading from dairy and agricultural sources was a major cause of water quality conditions conducive to noxious algal blooms and that phosphorus loading should be reduced by 40%. Others contend that the primary cause of increased phosphorus levels are the hundreds of areas of perimeter wetlands which have become flooded after a late 1970's decision by the Water Management District to raise the water level in the lake. Also, the higher lake levels reduce valuable fish spawning grounds and waterfowl feeding and nesting areas.

LOTAC and the Water Management District have initiated several biological, chemical and ecological research projects. In addition, DER has begun to regulate backpumping operations. Finally, both mechanical harvesting and biological methods are being used to control aquatic weeds. DER is currently preparing a basin assessment of the lake.



LAKE OKEECHOBEE
TAYLOR CR.
NUBBIN SLOUGH
KISSIMMEE RIVER
LETTUCE CR.
4.3
5
03090201
C-40
5
ST. LUCIE CANAL
C-41
4.2
FISHEATING CR.
GATOR SLOUGH
5
LAKE OKEECHOBEE
4.1
03090201
3.45
1
3
MOORE HAVEN
WEST PALM BEACH CANAL
CALOOSAHATCHEE RIVER
6
3.1
3.3
OKEECHOBEE RIM CANAL
3.2
MIAMI CANAL
BELLE GLADE
HILLSBORO CANAL
NORTH NEW RIVER CANAL
AVERAGE OVERALL WATER QUALITY
1970-1987 STORET DATA
RIVERS/STREAMS
LAKES/ESTUARIES
GOOD
FAIR
POOR
UNKNOWN
EPA WATER QUALITY INDEX
AND
FLORIDA TROPHIC STATE INDEX
Fla.
Map Location

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
** USGS HYDROLOGIC UNIT: 03090201 LAKE OKEECHOBEE																										
* WATER BODY TYPE: LAKE																										
3.10	LAKE OKEECHOBEE AB CALOOSAH CA	298	69	87	9.8	0.5	51	10	8.4	96	1.4	-1	20	8.1	128	1.67	0.05	20	11	8	2.2	0.8	3	603	-1	61
3.20	LAKE OKEECHOBEE AB MIAMI CANAL	49	73	87	5.2	0.5	63	-1	7.9	89	-1.0	-1	24	7.8	154	1.93	0.06	31	-1	5	-1.0	-1.0	-1	665	-1	58
3.30	LAKE OKEECHOBEE AB HILL/N NEW	143	63	87	12.3	0.5	50	-1	7.7	92	1.4	-1	19	7.8	153	1.58	0.08	21	280	32	-1.0	-1.0	-1	648	0	64
3.45	LAKE OKEECHOBEE AB W PALM BCH	9	69	70	33.0	-1.0	50	-1	10.3	96	-1.0	-1	-1	7.9	117	1.60	0.06	0	-1	-1	-1.0	-1.0	-1	446	-1	31
4.10	LAKE OKEECHOBEE AB L-8 CANAL (	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.20	LAKE OKEECHOBEE AB ST LUCIE CA	817	69	87	10.0	0.6	63	13	7.8	93	1.4	57	20	8.2	124	1.59	0.09	30	29	10	1.8	0.0	-1	581	0	68
4.30	LAKE OKEECHOBEE AB TAYLOR CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	LAKE OKEECHOBEE AB KISSIMMEE R	126	68	87	7.2	0.8	60	-1	7.8	91	1.6	-1	31	8.3	101	1.37	0.05	26	-1	5	-1.0	-1.0	-1	575	-1	61
* WATER BODY TYPE: STREAM																										
1.00	CALOOSAHATCHEE CANAL AB OKEECH	299	73	87	2.3	0.6	65	5	5.6	64	2.8	-1	22	7.5	127	1.78	0.06	-1	-1	-1	-1.0	-1.0	-1	609	-1	49
6.00	LAKE OKEECHOBEE RIM CANAL AB C	26	77	79	2.0	1.2	-1	-1	5.1	63	-1.0	-1	24	7.5	-1	1.65	0.10	-1	-1	-1	-1.0	-1.0	-1	590	-1	42

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
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** USGS HYDROLOGIC UNIT CODE: 03090201 LAKE OKEECHOBEE																	
* WATER BODY TYPE: LAKE																	
3.10	LAKE OKEECHOBEE ABOVE CALOOSAH CANA	PARTIAL	FAIR	----	---*	-*--	--.	***	0	.00.	.00.	0000	0.		* *	**	FAIR QUALITY.LAKE AND RIM CANAL EUTROPHICATION DUE IN PART TO DAIRIES ON KISSIMMEE RIVER AND AGRICULTURAL BACKPUMPING.DIESEL SPILLS FROMAGRICULTURE PUMPS HAVE ALSO CONTRIBUTED TO THE PROBLEM.
3.20	LAKE OKEECHOBEE ABOVE MIAMI CANAL (	PARTIAL	GOOD	----	---.	-*--	--.	***	.	....	....	....	..		* *	*	FAIR QUALITY.DIESEL SPILLS FROM AGRICULTURE PUMPS,BACKPUMPING,AND RUNOFF FROM LIVESTOCK WASTES CONTRIBUTE TO THE PROBLEM.
3.30	LAKE OKEECHOBEE ABOVE HILL/N NEW R	PARTIAL	FAIR	----	---.	-*--	--.	***	0	..0.	.--.	00-0	-.		* *	*	EFFORTS TO INTENSIFY BMP'S FOR RANCHING OPERATIONS.AGRICULTURAL BACKPUMPING, AND RUNOFF FROM LIVESTOCK WASTES CONTRIBUTE TO THE PROBLEM.
3.45	LAKE OKEECHOBEE ABOVE W PALM BCH CA	PARTIAL	GOOD	--*-	.-..	-.--	...	***	.	....	....	....	..		* *	*	OLD DATA. DIESEL SPILLS FROM AGRICULTURE PUMPS,BACKPUMPING AND LIVESTOCK WASTES CREATE CONDITIONS WHICH COULD FURTHER COMPROMISE WATER QUALITY.
4.10	LAKE OKEECHOBEE ABOVE L-8 CANAL (H)	PARTIAL	UNKN	....	....	....	.	***							* *	**	RUNOFF FROM RANGELANDS,AND AGRICULTURE ACTIVITIES INCLUDING BACKPUMPING ARE PRINCIPLE ELEMENTS IN THE DECLINE IN WATER QUALITY.
4.20	LAKE OKEECHOBEE ABOVE ST LUCIE CANA	PARTIAL	FAIR	----	---*	-*--	--.	***	0	0000	.--*	0000	0.	*	* *	**	OVERALL FAIR WATER QUALITY. NUTRIENT LOADS FROM DAIRY AND CATTLE RANCHING AND THE KISSIMMEE RIVER. KISSIMMEE RIVER IMPROVEMENT PROJECT UNDERWAY.
4.30	LAKE OKEECHOBEE ABOVE TAYLOR CREEK	PARTIAL	UNKN	....	....	....	.	***							* *	*	
5.00	LAKE OKEECHOBEE ABOVE KISSIMMEE RIV	PARTIAL	FAIR	----	*--.	----	--.	***	*	..0.	.00.	0*00	0.		* *	**	NATURAL LAKE LEVEL FLUCTUATIONS ALTERED.BACKPUMPING AND OTHER AGRICULTURE RELATED ACTIVITIES CONTRIBUTE TO THE PROBLEM.
* WATER BODY TYPE: STREAM																	
1.00	CALOOSAHATCHEE CANAL ABOVE OKEECHOB	YES	FAIR	----	--..	....	-..	***	-	..0-	.00.	..-0	-.		* *	*	NATURAL WATER LEVEL FLUCTUATION HAS BEEN ALTERED.
6.00	LAKE OKEECHOBEE RIM CANAL ABOVE CAL	YES	GOOD	----	--..	....	-..	***	.	....	....	....	..		* *	*	NATURAL LAKE LEVEL FLUCTUATION HAS BEEN ALTERED.

LITTLE MANATEE RIVER BASIN

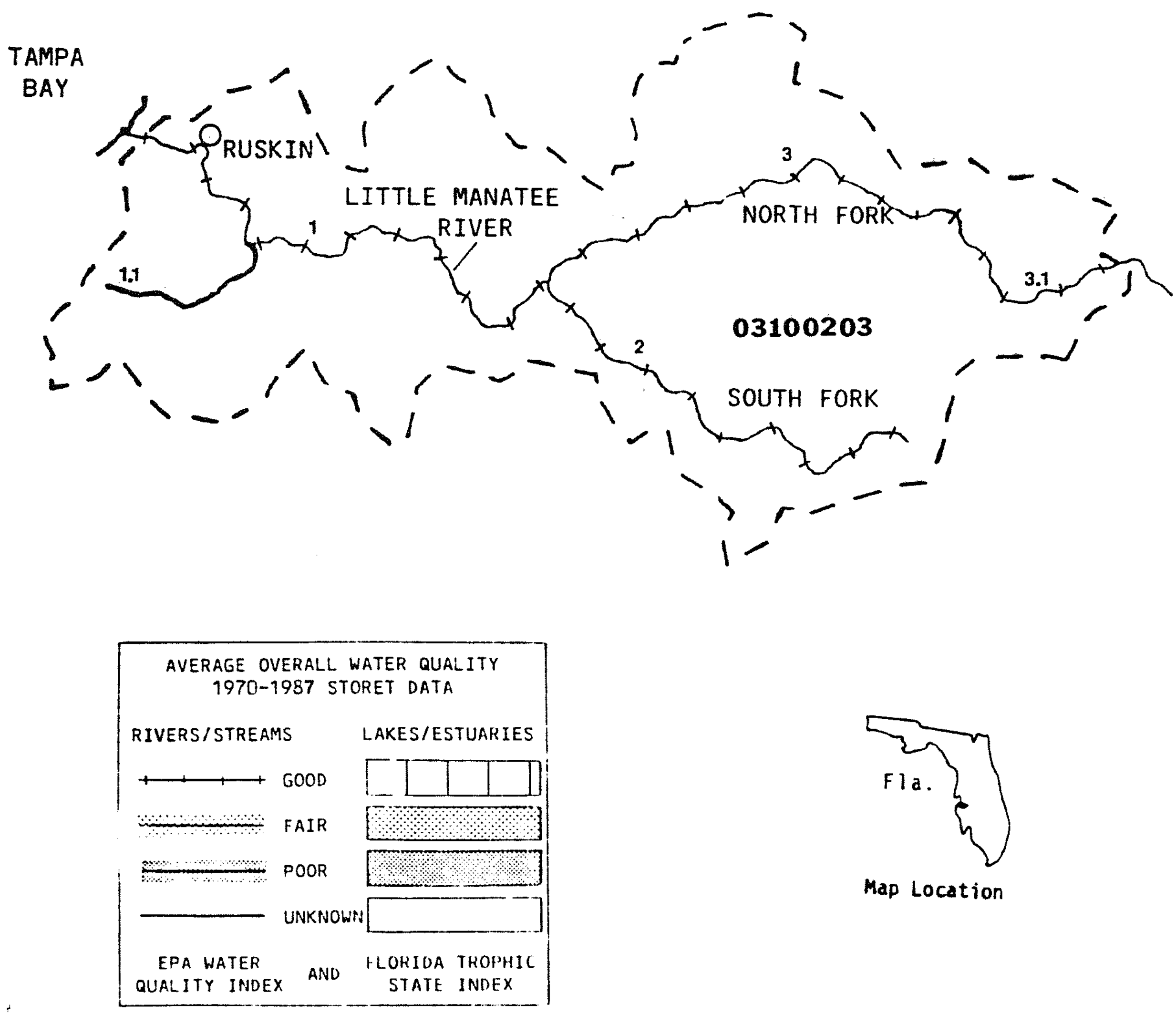
General Description of the Basin

The Little Manatee River basin has a drainage area of 221 square miles and consists primarily of agricultural land and rangeland. At a point 14 miles upstream from the mouth at Tampa Bay the average flow is 170 cfs. The stage-discharge relationship is tidally affected at this point.

Specific Water Quality Problems and Pollution Sources

The Little Manatee River has excellent water quality and aesthetic and recreational value. The basin (excluding the South Fork and Ruskin Inlet) has been declared an Outstanding Florida Water. There are no significant water quality problems or point sources in this basin; however, the reaches in this basin have somewhat elevated bacteria and nutrient levels. Additionally, the South Fork of the river has had occasionally depressed DO values and one problem organic toxic sample. All of these problems are likely due to runoff from rangeland (bacteria and nutrients) and agricultural areas (pesticides and nutrients).

LITTLE MANATEE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L   -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT: 03100203 LIT MANATEE RIV

* WATER BODY TYPE: STREAM

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
1.00	LITTLE MANATEE RIVER AB TAMPA	976	56	87	3.0	0.8	53	5	7.2	81	1.3	599	9	7.3	28	0.81	0.45	3	1100	300	-1.0	-1.0	25	299	46	33
1.10	CURIOSITY CREEK AB LITTLE MANA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
2.00	LITTLE MANATEE RIVER, S FORK A	128	62	86	2.5	-1.0	75	2	5.6	64	1.1	44	15	6.4	16	0.98	0.47	-1	-1	-1	-1.0	-1.0	-1	110	21	40
3.00	LITTLE MANATEE RIVER AB LIT MA	281	66	86	2.0	0.5	108	3	6.5	73	1.1	-1	16	6.5	-1	0.82	0.58	2	2150	340	2.5	-1.0	22	108	6	38
3.10	ALDERMAN CREEK AB LITTLE MANAT	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03100203 LIT MANATEE RIV

* WATER BODY TYPE: STREAM

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
1.00	LITTLE MANATEE RIVER ABOVE TAMPA BA	YES	GOOD	----	*---	....	--.	**	0	00*0	0000	00*0	0.		* *	*	GOOD OVERALL WATER QUALITY. SLIGHT BACTERIA AND NUTRIENT PROBLEM DUE TO RUNOFF FROM RANGELAND AND AGRICULTURAL LANDS. DECLARED AN OUTSTANDING FLORIDA WATER (OFW). SOME DECLINES IN FISHERIES APPARENT.
1.10	CURIOSITY CREEK ABOVE LITTLE MANATE	UNKNOWN	UNKN	....	....	....	.										
2.00	LITTLE MANATEE RIVER, S FORK ABOVE	YES	GOOD	*---	--..	....	--.	**	0	....	000-	..00	-.		* *		OFW. INCREASED AGRICULTURAL OPERATIONS.
3.00	LITTLE MANATEE RIVER ABOVE LIT MANA	YES	GOOD	*---	----	....	--.	**	0	0000	000-	0-00	00		* *	*	GOOD OVERALL WATER QUALITY. SLIGHT BACTERIA AND NUTRIENT PROBLEM DUE TO RUNOFF FROM RANGELAND AND AGRICULTURAL LANDS. DECLARED AN OUTSTANDING FLORIDA WATER (OFW).SOME DECLINE IN FISHERIES IS APPARENT.
3.10	ALDERMAN CREEK ABOVE LITTLE MANATEE	YES	UNKN	....	....	....	.	*									

MANATEE RIVER BASIN

General Description of the Basin

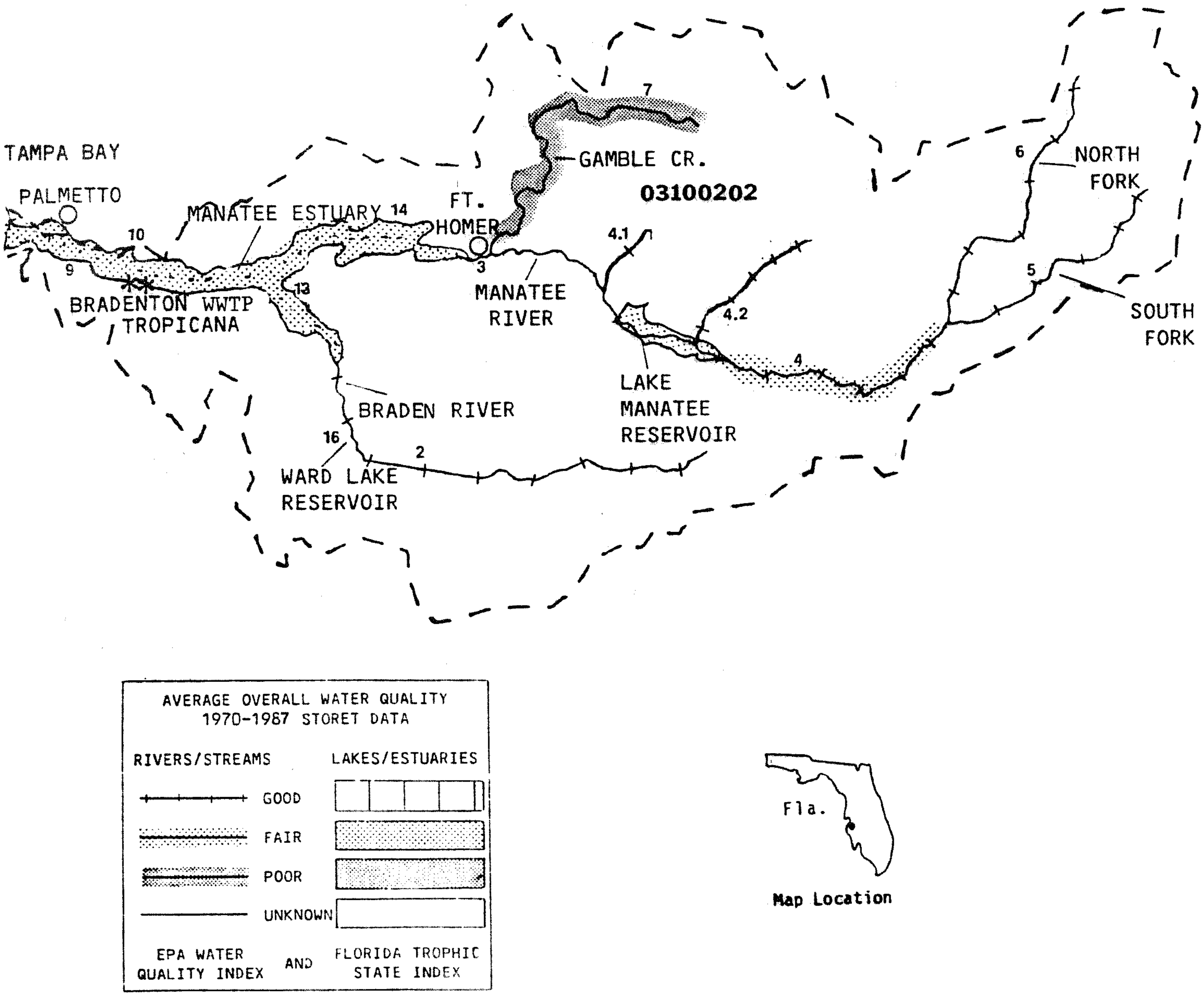
The headwaters of the Manatee River originate in the northeastern corner of Manatee County. The river flows approximately 25 miles southwesterly to Tampa Bay and drains 375 square miles. The river is impounded at Lake Manatee to provide the drinking water supply for Manatee County. Downstream, west of Fort Homer, the Manatee River forms a wide, tidally influenced estuary. Principal tributaries of the Manatee include Gamble Creek and the Braden River, which is also impounded to provide drinking water for the City of Bradenton. Land use in this basin is primarily agricultural and rangeland. Bradenton and Palmetto, near the river's mouth, are the major urban areas.

Specific Water Quality Problems and Pollution Sources

Much of this basin generally has very good water quality. The only major problem in the freshwater portion of the basin is increased nutrient levels in the Manatee River Reservoir. There are no point sources in the area to account for these values, but the lake receives excessive nonpoint source nutrient loading from orange groves, rangeland, and phosphate mining upstream. The high nutrient levels in the reservoir promote algae and weed growth. The lake has nearly year-round algal bloom problems which are treated with frequent applications of copper sulfate. Lake data collected by the Manatee County Public Works Department (PWD) indicate nutrient values in the "poor" TSI range, but chlorophyll levels are held artificially low because of the copper treatments. Consequently, copper levels are relatively high, (above state standards for surface waters and potable water supplies) both within and downstream of the lake. PWD is acting to improve the conditions in the lake by: 1) developing a pilot project to determine the effectiveness of requiring best management practices of agricultural operations; 2) instigating an aeration project in Gilley Creek tributary; 3) using hydrilla and water hyacinths to remove nutrients and reduce light; and 4) starting up a watershed land acquisition project.

During the rainy season of the year, nutrient and organic nitrogen loading from runoff cause periods of high chlorophyll and low DO values in the estuarine areas downstream of the reservoirs. Although STORET data are limited, an intensive survey of the lower Manatee and Braden Rivers for a wasteload allocation showed that these areas had fair water quality predominantly because of DO problems. The point source loading in the estuary will decrease with the upgrading of the Bradenton WWTP required by special legislation which makes advanced treatment mandatory for discharges going to Tampa Bay. However, the major source of pollution is runoff from upstream agricultural sources (and Lake Manatee) and urban runoff from Bradenton.

MANATEE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L   -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03100202 MANATEE RIVER																										
* WATER BODY TYPE: ESTUARY																										
10.00	MANATEE RIVER AB TAMPA BAY	78	83	84	-1.0	7.6	13	-1	7.2	81	-1.0	-1	-1	8.2	113	0.51	-1.00	8	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: LAKE																										
16.00	WARD LAKE(UPPER BRADEN RIVER)	83	66	86	-1.0	-1.0	-1	-1	5.3	59	1.8	-1	15	7.1	-1	0.90	0.29	-1	330	59	-1.0	-1.0	-1	463	-1	54
* WATER BODY TYPE: STREAM																										
2.00	BRADEN RIVER AB BRADEN RIVER C	940	66	87	5.0	-1.0	70	-1	6.8	86	1.9	50	14	7.3	70	1.02	0.17	-1	920	260	-1.0	-1.0	-1	700	0	60
3.00	MANATEE RIVER AB MANATEE RIVER	65	72	83	-1.0	1.7	185	-1	6.1	77	-1.0	-1	-1	7.4	40	1.23	-1.00	20	315	130	-1.0	-1.0	-1	-1	-1	45
4.00	MANATEE RIVER AB GAMBLE CREEK	900	61	87	2.2	-1.0	100	4	6.7	78	1.6	41	12	6.8	24	0.75	0.49	-1	825	120	-1.0	-1.0	-1	153	16	38
4.10	RYE CREEK AB LITTLE MANATEE RI	179	67	87	2.5	0.8	75	1	7.0	82	1.3	-1	9	7.0	-1	0.69	0.69	1	315	80	2.4	4.0	38	231	-1	32
4.20	GILLEY CREEK AB MANATEE RIVER	2	76	76	-1.0	-1.0	95	-1	-1.0	-1	0.8	45	18	7.2	14	2.35	0.25	-1	-1	-1	-1.0	-1.0	-1	110	-1	56
5.00	MANATEE RIVER, EAST FORK AB MA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	MANATEE RIVER, NORTH FORK AB M	10	56	76	-1.0	-1.0	70	-1	4.7	58	-1.0	-1	30	6.7	12	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	95	-1	70
7.00	GAMBLE CREEK AB MANATEE RIVER	57	62	76	-1.0	-1.0	85	-1	5.6	69	1.4	65	22	7.0	53	2.30	0.47	-1	1600	280	-1.0	-1.0	-1	324	-1	70
9.00	MANATEE RIVER AB SOUTH TAMPA B	2978	67	87	4.2	3.5	28	-1	6.2	78	2.0	-1	24	8.0	100	0.83	0.69	10	233	100	-1.0	-1.0	-1	32800	-1	37
13.00	MANATEE RIVER AB BRADEN RIVER	353	82	83	-1.0	1.6	172	0	5.8	72	-1.0	-1	-1	7.2	40	1.27	0.06	11	60	10	-1.0	-1.0	-1	310	-1	45
14.00	MANATEE RIVER AB MANATEE RIVER	267	83	84	-1.0	4.0	29	-1	6.8	83	-1.0	-1	-1	8.1	44	0.81	-1.00	15	-1	-1	-1.0	-1.0	-1	-1	-1	20

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03100202 MANATEE RIVER

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
* WATER BODY TYPE: ESTUARY																	
10.00	MANATEE RIVER ABOVE TAMPA BAY	PARTIAL	UNKN	--..	.-..	---.	-..	*	.	....	....	....	..		* **	**	HYDROMODIFIED (DAM). SEVERAL SOURCES INDICATED PROBLEMS IN THIS AREA.
* WATER BODY TYPE: LAKE																	
16.00	WARD LAKE(UPPER BRADEN RIVER) ABOVE	YES	GOOD	--.-	---.	..-*	-..		*	....	*-0.	..**	+.				INCREASED RECENT LEVELS OF BOD,TN AND TP.
* WATER BODY TYPE: STREAM																	
2.00	BRADEN RIVER ABOVE BRADEN RIVER CHA	YES	POOR	----	---.	....	-..	***	0	00..	....	....	-.		* **	**	ELEVATED BACTERIA COUNTS OF UNKNOWN ORIGIN.INCREASED CONDUCTIVITY IS NATURAL IN ORIGIN.ALGAL BLOOMS OVER A ONE MILE REACH ARE CAUSED BY RUNOFF FROM TOMATO FIELDS. ALTERATION OF NATURAL SHORELINE. NEW DEVELOPMENT THREATENING CLASS I DESIGNATION.
3.00	MANATEE RIVER ABOVE MANATEE RIVER C	YES	FAIR	--..	.--.	....	-..	**	.	....	....	....	..		* **	*	DEVELOPMENT ALONG THE RIVER AND ITS TRIBUTARIES CAUSE HABITAT ALTERATION AND EROSION.
4.00	MANATEE RIVER ABOVE GAMBLE CREEK	PARTIAL	GOOD	*---	---.	....	--.	***	0	-*00	*000	..0-	00		* *	* *	THE DISTRICT INDICATES THAT MANATEE LAKE RESERVOIR HAS UPSTREAM NPS LOADING CAUSING ALGAL BLOOMS AND AQUATIC WEED PROBLEMS. USE OF ALGACIDES CAUSING ELEVATED COPPER VALUES.
4.10	RYE CREEK ABOVE LITTLE MANATEE RIVE	YES	GOOD	*---	----	....	-..		0	**0.	000.	...0	0.				
4.20	GILLEY CREEK ABOVE MANATEE RIVER	YES	FAIR	*-.-	-...	....	...	*	.	....	....	....	..		*		HIGH NITROGEN,BUT NOT ENOUGH PARAMETER COVERAGE TO CLASSIFY REACH.CONTRIBUTES NUTRIENTS AND SEDIMENTS TO LAKE MANATEE. AGRICULTURAL IMPACTS INCLUDE RUNOFF FROM CATTLE AND CROPLANDS.
5.00	MANATEE RIVER, EAST FORK ABOVE MANA	YES	UNKN	....	....	....	.	**							* *	* *	BECKER PHOSPHATE MINE. RUNOFF FROM CATTLE RANCHING OPERATIONS. HYDROMODIFIED.
6.00	MANATEE RIVER, NORTH FORK ABOVE MAN	YES	POOR	.-.-	*-..	....	...	**	.	....	....	....	..		* *	* *	HIGH TOC AND LOW DO CONCENTRATIONS, HOWEVER PARAMETER COVERAGE IS LIMITED.BECKER PHOSPHATE MINE. CATTLE RANCHING OPERATIONS. HYDROMODIFIED.
7.00	GAMBLE CREEK ABOVE MANATEE RIVER	UNKNOWN	POOR	*-.-	---.	....	-..	**	.	....	....	....	..		* **		HIGH NUTRIENT LOAD FROM AN UNKNOWN SOURCE.DEVELOPMENT ALONG RIVER AND ITS TRIBUTARIES HAVE CAUSED HABITAT ALTERATION AND EROSION. REACH NOT CLASSIFIED DUE TO OLD DATA.
9.00	MANATEE RIVER ABOVE SOUTH TAMPA BAY	PARTIAL	GOOD	*--*	---.	....	-.-	**	0	00*.	0--.	---.	-.		* **	**	HYDROMODIFIED (DAM). SEVERAL SOURCES INDICATED PROBLEMS IN THIS AREA.
13.00	MANATEE RIVER ABOVE BRADEN RIVER	PARTIAL	FAIR	----	.--.	....	-..	**	0	....	.00.	0.0.	0.		* **	**	INTENSE DEVELOPMENT. HYDOMODIFIED (DAM). SEVERAL SOURCES INDICATED PROBLEMS IN THIS AREA.
14.00	MANATEE RIVER ABOVE MANATEE RIVER C	PARTIAL	GOOD	--..	.-..	....	-..	**	.	....	....	....	..		* **	**	DEVELOPMENT ALONG RIVER AND ITS TRIBS CAUSING HABITAT ALTERATION AND EROSION. HYDROMODIFIED. SEVERAL SOURCES INDICATED PROBLEMS IN THIS AREA.

MYAKKA RIVER BASIN

General Description of the Basin

The headwaters of the Myakka River arise from marshes in Hardee County in southwestern Florida. The river traverses approximately 54 miles, draining roughly 540 square miles prior to discharging to Charlotte Harbor. The average flow of the Myakka River at Myakka City is estimated at 130 cfs. A salt wedge extends upstream from Charlotte Harbor during periods of low flow. Rangeland and agriculture are the major land uses in the relatively undeveloped Myakka River Basin. There is also some phosphate mining in the upper river. There are no major urban areas in the Myakka River Basin; however, the City of Sarasota is located just west of this basin.

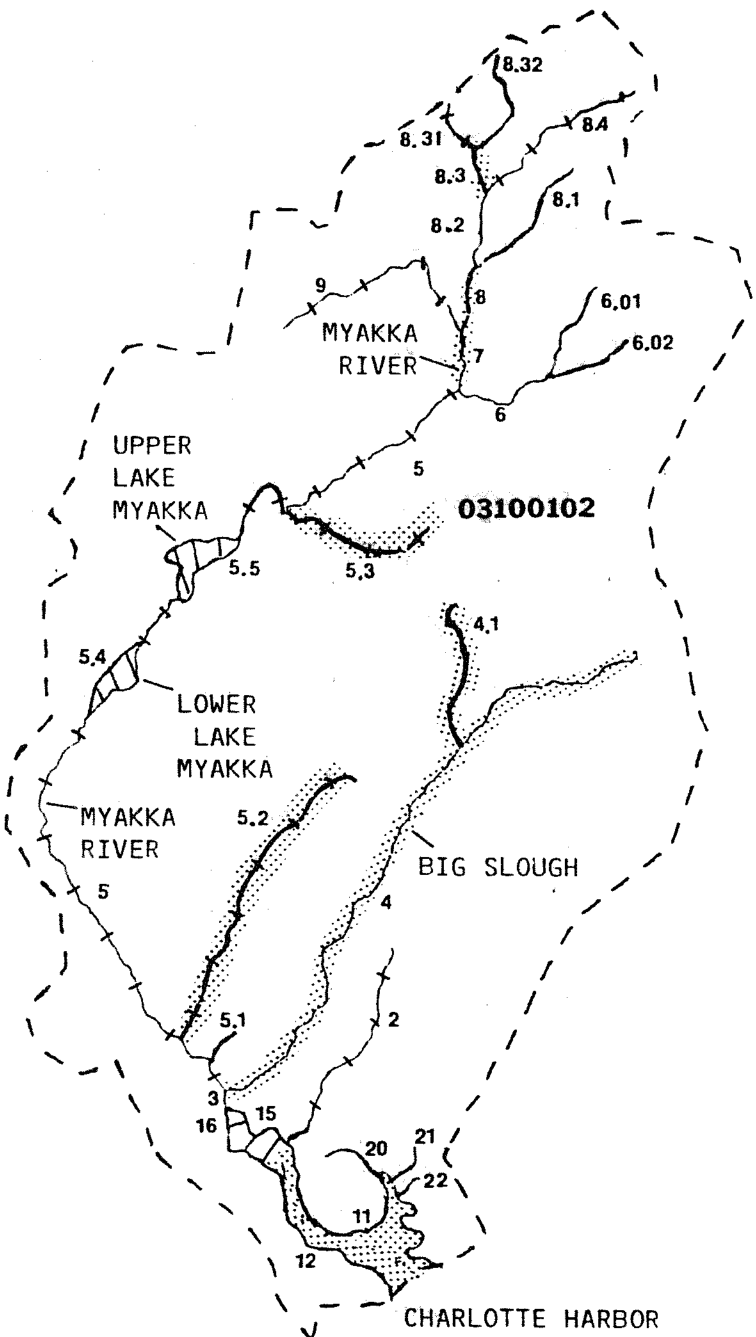
Specific Water Quality Problems and Pollution Sources

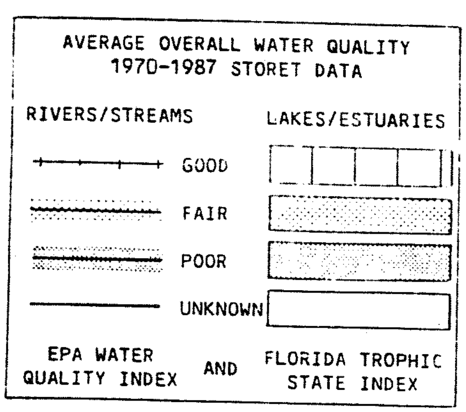
This basin generally has very good water quality and supports both productive freshwater and estuarine habitats. The river emanates from swamp drainage and is very sluggish, often with zero net flow during the dry spring seasons. Tidal influence on flows and salinity can extend approximately 20 miles upstream. A small portion of the watershed drains phosphate mining areas which, combined with agricultural and rangeland runoff, causes the river to have elevated nutrient levels. Upper Lake Myakka is eutrophic with dense hydrilla and hyacinth growth and depressed dissolved oxygen concentrations.

In the lower basin, Big Slough shows elevated coliform and nutrient levels presumably due to pasture and urban development area runoff. There was also a WWTP which historically discharged indirectly to Big Slough. There is relatively little development along the estuary which maintains much of its pristine, mangrove vegetated shoreline. The estuary, although high in phosphorus, supports a healthy flora and fauna.

Recently, Sarasota County has purchased a major land tract in the lower Myakka River basin and is coordinating with USGS and private consultants to investigate possible drinking water resources there.

MYAKKA RIVER BASIN





Map Location

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	CONO	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03100102 MYAKKA RIVER																										
* WATER BODY TYPE: ESTUARY																										
11.00	MYAKKA RIVER AB CHARLOTTE HARB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	MYAKKA RIVER AB CHARLOTTE HARB	100	65	85	2.0	0.9	40	-1	7.0	84	1.5	-1	9	7.6	-1	0.90	0.24	14	65	96	-1.0	-1.0	-1	28450	-1	58
15.00	MYAKKA RIVER AB *A	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.00	MYAKKA RIVER AB CHARLOTTE HARB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: LAKE																										
5.40	LOWER MYAKKA LAKE AB MYAKKA RI	14	65	83	-1.0	-1.0	150	-1	5.4	72	-1.0	-1	-1	7.2	26	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	155	-1	-1
5.50	UPPER MYAKKA LAKE AB MYAKKA RI	10	75	80	1.9	1.2	158	-1	3.0	37	-1.0	-1	23	7.2	38	1.29	0.28	8	-1	-1	1.2	-1.0	3	128	-1	52
* WATER BODY TYPE: STREAM																										
2.00	UNNAMED CREEK AB MYAKKA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	MYAKKA RIVER AB CHARLOTTE HARB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	BIG SLOUGH CANAL AB MYAKKA RIV	151	62	87	2.8	-1.0	170	10	6.2	72	1.1	84	22	7.2	41	1.25	0.29	5	1000	218	-1.0	-1.0	-1	423	26	45
4.10	MUD LAKE SLOUGH AB BIG SLOUGH	22	81	85	1.0	-1.0	200	-1	6.3	80	2.0	-1	24	6.5	-1	1.47	0.29	-1	1534	-1	-1.0	-1.0	-1	99	6	50
5.00	MYAKKA RIVER AB BIG SLOUGH CAN	1219	62	87	1.5	1.0	140	3	5.7	65	1.5	68	20	6.9	26	1.25	0.33	8	650	65	3.5	2.7	12	237	73	41
5.10	WARM SALT SPRING AB BIG SLOUGH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.20	DEER PRAIRIE CREEK AB MYAKKA R	42	82	85	0.8	-1.0	175	8	5.7	68	1.8	-1	22	6.2	-1	1.52	0.07	-1	1455	-1	-1.0	-1.0	-1	80	18	51
5.30	CLAY GULLEY AB MYAKKA RIVER	9	74	79	2.5	-1.0	100	-1	4.5	47	1.1	-1	-1	6.7	44	0.87	0.20	-1	3550	335	-1.0	-1.0	-1	160	-1	50
6.00	OWEN CREEK AB MYAKKA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.01	OWEN BRANCH AB OWEN CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.02	OWEN CREEK AB OWEN BRANCH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	MYAKKA RIVER AB OWEN CREEK	111	66	87	1.0	0.5	185	-1	5.4	67	1.4	-1	23	6.5	-1	2.92	0.39	0	1950	150	-1.0	-1.0	-1	175	-1	63
8.00	MYAKKA RIVER AB OGLEBY CREEK	13	63	83	2.0	-1.0	160	-1	6.1	69	1.4	87	34	6.4	58	1.54	0.41	0	580	146	-1.0	-1.0	-1	273	-1	52
8.10	LONG CREEK AB MYAKKA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.20	MYAKKA RIVER AB LONG CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.30	WINGATE CREEK AB MYAKKA RIVER	4	63	76	-1.0	-1.0	-1	-1	4.9	62	1.0	48	30	6.5	-1	1.13	0.19	-1	-1	-1	-1.0	-1.0	-1	76	-1	53
8.31	JOHNSON CREEK AB WINGATE CREEK	34	71	81	2.0	-1.0	40	-1	6.4	74	2.3	86	24	6.5	8	0.98	0.13	-1	-1	-1	-1.0	-1.0	-1	102	12	22
8.32	WINGATE CREEK AB JOHNSON CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.40	MYAKKA RIVER AB WINGATE CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	OGLEBY CREEK AB LONG CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
20.00	SAM KNIGHT CREEK AB TIPPECANOE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	HUCKABY CREEK AB TIPPECANOE BA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
22.00	FLOPBUCK CREEK AB TIPPECANOE B	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

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                                        WATER QUALITY ASSESSMENT REPORT
                                 SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
                             '*'=PROBLEM OR DEGRADING TREND  '0'=NO TREND  '.'=NO DATA
                              '-'= NO PROBLEM OR IMPROVING TREND  (SEE LEGEND PAGE 7)

                                                   MEETS   WQI | SCREENING PROBLEMS     | | 1980-1987 TRENDS     | | SOURCES      | PRESENT CONDITIONS AND CLEANUP EFFORTS
REACH REACH NAME                                    USE   RANK |----------------------- | |--------------------| |------------- |
----- ----------------------------------- ------- ---- |NPSS|BDBD|CSTT|AMB|FAB| |W|TFTT|BDDT|CSTT|TF| | IM|ASCU|MLHS|
                                                       |PHIA|OOAI|HDNP|MEI|KWL| |Q|CCUS|OOSO|HDNP|EL| | NU|GVNR|NDMT|

** USGS HYDROLOGIC UNIT CODE: 03100102 MYAKKA RIVER

* WATER BODY TYPE: ESTUARY
 11.00 MYAKKA RIVER ABOVE CHARLOTTE HARBOR PARTIAL UNKN |....|....|....|.  |***| | |    |    |    |  | | |* **|* **| PERIODIC SHELLFISHING BANS.
 12.00 MYAKKA RIVER ABOVE CHARLOTTE HARBOR PARTIAL FAIR |----|---.|---*|--.|***| |0|..0.|.0*0|.0*0|+.| | |* **|* **| ELEVATED NUTRIENT AND CHLOROPHYLL a CONCENTRATIONS IN
                                                                                                                    THE ESTUARY.
 15.00 MYAKKA RIVER ABOVE *A                YES     UNKN |....|....|....|.  | * | | |    |    |    |  | | |* **| ***|
 16.00 MYAKKA RIVER ABOVE CHARLOTTE HARBOR YES     UNKN |....|....|....|.  | * | | |    |    |    |  | | |* **| ***|

* WATER BODY TYPE: LAKE
  5.40 LOWER MYAKKA LAKE ABOVE MYAKKA RIVE YES     UNKN |.-.-|.-..|....|...| * | |.|....|....|....|..| | |* **|* **| WEED PROBLEM IN UPPER AND LOWER LAKE REGION. MINING
                                                                                                                    IN HEADWATERS AREA.
  5.50 UPPER MYAKKA LAKE ABOVE MYAKKA RIVE YES     GOOD |----|-*.*|---*|-..| **| |.|....|....|....|..| | |* **|* **| HYDRILLA AND HYACINTH GROWTH PROBLEMS, WITH RESULTANT
                                                                                                                    LOW DO. PASTURES AND SMALL PHOSPHATE PLANT UPSTREAM.
                                                                                                                    1979 WLA FOR SPRAYFIELD SITE.

* WATER BODY TYPE: STREAM
  2.00 UNNAMED CREEK ABOVE MYAKKA RIVER ES YES     UNKN |....|....|....|.  | * | | |    |    |    |  | | |* **|    | CLASS I WATERS
  3.00 MYAKKA RIVER ABOVE CHARLOTTE HARBOR YES     UNKN |....|....|....|.  | * | | |    |    |    |  | | |* **|****| WEED PROBLEM IS IN UPPER AND LOWER LAKE REGION.
                                                                                                                    MINING IN HEADWATERS AREA.
  4.00 BIG SLOUGH CANAL ABOVE MYAKKA RIVER PARTIAL FAIR |----|---.|....|-..| * | |0|0-0.|000.|..00|0.| | |* **|    | ELEVATED BACTERIA AND DEPRESSED DO, PRESUMABLY FROM
                                                                                                                    PASTURE LAND AND URBAN RUNOFF. IMPROVED WATER QUALITY
                                                                                                                    IN PAST 6 YEARS.CLASS I WATERS.
  4.10 MUD LAKE SLOUGH ABOVE BIG SLOUGH CA PARTIAL FAIR |----|---.|....|--.|   | |0|....|....|....|0.| | |    |    | SLIGHT BACTERIA PROBLEM FROM PASTURE LAND RUNOFF.
  5.00 MYAKKA RIVER ABOVE BIG SLOUGH CANAL YES     GOOD |----|----|....|--.| * | |-|0-00|-000|0000|0+| | |* **|****| DAMS IN UPPER AND LOWER LAKE CAUSE WEED PROBLEMS.
                                                                                                                    MINING IN HEADWATERS AREA.
  5.10 WARM SALT SPRING ABOVE BIG SLOUGH C UNKNOWN UNKN |....|....|....|.  |   | | |    |    |    |  | | |    |    |
  5.20 DEER PRAIRIE CREEK ABOVE MYAKKA RIV PARTIAL FAIR |----|---.|....|--.|   | |*|-...|0**0|..00|00| | |    |    | SLIGHTLY ELEVATED BACTERIA COUNTS AND AN INCREASE IN
                                                                                                                    DO DEPLETION,  BUT OTHERWISE GOOD WATER QUALITY.
  5.30 CLAY GULLEY ABOVE MYAKKA RIVER      PARTIAL FAIR |----|---.|....|-..|   | |.|....|....|....|..| | |    |    | SLIGHTLY ELEVATED BACTERIA LEVELS.
  6.00 OWEN CREEK ABOVE MYAKKA RIVER       UNKNOWN UNKN |....|....|....|.  |   | | |    |    |    |  | | |    |    |
  6.01 OWEN BRANCH ABOVE OWEN CREEK        UNKNOWN UNKN |....|....|....|.  |   | | |    |    |    |  | | |    |    |
  6.02 OWEN CREEK ABOVE OWEN BRANCH        UNKNOWN UNKN |....|....|....|.  |   | | |    |    |    |  | | |    |    |
  7.00 MYAKKA RIVER ABOVE OWEN CREEK       PARTIAL POOR |*---|---.|....|-..|   | |0|00..|....|....|0.| | |    |    | PROBLEMS ASSOCIATED WITH ELEVATED BACTERIA COUNTS AND
                                                                                                                    NUTRIENTS.
  8.00 MYAKKA RIVER ABOVE OGLEBY CREEK     PARTIAL FAIR |----|*--.|....|-..| * | |.|....|....|....|..| | |    |  **| RECENT TREND TOWARD INCREASED BOD AND NUTRIENT
                                                                                                                    CONCENTRATIONS.WEED PROBLEM CAUSED BY DAMS IN UPPER
                                                                                                                    AND LOWER LAKE.
  8.10 LONG CREEK ABOVE MYAKKA RIVER       UNKNOWN UNKN |....|....|....|.  |   | | |    |    |    |  | | |    |    |
  8.20 MYAKKA RIVER ABOVE LONG CREEK       YES     UNKN |....|....|....|.  | * | | |    |    |    |  | | |    |  **| DAMS IN UPPER AND LOWER LAKE CAUSE WEED PROBLEMS.
  8.30 WINGATE CREEK ABOVE MYAKKA RIVER    PARTIAL FAIR |--.-|*-..|....|-..|   | |.|....|....|....|..| |*|    |    | ONLY ONE SAMPLE. SITE OF BEKER BENEFICATION PLANT
                                                                                                                    OUTFALL.
  8.31 JOHNSON CREEK ABOVE WINGATE CREEK   YES     GOOD |----|--..|....|-..|   | |.|....|....|....|..| |*|    |    |
  8.32 WINGATE CREEK ABOVE JOHNSON CREEK   UNKNOWN UNKN |....|....|....|.  |   | | |    |    |    |  | | |    |    |
  8.40 MYAKKA RIVER ABOVE WINGATE CREEK    YES     UNKN |....|....|....|.  | * | | |    |    |    |  | | |    |  **|
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WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
9.00	OGLEBY CREEK ABOVE LONG CREEK	YES	UNKN	....	....	....	.	**							*		
20.00	SAM KNIGHT CREEK ABOVE TIPPECANOE B	UNKNOWN	UNKN	....	....	....	.										
21.00	HUCKABY CREEK ABOVE TIPPECANOE BAY	UNKNOWN	UNKN	....	....	....	.										
22.00	FLOPBUCK CREEK ABOVE TIPPECANOE BAY	UNKNOWN	UNKN	....	....	....	.										

NASSAU RIVER BASIN

General Description of the Basin

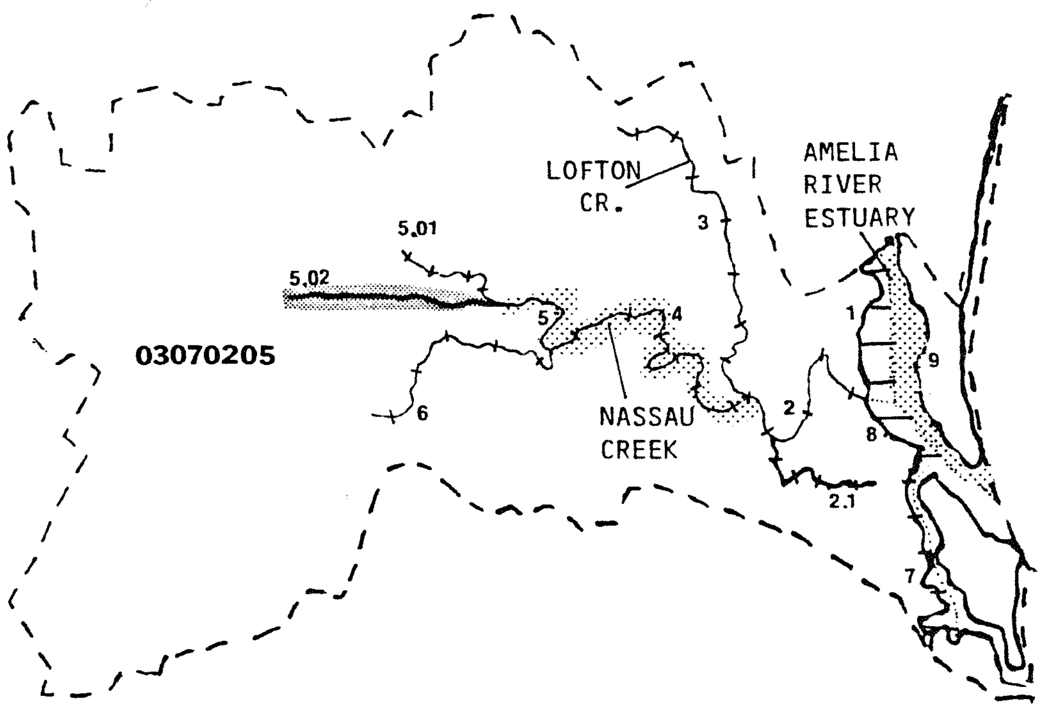
The Nassau River drains 430 square miles of predominately forest and wetlands. There are 54.8 stream miles in the basin and approximately 10 square miles of estuary (including South Amelia River, the mouth of Nassau River, Sisters Creek and Ft. George River). There are no large point sources of pollution in the basin (the largest is the Amelia Island Waterworks plant with .6 MGD which uses land application).

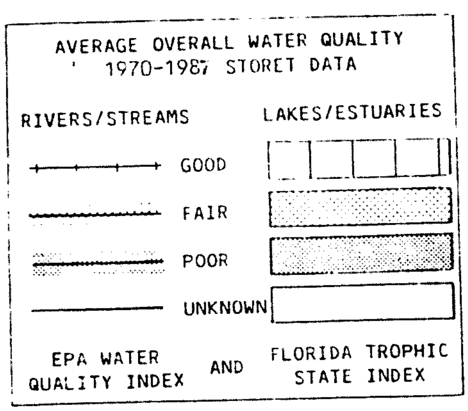
Specific Water Quality Problems and Sources

Historically, the Nassau River Basin has had very good water quality; however, there is limited STORET data in the area. Upper Mills Creek receives discharge from a small WWTP and heavy nutrient and bacteria loading from cattle operations. It exhibits poor water quality and affects some downstream stations.

The Amelia Island reach shows minor problems with elevated BOD, turbidity and phosphorus concentrations which may be from development on the island, either natural or the effects of a pulp mill discharge to the upstream reach (in the St. Marys Basin).

NASSAU RIVER BASIN





Map Location

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03070205 NASSAU RIVER																										
* WATER BODY TYPE: ESTUARY																										
1.00	NASSAU SOUND AB AMELIA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	FT GEORGE RIVER AB AMELIA RIVE	12	77	77	2.8	1.4	8	70	5.8	82	1.3	-1	-1	7.6	-1	0.63	0.03	-1	11	5	-1.0	-1.0	-1	49125	-1	49
8.00	NASSAU ISLAND AB NASSAU SOUND	2	83	83	3.6	1.0	44	9	7.2	94	-1.0	-1	-1	7.8	-1	0.74	0.07	-1	-1	-1	-1.0	-1.0	-1	-1	-1	58
9.00	AMELIA ISLAND AB AMELIA RIVER	325	69	85	8.7	0.8	50	73	6.0	73	1.8	190	8	7.7	116	0.67	0.12	5	225	48	2.8	1.1	-1	36250	1	58
* WATER BODY TYPE: STREAM																										
2.00	NASSAU RIVER AB ICWW	40	78	85	15.3	0.6	129	44	6.8	75	1.8	-1	-1	7.3	37	1.16	0.13	3	22	5	2.0	-1.0	-1	20500	-1	52
2.10	EDWARDS CREEK AB NASSAU RIVER	13	84	85	-1.0	1.0	43	39	7.2	82	1.7	-1	-1	7.2	74	0.59	0.25	7	-1	-1	-1.0	-1.0	-1	33575	-1	48
3.00	LOFTON CREEK AB NASSAU RIVER	33	63	86	-1.0	0.5	73	35	6.4	65	1.6	-1	-1	7.1	64	0.79	0.11	5	-1	-1	-1.0	-1.0	-1	25000	-1	50
4.00	NASSAU RIVER AB LOFTON CREEK	106	61	86	7.3	0.6	143	36	6.0	70	1.5	-1	17	7.0	54	0.89	0.15	7	665	34	1.1	-1.0	-1	10500	-1	52
5.00	MILLS CREEK AB THOMAS CREEK	19	82	85	-1.0	0.6	206	7	4.4	53	1.3	-1	-1	6.2	19	1.16	0.20	4	-1	-1	-1.0	-1.0	-1	1132	-1	51
5.01	BOGGY BRANCH AB MILLS CREEK	19	82	86	-1.0	-1.0	212	2	2.0	23	1.4	-1	-1	5.8	11	0.89	0.07	1	-1	-1	-1.0	-1.0	-1	135	-1	41
5.02	MILLS CREEK AB BOGGY BRANCH	18	75	86	-1.0	-1.0	238	7	5.1	53	3.0	-1	-1	6.7	55	2.19	2.19	2	1700	790	-1.0	-1.0	-1	193	4	66
6.00	THOMAS CREEK AB MILLS CREEK	147	65	85	4.6	0.5	170	19	5.4	60	1.6	-1	-1	6.4	23	0.88	0.16	3	-1	-1	-1.0	-1.0	-1	135	13	52

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS WQ	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03070205 NASSAU RIVER																	
* WATER BODY TYPE: ESTUARY																	
1.00	NASSAU SOUND ABOVE AMELIA RIVER	YES	UNKN	....	....	....	.								* **	*	THIS AREA'S WETLANDS ARE UNDERGOING RAPID DEVELOPMENT, INCLUDING CONSTRUCTION OF A NEW ACCESS BRIDGE.
7.00	FT GEORGE RIVER ABOVE AMELIA RIVER	YES	GOOD	--*-	---.	.---	...		.	....	....	....	..				
8.00	NASSAU ISLAND ABOVE NASSAU SOUND	YES	FAIR	---.	.-..	.---	-..		.	....	....	....	..				GENERALLY GOOD WATER QUALITY.
9.00	AMELIA ISLAND ABOVE AMELIA RIVER	PARTIAL	FAIR	--*-	*--*	----	-*.		0	000-	0***	00--	+.	*	**	*	RECENT TREND TOWARDS LOWER DO CONCENTRATIONS. ORIGIN OF THE PROBLEM MAY BE RELATED TO PULP WOOD INDUSTRY DISCHARGE, UNTREATED URBAN STORMWATER, AND RAPID DEVELOPMENT ON AMELIA ISLAND, INCLUDING CONSTRUCTION OF A NEW ACCESS BRIDGE.
* WATER BODY TYPE: STREAM																	
2.00	NASSAU RIVER ABOVE ICWW	YES	FAIR	--**	----	....	-..	*	0	...0	000.	...*	0.		* **	*	CONDUCTIVITY VALUES REFLECT NATURAL CONDITIONS.
2.10	EDWARDS CREEK ABOVE NASSAU RIVER	YES	FAIR	--**	--..	....	-..		.	....	....	....	..				CONDUCTIVITY REFLECTS NATURAL CONDITIONS.
3.00	LOFTON CREEK ABOVE NASSAU RIVER	YES	FAIR	--**	--..	....	-..		.	....	....	....	..		* *	* *	LIMITED DATA COVERAGE.EXISTING LANDFILL SITE CAUSING PROBLEMS. ALSO, SILVICULTURE ACTIVITIES ARE USING MARGINAL BMPS.
4.00	NASSAU RIVER ABOVE LOFTON CREEK	PARTIAL	FAIR	--**	---*	....	-..		0	...0	0-0.	0*0*	0.			*	PROBLEMS ASSOCIATED WITH ELEVATED BACTERIA COUNTS,INCREASED TURBIDITY AND A DECREASE IN THE DIVERSITY INDEX.
5.00	MILLS CREEK ABOVE THOMAS CREEK	PARTIAL	FAIR	----	--..	....	-..		.	....	....	....	..				RECENT DATA INDICATE ELEVATED NUTRIENT CONCENTRATIONS AND LOW DO.
5.01	BOGGY BRANCH ABOVE MILLS CREEK	YES	GOOD	----	-*..	....	-..		.	....	....	....	..				
5.02	MILLS CREEK ABOVE BOGGY BRANCH	NO	POOR	*---	--*.	....	-..	***	.	....	....	....	..	*	** *	**	NUTRIENT AND BACTERIA RELATED PROBLEMS ASSOCIATED WITH WATERS DOWNSTREAM OF A WWTP.STREAM IS CHANNELIZED.
6.00	THOMAS CREEK ABOVE MILLS CREEK	YES	FAIR	--*-	--..	....	-..	*	.	....	....	....	..		****	* *	CONDUCTIVITY LEVELS REFLECT NATURALLY OCCURRING CONDITIONS.ANNHEUSER-BUSCH SPRAYFIELD, JUNKYARD ON U.S. 1,AND NASSAU CO. RECYCLING OPERATIONS LOCATED IN THE AREA.

NEW RIVER BASIN

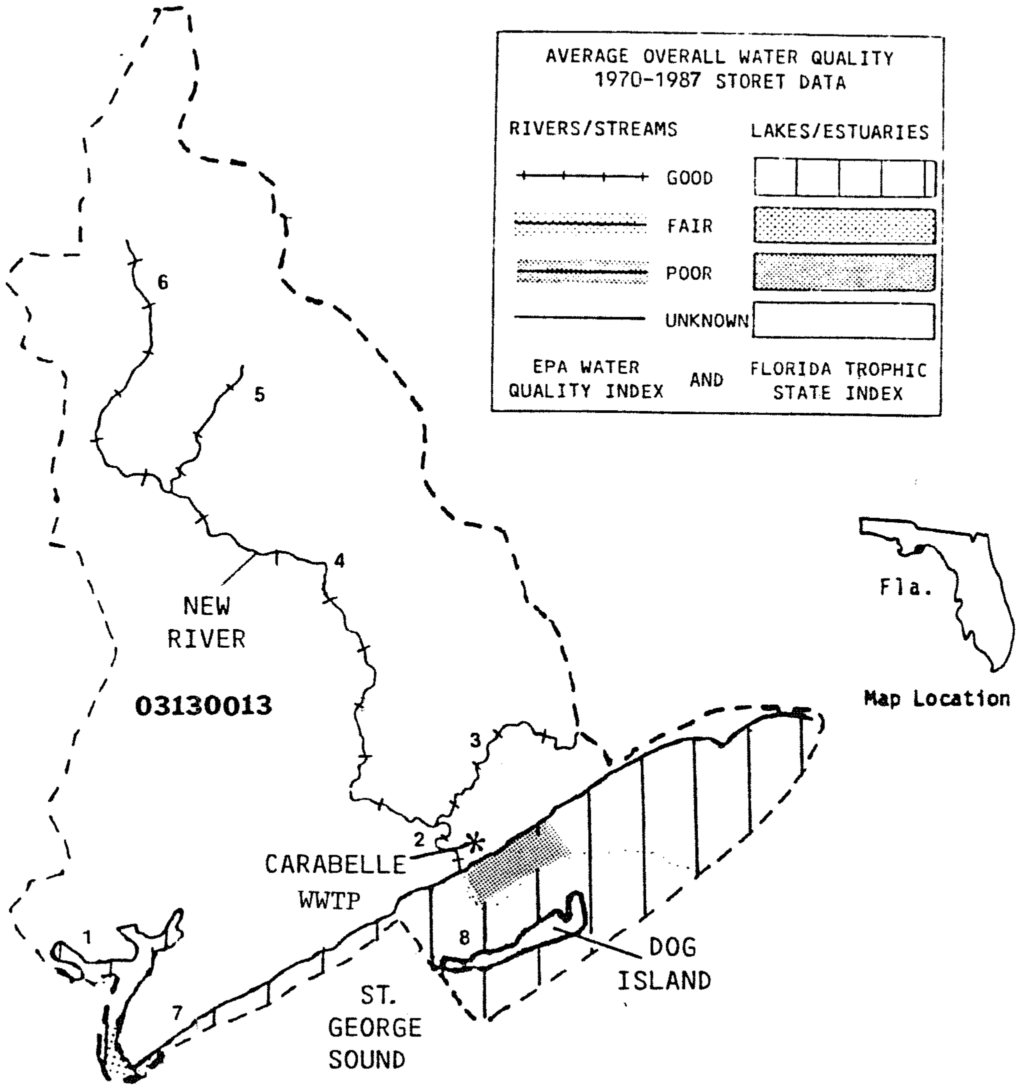
General Description of the Basin

The New River Basin is a small panhandle Florida coastal basin which adjoins the Apalachicola River basin. The basin drains about 569 square miles of Tate's Hell Swamp. Forestry and wetland areas are the predominant land uses in the basin. Only 1% of the basin is urban area, principally the coastal communities of Carrabelle and Eastpoint. Seafood processing is the area's major economic activity.

Specific Water Quality Problems and Pollution Sources

Sampling of the New River has been very limited; however, it drains an area nearly devoid of pollution sources except for a few logging operations and roads. The portion of the basin in St. George Sound also has good water quality except where the Carrabelle WWTP discharges. This facility has very poor treatment (primary treatment standards) and discharges directly into the Sound. However, there are plans to both improve treatment and discharge to an area of wetlands or a sprayfield. The new plant should be functioning by late summer of 1988. This improvement should have a marked effect on water quality in the area. Water quality is also poor in the immediate vicinity of Carrabelle and Eastpoint where pollution from marinas and shellfish processing facilities washes into the Sound.

NEW RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03130013 NEW RIVER																										
* WATER BODY TYPE: ESTUARY																										
1.00	ALLIGATOR POINT/ST GEORGE SOUN	8	71	85	7.0	0.6	60	41	7.3	90	2.7	-1	-1	7.8	-1	2.08	0.17	8	80	11000	-1.0	-1.0	-1	19620	-1	57
7.00	EAST POINT/ST GEORGE SOUND AB	11	71	76	17.0	0.6	90	-1	7.8	90	0.9	-1	-1	7.3	64	0.67	0.02	-1	790	7	-1.0	-1.0	-1	12500	-1	42
8.00	DOG ISLAND/ST GEORGE SOUND AB	6	71	85	5.0	0.7	40	26	7.7	109	1.1	-1	-1	7.9	-1	1.32	0.05	7	1000	-1	-1.0	-1.0	-1	30985	-1	55
* WATER BODY TYPE: STREAM																										
2.00	CARABELLE RIVER AB ST GEORGE S	3	75	75	-1.0	9.1	-1	-1	6.5	79	0.5	-1	-1	7.1	-1	-1.00	0.02	-1	240	70	-1.0	-1.0	-1	22000	-1	16
3.00	CROOKED RIVER AB NEW RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	NEW RIVER AB CROOKED RIVER	5	67	71	10.0	-1.0	200	-1	7.5	93	-1.0	-1	-1	5.1	2	0.87	0.04	-1	-1	-1	-1.0	-1.0	-1	29	2	25
5.00	NEW RIVER, CAT BRANCH AB NEW R	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	NEW RIVER AB NEW RIVER,CAT BRA	33	56	79	9.3	-1.0	243	-1	-1.0	-1	-1.0	-1	-1	5.6	-1	0.72	0.01	-1	-1	-1	-1.0	-1.0	-1	42	-1	28

WATER QUALITY ASSESSMENT REPORT
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'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03130013 NEW RIVER																	
* WATER BODY TYPE: ESTUARY																	
1.00	ALLIGATOR POINT/ST GEORGE SOUND ABO	YES	FAIR	*-*-	--*.	-***	*..		.	....	....	....	..	*			CARABELLE WWTP HAS POOR WASTEWATER TREATMENT, BUT IMPROVED TREATMENT IS PLANNED WITH DISCHARGE TO WETLANDS.
7.00	EAST POINT/ST GEORGE SOUND ABOVE NE	YES	GOOD	--*-	---.	.*--	-..		.	....	....	....	..		*	*	WASTEWATER FROM SHELLFISH PROCESSING PLACES. SEPTIC TANK SEEPAGE.
8.00	DOG ISLAND/ST GEORGE SOUND ABOVE AP	YES	FAIR	--*-	---.	----	-..		.	....	....	....	..				GENERALLY GOOD WATER QUALITY IN THIS AREA.
* WATER BODY TYPE: STREAM																	
2.00	CARABELLE RIVER ABOVE ST GEORGE SOU	YES	GOOD	--.*	---.	....	...		.	....	....	....	..		*	*	SEPTIC TANKS TOO CLOSE TO RIVER.
3.00	CROOKED RIVER ABOVE NEW RIVER	YES	UNKN	....	....	....	.										
4.00	NEW RIVER ABOVE CROOKED RIVER	YES	GOOD	-*--	.-..	....	...		.	....	....	....	..		*		
5.00	NEW RIVER, CAT BRANCH ABOVE NEW RIV	YES	UNKN	....	....	....	.										
6.00	NEW RIVER ABOVE NEW RIVER,CAT BRANC	YES	GOOD	----	....	....	...		.	....	....	....	..				

OCHLOCKONEE RIVER BASIN

General Description of the Basin

The Ochlockonee River originates in the clay hills of Georgia, entering Florida approximately 15 miles north of Tallahassee. The river flows 162 miles, first through rolling piedmont hills near the headwaters, then through sandy coastal plains before entering the Gulf of Mexico at Panacea, Florida. An impoundment, Lake Talquin, lies directly west of Tallahassee covering 8,850 acres. The Ochlockonee River averages 1,600 cfs upstream of Lake Talquin, although flow in the river fluctuates widely with occassional periods of flooding and drought. The Florida drainage basin is 1253 square miles (there are an additional 300 square miles in Georgia). Land use in the Georgia portion of the Ochlockonee River basin is largely agricultural, but the Florida portion is primarily forest land.

Specific Water Quality Problems and Pollution Sources

There are several problem areas evident in this basin. First, Little River and its upstream tributary, Quincy Creek, have historically shown bacteria, nutrient and turbidity problems. Upstream point sources include a Florida strip mine (for fuller's earth) and the City of Quincy WWTP (1.5 MGD design capacity). Recent data are not available for these fairly small water bodies except for one station in Quincy Creek which did show some improvement.

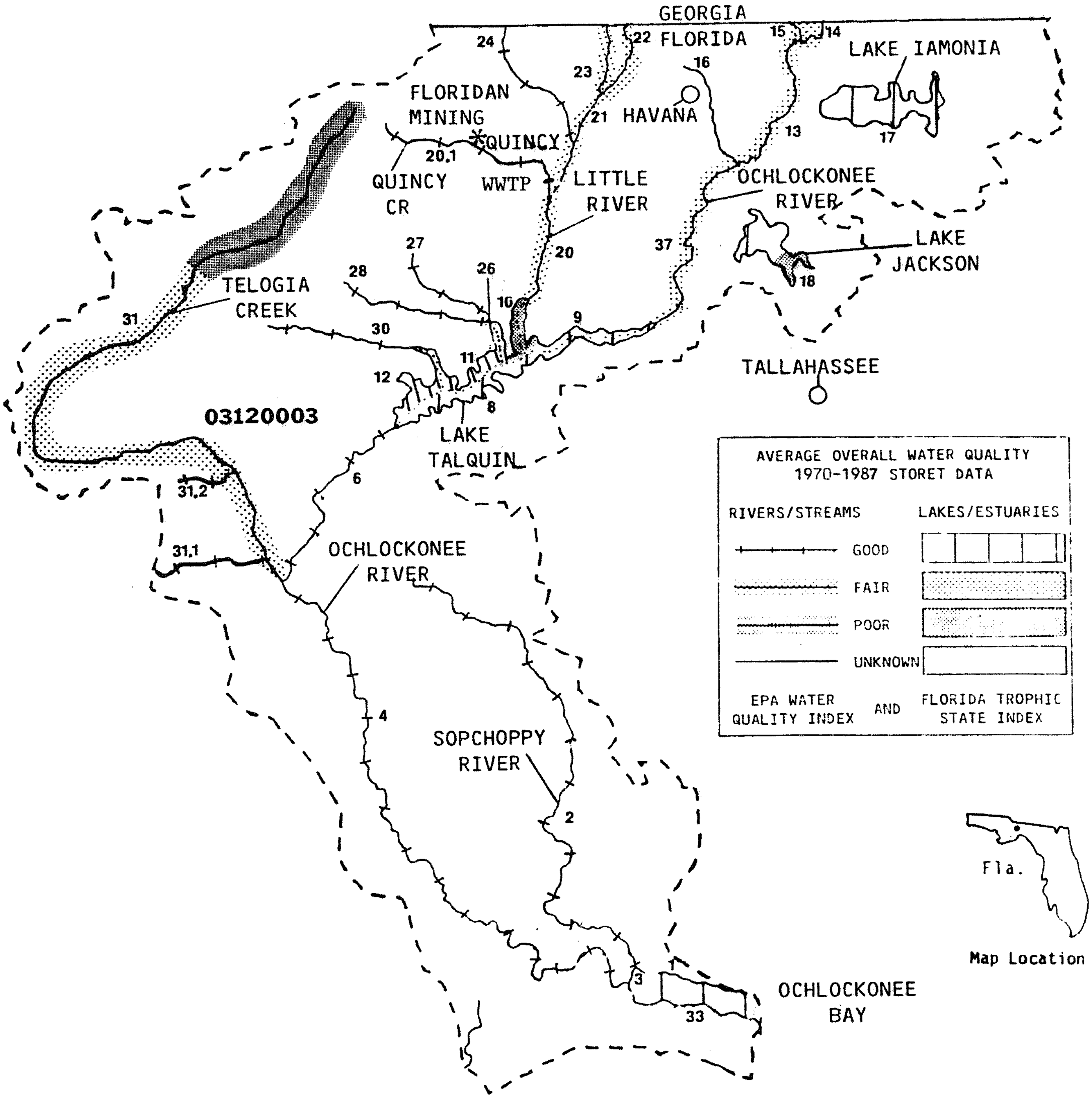
Another problem area is the Ochlockonee River immediately below the Georgia-Florida state line. Water quality problems include high bacteria, nutrient and turbidity values and low macroinvertebrate diversity. A 1987 survey of the upper Ochlocknee basin conducted by the DER Biology Section indicates that the primary source for the heavy turbidity and siltation is agricultural runoff in Georgia. Siltation is also apparently responsible for the depressed macroinvertebrate community. The Georgia Soil and Water Conservation Committee is trying to secure federal funds through the Georgia Environmental Protection Division to begin implementing farming "Best Management Practices". Georgia point sources (primarily two WWTPs and a pickle canning factory) appear to be responsible for the nutrient and bacteria problems in the upper reaches. Ochlockonee River shows improvement downstream before entering Lake Talquin. However, low macroinvertebrate species diversity and high nutrient levels also occur in the Ochlockonee Estuary.

A tributary to the Ochlocknee, Telogia Creek, has severe nutrient and DO problems in the upper portions due to runoff from the Gretna WWTP spray fields. This facility has applied for an EPA grant to correct the problem. A recent DER survey indicates that nutrient and weed problems extend several miles downstream.

Finally, there is concern over Lake Jackson in Tallahassee. Although for the most part, the water quality is still good, the lake, especially Megginnis Arm, is threatened by nutrient loading and siltation from residential and shopping center stormwater. The county has recently placed a temporary moritorium on development pending further assessment.

The other major tributary in the basin, the Sopchoppy River, predominantly draining wetlands and forest land, shows excellent water quality. Its high color, low pH, and relatively low DO levels are natural conditions due to its swamp drainage origin. Due to its inclusion in the Apalachicola National Forest, it is declared an Outstanding Florida Water.

OCHLOCKONEE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	SAMPLE RECORD BEG YR	SAMPLE RECORD END YR	WATER CLARITY TURB	WATER CLARITY SD	WATER CLARITY COLOR	TSS	DISSOLVED OXYGEN DO	DISSOLVED OXYGEN %SAT	OXYGEN DEMAND BOD	OXYGEN DEMAND COD	TOC	PH ALKALINITY PH	PH ALKALINITY ALK	TROPHIC STATUS NITRO	TROPHIC STATUS PHOS	CHLA	COLIFORM TOTAL	COLIFORM FECL	SPECIES DIVERSITY NAT	SPECIES DIVERSITY ART	SPECIES DIVERSITY BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03120003 OCHLOCKONEE RIV																										
* WATER BODY TYPE: ESTUARY																										
1.00	OCHLOCKONEE BAY AB GULF OF MEX	4	71	74	9.0	0.4	23	-1	6.9	100	1.4	-1	-1	7.8	90	0.95	0.03	-1	271	-1	-1.0	-1.0	-1	42500	-1	45
3.00	OCHLOCKONEE BAY AB GULF OF MEX	2	71	74	7.0	0.8	215	-1	5.4	65	1.2	-1	-1	6.0	8	1.61	0.07	-1	805	-1	-1.0	-1.0	-1	270	-1	57
33.00	OCHLOCKONEE BAY AB GULF OF MEX	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: LAKE																										
8.00	LAKE TALQUIN AB OCHLOCKONEE RI	147	65	80	17.5	0.9	80	8	4.9	52	1.5	27	-1	6.6	10	0.71	0.09	7	-1	-1	-1.0	-1.0	-1	62	-1	53
9.00	LAKE TALQUIN AB OCHLOCKONEE RI	7	73	74	4.5	0.9	100	8	6.2	72	1.1	25	-1	7.1	22	0.81	0.14	4	-1	-1	-1.0	-1.0	-1	92	-1	51
10.00	LAKE TALQUIN AB LITTLE CREEK	29	71	74	22.0	0.8	45	16	5.3	56	0.8	34	-1	6.6	14	-1.00	0.25	-1	-1	-1	-1.0	-1.0	-1	58	-1	-1
11.00	LAKE TALQUIN AB BEAR CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	LAKE TALQUIN AB OCKLAWAHA CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	LAKE IAMONIA AB FOSHALEE SLOUG	6	77	81	2.4	2.2	30	8	1.7	20	-1.0	-1	9	5.2	3	0.44	0.01	9	-1	-1	-1.0	-1.0	-1	20	12	36
18.00	LAKE JACKSON AB OX BOTTOM CREE	499	65	81	2.0	1.3	10	7	8.5	93	1.2	36	5	7.0	4	0.65	0.05	6	23	4	2.1	-1.0	-1	33	-1	43
* WATER BODY TYPE: STREAM																										
2.00	SOPCHOPPY RIVER AB OCHLOCKONEE	354	64	86	3.0	1.0	280	6	7.2	82	1.1	-1	24	4.5	8	0.68	0.03	-1	478	48	3.2	2.2	-1	47	86	28
4.00	OCHLOCKONEE RIVER AB OCHLOCKON	34	65	87	7.5	0.6	80	6	5.8	65	0.9	-1	10	6.3	8	0.71	0.08	7	270	40	-1.0	-1.0	-1	72	2130	32
6.00	OCHLOCKONEE RIVER AB TELOGIA C	155	64	83	8.0	1.1	70	6	7.0	81	1.1	31	8	6.6	11	0.67	0.09	12	198	23	1.5	2.7	8	63	378	35
13.00	OCHLOCKONEE RIVER AB OCHLOCKNE	6	65	80	15.5	0.3	100	12	6.5	71	1.2	-1	-1	6.6	20	1.32	0.22	0	515	920	2.6	-1.0	23	300	-1	39
14.00	OCHLOCKONEE RIVER AB SHAW CREE	4	74	77	13.5	-1.0	50	6	6.1	60	1.2	0	15	6.3	33	1.00	0.15	-1	330	79	-1.0	-1.0	-1	175	1433	52
15.00	SHAW CREEK AB OCHLOCKONEE RIVE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.00	OCHLOCKONEE RIVER TRIBUTARY AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
20.00	LITTLE RIVER AB LITTLE R(L TAL	85	62	81	25.0	0.7	75	24	7.2	79	1.7	32	11	6.5	11	1.70	0.16	-1	1260	155	-1.0	-1.0	-1	55	200	52
20.10	QUINCY CREEK AB LITTLE RIVER	61	56	87	13.8	-1.0	37	7	7.8	86	1.1	-1	6	6.8	16	0.86	0.12	-1	1600	275	-1.0	-1.0	-1	50	21	44
21.00	ATTAPULGAS CREEK AB WILLACOOCH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
22.00	SWAMP CREEK AB ATTAPULGAS CREE	1	75	75	140.0	-1.0	-1	-1	5.1	58	-1.0	-1	13	6.0	-1	1.04	0.25	-1	-1	-1	-1.0	-1.0	-1	27	144	61
23.00	ATTAPULGAS CREEK AB SWAMP CREE	16	65	81	25.0	0.8	70	-1	6.7	75	4.5	-1	8	6.5	3	2.37	0.10	-1	1600	200	-1.0	-1.0	-1	50	113	65
24.00	WILLACOOCHEE CREEK AB LITTLE R	35	62	84	22.5	0.5	85	-1	6.9	79	0.7	-1	8	7.0	12	0.63	0.07	-1	-1	402	-1.0	-1.0	-1	39	76	50
26.00	BEAR CREEK AB BEAR CR (L TALQU	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
27.00	ROCKY COMFORT CREEK AB BEAR CR	9	56	75	27.0	-1.0	30	-1	7.2	79	-1.0	-1	3	6.9	8	0.84	0.11	-1	-1	-1	-1.0	-1.0	-1	38	17	41
28.00	BEAR CREEK AB ROCKY COMFORT CR	13	73	75	7.0	-1.0	-1	-1	5.8	63	-1.0	-1	5	6.2	-1	0.36	0.09	-1	-1	-1	-1.0	-1.0	-1	20	10	30
30.00	OCKLAWAHA CREEK AB OCKLAWAHA C	46	73	85	3.0	-1.0	80	-1	8.2	90	-1.0	-1	9	4.4	1	0.30	0.01	-1	-1	220	-1.0	-1.0	-1	18	49	17
31.00	TELOGIA CREEK AB OCHLOCKONEE R	223	64	81	7.0	0.6	20	16	6.2	74	1.5	47	10	6.5	6	0.82	0.07	-1	1200	111	-1.0	-1.0	-1	41	21	40
31.10	YELLOW CREEK AB TELOGIA CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
31.20	STOKES BRANCH AB TELOGIA CREEK	3	79	79	-1.0	-1.0	-1	-1	6.4	76	-1.0	-1	-1	7.3	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	247	2	30
37.00	OCHLOCKONEE RIVER AB LAKE TALQ	274	57	87	15.0	0.7	66	16	7.0	76	1.2	-1	9	6.7	14	1.15	0.19	-1	320	50	-1.0	-1.0	-1	101	488	42

WATER QUALITY ASSESSMENT REPORT

SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP

'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA

'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS WQ	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03120003 OCHLOCKONEE RIV																	
* WATER BODY TYPE: ESTUARY																	
1.00	OCHLOCKONEE BAY ABOVE GULF OF MEXIC	YES	GOOD	----	---.	.*--	-..		.	....	....	....	..				GOOD OVERALL QUALITY. NATURALLY LOW SECCHI DEPTH AND SLIGHTLY ELEVATED NUTRIENTS. DATA COLLECTED IN EARLY SEVENTIES.
3.00	OCHLOCKONEE BAY ABOVE GULF OF MEXIC	YES	FAIR	----	---.	.---	-..		.	....	....	....	..				GOOD OVERALL QUALITY. NATURALLY LOW SECCHI DEPTH AND SLIGHTLY ELEVATED NUTRIENTS. DATA COLLECTED IN EARLY SEVENTIES.
33.00	OCHLOCKONEE BAY ABOVE GULF OF MEXIC	UNKNOWN	UNKN	....	....	....	.										
* WATER BODY TYPE: LAKE																	
8.00	LAKE TALQUIN ABOVE OCHLOCKONEE RIVE	YES	GOOD	--*-	--..	----	-..	**	.	....	....	....	..		* *	*	
9.00	LAKE TALQUIN ABOVE OCHLOCKONEE RIVE	YES	GOOD	----	--..	---*	-..	**	.	....	....	....	..		* *	*	
10.00	LAKE TALQUIN ABOVE LITTLE CREEK	NO	UNKN	--*-	--..	.-.*	-..	**	.	....	....	....	..	**	* *	*	ELEVATED NUTRIENT AND TURBIDITY CONCENTRATIONS, POSSIBLY DUE TO FULLER'S EARTH MINING OPERATION. DATA COLLECTED IN EARLY 1970'S.
11.00	LAKE TALQUIN ABOVE BEAR CREEK	YES	UNKN	....	....	....	.	**							* *	**	DEVELOPMENT IN AREA OF 267 TO COUNTY LINE ON NORTH SIDE OF LAKE.
12.00	LAKE TALQUIN ABOVE OCKLAWAHA CREEK	YES	UNKN	....	....	....	.	**							* *	*	
17.00	LAKE IAMONIA ABOVE FOSHALEE SLOUGH	YES	GOOD	----	-*..	----	--.	**	.	....	....	....	..		* *	**	GOOD OVERALL LAKE QUALITY. NATURALLY LOW DO, pH.HYDROMODIFICATION (SILL) ON WEST END OF LAKE. LAKE EUTROPHICATION IN PROGRESS, ALMOST 80% OF LAKE AFFECTED.
18.00	LAKE JACKSON ABOVE OX BOTTOM CREEK	YES	GOOD	----	----	----	--.	**	.	....	....	....	..		* **	**	NO TREND DATA PAST 1981.INCREASED DEVELOPMENT IN THE WATERSHED IS THREATENING LAKE'S OVERALL WATER QUALITY. AQUATIC WEED PROBLEM IN APPRX. 30% OF LAKE. LIFT STATION OVERFLOW PROBLEMS.
* WATER BODY TYPE: STREAM																	
2.00	SOPCHOPPY RIVER ABOVE OCHLOCKONEE B	YES	GOOD	-*--	----	....	--.		-	..0.	.-0.	...0	00				
4.00	OCHLOCKONEE RIVER ABOVE OCHLOCKONEE	YES	GOOD	----	---.	....	--.	*	*	-.0.	.00.	..00	0.		**		
6.00	OCHLOCKONEE RIVER ABOVE TELOGIA CRE	YES	GOOD	----	----	....	--.	*	.	....	....	....	..		**	*	WATER QUALITY INDEX SHOWS IMPROVEMENT PRIMARILY DUE TO INCREASING DISSOLVED OXYGEN. COULD BE DUE TO INC. EUTROPHIC L. TALQUIN CONDITIONS.HYDROELECTRIC DAM IS BARRIER TO ANADROMOUS FISH.
13.00	OCHLOCKONEE RIVER ABOVE OCHLOCKNEE	PARTIAL	GOOD	----	--*-	....	-..	*	.	....	....	....	..	**	* *	*	ELEVATED BACTERIA AND NUTRIENTS POSSIBLY DUE TO GEORGIA POINT SOURCES AND AGRICULTURAL RUNOFF.LACK OF BMPS ON RICH BAY ROAD. AGRICULTURE OPERATIONS LACKING BMPS HAVE CAUSED HEAVY SILTATION IN SEGMENTS NORTH OF LAKE TALQUIN.FULLER'S EARTH MINE DISCHARGE.
14.00	OCHLOCKONEE RIVER ABOVE SHAW CREEK	PARTIAL	FAIR	----	---.	....	-..		.	....	....	....	..	**		*	ELEVATED BACTERIA AND NUTRIENTS POSSIBLY DUE TO GEORGIA POINT SOURCES AND AGRICULTURAL RUNOFF.DISCHARGE FROM FULLERS EARTH MINING OPERATIONS.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
15.00	SHAW CREEK ABOVE OCHLOCKONEE RIVER	PARTIAL	UNKN	....	....	....	.									*	DISCHARGE FROM FULLERS EARTH MINING OPERATIONS.
16.00	OCHLOCKONEE RIVER TRIBUTARY ABOVE O	UNKNOWN	UNKN	....	....	....	.										
20.00	LITTLE RIVER ABOVE LITTLE R(L TALQU	PARTIAL	FAIR	--*-	---.	....	-..	*	.	....	....	....	..	**		*	FULLER'S EARTH MINING OPERATION ELEVATES STREAM NUTRIENTS AND TURBIDITY.
20.10	QUINCY CREEK ABOVE LITTLE RIVER	YES	GOOD	----	---.	....	--.	*	0	..0.	....	....	00		**		CREEK SHOWS CONSIDERABLE SPATIAL AND TEMPORAL VARIATION, POSSIBLY DUE TO WASTEWATER DISCHARGE AND MINING IN THE BASIN.CITY OF QUINCY URBAN RUNOFF.
21.00	ATTAPULGAS CREEK ABOVE WILLACOOCHEE	PARTIAL	UNKN	....	....	....	.	*						*		*	DISCHARGE FROM FULLERS EARTH MINING OPERATIONS.
22.00	SWAMP CREEK ABOVE ATTAPULGAS CREEK	PARTIAL	POOR	--*-	--..	....	-..	*	.	....	....	....	..	*		*	ONLY 1 SAMPLE, UNKNOWN QUALITY.DISCHARGE FROM FULLERS EARTH MINING OPERATIONS.
23.00	ATTAPULGAS CREEK ABOVE SWAMP CREEK	PARTIAL	POOR	*-*-	*--.	....	-..	*	.	....	....	....	..	*		*	FULLER'S EARTH MINING OPERATION ELEVATES STREAM NUTRIENTS AND TURBIDITY.
24.00	WILLACOOCHEE CREEK ABOVE LITTLE RIV	YES	FAIR	--*-	---.	....	-..	*	.	....	....	....	..			*	
26.00	BEAR CREEK ABOVE BEAR CR (L TALQUIN	UNKNOWN	UNKN	....	....	....	.										
27.00	ROCKY COMFORT CREEK ABOVE BEAR CREE	YES	GOOD	--*-	--..	....	-..		.	....	....	....	..				GOOD OVERALL QUALITY.
28.00	BEAR CREEK ABOVE ROCKY COMFORT CR	YES	GOOD	----	--..	....	-..		.	....	....	....	..				
30.00	OCKLAWAHA CREEK ABOVE OCKLAWAHA CR(	YES	GOOD	-*--	---.	....	-..		.	....	....	....	..				
31.00	TELOGIA CREEK ABOVE OCHLOCKONEE RIV	YES	GOOD	----	---.	....	--.	*	.	....	....	....	..		**	*	UPPER PORTION OF CREEK EXHIBITED WATER QUALITY PROBLEMS AROUND GRETNA WWTP IN LATE 1970'S.LOWER PORTION OF CREEK HAS GOOD QUALITY.HOG FARM AND AGRICULTURAL FIELDS RUNOFF, OVERFLOW FROM CHEMICAL PLANT, HEAVY WEED GROWTH,HYDROMODIFICATION THREATEN QUALITY.
31.10	YELLOW CREEK ABOVE TELOGIA CREEK	YES	UNKN	....	....	....	.										
31.20	STOKES BRANCH ABOVE TELOGIA CREEK	YES	GOOD	.-.-	.-..	....	..-		.	....	....	....	..				INSUFFICIENT PARAMETER COVERAGE TO CLASSIFY. SPORADIC OVERFLOW FROM CHEMICAL PLANT CONSTITUTES A THREAT TO WATER QUALITY.
37.00	OCHLOCKONEE RIVER ABOVE LAKE TALQUI	PARTIAL	GOOD	----	---.	....	---	*	0	..0.	.00.	..00	00	**	* *	*	ELEVATED NUTURIENTS AND TURBIDITY POSSIBLY DUE TO GEORGIA POINT SOURCES AND AGRICULTURAL RUNOFF.LACK OF BMPS ON RICH BAY ROAD. SEDIMENTATION FROM AGRICULTURAL OPERATIONS MOSTLY FROM GEORGIA SOURCES.DISCHARGE FROM FULLERS EARTH MINING OPERATIONS.

OKLAWAHA RIVER BASIN

General Description of the Basin

The Oklawaha River flows northward for approximately 96 miles from the headwaters near Lake Apopka to the St. Johns River just south of Welaka, Florida. The upper reaches of the river consist primarily of a series of interconnecting lakes known as the Oklawaha Chain of Lakes. Natural flow patterns have been altered in some areas by the construction of manmade canals and water control structures. Agriculture is the major land use in this area.

The lower reaches of the river form a riverine system with few contiguous lake systems. Silver Springs Run provides the major inflow to this portion of the river, contributing approximately 50% of the total average flow of 1,600 cfs at the mouth of the Oklawaha River. Numerous artesian wells from the Floridan aquifer also contribute to the flow of the Oklawaha River. Runoff provides little input to this system as the numerous lakes and swamps serve as recharge areas for the Floridan aquifer. The major land use in the lower Oklawaha River basin consists of forest land, although agriculture is also an important land use activity in this area.

Specific Water Quality Problems and Pollution Sources

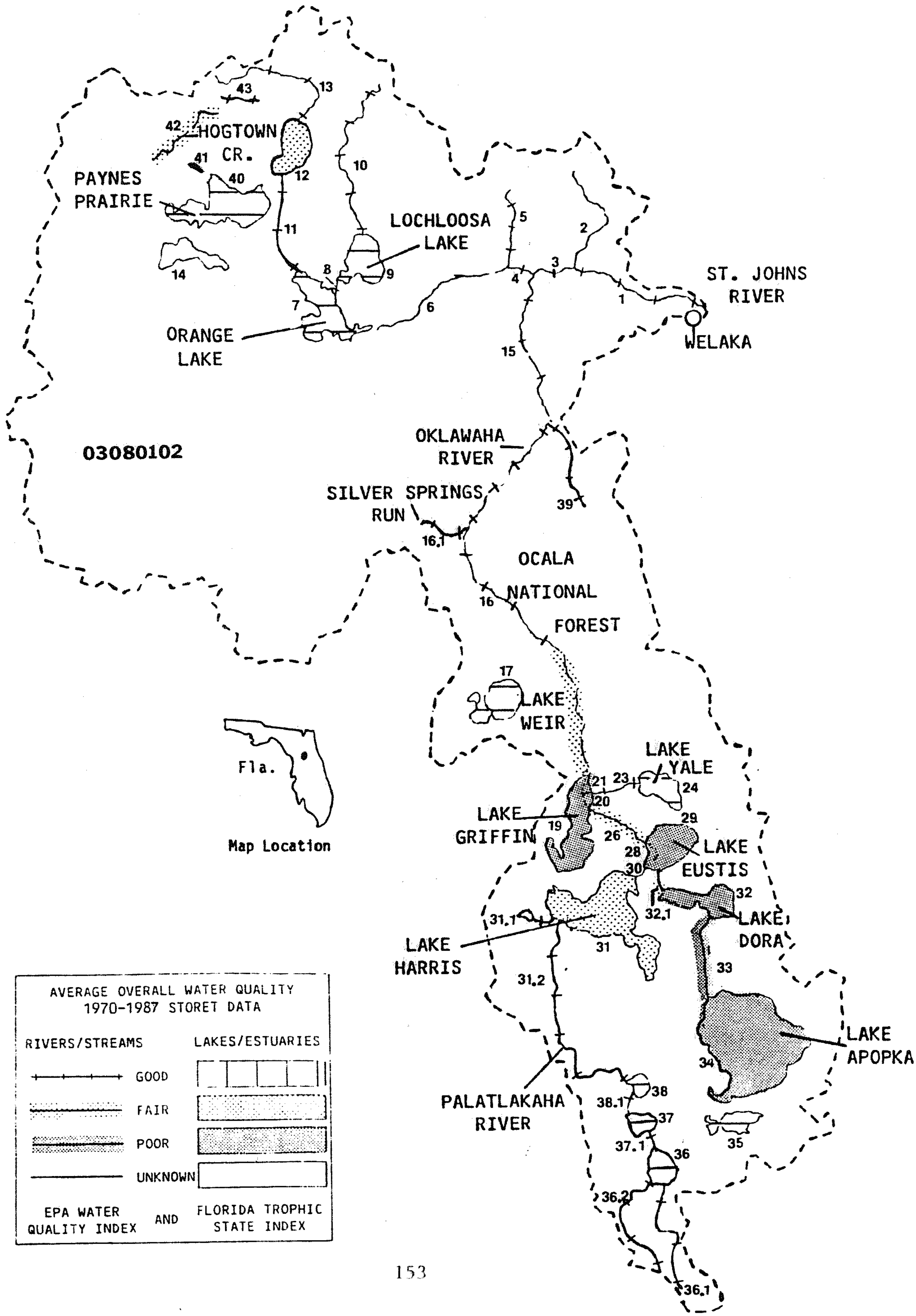
This basin has the distinction of having some of the most pristine and beautiful river and lake reaches in the state as well as some of the most polluted. Of the good water quality reaches, there are the Palatlakaha chain of lakes which are proposed for Outstanding Florida Waters (OFWs), the Oklawaha River itself downstream of the influence of the Apopka chain of lakes; and Silver Springs Run and Orange Lake, both of which are OFWs.

The majority of water quality problems are in the southern portion of this basin with the exception of Hogtown Creek which runs through Gainesville in the northern-most portion of the basin. An industrial toxic waste site (from wood preserving) is located on the upper portion of Hogtown Creek and is being cleaned up with state and Superfund monies. Additionally, Hogtown Creek receives urban runoff from the City of Gainesville.

In the southern region, the worst pollution problem is found in Lake Apopka which historically received effluent from citrus processing plants, WWTPs and nonpoint source agricultural inputs. The point sources have either been eliminated or considerably improved in the last five years, but excessive BOD and nutrient loading still occurs from backpumping and intensive, heavily fertilized row crop agriculture on the organically rich floodplain soils which surround the lake. Recently, there has been a great deal of controversy between the owners of these 'muck farms' and environmentalist groups intent on restoring the lake. Since the lake is very large and has had much organic loading, any restoration would have to be a large-scale, expensive operation. Several lake restoration proposals are being considered by DER.

Most of the other lakes downstream of Lake Apopka (Lakes Dora, Eustis, and Griffin) are also severely affected by excessive nutrient loading and have high chlorophyll values. The lakes receive nutrient loading from upstream sources and from citrus and muck farming in their own drainage areas. Lake County has initiated a new policy which has eliminated WWTP discharge to these lakes. They are monitoring these lakes to determine the extent of water quality improvement. However, the enforcement of adequate Best Management Practices for agricultural operations will probably be the primary determinant of the lakes' water quality. Lake County is performing a 205(j) study of agricultural stormwater and seepage water quality in the area.

The Oklawaha River below Lake Yale is bordered by swampy areas on the west and the Ocala National Forest on the east so it receives very little pollution. It does, however, have relatively low DO values due to the swampy nature of the drainage area and high tannin content of the water.



HOGTOWN CR.
PAYNES PRAIRIE
LOCHLOOSA LAKE
ST. JOHNS RIVER
WELAKA
ORANGE LAKE
03080102
OKLAWAHA RIVER
SILVER SPRINGS RUN
OCALA NATIONAL FOREST
LAKE WEIR
LAKE YALE
LAKE GRIFFIN
LAKE EUSTIS
LAKE DORA
LAKE HARRIS
LAKE APOPKA
PALATLAKAHA RIVER
Fla.
Map Location
AVERAGE OVERALL WATER QUALITY
1970-1987 STORET DATA
RIVERS/STREAMS
LAKES/ESTUARIES
GOOD
FAIR
POOR
UNKNOWN
EPA WATER QUALITY INDEX
AND
FLORIDA TROPHIC STATE INDEX

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L   -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03080102 OKLAWAHA RIVER																										
* WATER BODY TYPE: LAKE																										
7.00	ORANGE LAKE AB CROSS CREEK	275	56	86	3.4	1.1	48	2	7.8	86	2.1	-1	13	7.2	21	1.08	0.04	17	-1	-1	-1.0	-1.0	-1	80	-1	54
9.00	LOCHLOOSA LAKE AB LOCHLOOSA CR	90	58	82	4.2	0.7	85	12	9.1	99	3.7	67	23	7.2	20	1.75	0.05	28	116	9	1.8	-1.0	-1	96	-1	63
12.00	NEWNANS LAKE AB HATCHET CREEK	106	57	82	7.6	0.6	120	11	9.1	97	3.2	66	14	7.2	11	1.87	0.11	53	48	10	1.0	-1.0	-1	78	-1	70
14.00	LEVY LAKE AB KANAPAHA PRAIRIE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	LAKE WEIR AB MARSHALL SWAMP	564	56	86	2.0	2.0	8	5	7.8	96	1.0	-1	8	7.3	14	0.82	0.02	6	15	0	1.8	-1.0	-1	146	-1	38
19.00	LAKE GRIFFIN AB OKLAWAHA RIVER	612	65	86	25.5	0.5	25	29	9.2	105	4.9	80	23	8.7	96	2.70	0.10	58	10	0	1.3	1.5	-1	290	-1	75
20.00	LAKE GRIFFIN AB OKLAWAHA RIVER	33	82	85	27.0	0.5	30	32	9.0	102	4.5	-1	-1	8.0	81	2.67	0.12	40	-1	-1	-1.0	-1.0	-1	300	-1	72
21.00	LAKE GRIFFIN AB OKLAWAHA RIVER	22	80	84	-1.0	0.6	-1	-1	9.0	98	4.5	68	-1	8.2	91	1.60	0.16	39	-1	-1	-1.0	-1.0	-1	300	-1	68
24.00	LAKE YALE AB YALE-GRIFFIN CAN	365	65	86	3.0	1.6	12	6	8.2	99	1.2	29	13	8.4	113	1.01	0.03	10	0	0	-1.0	-1.0	-1	309	-1	46
28.00	LAKE EUSTIS AB HAINES CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
29.00	LAKE EUSTIS AB HAINES CREEK	342	66	85	31.5	0.6	25	30	9.4	106	3.1	94	24	8.6	97	2.44	0.06	35	0	0	-1.0	-1.0	-1	295	-1	66
31.00	LAKE HARRIS AB DEAD RIVER	257	65	85	26.5	0.9	23	19	8.7	99	1.8	58	17	8.6	90	1.42	0.04	21	0	0	1.3	-1.0	-1	252	-1	56
32.00	LAKE DORA AB DORA CANAL	451	63	86	19.0	0.4	50	42	8.9	103	5.6	119	35	8.8	120	3.52	0.11	75	0	5	-1.0	-1.0	-1	380	-1	76
34.00	LAKE APOPKA AB APOPKA-BEAUCLAI	308	59	85	25.0	0.3	55	48	10.0	117	5.9	-1	41	9.0	122	3.89	0.14	45	-1	-1	-1.0	-1.0	-1	360	-1	78
35.00	JOHNS LAKE AB BLACK LAKE	130	59	82	13.0	1.1	18	-1	9.9	70	-1.0	-1	-1	6.6	3	0.71	0.04	8	-1	-1	-1.0	-1.0	-1	191	-1	49
36.00	LAKE LOUISA AB LITTLE CREEK	158	59	85	3.2	0.9	160	3	7.3	90	0.7	40	-1	5.3	2	0.86	0.02	5	2	0	-1.0	-1.0	-1	74	-1	49
37.00	LAKE MINNEHAHA AB PALATLAKAHA	185	56	85	5.3	1.5	38	3	7.2	89	0.8	23	14	6.1	4	0.63	0.02	6	10	0	-1.0	-1.0	-1	74	0	43
38.00	LAKE MINNEOLA AB PALATLAKAHA R	132	66	85	1.8	2.2	18	3	8.0	96	0.8	17	6	6.6	5	0.52	0.02	3	5	0	3.1	-1.0	-1	86	-1	37
40.00	PAYNES PRAIRIE AB ALACHUA SINK	6	73	82	-1.0	0.6	100	8	7.6	89	1.0	-1	-1	7.0	30	1.40	0.71	88	270	-1	-1.0	-1.0	-1	138	-1	66
41.00	BIVANS ARM AB LAKE ALICE	17	69	80	2.8	0.6	23	6	6.8	83	-1.0	-1	-1	7.5	106	1.42	0.62	14	-1	-1	-1.0	-1.0	-1	331	-1	64
* WATER BODY TYPE: STREAM																										
1.00	OKLAWAHA RIVER AB ST JOHNS RIV	843	56	85	1.5	2.0	40	2	7.2	84	1.1	20	8	7.6	108	0.55	0.04	1	100	8	1.4	2.4	17	410	1210	19
2.00	SWEETWATER CREEK AB OKLAWAHA R	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	OKLAWAHA RIVER AB SWEETWATER C	49	71	85	5.7	3.5	44	11	5.3	62	1.7	32	7	7.3	122	0.29	0.03	2	14	0	-1.0	-1.0	-1	450	-1	29
4.00	ORANGE CREEK AB OKLAWAHA RIVER	59	56	85	1.6	0.6	92	2	6.5	73	0.6	38	17	7.2	25	0.78	0.07	2	495	110	-1.0	-1.0	-1	92	123	26
5.00	CABBAGE CREEK AB ORANGE CREEK	9	84	86	-1.0	0.7	132	3	8.2	86	0.9	-1	-1	6.9	31	0.52	0.04	0	-1	-1	-1.0	-1.0	-1	82	-1	10
6.00	ORANGE CREEK AB CABBAGE CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.00	CROSS CREEK AB LOCHLOOSA LAKE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
10.00	LOCHLOOSA CREEK AB SALUDA SWAM	9	70	74	12.0	-1.0	50	-1	7.6	91	-1.0	-1	-1	7.0	147	1.21	0.03	-1	-1	-1	-1.0	-1.0	-1	286	0	33
11.00	PRAIRIE CR/CAMP CAN/RIVER STYX	19	56	81	-1.0	-1.0	-1	7	10.2	84	2.0	-1	-1	7.2	-1	-1.00	0.19	-1	-1	-1	-1.0	-1.0	-1	-1	-1	35
13.00	HATCHET CREEK AB BUCK BAY	5	79	81	-1.0	-1.0	-1	0	10.4	98	-1.0	-1	-1	6.7	-1	-1.00	0.23	-1	-1	-1	-1.0	-1.0	-1	-1	-1	20
15.00	OKLAWAHA RIVER AB ORANGE CREEK	181	70	87	3.5	1.7	22	4	6.6	74	0.8	9	6	7.8	138	0.83	0.06	1	330	32	2.0	3.3	20	385	810	29
16.00	OKLAWAHA RIVER AB ELON CREEK	619	56	87	6.8	0.8	55	10	5.4	63	2.7	76	20	7.5	96	1.83	0.07	20	350	34	1.2	2.6	5	293	44	53
16.10	SILVER SPRING RUN AB OKLAWAHA	104	66	87	0.5	2.7	5	3	5.0	58	0.8	-1	8	7.8	150	0.90	0.04	1	290	50	2.7	2.7	21	396	-1	30
23.00	YALE-GRIFFIN CANAL AB OKLAWAHA	17	68	70	8.5	-1.0	20	-1	7.0	85	-1.0	-1	-1	7.1	82	1.22	0.03	-1	-1	-1	-1.0	-1.0	-1	235	44	35
26.00	HAINES CREEK AB LAKE GRIFFIN	210	56	85	10.0	0.7	25	28	6.2	72	3.1	70	24	8.0	99	2.42	0.07	37	260	10	-1.0	-1.0	-1	290	60	52
30.00	DEAD RIVER AB LAKE EUSTIS	18	71	85	18.2	0.8	20	23	8.1	93	2.3	61	-1	8.3	95	2.04	0.07	28	600	0	-1.0	-1.0	-1	265	-1	43
31.10	HELENA RUN/LAKE DENHAM AB LAKE	23	74	85	6.3	0.6	25	10	9.3	115	3.0	-1	-1	8.0	126	1.71	0.04	42	-1	-1	-1.0	-1.0	-1	310	-1	28
31.20	PALATLAKAHA RIVER AB LAKE HARR	622	56	85	1.0	1.1	30	3	6.3	73	1.0	25	9	6.2	7	0.71	0.02	3	240	22	-1.0	2.2	4	89	0	25
32.10	DORA CANAL AB LAKE EUSTIS	201	59	85	27.0	0.5	47	37	6.0	70	4.2	109	32	8.3	118	3.34	0.11	89	100	0	-1.0	-1.0	-1	355	0	59
33.00	APOPKA-BEAUCLAIR CANAL AB LAKE	375	66	85	27.0	0.2	60	47	6.8	80	6.0	60	35	8.6	126	3.58	0.25	83	185	50	1.2	0.7	1	400	23	60

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
36.10	BIG CREEK AB LAKE LOUISA	156	56	84	1.0	0.3	300	-1	6.0	66	0.8	65	28	4.4	3	1.14	0.05	-1	-1	-1	-1.0	-1.0	-1	78	4	38
36.20	LITTLE CREEK AB LAKE LOUISA	45	56	83	1.0	0.6	385	-1	3.5	38	1.1	257	54	4.2	1	1.36	0.04	-1	-1	-1	-1.0	-1.0	-1	113	-1	45
37.10	PALATLAKAHA RIVER AB LAKE LOUI	25	66	80	1.5	0.8	100	3	5.9	73	1.2	30	30	5.3	4	0.94	0.03	-1	200	1	-1.0	-1.0	-1	81	-1	29
38.10	PALATLAKAHA RIVER AB LAKE MINN	48	66	85	2.0	1.1	50	4	6.8	80	1.0	28	17	6.0	4	0.77	0.04	4	320	9	-1.0	-1.0	-1	88	-1	22
39.00	ELON CREEK AB OKLAWAHA RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
42.00	HOGTOWN CREEK AB HOGTOWN PRAIR	57	66	81	4.5	0.1	255	5	8.1	72	33.5	135	-1	7.2	27	0.80	0.69	-1	1251	-1	-1.0	-1.0	-1	190	10	37
43.00	LITTLE HATCHETT CREEK AB HOGTO	18	79	81	-1.0	-1.0	-1	4	8.0	75	-1.0	-1	-1	7.2	-1	-1.00	0.32	-1	-1	-1	-1.0	-1.0	-1	-1	-1	27

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                                     WATER QUALITY ASSESSMENT REPORT
                                SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
                            '*'=PROBLEM OR DEGRADING TREND  '0'=NO TREND  '.'=NO DATA
                             '-'= NO PROBLEM OR IMPROVING TREND  (SEE LEGEND PAGE 7)

                                              MEETS   WQI | SCREENING PROBLEMS  || 1980-1987 TRENDS  ||   SOURCES    | PRESENT CONDITIONS AND CLEANUP EFFORTS
REACH REACH NAME                               USE   RANK |------------------------|---------------------||------------|
----- ---------------------------------- ------- ---- |NPSS|BDBD|CSTT|AMB|FAB| |W|TFTT|BDDT|CSTT|TF| |IM|ASCU|MLHS|
                                                      |PHIA|OOAI|HDNP|MEI|KWL| |Q|CCUS|OOSO|HDNP|EL| |NU|GVNR|NDMT|

** USGS HYDROLOGIC UNIT CODE: 03080102 OKLAWAHA RIVER

* WATER BODY TYPE: LAKE
  7.00 ORANGE LAKE ABOVE CROSS CREEK       YES     GOOD |----|--..|----|--.|***| |0|..0.|0-0-|..00|0.| |  |*  *|  * | CATTLE GRAZING IN AND AROUND THE LAKE MAY POSE A
                                                                                                             THREAT TO ORANGE LAKE ,WHICH IS A DESIGNATED OFW.
  9.00 LOCHLOOSA LAKE ABOVE LOCHLOOSA CREE YES     FAIR |----|*---|----|-..| **| |.|....|....|....|..| |  |*  *|   *| TRENDS INDICATE ELEVATED TN AND BOD, POSSIBLY A
                                                                                                             REFLECTION OF       NATURAL CONDITIONS.HOUSING
                                                                                                             DEVELOPMENT ON NORTHEAST SHORE.
 12.00 NEWNANS LAKE ABOVE HATCHET CREEK    PARTIAL POOR |----|---*|**--|-..| **| |.|....|....|....|..| |  |   *|  **| RECENT DATA INDICATE HIGH TP AND CHLOROPHYLL a
                                                                                                             CONCENTRATIONS.A THICK LAYER OF ORGANIC SEDIMENTS
                                                                                                             FROM GRADUAL EUTROPHICATION HAS BEEN REPORTED. SEPTIC
                                                                                                             TANK DRAINFIELD RUNOFF IS ALSO A PROBLEM.
 14.00 LEVY LAKE ABOVE KANAPAHA PRAIRIE    UNKNOWN UNKN |....|....|....|.  |   | | |    |    |    |  | |  |    |    |
 17.00 LAKE WEIR ABOVE MARSHALL SWAMP      YES     GOOD |----|----|----|--.|***| |0|..00|0000|00*0|0.| |  |*  *|   *| CITRUS GROVE OPERATION NEARBY.RUNOFF FROM LIMEROCK
                                                                                                             ROAD AND SEEPAGE FROM FAILING SEPTIC TANKS ARE A
                                                                                                             POTENTIAL THREAT TO WATER QUALITY.
 19.00 LAKE GRIFFIN ABOVE OKLAWAHA RIVER   NO      POOR |*-*-|*--*|***-|-..|***| |*|..00|*000|0*00|0.| |**|*  *|  **| WATER QUALITY PROBLEM DUE TO UPSTREAM POLLUTION LOADS
                                                                                                             FROM LAKE APOPKA AND WWTP EFFLUENT. RECENT DATA
                                                                                                             REFLECTS A TREND OF INCREASED BOD  AND REDUCED SECCHI
                                                                                                             DEPTH. POLLUTION LOADS BEING REDUCED.LAKE APOPKA
                                                                                                             CLEANUP PROPOSED.CITRUS AND MUCK FARMING NEARBY.
 20.00 LAKE GRIFFIN ABOVE OKLAWAHA RIVER   NO      POOR |*-*-|*-..|-**-|-..|***| |.|....|....|....|..| |**|*  *|  **| HIGHLY EUTROPHIC LAKE DUE TO UPSTREAM POLLUTION LOADS
                                                                                                             FROM LAKE APOPKA AND WWTP EFFLUENT. POLLUTION LOADS
                                                                                                             BEING REDUCED. LAKE APOPKA CLEANUP PROPOSED.MUCK
                                                                                                             FARMS,CITRUS OPERATIONS AND FAILING SEPTIC TANKS ARE
                                                                                                             PRINCIPLE ELEMENTS CONTRIBUTING TO NON-SUPPOR
 21.00 LAKE GRIFFIN ABOVE OKLAWAHA RIVER   NO      FAIR |--.-|*-..|-*-*|-..|***| |.|....|....|....|..| |**|*  *|  **| HIGHLY EUTROPHIC CONDITIONS DUE TO UPSTREAM INFLUENDE
                                                                                                             OF LAKE APOPKAAND WWTP EFFLUENT. POLLUTION LOADING
                                                                                                             BEING REDUCED. LAKE APOPKA CLEANUP PROPOSED.ADJACENT
                                                                                                             MUCK FARMS AND SEEPAGE FROM SEPTIC TANKS CONTRIBUTE
                                                                                                             TO THE PROBLEM.
 24.00 LAKE YALE ABOVE YALE-GRIFFIN CAN    YES     GOOD |----|---.|----|-..| **| |0|..0.|00-0|*000|0.| |  |*  *|  **| CATTLE FARM AND CITRUS OPERATION ADJACENT TO THE
                                                                                                             LAKE.TRASH & TRUCK PARTS LITTER AREA BEHIND FREIGHT
                                                                                                             SERVICE.SEPTIC TANKS ALONG SHORELINE OF LAKE.
 28.00 LAKE EUSTIS ABOVE HAINES CREEK      NO      UNKN |....|....|....|.  |***| | |    |    |    |  | |**|*  *|  **| EUSTIS URBAN RUNOFF, CITRUS OPERATIONS, AND SEPTIC
                                                                                                             TANK SEEPAGE ALONG SHORELINE CONTRIBUTE TO WATER
                                                                                                             QUALITY PROBLEMS.
 29.00 LAKE EUSTIS ABOVE HAINES CREEK      NO      FAIR |*-*-|---.|-**-|--.|***| |0|..00|0*0.|0000|+.| |**|*  *|  **| DISTRICT INFLORMATION INDICATES POOR WATER QUALITY
                                                                                                             DUE TO UPSTREAM POLLUTION LOADS (LAKE APOPKA). LAKE
                                                                                                             APOPKA CLEANUP PROPOSED.HIGHWAY RUNOFF, CITRUS
                                                                                                             OPERATIONS AND FAILING SEPTIC TANKS ON SHORELINE
                                                                                                             EXASCERBATE THE PROBLEM.
 31.00 LAKE HARRIS ABOVE DEAD RIVER        PARTIAL GOOD |--*-|----|----|-..| **| |*|..00|-0-.|0*00|0.| |  |*  *|****| LAKE HARRIS HAS ELEVATED TN VALUES AND FAIR SECCHI
                                                                                                             DEPTH. OTHER PARAMETERS ARE BORDERLINE GOOD-FAIR.
                                                                                                             THIS ALL CONTRIBUTES TO AN OVERALL RATING OF FAIR
                                                                                                             (TSI=59). DISTRICT INDICATES MINOR EUTROPHICATION
                                                                                                             PROBLEM.DAIRY FARM,AND CITRUS OPERATIONS NEARBY.
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WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
32.00	LAKE DORA ABOVE DORA CANAL	NO	POOR	*-*-	*--.	***-	*..	***	0	..00	0000	0000	0.	**	* *	***	WATER QUALITY PROBLEMS WITH LONG-TERM DEGRADATION TREND IN SECCHI DEPTH AND NUTRIENTS.RECEIVES UPSTREAM POLLUTION LOADS (LAKE APOPKA). LAKE APOPKA CLEANUP PROPOSED.ASTATULA LANDFILL NEARBY.CITRUS FARMS,URBAN RUNOFF AND FAILING SEPTIC TANKS ARE A PROBLEM.
34.00	LAKE APOPKA ABOVE APOPKA-BEAUCLAIR	NO	POOR	***-	*-..	****	-..	***	-	..0.	.0--	.-00	0.	**	* *	**	DEGRADING TREND APPARENT IN THE 70'S,RESULTS OF 80'S DATA SHOW A SLIGHT IMPROVEMENT. SEVERAL LAKE RESTORATION STUDIES PROPOSED.NO STORMWATER TREATMENT AT FERTILIZER FACTORY AND INDUSTRIAL PARK.EXTENSIVE AGRICULTURAL RUNOFF.INTENSIVE MUCK FARMING,NO BMPS. SAND MINES NEARBY.
35.00	JOHNS LAKE ABOVE BLACK LAKE	YES	GOOD	----	.-..	----	-..		.	....	....	....	..			*	
36.00	LAKE LOUISA ABOVE LITTLE CREEK	YES	GOOD	----	---.	----	-..	*	0	....	-00.	.000	0.		* *	* *	DEVELOPMENT ALONG SHORELINE,CITRUS OPERATIONS AND SAND MINES ARE POTENTIAL THREATS TO WATER QUALITY IN THE AREA.
37.00	LAKE MINNEHAHA ABOVE PALATLAKAHA RI	YES	GOOD	----	---.	----	-..	*	0	....	-00.	.*00	-.		* *	*	CLERMONT URBAN RUNOFF AND CITRUS OPERATIONS CONSTITUTE A POTENTIAL THREAT TO WATER QUALITY.
38.00	LAKE MINNEOLA ABOVE PALATLAKAHA RIV	YES	GOOD	----	----	----	-..	*	*	....	-00.	.*00	0.		* *	* *	CLERMONT AND MINNEOLA URBAN RUNOFF AND PACKAGING PLANTS SITUATED ON LAKE WITHOUT STORMWATER TREATMENT CONSTITUTE A THREAT TO THE LAKES WATER QUALITY.
40.00	PAYNES PRAIRIE ABOVE ALACHUA SINK	YES	FAIR	*---	---.	**-*	-.*		.	....	....	....	..				RECENT DATA INDICATE HIGH NUTRIENT AND CHLOROPHYLL a CONCENTRATIONS ACCOMPANIED BY LOW SECCHI DEPTH FOR PAYNES PRAIRIE SINK. WATER QUALITY OF ENTIRE AREA IS GOOD OVERALL.
41.00	BIVANS ARM ABOVE LAKE ALICE	NO	FAIR	*---	.-..	-*-*	...	* *	.	....	....	....	..		**		CURRENT TRENDS REFLECT ELEVATED CONCENTRATIONS OF TP AND CHLOROPHYLL a ACCOMPANIED BY LOW SECCHI DEPTH. URBAN RUNNOFF AND POSSIBLE DAIRY RUNOFF CAUSE PROBLEM.
* WATER BODY TYPE: STREAM																	
1.00	OKLAWAHA RIVER ABOVE ST JOHNS RIVER	YES	GOOD	----	----	....	--.	***	0	0.-0	*00.	----	0.	*			
2.00	SWEETWATER CREEK ABOVE OKLAWAHA RIV	UNKNOWN	UNKN	....	....	....	.							*	*	*	
3.00	OKLAWAHA RIVER ABOVE SWEETWATER CRE	YES	GOOD	----	---.	....	-..	***	.	....	....	....	..	*			
4.00	ORANGE CREEK ABOVE OKLAWAHA RIVER	YES	GOOD	----	---.	....	-..	***	.	....	....	....	..				RECEIVES INPUT FROM OKLAWAHA RIVER.
5.00	CABBAGE CREEK ABOVE ORANGE CREEK	YES	GOOD	----	--..	....	-..		.	....	....	....	..				
6.00	ORANGE CREEK ABOVE CABBAGE CREEK	UNKNOWN	UNKN	....	....	....	.								*	*	COMPLAINTS RECEIVED CONCERNING WASHING MACHINE AND SEPTIC TANK DISCHARGES.
8.00	CROSS CREEK ABOVE LOCHLOOSA LAKE	YES	UNKN	....	....	....	.										
10.00	LOCHLOOSA CREEK ABOVE SALUDA SWAMP	YES	GOOD	----	.-..	....	...		.	....	....	....	..				
11.00	PRAIRIE CR/CAMP CAN/RIVER STYX ABOV	YES	GOOD	---.	--..	....	...	*	.	....	....	....	..			*	CHANNELIZED STREAM.
13.00	HATCHET CREEK ABOVE BUCK BAY	YES	GOOD	---.	.-..	....	...		.	....	....	....	..			*	LANDFILL CLOSED 2 SITES.
15.00	OKLAWAHA RIVER ABOVE ORANGE CREEK	YES	GOOD	----	----	....	--.	***	0	..-0	000.	000-	0.	*	*	*	
16.00	OKLAWAHA RIVER ABOVE ELON CREEK	PARTIAL	FAIR	----	---*	....	--.	***	-	..00	-00.	000-	-.	*	*	* *	DO ,TURBIDITY AND DIVERSITY INDEX PROBLEMS IN UPPER HALF OF REACH. IMPROVED BOD AND TP RESULTS.
16.10	SILVER SPRING RUN ABOVE OKLAWAHA RI	YES	GOOD	----	----	....	--.		-	..-0	000.	0000	0.	*			MUCK FARMS IN CLOSE PROXIMITY TO THE WATERBODY POSE A THREAT TO WATER QUALITY.
23.00	YALE-GRIFFIN CANAL ABOVE OKLAWAHA R	YES	GOOD	----	.-..	....	...	***	.	....	....	....	..				

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
26.00	HAINES CREEK ABOVE LAKE GRIFFIN	PARTIAL	FAIR	*-*-	---.	....	-..	***	0	....	000.	.*00	0.	*	* *		DISTRICT INDICATES TN AND TURBIDITY ARE ELEVATED DUE TO UPSTREAM POLLUTION SOURCES FROM LAKE EUSTIS.MUCK FARMS OPERATE IN CLOSE PROXIMITY TO THE CREEK.
30.00	DEAD RIVER ABOVE LAKE EUSTIS	YES	GOOD	*-*-	---.	....	-..	*	.	....	....	....	..		*		STREAM SEGMENT (MISIDENTIFIED AS LAKE SEG) CONNECTING LAKES HARRIS AND EUSTIS.
31.10	HELENA RUN/LAKE DENHAM ABOVE LAKE H	YES	GOOD	----	--..	....	-..	**	.	....	....	....	..		*		MUCK AND DAIRY FARMS IN CLOSE PROXIMITY TO WATERBODY.
31.20	PALATLAKAHA RIVER ABOVE LAKE HARRIS	YES	GOOD	----	---*	....	-..	**	0	..00	-000	0000	-.		*	**	NEARBY CITRUS OPERATIONS AND THE CHANNELIZATION OF THE RIVER HAVE CREATED CONDITIONS WHICH MAY THREATEN WATER QUALITY.
32.10	DORA CANAL ABOVE LAKE EUSTIS	PARTIAL	FAIR	*-*-	*--.	....	-..	*	.	....	....	....	..		*		WATER QUALITY PROBLEMS ASSOCIATED WITH INCREASED NUTRIENTS,TURBIDITY,AND BOD. DISTRICT INDICATES FAIR QUALITY CAUSED BY UPSTREAM POLLUTION SOURCES IN LAKE DORA.
33.00	APOPKA-BEAUCLAIR CANAL ABOVE LAKE A	NO	POOR	*-*-	*--*	....	-..	***	*	..-.	-0*.	0-00	0.	**	*		TREND ANALYSIS INDICATES FLUCTUATIONS BETWEEN DEGRADING AND IMPROVING WATER QUALITY CONDITIONS.RECENT DATA REFLECT OVERALL DEGRADE IN WATER QUALITY.MUCK FARMS NEARBY.
36.10	BIG CREEK ABOVE LAKE LOUISA	YES	GOOD	-*--	*-..	....	-..		0	....	....	..00	..			*	SAND MINES IN CLOSE PROXIMTY.
36.20	LITTLE CREEK ABOVE LAKE LOUISA	YES	FAIR	-*--	**..	....	-..		.	....	....	....	..			*	PROBLEMS ASSOCIATED WITH pH AND HIGH BOD APPEAR TO BE NATURAL IN ORIGIN.SAND MINES NEARBY.
37.10	PALATLAKAHA RIVER ABOVE LAKE LOUISA	YES	GOOD	----	*--.	....	-..	*	.	....	....	....	..		* *	*	
38.10	PALATLAKAHA RIVER ABOVE LAKE MINNEH	YES	GOOD	----	---.	....	-..		0	....	000.	.000	-.		*		MUCK FARMS NEARBY.
39.00	ELON CREEK ABOVE OKLAWAHA RIVER	YES	UNKN	....	....	....	.										
42.00	HOGTOWN CREEK ABOVE HOGTOWN PRAIRIE	PARTIAL	GOOD	*---	*--.	....	..*		0	...*	.-0.	...0	-.			*	SUPERFUND SITE. URBAN RUNOFF IMPACTS STREAM.
43.00	LITTLE HATCHETT CREEK ABOVE HOGTOWN	YES	GOOD	---.	.-..	....	...	*	0	...0	.00.	...0	+.		**		ORGANIC SEDIMENTS FROM GRADUAL EUTROPHICATION PREVENTS NATURAL FLUCTUATION.

PEACE RIVER BASIN

General Description of the Basin

The Peace River originates in the Green Swamp in Central Polk County and flows generally southwest for approximately 105 miles, entering the Gulf of Mexico at Charlotte Harbor. The drainage area encompasses over 2,300 square miles. Numerous lakes and large areas of poorly drained swamps in the headwaters of the Peace River act as an important recharge area for the Floridan aquifer. The mean flow of the Peace River at Arcadia is recorded as 900 cfs 36 miles upstream from the mouth. Primary tributaries of the Peace River include Peace Creek, Saddle Creek, Charlie Creek, Horse Creek, and Shell Creek. Major urban areas in the upper basin include, Lakeland, Winter Haven and Bartow. At the river's mouth is Port Charlotte and Punta Gorda. Land use in the upper portion of the Peace River Basin is predominantly agricultural. An additional large percentage of barren land (about 25%) reflects the extensive phosphate mining activities that have been prevalent in the upper basin. In the lower portion of the Peace River Basin, land use consists primarily of agriculture and rangeland. Pollution sources in the Peace River Basin include domestic wastewater discharges, heavy industrial discharges from phosphate mining activities, chemical and citrus processing plants, and surface runoff from urban, agricultural, rangeland and barren (mined) areas.

Specific Water Quality Problems and Pollution Sources

This basin has four major classes of pollution sources that affect different areas along the river and its tributaries. In the northern portion of the basin both domestic and industrial point sources and urban stormwater severely impact water quality. Another portion of the upper basin has been affected by phosphate mining. Most of the major tributaries throughout the basin have agricultural and rangeland runoff to a greater or lesser degree.

The worst water quality problems originate in the upper portion of the basin. Lake Parker, Lake Hancock, Banana Lake and their tributaries (Stahl Canal, Banana Lake Canal, and Lake Lena Run) have some of the poorest water quality in the state with elevated nutrients, periodic low DO, high pH, high bacteria and severely depressed biological indicators.

Lake Hancock, with extremely poor water quality is fed by three polluted streams or canals. One of these, Lake Lena Run, has the second worst water quality index in the state, and during two sampling events in the spring of 1981, yielded only three species of macroinvertebrates and diversity indices of less than 0.25. Most of its flow is made up of effluent from three citrus processing companies, a distillery, the Auburndale WWTP and runoff from rangeland, a sprayfield, and a dump site for citrus waste. DER has performed several intensive surveys and wasteload allocations of this area over the last 10 years. The models have indicated that the flow from the dischargers would actually be beneficial to the stream and receiving lake if the nutrients were removed; therefore, more strict loading limitations have been set. The second problem drainage to Lake Hancock is from the Banana-Hancock Canal. The Stahl Canal (now flowing into Banana Lake) historically received effluent from a major Lakeland WWTP. This facility is now discharging to a deserted phosphate mine converted to an artificial wetland, which drains to the Alafia River. Now that the point sources have been removed from the system, plans are being considered for the restoration of Banana Lake. Finally, upper Saddle Creek, the third Lake Hancock tributary, is impacted primarily by urban stormwater runoff.

Periodic discharges from Lake Hancock during the rainy season severly impact water quality and river fauna downstream. The algal laden waters create a tremendous slug of high BOD material as the algae die. The effects of these releases can be seen all the way to the mouth of the river. Recolonization of Peace River's fauna generally comes from the few remaining unmined tributaries.

Between Lakes Hancock and Hamilton, there are several other small loosely connected lakes and the City of Winter Haven. These lakes receive various combinations of industrial effluent, domestic discharge and urban runoff. Polk County received federal grants to clean up some of the pollution problems in several of these lakes. A 1985 205(j) report prepared by Polk County indicates that corrective actions, especially the removal of domestic dischargers, have resulted in marked improvements in the Trophic State Index (TSI). Most lakes, however, continued to be in the eutrophic range of TSI values. Lake Hamilton was not included in this study but presumably is typical of the region's problem lakes. Similarly, Lake Parker receives runoff from the City of Lakeland and thermal impact from power plant discharge. Peace Creek, located in the upper portion of the basin, periodically receives slugs of pollution from some of the upstream lakes, indirect discharge from the Winter Haven WWTP, and rangeland runoff. It appears from intensive survey sampling and a DER district study that water quality in lower Peace Creek is often quite good but is subject to periodic pollution events, particularly discharges from Lake Effie located on the Peace Creek drainage canal.

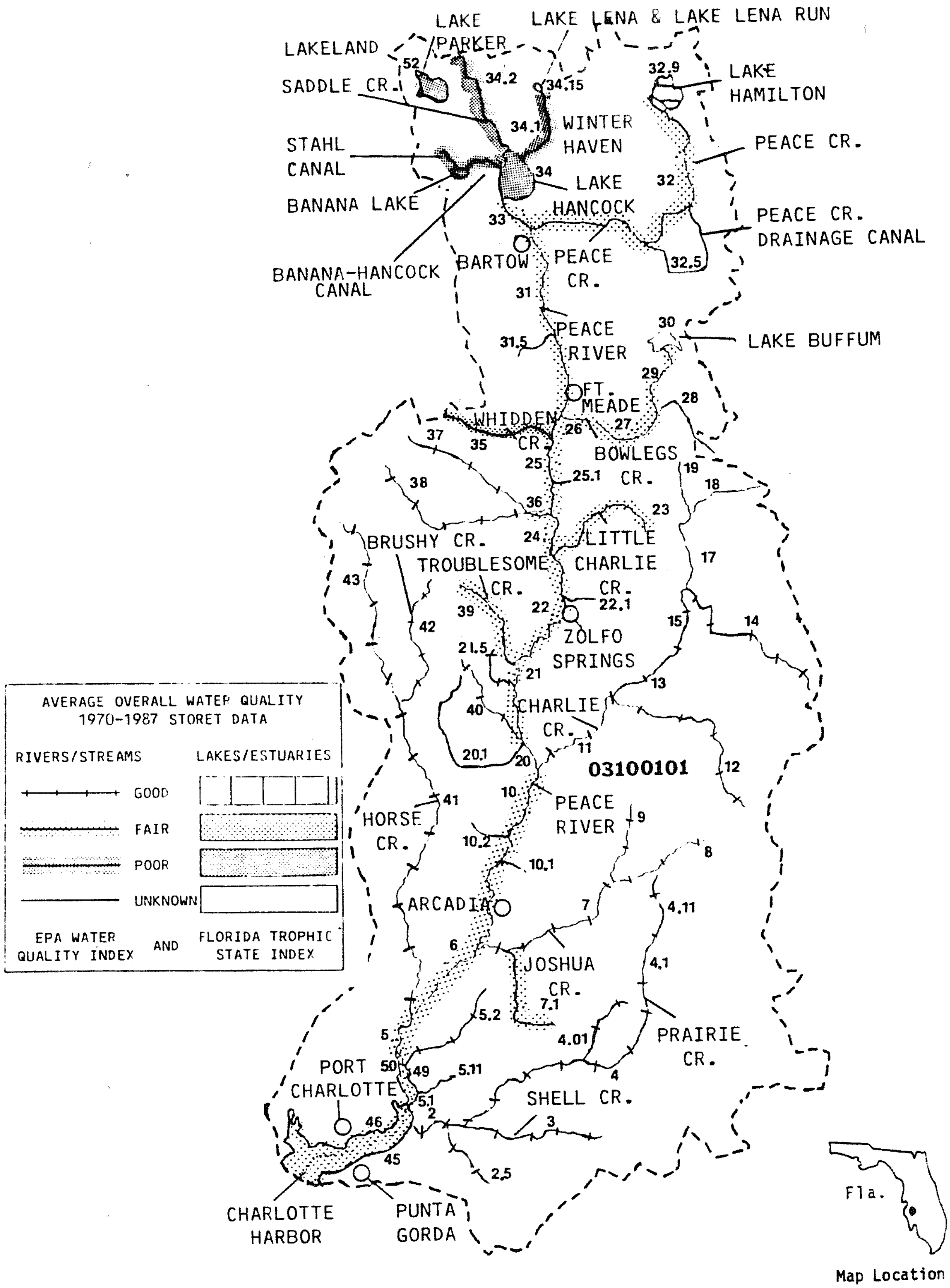
The Peace River in the vicinity of Bartow, Fort Meade, and Zolfo Springs is affected by several phosphate mining and fertilizer industries. This portion of the river and several tributaries (Bowlegs Creek, Whidden Creek, Little Charlie Creek and Troublesome Creek) exhibit very high nutrient concentrations. Some nutrient loading in this area is natural since waters flowing through phosphate strata have higher background concentrations. However, mining operations contribute far greater nutrient loading than natural background loads. Twenty years ago there were severe water quality problems in Peace River due to periodic dam breaks of phosphate mining sludge ponds. These problems have ceased; however, mining and particularly phosphate processing adds significant nutrient loads to the Peace River and downstream to Charlotte Harbor. Whidden Creek has the worst water quality index in this area. Another detrimental impact of phosphate mining is to disrupt the flow regime of the small creeks. The Peace River relys upon these tributaries for biological recruitment.

South of Troublesome Creek there are few point sources, except for the City of Arcadia WWTP which has a faulty collection system. The nonpoint sources shift from mining operations to agricultural and rangeland runoff. Because of this less intensive land use and with the confluence of Horse Creek, a relatively undisturbed tributary system, the Peace River exhibits relatively good water quality as it enters Charlotte Harbor. The Prairie Creek and

Shell Creek drainage is threatened by increased urban development occurring in the area. Shell Creek has been impounded for drinking water.

The estuarine portion of the river is impacted by the development of Port Charlotte and Punta Gorda. The Punta Gorda WWTP has converted from surface water discharge to spray irrigation.

PEACE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03100101 PEACE RIVER																										
* WATER BODY TYPE: ESTUARY																										
45.00	PEACE RIVER AB GULF OF MEXICO	631	73	85	1.9	1.4	32	-1	4.6	61	3.0	-1	13	7.7	-1	0.78	0.58	-1	68	20	-1.0	-1.0	-1	35845	-1	50
46.00	PEACE RIVER AB GULF OF MEXICO	411	52	86	3.2	1.0	50	14	6.5	80	1.9	-1	10	7.8	99	0.84	0.48	13	32	8	3.0	-1.0	-1	28125	-1	57
49.00	PEACE RIVER AB SHELL CREEK	55	83	85	1.8	0.7	70	-1	4.1	52	1.6	-1	14	6.7	-1	1.67	0.95	-1	-1	-1	-1.0	-1.0	-1	295	-1	66
50.00	PEACE RIVER AB GULF OF MEXICO	7	84	85	-1.0	0.7	-1	-1	5.2	69	1.4	-1	16	6.9	-1	1.67	0.91	-1	-1	-1	-1.0	-1.0	-1	341	-1	68
* WATER BODY TYPE: LAKE																										
30.00	LAKE BUFFUM AB BOWLEGS CREEK	60	72	81	3.0	0.8	32	-1	6.1	77	-1.0	-1	-1	5.4	2	0.38	0.05	3	40	-1	-1.0	-1.0	-1	115	-1	42
32.90	LAKE HAMILTON AB LITTLE LAKE H	53	68	86	13.0	0.5	150	-1	9.2	98	-1.0	-1	26	6.9	12	1.27	0.16	-1	-1	-1	-1.0	-1.0	-1	243	-1	71
34.00	LAKE HANCOCK AB LAKE LENA RUN	125	66	83	30.0	0.3	47	49	9.0	106	6.7	-1	30	9.4	84	4.88	0.75	106	-1	-1	1.3	-1.0	0	295	-1	90
34.15	LAKE LENA AB	127	70	83	8.9	0.4	59	-1	8.3	101	-1.0	-1	-1	7.8	36	2.18	0.07	64	-1	-1	-1.0	-1.0	-1	208	-1	45
34.35	BANANA LAKE AB STAHL CANAL	73	70	83	32.8	0.5	25	39	12.0	139	9.0	-1	25	9.8	88	5.10	0.86	142	-1	-1	-1.0	-1.0	-1	326	-1	88
52.00	LAKE PARKER AB	142	65	81	-1.0	0.5	-1	72	10.0	109	20.1	-1	24	8.9	85	2.27	0.15	55	-1	-1	1.5	-1.0	-1	258	-1	74
* WATER BODY TYPE: STREAM																										
2.00	SHELL CREEK AB PEACE RIVER	117	66	86	1.5	-1.0	90	0	4.4	52	1.6	-1	21	7.0	70	0.93	0.14	-1	204	32	-1.0	-1.0	-1	571	119	51
2.50	MYRTLE SLOUGH #2 AB SHELL CREE	65	72	87	3.0	0.9	100	5	4.7	52	1.5	33	-1	7.2	40	1.22	0.10	4	220	196	3.3	3.5	11	1100	-1	47
3.00	SHELL CREEK AB PRAIRIE CREEK	185	71	87	2.0	1.1	60	2	5.8	67	1.3	19	14	7.5	131	1.23	0.09	6	120	41	3.3	3.3	19	950	0	31
4.00	PRAIRIE CREEK AB SHELL CREEK	217	62	86	3.1	1.3	102	8	6.1	73	1.0	-1	22	7.3	70	1.64	0.09	1	75	37	-1.0	-1.0	-1	520	31	36
4.01	MYRTLE SLOUGH AB PRAIRIE CREEK	9	70	76	1.5	-1.0	90	-1	5.5	67	2.1	-1	-1	7.7	106	1.86	0.05	-1	164	21	-1.0	-1.0	-1	962	-1	36
4.10	TIGER BAY SLOUGH AB PRAIRIE CR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.11	MOSSY GULLY AB TIGER BAY SLOUG	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	PEACE RIVER AB HORSE CREEK	169	52	85	4.2	0.5	120	-1	6.0	69	1.4	-1	21	7.0	57	2.02	1.33	55	375	87	-1.0	-1.0	-1	258	-1	55
5.10	HUNTER CREEK AB PEACE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.11	LEE BRANCH AB PEACE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.20	THORNTON BRANCH AB PEACE RIVER	1	70	70	-1.0	-1.0	50	-1	6.4	76	-1.0	-1	-1	8.0	72	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	490	-1	30
6.00	PEACE RIVER AB HORSE CREEK	147	52	84	3.5	-1.0	110	-1	6.0	73	1.5	-1	-1	7.3	55	2.57	2.17	160	660	50	-1.0	-1.0	-1	310	-1	46
7.00	JOSHUA CREEK AB PEACE RIVER	157	61	86	1.5	0.7	110	1	6.3	74	1.1	-1	15	7.1	115	1.45	0.43	0	330	68	3.6	-1.0	29	394	26	35
7.10	HAWTHORNE CREEK AB JOSHUA CREE	21	65	81	3.0	-1.0	100	-1	5.6	66	2.2	-1	-1	7.2	-1	2.49	1.61	-1	520	172	-1.0	-1.0	-1	450	-1	52
8.00	HONEY RUN AB JOSHUA CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	JOSHUA CREEK AB HONEY RUN	2	73	74	-1.0	-1.0	200	-1	-1.0	-1	4.8	-1	25	-1.0	5	1.79	0.18	-1	-1	-1	-1.0	-1.0	-1	36	-1	70
10.00	PEACE RIVER AB JOSHUA CREEK	1091	30	86	3.5	0.7	95	7	7.0	80	1.5	55	12	7.3	50	2.28	2.19	4	600	52	2.5	3.0	23	325	363	40
10.10	MCBRIDE BRANCH AB PEACE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
10.20	WALKER BRANCH AB PEACE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.00	CHARLIE CREEK AB PEACE RIVER	203	52	84	2.0	0.7	180	5	7.0	83	1.3	-1	23	6.9	23	1.56	0.51	0	-1	39	2.0	-1.0	12	175	40	38
12.00	OAK CREEK AB CHARLIE CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.00	CHARLIE CREEK AB OAK CREEK	4	83	84	2.7	-1.0	240	-1	4.0	49	-1.0	-1	-1	6.7	-1	1.53	0.36	0	-1	132	-1.0	-1.0	-1	154	-1	49
14.00	LITTLE CHARLY BOWLEGS AB CHARL	182	66	83	-1.0	-1.0	480	-1	3.8	43	1.3	-1	37	4.8	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	81	6	75
15.00	CHARLIE CREEK AB OAK CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	CHARLIE CREEK AB L CHARLY BOWL	3	65	70	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	OLD TOWN CREEK AB CHARLIE CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
19.00	CHARLIE CREEK AB OLD TOWN CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
20.00	PEACE RIVER AB CHARLIE CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
20.10	LIMESTONE CREEK AB PEACE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	PEACE RIVER AB OAK CREEK	4	82	83	5.4	-1.0	88	15	6.7	76	1.4	-1	16	7.0	-1	2.30	2.33	-1	-1	-1	-1.0	-1.0	-1	328	955	52
21.50	HICKORY CREEK AB PEACE RIVER	4	82	83	1.8	-1.0	132	9	8.0	88	1.2	-1	19	6.5	-1	1.06	0.56	-1	-1	-1	-1.0	-1.0	-1	183	20	35
22.00	PEACE RIVER AB TROUBLESOME CRE	1744	51	86	5.2	1.3	80	9	6.8	77	1.5	23	16	7.4	59	2.17	2.60	86	1300	100	2.1	2.9	27	368	267	50
22.10	HICKORY BRANCH AB PEACE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
23.00	LITTLE CHARLIE CREEK AB PEACE	14	62	83	2.2	-1.0	120	9	7.8	88	1.3	-1	17	7.1	30	3.89	0.42	-1	-1	-1	-1.0	-1.0	-1	311	33	41
24.00	PEACE RIVER AB LITTLE CHARLIE	5	82	83	6.0	-1.0	88	14	7.0	80	2.6	-1	17	7.3	-1	2.26	2.45	-1	-1	-1	-1.0	-1.0	-1	273	658	55
25.00	PEACE RIVER AB PAYNE CREEK	298	54	86	5.2	0.6	58	10	6.2	71	1.7	20	16	7.2	70	2.29	3.31	10	350	130	2.8	2.7	22	400	529	55
25.10	GILSHEY BRANCH AB PEACE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
26.00	PEACE RIVER AB WHIDDEN CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
27.00	BOWLEGS CREEK AB PEACE RIVER	116	52	83	4.2	0.4	120	4	7.2	76	1.0	-1	18	7.1	55	1.16	0.60	-1	-1	-1	-1.0	-1.0	-1	295	88	37
28.00	BOGGY BRANCH AB BOWLEGS CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
29.00	BOWLEGS CREEK AB BOGGY BRANCH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
31.00	PEACE RIVER AB BOWLEGS CREEK	700	59	86	8.8	0.9	73	14	5.5	66	2.6	27	21	7.2	70	2.22	2.47	325	2925	-1	-1.0	-1.0	-1	370	67	61
31.50	SIXMILE CREEK AB PEACE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
32.00	PEACE CREEK DRAINAGE CANAL #1	118	59	83	10.7	-1.0	193	22	4.7	57	3.5	47	28	6.6	18	2.23	0.49	-1	-1	-1	-1.0	-1.0	-1	287	22	68
32.50	PEACE CREEK DRAINAGE CANAL #2	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
33.00	SADDLE CREEK AB PEACE RIVER	128	65	86	17.8	-1.0	58	33	7.7	94	7.1	-1	40	8.8	79	4.70	0.64	-1	-1	-1	-1.0	-1.0	-1	333	28	55
34.10	LAKE LENA RUN AB LAKE LENA	82	70	83	5.5	0.3	228	22	1.0	20	18.0	48	35	7.1	139	4.99	0.43	37	430	60	-1.0	-1.0	-1	282	46	81
34.20	SADDLE CREEK AB LAKE HANCOCK	94	59	83	6.5	-1.0	97	15	5.5	59	1.6	21	19	7.6	105	1.40	0.41	-1	-1	-1	-1.0	-1.0	-1	238	153	50
34.30	BANANA-HANCOCK CANAL AB BANANA	66	59	83	30.0	1.0	40	63	9.3	105	10.0	67	23	8.6	125	6.86	1.71	410	-1	-1	-1.0	-1.0	-1	362	29	61
34.37	STAHL CANAL AB BANANA LAKE	47	59	83	5.2	-1.0	24	13	6.2	67	17.5	67	14	7.7	130	1.65	0.74	-1	-1	-1	-1.0	-1.0	-1	201	18	59
35.00	WHIDDEN CREEK AB PEACE RIVER	283	52	83	6.0	0.7	20	11	4.5	53	2.0	24	8	7.2	73	2.62	6.70	10	-1	-1	-1.0	-1.0	-1	525	95	67
36.00	PAYNE CREEK AB PEACE RIVER	155	52	83	2.6	0.6	80	2	7.5	83	0.9	-1	12	7.2	63	2.07	0.73	1	-1	-1	-1.0	-1.0	-1	282	72	35
37.00	LITTLE PAYNE CREEK AB PAYNE CR	2	76	76	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
38.00	PAYNE CREEK AB LITTLE PAYNE CR	22	65	82	2.1	1.4	120	5	6.7	71	-1.0	-1	18	7.2	64	1.02	0.60	-1	-1	-1	1.3	-1.0	23	238	-1	40
39.00	TROUBLESOME CREEK AB PEACE RIV	11	70	83	3.2	1.0	90	16	7.2	76	1.1	-1	18	6.8	34	5.16	0.71	-1	-1	-1	-1.0	-1.0	25	265	15	50
40.00	OAK CREEK AB PEACE RIVER	8	65	83	5.2	-1.0	149	24	7.2	81	2.0	-1	30	7.2	-1	1.75	0.69	-1	-1	-1	-1.0	-1.0	-1	320	55	53
41.00	HORSE CREEK AB PEACE RIVER	573	62	87	1.7	0.7	200	3	6.2	71	1.1	45	21	6.8	48	1.26	0.56	0	160	56	1.9	3.3	18	195	22	39
42.00	BRUSHY CREEK AB HORSE CREEK	17	81	84	3.0	0.6	240	6	4.7	53	-1.0	-1	-1	6.7	-1	1.36	0.45	1	-1	250	-1.0	-1.0	-1	142	-1	55
43.00	HORSE CREEK AB BRUSHY CREEK	95	69	84	1.9	0.5	200	5	7.1	81	1.5	32	25	6.5	28	1.08	0.53	0	880	575	3.0	-1.0	27	103	8	40

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03100101 PEACE RIVER																	
* WATER BODY TYPE: ESTUARY																	
45.00	PEACE RIVER ABOVE GULF OF MEXICO	PARTIAL	FAIR	*---	---.	.--*	-..	**	.	....	....	....	..	*	* **	* *	ELEVATED TP CONCENTRATIONS,HOWEVER OTHER INDICATORS REFLECT GOOD OVERALL WATER QUALITY.DIVERSITY INDEX OF 2.7 .PERIODIC BANS ON SHELLFISHING.
46.00	PEACE RIVER ABOVE GULF OF MEXICO	PARTIAL	FAIR	*---	----	---*	--.	**	0	.000	0000	000-	+.		* **	* *	ELEVATED CONCENTRATIONS OF TP, HOWEVER OTHER INDICATORS REFLECT GOOD OVERALL WATER QUALITY INCLUDING DIVERSITY INDEX.PERIODIC BANS ON SHELLFISHING.
49.00	PEACE RIVER ABOVE SHELL CREEK	PARTIAL	POOR	*---	--..	.--*	--.	***	0	....	.00.	.000	0.	*	* *	*	VERY HIGH NUTRIENT LEVELS,SPECIFICALLY TP,HOWEVER OTHER INDICATORS DEPICT CONDITIONS TO BE GOOD IN GENERAL.MINING IN UPPER RIVER (POLK CO).
50.00	PEACE RIVER ABOVE GULF OF MEXICO	PARTIAL	POOR	*-.-	--..	.--*	-..	**	.	....	....	....	..	*	* **	* **	VERY HIGH NUTRIENT LEVELS ,SPECIFICALLY TP,BUT OTHERWISE GOOD QUALITY.RAW SEWAGE LEAKS FROM CITY OF ARCADIA COLLECTION SYSTEM. POTENTIAL CONTAMINATION FROM AGRICULTURE.
* WATER BODY TYPE: LAKE																	
30.00	LAKE BUFFUM ABOVE BOWLEGS CREEK	YES	GOOD	----	.--.	----	-..		.	....	....	....	..		* *		
32.90	LAKE HAMILTON ABOVE LITTLE LAKE HAM	YES	POOR	----	--..	.*-*	---	*	.	....	....	....	..		* *		ONE SAMPLE IN 1980 WITH POOR PHOSPORUS AND SECCHI DEPTH.
34.00	LAKE HANCOCK ABOVE LAKE LENA RUN	NO	POOR	***-	*-.*	****	*.*	***	.	....	....	....	..	**	* **	* **	BANANA-HANCOCK CANAL, LAKE LENA RUN AND ADJACENT RUNOFF PROVIDE LARGE NUTRIENT LOAD INTO LAKE HANCOCK FROM WWTP, INDUSTRIAL AND MINING SOURCES. 1985 WLA STUDY.
34.15	LAKE LENA ABOVE	NO	GOOD	*---	.-..	***-	-..	*	0	....	.00.	00.-	-.		*	*	POOR OVERALL WATER QUALITY, SPECIFICALLY RELATED TO ELEVATED TP AND CHLOROPHYLL a CONCENTRATIONS AND REDUCED SECCHI DEPTH.
34.35	BANANA LAKE ABOVE STAHL CANAL	NO	POOR	***-	*-..	****	*..	***	.	....	....	....	..	*	* *	* *	BANANA LAKE RECEIVES WWTP EFFLUENT FROM LAKELAND VIA THE STAHL CANAL. EFFLUENT IS BEING DIVERTED FROM THIS HIGHLY EUTROPHIC LAKE. 1984 WLA.
52.00	LAKE PARKER ABOVE	NO	POOR	***-	*-.-	****	*.*	***	0	....	.-0.	.0..	-.	**	* **	**	HIGHLY EUTROPHIC LAKE, BUT ONLY ONE SAMPLE. SEVERAL POINT SOURCES LISTED IN LAKELAND AREA. 2 POWER PLANTS LOCATED ON SHORE LINE.
* WATER BODY TYPE: STREAM																	
2.00	SHELL CREEK ABOVE PEACE RIVER	YES	FAIR	----	---.	....	-..	***	-	....	.00.	....	00		* **	**	NATURAL DO PROBLEM.IMPOUNDED FOR CLASS I (DRINKING WATER) USE. CITRUS INDUSTRY ACTIVITIES ARE A POTENTIAL THREAT.
2.50	MYRTLE SLOUGH #2 ABOVE SHELL CREEK	YES	FAIR	----	----	....	-..		0	.*00	000.	..00	0.				NATURAL DO PROBLEM.
3.00	SHELL CREEK ABOVE PRAIRIE CREEK	YES	GOOD	----	----	....	-*.	***	0	000.	.00.	..00	+.		* **	**	IMPOUNDED FOR CLASS I (DRINKING WATER) USE. CITRUS INDUSTRY ACTIVITIES ARE A POTENTIAL THREAT.
4.00	PRAIRIE CREEK ABOVE SHELL CREEK	YES	GOOD	----	---.	....	--.	*	0	....	.000	....	00		* **	**	RESIDENTIAL DEVELOPMENT INCREASING IN WATERSHED. POTENTIAL CONTAMINATION FROM AGRICULTURAL RUNOFF.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
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REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
4.01	MYRTLE SLOUGH ABOVE PRAIRIE CREEK	YES	GOOD	----	---.	....	-..		.	....	....	....	..		*		POTENTIAL CONTAMINATION FROM AGRICULTURAL RUNOFF.
4.10	TIGER BAY SLOUGH ABOVE PRAIRIE CREE	YES	UNKN	....	....	....	.								* *	*	RESIDENTIAL DEVELOPMENT INCREASING IN WATERSHED. POTENTIAL CONTMAINATION FROM AGRICULTURE.
4.11	MOSSY GULLY ABOVE TIGER BAY SLOUGH	YES	UNKN	....	....	....	.								*		POTENTIAL CONTAMINATION FROM AGRICULTURAL RUNOFF.
5.00	PEACE RIVER ABOVE HORSE CREEK	PARTIAL	FAIR	*---	---.	....	-..	***	0	....	.00.	..00	0.	*	* *	***	ELEVATED NUTRIENTS CAUSED BY MINING OPERATIONS.SEVERAL FISHKILLS DUE TO PHOSPHATE DAM SPILLS. LANDFILL IS 1/2 MILE FROM RIVER. RAW SEWAGE LEAKS FROM CITY OF ARCADIA COLLECTION SYSTEM. MINING RUNOFF IN HEADWATERS. POTENTIAL CONTAMINATION FROM AGRICULTURE.
5.10	HUNTER CREEK ABOVE PEACE RIVER	UNKNOWN	UNKN	....	....	....	.										
5.11	LEE BRANCH ABOVE PEACE RIVER	UNKNOWN	UNKN	....	....	....	.										
5.20	THORNTON BRANCH ABOVE PEACE RIVER	YES	GOOD	.-.-	.-..	....	...		.	....	....	....	..		*		INSUFFICIENT PARAMETER COVERAGE.POTENTIAL CONTAMINATION FROM AGRICULTURAL RUNOFF.
6.00	PEACE RIVER ABOVE HORSE CREEK	PARTIAL	FAIR	*---	---.	....	-.-	***	.	....	....	....	..	*	* *	***	ELEVATED NUTRIENTS CAUSED BY MINING OPERATIONS.RAW SEWAGE LEAKS FROM COLLECTION SYSTEM FROM CITY OF ARCADIA. POTENTIAL CONTAMINATION FROM AGRICULTURE RUNOFF. MINING IN HEADWATERS. FISHKILLS DUE TO PHOSPHATE DAM SPILLS.
7.00	JOSHUA CREEK ABOVE PEACE RIVER	YES	GOOD	----	----	....	--.	*	0	..*.	.--.	..00	00		* *		NUMEROUS AGRICULTURE AND CATTLE RANCHES ALONG CREEK.
7.10	HAWTHORNE CREEK ABOVE JOSHUA CREEK	PARTIAL	FAIR	*---	---.	....	-..		.	....	....	....	..		*		ELEVATED NUTRIENTS AND BACTERIA, CAUSE UNKNOWN.POTENTIAL CONTAMINATION FROM AGRICULTURAL RUNOFF.
8.00	HONEY RUN ABOVE JOSHUA CREEK	YES	UNKN	....	....	....	.								*		POTENTIAL CONTAMINATION AGRICULTURAL RUNOFF
9.00	JOSHUA CREEK ABOVE HONEY RUN	YES	POOR	-..-	*...	....	...		.	....	....	....	..		*		INSUFFICIENT PARAMETER COVERAGE.POTENTIAL CONTAMINATION AGRICULTURAL RUNOFF
10.00	PEACE RIVER ABOVE JOSHUA CREEK	PARTIAL	GOOD	*---	----	....	-*.	***	0	00-0	.000	000-	00	*	* *	**	ELEVATED NUTRIENTS FROM UPSTREAM MINING OPERATIONS.FISH KILLS DUE TO PHOSPHATE DAM BREAKS. MINING ACTIVITIES IN HEADWATERS. POTENTIAL CONTAMINATION FROM AGRICULTURAL RUNOFF.
10.10	MCBRIDE BRANCH ABOVE PEACE RIVER	YES	UNKN	....	....	....	.								*		POTENTIAL CONTAMINATION FROM AGRICULTURAL RUNOFF
10.20	WALKER BRANCH ABOVE PEACE RIVER	YES	UNKN	....	....	....	.								*		POTENTIAL CONTAMINATION FROM AGRICULTURAL RUNOFF.
11.00	CHARLIE CREEK ABOVE PEACE RIVER	YES	GOOD	*---	----	....	--.		0	..0.	.00.	..00	0.		*		NUMEROUS AGRICULTURE AND CATTLE RANCHES ALONG CREEK.
12.00	OAK CREEK ABOVE CHARLIE CREEK	YES	UNKN	....	....	....	.								*		POTENTIAL CONTAMINATION FROM AGRICULTURAL RUNOFF.
13.00	CHARLIE CREEK ABOVE OAK CREEK	YES	FAIR	----	.--.	....	...		.	....	....	....	..		*		SOME LOW DO'S, PROBABLY NATURAL.NUMEROUS FARMS AND CATTLE RANCHES ALONG CREEK.
14.00	LITTLE CHARLY BOWLEGS ABOVE CHARLIE	YES	POOR	.*.-	**..	....	...		.	....	....	....	..				NATURALLY LOW DO,pH AND HIGH TOC.
15.00	CHARLIE CREEK ABOVE OAK CREEK	YES	UNKN	....	....	....	.								*		
17.00	CHARLIE CREEK ABOVE L CHARLY BOWLEG	UNKNOWN	UNKN	....	....	....	...		.	....	....	....	..				
18.00	OLD TOWN CREEK ABOVE CHARLIE CREEK	UNKNOWN	UNKN	....	....	....	.										
19.00	CHARLIE CREEK ABOVE OLD TOWN CREEK	UNKNOWN	UNKN	....	....	....	.										
20.00	PEACE RIVER ABOVE CHARLIE CREEK	PARTIAL	UNKN	....	....	....	.	***						*	* *	**	FISH KILLS DUE TO PHOSPHATE DAM BREAKS. MINING IN UPPER REACHES.
20.10	LIMESTONE CREEK ABOVE PEACE RIVER	UNKNOWN	UNKN	....	....	....	.										
21.00	PEACE RIVER ABOVE OAK CREEK	PARTIAL	FAIR	*---	--..	....	-..	***	.	....	....	....	..	*	* *	**	ELEVATED NUTRIENTS FROM UPSTREAM MINING OPERATIONS.FISH KILLS DUE TO PHOSPHATE DAM BREAKS. MINING ACTIVITIES IN UPPER REACHES.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
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REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
21.50	HICKORY CREEK ABOVE PEACE RIVER	YES	GOOD	*---	--..	....	-..		.	....	....	....	..				
22.00	PEACE RIVER ABOVE TROUBLESOME CREEK	PARTIAL	FAIR	*---	----	....	--.	***	0	..00	*-00	..--	00	**	* *	**	ELEVATED NUTRIENTS FROM UPSTREAM MINING OPERATIONS. 1982 INTENSIVE SURVEY OF BOWLING GREEN-WAUCHULA WWTP'S, WORSE NUTRIENTS IN EARLY 70'S, SOME RECENT IMPROVEMENT.MINING IN UPPER RIVER (POLK CO). FISHKILLS DUE TO PHOSPHATE DAM BREAKS.
22.10	HICKORY BRANCH ABOVE PEACE RIVER	UNKNOWN	UNKN	....	....	....	.										
23.00	LITTLE CHARLIE CREEK ABOVE PEACE RI	PARTIAL	GOOD	*---	--..	....	-..		.	....	....	....	..	*			ELEVATED NUTRIENTS FROM MINING OPERATIONS.
24.00	PEACE RIVER ABOVE LITTLE CHARLIE CR	PARTIAL	FAIR	*---	--..	....	-..	***	.	....	....	....	..	*	* *	**	ELEVATED NUTRIENTS FROM MINING OPERATIONS.MINING ACTIVITIES IN UPPER REACHES.
25.00	PEACE RIVER ABOVE PAYNE CREEK	PARTIAL	FAIR	*---	----	....	-*.	***	-	0.00	.0-.	0.--	+.	*	* *	*	ELEVATED NUTRIENTS FROM MINING OPERATIONS.MINING ACTIVITIES IN UPPER REACHES.
25.10	GILSHEY BRANCH ABOVE PEACE RIVER	UNKNOWN	UNKN	....	....	....	.										
26.00	PEACE RIVER ABOVE WHIDDEN CREEK	PARTIAL	UNKN	....	....	....	.	***						*	* *	*	MINING ACTIVITIES IN UPPER REACHES.
27.00	BOWLEGS CREEK ABOVE PEACE RIVER	PARTIAL	GOOD	*---	--..	....	-..		.	....	....	....	..	*	*	*	ELEVATED NUTRIENTS FROM MINING OPERATIONS.
28.00	BOGGY BRANCH ABOVE BOWLEGS CREEK	UNKNOWN	UNKN	....	....	....	.										
29.00	BOWLEGS CREEK ABOVE BOGGY BRANCH	PARTIAL	UNKN	....	....	....	.								*	*	
31.00	PEACE RIVER ABOVE BOWLEGS CREEK	PARTIAL	POOR	*---	---.	....	---	***	0	..0-	000-	..--	00	**	* *	*	ELEVATED NUTRIENTS AND SOME DO PROBLEMS ASSOCIATED WITH MINING OPERATIONS. UPSTREAM WWTP. LONG TERM TREND TOWARD DECLINING CONDITIONS. BIOASSAY OF FT. MEAD MINING COMPANY.
31.50	SIXMILE CREEK ABOVE PEACE RIVER	UNKNOWN	UNKN	....	....	....	.										
32.00	PEACE CREEK DRAINAGE CANAL #1 ABOVE	PARTIAL	POOR	*-*-	*-..	....	-.-	***	.	....	....	....	..	**	*	* *	DO PROBLEMS CAUSED BY SEVERAL WWTP'S AND INDUSTRIAL SITES IN THE AREA. SEVERAL SPECIAL STUDIES. 1984 WLA OF BARTOW AIRPORT WWTP.
32.50	PEACE CREEK DRAINAGE CANAL #2 ABOVE	UNKNOWN	UNKN	....	....	....	.										
33.00	SADDLE CREEK ABOVE PEACE RIVER	PARTIAL	FAIR	*-*-	*-..	....	-..	*	0	....	.00.	....	00	**		* *	THE OUTLET OF LAKE HANCOCK HAS PROBLEMS RELATED TO WWTP AND INDUSTRIAL SOURCES.
34.10	LAKE LENA RUN ABOVE LAKE LENA	NO	POOR	*-*-	**-.	....	-.-		.	....	....	....	..	**			ONE WWTP AND SEVERAL INDUSTRIAL DISCHARGERS CAUSE SERIOUS WATER QUALITY PROBLEMS TO LAKE LENA RUN AND LAKE HANCOCK. 1985 WLA STUDY.
34.20	SADDLE CREEK ABOVE LAKE HANCOCK	PARTIAL	FAIR	----	--..	....	-.-	**	.	....	....	....	..	*	**	*	MINING OPERATIONS IN AREA CAUSE PROBLEMS.
34.30	BANANA-HANCOCK CANAL ABOVE BANANA L	NO	POOR	*-*-	*-..	....	*..		.	....	....	....	..	*			CANAL THAT DRAINS BANANA LAKE. HAS THE SAME PROBLEMS AS LAKE.(RCH 34.35).
34.37	STAHL CANAL ABOVE BANANA LAKE	NO	FAIR	*---	*-..	....	-..		.	....	....	....	..	*			POOR WATER QUALITY DUE TO LAKELAND WWTP. (WILL BE DIVERTED).1984 WLA.
35.00	WHIDDEN CREEK ABOVE PEACE RIVER	NO	POOR	*---	--..	....	-..		.	....	....	....	..	*			SEVERAL MINING POINT SOURCES. VERY HIGH NUTRIENTS.
36.00	PAYNE CREEK ABOVE PEACE RIVER	PARTIAL	GOOD	*---	--..	....	-..		.	....	....	....	..	*	*	* *	PHOSPHATE MINING ACTIVITIES CAUSING ELEVATED NUTRIENTS.
37.00	LITTLE PAYNE CREEK ABOVE PAYNE CREE	YES	UNKN	....	....	....	...		.	....	....	....	..		*	* *	INSUFFICIENT PARAMETER COVERAGE.PHOSPHATE MINING IN WATERSHED
38.00	PAYNE CREEK ABOVE LITTLE PAYNE CREE	YES	GOOD	*---	--.*	....	--.		.	....	....	....	..		*	* *	PHOSPHATE MINING IN WATERSHED.
39.00	TROUBLESOME CREEK ABOVE PEACE RIVER	PARTIAL	FAIR	*---	--.-	....	-..		.	....	....	....	..	*			MINING ACTIVITIES ELEVATING NUTRIENT LEVELS.
40.00	OAK CREEK ABOVE PEACE RIVER	YES	FAIR	*-*-	*-..	....	-..		.	....	....	....	..				NATURALLY LOW DO.
41.00	HORSE CREEK ABOVE PEACE RIVER	YES	GOOD	*---	----	....	--.		0	0-0*	.-00	0.-0	-0		*	*	NUMBEROUS FARMS AND CATTLE RANCHES ALONG CREEK.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
42.00	BRUSHY CREEK ABOVE HORSE CREEK	YES	FAIR	----	.--.	....	--.		.	....	....	....	..				NATURALLY LOW DO.
43.00	HORSE CREEK ABOVE BRUSHY CREEK	YES	GOOD	*---	--*-	....	--.		0	..0.	.00.	..00	0.		*	*	NUMBEROUS FARMS AND CATTLE RANCHES ALONG CREEK.

PENSACOLA BAY BASIN

General Description of the Basin

The Pensacola Bay Basin (located in northwest Florida) has a drainage area of 543 square miles. The main waterbodies in the basin are Pensacola Bay, Escambia Bay, East Bay, Blackwater Bay and Santa Rosa Sound. Major inflows into the Bay system are from Escambia River (6500 cfs), the Blackwater River (400 cfs) and the Yellow River (1500 cfs). Land use within the basin is mostly silviculture and urban.

Specific Water Quality Problems and Sources

The main water quality problems in the area are upper Escambia Bay, and the two bayous (Bayou Chico and Bayou Texar) which drain the Pensacola urban area. In addition to the stormwater, Bayou Chico, the worse of the two, receives shipyard runoff, historic discharge and runoff from Reichold Chemicals, and the Warrington WWTP discharge. Historically, it was also impacted by chemical, lumberyard and creosote industries. Sediments are polluted with metals and support almost no macroinvertebrate life. The bayou also has bacteria, fishkill and nutrient problems. The two creeks which feed this bayou (Jackson Creek and Jones Creek) also exhibit water quality problems. The Warrington plant has proposed upgrades in its treatment and is scheduled to remove its discharge from the bayou next year. DER has been conducting a survey of sediments in port areas throughout the state. The study found that sediments in the Pensacola Bay port area east of Bayou Chico were the only ones in the state to contain phenols.

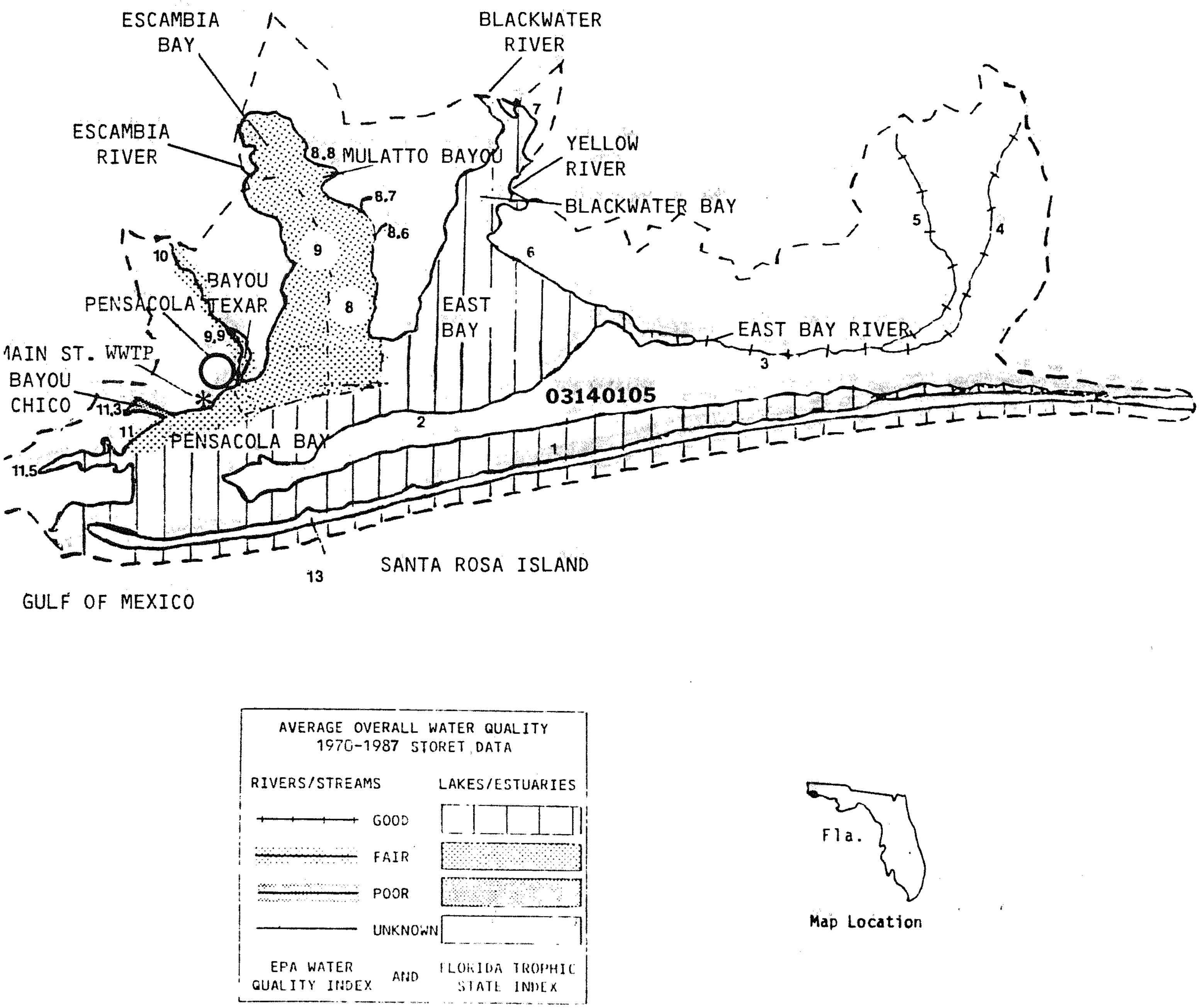
Bayou Texar has had increasing fishkill problems in recent years. It receives dischage from 68 storm sewers and heavy suspended solids loads from Carpenters Creek. Recently, the city has proposed a demonstration project to modify four of these sewers to allow partial treatment of the stormwater before entering the bayou. In addition, there has been approval of a two-year study by the University of West Florida to assess the problems of the bayou and make recommendations.

Further up the estuary, water quality problems are evident in the northern portion of Escambia Bay with reduced DO concentrations, fishkills and also bacteria problems around the mouth of the Escambia River. The University of West Florida WWTP, Monsanto industrial discharge and Gulfpower thermal discharge enters the Escambia River upstream of the mouth. In addition, this portion of the bay receives discharge from two chemical manufacturing companies. Airproducts was recently found to be toxic in bioassay testing. These companies discharge high levels of nitrogen and BOD. Problems in the upper bay are complicated by poor flushing due to natural circulation patterns and also a somewhat restrictive railroad trestle. A new railroad bridge will soon be constructed and the old one removed. Located on the eastern side of Escambia Bay is Mulatto Bayou which exhibits DO, nutrient and transparency problems. Indian Bayou, in the southeastern portion of Escambia Bay, still supports a grassbed community.

Water quality improves in Pensacola Bay. Recently an intensive sampling effort by Pensacola's Main Street wastewater treatment plant has been completed to determine the water quality effects of the discharge on Pensacola Bay. Water chemistry samples collected for two years in the bay around the discharge point and at several background sites indicate that the bay was assimilating the current discharge but that loadings should not be increased. DER biological sampling indicated low diversity and heavy organic sedimentation. There is an on-going basin assessment study of Escambia River, Escambia Bay and Pensacola Bay by DER district staff.

Santa Rosa Sound has good water quality. It is threatened by development of the island, ditching and stormwater. There are also a few WWTPs that have some seasonal problems in summer, tourist months. Finally, the City of Navarre has proposed cutting a pass (and marina) through the island.

PENSACOLA BAY BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03140105 PENSACOLA BAY																										
* WATER BODY TYPE: ESTUARY																										
1.00	GULF OF MEXICO AB SANTA ROSA S	225	68	87	3.0	2.0	10	9	7.7	99	1.2	-1	3	8.0	80	0.71	0.02	7	13	20	2.8	-1.0	-1	29000	-1	37
2.00	PENSACOLA BAY AB GULF OF MEXIC	336	68	85	7.0	2.0	22	14	7.8	97	1.6	1000	8	8.0	77	0.74	0.02	7	23	20	-1.0	-1.0	-1	28500	-1	39
6.00	EAST BAY AB EAST BAY RIVER	207	70	83	8.0	1.2	30	12	7.7	93	1.0	17500	5	7.5	34	0.51	0.03	5	90	49	2.3	1.1	-1	16200	-1	45
7.00	EAST BAY AB YELLOW RIVER	333	70	80	6.2	1.5	30	10	7.2	88	0.9	-1	7	7.2	30	0.68	0.03	3	235	23	2.0	2.6	-1	10825	-1	42
8.00	PENSACOLA BAY AB GULF OF MEXIC	959	68	87	10.0	0.8	40	11	7.5	87	1.6	527	7	7.5	40	0.91	0.03	11	160	49	2.1	2.3	-1	14000	-1	51
8.60	TROUT BAYOU AB PENSACOLA BAY	144	47	76	27.0	0.5	80	30	6.6	83	2.9	-1	-1	7.4	6	1.08	0.04	-1	152	423	-1.0	-1.0	-1	15500	-1	49
8.70	INDIAN BAYOU AB PENSACOLA BAY	54	70	76	12.0	0.3	40	40	6.2	77	2.6	-1	-1	7.0	34	1.02	0.01	-1	49	1225	-1.0	-1.0	-1	212	-1	24
8.80	MULATTO BAYOU AB PENSACOLA BAY	462	70	87	20.0	1.0	80	12	7.4	86	2.0	12	16	7.4	26	1.47	0.05	8	137	49	-1.0	-1.0	-1	5775	-1	50
9.00	ESCAMBIA BAY AB ESCAMBIA RIVER	1389	68	86	10.0	0.7	30	14	7.5	84	1.4	438	6	7.5	58	0.56	0.03	6	108	33	-1.0	-1.0	-1	2620	-1	47
9.90	BAYOU TEXAR AB PENSACOLA BAY	216	70	87	11.5	1.2	34	13	7.3	88	1.7	-1	-1	7.7	53	1.17	0.04	12	341	330	-1.0	-1.0	-1	14250	-1	50
11.00	PENSACOLA BAY AB CARPENTER CRE	472	68	86	7.5	3.0	19	12	7.5	92	1.6	1045	7	8.1	82	0.86	0.03	-1	126	130	-1.0	-1.0	-1	32000	-1	39
11.30	BAYOU CHICO AB PENSACOLA BAY	107	70	87	18.0	0.3	50	21	6.8	81	4.2	80	-1	8.0	76	1.44	0.14	52	2300	330	-1.0	-1.0	-1	21000	-1	63
11.50	BAYOU GRANDE AB PENSACOLA BAY	58	70	87	5.0	1.5	20	13	6.8	88	1.6	-1	-1	8.0	64	0.79	0.03	9	41	35	-1.0	-1.0	-1	15500	-1	41
13.00	SANTA ROSA ISLAND AB GULF OF M	31	70	87	6.0	1.1	13	16	8.8	100	2.0	-1	-1	8.0	73	0.68	0.04	6	34	20	-1.0	-1.0	-1	31500	-1	39
* WATER BODY TYPE: STREAM																										
3.00	EAST BAY RIVER AB PENSACOLA (E	14	71	80	18.0	2.0	45	2	6.0	77	1.6	-1	-1	7.2	33	1.27	0.03	-1	2100	2300	-1.0	-1.0	-1	5400	-1	52
4.00	TURTLE CREEK AB LIVEOAK CREEK	8	78	81	2.0	-1.0	20	-1	8.6	88	0.3	1	-1	5.0	1	0.32	0.01	-1	-1	-1	-1.0	-1.0	-1	14	63	3
5.00	LIVEOAK CREEK AB TURTLE CREEK	20	77	81	2.5	-1.0	30	-1	8.4	85	0.4	1	0	5.2	1	0.25	0.01	-1	-1	-1	-1.0	-1.0	-1	14	75	1
10.00	CARPENTER CREEK AB PENSACOLA B	82	70	87	8.0	1.0	40	9	7.6	85	1.0	-1	-1	6.6	9	1.18	0.03	-1	1625	445	-1.0	-1.0	-1	160	-1	38

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
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'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03140105 PENSACOLA BAY																	
* WATER BODY TYPE: ESTUARY																	
1.00	GULF OF MEXICO ABOVE SANTA ROSA SOU	YES	GOOD	----	----	----	-*.		0	0.00	000.	.*00	0.				
2.00	PENSACOLA BAY ABOVE GULF OF MEXICO	YES	GOOD	----	*--.	----	-*.		.	....	....	....	..		**	*	ACCELERATED GROWTH, MANY UNITS UTILIZING SEPTIC TANKS. ELEVATED COLIFORM COUNTS.
6.00	EAST BAY ABOVE EAST BAY RIVER	YES	GOOD	----	*--*	----	--.		.	....	....	....	..		*	*	ELEVATED COLIFORM LEVELS.
7.00	EAST BAY ABOVE YELLOW RIVER	YES	GOOD	----	----	----	--.		.	....	....	....	..				
8.00	PENSACOLA BAY ABOVE GULF OF MEXICO	PARTIAL	FAIR	----	*---	----	-**		*	00*0	000.	0000	0.	*	**	*	GENERALLY ELEVATED CHLOROPHYLL a AND NUTRIENTS WITH REDUCED WATER CLARITY. SEVERAL DER BIOASSAYS PERFORMED ON LOCAL INDUSTRY EFFLUENTS.ELEVATED COLIFORM LEVELS.
8.60	TROUT BAYOU ABOVE PENSACOLA BAY	YES	GOOD	--*-	---.	.*--	-..		.	....	....	....	..				
8.70	INDIAN BAYOU ABOVE PENSACOLA BAY	YES	GOOD	--*-	--*.	.*--	-..		.	....	....	....	..				WATER QUALITY PROBLEMS IN URBANIZED BAYOU.
8.80	MULATTO BAYOU ABOVE PENSACOLA BAY	PARTIAL	FAIR	--*-	---.	----	-..		.	....	....	....	..				INCREASED URBAN RUNOFF FROM DEVELOPMENT.
9.00	ESCAMBIA BAY ABOVE ESCAMBIA RIVER	PARTIAL	GOOD	----	*--.	----	-..		.	....	....	....	..	*	**	*	ELEVATED NUTRIENTS AND REDUCED WATER CLARITY. IMPROVED IN EARLY 1970'S DUE TO CLEANUP EFFORTS.
9.90	BAYOU TEXAR ABOVE PENSACOLA BAY	PARTIAL	FAIR	----	---.	----	--.	* *	0	..00	--0.	..00	-.	**	**	* *	BACTERIA, NUTRIENTS AND WATER CLARITY PROBLEMS IN URBANIZED BAYOU.ROADWAY & RESIDENTIAL RUNOFF, ANNUAL FISHKILLS IN THE SUMMER.
11.00	PENSACOLA BAY ABOVE CARPENTER CREEK	YES	GOOD	----	*--.	.---	-.*		.	....	....	....	..				GENERALLY GOOD OVERALL WATER QUALITY IN THE REACH.
11.30	BAYOU CHICO ABOVE PENSACOLA BAY	NO	POOR	--*-	*--.	**-*	--.	* *	-	..00	-00.	..0-	-.	**	**	*	GENERALLY POOR WATER QUALITY. ONE WWTP (WARRINGTON) EFFLUENT REMOVED FROM BAYOU. 1980 WLA STUDY.OVERALL WATER QUALITY INDEX AND BOD RESULTS HAVE IMPROVED RECENTLY.ANNUAL FISHKILLS IN SUMMER. DEVELOPMENT IMPACTS CONTINUE TO ESCALATE.
11.50	BAYOU GRANDE ABOVE PENSACOLA BAY	YES	GOOD	----	---.	----	-*.		0	..0.	.00.	...0	0.				WATER QUALITY PROBLEMS APPEAR IN URBANIZED BAYOU AREAS.
13.00	SANTA ROSA ISLAND ABOVE GULF OF MEX	YES	GOOD	----	---.	----	-..		-	..-0	--0.	...-	-.				GOOD OVERALL QUALITY IN THIS REACH. SAMPLE STATIONS ADJACENT TO WWTP, NOT REPRESENTATIVE.
* WATER BODY TYPE: STREAM																	
3.00	EAST BAY RIVER ABOVE PENSACOLA (EAS	YES	FAIR	--**	--*.	....	-..		.	....	....	....	..				THREE FAIR BACTERIA SAMPLES IN 1980. OTHERWISE, OVERALL WATER QUALITY IS VERY GOOD.
4.00	TURTLE CREEK ABOVE LIVEOAK CREEK	YES	GOOD	-*--	--..	....	-..		.	....	....	....	..				
5.00	LIVEOAK CREEK ABOVE TURTLE CREEK	YES	GOOD	----	--..	....	-..		.	....	....	....	..				
10.00	CARPENTER CREEK ABOVE PENSACOLA BAY	PARTIAL	GOOD	----	---.	....	--.	* *	0	000.	000.	..00	-.		**	*	ANNUAL FISH KILLS IN SUMMER.

PERDIDO BAY BASIN

General Description of the Basin

Perdido Bay is a relatively small Florida estuary (50 square miles) with an immediate drainage area of approximately 300 square miles. The centerline of the bay forms the state boundary line between Alabama and Florida, with each state sharing approximately half of the basin drainage area. The Perdido River is the major fresh water inflow to the bay with an average annual flow of 700 cfs. Florida land use in the basin is primarily forest and urban. The highly urbanized areas (western edge of Pensacola) is an important contributor of nonpoint source pollution. The basin has been the subject of several water quality studies with the major focus on water quality problems associated with treated pulp mill effluents which are discharged to Elevenmile Creek and eventually to Perdido Bay.

Specific Water Quality Problems and Pollution Sources

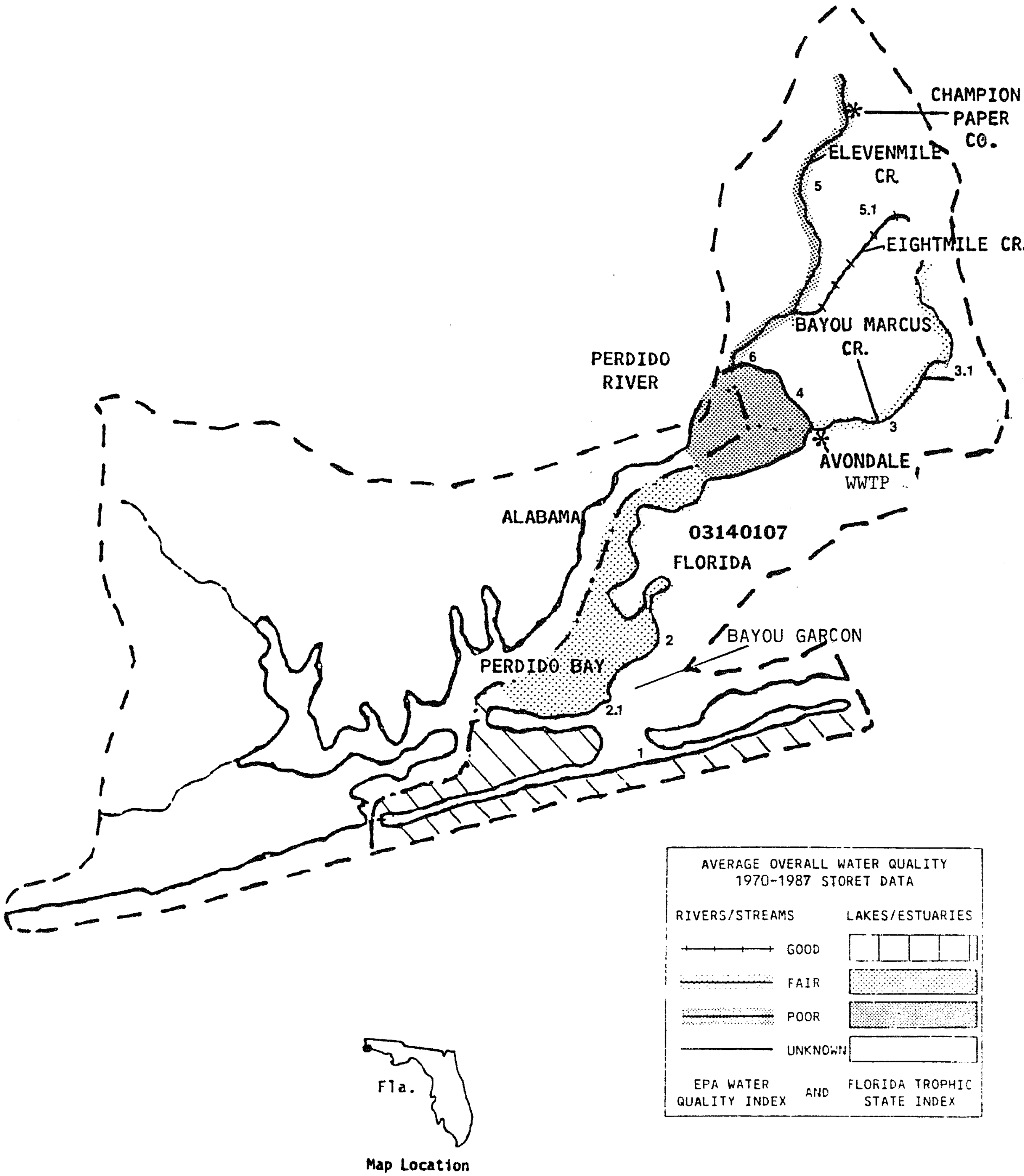
The most concentrated and voluminous pollution source in the basin is the Champion Paper Company (formerly St. Regis Paper Company) which discharges 28 MGD of partially treated pulp mill waste into Elevenmile Creek. The historical record shows that the creek has had major water quality problems since the early 1970's. After the installation of a treatment facility at St. Regis Paper Company, water quality parameters showed some improvement in the mid 1970's; however, in the early 1980's, production and concomitant pollution increased. Recently, the new owners, Champion, have changed production methods to include a bleaching process. This change requires an increase in color and specific conductance levels in the discharge and thus a new permit. This permit is being contested by a local environmental group and the State of Alabama, and has been in litigation for about a year. Meanwhile, the plant is operating without a permit and out of compliance with the old permit. The effluent has also been found toxic to bioassay text organisms in the past.

The discharge negatively affects many water quality parameters, particularly color, DO, BOD, nutrients, turdibity and solids. Over 60% of the DO samples collected for the stream in the last fifteen (15) years have been below the state standard of 5 mg/l. DER District personnel report consistently low DO values (<2 mg/l) in bottom waters near the mouth of the creek where flow rates decrease. The poor water quality throughout the creek is reflected in low density, diversity and the species richness values for benthic fauna. The effects of the creek on color, nutrients and biological parameters are seen about 12 miles into Perdido Bay (the upper third of the bay). EPA Region IV conducted a survey of Elevenmile Creek and Upper Perdido Bay in 1986, and other state and federal studies are proposed.

Upper Perdido Bay is also negatively affected by Eightmile Creek and Bayou Marcus which receive runoff from urbanized areas and have elevated water quality index values. In addition, the Avondale WWTP discharges to Bayou Marcus. This facility has historically had spill problems. There were negotiations to close this facility and re-route the wastewater to the Main Street WWTP; however, with the increased developmental pressures, the Avondale plant is still in operation, and is being expanded. A recent intensive survey indicated DO problems below the plant; therefore, higher levels of treatment will be required for the new permit.

Bayou Garcon, in the southern portion of the bay, exhibits transparency and DO problems. In addition, there have been local reports of increased siltation at the mouth of the bayou which was attributed to new development in the watershed area. Within the last few years, there has been an increase in development in the swampy areas west of Pensacola. During rainy seasons, runoff from these developments can affect much of the eastern portions of the bay and thus exacerbate the degredation of the bay caused by Elevenmile Creek.

PERDIDO BAY BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03140107 PERDIDO BAY																										
* WATER BODY TYPE: ESTUARY																										
2.00	PERDIDO BAY AB GULF OF MEXICO	321	70	87	6.0	1.0	35	9	7.5	90	1.4	24	6	7.4	37	0.84	0.04	8	49	115	1.9	0.6	-1	9318	-1	51
2.10	BAYOU GARCON AB PERDIDO BAY	14	69	87	4.0	0.6	175	8	3.1	37	1.1	-1	-1	5.6	49	0.58	0.03	13	240	275	-1.0	-1.0	-1	26610	-1	52
4.00	PERDIDO BAY AB BAYOU MARCUS	109	69	87	10.0	0.5	68	15	6.5	77	1.8	-1	7	7.1	31	1.20	0.05	16	340	138	-1.0	-1.0	-1	17200	-1	59
6.00	PERDIDO BAY AB ELEVENMILE CREE	21	71	76	10.0	0.9	40	21	4.8	56	1.6	-1	-1	6.9	31	0.68	0.06	-1	307	8	-1.0	-1.0	-1	10250	-1	59
* WATER BODY TYPE: OCEAN																										
1.00	PERDIDO BAY AB GULF OF MEXICO	4	70	76	3.0	2.2	12	-1	8.4	100	4.4	-1	-1	8.3	98	0.25	0.00	-1	5	-1	-1.0	-1.0	-1	29000	-1	32
* WATER BODY TYPE: STREAM																										
3.00	BAYOU MARCUS CREEK AB PERDIDO	276	68	87	7.7	1.0	60	6	6.3	65	1.2	-1	3	6.4	9	1.15	0.12	6	2300	495	0.8	-1.0	6	60	-1	45
3.10	BELLSHEAD BRANCH AB BAYOU MARC	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	ELEVENMILE CREEK AB PERDIDO BA	341	58	87	22.0	0.1	340	28	4.2	45	8.3	235	79	7.3	127	3.54	0.26	10	1195	330	-1.0	1.5	-1	977	54	73
5.10	EIGHTMILE CREEK AB ELEVENMILE	30	70	86	8.5	1.1	83	6	5.9	61	1.4	21	-1	6.3	10	0.79	0.04	12	3300	705	-1.0	-1.0	-1	80	-1	45

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03140107 PERDIDO BAY																	
* WATER BODY TYPE: ESTUARY																	
2.00	PERDIDO BAY ABOVE GULF OF MEXICO	PARTIAL	FAIR	----	---*	----	-*.		0	*0**	000.	000*	0.	*	***		DISTRICT INDICATES POOR WATER QUALITY IN THE UPPER BAY, AS EVIDENCED BY THE LOW BIOLOGICAL DIVERSITY.THE LOWER PORTION OF THE REACH HAS BETTER WATER QUALITY.
2.10	BAYOU GARCON ABOVE PERDIDO BAY	PARTIAL	FAIR	----	-*-.	-*--	--.		.	....	....	....	..				URBAN RUNOFF INCLUDING SILTATION DUE TO NEW HOUSING DEVELOPMENTS.
4.00	PERDIDO BAY ABOVE BAYOU MARCUS	NO	FAIR	----	---.	-*--	-.*		.	....	....	....	..	*	***		DISTRICT INDICATES POOR WATER QUALITY DUE TO PULP MILL WASTE FROM ELEVENMILE CREEK. WLA FOR SAUFLEY FIELD WWTP.
6.00	PERDIDO BAY ABOVE ELEVENMILE CREEK	NO	FAIR	--*-	---.	.---	-..		.	....	....	....	..	*			DISTRICT INDICATES POOR WATER QUALITY IN THE UPPER BAY DUE TO IMPACT BY ELEVENMILE CREEK.
* WATER BODY TYPE: OCEAN																	
1.00	PERDIDO BAY ABOVE GULF OF MEXICO	YES	GOOD	----	*--.	.---	-..		.	....	....	....	..				
* WATER BODY TYPE: STREAM																	
3.00	BAYOU MARCUS CREEK ABOVE PERDIDO BA	PARTIAL	FAIR	----	--**	....	-*.	* *	0	00-0	*00.	0.00	0.	*	*		URBAN RUNOFF AND WWTP DISCHARGE PROBLEMS. AVONDALE WWTP TO IMPROVE TREATMENT AND GO TO REGIONAL PLANT.
3.10	BELLSHEAD BRANCH ABOVE BAYOU MARCUS	UNKNOWN	UNKN	....	....	....	.										
5.00	ELEVENMILE CREEK ABOVE PERDIDO BAY	NO	POOR	*-*-	*--*	....	---		*	00*0	000.	-000	0.	*			PULP MILL WASTE DEGRADES CREEK. IMPROVED IN EARLY 1970'S, DEGRADED IN EARLY 1980'S. BIOASSAY STUDIES OF WASTE TOXICITY.
5.10	EIGHTMILE CREEK ABOVE ELEVENMILE CR	YES	FAIR	----	--*.	....	-..		0	00*.	000.	..00	0.				SLIGHT BACTERIA PROBLEM.

PERDIDO RIVER BASIN

General Description of the Basin

Perdido River Basin, located in Northwest Florida, has a drainage area of 913 square miles of which only 25% is in Florida. There are a total of 220 stream reach miles with 96 miles in Florida. The major stream reach is the Perdido River, which is tidally affected in the lower reaches. Minor Florida streams include Boggy Creek and Brushy Creek. Land use in the basin is primarily forest with some agricultural areas and wetlands. The basin has a much higher than state average forest coverage and a very low urban land use coverage.

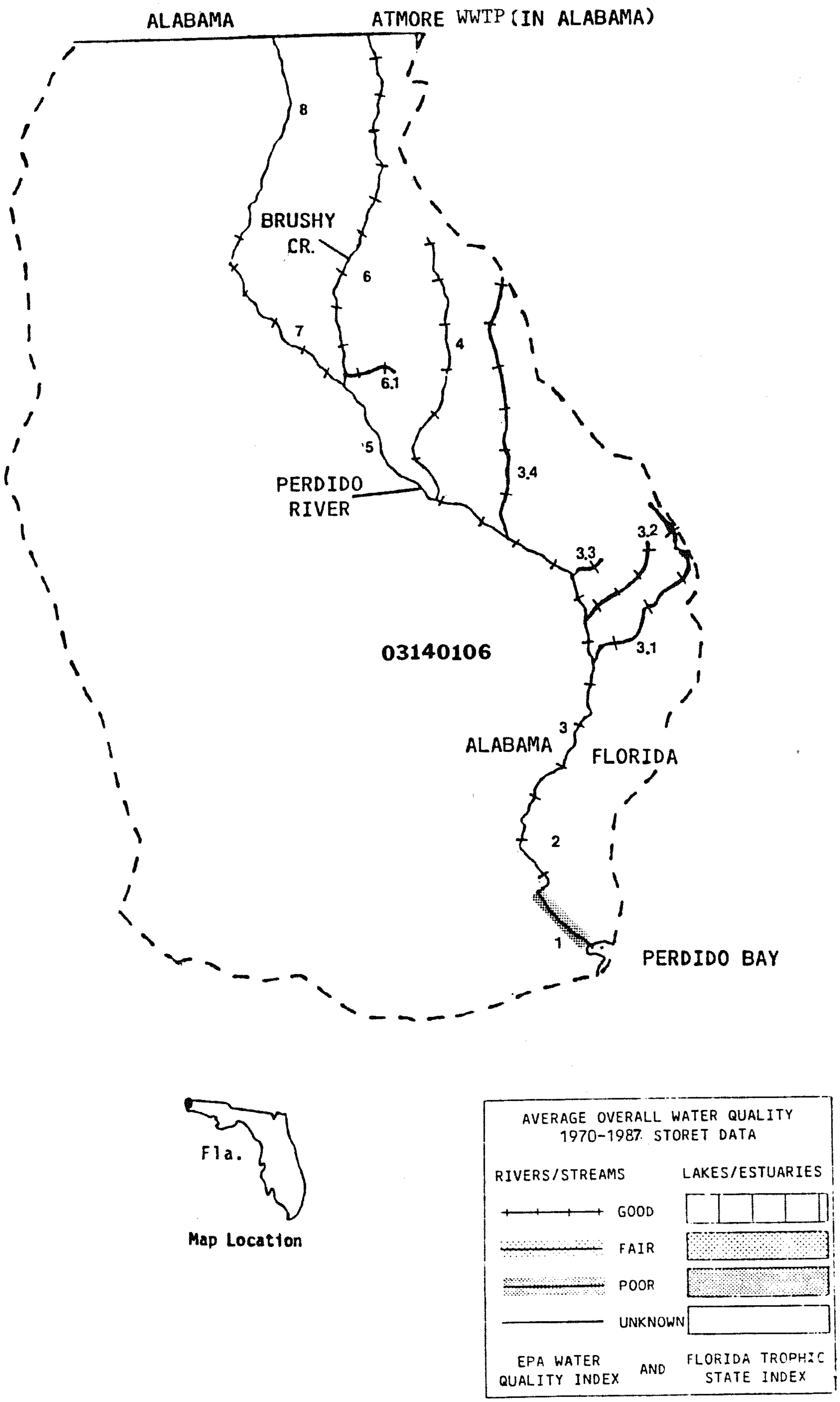
Specific Water Quality Problems and Pollution Sources

Water quality in the upper basin is very good. All stream reaches meet their designated use. Brushy Creek, a tributary of the Perdido River in the northern portion of the basin, has historically had a fair water quality index value due to elevated bacteria and nutrient levels. The most likely source of this pollution is the City of Atmore, Alabama WWTP and a furniture manufacturing plant. Atmore has upgraded their plant, and recent data indicate improving water quality and a good water quality index.

Another historical problem area in the basin is Jacks Branch. In the early 1980's there was some hazardous waste contamination from Dubose Oil Company to Jacks Branch. Since that time the state and EPA have contained this pollution source and are involved in the cleanup process.

The lower river reaches are affected by water from Perdido Bay which is degraded by Elevenmile Creek's paper mill discharge and domestic wastewater. The lower river is considered fair to poor by district personnel, exhibiting very low bottom DO levels and concomitant low benthic diversity values.

PERDIDO RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03140106 PERDIDO RIVER																										
* WATER BODY TYPE: STREAM																										
1.00	PERDIDO RIVER AB PERDIDO BAY	182	69	86	4.5	1.1	40	6	6.5	71	1.1	4	4	6.4	13	0.59	0.04	12	240	49	3.7	-1.0	-1	5130	-1	28
2.00	PERDIDO RIVER AB BLACKWATER CR	78	71	86	4.0	-1.0	40	4	6.3	73	0.9	-1	5	6.0	10	0.59	0.03	-1	303	80	-1.0	-1.0	-1	1672	-1	26
3.00	PERDIDO RIVER AB STYX RIVER	433	58	87	5.0	1.0	40	6	8.2	87	0.9	14	5	5.8	3	0.50	0.04	3	620	85	3.7	3.8	49	24	549	21
3.10	JACKS BRANCH AB PERDIDO RIVER	26	74	79	4.5	-1.0	43	6	6.8	74	0.8	-1	-1	5.4	6	0.62	0.03	-1	560	513	-1.0	-1.0	-1	46	-1	21
3.20	COW DEVIL CREEK AB PERDIDO RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.30	CHURCH HOUSE BRANCH AB PERDIDO	4	69	74	4.0	-1.0	-1	-1	6.7	76	-1.0	-1	-1	-1.0	-1	0.29	0.01	-1	-1	-1	-1.0	-1.0	-1	16	1	27
3.40	MCDAVID CREEK AB PERDIDO RIVER	27	74	79	6.2	-1.0	50	4	7.9	80	0.7	-1	-1	5.2	4	0.51	0.03	-1	590	310	-1.0	-1.0	-1	41	-1	21
4.00	BOGGY CREEK AB PERDIDO RIVER	25	74	79	7.0	-1.0	55	4	7.2	77	0.6	-1	-1	5.6	5	0.41	0.04	-1	1385	284	-1.0	-1.0	-1	47	-1	25
5.00	PERDIDO RIVER AB BOGGY CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	BRUSHY CREEK AB PERDIDO RIVER	52	58	86	6.0	0.4	33	6	7.3	78	0.8	-1	-1	5.9	6	0.83	0.24	6	2000	800	-1.0	-1.0	-1	39	57	38
6.10	JACKSON SPRING BRANCH AB BRUSH	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	PERDIDO RIVER AB BRUSHY CREEK	48	68	86	4.0	1.5	46	6	7.6	82	0.8	-1	-1	5.5	4	0.51	0.02	-1	540	161	4.1	-1.0	31	24	-1	20
8.00	PERDIDO RIVER AB DYAS CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR OEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03140106 PERDIDO RIVER

* WATER BODY TYPE: STREAM

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
1.00	PERDIDO RIVER ABOVE PERDIDO BAY	NO	GOOD	---*	----	....	-..		0	00*0	000.	..0*	+.	*			DISTRICT INDICATES POOR WATER QUALITY IN THIS TIDAL PORTION OF THE RIVER. BAY WATER AFFECTED BY ELEVENMILE CREEK CAUSE THIS UPSTREAM EFFECT. TREND ANALYSIS DIFFICULT DUE TO TIDAL NATURE OF LOCATION.
2.00	PERDIDO RIVER ABOVE BLACKWATER CREE	YES	GOOD	---*	---.	....	-..		*	00*.	-00.	..*0	+.				
3.00	PERDIDO RIVER ABOVE STYX RIVER	YES	GOOD	----	----	....	--.		0	00*0	000.	..00	00		****	*	URBANIZING AREA.
3.10	JACKS BRANCH ABOVE PERDIDO RIVER	YES	GOOD	----	--*.	....	-.*		.	....	....	....	..		****	*	IN THE EARLY 1980'S THERE WAS SOME HAZARDOUS WASTE CONTAMINATION FROM DUBOSE OIL COMPANY.EPA AND THE STATE HAVE CONTAINED THE POLLUTION SOURCE AND ARE INVOLVED IN THE CLEAN-UP PROCESS.LAND CLEARING IN STREAM CHANNEL.
3.20	COW DEVIL CREEK ABOVE PERDIDO RIVER	YES	UNKN	....	....	....	.								****	*	URBANIZING AREA.
3.30	CHURCH HOUSE BRANCH ABOVE PERDIDO R	YES	GOOD	-.--	.-..	....	...		.	....	....	....	..		****	*	URBANIZING AREA.
3.40	MCDAVID CREEK ABOVE PERDIDO RIVER	YES	GOOD	----	---.	....	-..		.	....	....	....	..		**		DIRT ROAD RUNOFF.
4.00	BOGGY CREEK ABOVE PERDIDO RIVER	YES	GOOD	----	---.	....	-..		.	....	....	....	..		**		
5.00	PERDIDO RIVER ABOVE BOGGY CREEK	UNKNOWN	UNKN	....	....	....	.										
6.00	BRUSHY CREEK ABOVE PERDIDO RIVER	YES	GOOD	----	--*.	....	-..		0	000.	000.	..00	0.	**	**		PROBABLE SOURCE OF POLLUTION FROM OUT OF STATE (ATMORE,ALABAMA).THIS REACH HAS ELEVATED CONCENTRATIONS OF NUTRIENTS,BACTERIA,AND TSS.
6.10	JACKSON SPRING BRANCH ABOVE BRUSHY	YES	UNKN	....	....	....	.								**		
7.00	PERDIDO RIVER ABOVE BRUSHY CREEK	YES	GOOD	----	----	....	-..		0	000.	000.	..00	0.				
8.00	PERDIDO RIVER ABOVE DYAS CREEK	UNKNOWN	UNKN	....	....	....	.										

SANTA FE RIVER BASIN

General Description of the Basin

The Santa Fe basin drains 1390 square miles of primarily forest and agricultural land . A few, small urban areas are located in this region, including the cities of Lake City, Starke and High Springs. At a point 19 miles upstream from the mouth, the average flow of the Santa Fe River is 1600 cfs. A large portion of the flow is from groundwater. Ichetucknee Springs brings in an additional 400 cfs to the Santa Fe River below the point where the 1600 cfs was measured.

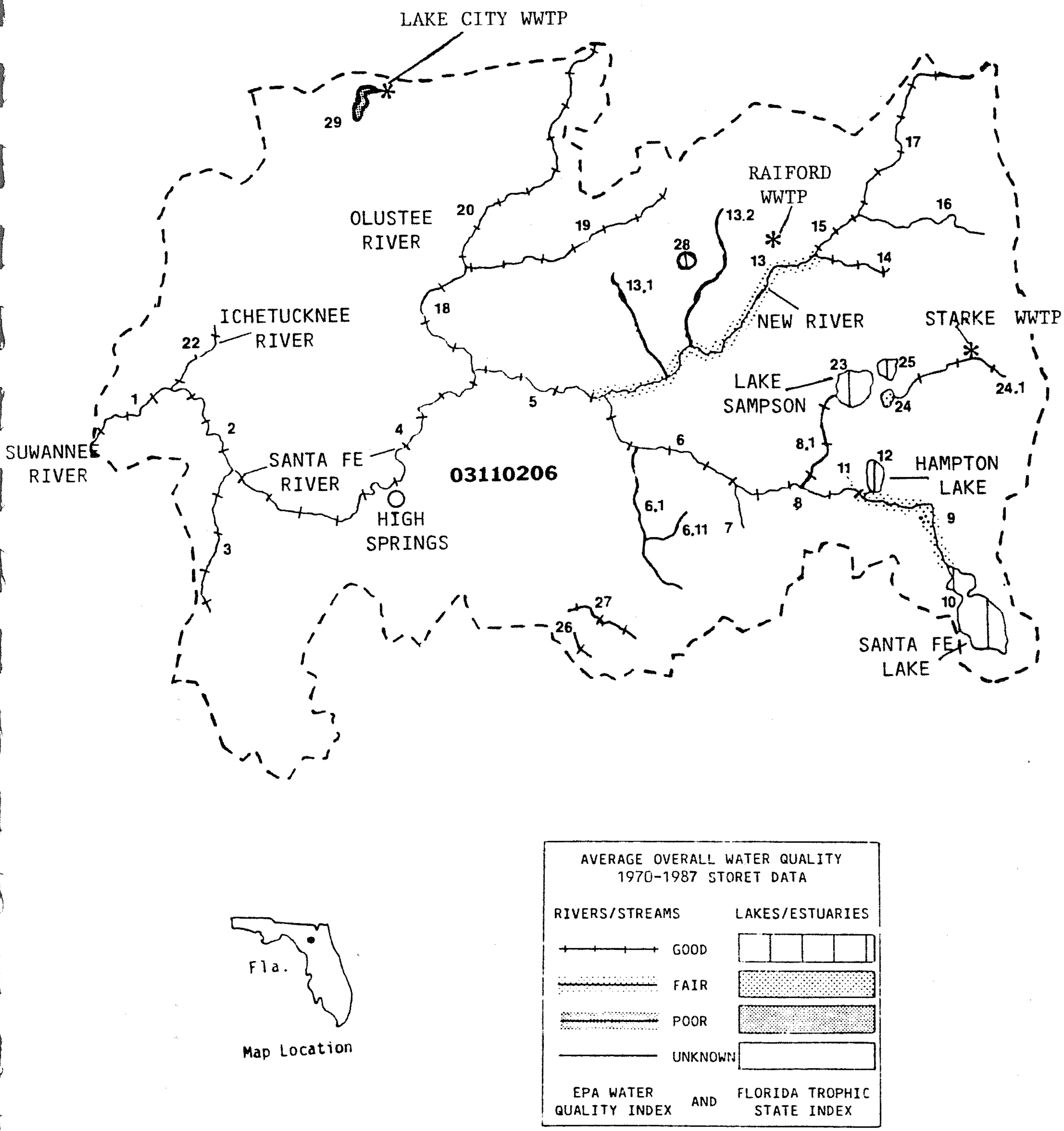
Specific Water Quality Problems and Pollution Sources

The Santa Fe River has been declared an Outstanding Florida Water, indicating generally good water quality. Most of the reaches and lakes in the basin that have been sampled meet their designated uses. Because much of this river is naturally low in pH and/or dissolved oxygen due to swampland drainage and springflow, the calculation of the WQI is more complicated. However, it is noted from the basin water quality index table that several reaches have minor problems with nutrients, bacteria and inorganic toxics (mostly mercury). Area cattle ranches and small WWTPs probably account for the bacteria and nutrient problems. There is no obvious reason for the elevated mercury values.

There are a few specific problem areas in the basin due primarily to WWTP effluent. Alligator Lake receives Lake City stormwater and in the past discharge from the Lake City WWTP which was diverted in the fall of 1987. It has nutrient, algae bloom, aquatic weed and fishkill problems. Lake Rowell also demonstrates a slight eutrophication problem. The City of Starke WWTP discharges to a creek which drains into the lake. Although Santa Fe Lake exhibits good water quality, it is severely threatened by the City of Melrose storm drainage and development along the shoreline. The Santa Fe River below Santa Fe Lake has elevated BOD and suspended solids values indicative of algae laden waters.

Portions of New River exhibit elevated bacteria, nutrient and turbidity values. It receives discharge from the Raiford WWTP and indirectly from the Lake Butler WWTP. There is also a considerable amount of cattle farming in the headwaters that may account for some of the problem values.

SANTA FE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03110206 SANTA FE RIVER																										
* WATER BODY TYPE: LAKE																										
10.00	SANTE FE LAKE AB SANTA FE RIVE	102	57	85	2.0	2.3	40	2	9.1	93	0.8	29	8	5.5	3	0.82	0.05	5	25	7	2.1	-1.0	-1	47	-1	40
12.00	HAMPTON LAKE AB OUTLET HAMPTON	11	73	80	2.2	1.8	40	2	6.3	80	0.0	24	-1	5.5	4	0.40	0.04	6	17	7	-1.0	-1.0	-1	61	-1	36
23.00	LAKE SAMPSON AB LAKE ROWELL	58	69	81	2.0	1.0	60	3	8.0	87	1.7	48	18	7.0	9	0.68	0.06	7	33	17	2.9	-1.0	-1	124	-1	47
24.00	LAKE ROWELL AB ALLIGATOR CREEK	48	69	81	6.5	0.6	80	11	7.0	88	3.1	62	26	7.2	12	1.00	0.16	27	110	23	-1.0	-1.0	-1	193	-1	65
25.00	LAKE CROSBY AB	31	73	81	2.2	1.6	30	3	7.8	92	1.1	33	8	6.2	2	0.47	0.03	5	17	2	-1.0	-1.0	-1	49	-1	45
28.00	LAKE BUTLER AB BLACK SWAMP	28	68	80	8.5	1.0	100	3	7.8	93	1.6	45	-1	6.0	6	0.58	0.03	5	4	-1	-1.0	-1.0	-1	55	-1	49
29.00	ALLIGATOR LAKE AB PRICE CREEK	46	65	80	17.5	0.6	58	20	7.1	90	6.5	66	22	7.8	47	2.18	0.64	54	1995	300	2.2	-1.0	-1	156	-1	73
* WATER BODY TYPE: STREAM																										
1.00	SANTA FE RIVER AB SUWANNEE RIV	197	67	87	1.2	1.8	40	1	6.3	70	0.8	14	6	7.5	125	1.08	0.16	1	475	41	2.8	3.0	15	274	1155	29
2.00	SANTE FE RIVER AB ITCHETUCKNEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	COW CREEK AB SANTE FE RIVER	1	77	77	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	SANTE FE RIVER AB COW CREEK	210	56	85	1.8	1.0	70	0	5.8	62	1.0	34	4	7.2	109	0.74	0.17	1	378	47	2.7	-1.0	15	282	1115	31
5.00	SANTE FE RIVER AB OLUSTEE RIVE	310	57	86	2.5	0.9	175	3	6.5	73	0.8	58	22	6.7	15	0.96	0.29	1	920	175	-1.0	-1.0	-1	92	217	35
6.00	SANTE FE RIVER AB NEW RIVER	32	71	85	2.1	0.7	200	2	7.0	69	0.9	68	19	6.5	14	1.27	0.13	1	1100	490	3.3	-1.0	10	90	-1	36
6.10	ROCKY CREEK AB RHUDA BRANCH	1	76	76	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.11	RHUDA BRANCH AB SUNSHINE LAKE	1	76	76	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	MONTEOCHA CREEK AB LITTLE MONT	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.00	SANTE FE RIVER AB MONTEOCHA CR	56	57	77	2.5	-1.0	220	-1	6.2	72	0.7	-1	26	5.7	6	0.61	0.07	-1	2050	-1	-1.0	-1.0	-1	62	27	33
8.10	SAMPSON RIVER AB LAKE SAMPSON	14	57	81	2.0	-1.0	60	4	8.0	79	0.8	65	21	7.0	26	0.23	0.04	-1	180	79	-1.0	-1.0	-1	120	-1	29
9.00	SANTE FE RIVER AB *C	24	71	85	1.1	0.6	270	3	4.5	51	1.0	79	-1	4.2	0	1.28	0.06	1	1060	255	-1.0	-1.0	-1	65	-1	39
11.00	OUTLET FROM HAMPTON LAKE AB SA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.00	NEW RIVER AB SANTE FE RIVER	109	57	83	4.8	0.6	220	2	6.4	67	1.2	81	21	6.8	28	1.27	0.50	0	640	230	3.8	-1.0	-1	89	78	48
13.10	FIVEMILE CREEK AB NEW RIVER	1	77	77	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.20	RICHARD CREEK AB NEW RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	WATER OAK CREEK AB NEW RIVER	2	77	79	-1.0	-1.0	-1	-1	6.6	76	-1.0	-1	-1	7.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	47	5	30
15.00	NEW RIVER AB WATER OAK CREEK	3	65	77	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	8.1	109	0.69	0.04	-1	-1	-1	-1.0	-1.0	-1	255	1	15
16.00	ALLIGATOR CREEK AB NEW RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	NEW RIVER AB ALLIGATOR CREEK	5	75	83	3.1	0.5	320	12	5.5	59	0.6	96	-1	4.3	1	0.89	0.13	-1	4350	170	-1.0	-1.0	-1	49	19	49
18.00	OLUSTEE RIVER AB SANTE FE RIVE	60	57	85	3.0	0.4	360	2	4.8	55	1.0	92	29	5.2	3	0.92	0.23	1	1300	280	-1.0	-1.0	14	48	12	45
19.00	SWIFT CREEK AB OLUSTEE RIVER	13	56	74	2.2	-1.0	400	-1	6.8	82	-1.0	-1	-1	6.5	7	1.08	0.09	-1	-1	-1	-1.0	-1.0	-1	45	0	20
20.00	OLUSTEE RIVER AB SWIFT CREEK	29	65	85	2.0	0.4	400	0	5.0	55	0.9	89	-1	4.9	0	1.22	0.18	-1	1300	230	-1.0	-1.0	-1	50	-1	43
22.00	ITCHETUCKNEE RIVER AB SANTE FE	11	75	80	0.3	1.2	4	1	6.3	72	1.0	6	2	7.5	3	1.41	0.14	-1	582	59	2.4	3.3	29	260	3	26
24.10	ALLIGATOR CREEK AB	1	77	77	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
26.00	BLUES CREEK AB SANCHEZ PRAIRIE	43	79	81	-1.0	-1.0	-1	5	5.2	52	-1.0	84	-1	6.0	-1	-1.00	0.82	-1	-1	-1	-1.0	-1.0	-1	-1	-1	47
27.00	TURKEY CREEK AB SANCHEZ PRAIRI	16	75	81	-1.0	-1.0	30	4	10.0	92	-1.0	-1	-1	7.7	700	-1.00	0.14	-1	-1	-1	-1.0	-1.0	-1	1900	2	18

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03110206 SANTA FE RIVER																	
* WATER BODY TYPE: LAKE																	
10.00	SANTE FE LAKE ABOVE SANTA FE RIVER	YES	GOOD	----	----	----	-*.		-	0**-	0*0.	.00-	+.		**	*	MELROSE STORMWATER SYSTEM DISCHARGES DIRECTLY INTO LAKE.DEVELOPMENT THREAT TO WETLANDS AND LITTORAL ZONE OF LAKE'S WATERSHED. LAND CLEARING ACTIVITIES.
12.00	HAMPTON LAKE ABOVE OUTLET HAMPTON L	YES	GOOD	----	---.	----	-..		.	....	....	....	..			*	
23.00	LAKE SAMPSON ABOVE LAKE ROWELL	YES	GOOD	----	----	----	-..	*	0	..0.	.0..	.00*	..		*	*	LAND CLEARING ACTIVITIES AND DIRT ROAD RUNOFF MAY THREATEN WATER QUALITY.
24.00	LAKE ROWELL ABOVE ALLIGATOR CREEK	PARTIAL	FAIR	----	---.	-*-*	-..	**	.	....	....	....	..	*	*		CITY OF STARKE DISCHARGES TO LAKE ROWELL VIA ALLIGATOR CREEK CAUSING WATER QUALITY PROBLEMS. 1982 WLA STUDY OF THIS AREA.
25.00	LAKE CROSBY ABOVE	YES	GOOD	----	---.	----	-..	*	.	....	....	....	..		*	*	MANMADE CANALS ARE REQUIRING VEGETATION MANAGEMENT.
28.00	LAKE BUTLER ABOVE BLACK SWAMP	YES	GOOD	----	---.	----	-..		.	....	....	....	..		*		UNTREATED RUNOFF FROM STORMDRAINS.
29.00	ALLIGATOR LAKE ABOVE PRICE CREEK	NO	POOR	*-*-	*---	****	-.*		.	....	....	....	..	*			LAKE CITY WWTP DISCHARGES INDIRECTLY TO THE LAKE WHICH HAS HIGH CONCENTRATIONS OF NUTRIENTS. 1984 DER BIOASSAY STUDY.
* WATER BODY TYPE: STREAM																	
1.00	SANTA FE RIVER ABOVE SUWANNEE RIVER	YES	GOOD	----	----	....	--.	*	0	*0*0	000.	000-	0.			*	SEPTIC TANKS NEAR RIVER. EROSION IN PUBLIC ACCESS AREA. OFW STATUS.
2.00	SANTE FE RIVER ABOVE ITCHETUCKNEE R	YES	UNKN	....	....	....	.	*							*	*	SEPTIC TANKS NEAR RIVER. SUBDIVISION ON RIVERBANKS. DEVELOPMENT IN LOW AREAS WHERE FLOODING FREQUENTLY OCCURS.
3.00	COW CREEK ABOVE SANTE FE RIVER	YES	UNKN	....	....	....	...	*	.	....	....	....	..		*		SEDIMENTS FROM LOGGING OPERATIONS AND AGRICULTURE THREATEN WATER QUALITY.
4.00	SANTE FE RIVER ABOVE COW CREEK	YES	GOOD	----	----	....	--.	*	0	0*00	000.	0--0	0.		*	*	GOOD OVERALL QUALITY. NO REAL PROBLEMS.COUNTY PARK CONSTRUCTION.
5.00	SANTE FE RIVER ABOVE OLUSTEE RIVER	YES	GOOD	----	---.	....	--.		0	..0.	.-0.	..00	00		*		
6.00	SANTE FE RIVER ABOVE NEW RIVER	YES	GOOD	----	--*-	....	--.		.	....	....	....	..		** *	*	
6.10	ROCKY CREEK ABOVE RHUDA BRANCH	UNKNOWN	UNKN	....	....	....	...		.	....	....	....	..				
6.11	RHUDA BRANCH ABOVE SUNSHINE LAKE	UNKNOWN	UNKN	....	....	....	...		.	....	....	....	..				
7.00	MONTEOCHA CREEK ABOVE LITTLE MONTEO	UNKNOWN	UNKN	....	....	....	.										
8.00	SANTE FE RIVER ABOVE MONTEOCHA CREE	YES	GOOD	----	---.	....	-..		.	....	....	....	..		*	*	
8.10	SAMPSON RIVER ABOVE LAKE SAMPSON	YES	GOOD	----	---.	....	-..		.	....	....	....	..			*	DREDGED FOR FLOOD CONTROL 1968-69 AND DAMMED SOUTH OF SAMPSON LAKE.
9.00	SANTE FE RIVER ABOVE *C	PARTIAL	GOOD	-*--	---.	....	--.		.	....	....	....	..		*	*	A SLIGHT DO, pH, AND BACTERIA PROBLEM WHICH MAY BE NATURAL OR RELATED TO CATTLE RANCHING.
11.00	OUTLET FROM HAMPTON LAKE ABOVE SANT	YES	UNKN	....	....	....	.								*	*	
13.00	NEW RIVER ABOVE SANTE FE RIVER	PARTIAL	FAIR	*---	----	....	-*.		*	0**0	*00.	.0.-	+.	*	* *		RAIFORD WWTP AND LAKE BUTLER WWTP AFFECTS STREAM WATER QUALITY. WLA STUDIES IN 1980 AND 1983.
13.10	FIVEMILE CREEK ABOVE NEW RIVER	UNKNOWN	UNKN	....	....	....	...		.	....	....	....	..				
13.20	RICHARD CREEK ABOVE NEW RIVER	UNKNOWN	UNKN	....	....	....	.										
14.00	WATER OAK CREEK ABOVE NEW RIVER	YES	GOOD	.-.-	.-..	....	...		.	....	....	....	..			*	INSUFFICIENT PARAMETER COVERAGE.DREDGED BY COUNTY FOR FLOOD CONTROL. CREEK BANK EROSION PROBLEMS.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
15.00	NEW RIVER ABOVE WATER OAK CREEK	YES	GOOD	--.-	....	....	...		.	....	....	....	..				
16.00	ALLIGATOR CREEK ABOVE NEW RIVER	UNKNOWN	UNKN	....	....	....	.										
17.00	NEW RIVER ABOVE ALLIGATOR CREEK	YES	FAIR	-*--	--*.	....	-*.	* *	.	....	....	....	..		**	**	LOW pH DUE TO NATURAL SWAMPY CONDITIONS. CHANNELIZATION OF HEADWATERS AREA. CATTLE CROSSING IN RIVER.
18.00	OLUSTEE RIVER ABOVE SANTE FE RIVER	YES	FAIR	----	*---	....	--.		0	0*00	0...	.0.0	0.				LOW pH DUE TO NATURAL SWAMPY CONDITIONS.
19.00	SWIFT CREEK ABOVE OLUSTEE RIVER	YES	GOOD	----	.-..	....	...		.	....	....	....	..				DIRT ROAD RUNOFF, HEAVY EROSION FROM ROAD BANKS.
20.00	OLUSTEE RIVER ABOVE SWIFT CREEK	YES	GOOD	-*--	---.	....	--.		0	0*00	000.	.0.0	0.				LOW pH DUE TO NATURAL SWAMPY CONDITIONS.
22.00	ITCHETUCKNEE RIVER ABOVE SANTE FE R	YES	GOOD	----	----	....	-..		.	....	....	....	..			*	ONE ERRONEOUS METALS SAMPLE IN STORET. GOOD OVERALL QUALITY.OFW STATUS. DIRT ROAD RUNOFF, LAND CLEARING, AND DEVELOPMENT ACTIVITIES THREATEN WATER QUALITY.
24.10	ALLIGATOR CREEK ABOVE	YES	UNKN	....	....	....	..*	***	.	....	....	....	..		*	* *	OLD LAND FILL.
26.00	BLUES CREEK ABOVE SANCHEZ PRAIRIE	YES	FAIR	*--.	--..	....	...		0	...0	.00.	....	0.		*		NATURALLY LOW DO, pH.
27.00	TURKEY CREEK ABOVE SANCHEZ PRAIRIE	YES	GOOD	---*	.-..	....	...		*	...0	.--.	....	-.		*		

SARASOTA BAY BASIN

General Description of the Basin

The Sarasota Bay drainage area is 268 square miles and extends from Tampa Bay to Charlotte Harbor. Sarasota Bay, Little Sarasota Bay and Lemon Bay have a combined estuarine area of approximately 24 square miles. There are several small streams, most of which are less than five miles long, that enter these estuaries. Nearly all of these streams have DO problems similar to other southern Florida areas. This basin has only one major urban center, Sarasota, but most of the rest of the area is developed into subdivisions and small municipalities. There is also some agricultural drainage in the basin mostly from citrus groves in the east section of the basin and rangeland at the headwaters of Phillippi Creek and Cow Pen Slough. Sarasota Bay was identified in Section 317 (National Estuarine Program) of the Water Quality Act of 1987 for priority consideration as an estuary of national significance.

Specific Water Quality Problems and Pollution Sources

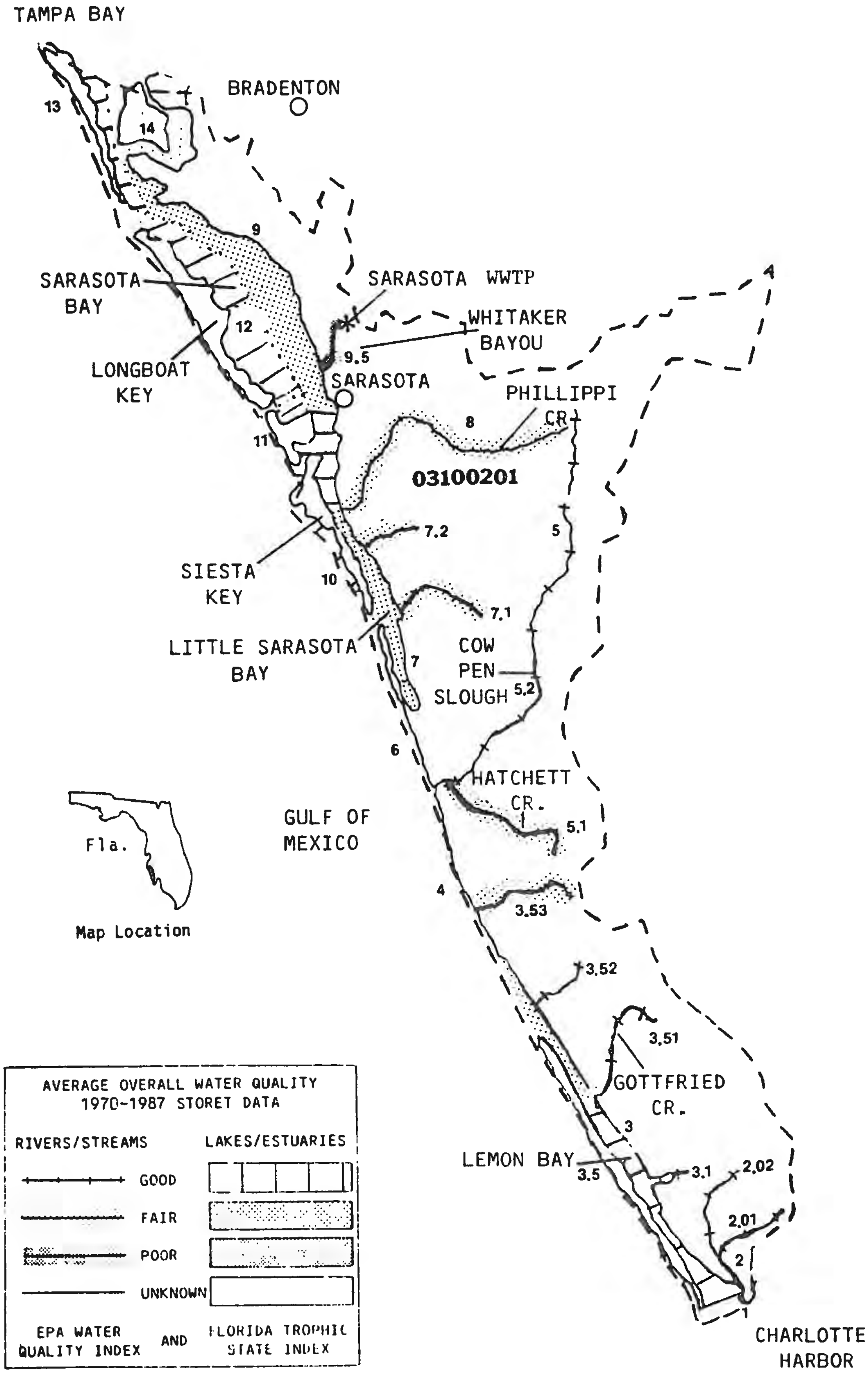
The major point source of pollution in the basin is the City of Sarasota WWTP which discharges into Whitaker Bayou. This facility is overloaded due to the rapid development in the area. Although the county requires advanced treatment, this plant frequently does not meet secondary standards. Whitaker Bayou has nutrient, DO and coliform problems. The plant has had a long history of enforcement actions taken against them, and the city has explored a variety of political, engineering and permitting options. Currently, DER has issued them several permits for pipelines and holding ponds for spray irrigation purposes; however, construction has not yet begun and the discharge continues. There are also numerous "package plants" discharging throughout the basin.

Agricultural and urban stormwater runoff is also a problem in this basin. Many of the streams running through developed areas are affected by septic tanks. Tributaries and direct runoff supply the bay systems with heavy nutrient loading. Seagrass beds are declining in upper Sarasota Bay especially the eastern side, presumably because high algae concentrations are reducing transparency. Runoff from the Bradenton area and the Manatee County WWTP sprayfields (a flower farm) provided further nutrient loading.

Sarasota Bay, Little Sarasota Bay and Lemon Bay have been declared Outstanding Florida Waters, which should afford them greater protection from both point source and nonpoint source pollution. However, all are threatened by increased boat traffic, seawalling and the replacement of mangroves by lawns and drainage canals. Lemon Bay and Little Sarasota Bay seem to have the most pronounced degrading trends. The latter bay has been closed off from the Gulf by the natural shoaling of Midnight Pass. There is local controversy over whether or not the pass should be reopened by dredging. Biological stress inside the closed pass has been indicated by district sampling.

For further information on Sarasota Bay please refer to the estuarine system case study in Section 3.g. Estuary Information of the 305(b) main report.

SARASOTA BAY BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03100201 SARASOTA BAY																										
* WATER BODY TYPE: ESTUARY																										
1.00	GASPARILLA SOUND AB CHARLOTTE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	PLACIDA HARBOR/LEMON BAY AB GA	14	75	87	4.0	1.6	15	-1	7.5	84	2.0	-1	-1	8.1	-1	0.42	0.07	6	-1	4	4.4	-1.0	-1	47500	-1	47
3.50	LEMON BAY(EXTENDED) AB GULF OF	992	71	87	3.1	1.1	25	27	6.5	77	3.4	-1	4	8.1	-1	0.91	0.22	16	100	10	2.5	-1.0	-1	44363	-1	55
7.00	LITTLE SARASOTA BAY AB CATFISH	1061	71	87	3.0	1.4	15	21	7.0	80	0.6	-1	4	8.1	-1	0.77	0.18	-1	100	10	4.2	-1.0	-1	46650	-1	51
9.00	SARASOTA BAY AB PHILLIPPI CREE	2778	71	87	4.2	1.1	15	21	7.2	84	1.9	-1	-1	8.0	0	0.82	0.17	8	112	110	-1.0	-1.0	-1	50800	-1	56
9.50	WHITTAKER BAYOU AB SARASOTA BA	472	70	87	4.8	0.7	58	36	4.9	56	1.9	-1	-1	7.5	162	4.29	1.02	2	3350	363	-1.0	-1.0	-1	22500	-1	73
9.90	PALMA SOLA BAY AB TAMPA BAY	333	67	87	3.5	-1.0	17	-1	6.2	88	2.5	-1	-1	8.4	-1	-1.00	0.38	-1	5	6	-1.0	-1.0	-1	41125	-1	-1
10.00	SIESTA KEY AB LITTLE SARASOTA	165	73	87	3.6	1.4	15	24	7.1	82	0.4	-1	-1	8.1	-1	0.61	0.16	-1	100	10	-1.0	-1.0	-1	46500	-1	48
11.00	ST ARMAND KEY AB SARASOTA BAY	116	71	87	3.3	1.5	13	16	7.5	90	1.2	-1	-1	8.2	-1	0.66	0.13	5	100	10	-1.0	-1.0	-1	51500	-1	48
12.00	LONGBOAT KEY AB SARASOTA BAY	702	71	87	2.5	1.4	15	30	6.6	78	4.3	-1	-1	8.3	265	0.92	0.14	10	46	20	-1.0	-1.0	-1	47930	-1	52
13.00	ANNA MARIA KEY AB SOUTH TAMPA	619	71	87	3.0	1.8	5	28	7.0	87	2.0	-1	4	8.3	252	0.50	0.13	4	33	20	3.8	-1.0	-1	47050	-1	38
14.00	PERICO KEY AB MANATEE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: OCEAN																										
4.00	GULF OF MEXICO AB LEMON BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	GULF OF MEXICO AB ROBERTS/DONA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: STREAM																										
2.00	CORAL CREEK AB GASPARILLA SOUN	3	72	74	3.5	-1.0	20	-1	4.9	76	1.9	-1	-1	7.9	131	0.68	-1.00	-1	26	6	-1.0	-1.0	-1	49000	-1	43
2.01	CORAL CREEK, EAST FORK AB CORA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
2.02	CORAL CREEK, WEST FORK AB CORA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.10	BUCK CREEK AB LEMON BAY	5	72	76	3.0	-1.0	45	-1	3.2	41	2.3	-1	-1	7.9	130	0.68	0.10	-1	16	11	-1.0	-1.0	-1	51000	-1	45
3.51	GOTTFRIED CREEK AB LEMON BAY	94	72	87	1.8	-1.0	65	-1	4.8	58	2.5	-1	-1	7.8	162	1.01	0.42	10	430	90	-1.0	-1.0	-1	34000	-1	44
3.52	FORKED CREEK AB LEMON BAY	78	73	87	2.9	-1.0	60	-1	5.3	64	5.3	-1	-1	7.9	185	1.21	0.30	64	825	145	-1.0	-1.0	-1	40550	-1	46
3.53	ALLIGATOR CREEK AB LEMON BAY	134	73	87	3.1	-1.0	65	-1	5.0	58	1.0	-1	-1	7.7	181	1.34	0.35	17	1250	190	-1.0	-1.0	-1	24500	-1	50
5.00	ROBERTS BAY/DONA BAY AB GULF O	525	71	87	3.6	1.1	20	9	7.0	78	-1.0	-1	-1	8.1	-1	0.77	0.15	-1	100	20	-1.0	-1.0	-1	46000	-1	22
5.10	HATCHETT CREEK AB ROBERTS BAY	155	73	87	2.8	-1.0	55	-1	4.5	54	1.1	-1	-1	7.6	169	1.04	0.23	7	2000	290	-1.0	-1.0	-1	8820	-1	48
5.20	COW PEN SLOUGH AB DONA BAY	243	70	87	2.5	-1.0	70	-1	6.3	77	2.0	-1	-1	7.6	107	1.17	0.16	10	700	75	-1.0	-1.0	-1	1150	-1	35
7.10	CATFISH CREEK AB LITTLE SARASO	92	74	87	3.5	-1.0	90	-1	3.0	37	4.6	-1	-1	7.6	233	1.60	0.44	93	1850	308	-1.0	-1.0	-1	19073	-1	58
7.20	MATHENY CREEK AB LITTLE SARASO	100	73	87	3.5	-1.0	60	-1	3.9	44	1.1	-1	-1	7.4	287	1.29	0.25	26	3500	320	-1.0	-1.0	-1	1130	-1	56
8.00	PHILLIPPI CREEK AB LITTLE SARA	506	63	87	5.7	1.0	72	13	5.2	60	3.3	-1	18	7.4	126	2.28	0.67	12	2000	378	-1.0	-1.0	-1	630	60	59

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03100201 SARASOTA BAY																	
* WATER BODY TYPE: ESTUARY																	
1.00	GASPARILLA SOUND ABOVE CHARLOTTE HA	PARTIAL	UNKN	....	....	....	.	*									WASTE PRODUCTS FROM FISHERY (AT PLACIDA)
3.00	PLACIDA HARBOR/LEMON BAY ABOVE GASP	YES	GOOD	----	----	----	-..		0	..0.	.00.	....	0.		**	**	GOOD OVERALL WATER QUALITY.PERIODIC BANS ON SHELLFISHING. EXCESSIVE MANGROVE CUTTING AND SLASHING HAS BEEN A PROBLEM.
3.50	LEMON BAY(EXTENDED) ABOVE GULF OF M	PARTIAL	FAIR	--*-	*---	---*	-..	***	*	**0.	000.	---*	0.	*	* **	***	HIGH CHL a AND NUTRIENT LEVELS.TREND TOWARD WORSENING CONDITIONS.DEVELOPMENT IMPACTS INCLUDE EXCESSIVE CLEARING OF VEGETATION, HEAVY BOAT TRAFFIC,FILLING IN OF VITAL MANGROVE AREAS, RESIDENTIAL LAWN FERTILIZERS, LITTERING, AND EROSION.
7.00	LITTLE SARASOTA BAY ABOVE CATFISH C	PARTIAL	FAIR	--*-	----	.--*	--.	* *	*	**-.	.00.	.000	+.	*	* *	*	SECCHI DEPTH, NUTRIENT PROBLEMS DUE TO URBAN RUNOFF AND WWTP EFFLUENT.FISHKILL SUMMER OF 1987. SHORELINE ALTERATIONS (SEA WALLS) HAVING ADVERSE EFFECTS.
9.00	SARASOTA BAY ABOVE PHILLIPPI CREEK	PARTIAL	FAIR	--*-	---.	---*	-..	***	0	**-0	.0-.	00--	+.	*	* **	*	ELEVATED NUTRIENT LEVELS CAUSED BY URBAN RUNOFF AND WWTP EFFLUENTS FROM SARASOTA. 1984 WLA.URBAN STORMWATER RUNOFF, EAST SHORE. DEPLETED SHELLFISH POPULATIONS. WWTP SPRAY IRRIGATION RUNOFF POLLUTING BAY.
9.50	WHITTAKER BAYOU ABOVE SARASOTA BAY	NO	POOR	*-*-	---.	--**	-..		0	0-0.	.--.	..00	0.	*	*	*	RECEIVES SARASOTA WWTP'S EFFLUENT. OVERLOADED PLANT HAS ADVANCED WASTE TREATMENT EFFLUENT LIMITS, BUT FREQUENTLY DOES NOT MEET SECONDARY TREATMENT STANDARDS. 1984 WLA.OCCASIONAL CLOSING OF SHELLFISH HARVESTING AREAS. SEA GRASS DEPLETION.
9.90	PALMA SOLA BAY ABOVE TAMPA BAY	PARTIAL	UNKN	----	---.	...*	...	*	.	....	....	....	..		* *		LIMITED WATER QUALITY DATA.SEA WALLS HAVING ADVERSE EFFECTS ON WATER QUALITY.
10.00	SIESTA KEY ABOVE LITTLE SARASOTA BA	YES	GOOD	--*-	---.	.--*	-..		0	000.	.00.	.00-	0.				ELEVATED TP LEVELS BUT OTHERWISE FAIR-GOOD QUALITY.
11.00	ST ARMAND KEY ABOVE SARASOTA BAY	YES	GOOD	----	---.	---*	-..	*	0	0.0.	.00.	.000	0.		* **	*	ELEVATED TP CONCENTRATIONS, BUT OTHERWISE FAIR-GOOD QUALITY.
12.00	LONGBOAT KEY ABOVE SARASOTA BAY	YES	FAIR	--*-	*--.	---*	-..	*	0	*0-.	.0-.	.0--	0.	*	* **	*	RECEIVES SARASOTA'S WWTP EFFLUENT AND URBAN RUNOFF. 1984 WLA.
13.00	ANNA MARIA KEY ABOVE SOUTH TAMPA BA	YES	GOOD	--*-	----	---*	--.		-	000.	.00.	.00-	0.				ELEVATED TP BUT OTHERWISE FAIR-GOOD QUALITY.
14.00	PERICO KEY ABOVE MANATEE RIVER	UNKNOWN	UNKN	....	....	....	.										
* WATER BODY TYPE: OCEAN																	
4.00	GULF OF MEXICO ABOVE LEMON BAY	UNKNOWN	UNKN	....	....	....	.										
6.00	GULF OF MEXICO ABOVE ROBERTS/DONA B	UNKNOWN	UNKN	....	....	....	.										
* WATER BODY TYPE: STREAM																	
2.00	CORAL CREEK ABOVE GASPARILLA SOUND	YES	GOOD	---*	---.	....	-..		.	....	....	....	..				
2.01	CORAL CREEK, EAST FORK ABOVE CORAL	YES	UNKN	....	....	....	.	*							**	**	
2.02	CORAL CREEK, WEST FORK ABOVE CORAL	YES	UNKN	....	....	....	.	*							**	**	
3.10	BUCK CREEK ABOVE LEMON BAY	YES	FAIR	---*	-*-.	....	-..		.	....	....	....	..				
3.51	GOTTFRIED CREEK ABOVE LEMON BAY	YES	GOOD	---*	---.	....	-..		0	000.	.00.	..00	0.	*	**		THE SITE OF THE REVERSE OSMOSIS PLANT, SLIGHT DO PROBLEM.ELEVATED CONDUCTIVITY IS NATURAL. 1981 WLA.DESTRUCTION OF MANGROVES

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                                                 WATER QUALITY ASSESSMENT REPORT
                                             SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
                                         '*'=PROBLEM OR DEGRADING TREND  'O'=NO TREND  '.'=NO DATA
                                          '-'= NO PROBLEM OR IMPROVING TREND  (SEE LEGEND PAGE 7)

                                               MEETS   WQI  | SCREENING PROBLEMS   | | 1980-1987 TRENDS  | |   SOURCES    | PRESENT CONDITIONS AND CLEANUP EFFORTS
REACH REACH NAME                                USE    RANK |----------------------| |-------------------| |--------------|
----- -------------------------------------- ------- ---- |NPSS|BDBD|CSTT|AMB|FAB| |W|TFTT|BDDT|CSTT|TF| |IM|ASCU|MLHS|
                                                            |PHIA|OOAI|HDNP|MEI|KWL| |Q|CCUS|OOSO|HDNP|EL| |NU|GVNR|NDMT|

 3.52 FORKED CREEK ABOVE LEMON BAY             YES     FAIR |---*|*--.|....|-..|   | |0|00-.|.00.|..00|0.| |  |   *|  **| GOOD OVERALL WATER QUALITY,NATURALLY HIGH
                                                                                                                    CONDUCTIVITY.SEA WALLS ALONG CREEK (RESIDENTIAL).
                                                                                                                    MANGROVES INTACT AT MOUTH OF CREEK. TWO OLD CLOSED
                                                                                                                    LANDFILLS WITHIN DRAINAGE BASIN.
 3.53 ALLIGATOR CREEK ABOVE LEMON BAY          YES     FAIR |---*|---.|....|-..|   | |0|000.|.00.|..--|+.| |  |   *|    | GOOD OVERALL WATER QUALITY, NATURALLY HIGH
                                                                                                                    CONDUCTIVITY.DREDGE AND FILL IMPACTS, AND OLD CLOSED
                                                                                                                    LANDFILL.
 5.00 ROBERTS BAY/DONA BAY ABOVE GULF OF       YES     GOOD |---*|.--.|....|-..|  *| |0|00-.|.0-.|.-00|+.| |  |*  *|   *| HEAVY SILTATION DUE TO CHANNELIZED FLOW.
 5.10 HATCHETT CREEK ABOVE ROBERTS BAY         PARTIAL FAIR |---*|---.|....|-.*|   | |-|000.|.-0.|..--|0.| |  |   *|    | IMPROVED TREND FOR BACTERIA, NUTRIENTS AND DO FROM
                                                                                                                    1980-1985. PROPOSED SITE FOR EAST VENICE WWTP. 1984
                                                                                                                    WLA AND 1986 BIOASSAY.ADVERSE ROAD CONSTRUCTION
                                                                                                                    IMPACTS (SILTATION).
 5.20 COW PEN SLOUGH ABOVE DONA BAY            YES     GOOD |----|---.|....|-..| **| |0|000.|.00.|..-0|0.| |  |* **| ** | HEAVY SILTATION DUE TO CHANNELIZED FLOW. COUNTY
                                                                                                                    LANDFILL IN CLOSE PROXIMITY.
 7.10 CATFISH CREEK ABOVE LITTLE SARASOTA      PARTIAL FAIR |---*|**-.|....|-..|   | |0|000.|.00.|..-0|0.| |  |*  *|    | LOW DO,HIGH BACTERIA,AND BOD MAY BE DUE TO URBAN
                                                                                                                    RUNOFF.OLD CLOSED LANDFILL IN CLOSE PROXIMITY.
 7.20 MATHENY CREEK ABOVE LITTLE SARASOTA      PARTIAL FAIR |----|-*-.|....|-..|   | |-|000.|.--.|..--|0.| | *|   *|   *| BACTERIA AND DO PROBLEM DUE TO URBAN RUNOFF AND WWTP
                                                                                                                    EFFLUENT.
 8.00 PHILLIPPI CREEK ABOVE LITTLE SARASO      PARTIAL FAIR |*---|---.|....|--.| **| |0|0000|.0-.|0000|+.| | *|* **|  **| BACTERIA, NUTRIENT AND DO PROBLEMS. 1984 WLA.
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SOUTHEASTERN FLORIDA BASIN

General Description of the Basin

The Southeastern Florida Basin runs from Ft. Pierce to Homestead, Florida. It includes the southeastern coast of Florida, the Lake Okeechobee drainage canals (those which drain to the Atlantic Ocean) and a portion of the Everglades including Cape Sable on the southwestern tip of Florida. The basin includes over 8000 square miles of drainage area.

Southeastern Florida is criss-crossed by hundreds of miles of canals and levees used to control and manage water resources. Controls are centered around Lake Okeechobee, often referred to as the hub of this water management system. The remainder of the system includes 5 major canals that radiate out from Lake Okeechobee to the Atlantic. The southeastern canals are the Miami Canal, North New River Canal, Hillsboro Canal, West Palm Beach Canal and St. Lucie Canal. A sixth major canal, the Tamiami Canal, serves as the primary drainage for the Everglades and the lower southeast coast. Control structures at all the major junctions of these canals allow water quantity management throughout the system.

Much of the westernmost areas of the basin are wetlands, with Water Conservation Areas in the north and the Everglades National Park in the south. Agricultural areas are predominently found south and west of Lake Okeechobee, where sugar cane, row crops and citrus groves are cultivated; and in the southeastern basin near Homestead, where row crops predominate. This type of farming utilizies large amounts of water, fertilizers and pesticides. Finally, there is heavy urbanization along the coast especially south of West Palm Beach to South Miami.

Specific Water Quality Problems and Pollution Sources

This basin is extremely difficult to analyze in the same manner as the other Florida basins for several reasons. First, it is nearly three times bigger than the next largest basin. Second, most of the reaches are man-made canals with man-induced flow regimes. Third, some of the reaches in this basin are too large (up to 60 miles) resulting in the loss of information on local water quality problems. The result is that this basin assessment relys more heavily on the professional judgement offered in reports and by DER district and county agency personnel than on the calculated water quality index values.

Before giving an area-by-area description of water quality, some basinwide generalizations can be made. The eastern coast area is heavily urbanized and the major pollution source in these urban areas is stormwater. Most WWTPs either use deep well injection or ocean outfalls, but where they do discharge to surface waters, there are usually water quality problems. The western portions of the basin, particularly south of Lake Okeechobee, suffer from intensive agricultural development. In general, canals draining these areas have poorer water quality than those in urban areas. In the southern portion of the basin, between the agricultural areas and the urban areas, are vast diked wetlands which are Water Conservation Areas for aquifer recharge. Although the Conservation Areas absorb some of the nutrient load, the canals' water quality depends heavily on water quantity (inverse relationship).

There has been a great deal of controversy recently about the impact of agricultural activities on the water quality in Lake Okeechobee, the canals and the Conservation Areas. The native sawgrass community in these wetlands is beginning to be replaced by more nutrient-loving cattails. This shift in the predominant vegetation and its threat to the Everglades National Park is causing concern among environmentalists.

The water quality in the northeastern portion of the basin is relatively good. The major problems are near Port St. Lucie in Fivemile and Tenmile Creeks which receive runoff from citrus groves and exhibit poor water quality with high levels of pesticides. Other parts of the St. Lucie River watershed are being affected by runoff from construction sites and urban development along the river. Manatee Pocket, a small port area on the St. Lucie River estuary, has very poor water quality and severely depressed biological community. The Savannas, a 15 mile long area of freshwater marsh located between Ft. Pierce and Stuart, have very good water quality.

The Loxahatchee basin was recently evaluated in a district basin assessment. Good to fair water quality was generally found throughout the area. Problem areas included a small section of the north fork of the Loxahatchee River which had low DO concentrations and waters in Jonathon Dickinson State Park which had high coliform counts. At low water times parts of the C-18 canal receives surficial groundwater seepage of nearly anoxic waters from agricultural areas. There is no control structure on this canal to prevent these waters from entering the western Loxahatchee River. Fishkills have been noted in recent years. The estuarine portion of the Loxahatchee River has had a dramatic decline in seagrass beds in the last decade.

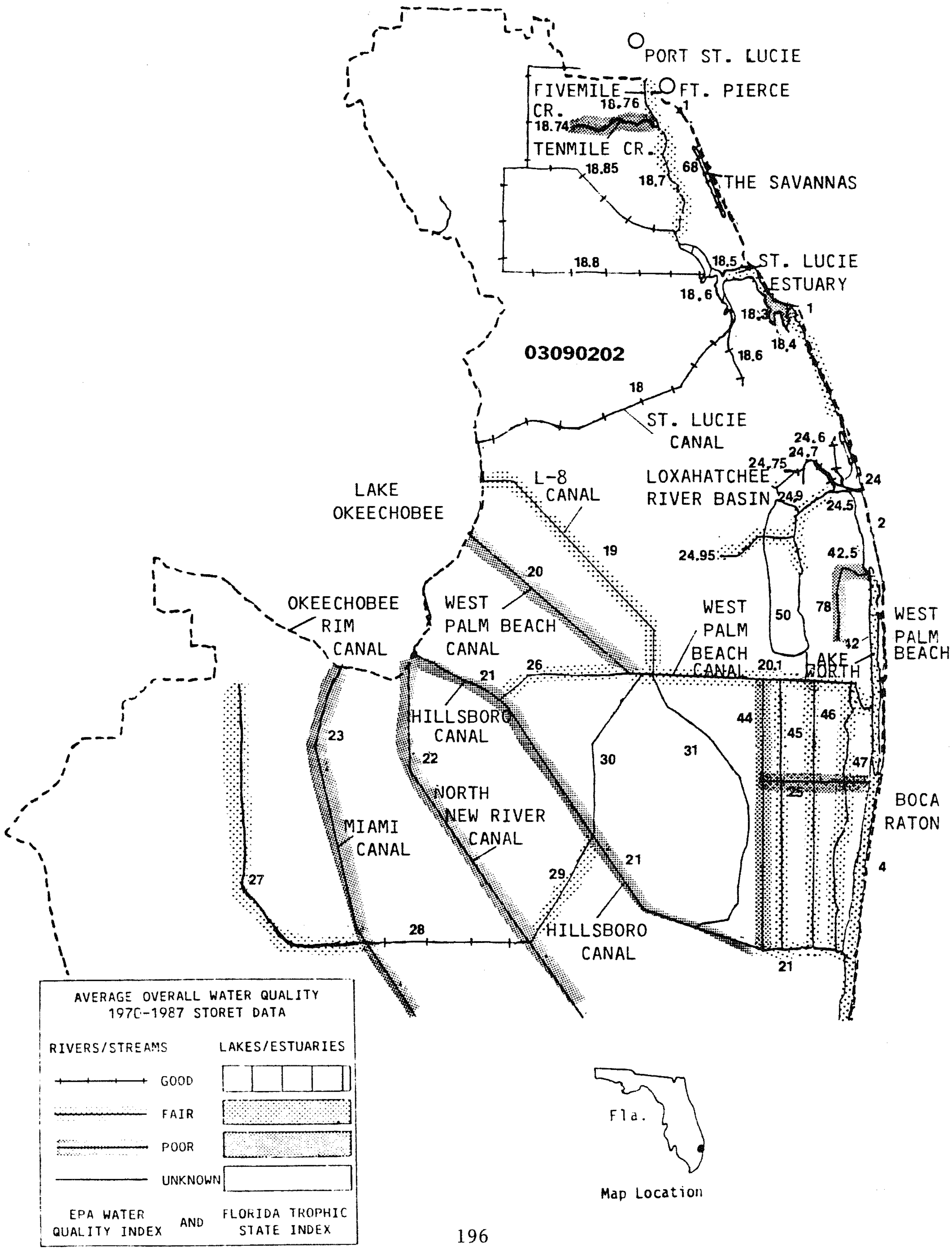
The L-8, West Palm Beach, Hillsborough, Northern New River and Miami canals from Lake Okeechobee to the L4-L7 canals exhibit poor water quality with extremely high nutrients and low DO values. Pesticides, BOD, bacteria and suspended solids have also been identified as problems. Agricultural runoff and the overflow or seepage from huge sugar mill retention ponds provide the pollutant loading to these canals. In addition, between the L-8 and West Palm Beach canals, sludge spreading operations may further impact these waterways. The West Palm Beach canal also has a toxicity problem with fishkills occurring after heavy rains drain from the Chemair Spray hazardous waste site. Canals bordering conservation areas generally have very low DO concentrations typical of marsh waters. Nutrient levels at the perimeter of the marsh are somewhat elevated, probably due to detritus breakdown as well as the agricultural drainage.

In the eastern areas the four parallel north-south canals are all fair except the westernmost which is poor from agricultural runoff. The others are more directly affected by urban stormwater. The Earman River (or C-17) has historically been degraded by WWTP discharge; however, the discharge has been reduced and water quality in the canal is improving. Lake Worth has good water quality near the inlet and is mostly good north of the inlet; however, water quality degrades south of the inlet especially where the West Palm Beach canal enters.

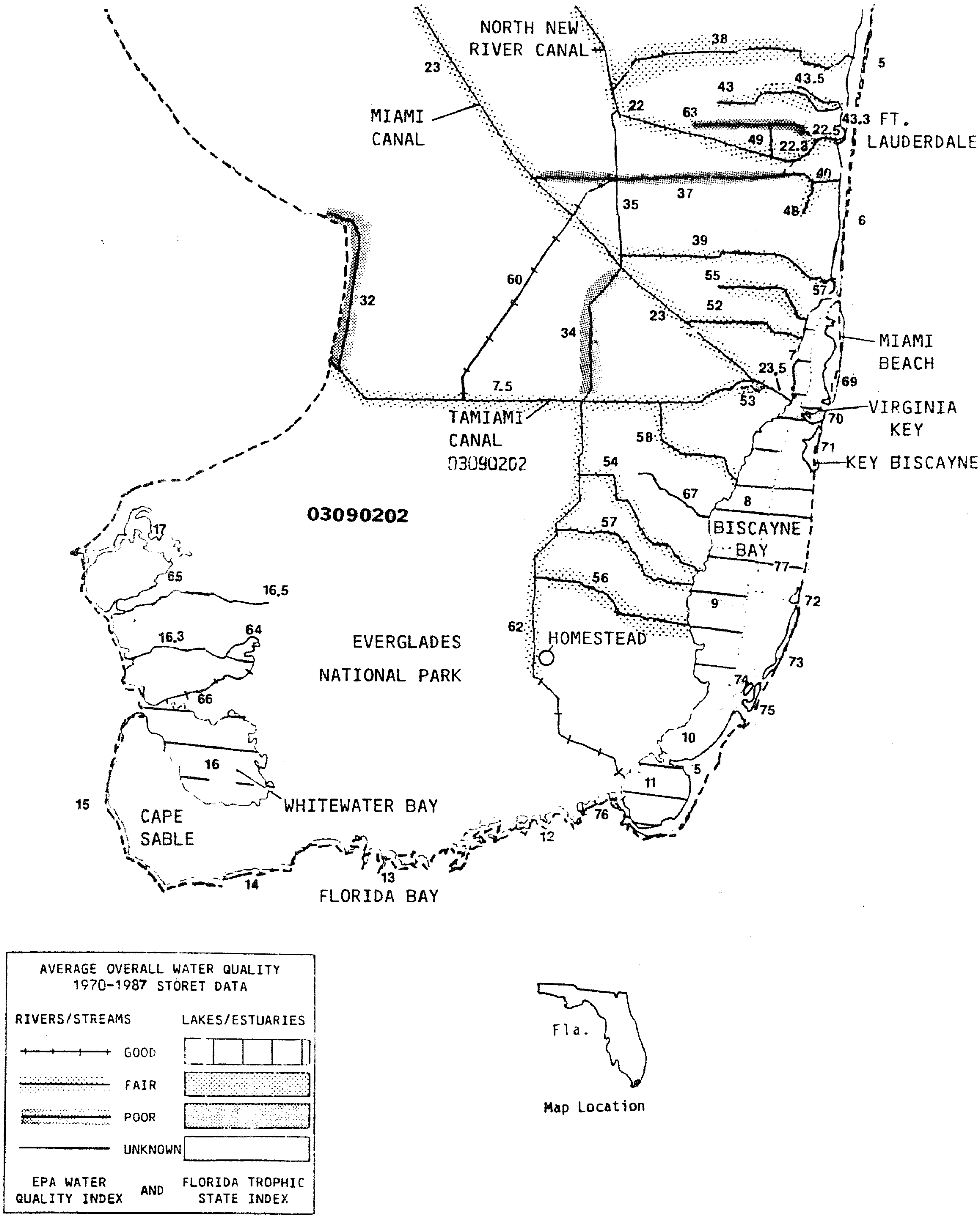
The Ft. Lauderdale area seems to be particularly plagued with water quality problems due to urban runoff and discharge from the numerous, small, poorly regulated WWTPs. Also, frequently the westernmost stations on the canals have the worst water quality, again from agricultural sources. Canals throughout the area are frequently choked with weeds and require mechanical removal or herbicide treatment.

Biscayne Bay is impacted by canal discharge and port activity but has good flushing from the Atlantic Ocean, especially south of Key Biscayne. Good water quality is exhibited in the Everglades and Whitewater Bay on the southwest coast of Florida based upon the limited water quality data available on this remote wilderness area.

SOUTHEAST FLORIDA BASIN (UPPER)



SOUTHEAST FLORIDA BASIN (LOWER)



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03090202 SE FLA COAST																										
* WATER BODY TYPE: ESTUARY																										
7.00	BISCAYNE BAY AB ATLANTIC OCEAN	441	71	84	1.2	4.0	5	8	6.7	79	1.4	-1	5	7.9	121	0.42	0.01	3	20	14	4.2	2.8	-1	46500	-1	24
8.00	BISCAYNE BAY AB ATLANTIC OCEAN	183	75	84	-1.0	7.2	5	9	6.0	72	-1.0	-1	-1	8.2	-1	0.69	0.01	-1	11	10	-1.0	-1.0	-1	-1	-1	14
9.00	BISCAYNE BAY AB ATLANTIC OCEAN	207	70	83	1.8	2.3	5	20	7.5	92	1.4	-1	5	8.1	152	0.56	0.01	2	20	5	4.8	2.3	-1	48600	0	28
10.00	CARD SOUND AB ATLANTIC OCEAN	17	70	76	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.00	BARNES SOUND AB CARD SOUND	39	80	86	-1.0	2.7	-1	1	6.5	73	-1.0	-1	2	7.8	-1	0.49	0.01	-1	-1	-1	4.6	-1.0	-1	53600	-1	26
16.00	WHITEWATER BAY AB GULF OF MEXI	1	82	82	1.8	-1.0	50	-1	6.3	83	-1.0	-1	23	8.3	-1	1.52	0.02	-1	-1	-1	-1.0	-1.0	-1	-1	-1	37
16.30	HARNEY RIVER AB TARPON BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.50	BROAD RIVER AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	BIG LOSTMANS BAY AB GULF OF ME	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.30	MANATEE POCKET AB ST LUCIE RIV	1673	72	87	5.3	0.7	40	-1	5.4	63	-1.0	-1	8	7.5	126	0.71	0.14	-1	3140	150	-1.0	-1.0	-1	40300	-1	60
18.50	ST LUCIE RIVER AB ST LUCIE CAN	255	69	87	4.3	1.0	50	15	6.5	79	1.3	80	8	7.6	122	0.63	0.11	368	76	20	-1.0	-1.0	-1	37050	-1	53
24.00	JUPITER INLET AB ATLANTIC OCEA	38	78	81	1.5	4.9	5	-1	6.5	78	-1.0	-1	26	7.9	-1	0.53	0.02	-1	-1	-1	-1.0	-1.0	-1	51300	-1	40
24.30	JUPITER SOUND AB JUPITER INLET	11	75	80	-1.0	0.6	-1	-1	8.3	98	2.7	-1	2	8.1	-1	0.38	0.03	-1	-1	-1	3.8	-1.0	-1	52000	-1	37
24.35	HOBE SOUND AB INDIAN RIVER	39	71	84	4.4	1.0	35	10	6.2	71	6.5	-1	-1	7.4	130	0.41	0.04	240	102	100	-1.0	-1.0	-1	35500	-1	47
24.40	JUPITER RIVER AB JUPITER INLET	19	75	82	3.0	-1.0	40	-1	4.0	47	-1.0	-1	11	7.1	159	0.88	0.10	-1	-1	-1	-1.0	-1.0	-1	26400	0	57
24.50	LOXAHATCHEE RIVER AB JUPITER R	715	71	87	3.0	1.4	15	17	7.0	86	0.8	-1	4	8.0	69	0.41	0.04	6	53	18	4.3	-1.0	-1	48160	-1	40
42.00	LAKE WORTH AB ATLANTIC OCEAN	744	69	85	1.6	1.4	5	-1	6.3	83	1.5	-1	8	7.8	125	0.83	0.08	10	45	18	-1.0	-1.0	-1	48150	-1	52
64.00	TARPON BAY AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
65.00	RODGERS RIVER AB RODGERS RIVER	17	70	74	4.2	-1.0	22	-1	4.8	55	-1.0	-1	14	8.1	150	1.25	0.02	-1	-1	-1	-1.0	-1.0	-1	413	-1	31
66.00	SHARK RIVER AB TARPON BAY	25	65	71	-1.0	-1.0	-1	-1	4.8	64	-1.0	-1	5	8.1	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	12500	-1	-1
69.00	MIAMI BEACH(ISLAND) AB BISCAYN	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
70.00	VIRGINIA KEY AB BISCAYNE BAY	122	79	84	-1.0	5.7	5	9	6.5	76	-1.0	-1	-1	8.2	-1	-1.00	0.01	-1	18	6	-1.0	-1.0	-1	-1	-1	-1
71.00	KEY BISCAYNE AB BISCAYNE BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
72.00	SANDS KEY AB ATLANTIC OCEAN	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
73.00	ELLIOTT KEY AB ATLANTIC OCEAN	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
74.00	TOTTEN KEY AB ATLANTIC OCEAN	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
75.00	OLD RHODES KEY AB ATLANTIC OCE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
76.00	BLACKWATER SOUND AB FLORIDA BA	4	85	85	-1.0	-1.0	-1	-1	7.0	74	-1.0	-1	-1	8.4	-1	0.51	0.01	-1	-1	-1	-1.0	-1.0	-1	44000	-1	24
77.00	BISCAYNE BAY AB ATLANTIC OCEAN	52	79	84	-1.0	6.2	5	7	6.4	78	-1.0	-1	-1	8.2	-1	-1.00	0.01	-1	1	1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: LAKE																										
50.00	LOXAHATCHEE SLOUGH AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
68.00	THE SAVANNAHS AB	116	75	87	1.3	0.8	200	-1	6.4	75	-1.0	-1	42	5.3	18	1.20	0.02	7	-1	18	-1.0	-1.0	-1	153	-1	47
* WATER BODY TYPE: OCEAN																										
1.00	ATLANTIC OCEAN AB	11	73	84	4.2	1.1	50	-1	6.0	76	-1.0	88	-1	7.0	101	0.49	0.04	-1	820	695	-1.0	-1.0	-1	35500	-1	50
2.00	ATLANTIC OCEAN AB	221	71	85	3.8	1.5	19	-1	6.3	81	1.3	-1	-1	7.8	67	0.48	0.09	9	65	30	-1.0	-1.0	-1	44338	-1	46
3.00	ATLANTIC OCEAN AB	34	84	85	2.7	1.2	7	-1	6.9	85	-1.0	-1	-1	7.8	-1	0.27	0.07	14	-1	10	-1.0	-1.0	-1	44550	-1	44
4.00	ATLANTIC OCEAN AB	80	80	85	4.0	1.4	8	-1	6.2	75	1.1	-1	-1	7.5	51	0.41	0.11	6	140	30	-1.0	-1.0	-1	38650	-1	50
5.00	ATLANTIC OCEAN AB	841	71	86	2.0	1.8	11	-1	6.2	74	2.0	-1	-1	7.9	-1	0.61	0.08	8	350	44	-1.0	-1.0	-1	43400	-1	47
6.00	ATLANTIC OCEAN AB	839	69	86	3.0	1.8	10	-1	5.8	70	1.6	-1	-1	7.8	-1	0.57	0.06	-1	263	31	-1.0	-1.0	-1	45400	-1	45
12.00	FLORIDA BAY AB BARNES SOUND	5	68	82	0.7	-1.0	3	-1	5.3	73	-1.0	-1	11	8.2	-1	0.51	0.00	-1	-1	-1	-1.0	-1.0	-1	39000	-1	31

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
13.00	FLORIDA BAY AB GULF OF MEXICO	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	FLORIDA BAY AB GULF OF MEXICO	12	64	76	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
15.00	GULF OF MEXICO AB FLORIDA BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: STREAM																										
7.50	TAMIAMI CANAL/C-4,L-29 AB MIAM	1699	42	85	2.5	2.3	40	1	4.1	49	1.6	58	22	7.5	189	1.51	0.02	3	478	70	2.1	2.7	4	515	63	45
18.00	ST LUCIE CANAL/CANAL-44 AB LAK	808	54	87	4.0	1.0	75	4	6.0	70	1.3	24	18	7.5	162	1.39	0.13	9	76	24	2.3	2.2	4	677	12	40
18.40	MANATEE CREEK AB MANATEE POCKE	27	72	87	2.7	0.5	100	-1	4.4	50	-1.0	-1	18	7.2	110	0.94	0.06	-1	3640	155	-1.0	-1.0	-1	413	-1	49
18.60	SOUTH FORK, ST LUCIE RIVER AB	106	72	87	2.6	0.8	89	30	4.0	49	-1.0	64	21	7.1	196	1.28	0.19	-1	272	95	-1.0	-1.0	-1	1316	-1	49
18.70	NORTH FORK, ST LUCIE RIVER AB	611	72	86	5.1	0.8	70	16	6.0	68	1.6	41	12	7.3	181	1.07	0.23	24	1450	130	-1.0	-1.0	-1	1679	352	46
18.74	TENMILE CREEK AB N FK, ST LUCI	344	72	86	3.7	0.8	50	359	6.1	73	1.5	44	12	7.4	190	1.10	0.21	25	676	135	-1.0	-1.0	-1	1665	140	42
18.76	FIVEMILE CREEK AB N FK, ST LUC	157	72	86	4.8	0.6	55	7	6.2	70	1.3	40	11	7.3	182	0.88	0.21	12	740	600	-1.0	-1.0	-1	1330	63	49
18.80	DIVERSION CANAL/CANAL-23 AB N	94	68	83	3.7	0.9	90	-1	5.4	66	1.9	-1	18	7.6	207	1.10	0.18	24	-1	45	-1.0	-1.0	-1	1390	-1	42
18.85	DIVERSION CANAL/CANAL-24 AB N	110	72	86	3.5	0.8	109	-1	5.5	65	2.6	2	13	7.5	170	1.07	0.19	25	23	56	-1.0	-1.0	-1	1771	-1	34
19.00	LEVEE-8 CANAL AB LAKE OKEECHOB	144	57	87	5.2	0.8	73	8	3.8	45	-1.0	-1	-1	7.2	123	1.60	0.09	-1	-1	102	-1.0	-1.0	-1	563	259	55
20.00	WEST PALM BEACH CANAL/L-10,12	1	85	85	2.0	-1.0	50	-1	2.9	35	-1.0	-1	-1	7.2	-1	2.00	0.17	-1	-1	220	-1.0	-1.0	-1	400	-1	59
20.10	WEST PALM BCH CANAL/CANAL-51 A	1012	39	86	6.6	1.1	60	6	4.7	54	1.5	82	21	7.5	185	1.75	0.12	14	863	113	2.2	2.3	3	701	102	55
21.00	HILLSBORO CANAL/L-14,15,39 AB	2544	39	87	2.3	1.0	93	4	3.5	42	1.9	90	28	7.5	240	2.04	0.12	13	570	60	2.0	2.3	3	885	20	51
22.00	N NEW R CAN/L-18,19,20,35,38 A	3479	17	87	2.8	1.2	60	10	4.0	47	1.6	74	28	7.7	238	2.11	0.05	5	350	30	1.6	-1.0	-1	889	17	49
22.30	NEW RIVER AB N NEW RIVER CANAL	365	69	86	3.4	1.8	40	-1	4.7	59	1.5	48	17	7.7	209	1.48	0.20	6	1125	146	2.0	-1.0	-1	17000	-1	52
22.50	N FORK, NEW RIVER, BELOW S-33	437	69	86	5.0	0.7	45	-1	2.8	30	3.6	46	16	7.6	195	3.58	1.04	6	2000	200	-1.0	-1.0	-1	869	-1	70
23.00	MIAMI CANAL/C-6,L-23,24,25 AB	2335	20	87	2.2	1.5	56	2	4.0	47	1.3	56	23	7.5	221	1.76	0.03	2	180	31	2.1	1.9	3	704	158	47
23.50	MIAMI RIVER, BELOW S-26 AB MIA	62	79	84	-1.0	4.0	5	12	5.2	66	-1.0	-1	-1	8.2	-1	0.55	0.01	-1	4450	890	-1.0	-1.0	-1	-1	-1	50
24.60	NORTH FORK, LOXAHATCHEE RIVER	60	72	84	10.0	0.6	65	-1	6.5	72	-1.0	-1	-1	7.5	134	0.53	0.06	7	218	340	-1.0	-1.0	-1	34350	-1	35
24.70	NORTHWEST FK LOXAHATCHEE RIV A	2523	28	85	3.5	1.3	50	6	5.0	60	1.2	-1	15	7.5	172	0.93	0.05	6	453	112	-1.0	-1.0	-1	1420	40	40
24.75	CYPRESS CREEK AB NW FRK LOXAHA	67	75	87	3.5	-1.0	40	4	6.7	83	-1.0	-1	16	7.2	118	0.92	0.03	-1	290	195	-1.0	-1.0	-1	495	30	27
24.90	LOXAHATCH RIV(SL)/C-18 (SWF) A	717	8	87	3.0	1.2	46	4	5.4	65	1.1	27	12	7.3	128	0.97	0.05	8	231	34	-1.0	-1.0	-1	404	100	32
24.95	CANAL-18 (WEST FORK) AB LOXAHA	309	71	87	1.9	1.1	65	3	5.7	67	1.6	-1	13	7.4	128	1.17	0.03	5	980	613	-1.0	-1.0	-1	356	-1	32
25.00	BOYNTON BEACH CANAL/CANAL-16 A	115	42	85	3.6	1.2	93	-1	4.9	61	1.4	-1	19	7.7	162	1.25	0.33	13	220	60	-1.0	-1.0	-1	488	-1	48
26.00	OCEAN CANAL/LEVEE-13 AB HILLSB	18	86	87	1.0	1.0	210	-1	2.6	32	-1.0	-1	-1	7.2	-1	3.68	0.17	-1	-1	71	-1.0	-1.0	-1	1649	-1	50
27.00	LEVEES-1,2,3,4 CANAL AB	79	70	80	5.5	-1.0	70	-1	5.7	70	1.6	49	26	7.7	159	1.39	0.10	-1	408	-1	-1.0	-1.0	-1	505	0	45
28.00	LEVEE-5 CANAL AB MIAMI CANAL	5	70	72	15.5	-1.0	35	-1	8.6	103	-1.0	-1	19	8.2	182	0.97	0.04	-1	-1	-1	-1.0	-1.0	-1	468	-1	35
29.00	LEVEE-6 CANAL AB NORTH NEW RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
30.00	LEVEE-7 CANAL AB HILLSBORO CAN	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
31.00	LEVEE-40 CANAL AB WEST PALM BC	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
32.00	LEVEE-28 CANAL AB TAMIAMI CANA	130	70	78	6.0	1.9	55	-1	6.5	70	1.5	52	21	7.8	171	1.48	0.04	-1	-1	-1	-1.0	-1.0	-1	375	-1	40
33.00	LEVEE-31N CANAL AB CANAL-111	55	69	82	2.5	0.1	30	-1	3.6	43	-1.0	46	19	7.5	226	1.58	0.01	-1	-1	-1	-1.0	-1.0	-1	501	-1	49
34.00	LEVEE-30 CANAL AB TAMIAMI CANA	13	76	78	-1.0	-1.0	-1	-1	3.9	46	-1.0	52	24	7.3	240	4.41	1.85	-1	-1	-1	-1.0	-1.0	-1	490	-1	77
35.00	LEVEES-33,37 CANAL AB SNAKE CR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
36.00	LEVEE-37 CANAL AB SOUTH NEW RI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
37.00	SOUTH NEW RIVER CAN/CANAL-11 A	1763	39	84	3.0	1.2	60	537	3.0	38	2.0	63	27	7.6	254	1.76	0.05	5	800	130	-1.0	-1.0	-1	735	1	51
38.00	CYPRESS CREEK CANAL/CANAL-14 A	1025	22	86	2.6	1.6	50	-1	6.0	71	1.6	-1	18	7.8	220	1.28	0.10	10	338	50	-1.0	-1.0	-1	700	0	40
39.00	SNAKE CREEK CANAL/CANAL-9 AB M	1060	60	85	2.5	1.7	43	5	3.3	40	1.1	54	21	7.5	230	1.43	0.02	4	393	33	-1.0	-1.0	-1	657	106	38
40.00	DANIA CUTOFF CANAL/CANAL-11 AB	335	69	86	3.1	1.0	23	-1	4.9	61	1.4	-1	9	7.7	169	0.66	0.07	0	818	85	-1.0	-1.0	-1	32800	-1	42
42.50	LAKE WORTH CREEK AB JUPITER RI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	SAMPLE RECORD BEG YR	SAMPLE RECORD END YR	WATER CLARITY TURB	WATER CLARITY SD	WATER CLARITY COLOR	TSS	DISSOLVED OXYGEN DO	DISSOLVED OXYGEN %SAT	OXYGEN DEMAND BOD	OXYGEN DEMAND COD	TOC	PH ALKALINITY PH	PH ALKALINITY ALK	TROPHIC STATUS NITRO	TROPHIC STATUS PHOS	TROPHIC STATUS CHLA	COLIFORM TOTAL	COLIFORM FECL	SPECIES DIVERSITY NAT	SPECIES DIVERSITY ART	SPECIES DIVERSITY BECK	COND	FLOW	WQI
43.00	MIDDLE RIVER CANAL/CANAL-13 AB	1368	41	86	5.0	0.4	50	-1	5.2	61	1.9	-1	22	7.8	220	1.81	0.09	15	600	50	-1.0	-1.0	-1	680	0	50
43.30	MIDDLE RIVER AB MIDDLE RIVER C	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
43.50	NORTH FORK, MIDDLE RIVER AB MI	442	66	86	3.6	0.3	70	-1	4.4	54	2.0	-1	27	7.8	125	1.48	0.10	-1	1200	143	-1.0	-1.0	-1	625	-1	53
44.00	CANAL E-1 AB W PALM BEACH CANA	65	73	84	2.8	1.0	100	-1	3.2	40	1.8	-1	37	7.2	214	1.49	0.30	-1	1480	225	-1.0	-1.0	-1	392	-1	60
45.00	CANAL E-2E AB W PALM BEACH CAN	41	74	81	1.5	-1.0	70	-1	4.1	46	-1.0	-1	25	7.6	213	1.60	0.16	-1	-1	-1	-1.0	-1.0	-1	720	-1	45
46.00	CANAL E-3 AB W PALM BEACH CANA	173	74	85	2.0	1.1	75	-1	3.5	39	1.5	-1	20	7.2	162	1.17	0.18	-1	538	80	-1.0	-1.0	-1	442	150	45
47.00	EL RIO CANAL/CANAL E-4 AB W PA	530	44	86	3.4	1.1	79	-1	4.9	61	1.6	-1	19	7.3	152	1.22	0.23	-1	540	80	-1.0	-1.0	-1	429	0	45
48.00	HOLLYWOOD CANAL/CANAL-10 AB DA	870	60	85	4.0	-1.0	30	-1	5.6	68	1.6	-1	10	7.7	187	0.79	0.05	19	800	118	-1.0	-1.0	-1	23550	0	38
49.00	EAST TURNPIKE CANAL AB PLANTAT	11	68	76	4.0	-1.0	40	-1	6.7	80	2.5	-1	11	7.9	164	1.67	0.16	-1	100	50	-1.0	-1.0	-1	535	-1	38
51.00	OLETA RIVER AB SNAKE CREEK CAN	231	66	84	-1.0	3.8	10	8	5.9	70	4.0	-1	11	7.7	-1	0.73	0.03	-1	72	30	3.0	-1.0	-1	38000	-1	31
52.00	LITTLE RIVER CANAL/CANAL-7 AB	573	58	85	3.0	1.8	34	12	3.8	48	4.7	-1	19	7.5	230	1.47	0.03	-1	790	270	-1.0	-1.0	-1	645	132	52
53.00	COMFORT CAN/S FRK MIAMI R/C-5	301	67	85	1.5	1.8	23	-1	4.2	47	-1.0	-1	-1	7.2	-1	1.17	0.09	-1	-1	795	-1.0	-1.0	-1	532	-1	46
54.00	BLACK CREEK CANAL/CANAL-1 AB L	739	5	84	5.0	2.9	12	6	5.3	67	3.2	34	8	7.5	181	1.47	0.07	3	105	28	-1.0	-1.0	-1	550	0	40
55.00	BISCAYNE CANAL/CANAL-8 AB	591	40	85	3.5	2.6	38	8	5.5	67	1.4	-1	16	7.8	213	1.40	0.03	-1	185	40	-1.0	-1.0	-1	610	0	40
56.00	MOWRY CANAL/CANAL-103 AB LEVEE	740	66	80	2.0	3.0	5	-1	6.3	76	-1.0	-1	4	7.6	197	1.23	0.01	-1	-1	-1	-1.0	-1.0	-1	973	0	22
57.00	C-102 AB LEVEE-31N	374	67	79	15.0	-1.0	3	-1	6.3	77	-1.0	19	11	7.6	212	1.92	1.70	-1	-1	-1	-1.0	-1.0	-1	500	0	35
58.00	SNAPPER CREEK CANAL/CANAL-2 AB	640	58	84	5.0	1.8	40	-1	3.6	43	-1.0	-1	16	7.5	214	1.43	0.05	-1	-1	-1	-1.0	-1.0	-1	532	0	55
60.00	LEVEE-67A CANAL AB S NEW RIVER	71	72	85	2.0	-1.0	65	-1	5.7	65	1.6	62	26	7.8	168	1.49	0.02	-1	-1	-1	-1.0	-1.0	-1	602	-1	39
62.00	CANAL-111 AB LEVEE-31N	2971	8	85	1.3	3.0	5	-1	7.0	84	0.7	14	9	7.9	174	0.45	0.01	-1	-1	-1	-1.0	-1.0	-1	448	0	12
63.00	PLANTATION CAN, C-12, AB S-33	1014	61	85	5.0	0.8	50	-1	3.1	37	4.6	48	24	7.5	187	3.68	1.20	7	1125	297	-1.0	-1.0	-1	632	0	69
67.00	CANAL-100 AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
78.00	EARMAN RIVER/CANAL-17 AB LAKE	78	27	85	6.5	1.0	40	-1	4.9	58	2.4	-1	20	7.5	177	1.81	0.14	19	333	49	-1.0	-1.0	-1	587	-1	60

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03090202 SE FLA COAST																	
* WATER BODY TYPE: ESTUARY																	
7.00	BISCAYNE BAY ABOVE ATLANTIC OCEAN	YES	GOOD	----	----	----	--.		0	00.-	.**.	0000	0.		*	*	PETROLEUM POLLUTANTS(GAS & OIL FROM BOATS),AN OLD DUMPING AREA,AVIATION SOURCES AND ACIDIFIED RAIN FROM AIR POLLUTANTS CONSTITUTE A THREAT TO WATER QUALITY.
8.00	BISCAYNE BAY ABOVE ATLANTIC OCEAN	YES	GOOD	---.	.--.	.---	--.		0	00.-	.00.	.0.0	0.		*		PETROLEUM POLLUTANTS (GAS & OIL FROM BOATS),GARBAGE,AVIATION SOURCESAND ACIDIFIED RAIN FROM AIR POLLUTANTS CONTRIBUTE TO THE DECLINE IN WATER QUALITY.
9.00	BISCAYNE BAY ABOVE ATLANTIC OCEAN	YES	GOOD	--*-	----	----	--.		.	....	....	....	..		*		(SEE REACH 8.00)
10.00	CARD SOUND ABOVE ATLANTIC OCEAN	YES	UNKN	....	....	....	...		.	....	....	....	..				PETROLEUM POLLUTANTS (GAS & OIL FROM BOATS),GARBAGE,AVIATION SOURCESAND ACIDIFIED RAIN FROM AIR POLLUTANTS CONSTITUTE A CONTINUEING THREAT TO WATER QUALITY.
11.00	BARNES SOUND ABOVE CARD SOUND	YES	GOOD	----	--.-	.---	-..		*	....	.0-.	..0*	+.				WASTES FROM BOATS AND AVIATION SOURCES CONSTITUTE A THREAT TO WATER QUALITY.
16.00	WHITEWATER BAY ABOVE GULF OF MEXICO	YES	GOOD	---.	--..	..--	-..		.	....	....	....	..				
16.30	HARNEY RIVER ABOVE TARPON BAY	UNKNOWN	UNKN	....	....	....	.										
16.50	BROAD RIVER ABOVE	UNKNOWN	UNKN	....	....	....	.										
17.00	BIG LOSTMANS BAY ABOVE GULF OF MEXI	UNKNOWN	UNKN	....	....	....	.										
18.30	MANATEE POCKET ABOVE ST LUCIE RIVER	NO	POOR	----	---.	.--*	--.	*	*	.00.	.00.	.*00	+.		**	**	SECCHI DEPTH AND PHOSPHORUS PROBLEM IN ESTUARINE AREA OFF ST. LUCIE RIVER IN PORT SALERNO.
18.50	ST LUCIE RIVER ABOVE ST LUCIE CANAL	PARTIAL	FAIR	----	---.	*---	-.-	*	*	.00.	.00.	.000	0.	**	* **	**	SLIGHT PROBLEM DUE TO HIGH TP,CHLa AND LOW SECCHI DEPTH. PROBLEM IS CAUSED BY URBAN RUNOFF,WWTP EFFLUENTS AND INDUSTRIAL DISCHARGES. SEVERAL SPECIAL STUDIES INCLUDING A 1980 WLA.SANDPIPER BAY GOLF COURSE AND CITRUS INDUSTRY RUNOFF EXASCERBATE PROBLEM.
24.00	JUPITER INLET ABOVE ATLANTIC OCEAN	YES	GOOD	----	--..	.---	-..		.	....	....	....	..		* **	*	
24.30	JUPITER SOUND ABOVE JUPITER INLET	YES	GOOD	--.-	--.-	.*--	...		.	....	....	....	..		* *		
24.35	HOBE SOUND ABOVE INDIAN RIVER	YES	GOOD	----	*--.	*---	-..		.	....	....	....	..				MINOR BACTERIA AND DO PROBLEM.
24.40	JUPITER RIVER ABOVE JUPITER INLET	PARTIAL	FAIR	----	--..	..--	-..	* *	.	....	....	....	..		* *	*	DO PROBLEMS AND ELEVATED NUTRIENTS.OFW DESIGNATION.
24.50	LOXAHATCHEE RIVER ABOVE JUPITER RIV	PARTIAL	GOOD	----	----	----	--.	* *	0	000.	.000	.00*	0.		* **	* **	OFW DESIGNATION. C-18 CANAL DISCHARGES.
42.00	LAKE WORTH ABOVE ATLANTIC OCEAN	PARTIAL	FAIR	----	---.	----	-..	***	-	000.	0-0.	.0--	-.		* **	**	NUTRIENT AND SECCHI DEPTH PROBLEM.EXTENSIVE SHORELINE DEVELOPMENT AND DRAINAGE CANALS.
64.00	TARPON BAY ABOVE	UNKNOWN	UNKN	....	....	....	.										
65.00	RODGERS RIVER ABOVE RODGERS RIVER B	UNKNOWN	GOOD	----	--..	..--	-..		.	....	....	....	..				
66.00	SHARK RIVER ABOVE TARPON BAY	YES	UNKN	.-.-	--..	....	...		.	....	....	....	..				
69.00	MIAMI BEACH(ISLAND) ABOVE BISCAYNE	UNKNOWN	UNKN	....	....	....	.								*		
70.00	VIRGINIA KEY ABOVE BISCAYNE BAY	YES	UNKN	---.	.--.	.-.-	--*		0	00.-	.0*.	.0.-	+.		*		NO TN DATA AVAILABLE TO CALCULATE TSI.
71.00	KEY BISCAYNE ABOVE BISCAYNE BAY	UNKNOWN	UNKN	....	....	....	.								*		
72.00	SANDS KEY ABOVE ATLANTIC OCEAN	UNKNOWN	UNKN	....	....	....	.										
73.00	ELLIOTT KEY ABOVE ATLANTIC OCEAN	UNKNOWN	UNKN	....	....	....	.										
74.00	TOTTEN KEY ABOVE ATLANTIC OCEAN	UNKNOWN	UNKN	....	....	....	.										

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
75.00	OLD RHODES KEY ABOVE ATLANTIC OCEAN	UNKNOWN	UNKN	....	....	....	.										
76.00	BLACKWATER SOUND ABOVE FLORIDA BAY	YES	GOOD	--.-	.-..	..--	..*		.	....	....	....	..				
77.00	BISCAYNE BAY ABOVE ATLANTIC OCEAN	YES	UNKN	---.	.--.	.-.-	...		.	....	....	....	..				NO TN DATA AVAILABLE TO CALCULATE TSI.
* WATER BODY TYPE: LAKE																	
50.00	LOXAHATCHEE SLOUGH ABOVE	PARTIAL	UNKN	....	....	....	.								* **	*	BRIDGE ON WEST LAKE PARK ROAD IN CATCHMENT AREA IS DUMPING GROUND FOR BUTCHERED ANIMALS.
68.00	THE SAVANNAHS ABOVE	YES	GOOD	----	*--.	----	--.		0	.0*.	.00.	*0-*	-.		**		SECTION 40 CONSTRUCTION ACTIVITY.
* WATER BODY TYPE: OCEAN																	
1.00	ATLANTIC OCEAN ABOVE	YES	FAIR	----	--*.	.---	...		.	....	....	....	..		* **	*	GOOD OVERALL WATER QUALITY.THESE STATIONS ARE NOT IN ATLANTIC OCEAN.THEY ARE IN PECK LAKE AT ICWW.
2.00	ATLANTIC OCEAN ABOVE	YES	GOOD	----	---.	----	-..		-	0-0.	0-0.	.000	-.		* *		GOOD OVERALL WATER QUALITY.
3.00	ATLANTIC OCEAN ABOVE	YES	GOOD	----	.--.	----	...		0	..0.	.00.	.0.0	-.		* *		GOOD OVERALL WATER QUALITY.SHIPS CLEANING BILGES,FRESHWATER CANAL DISCHARGES CONSTITUTE A THREAT TO WAER QUALITY.
4.00	ATLANTIC OCEAN ABOVE	PARTIAL	FAIR	----	---.	----	-.*		-	000.	***.	.0--	0.		* **	**	ICWW BETWEEN BOCA RATON AND LAKE WORTH HAS SLIGHT NUTRIENT AND SECCHI DEPTH PROBLEM FROM RUNOFF. STATIONS ARE NOT IN ATLANTIC OCEAN. EXTENSIVE SHORELINE DEVELOPMENT,NUMEROUS FINGER CANALS AND BULKHEADS CONSTRUCTED. NO NATURAL SHORELINE LEFT.
5.00	ATLANTIC OCEAN ABOVE	YES	GOOD	----	---.	----	-..	**	0	.0*.	.**.	.00-	+.		**		BEACH EROSION IS A POTENTIAL PROBLEM.
6.00	ATLANTIC OCEAN ABOVE	YES	GOOD	----	---.	.---	-.*	**	0	.**.	.**.	.000	+.		**		BEACH EROSION IS A POTENTIAL PROBLEM.
12.00	FLORIDA BAY ABOVE BARNES SOUND	YES	GOOD	----	--..	..--	-..		.	....	....	....	..				
13.00	FLORIDA BAY ABOVE GULF OF MEXICO	UNKNOWN	UNKN	....	....	....	.										
14.00	FLORIDA BAY ABOVE GULF OF MEXICO	UNKNOWN	UNKN	....	....	....	...		.	....	....	....	..				
15.00	GULF OF MEXICO ABOVE FLORIDA BAY	UNKNOWN	UNKN	....	....	....	.										
* WATER BODY TYPE: STREAM																	
7.50	TAMIAMI CANAL/C-4,L-29 ABOVE MIAMI	PARTIAL	FAIR	----	---*	....	--.	**	0	.00.	.000	.000	0.		* *	*	PRIMARILY DO PROBLEMS, PART IS NATURAL AND PART IS DUE TO URBAN AND AGRICULTURAL RUNOFF. CYCLIC WATER QUALITY TREND POSSIBLY DUE TO LONG TERM RAINFALL TRENDS.
18.00	ST LUCIE CANAL/CANAL-44 ABOVE LAKE	YES	GOOD	----	---*	....	-..	***	-	.00.	.000	.000	0.		* **	**	NUMEROUS AGRICULTURAL OUTFALLS,AND URBAN DEVELOPMENT WITH SEPTIC TANKS THREATEN TO CREATE DECLINING WATER QUALITY CONDITIONS.
18.40	MANATEE CREEK ABOVE MANATEE POCKET	NO	FAIR	----	---.	....	-..	*	0	.0-.	.00.	..00	0.		**	**	SLIGHT DO PROBLEM.
18.60	SOUTH FORK, ST LUCIE RIVER ABOVE ST	YES	FAIR	--**	---.	....	-..	***	-	.00.	.-00	.0--	0.		* **	**	
18.70	NORTH FORK, ST LUCIE RIVER ABOVE ST	PARTIAL	FAIR	---*	---.	....	-.-	***	0	.0*.	---*	-0-0	0.		* **	**	CONSTRUCTION PROJECT ACTIVITY,GOLF COURSE RUNOFF AND INDUSTRIAL PARK RUNOFF CONSTITUTE A POTENTIAL THREAT TO WATER QUALITY.
18.74	TENMILE CREEK ABOVE N FK, ST LUCIE	NO	GOOD	--**	---.	....	-.-	***	0	.00.	-00*	-000	0.		* *	*	RUNOFF FROM CITRUS INDUSTRY.
18.76	FIVEMILE CREEK ABOVE N FK, ST LUCIE	NO	FAIR	---*	--*.	....	-.-	***	0	.00.	.000	..00	0.	*	* *	*	SLIGHT BACTERIA AND NUTRIENT PROBLEM BELOW CITRUS PROCESSOR. POSSIBLE IMPROVEMENT IN LAST FEW YEARS. 1979 WLA FOR CITRUS PROCESSOR.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
18.80	DIVERSION CANAL/CANAL-23 ABOVE N FK	YES	GOOD	---*	---.	....	-..	***	.	....	....	....	..		* *	*	RUNOFF FROM CITRUS INDUSTRY.
18.85	DIVERSION CANAL/CANAL-24 ABOVE N FK	YES	GOOD	---*	---.	....	-..	***	0	..0.	.00.	.00-	0.		* *	*	RUNOFF FROM CITRUS INDUSTRY.
19.00	LEVEE-8 CANAL ABOVE LAKE OKEECHOBEE	NO	FAIR	----	.*-.	....	-..	***	0	..0.	.00.	..00	0.		*		ONLY 2 WQI OBSERVATIONS. DO PROBLEM IN 1975.NUTRIENT LOADING FROM AGRICULTURAL RUNOFF.
20.00	WEST PALM BEACH CANAL/L-10,12 * ABO	NO	FAIR	----	.*-.	....	-.-	***	.	....	....	....	..		* *	*	SEWAGE SLUDGE SPREADING AND NUTRIENT LOADING FROM AGRICULTURAL RUNOFF HAVE CONTRIBUTED TO A DECLINE IN WATER QUALITY.
20.10	WEST PALM BCH CANAL/CANAL-51 ABOVE	NO	FAIR	----	---*	....	-..	***	0	00*.	000.	.0--	-.	*	* **	* *	DO, BACTERIA AND NUTRIENT IMPROVEMENT IN LAST 3 YEARS. 1985 BIOASSAY OF WWTP. CANAL DRAINS PORTION OF WEST PALM BEACH.WIDENING OF CANALS, SEWAGE SLUDGE SPREADING AND AGRICULTURAL RUNOFF HAVE CONTRIBUTED TOFAIR WATER QUALITY ASSESSMENT.
21.00	HILLSBORO CANAL/L-14,15,39 ABOVE LA	NO	FAIR	*---	**-*	....	-..	***	-	--0.	000-	.000	0.	*	* **	***	THE 1982 BIOASSAY AND WLA OF BELLE GLADE WWTP REPORTS NONCOMPLIANCE. CANAL RUNS FROM LAKE OKEECHOBEE TO BOCA RATON. DO PROBLEM AND NUTRIENT LOADING FROM AGRICULTURE BACKPUMPING AND URBAN RUNOFF.
22.00	N NEW R CAN/L-18,19,20,35,38 ABOVE	PARTIAL	FAIR	*---	*---	....	-..	***	-	0000	.000	.*00	0.	*	* **	* *	DECLINING DO LEVELS.ROAD CONSTRUCTION, AND NUTRIENT LOADING FROM AGRICULTURAL RUNOFF.
22.30	NEW RIVER ABOVE N NEW RIVER CANAL	PARTIAL	FAIR	---*	----	....	-*.	**	.	....	....	....	..	*	**	*	NUTRIENT PROBLEM IN FT. LAUDERDALE URBANIZED AREA.
22.50	N FORK, NEW RIVER, BELOW S-33 ABOVE	PARTIAL	POOR	*---	**-.	....	***	**	.	....	....	....	..	*	**		1980 WLA. FT. LAUDERDALE AREA CANAL RECEIVES RUNOFF AND WWTP EFFLUENTS FROM PLANTATION CANAL.
23.00	MIAMI CANAL/C-6,L-23,24,25 ABOVE LA	PARTIAL	FAIR	----	---*	....	-..	***	-	--00	.000	.000	+.		* *	*	MIAMI CANAL FROM LAKE OKEECHOBEE TO MIAMI. DO PROBLEMS FROM AGRICULTURAL BACKPUMPING AND URBAN RUNOFF. THREE BIOASSAYS PERFORMED. CYCLIC TRENDS.POTENTIAL NUTRIENT LOADING FROM AGRICULTURAL RUNOFF.
23.50	MIAMI RIVER, BELOW S-26 ABOVE MIAMI	PARTIAL	FAIR	---.	.-*.	....	--.	***	.	....	....	....	..		* *		ELEVATED TOTAL COLIFORM LEVELS.NUTRIENT LOADING FROM AGRICULTURAL RUNOFF.
24.60	NORTH FORK, LOXAHATCHEE RIVER ABOVE	YES	GOOD	---*	.--.	....	-..		.	....	....	....	..		* *	*	OFW.
24.70	NORTHWEST FK LOXAHATCHEE RIV ABOVE	YES	GOOD	---*	---.	....	---		0	00*.	*000	.00*	00		* **	* **	WILD AND SCENIC WATERWAY. POLLUTANT DISCHARGES FROM SOUTH INDIAN RIVER WATER CONTROL DISTRICT THREATEN WATER QUALITY.
24.75	CYPRESS CREEK ABOVE NW FRK LOXAHATC	YES	GOOD	----	---.	....	-..		0	....	.00.	..00	0.				
24.90	LOXAHATCH RIV(SL)/C-18 (SWF) ABOVE	YES	GOOD	----	---.	....	---	***	0	000.	*0*0	.000	-.		* **	*	SEVERAL BIOASSAYS PERFORMED IN AREA. VERY MINOR DO PROBLEM.INCREASED SHORELINE DEVELOPMENT.CONTROL STRUCTURE DISCHARGES.
24.95	CANAL-18 (WEST FORK) ABOVE LOXAHATC	PARTIAL	GOOD	----	--*.	....	-.-	***	-	..0-	.-00	..00	0.	*	* **	**	BIOASSAY PERFORMED OF AREA INDUSTRIES. MINOR DO PROBLEM.
25.00	BOYNTON BEACH CANAL/CANAL-16 ABOVE	NO	FAIR	----	---.	....	--.	***	0	.0-.	.00.	..-0	0.	*	* **	*	MINOR DO AND NUTRIENT PROBLEM.HIGH BACTERIAL LEVELS,POOR CIRCULATION,OCCASIONAL SEWAGE SPILL .
26.00	OCEAN CANAL/LEVEE-13 ABOVE HILLSBOR	PARTIAL	FAIR	*--*	.*-.	....	-..	***	.	....	....	....	..		*		WATER QUALITY PROBLEMS RELATED TO INCREASED NUTRIENTS AND DEPRESSED DO.NUTRIENT LOADING FROM AGICULTURAL RUNOFF.
27.00	LEVEES-1,2,3,4 CANAL ABOVE	PARTIAL	FAIR	----	---.	....	-..	***	.	....	....	....	..		*		DRAINAGE CANAL ALONG 80/25 HAS EXCESSIVE EUTROPHICATION DUE TO HEAVYAGRICULTURAL ACTIVITIES IN AREA. ALL MAJOR WATER MANAGEMENT DISTRICT CANALS ARE CLASS III AND DO NOT MEET STANDARDS.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
28.00	LEVEE-5 CANAL ABOVE MIAMI CANAL	PARTIAL	GOOD	----	--..	....	...	***	.	....	....	....	..		*		ALL MAJOR WATER MANAGEMENT DISTRICT CANALS ARE CLASS III AND DO NOT MEET STANDARDS.
29.00	LEVEE-6 CANAL ABOVE NORTH NEW RIVER	PARTIAL	UNKN	....	....	....	.	*							*		ALL MAJOR WATER MANAGEMENT DISTRICT CANALS ARE CLASS III AND DO NOT MEET STANDARDS.
30.00	LEVEE-7 CANAL ABOVE HILLSBORO CANAL	PARTIAL	UNKN	....	....	....	.	*							*		NUTRIENT LOADING FROM AGRICULTURAL RUNOFF.ALL MAJOR WATER MANAGEMENT DISTRICT CANALS ARE CLASS III AND DO NOT MEET STANDARDS.
31.00	LEVEE-40 CANAL ABOVE WEST PALM BCH	PARTIAL	UNKN	....	....	....	.	*							* **	* *	NUTRIENT LOADING FROM AGRICULTURAL RUNOFF.
32.00	LEVEE-28 CANAL ABOVE TAMIAMI CANAL	YES	GOOD	----	--..	....	-..	**	.	....	....	....	..		*		
33.00	LEVEE-31N CANAL ABOVE CANAL-111	PARTIAL	FAIR	----	-*..	....	-..		.	....	....	....	..		*		DO AND TOXICS PROBLEM IN CANAL LOCATED WEST OF HOMESTEAD.
34.00	LEVEE-30 CANAL ABOVE TAMIAMI CANAL	PARTIAL	POOR	*-.-	-*..	....	-..	***	.	....	....	....	..		* *		POOR NUTRIENTS AND DO LEVELS IN CANAL WEST OF MIAMI, SAMPLED 1976-1978.MASSIVE AGRICULTURAL INPUTS.
35.00	LEVEES-33,37 CANAL ABOVE SNAKE CREE	PARTIAL	UNKN	....	....	....	.	**							**	*	
36.00	LEVEE-37 CANAL ABOVE SOUTH NEW RIVE	UNKNOWN	UNKN	....	....	....	.										
37.00	SOUTH NEW RIVER CAN/CANAL-11 ABOVE	NO	FAIR	--*-	-*-.	....	-*.	***	0	.0*.	.00.	..00	+.	*	* **	***	DEPRESSED DO IN CANAL WHICH RUNS FROM MIAMI CANAL TO FT. LAUDERDALE. URBAN RUNOFF AND WWTP EFFLUENTS CAUSING WATER QUALITY PROBLEMS.DAVIE LANDFILL.
38.00	CYPRESS CREEK CANAL/CANAL-14 ABOVE	PARTIAL	GOOD	----	---.	....	-*.	***	0	.00.	.00.	.000	0.		* **	**	
39.00	SNAKE CREEK CANAL/CANAL-9 ABOVE MIA	PARTIAL	GOOD	----	-*-.	....	--.	**	0	.00.	.00.	..00	0.	*	*	*	CANAL RUNS FROM MIAMI CANAL TO MIAMI. DO PROBLEM DUE TO URBAN RUNOFF AND POSSIBLY EFFLUENT FROM SMALL WWTP.
40.00	DANIA CUTOFF CANAL/CANAL-11 ABOVE S	PARTIAL	GOOD	---*	---.	....	-..	***	.	....	....	....	..		* **	**	MINOR DO PROBLEM.
42.50	LAKE WORTH CREEK ABOVE JUPITER RIVE	PARTIAL	UNKN	....	....	....	.								* **	**	INCREASED SHORELINE DEVELOPMENT.
43.00	MIDDLE RIVER CANAL/CANAL-13 ABOVE C	PARTIAL	FAIR	----	---.	....	--.	**	0	.00.	.--.	.0-0	0.	*	**		MINOR DO AND NUTRIENT PROBLEM IN FT. LAUDERDALE AREA CANAL, DRAINS PLANTATION CANAL PROBLEM AREA.
43.30	MIDDLE RIVER ABOVE MIDDLE RIVER CAN	PARTIAL	UNKN	....	....	....	.								*		
43.50	NORTH FORK, MIDDLE RIVER ABOVE MIDD	PARTIAL	FAIR	----	---.	....	-..		.	....	....	....	..		*		MINOR DO AND NUTRIENT PROBLEM IN FT. LAUDERDALE AREA CANAL.
44.00	CANAL E-1 ABOVE W PALM BEACH CANAL	NO	POOR	----	**-.	....	--.		0	.00.	.00.	..-0	0.		* *		PROBLEMS RELATED TO TOC,DO AND BACTERIA.NUTRIENT PROBLEM IN CANAL WHICH IS JUST WEST OF WEST PALM BEACH AND DEERFIELD BEACH.
45.00	CANAL E-2E ABOVE W PALM BEACH CANAL	PARTIAL	FAIR	----	--..	....	--.		.	....	....	....	..		* *		DO PROBLEM IN CANAL WHICH IS JUST WEST OF WEST PALM BEACH AND DEERFIELD BEACH.
46.00	CANAL E-3 ABOVE W PALM BEACH CANAL	PARTIAL	FAIR	----	-*-.	....	--.		0	.00.	.00.	..0*	0.		* *		DO AND NUTRIENT PROBLEMS IN CANAL WHICH RUNS FROM WEST PALM BEACH TO DEERFIELD BEACH.
47.00	EL RIO CANAL/CANAL E-4 ABOVE W PALM	PARTIAL	FAIR	----	---.	....	--.	***	0	000.	0**.	..00	0.		* **	*	DO AND MINOR NUTRIENT PROBLEM IN CANAL FROM LAKE WORTH TO DEERFIELD BEACH.SEVERE ALGAL BLOOM AND POOR CIRCULATION OF WATER.
48.00	HOLLYWOOD CANAL/CANAL-10 ABOVE DANI	YES	GOOD	---*	---.	....	-*.	**	.	....	....	....	..		**	**	
49.00	EAST TURNPIKE CANAL ABOVE PLANTATIO	PARTIAL	GOOD	----	---.	....	-..		.	....	....	....	..		*		DO PROBLEM IN CANAL LOCATED IN FT. LAUDERDALE.
51.00	OLETA RIVER ABOVE SNAKE CREEK CANAL	YES	GOOD	---*	*---	....	...		0	....	....	...-	..		*	*	OLD DUMPING AREA.
52.00	LITTLE RIVER CANAL/CANAL-7 ABOVE MI	PARTIAL	FAIR	----	**-.	....	--.	**	0	.0..	.*0.	.*00	0.		*	*	DO PROBLEM IN CANAL WHICH DRAINS WEST SECTION OF MIAMI.
53.00	COMFORT CAN/S FRK MIAMI R/C-5 ABOVE	PARTIAL	FAIR	----	.-*.	....	...		.	....	....	....	..		*		BACTERIA AND DO PROBLEM IN CANAL WHICH DRAINS PORTION OF MIAMI.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
54.00	BLACK CREEK CANAL/CANAL-1 ABOVE LEV	PARTIAL	GOOD	----	---.	....	--.	***	-	....	.00.	00.0	+.		*	*	NUTRIENT AND DO PROBLEM IN CANAL CLOSE TO HOMESTEAD, AN AGRICULTURAL AREA.
55.00	BISCAYNE CANAL/CANAL-8 ABOVE	PARTIAL	GOOD	----	---.	....	--*	**	0	.0..	.00.	.0.0	0.		*	*	
56.00	MOWRY CANAL/CANAL-103 ABOVE LEVEE-3	PARTIAL	GOOD	----	--..	....	--.	**	.	....	....	....	..		* *	*	
57.00	C-102 ABOVE LEVEE-31N	PARTIAL	GOOD	*---	--..	....	-..	**	.	....	....	....	..		* *	*	NUTRIENT PROBLEM IN CANAL NEAR THE AGRICULTURAL AREA OF HOMESTEAD.
58.00	SNAPPER CREEK CANAL/CANAL-2 ABOVE T	PARTIAL	FAIR	----	-*..	....	-..	**	.	....	....	....	..		*	*	DO PROBLEM IN CANAL WHICH DRAINS TO SOUTH BISCAYNE BAY BELOW MIAMI AND ABOVE HOMESTEAD.
60.00	LEVEE-67A CANAL ABOVE S NEW RIVER C	YES	GOOD	----	--..	....	-..	***	0	..0.	...0	..0*	..		*	*	
62.00	CANAL-111 ABOVE LEVEE-31N	YES	GOOD	----	--..	....	-..	***	.	....	....	....	..		* *		
63.00	PLANTATION CAN, C-12, AB S-33 * ABO	NO	POOR	*---	**-.	....	**.	**	-	-.0.	.---	..00	0.	*	**	*	VERY POOR WATER QUALITY IN EARLY 70'S, IMPROVED QUALITY BY LATE 70'S AND 80'S. PLANTATION WWTP DISCHARGES TO CANAL WEST OF FT. LAUDERDALE.
67.00	CANAL-100 ABOVE	PARTIAL	UNKN	....	....	....	. .	**							* *	*	
78.00	EARMAN RIVER/CANAL-17 ABOVE LAKE WO	NO	POOR	----	---.	....	-.*	***	-	00..	000.	..-0	-.	*	* *	*	DO AND NUTRIENT PROBLEM IN CANAL IN NORTH PALM BEACH. IMPROVED WATER QUALITY OVER LAST 13 YEARS. SEVERAL BIOASSAYS OF WWTP'S.FINGER CANALS POLLUTED.

ST. ANDREWS BAY BASIN

General Description of the Basin

St. Andrews Bay basin drains a total area of about 1350 square miles (the basin also includes St. Joe Bay). Econfina Creek is the main tributary to St. Andrews Bay and has an average flow of 500 cfs about 11 miles upstream from the mouth. The watershed is primarily forested with an urbanized area concentrated adjacent to St. Andrews Bay. The major urban centers are Panama City, Lynn Haven and a narrow strip of development along the gulf. Point sources of pollution in the area include two large paper/pulp processing plants (one in St. Andrews Bay and one in St. Joe Bay) and several wastewater treatment plants.

Specific Water Quality Problems and Pollution Sources

The St. Andrews Bay system generally exhibits good water quality. The major river inflow, Econfina Creek, is nearly pristine, and the bay waters are generally well flushed by the gulf. However, the bay is threatened, not only by the growth induced nonpoint source pollution, but also by several important domestic and industrial point sources.

There are several areas of concern in the basin. Deer Point Lake is the drinking water source for Panama City. Although its major inflow is from Econfina Creek, its other tributaries have some pollution impacts. Bayou George Creek is in the watershed with the Majette Landfill. In a 1987 study, Pond C effluent to the creek had significant amounts of ammonia and unionized ammonia. The creek below the landfill has elevated nutrients and specific conductance, and the macroinvertebrate community was depressed. A chemical spill in 1978 in the Bear Creek drainage caused a fishkill and heavy mortality to other aquatic life. The lake itself also receives impact from recreation and shoreline development. It has severe weed problems which have been treated by both the state and private citizens with herbicides in the seventies. Sampling in February and June of 1987 indicated evelated values for chromium, lead and zinc in the sediments near the dam and depauperate benthic fauna. Water quality indicates high nutrients, low DO and some bacteria problems.

Beatty Bayou below the impoundment is affected by the Lynn Haven WWTP sprayfields. The plant will be shifting to alternative disposal methods currently being investigated. Watson Bayou also suffers from historical WWTP discharge. Although the bayou is no longer receiving discharge, there are no recent samples to indicate improved water quality. West Bay in the vicinity of the Panama City Beach WWTP is also showing water quality problems with decreased DO values. Finally, the St. Andrews WWTP which handles wastewater from Panama City appears to be affecting the sediments and biological richness in the vicinity of its outfall in St. Andrews Bay.

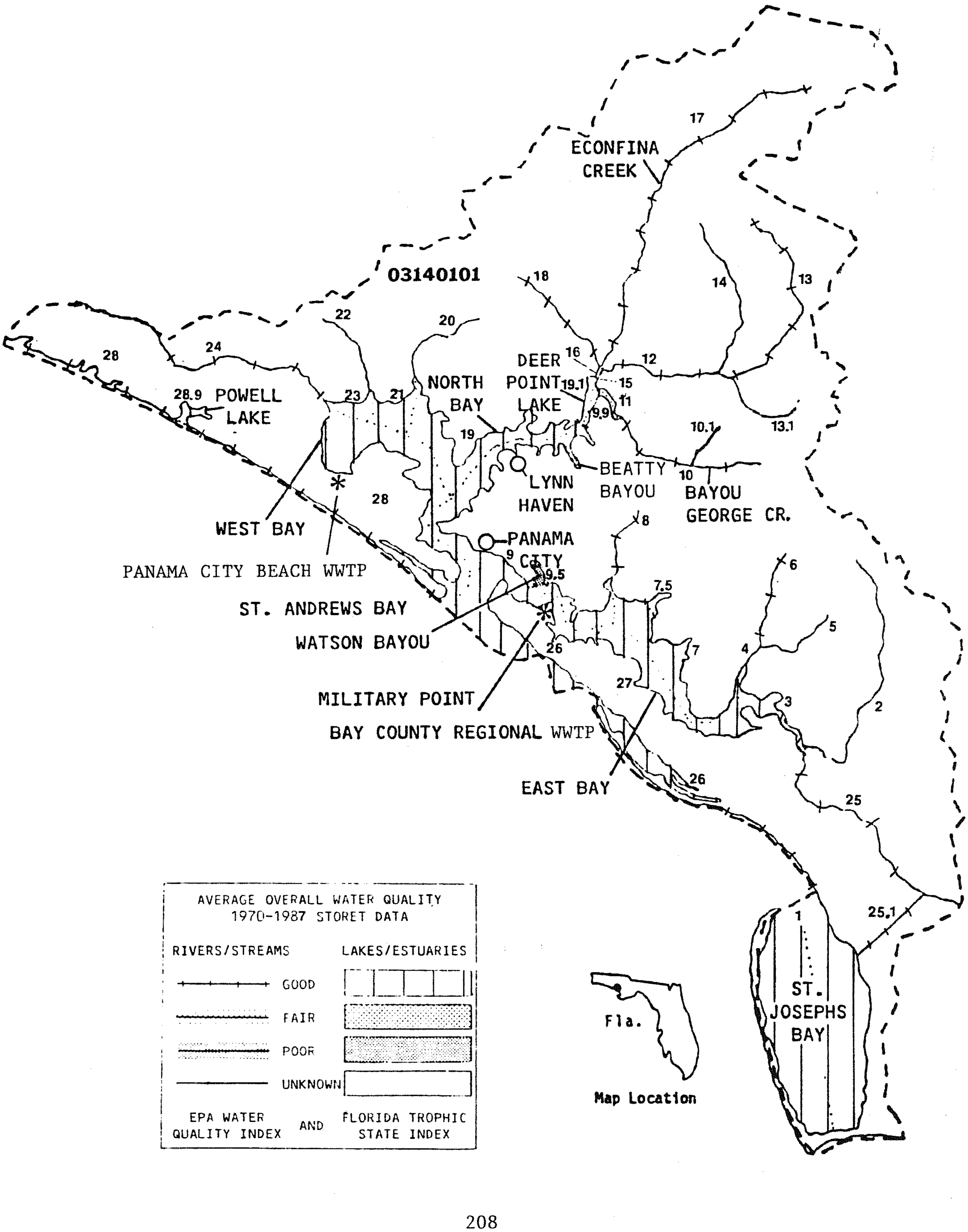
Two of the basin's treatment plants receive more industrial wastes than domestic. The Bay County Regional WWTP treats Stone Container (paper/pulp mill) and Arizona Chemicals Company wastewater; and the City of Port St. Joe WWTP treats St. Joe Forest Products (paper/pulp mill) and Basic Magnesia, Inc. wastes. They each discharge about 30 MGD (of which 80-90% is from the paper companies) into St. Andrews Bay and St. Josephs Bay, respectively.

Both are publicly owned treatment plants that mutually benefit the paper companies and the counties (by virtue of having the industrial development). Unfortunately, neither plant is meeting its permit limitations. The Bay County plant, with BOD and bacteria problems, is due for permit renewal, and an extensive assessment of various discharge options and an allocation will be conducted by DER and EPA this next year. The Port St. Joe plant, with mostly suspended solids problems, has recently been permitted for some facility upgrades. Both of the receiving bays show biological degradation and shifts in sediment composition. However, because of the bays' circulation patterns, the effluent is relatively quickly dispersed and, unless samples are collected directly in the plume, the water column quality remains quite good.

Other pollution sources in this basin include many small package plants and septic tanks which discharge poorly treated waste into ditches emptying into the bay, significant amounts of highway and construction site runoff, and runoff from logging operations.

Powell Lake is ecologically interesting in that it has characteristics of both freshwater and saltwater lakes. It is also in relatively pristine condition; however, it is currently undergoing rapid development. The utmost care should be taken to prevent stormwater pollution in this sensitive area.

ST. ANDREWS BAY BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03140101 ST ANDREWS BAY																										
* WATER BODY TYPE: ESTUARY																										
1.00	ST JOSEPH BAY AB GULF OF MEXIC	158	71	85	1.0	4.6	4	13	7.2	84	0.8	-1	3	8.1	110	0.27	0.04	2	24	20	-1.0	-1.0	-1	42875	-1	24
3.00	EAST BAY AB WETTAPPO CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	EAST BAY AB SANDY CREEK	2	72	72	11.0	-1.0	35	-1	6.7	88	4.0	-1	-1	7.8	59	0.76	0.02	-1	13	-1	-1.0	-1.0	-1	-1	-1	37
7.50	LAIRD BAYOU AB EAST BAY	4	72	72	26.5	-1.0	13	-1	5.5	76	2.7	-1	-1	8.1	100	0.67	0.03	-1	804	-1	-1.0	-1.0	-1	-1	-1	46
9.00	NORTH BAY AB CALLAWAY CREEK	179	71	87	5.0	2.3	19	10	7.3	91	1.1	-1	7	7.8	80	0.66	0.03	83	35	10	-1.0	-1.0	-1	27000	-1	45
9.50	WATSON BAYOU AB ST ANDREWS BAY	54	71	79	10.5	0.8	35	20	7.4	79	3.3	-1	-1	8.1	94	1.10	0.11	65	350	490	3.6	-1.0	-1	33500	-1	60
11.00	NORTH BAY AB BAYOU GEORGE	1	72	72	7.0	-1.0	15	-1	-1.0	-1	2.1	-1	-1	7.6	39	0.75	0.01	-1	540	-1	-1.0	-1.0	-1	-1	-1	24
15.00	NORTH BAY AB ST ANDREWS BAY	227	66	76	3.0	2.2	29	10	6.5	77	0.7	-1	6	7.2	21	0.67	0.02	-1	79	110	-1.0	-1.0	-1	84	-1	34
19.00	NORTH BAY AB CEDAR CREEK	36	71	85	3.0	1.7	20	18	5.8	77	0.9	-1	-1	7.7	86	0.64	0.03	69	17	2	3.3	2.7	-1	20750	-1	44
21.00	WEST BAY AB BURNT MILL CREEK	8	71	74	12.0	1.9	10	18	7.6	92	1.1	-1	-1	8.4	92	0.42	0.03	109	18	-1	-1.0	-1.0	-1	37800	-1	35
23.00	WEST BAY AB BIG CROOKED CREEK	3	73	73	-1.0	1.6	-1	24	8.6	95	0.0	-1	-1	8.4	-1	0.24	0.01	69	33	-1	-1.0	-1.0	-1	36400	-1	50
26.00	ST JOSEPH BAY AB GULF OF MEXIC	92	71	86	3.0	3.5	10	9	7.8	104	0.8	-1	3	8.2	110	0.42	0.01	6	27	60	4.0	2.6	-1	44000	-1	32
27.00	EAST BAY AB ST ANDREWS BAY	182	71	87	5.0	2.5	15	18	6.3	89	1.3	1460	-1	8.0	96	0.76	0.02	20	51	27	3.6	-1.0	-1	34000	-1	37
28.00	WEST BAY AB ICWW	193	68	87	4.5	2.5	15	17	8.4	99	0.9	-1	4	7.8	92	0.45	0.02	5	20	10	4.2	3.2	-1	38000	-1	36
* WATER BODY TYPE: LAKE																										
9.90	DEER POINT LAKE AB NORTH BAY	161	72	81	4.0	1.6	10	-1	6.3	70	0.3	-1	-1	7.0	29	0.56	0.02	-1	1600	-1	-1.0	-1.0	-1	75	-1	24
19.10	DEER POINT LAKE AB NORTH BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
28.90	POWELL LAKE AB GULF OF MEXICO	7	72	85	16.0	-1.0	15	19	7.2	98	1.5	-1	-1	6.5	87	0.67	0.01	-1	30	-1	-1.0	-1.0	-1	46800	-1	24
* WATER BODY TYPE: STREAM																										
2.00	WETAPPO CREEK AB EAST BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	SANDY CREEK AB EAST BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	ALLIGATOR CREEK AB SANDY CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	SANDY CREEK AB ALLIGATOR CREEK	10	61	76	4.0	-1.0	20	-1	7.7	84	-1.0	-1	-1	6.0	7	0.14	0.02	-1	240	-1	-1.0	-1.0	-1	33	8	13
8.00	CALLAWAY CREEK AB EAST BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
10.00	BAYOU GEORGE AB NORTH BAY	4	72	87	35.5	0.9	115	68	8.4	84	1.3	-1	-1	7.4	22	2.14	0.04	-1	490	240	-1.0	-1.0	-1	92	-1	31
10.10	BEEFWOOD BRANCH AB BAYOU GEORG	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	BEAR CREEK AB NORTH BAY	6	71	76	7.0	1.3	40	4	4.7	52	0.7	-1	-1	7.0	21	0.99	0.01	-1	302	13	-1.0	-1.0	-1	57	-1	29
13.00	BEAR CREEK AB LITTLE BEAR CREE	16	61	75	4.9	-1.0	75	-1	6.6	77	0.9	-1	-1	6.6	5	0.73	0.03	-1	1600	-1	-1.0	-1.0	-1	25	66	20
13.10	BEAR CREEK. SOUTH FORK AB BEAR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	LITTLE BEAR CREEK AB BEAR CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.00	ECONFINA CREEK AB NORTH BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	ECONFINA CREEK AB CEDAR CREEK	197	61	86	2.0	2.0	20	4	6.7	72	1.0	-1	2	7.3	38	0.37	0.02	-1	350	40	-1.0	3.3	48	92	483	14
18.00	CEDAR CREEK AB ECONFINA CREEK	23	73	81	10.0	1.9	80	22	7.4	79	1.0	-1	-1	6.8	25	2.19	0.02	-1	-1	-1	-1.0	-1.0	-1	79	-1	10
20.00	BURNT MILL CREEK AB WEST BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
22.00	BIG CROOKED CREEK AB WEST BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
24.00	ICWW AB WEST BAY	6	71	73	32.0	1.6	120	24	6.0	72	1.5	-1	-1	8.4	29	1.29	0.01	36	64	-1	-1.0	-1.0	-1	35300	-1	35
25.00	ICWW AB EAST BAY	24	75	75	-1.0	-1.0	-1	-1	8.0	80	-1.0	-1	5	7.2	-1	0.28	0.04	-1	118	35	-1.0	-1.0	-1	-1	-1	11
25.10	GULF COUNTY CANAL AB ICWW	146	73	85	6.2	0.6	68	10	7.8	79	1.2	-1	5	7.8	57	0.41	0.05	-1	190	23	-1.0	-1.0	-1	24500	-1	21

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03140101 ST ANDREWS BAY																	
* WATER BODY TYPE: ESTUARY																	
1.00	ST JOSEPH BAY ABOVE GULF OF MEXICO	YES	GOOD	----	---.	----	-..		.	....	....	....	..				
3.00	EAST BAY ABOVE WETTAPPO CREEK	YES	UNKN	....	....	....	.	*							**	*	
7.00	EAST BAY ABOVE SANDY CREEK	YES	GOOD	---.	*--.	..--	-..	*	.	....	....	....	..		**	*	INADEQUATE BMP CONTROLS. RESIDENTIAL CONSTRUCTION SITES.
7.50	LAIRD BAYOU ABOVE EAST BAY	YES	GOOD	--*.	---.	..--	-..		.	....	....	....	..				
9.00	NORTH BAY ABOVE CALLAWAY CREEK	YES	GOOD	----	---.	*---	--*	**	0	..00	000.	.000	0.	*	**	** *	BEATTY BAYOU WAS PREVIOUSLY AFFECTED BY LYNN HAVEN WWTP WHICH HAS CONVERTED TO SPRAYFIELD. ALSO NPS RUNOFF PROBLEM.BORROW PIT AND SPRAYFIELD ARE AFFECTING BEATTY BAYOU.
9.50	WATSON BAYOU ABOVE ST ANDREWS BAY	NO	POOR	--*-	--*-	*---	-..		.	....	....	....	..	*	**		THE MILLVILLE WWTP INFLUENT WAS DIVERTED TO THE REGIONAL PLANT. THE BAYOU'S WATER QUALITY SHOULD IMPROVE. LATEST DATA ARE FROM 1979.
11.00	NORTH BAY ABOVE BAYOU GEORGE	YES	GOOD	---.	-.-.	..--	-..	**	.	....	....	....	..		**	* *	BUILD UP IN BAYOU GEORGE AREA IS AFFECTING WATER QUALITY
15.00	NORTH BAY ABOVE ST ANDREWS BAY	YES	GOOD	----	---.	.---	-*.	**	.	....	....	....	..		*	*	
19.00	NORTH BAY ABOVE CEDAR CREEK	YES	GOOD	----	----	*---	---	**	.	....	....	....	..		**	** *	BORROW PIT AND SPRAYFIELD ARE AFFECTING BEATTY BAYOU.
21.00	WEST BAY ABOVE BURNT MILL CREEK	YES	GOOD	----	---.	*---	-..	*	.	....	....	....	..		**	*	
23.00	WEST BAY ABOVE BIG CROOKED CREEK	YES	FAIR	--*-	---.	*---	-..	*	.	....	....	....	..		**	*	GOOD OVERALL QUALITY. LIMITED, OLD SAMPLES.
26.00	ST JOSEPH BAY ABOVE GULF OF MEXICO	YES	GOOD	----	----	----	-*-	*	0	..**	000.	.00*	0.		**	*	
27.00	EAST BAY ABOVE ST ANDREWS BAY	YES	GOOD	----	*---	----	-..	*	.	....	....	....	..		**	*	HIGH DDT LEVELS IN SEDIMENTS FROM UNKNOWN ORIGIN
28.00	WEST BAY ABOVE ICWW	YES	GOOD	----	----	----	--*	*	0	0-**	*-0.	*000	-.		**	*	SURROUNDED BY DEVELOPED UPLANDS.
* WATER BODY TYPE: LAKE																	
9.90	DEER POINT LAKE ABOVE NORTH BAY	YES	GOOD	----	---.	.---	-..	**	-	....	....	...-	-.		*	**	SPRAYFIELD RUNOFF.ADANDONED BORROW PIT.
19.10	DEER POINT LAKE ABOVE NORTH BAY	PARTIAL	UNKN	....	....	....	.	**							*	*	LAND FILL IN CLOSE PROXIMITY.
28.90	POWELL LAKE ABOVE GULF OF MEXICO	YES	GOOD	--**	---.	..--	-..		.	....	....	....	..				
* WATER BODY TYPE: STREAM																	
2.00	WETAPPO CREEK ABOVE EAST BAY	UNKNOWN	UNKN	....	....	....	.										
4.00	SANDY CREEK ABOVE EAST BAY	UNKNOWN	UNKN	....	....	....	.										
5.00	ALLIGATOR CREEK ABOVE SANDY CREEK	UNKNOWN	UNKN	....	....	....	.										
6.00	SANDY CREEK ABOVE ALLIGATOR CREEK	YES	GOOD	----	.--.	....	-..		.	....	....	....	..				
8.00	CALLAWAY CREEK ABOVE EAST BAY	YES	UNKN	....	....	....	.								**		WATERFRONT RESIDENTIAL CONSTRUCTION ACTIVITIES WITH INADEQUATE RUNOFF CONTROLS.
10.00	BAYOU GEORGE ABOVE NORTH BAY	YES	GOOD	*-*-	---.	....	-**	**	.	....	....	....	..		**	* *	BUILD UP IN BAYOU GEORGE AREA IS AFFECTING WATER QUALITY.
10.10	BEEFWOOD BRANCH ABOVE BAYOU GEORGE	UNKNOWN	UNKN	....	....	....	.										
12.00	BEAR CREEK ABOVE NORTH BAY	YES	GOOD	----	---.	....	-..		.	....	....	....	..			*	ACTIVE BORROW PITS.
13.00	BEAR CREEK ABOVE LITTLE BEAR CREEK	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
13.10	BEAR CREEK. SOUTH FORK ABOVE BEAR C	UNKNOWN	UNKN	....	....	....	.										
14.00	LITTLE BEAR CREEK ABOVE BEAR CREEK	UNKNOWN	UNKN	....	....	....	.										
16.00	ECONFINA CREEK ABOVE NORTH BAY	UNKNOWN	UNKN	....	....	....	.										

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
17.00	ECONFINA CREEK ABOVE CEDAR CREEK	YES	GOOD	----	----	....	--.		*	..*.	.00.	..00	00				VERY PRISTINE CREEK.
18.00	CEDAR CREEK ABOVE ECONFINA CREEK	YES	GOOD	*-*-	--..	....	-..	**	.	....	....	....	..		*	*	
20.00	BURNT MILL CREEK ABOVE WEST BAY	UNKNOWN	UNKN	....	....	....	.										
22.00	BIG CROOKED CREEK ABOVE WEST BAY	UNKNOWN	UNKN	....	....	....	.										
24.00	ICWW ABOVE WEST BAY	YES	GOOD	--**	---.	....	-..		.	....	....	....	..				
25.00	ICWW ABOVE EAST BAY	YES	GOOD	--..	---.	....	-..		.	....	....	....	..				
25.10	GULF COUNTY CANAL ABOVE ICWW	YES	GOOD	---*	---.	....	-..		0	0...	....	....	..				

LOWER ST. JOHNS RIVER BASIN

General Description of the Basin

The Lower St. Johns River is defined as the section between the Oklawaha River and the Atlantic Ocean at Jacksonville. This segment of the river is essentially an elongated lake having a low gradient and extensive floodplain. The river averages more than a mile in width downstream of Palatka and contains numerous bays and lagoons. The entire lower reach of the St. Johns River is subject to tidal influence. The low gradient in the St. Johns River combined with the effects of low flow, tides, and wind direction result in short-term reverse flows as far south as Lake Harney. Although these reverse flows may continue for several days, there is a net downstream flow approximately 75% of the time for the entire river system. The total average flow of the river is estimated at 7000 cfs. Forest land is the major land use in the lower St. Johns River basin except near Jacksonville, where more than 25% of the land use is urban. Pollution sources in the lower St. Johns River basin include urban runoff, WWTP effluent, pulp and paper mill effluent, and numerous other industrial discharges.

Specific Water Quality Problems and Pollution Sources

This assessment of the lower St. Johns River begins in the southern portion of the basin, and then moves northward to the Duval County portion of the basin. Water quality of the southern portion of the lower St. Johns River is generally good. However, there is a growing problem with runoff from row-crop agriculture and, in more developed areas, with septic tank leachate. There are also problems in tributary stream systems in this area.

The first tributary system in this area of the basin is Haw Creek/Crescent Lake/Dunns Creek which has DO and nutrient problems attributable to the swampy drainage area, agricultural runoff, and WWTP effluents. Point sources in this area include the Crescent City WWTP and the City of Bunnell WWTP. A 1975 EPA National Eutrophication Study described Crescent Lake as eutrophic and estimated that about half the nutrient load to the lake came from Haw Creek. Recent estimates of nutrient loading identified agricultural runoff as the main source of nutrient loads. Lake Disston is threatened by land clearing operations close to the shoreline and row-crop farming.

The Rice Creek tributary system located just north of Palatka arises from from swampland discharge and has low DO and pH. There is also some dairy farming in the Etonia watershed that may account for bacteria problems. The worst problem, however, is that the southern portion of Rice Creek receives a large volume of effluent from a paper mill (Georgia-Pacific) and has very low DO values (87% of the DO samples collected from 1970-1985 were below 5 mg/l in the lower portion of Rice Creek) and high nutrient and color values. The macroinvertebrate communities in the creek exhibit a low diversity having only a few highly tolerant species. Georgia-Pacific has begun a process of supersaturating their effluent with oxygen before discharging to Rice Creek. This additional treatment should alleviate some of the DO problems, although there is not yet enough data to determine that trend. Rice Creek impacts the St. Johns River both upstream and downstream of its confluence. Simms Creek has sporatic turbidity problems due to spills from upstream titanium mining operations.

The next problem area in the lower St. Johns River basin is Trout Creek (REACH 84.1) which historically received very poorly treated effluent from the Homer Smith scallop processing plant. The effluent was found to be toxic in 1985 bioassays and had a high concentration of BOD, TKN and solids, as well as elevated bacteria and metals concentrations. The plant is no longer operating and water quality should improve. There is a serious nonpoint source threat from a large development in the upper Trout Creek drainage.

The Black Creek/Peters Creek tributary system has mostly good water quality but exhibits some nutrient and BOD concentration problems probably caused by agricultural and dairy runoff. These problems are more evident in Peters Creek. The area is undergoing rapid development which is affecting the stream system with increased domestic wastewater discharge, septic tank and stormwater runoff. Julington and Durbin Creeks are undergoing some of the most rapid development in the basin. Increased siltation and an associated decrease in fish breeding grounds fish populations have been documented. DER has just begun a wasteload allocation for the numerous small WWTPs in the Julington Creek and Durbin Creek area. Both of these tributary systems drain low-gradient swampy lands into a large floodplain. The upland areas are scattered throughout the drainage thus continued development frequently requires wetland disruption.

Doctor's Lake is highly eutrophic as a result of excessive nutrient loading from historic WWTP discharge, septic tank leachage and urban runoff. The lake's poor circulation and limited hydraulic flushing further compound water quality problems. The lake was the subject of a 1975 EPA National Eutrophication Study which identified the Orange Park WWTP effluent as a significant source of nutrient loads to the lake. The effluents from the Orange Park plant and several other WWTPs were diverted from the lake in the late seventies and routed to the St. Johns River. The lake still exhibits eutrophication problems attributed to urban runoff.

The most concentrated area of water quality problems in the lower St. Johns River is found in the Duval County portion of the basin. This section of the basin is the most industrialized region in the state and one of the largest residential centers as well. Duval County has 379 permitted point source dischargers. A wide range of water quality problems are found including dissolved oxygen, nutrient, bacteria and toxics problems. Also an outbreak of Ulcerative Disease Syndrome (UDS) in a variety of fish species occurred in the Lower St. Johns River in recent years. Studies are now underway to determine whether the outbreaks of disease are related to pollution levels. A Lower St. Johns River Water Quality Review prepared by DER in 1986 presented a overview of the river's status and made recommendations for controlling domestic and industrial effluents and stormwater runoff. A brief review of the problem areas is presented below.

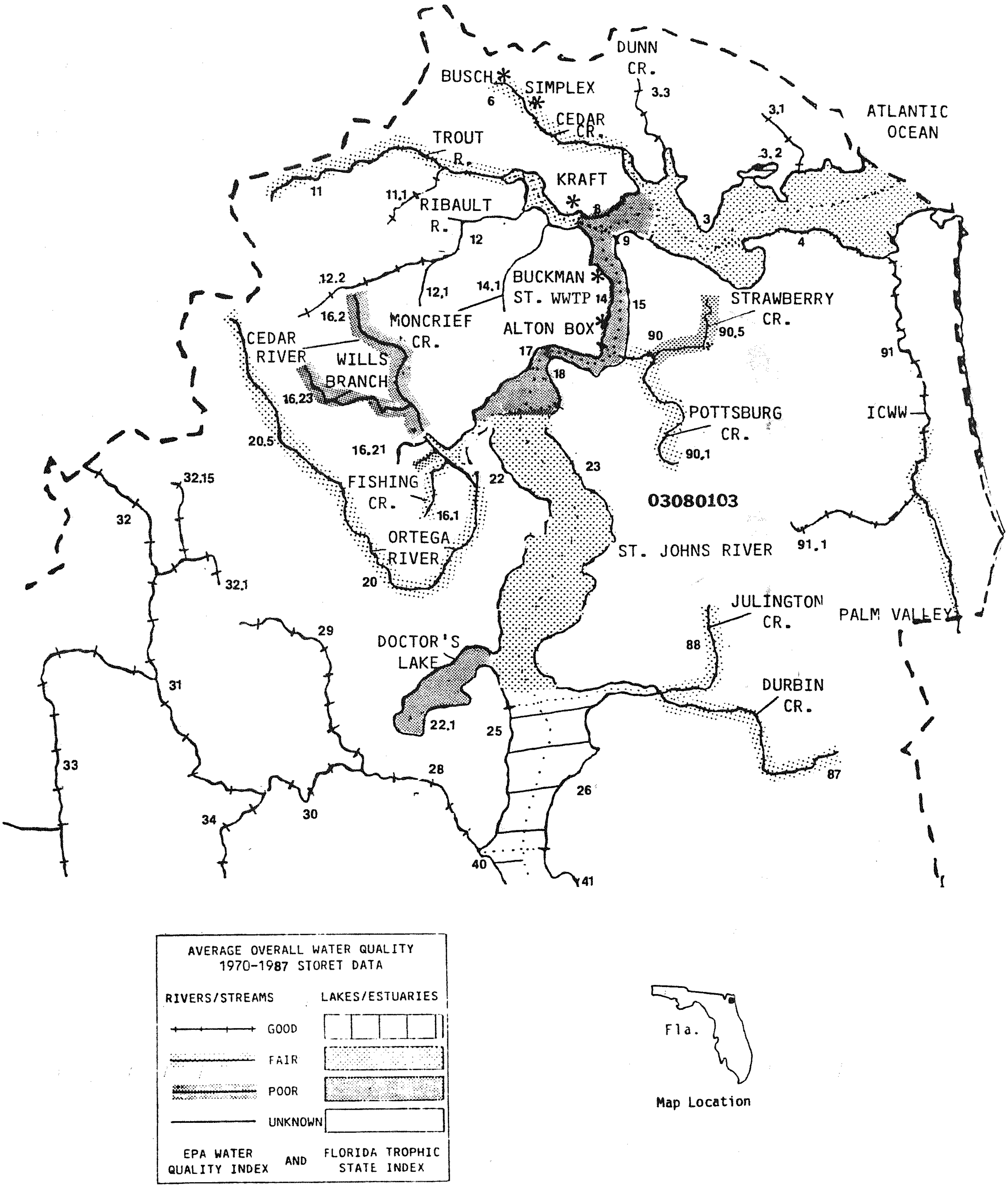
Starting in the southern portion of Duval County, one of the most notable problem areas is the Cedar River/Wills Branch/Ortega River system. Cedar River has the worst water quality in the area and frequent fishkills caused by wire, chemical and paper industry discharge as well as numerous package plants. This tributary system appears to have a negative impact on the quality of the St. Johns River itself. However, just north of this segment (at the horizontal bend in the river), the St. Johns also receives drainage from two severely polluted urban creeks (not shown on map) and the Jacksonville shipyards. Adjacent to this reach are Strawberry and Pottsburg Creeks which also exhibit poor water quality caused by pollution loads from WWTPs and stormwater runoff.

North of this tributary system, the St. Johns River receives effluent from Jacksonville's regional WWTP (Buckman Street WWTP) discharging 52 MGD, and Alton Box and Packaging Corporation with a total discharge of 14 MGD. The Buckman plant also treats some industrial wastes which cause occasional upsets in the treatment process. The Ribault River, lower Trout River and Moncrief Creek, probably the second worst tributary system after Cedar River, also empty into the St. Johns River a few miles north of this area. Downstream from the confluence of Trout River, the St. Johns River receives paper mill effluent (Kraft Paper Company at 20 MGD) and is further affected by Broward River and Dunn Creek. These tributaries, although not as severely degraded as the previously mentioned systems, exhibit low DO values and high concentrations of nutrients and BOD from domestic and industrial point sources.

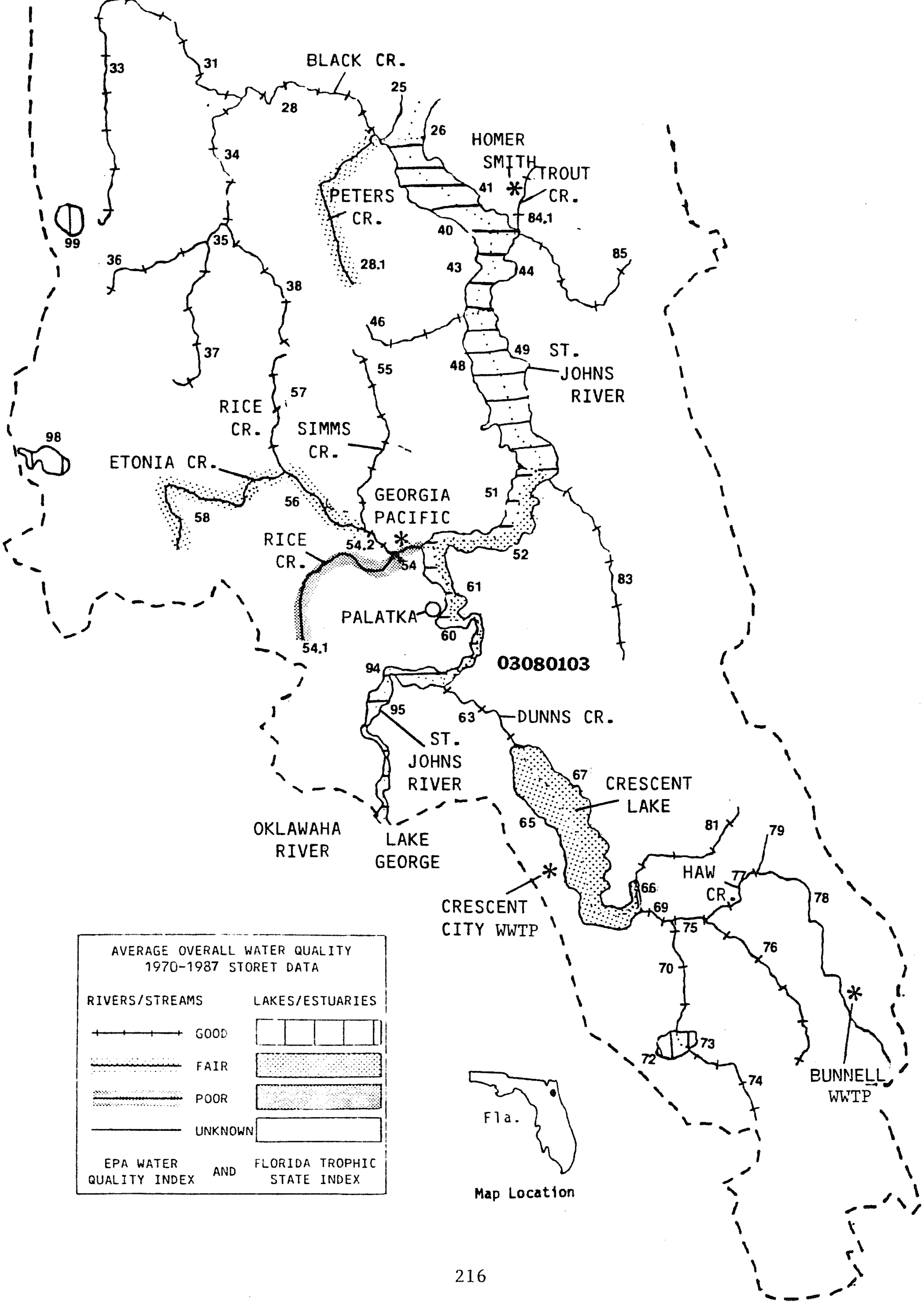
In summary, the southern portion of the Lower St. Johns Basin generally exhibits good to fair water quality. With the exception of one tributary system with poor water quality due to a point source, the major sources of pollution are runoff from rangelands and construction sites. On the contrary, the Duval County portion of the basin generally has poor water quality. Both domestic and industrial point sources are major contributers to the problem as well as urban stormwater. For several years it has been a recognized fact that the tributary systems in this area are seriously degraded. However, more recently there has been growing concern over the river itself. Biological data indicate poor diversities and low density. Water quality trends for most of the river reaches indicate degradation problems. However, there is improvement of the river's water quality near its mouth due to the flushing effects of the tides.

The 1987 Florida Legislature passed the Surface Water Improvement and Management (SWIM) Act which will provide funds to the state's Water Management Districts to restore or preserve some of the critically threatened water bodies. The Lower St. Johns River is one of the targeted sites. Specific plans have not yet been established by the District. However, the City of Jacksonville Bio-Environmental Services Division (BES) has adopted a "Regional Sewage Utility Rule" which is designed to facilitate the centralization of small WWTPs, package plants and septic tanks into about 30 regional plants by 1992. In addition, funds are available for a 3-4 year study to produce a Jacksonville Stormwater Master Plan. Finally, BES has a nonpoint source program to develop regional rules not specifically addressed by the state's rule and provide additional enforcement.

ST. JOHNS RIVER BASIN (LOWER)



ST. JOHNS RIVER BASIN (CONT)



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03080103 ST JOHNS (LOW)																										
* WATER BODY TYPE: ESTUARY																										
3.00	ST JOHNS RIVER AB ICWW	250	68	87	8.0	1.1	40	28	6.2	78	1.1	-1	22	7.6	89	0.85	0.10	4	333	80	2.4	-1.0	-1	24750	-1	49
4.00	ST JOHNS RIVER AB ICWW	24	80	87	8.9	1.5	31	24	6.8	85	1.1	-1	-1	7.5	95	1.03	0.12	5	45	70	4.2	-1.0	-1	24750	-1	60
8.00	ST JOHNS RIVER AB CEDAR CREEK	250	68	87	12.5	0.8	60	24	6.1	76	1.5	-1	15	7.5	82	0.97	0.15	4	805	200	1.8	-1.0	-1	16000	-1	60
9.00	ST JOHNS RIVER AB ST JOHNS RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	ST JOHNS RIVER AB TROUT RIVER	169	66	87	10.0	0.7	58	26	6.3	76	1.1	150	25	7.5	76	1.10	0.13	4	850	185	1.9	-1.0	-1	12500	-1	56
15.00	ST JOHNS RIVER AB TROUT RIVER	41	86	87	12.1	0.9	68	30	7.8	86	1.4	-1	-1	7.5	-1	1.02	0.16	6	900	235	2.0	-1.0	-1	15540	-1	55
17.00	ST JOHNS RIVER AB ST JOHNS RIV	3761	59	87	10.0	0.6	75	29	6.8	80	1.1	147	17	7.5	74	1.17	0.15	7	790	185	1.7	0.2	-1	6140	25000	59
18.00	ST JOHNS RIVER AB ARLINGTON RI	10	86	87	13.2	0.9	88	27	8.1	88	1.4	-1	-1	7.7	-1	1.27	0.16	7	260	155	1.4	-1.0	-1	11050	-1	56
22.00	ST JOHNS RIVER AB ORTEGA RIVER	149	71	87	7.0	0.7	90	18	7.2	92	3.1	63	15	8.2	66	1.23	0.15	11	80	37	1.9	-1.0	-1	1875	-1	67
23.00	ST JOHNS RIVER AB ST JOHNS RIV	32	75	87	10.6	0.9	95	20	7.2	87	1.4	-1	-1	7.5	-1	1.09	0.15	7	175	70	2.2	-1.0	-1	6310	-1	56
* WATER BODY TYPE: LAKE																										
22.10	DOCTORS LAKE AB ST JOHNS RIVER	118	71	86	6.0	0.7	90	18	7.0	86	3.4	62	13	8.0	61	1.33	0.11	32	79	10	0.9	-1.0	-1	1800	0	65
65.00	CRESCENT LAKE AB DUNNS CREEK	107	71	85	3.7	0.6	183	10	7.1	85	2.0	45	31	7.4	28	1.41	0.14	13	103	18	2.0	-1.0	-1	358	-1	65
66.00	CRESCENT LAKE AB HAW CREEK	1	83	83	2.0	0.4	320	7	0.8	10	1.8	97	-1	6.7	-1	0.11	0.21	-1	1300	1300	-1.0	-1.0	-1	510	-1	50
67.00	CRESCENT LAKE AB DUNNS CREEK	66	71	85	3.7	0.6	192	7	8.1	92	2.2	39	30	7.4	25	1.32	0.10	31	64	4	2.7	-1.0	-1	345	-1	67
72.00	LAKE DISSTON AB LITTLE HAW CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
73.00	LAKE DISSTON AB LITTLE HAW CRE	15	76	86	2.0	0.5	313	2	7.8	86	0.7	-1	32	5.5	4	0.95	0.02	3	88	2	2.6	-1.0	-1	56	-1	53
98.00	LAKE GENEVA AB BROOKLYN LAKE	83	57	84	1.6	2.3	5	1	8.6	99	1.1	0	4	6.4	5	0.27	0.02	2	7	4	-1.0	-1.0	-1	54	-1	29
99.00	KINGSLEY LAKE AB BLACK CR, NOR	82	57	84	1.0	3.2	5	2	8.4	101	1.0	10	6	6.8	9	0.42	0.04	2	29	5	1.6	-1.0	-1	62	-1	31
* WATER BODY TYPE: STREAM																										
3.10	CLAPBOARD CREEK AB FITZPATRICK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.20	BROWNS CREEK AB FT GEORGE RIVE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.30	DUNN CREEK AB ST JOHNS RIVER	9	72	87	6.4	1.0	50	28	8.6	89	1.3	-1	-1	7.5	-1	0.74	0.12	7	420	80	1.7	-1.0	-1	13200	-1	45
6.00	CEDAR CREEK (OFF BROWARD RIVER	21	65	85	5.5	0.8	70	53	6.0	75	1.8	-1	-1	7.2	57	0.72	0.22	33	1800	130	2.0	-1.0	-1	9700	394	57
11.00	TROUT RIVER AB RIBAULT RIVER	16	66	76	-1.0	-1.0	160	-1	5.5	71	4.2	-1	-1	6.9	62	0.71	0.14	-1	-1	3215	-1.0	-1.0	-1	195	0	69
11.10	NINEMILE CREEK AB TROUT RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	RIBAULT RIVER AB TROUT RIVER	110	71	85	16.0	1.0	90	16	5.7	65	4.0	-1	51	7.4	-1	1.85	0.53	28	900	700	2.0	-1.0	-1	1190	-1	65
12.10	LITTLE SIXMILE CREEK AB SIXMIL	2	71	71	14.0	-1.0	-1	19	2.5	-1	22.0	-1	-1	7.9	-1	-1.00	-1.00	-1	214	-1	-1.0	-1.0	-1	-1	-1	69
12.20	SIXMILE CREEK AB RIBAULT RIVER	3	71	75	6.0	-1.0	-1	18	1.9	-1	7.7	-1	-1	7.5	-1	-1.00	-1.00	-1	1500	114	-1.0	-1.0	-1	-1	-1	68
14.10	MONCRIEF CREEK AB RIBAULT RIVE	9	71	76	15.5	-1.0	-1	18	3.8	81	8.3	-1	-1	8.0	-1	-1.00	1.20	-1	235	700	-1.0	-1.0	-1	-1	-1	69
16.10	FISHING CREEK AB	8	71	79	16.0	-1.0	-1	12	6.0	74	4.0	-1	-1	7.1	-1	1.27	0.80	-1	2000	500	-1.0	-1.0	-1	310	-1	60
16.20	CEDAR RIVER(OFF ORTEGA RIVER)	150	71	85	19.0	0.6	100	14	4.7	56	4.8	51	15	7.1	88	1.72	0.47	62	9000	4900	0.9	-1.0	-1	425	-1	68
16.21	BUTCHER PEN CREEK AB FISHING C	5	71	79	22.0	-1.0	-1	14	5.7	82	11.0	-1	-1	7.6	-1	1.83	3.28	-1	12638	300	-1.0	-1.0	-1	245	-1	64
16.22	WILLIAMSON CREEK AB BUTCHER PE	18	71	79	11.0	-1.0	75	29	5.8	69	2.0	34	14	7.2	89	0.79	1.32	-1	9900	2300	-1.0	-1.0	-1	301	0	61
16.23	WILLS BRANCH AB	16	71	79	24.0	-1.0	-1	10	3.6	43	8.1	49	-1	7.0	-1	2.22	0.82	-1	170	350	-1.0	-1.0	-1	243	-1	65
20.00	ORTEGA RIVER AB ORTEGA RIVER	327	56	87	5.3	0.8	110	14	5.7	69	2.0	66	18	7.3	60	1.21	0.32	6	1045	245	2.0	1.3	6	1075	7	54
20.50	MCGIRTS CREEK AB ORTEGA RIVER	24	71	79	22.0	0.6	-1	6	5.7	60	0.8	-1	-1	6.2	-1	1.54	0.25	-1	1350	110	-1.0	-1.0	-1	93	-1	44
24.10	CUNNINGHAM CREEK AB ST JOHNS R	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
25.00	ST JOHNS RIVER AB ST JOHNS RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
26.00	ST JOHNS RIVER AB DURBIN CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L   -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
28.00	BLACK CREEK AB BLACK CREEK(ST	103	70	86	3.3	0.9	185	4	4.8	52	1.3	49	21	6.3	12	0.69	0.17	0	790	49	2.3	-1.0	-1	74	-1	43
28.10	PETERS CREEK AB BLACK CREEK	28	74	86	5.0	0.8	142	4	4.3	58	1.1	38	16	6.3	22	1.03	0.36	4	8950	700	-1.0	-1.0	-1	65	-1	54
29.00	LITTLE BLACK CREEK AB BLACK CR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
30.00	BLACK CREEK AB LITTLE BLACK CR	23	70	81	3.2	1.1	180	3	5.3	54	0.6	44	-1	5.9	14	1.02	0.17	-1	460	33	1.9	-1.0	-1	72	-1	40
31.00	BLACK CREEK, NORTH FORK AB BLA	123	57	81	2.3	1.1	120	2	5.2	64	1.4	25	21	6.2	18	0.68	0.11	1	1200	110	1.4	3.3	-1	84	69	37
32.00	YELLOW WATER CREEK AB BLACK CR	21	56	81	6.5	-1.0	30	-1	6.2	67	-1.0	-1	-1	6.6	28	0.31	0.05	-1	-1	-1	-1.0	-1.0	-1	102	0	26
32.10	SAL TAYLOR CREEK AB YELLOW WAT	1	71	71	3.9	-1.0	80	10	8.7	-1	2.1	-1	-1	6.8	50	-1.00	0.49	-1	-1	-1	-1.0	-1.0	-1	-1	-1	45
32.15	ROWELL CREEK AB SAL TAYLOR CRE	1	71	71	5.2	-1.0	60	26	10.1	-1	2.5	-1	-1	7.2	54	-1.00	0.88	-1	-1	-1	-1.0	-1.0	-1	-1	-1	54
33.00	BLACK CREEK, NORTH FORK AB YEL	167	57	81	1.9	0.8	60	2	8.2	88	0.9	27	12	6.3	10	1.09	0.09	-1	490	130	-1.0	-1.0	-1	123	-1	25
33.10	BOGGY BRANCH AB BLACK CR, NORT	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
34.00	BLACK CREEK, SOUTH FORK AB BLA	181	57	81	2.0	1.1	140	3	7.0	79	1.2	27	18	5.9	8	0.68	0.15	1	1300	330	3.0	3.2	-1	41	53	33
35.00	BLACK CREEK, SOUTH FORK AB GRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
36.00	BLACK CREEK, SOUTH FORK AB ATE	18	56	81	3.2	-1.0	70	-1	7.9	88	-1.0	-1	-1	6.1	4	0.36	0.08	-1	-1	-1	-1.0	-1.0	-1	35	31	15
37.00	ATES CREEK AB BLACK CR, SOUTH	17	70	81	1.6	0.8	200	5	6.9	73	1.1	48	28	5.2	4	1.10	0.20	-1	1300	130	-1.0	-1.0	-1	43	-1	38
38.00	GREENS CREEK AB BLACK CR, SOUT	37	57	81	2.0	0.6	180	5	5.5	57	1.0	48	16	5.9	4	0.85	0.07	-1	1100	110	-1.0	-1.0	-1	46	1	42
40.00	ST JOHNS RIVER AB BLACK CREEK	47	75	85	22.0	0.9	-1	-1	7.9	88	-1.0	-1	-1	7.6	-1	1.14	0.10	-1	-1	-1	-1.0	-1.0	-1	788	-1	30
41.00	ST JOHNS RIVER AB ST JOHNS RIV	30	72	87	7.5	0.8	120	15	7.3	83	1.4	-1	-1	7.4	55	1.22	0.14	15	160	40	1.7	0.2	8	720	-1	39
43.00	ST JOHNS RIVER AB ST JOHNS RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
44.00	ST JOHNS RIVER AB SIXMILE CREE	11	72	81	4.2	0.6	70	15	6.4	82	2.0	810	18	7.4	-1	0.98	0.11	-1	15	8	2.2	-1.0	-1	894	-1	38
46.00	CLARKES CREEK AB CLARKES CR(ST	18	58	81	8.9	-1.0	50	67	8.0	84	0.6	15	-1	6.9	34	0.36	0.13	-1	3000	134	-1.0	-1.0	-1	146	3	41
48.00	ST JOHNS RIVER AB CLARKES CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
49.00	ST JOHNS RIVER AB ST JOHNS RIV	6	72	72	4.0	-1.0	-1	-1	6.5	84	1.4	-1	-1	7.7	-1	-1.00	-1.00	-1	20	8	-1.0	-1.0	-1	930	-1	25
51.00	ST JOHNS RIVER AB ST JOHNS RIV	140	72	86	4.0	0.8	100	8	7.9	85	2.0	51	17	7.7	82	1.34	0.11	9	320	33	2.6	1.5	7	815	0	36
52.00	ST JOHNS RIVER AB DEEP CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
54.00	RICE CREEK AB RICE CR (ST JOHN	96	67	86	6.5	0.3	360	6	1.6	20	3.0	134	41	7.1	64	1.56	0.33	1	1300	170	1.8	3.0	6	530	400	68
54.10	RICE CREEK AB SIMMS CREEK	156	70	86	4.3	0.5	210	4	5.2	59	1.7	82	15	7.0	40	0.90	0.21	1	1900	220	2.6	-1.0	5	185	-1	53
54.20	SIMMS CREEK AB RICE CREEK	5	78	83	2.3	2.2	85	2	7.5	81	0.7	19	-1	6.7	-1	0.68	0.25	-1	790	130	-1.0	-1.0	-1	159	-1	25
55.00	SIMMS CREEK AB ETONIA CREEK	12	81	86	8.0	0.5	195	1	6.3	68	0.9	120	-1	5.5	8	0.55	0.08	0	2200	140	-1.0	-1.0	-1	49	-1	25
56.00	ETONIA CREEK AB SIMMS CREEK	4	78	80	2.5	-1.0	200	6	4.3	47	1.3	47	32	6.5	-1	0.95	0.16	-1	4900	3600	-1.0	-1.0	-1	135	-1	54
57.00	RICE CREEK AB ETONIA CREEK	4	78	80	4.5	0.7	200	5	4.5	50	3.0	46	30	5.7	-1	0.54	0.04	-1	27175	1025	-1.0	-1.0	-1	259	-1	43
58.00	ETONIA CREEK AB RICE CREEK	8	78	80	3.5	0.7	250	5	5.0	55	1.6	43	26	6.5	-1	1.25	0.10	-1	3200	390	-1.0	-1.0	-1	129	-1	53
60.00	ST JOHNS RIVER AB ETONIA CREEK	143	62	86	4.0	0.5	188	7	6.3	78	2.0	83	16	7.6	70	1.13	0.10	-1	790	30	-1.0	-1.0	-1	895	7900	42
61.00	ST JOHNS RIVER AB ST JOHNS RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
63.00	DUNNS CREEK AB DUNNS CR(ST JOH	111	73	86	2.7	0.8	100	9	7.0	81	1.6	59	17	7.4	67	1.33	0.09	15	500	43	2.5	0.9	8	710	0	39
69.00	HAW CREEK AB HAW CR (CRESCENT	12	79	86	2.0	0.6	323	4	4.3	49	1.3	100	-1	6.2	9	1.02	0.11	1	330	130	-1.0	-1.0	-1	181	-1	46
70.00	LITTLE HAW CREEK AB HAW CREEK	35	55	83	1.6	-1.0	240	-1	6.2	72	-1.0	-1	-1	4.7	2	0.64	0.05	-1	-1	-1	-1.0	-1.0	-1	75	7	33
74.00	LITTLE HAW CREEK AB LAKE DISST	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
75.00	HAW CREEK AB LITTLE HAW CREEK	15	73	79	1.4	0.4	450	8	1.6	17	2.0	106	49	5.3	-1	1.74	0.06	-1	130	165	-1.0	-1.0	-1	80	-1	49
76.00	MIDDLE HAW CREEK AB HAW CREEK	4	79	83	2.7	0.3	400	12	4.5	43	1.2	124	44	4.5	-1	1.69	0.18	-1	2050	93	-1.0	-1.0	-1	92	-1	53
77.00	HAW CREEK AB MIDDLE HAW CREEK	11	75	83	2.7	0.3	375	4	3.7	44	1.5	110	48	5.6	-1	0.75	0.15	2	2800	175	-1.0	-1.0	10	284	1	52
78.00	HAW CREEK, BLACK BRANCH CANAL	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
79.00	HAW CREEK AB HAW CR, BLACK BR	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
81.00	BULL CREEK AB BULL CR(CRESNT L	10	73	74	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	1.52	0.41	-1	-1	-1	-1.0	-1.0	-1	-1	-1	68
83.00	DEEP CREEK AB DEEP CR (ST JOHN	9	84	86	-1.0	0.5	80	4	3.0	34	1.1	-1	-1	7.1	87	0.88	0.36	1	-1	-1	-1.0	-1.0	-1	1590	-1	44
84.10	TROUT CREEK AB SIXMILE CREEK	7	85	86	-1.0	-1.0	168	4	5.5	58	2.1	-1	-1	6.9	55	1.28	0.12	13	-1	-1	-1.0	-1.0	-1	646	-1	47

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L   -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	SAMPLE RECORD BEG YR	SAMPLE RECORD END YR	WATER CLARITY TURB	WATER CLARITY SD	WATER CLARITY COLOR	TSS	DISSOLVED OXYGEN DO	DISSOLVED OXYGEN %SAT	OXYGEN DEMAND BOD	OXYGEN DEMAND COD	OXYGEN DEMAND TOC	PH ALKALINITY PH	PH ALKALINITY ALK	TROPHIC STATUS NITRO	TROPHIC STATUS PHOS	TROPHIC STATUS CHLA	COLIFORM TOTAL	COLIFORM FECL	SPECIES DIVERSITY NAT	SPECIES DIVERSITY ART	SPECIES DIVERSITY BECK	COND	FLOW	WQI
85.00	SIXMILE CREEK AB SIXMILE CR(ST	9	84	86	-1.0	-1.0	125	2	4.8	52	1.5	-1	-1	7.0	70	1.03	0.11	8	-1	-1	-1.0	-1.0	-1	400	-1	48
87.00	DURBIN CREEK AB JULINGTON CREE	19	66	86	3.0	0.7	135	2	3.2	36	2.1	54	26	6.5	54	1.01	0.14	-1	1100	140	-1.0	-1.0	-1	280	0	55
88.00	JULINGTON CREEK AB DURBIN CREE	103	65	87	5.0	0.8	120	10	6.0	70	1.6	25	27	7.2	65	0.86	0.19	10	280	58	2.1	-1.0	6	865	4	45
90.00	ARLINGTON RIVER AB ARLINGTON R	149	68	87	11.0	0.7	70	22	6.8	81	1.3	-1	27	7.5	75	1.25	0.17	15	1800	698	1.9	-1.0	-1	6988	-1	50
90.10	POTTSBURG CREEK AB ARLINGTON R	9	71	85	13.3	0.8	105	18	7.4	75	4.0	-1	-1	7.5	-1	0.49	0.43	48	4900	800	2.6	-1.0	-1	6638	-1	58
90.50	STRAWBERRY CREEK AB RED BAY CR	9	71	75	10.5	-1.0	70	15	3.2	63	7.0	-1	7	7.5	83	0.93	4.10	-1	7400	500	-1.0	-1.0	-1	13200	-1	55
91.00	ICWW (PABLO CREEK) AB ST JOHNS	305	71	87	7.0	0.9	75	35	5.7	70	1.3	-1	6	7.5	100	0.61	0.17	3	490	130	2.0	-1.0	-1	29450	-1	48
91.10	PABLO CREEK AB ICWW (PABLO CRE	18	71	81	8.8	-1.0	120	25	5.4	62	1.3	-1	20	7.0	44	0.75	0.16	-1	3373	-1	-1.0	-1.0	-1	219	19	42
94.10	CROSS FLORIDA BARGE CANAL AB S	92	68	85	5.0	2.8	50	6	6.5	77	1.1	-1	10	7.7	84	0.56	0.03	4	50	0	-1.0	-1.0	-1	400	-1	26
95.00	ST JOHNS RIVER AB DUNNS CREEK	3	74	75	39.0	-1.0	59	12	9.1	99	2.8	-1	-1	7.8	82	1.52	0.08	-1	185	15	-1.0	-1.0	-1	1121	-1	40

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03080103 ST JOHNS (LOW)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
* WATER BODY TYPE: ESTUARY																	
3.00	ST JOHNS RIVER ABOVE ICWW	PARTIAL	GOOD	--*-	----	----	-..	*	0	000-	0--.	0000	-.	**	* **	**	BIOASSAY OF JAX PAPER CO. RECEIVES JACKSONVILLE RUNOFF. IMPROVED WATER QUALITY IN PROXIMITY TO THE MOUTH OF THE RIVER.UNTREATED URBAN RUNOFFF AND HEAVY INDUSTRIAL RUNOFF ARE CONTRIBUTING FACTORS.
4.00	ST JOHNS RIVER ABOVE ICWW	PARTIAL	POOR	--*-	----	----	-*.	*	0	...-	000.	..0.	0.		* **	**	WATER QUALITY IMPROVES NEAR THE MOUTH OF THE RIVER.UNTREATED URBAN RUNOFF AND HEAVY INDUSTRIAL CONTRIBUTE TO THE PROBLEM.
8.00	ST JOHNS RIVER ABOVE CEDAR CREEK	NO	POOR	--*-	----	---*	-*.	*	0	0-00	0--.	0000	-.	**	* **	****	IMPROVED DO AND BACTERIA. INTENSIVE SURVEY 1981 NEWCASTLE CREEK. RECEIVES RIBAULT RIVER AND JAX RUNOFF.UNTREATED URBAN RUNOFF.
9.00	ST JOHNS RIVER ABOVE ST JOHNS RIVER	NO	UNKN	....	....	....	.	*							* **	**	HEAVY INDUSTRIAL RUNOFF CONTRIBUTES TO THE PROBLEM.
14.00	ST JOHNS RIVER ABOVE TROUT RIVER	NO	FAIR	--*-	*---	---*	-**	*	0	00*0	000.	*000	-.	**	* **	****	WATER QUALITY PROBLEMS RELATED TO INCREASED TURBIDITY,BACTERIA,TP, AND METALS CONCENTRATIONS.
15.00	ST JOHNS RIVER ABOVE TROUT RIVER	NO	FAIR	--*-	----	---*	-*.	*	*	-0**	*-0.	**0-	-.	**	* **	****	RECENT TRENDS INDICATE PROBLEMS WITH METALS,TURBIDITY,AND TP CONCENTRATIONS.
17.00	ST JOHNS RIVER ABOVE ST JOHNS RIVER	NO	FAIR	--*-	*--*	-*-*	-*.	*	0	0000	0--.	00-0	-.	**	* **	****	IMPROVED BACTERIA IN MID 1970'S. THREE POINT SOURCES AND UPSTREAM IMPACTS.RECENT IMPROVEMENT IN DO,BOD,AND TN HAS BEEN OBSERVED.
18.00	ST JOHNS RIVER ABOVE ARLINGTON RIVE	NO	FAIR	--*-	---*	---*	-*.	*	.	....	....	....	..	**	* **	****	METALS,TURBIDITY,AND TP CONCENTRATIONS ARE ELEVATED.
22.00	ST JOHNS RIVER ABOVE ORTEGA RIVER	PARTIAL	POOR	----	----	---*	-**	***	-	0**0	--0.	*---	-.	*	* **	****	WATER QUALITY PROBLEMS CREATED BY INCREASED TURBIDITY,BACTERIA,AND TP CONCENTRATIONS.SHORELINE DEVELOPMENT HAS INDUCED REDUCED FLOW.
23.00	ST JOHNS RIVER ABOVE ST JOHNS RIVER	PARTIAL	FAIR	--*-	----	---*	-*.	*	*	00*0	*-0.	*00-	-.		* **	**	ST. JOHNS RIVER ABOVE JACKSONVILLE HAS FAIRLY GOOD QUALITY WITH SLIGHT SECCHI DEPTH, TOTAL PHOSPHORUS PROBLEMS.
* WATER BODY TYPE: LAKE																	
22.10	DOCTORS LAKE ABOVE ST JOHNS RIVER	NO	FAIR	---*	*--*	----	-..	***	0	00*0	000.	0000	0.		**	*	NES SURVEY FOUND EUTROPHIC CONDITIONS.ORANGE PARK WWTP MOVED EFFLUENT IN 1975,BUT THERE WAS NO SIGNIFICANT IMPROVEMENT.DOCTORS LAKE HAS POOR QUALITY DUE TO NPS RUNOFF AND POOR CIRCULATION.
65.00	CRESCENT LAKE ABOVE DUNNS CREEK	PARTIAL	FAIR	----	*---	-*-*	-..	**	0	000-	000.	.*00	0.	*	* *	*	NES STUDY FOUND ONLY 2% NUTRIENT INPUT FROM CRESTVIEW WWTP BUT HALF FROM HAW CREEK WHICH RECEIVES BUNNEL WWTP.ALGAL BLOOM PROBLEM ON ENTIRE LAKE REPORTED.
66.00	CRESCENT LAKE ABOVE HAW CREEK	PARTIAL	GOOD	----	-**.	.*-*	-..	**	.	....	....	....	..	*	*	*	NOT ENOUGH DATA FOR ASSESSMENT.
67.00	CRESCENT LAKE ABOVE DUNNS CREEK	PARTIAL	FAIR	----	*---	-*--	-..	**	0	0.*0	000.	.*00	0.	*	* *	*	NES STUDY FOUND ONLY 2% INPUT FROM CRESTVIEW WWTP,BUT HALF FROM HAW CREEK WHICH RECEIVES EFFLUENT FROM THE BUNNEL WWTP.ALGAL BLOOM PROBLEM ON ENTIRE LAKE REPORTED.
72.00	LAKE DISSTON ABOVE LITTLE HAW CREEK	YES	UNKN	....	....	....	.								*		LAND CLEARING OPERATIONS UP TO LAKE SHORE. ROW CROP FARMING ACTIVITIES ONGOING.
73.00	LAKE DISSTON ABOVE LITTLE HAW CREEK	YES	GOOD	----	*---	-*--	-..		.	....	....	....	..		*		LAND CLEARING OPERATIONS UP TO LAKE SHORE. ROW CROP FARMING.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS WQ	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
98.00	LAKE GENEVA ABOVE BROOKLYN LAKE	YES	GOOD	----	---.	----	-..		0	0*0.	-*0.	.-.0	+.		*	*	BEACH MAINTENANCE CAUSING WATER QUALITY PROBLEMS. DECLINING WATER TABLE.
99.00	KINGSLEY LAKE ABOVE BLACK CR, NORTH	YES	GOOD	----	----	----	-..	*	0	**0*	000.	.0.*	+.		*	*	LAND CLEARING AND DEVLOPMENT ACTIVITIES IN PROXIMITY TO THE LAKE.
* WATER BODY TYPE: STREAM																	
3.10	CLAPBOARD CREEK ABOVE FITZPATRICK C	YES	UNKN	....	....	....	.										
3.20	BROWNS CREEK ABOVE FT GEORGE RIVER	YES	UNKN	....	....	....	.	*							* **	**	HEAVY INDUSTRIAL RUNOFF,UNTREATED URBAN RUNOFF AND THE PRESENCE OF THE NORTH LANDFILL CONSTITUTE A POTENTIAL THREAT TO WATER QUALITY.
3.30	DUNN CREEK ABOVE ST JOHNS RIVER	YES	FAIR	--**	----	....	-*.		.	....	....	....	..		* **	*	
6.00	CEDAR CREEK (OFF BROWARD RIVER) ABO	PARTIAL	FAIR	--**	----	....	--.	*	.	....	....	....	..		* *		PROBLEMS ASSOCIATED WITH TURBIDITY,BACTERIA AND TP CONCENTRATIONS. NATURALLY HIGH CONDUCTIVITY.DAIRY FARM & COMMERCIAL AIRPORT OPERATE IN THE VICINITY.
11.00	TROUT RIVER ABOVE RIBAULT RIVER	PARTIAL	POOR	--.-	*-*.	....	...		.	....	....	....	..		* *		WATER QUALITY DECLINE DUE TO BOD AND BACTERIA PROBLEMS.DAIRY OPERATIONS CONTRIBUTE TO THE PROBLEM.
11.10	NINEMILE CREEK ABOVE TROUT RIVER	YES	UNKN	....	....	....	.								*		
12.00	RIBAULT RIVER ABOVE TROUT RIVER	NO	POOR	*---	*-*-	....	-..		.	....	....	....	..	**	**	*	INTENSIVE SURVEY AND WLA FOR 1986: 16 DISCHARGERS INTO SIXMILE CREEK AND RIBAULT RIVER. SOME SMALL WWTP'S WILL HAVE TO UPGRADE AND CONTROL NONPOINT SOURCES.EXISTING INDUSTRIAL AND RESIDENTIAL LAND USES.
12.10	LITTLE SIXMILE CREEK ABOVE SIXMILE	NO	POOR	.-*.	**-.	....	..*		.	....	....	....	..				OLD DATA ,BUT EXTENSIVE PROBLEMS NOTED.
12.20	SIXMILE CREEK ABOVE RIBAULT RIVER	YES	POOR	.--.	**-.	....	...		.	....	....	....	..		*	*	PAST PROBLEMS WERE ASSOCIATED WITH BOD AND DO.CURRENT DATA NOT AVAILABLE.EXISTING INDUSTRIAL & RESIDENTIAL LAND USES.
14.10	MONCRIEF CREEK ABOVE RIBAULT RIVER	NO	POOR	*--.	***.	....	-.-		.	....	....	....	..		**		OLD DATA,BUT EXTENSIVE PROBLEMS NOTED.
16.10	FISHING CREEK ABOVE	PARTIAL	POOR	*---	*-*.	....	*..		.	....	....	....	..	**	*	*	SEVEN POINT SOURCES AND THREE SPECIAL STUDIES. VIOLATIONS FOUND AND WLA ISSUED IN 1984.EXISTING INDUSTRIAL & RESIDENTIAL LAND USES.
16.20	CEDAR RIVER(OFF ORTEGA RIVER) * ABO	NO	POOR	*-*-	*-**	....	--*	*	0	**0-	-**.	.0--	0.	**	* **	* *	THIRTEEN SPECIAL STUDIES WITH 41 DISCHARGERS. FOUND DO, COLIFORM AND AMMONIA VIOLATIONS AND TOXIC EFFLUENTS.INTENSE INDUSTRIAL COMPLEX RUNOFF IS A FACTOR.
16.21	BUTCHER PEN CREEK ABOVE FISHING CRE	NO	POOR	*-*-	*-*.	....	-..		.	....	....	....	..	**	*	*	1984 INTENSIVE SURVEY STUDIED THIS AREA WHICH HAS DO AND NUTRIENT PROBLEMS.EXISTING INDUSTRIAL & RESIDENTIAL LAND USES.
16.22	WILLIAMSON CREEK ABOVE BUTCHER PEN	PARTIAL	POOR	*-*-	--*.	....	-..		.	....	....	....	..	**			1984 INTENSIVE SURVEY STUDIED THIS AREA WHICH HAS BACTERIA AND NUTRIENT PROBLEMS.
16.23	WILLS BRANCH ABOVE	NO	POOR	*-*-	**-.	....	-..		.	....	....	....	..	**	*	*	SIX POINT SOURCES AND THREE SPECIAL STUDIES. DO, AMMONIA, AND RESIDUAL CHLORINE VIOLATIONS. NO DISCHARGE ISSUED IN 1984.EXISTING INDUSTRIAL & RESIDENTIAL LAND USES.
20.00	ORTEGA RIVER ABOVE ORTEGA RIVER	PARTIAL	FAIR	----	---*	....	-*.		-	0-0-	000.	00--	-.	**			THERE ARE 21 DISCHARGERS, EPA IS REVIEWING WLA. THERE WILL BE WATER QUALITY PROBLEMS EVEN WITHOUT DISCHARGERS. DER RECOMMENDS NO DISCHARGE.RECENT IMPROVEMENT IN TRENDS RELATED TO FECAL COLIFORM,TSS AND NUTRIENTS.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
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REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
20.50	MCGIRTS CREEK ABOVE ORTEGA RIVER	PARTIAL	GOOD	--*-	---.	....	-.*		.	....	....	....	..		**	*	INCREASED TURBIDITY HAS CAUSED A DECLINE IN WATER QUALITY.
24.10	CUNNINGHAM CREEK ABOVE ST JOHNS RIV	UNKNOWN	UNKN	....	....	....	.										
25.00	ST JOHNS RIVER ABOVE ST JOHNS RIVER	YES	UNKN	....	....	....	.	***							* **	**	SHORELINE DEVELOPMENT CONSTITUTES A THREAT TO WATER QUALITY.
26.00	ST JOHNS RIVER ABOVE DURBIN CREEK	YES	UNKN	....	....	....	.	*							* *	*	WETLANDS URBANIZATION,ROW CROP FARMING.
28.00	BLACK CREEK ABOVE BLACK CREEK(ST JO	YES	GOOD	----	----	....	-..	**	-	00*0	0-0.	.0--	-.		* **	*	RECENT DATA REFLECTS IMPROVEMENT.
28.10	PETERS CREEK ABOVE BLACK CREEK	PARTIAL	FAIR	----	--*.	....	-..	***	0	0000	000.	..00	0.		* **	** *	PROBLEMS RELATED TO AGRICULTURAL AND DAIRY FARM RUNOFF.POSSIBLE LANDFILL (ROSEMARY HILL) AND SEPTIC TANK SEEPAGE.
29.00	LITTLE BLACK CREEK ABOVE BLACK CREE	YES	UNKN	....	....	....	.	*							**		
30.00	BLACK CREEK ABOVE LITTLE BLACK CR	YES	GOOD	----	----	....	-..		.	....	....	....	..		**	*	
31.00	BLACK CREEK, NORTH FORK ABOVE BLACK	YES	GOOD	----	---*	....	-..	**	.	....	....	....	..		**	*	
32.00	YELLOW WATER CREEK ABOVE BLACK CR,	YES	GOOD	----	.-..	....	...		.	....	....	....	..				
32.10	SAL TAYLOR CREEK ABOVE YELLOW WATER	YES	FAIR	*--.	--..	....	...		.	....	....	....	..				GOOD OVERALL WATER QUALITY.
32.15	ROWELL CREEK ABOVE SAL TAYLOR CREEK	YES	FAIR	*-*.	--..	....	..-		.	....	....	....	..				ONLY ONE 1971 SAMPLE.
33.00	BLACK CREEK, NORTH FORK ABOVE YELLO	YES	GOOD	----	---.	....	-..		0	000*	0-0.	...-	-.		**	*	
33.10	BOGGY BRANCH ABOVE BLACK CR, NORTH	UNKNOWN	UNKN	....	....	....	.										
34.00	BLACK CREEK, SOUTH FORK ABOVE BLACK	YES	GOOD	----	----	....	-..		.	....	....	....	..		**	**	WATER FROM THE RAVINES GOLF COURSE DEVELOPMENT AND SEVERAL DRAINAGE CANALS CONTRIBUTE TO FLOW IN BLACK CREEK.
35.00	BLACK CREEK, SOUTH FORK ABOVE GREEN	UNKNOWN	UNKN	....	....	....	.										
36.00	BLACK CREEK, SOUTH FORK ABOVE ATES	YES	GOOD	----	.-..	....	...		.	....	....	....	..		**		
37.00	ATES CREEK ABOVE BLACK CR, SOUTH FO	YES	GOOD	----	*--.	....	-..		.	....	....	....	..				
38.00	GREENS CREEK ABOVE BLACK CR, SOUTH	YES	GOOD	----	---.	....	-..		.	....	....	....	..				DO AND pH PROBLEM, SEEMS A NATURAL, BACKGROUND CONDITION.
40.00	ST JOHNS RIVER ABOVE BLACK CREEK	YES	GOOD	--*-	.-..	....	-..	***	0	....	.-0.	.000	0.		* **	**	
41.00	ST JOHNS RIVER ABOVE ST JOHNS RIVER	YES	GOOD	----	---*	....	-..	*	.	....	....	....	..		* *	*	OLD RESIDENTIAL AREA WITH SEPTIC TANKS IN WATER TABLE.ROW CROP FARMING AND WETLANDS URBANIZATION ALSO CONSTITUTE A THREAT TO WATER QUALITY.
43.00	ST JOHNS RIVER ABOVE ST JOHNS RIVER	YES	UNKN	....	....	....	.	***							* **	*	
44.00	ST JOHNS RIVER ABOVE SIXMILE CREEK	YES	GOOD	----	*---	....	-..	*	.	....	....	....	..		* *	*	ACTIVITIES ASSOCIATED WITH ROW CROP FARMING AND WETLAND URBANIZATIONONGOING IN THIS AREA.
46.00	CLARKES CREEK ABOVE CLARKES CR(ST J	YES	GOOD	--*-	---.	....	..-		.	....	....	....	..		*	*	FISHCAMP HAD TO CLOSE BECAUSE OF DECLINE IN FISHERIES DUE TO UPSTREAM MINING AND SILVICULTURAL OPERATIONS.
48.00	ST JOHNS RIVER ABOVE CLARKES CREEK	YES	UNKN	....	....	....	.	***							* **	*	
49.00	ST JOHNS RIVER ABOVE ST JOHNS RIVER	YES	GOOD	.---	---.	....	...	*	.	....	....	....	..		* *	*	ACTIVITIES ASSOCIATED WITH ROW CROP FARMING AND WETLAND URBANIZATION ONGOING IN THIS AREA.
51.00	ST JOHNS RIVER ABOVE ST JOHNS RIVER	YES	GOOD	----	---*	....	--.		*	00*0	000.	.000	0.				
52.00	ST JOHNS RIVER ABOVE DEEP CREEK	PARTIAL	UNKN	....	....	....	.	***							* *	*	
54.00	RICE CREEK ABOVE RICE CR (ST JOHNS	NO	POOR	----	**--	....	-*.	**	*	*0*0	00-.	.*00	0.	*	* *	*	GEORGIA PACIFIC PAPER MILL DISCHARGE RESULTS IN 87% OF DO SAMPLES UNDER 5 MG/L(101 SAMPLES 1970-1985).GOING TO SUPERSATURATE EFFLUENT TO IMPROVE RECEIVING BODY.DOSAT UP IN 80'S.RECENT DECLINE DUE TO TURBIDITY,TC AND SD.ROW CROP FARMING NEARBY.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
54.10	RICE CREEK ABOVE SIMMS CREEK	PARTIAL	FAIR	----	----	....	-*-		0	00*0	000.	.000	0.	*	* *		DECLINING TURBIDITY TREND.GEORGIA PACIFIC PULP & PAPER MILL.
54.20	SIMMS CREEK ABOVE RICE CREEK	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
55.00	SIMMS CREEK ABOVE ETONIA CREEK	YES	GOOD	----	*--.	....	-..		0	....	000.	...0	0.	*	*	*	
56.00	ETONIA CREEK ABOVE SIMMS CREEK	PARTIAL	FAIR	----	*-*.	....	-..		.	....	....	....	..	*	*		ONLY FOUR SAMPLES. BOD,AND BACTERIA PROBLEMS.DAIRY OPERATIONS ONGOING IN THE AREA.
57.00	RICE CREEK ABOVE ETONIA CREEK	YES	GOOD	----	*-*.	....	-..		.	....	....	....	..	*			
58.00	ETONIA CREEK ABOVE RICE CREEK	PARTIAL	FAIR	----	---.	....	-..		.	....	....	....	..	*			DO AND BACTERIA PROBLEM ABOVE PULP MILL EFFLUENT.
60.00	ST JOHNS RIVER ABOVE ETONIA CREEK	YES	GOOD	----	---.	....	--.	***	*	0**0	000.	.*00	+.		* *	*	VEHICLE WASHING ACTIVITIES,EAST PALATKA URBAN RUNOFF CONTRIBUTE TO THE MODERATELY EUTROPHIC CONDITIONS(CHLOROPHYLL A AVERAGE > 30 UG/L).
61.00	ST JOHNS RIVER ABOVE ST JOHNS RIVER	PARTIAL	UNKN	....	....	....	.	***							* *	*	ROW CROP FARMING MAY CONTRIBUTE TO MODERATELY EUTROPHIC CONDITIONS(CHLOROPHYLL A AVERAGE > 30 UG/L).
63.00	DUNNS CREEK ABOVE DUNNS CR(ST JOHNS	YES	GOOD	----	---*	....	-..	**	0	...0	000.	00.0	0.		*	*	
69.00	HAW CREEK ABOVE HAW CR (CRESCENT L	YES	FAIR	----	---.	....	-..		.	....	....	....	..				
70.00	LITTLE HAW CREEK ABOVE HAW CREEK	YES	GOOD	-*--	.-..	....	...		.	....	....	....	..		*		ROW CROP AND CATTLE FARMING ARE ONGOING ACTIVITIES IN THIS AREA.
74.00	LITTLE HAW CREEK ABOVE LAKE DISSTON	YES	UNKN	....	....	....	.										
75.00	HAW CREEK ABOVE LITTLE HAW CREEK	YES	FAIR	----	**-.	....	-..	*	.	....	....	....	..		*		NATURAL DO AND pH.PASTURE RUNOFF,ROW CROP FARMING AND CATTLE RANCHING ACTIVITIES ONGOING.
76.00	MIDDLE HAW CREEK ABOVE HAW CREEK	YES	FAIR	-*--	*--.	....	-..		.	....	....	....	..		*		NATURAL DO AND pH.ROW CROP AND CATTLE FARMING OPERATIONS.
77.00	HAW CREEK ABOVE MIDDLE HAW CREEK	YES	FAIR	----	**--	....	-..		.	....	....	....	..		*		NATURAL DO AND pH.ROW CROP AND CATTLE FARMING OPERATIONS.
78.00	HAW CREEK, BLACK BRANCH CANAL ABOVE	UNKNOWN	UNKN	....	....	....	.										
79.00	HAW CREEK ABOVE HAW CR, BLACK BR CA	UNKNOWN	UNKN	....	....	....	.										
81.00	BULL CREEK ABOVE BULL CR(CRESNT L)	YES	POOR	-...	....	....	...		.	....	....	....	..		*		INSUFFICIENT PARAMETER COVERAGE.POTATO AND CABBAGE FARMS RUNOFF.
83.00	DEEP CREEK ABOVE DEEP CR (ST JOHNS	YES	GOOD	---*	-*..	....	-..	*	.	....	....	....	..		*	*	PESTICIDES, FERTILIZERS AND HERBICIDES USAGE IN EXTENSIVE ROW CROP FARMING OPERATIONS.
84.10	TROUT CREEK ABOVE SIXMILE CREEK	YES	FAIR	----	--..	....	-.*	* *	.	....	....	....	..		*	*	
85.00	SIXMILE CREEK ABOVE SIXMILE CR(ST J	YES	FAIR	----	--..	....	-..	**	.	....	....	....	..		* **		ROW CROP FARMING OPERATIONS.
87.00	DURBIN CREEK ABOVE JULINGTON CREEK	PARTIAL	FAIR	----	-*-.	....	-..		.	....	....	....	..	*	***		COMING UP IN NEXT YEAR FOR WLA. UNDERGOING RAPID DEVELOPMENT CAUSING DOMESTIC SEWAGE AND STORMWATER RUNOFF PROBLEMS.ILLEGAL AUTO WASTE DUMPING (DER CITATION ON FILE).WETLAND DEVELOPMENT IN PROGRESS.
88.00	JULINGTON CREEK ABOVE DURBIN CREEK	PARTIAL	FAIR	----	----	....	--.		0	000-	000.	0000	-.	*	***	*	COMING UP NEXT YEAR FOR WLA. UNDERGOING RAPID DEVELOPMENT WITH ACCOMPANYING DOMESTIC SEWAGE AND STORMWATER RUNOFF PROBLEMS.WETLAND DEVELOPMENT.
90.00	ARLINGTON RIVER ABOVE ARLINGTON RIV	PARTIAL	FAIR	--**	--*-	....	-*.		0	0..0	000.	..00	0.	*	**		SLIGHT IMPROVEMENT IN 1970'S DUE TO BACTERIA, SEVERAL POINT SOURCES UPSTREAM BEING STUDIED.
90.10	POTTSBURG CREEK ABOVE ARLINGTON RIV	PARTIAL	FAIR	---*	*-*-	....	-..	*	.	....	....	....	..	*	* **	*	BACTERIA PROBLEM.SKINNER'S DAIRY OPERATION AND INTENSIVELY DEVELOPED SHORELINE CONTRIBUTE TO THE PROBLEM.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
90.50	STRAWBERRY CREEK ABOVE RED BAY CREE	NO	FAIR	*--*	***.	....	-..		.	....	....	....	..	*			1985 INTENSIVE SURVEY/WLA IN PREPARATION.
91.00	ICWW (PABLO CREEK) ABOVE ST JOHNS R	YES	FAIR	--**	----	....	-.*		-	00*-	---.	0-0*	-.		*		GOOD OVERALL WATER QUALITY.
91.10	PABLO CREEK ABOVE ICWW (PABLO CREEK	YES	GOOD	--*-	---.	....	--.		.	....	....	....	..				GOOD OVERALL WATER QUALITY
94.10	CROSS FLORIDA BARGE CANAL ABOVE ST	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
95.00	ST JOHNS RIVER ABOVE DUNNS CREEK	YES	GOOD	--*-	---.	....	-..	***	.	....	....	....	..		* *	*	ALTHOUGH WATER QUALITY IS GOOD, MODERATELY EUTROPHIC CONDITIONS EXIST (CHL.A AVER.>30 UG/L).

UPPER ST. JOHNS RIVER BASIN

General Description of the Basin

The upper St. Johns River basin is defined as the area between the St. Johns River headwaters and the confluence of the Oklawaha and St. Johns Rivers. The headwaters of the St. Johns River emerge from a swamp in St. Lucie County at an altitude of less than 25' above mean sea level. The river meanders northward for approximately 300 miles, entering the Atlantic Ocean near Jacksonville. Mean flow for the upper St. Johns River is 1300 cfs at Lake Poinsett outlet (209 miles from the mouth) and 3200 cfs near Deland (142 miles from the mouth). The upper St. Johns River near the headwaters has been extensively modified by canals and dikes. The remaining portion of the upper St. Johns River flows through numerous large shallow lakes. Lake George, the largest, has a surface area of nearly 46,000 acres. Land use is largely agriculture in the upper reaches of the upper St. Johns River basin with a greater percentage of forest land in the downstream reaches. There is considerable urban land usage in the middle portion of the basin in the Orlando vicinity.

Specific Water Quality Problems and Pollution Sources

Through the years much of the headwaters of the St. Johns River has been extensively altered into drainage channels thus providing more land for citrus and cattle. Still, water quality in the upper reaches of the basin is relatively good. DO values tend to be low because of the sluggish nature of the stream and from the nonpoint source enrichment.

Lake Washington is classified as Class I waters and provides drinking water for Melbourne, Florida. It maintains a good rating; however, a degrading trend in DO and phosphorus was detected. Lake Poinsett located downstream of Lake Washington receives effluent from two small volume WWTPs which provide nutrient loading to the lake. There are plans to connect these plants to a centralized facility. From Lake Poinsett to Puzzle Lake, the St. Johns River and its tributaries are very shallow, and low DO concentrations are typical due to the drainage from swampy, rangeland floodplains.

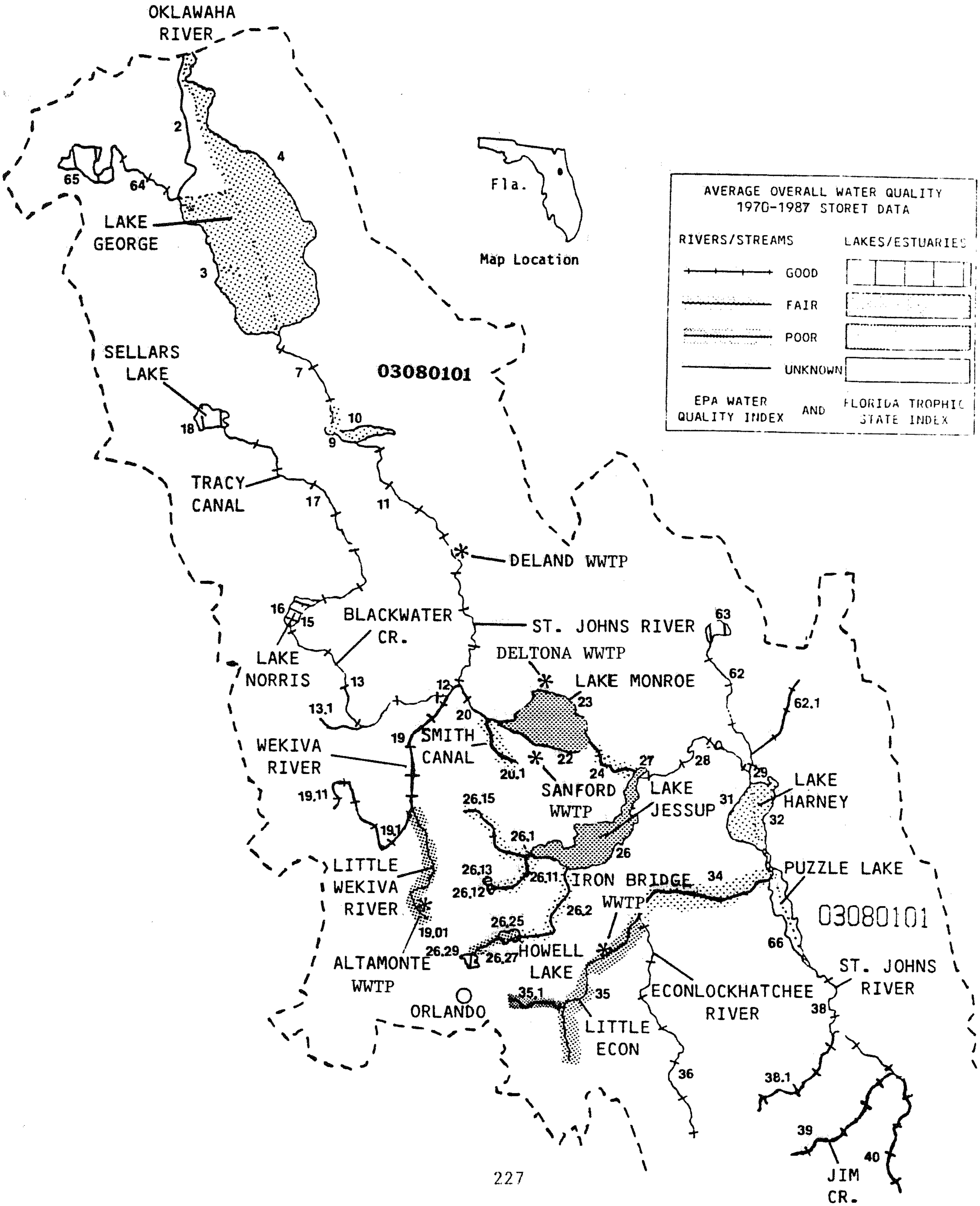
The next stretch of the St. Johns River, and its lakes and tributaries have many water quality problems, mostly related to urban development around Orlando. The problems are chiefly a result of discharge from the numerous WWTPs and urban runoff. In recent years, many of the smaller, poorly-regulated facilities have been connected with one of the two major Orlando regional sewage treatment plants: Iron Bridge and Orange County Easterly. The former plant discharges to the Little Econ and also a wetland area that drains to the St. Johns River. About half of the Orange County Easterly discharge goes to the Econlockhatchee River. The other half is used as cooling water for the local utility company. Both plants are considering expansions. The consolidation of several facilities into these two plants has resulted in significantly improved water treatment. The water quality in the affected reaches of the Econ system indicates improving trends. Lake Harney has also shown modest improvements (algal blooms occur later in the season and there were no fishkills this year).

The tributary system flowing into Lake Jessup has had WWTP impact (especially in Lake Howell); however, currently the primary source of pollution is stormwater. The Lake Howell drainage basin has shown a significant improvement in water quality due to the diversion of SSTP effluents from this system. Lake Jessup is very eutrophic with an almost constant algal bloom and yearly fishkills. Recent trends show improved concentrations of phosphorus, nitrogen and chlorophyll. Another lake suffering from severe eutrophication is Lake Monroe which receives WWTP discharge from the Sanford and Deltona plants.

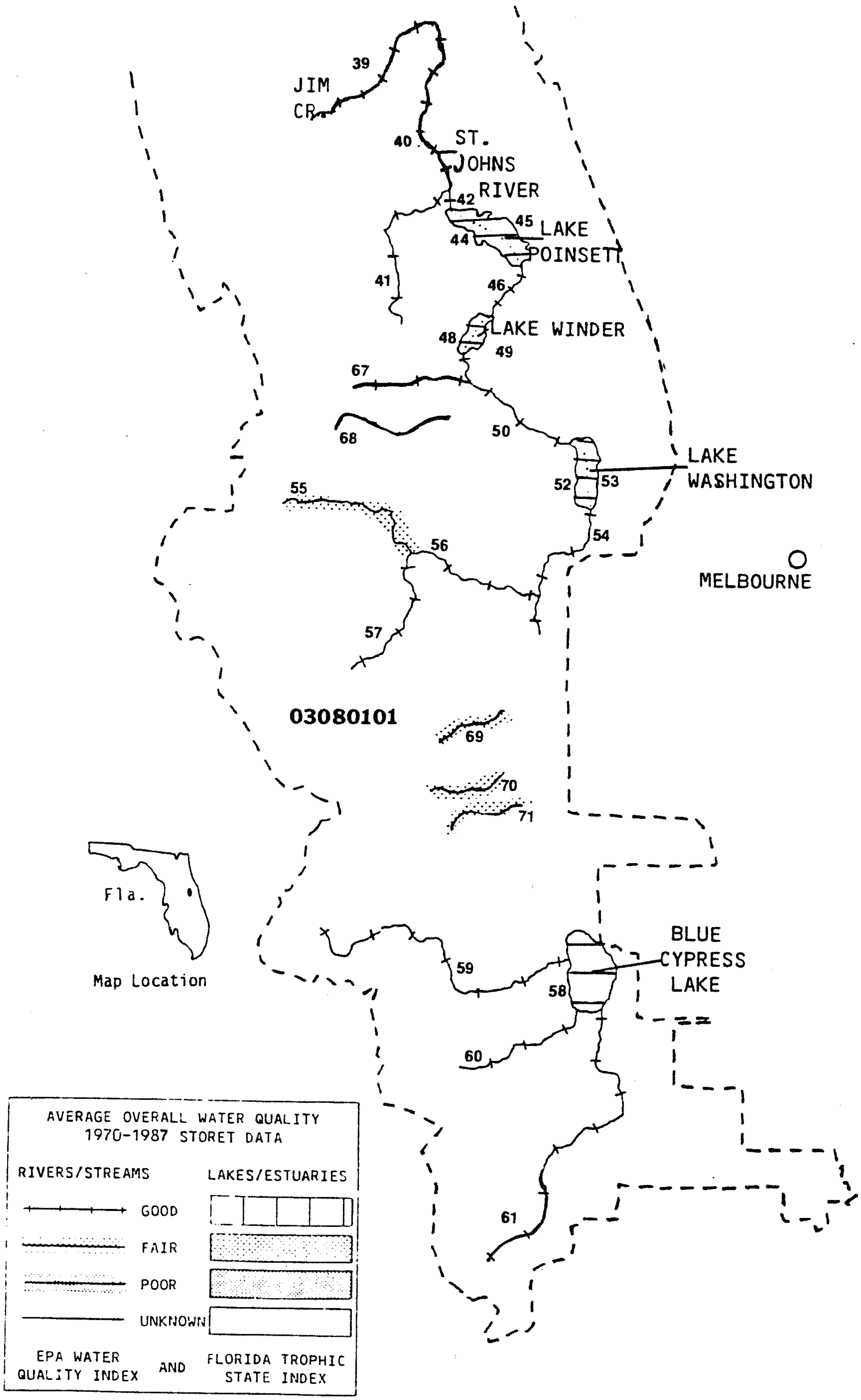
The Wekiva and Little Wekiva Rivers have been designated as Outstanding Florida Waters to afford them greater protection from future degradation. The Altamonte Springs advanced waste treatment plant, which began operation in the mid-seventies, greatly improved the dissolved oxygen concentrations in the Little Wekiva River due to the improved discharge. However, nutrients and bacteria concentrations remain high in this reach, and developmental pressure is great. Development in the Wekiva system has been the subject of heated controversy in recent months involving several local environmental groups and state agencies. A small watershed just north of the Wekiva River (Sellers Lake/Tracy Creek/Lake Norris/Black Water Creek system) has excellent water quality, and portions of this basin are proposed for state purchase to insure preservation.

The St. Johns River water quality improves between Lakes Monroe and George. There is only one WWTP discharge (Deland) to this section of the river. Lake George is wide and shallow and exhibits a moderate degree of eutrophication.

ST. JOHNS RIVER BASIN (UPPER)



ST. JOHNS RIVER BASIN (UPPER)



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD			WATER CLARITY				DISSOLVED OXYGEN		OXYGEN DEMAND			PH ALKALINITY		TROPHIC STATUS			COLIFORM		SPECIES DIVERSITY			COND	FLOW	WQI
		MAX #OBS	BEG YR	END YR	TURB	SD	COLOR	TSS	DO	%SAT	BOD	COD	TOC	PH	ALK	NITRO	PHOS	CHLA	TOTAL	FECL	NAT	ART	BECK	COND	FLOW	
** USGS HYDROLOGIC UNIT: 03080101 ST JOHNS (UP)																										
* WATER BODY TYPE: LAKE																										
2.00	LAKE GEORGE AB ST JOHNS RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	LAKE GEORGE AB ST JOHNS RIVER	93	71	87	28.0	0.7	70	20	8.5	98	4.1	-1	-1	8.0	68	1.70	0.13	36	110	0	-1.0	-1.0	-1	1190	-1	69
4.00	LAKE GEORGE AB ST JOHNS RIVER	7443	0	87	26.5	0.7	76	14	8.3	91	3.1	48	15	8.1	67	1.44	0.10	23	40	6	1.7	0.2	-1	1140	-1	66
9.00	LAKE WOODRUFF AB ST JOHNS RIVE	9	71	87	6.9	0.7	80	12	6.2	72	1.8	25	-1	7.7	73	1.30	0.13	17	140	0	-1.0	-1.0	-1	1100	-1	60
10.00	LAKE WOODRUFF AB ST JOHNS RIVE	20	71	87	5.9	0.7	90	13	7.5	83	2.0	37	-1	8.1	68	1.33	0.12	20	105	0	-1.0	-1.0	-1	1100	-1	66
15.00	LAKE NORRIS AB BLACK WATER CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.00	LAKE NORRIS AB BLACK WATER CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	SELLARS LAKE AB ALEXANDER SPRI	50	74	86	0.6	5.6	4	3	8.3	95	0.8	-1	-1	4.8	2	0.18	0.01	1	15	0	-1.0	-1.0	-1	43	-1	21
22.00	LAKE MONROE AB ST JOHNS RIVER	140	68	86	4.7	0.6	130	10	7.2	81	3.0	51	-1	7.5	45	1.87	0.19	27	540	48	-1.0	-1.0	-1	940	-1	73
23.00	LAKE MONROE AB ST JOHNS RIVER	355	68	87	9.0	0.6	95	16	7.6	89	2.8	56	24	7.7	53	1.90	0.16	29	66	15	2.3	2.1	5	1058	-1	71
26.00	LAKE JESSUP AB ST JOHNS RIVER	233	66	86	40.5	0.3	70	45	9.0	99	5.8	75	27	8.8	74	2.90	0.44	88	40	0	1.0	0.3	-1	864	-1	81
26.12	LAKE KATHRYN AB FAIRY LAKE	88	72	83	2.3	1.1	-1	445	7.8	93	3.0	34	-1	7.5	29	1.04	0.04	-1	340051000		-1.0	-1.0	-1	125	-1	58
26.13	FAIRY LAKE AB LAKE WINDMERE	12	66	74	-1.0	-1.0	30	9	10.5	114	4.0	8	-1	7.9	18	1.16	0.03	-1	10	0	-1.0	-1.0	-1	105	-1	24
26.25	LAKE HOWELL AB HOWELL BRANCH	202	66	84	31.0	0.5	43	15	10.3	117	4.9	37	-1	8.7	68	1.85	0.72	68	62	60	-1.0	-1.0	-1	246	-1	72
26.29	LAKE MAITLAND AB	58	66	80	4.6	1.8	15	20	8.6	87	1.6	13	-1	7.8	69	0.67	0.04	6	195	0	-1.0	-1.0	-1	229	-1	47
27.00	LAKE JESSUP AB ST JOHNS RIVER	40	80	85	2.8	0.6	-1	-1	6.0	69	1.0	-1	-1	7.3	51	3.04	0.32	2	-1	-1	-1.0	-1.0	-1	750	-1	75
31.00	LAKE HARNEY AB ST JOHNS RIVER	158	68	87	2.5	0.8	135	4	6.6	73	1.6	-1	23	7.4	48	1.68	0.13	6	100	24	2.0	2.3	8	1100	-1	56
32.00	LAKE HARNEY AB ST JOHNS RIVER	473	54	87	4.5	0.6	134	8	7.5	83	1.4	58	23	7.4	47	1.82	0.12	11	112	4	1.6	-1.0	-1	1000	973	68
44.00	LAKE POINSETT AB ST JOHNS RIVE	96	71	85	20.0	1.0	125	2	5.3	64	1.3	-1	19	7.0	55	1.56	0.08	4	-1	-1	-1.0	-1.0	-1	500	-1	61
45.00	LAKE POINSETT AB ST JOHNS RIVE	232	54	87	3.0	0.8	138	5	7.0	85	1.4	-1	19	7.5	56	1.50	0.06	8	8	2	2.4	-1.0	7	830	-1	55
48.00	LAKE WINDER AB ST JOHNS RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
49.00	LAKE WINDER AB ST JOHNS RIVER	35	54	87	1.6	0.8	150	2	2.8	37	1.2	-1	16	7.5	64	1.29	0.06	3	-1	-1	-1.0	-1.0	-1	490	-1	51
52.00	LAKE WASHINGTON AB ST JOHNS RI	248	68	87	1.8	0.9	145	2	6.8	81	1.1	-1	28	7.4	54	1.58	0.06	2	38	2	2.2	2.7	8	530	31	50
53.00	LAKE WASHINGTON AB ST JOHNS RI	193	54	87	4.2	1.0	145	6	7.5	89	1.0	58	18	7.6	57	1.49	0.05	5	3	-1	-1.0	-1.0	-1	471	-1	49
54.50	LAKE HELLEN BLAZES AB ST JOHNS	144	69	85	20.0	0.9	120	-1	5.2	48	0.7	-1	19	7.1	44	1.58	0.08	4	-1	-1	-1.0	-1.0	-1	580	-1	64
58.00	BLUE CYPRESS LAKE AB BLUE CYPR	463	66	87	3.5	0.8	141	3	7.0	86	1.3	-1	22	7.0	30	1.28	0.07	6	40	1	1.9	2.1	-1	231	0	61
63.00	LAKE ASHBY AB DEEP CREEK	18	77	80	8.0	0.6	150	3	8.3	92	-1.0	-1	-1	7.7	11	0.76	0.04	-1	-1	-1	-1.0	-1.0	-1	92	-1	56
65.00	LAKE KERR AB SALT SPRING RUN	360	65	86	2.0	2.8	5	3	7.6	91	0.8	-1	3	6.3	2	0.29	0.02	2	-1	-1	-1.0	-1.0	-1	118	-1	30
66.00	PUZZLE LAKE AB ST JOHNS RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: STREAM																										
1.00	ST JOHNS RIVER AB OKLAWAHA RIV	3	71	75	-1.0	-1.0	40	9	8.5	95	2.1	-1	-1	8.0	78	1.32	0.08	-1	310	15	-1.0	-1.0	-1	1500	-1	35
7.00	ST JOHNS RIVER AB LAKE GEORGE	205	71	87	26.5	0.8	80	10	6.3	73	1.9	33	19	7.6	64	1.42	0.13	19	123	10	2.5	2.9	7	995	-1	45
11.00	ST JOHNS RIVER AB LAKE WOODRUF	315	48	87	5.7	0.6	73	12	6.0	69	1.8	33	21	7.7	71	1.33	0.13	22	155	5	-1.0	-1.0	-1	1036	2613	49
12.00	WEKIVA RIVER AB ST JOHNS RIVER	15	71	87	2.0	1.5	45	6	6.1	71	0.7	23	-1	7.7	95	0.92	0.13	1	280	50	-1.0	-1.0	-1	712	-1	30
13.00	BLACK WATER CREEK AB WEKIVA RI	55	56	84	1.0	0.6	268	-1	5.5	64	1.0	-1	37	6.5	29	1.08	0.06	-1	-1	-1	-1.0	-1.0	-1	133	23	36
13.10	SEMINOLE CREEK AB BLACK WATER	7	72	86	-1.0	-1.0	5	-1	4.9	56	-1.0	-1	-1	7.4	87	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	305	32	60
17.00	ALEXANDER SPRING CR/TRACY CANA	35	56	86	1.0	0.6	168	1	2.9	34	0.7	8	19	5.5	4	0.73	0.04	0	1010	154	-1.0	-1.0	14	534	99	43
19.00	WEKIVA RIVER AB BLACK WATER CR	128	54	84	1.1	1.1	25	6	7.5	81	0.4	17	-1	7.7	98	1.20	0.17	2	245	44	-1.0	-1.0	-1	290	190	25
19.01	LITTLE WEKIVA RIVER AB WEKIVA	479	60	86	3.9	0.5	40	7	5.4	60	2.8	31	6	7.1	69	1.87	0.56	6	1800	190	1.7	2.3	11	240	15	53
19.10	WEKIVA RIVER AB WEKIVA RIVER	27	73	84	1.8	1.1	19	4	4.1	46	1.5	15	-1	7.7	123	1.38	0.10	0	660	40	-1.0	-1.0	-1	249	135	43
19.11	ROCK SPRINGS RUN AB ROCK SPRIN	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
20.00	ST JOHNS RIVER AB WEKIVA RIVER	59	54	87	7.7	0.7	115	19	7.5	86	2.5	57	-1	7.9	56	1.60	0.14	33	85	28	-1.0	-1.0	-1	1070	-1	56
20.10	SMITH CANAL AB ST JOHNS RIVER	29	82	82	-1.0	0.3	-1	-1	4.9	61	1.7	-1	-1	7.5	98	1.30	0.79	2	-1	-1	-1.0	-1.0	-1	375	-1	60
24.00	ST JOHNS RIVER AB LAKE MONROE	133	62	86	5.3	0.8	140	10	6.2	76	2.4	68	-1	7.6	49	1.86	0.15	21	145	28	-1.0	-1.0	-1	1000	0	54
26.10	SOLDIER CREEK AB LAKE JESSUP	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
26.11	GEE CREEK AB SOLDIER CREEK	213	72	84	2.0	0.3	80	13	6.0	66	2.7	45	11	7.1	60	4.36	2.79	9	3400	660	-1.0	-1.0	-1	265	15	53
26.15	SOLDIER CREEK AB GEE CREEK	94	72	86	35.0	0.3	282	5	7.3	77	1.3	89	16	7.0	47	1.75	0.26	6	2575	360	-1.0	-1.0	-1	222	2	52
26.20	HOWELL CREEK AB LAKE JESSUP	352	65	84	4.5	0.5	50	10	6.5	75	2.2	30	8	7.4	65	1.78	0.75	59	1060	110	-1.0	-1.0	-1	250	17	50
26.27	HOWELL BRANCH AB LAKE MAITLAND	56	65	77	10.7	6.4	34	6	5.5	59	2.3	20	-1	7.2	76	2.45	2.95	66	570	102	-1.0	-1.0	-1	295	-1	51
28.00	ST JOHNS RIVER AB LAKE JESSUP	66	54	86	4.2	0.8	132	5	7.0	81	1.9	61	-1	7.7	52	1.50	0.10	12	2043	18	-1.0	-1.0	-1	1000	-1	49
29.00	ST JOHNS RIVER AB DEEP CREEK	34	68	84	6.0	0.8	120	3	6.9	80	3.1	-1	-1	8.0	50	1.95	0.16	68	-1	-1	-1.0	-1.0	-1	900	-1	46
34.00	ECONLOCKHATCHEE RIVER AB LAKE	352	54	86	3.0	0.7	148	3	4.7	56	2.5	25	18	7.0	44	3.01	0.44	1	359	55	2.4	2.6	18	333	127	58
35.00	LITTLE ECONLOCKHATCHEE RIVER A	404	56	84	5.0	0.6	100	12	4.6	52	2.9	43	-1	7.1	54	2.01	0.81	7	-1	-1	-1.0	-1.0	-1	235	2	62
35.10	CRANE STRAND AB LITTLE ECON RI	33	72	76	68.0	-1.0	30	6	2.6	30	4.9	45	-1	7.0	56	10.09	4.43	-1	8750	180	-1.0	-1.0	-1	258	-1	78
36.00	ECONLOCKHATCHEE RIVER AB LITTL	99	67	85	3.5	0.8	300	4	5.2	56	2.1	99	36	6.4	12	1.35	0.11	2	420	56	-1.0	3.5	23	172	2	43
38.00	ST JOHNS RIVER AB LAKE PUZZLE	526	52	87	2.0	1.1	130	4	4.5	49	1.9	64	20	6.8	36	1.40	0.09	2	-1	-1	-1.0	-1.0	-1	240	465	45
38.10	TOOTOOSAHATCHEE CREEK AB ST JO	15	78	82	-1.0	0.9	138	4	2.8	34	1.2	-1	20	7.2	64	0.95	0.03	1	350	360	-1.0	-1.0	-1	246	-1	42
39.00	JIM CREEK AB ST JOHNS RIVER	68	63	86	2.4	0.5	120	3	4.2	50	1.2	-1	19	7.0	36	0.86	0.02	1	141	290	-1.0	-1.0	-1	256	0	38
40.00	ST JOHNS RIVER AB JIM CREEK	111	54	87	1.4	1.0	120	2	5.8	62	1.1	-1	-1	7.0	62	1.69	0.07	2	-1	-1	-1.0	-1.0	-1	755	-1	42
41.00	TAYLOR CREEK AB ST JOHNS RIVER	670	69	86	2.0	0.9	120	4	6.5	74	1.1	-1	20	6.7	22	0.94	0.06	3	21	-1	-1.0	-1.0	-1	108	107	33
42.00	ST JOHNS RIVER AB TAYLOR CREEK	604	53	87	4.0	0.8	125	3	6.5	80	1.2	-1	25	7.2	54	1.45	0.06	0	-1	-1	-1.0	-1.0	-1	592	422	40
46.00	ST JOHNS RIVER AB LAKE POINSET	211	68	85	11.5	0.9	125	3	6.0	71	1.8	-1	-1	7.1	58	1.61	0.08	5	-1	-1	-1.0	-1.0	-1	765	-1	42
50.00	ST JOHNS RIVER AB LAKE WINDER	242	68	87	5.3	0.9	150	6	3.5	40	1.8	-1	-1	7.0	63	1.59	0.07	4	8	-1	-1.0	-1.0	-1	529	-1	50
54.00	ST JOHNS RIVER AB LAKE WASHING	622	52	87	2.5	0.9	166	4	5.3	56	1.4	56	28	7.2	72	1.50	0.06	5	8	-1	-1.0	-1.0	-1	458	105	40
55.00	CRABGRASS CREEK AB NORTH BRANC	91	69	86	30.0	-1.0	-1	-1	6.0	69	-1.0	-1	-1	-1.0	-1	0.98	0.03	-1	-1	-1	-1.0	-1.0	-1	418	2	52
56.00	JANE GREEN CREEK AB CRABGRASS	151	54	86	2.5	0.6	190	-1	3.8	44	1.3	-1	27	6.6	29	1.10	0.05	2	725	-1	-1.0	-1.0	-1	170	26	44
57.00	BULL CREEK AB CRABGRASS CREEK	2	85	86	-1.0	0.5	350	1	2.3	26	1.7	-1	-1	6.0	7	1.03	0.04	5	-1	-1	-1.0	-1.0	-1	84	-1	39
59.00	BLUE CYPRESS CREEK AB COW LOG	41	69	85	3.0	0.8	155	3	2.8	30	1.6	-1	24	6.1	29	1.28	0.10	2	-1	-1	-1.0	-1.0	-1	157	7	47
60.00	PADGETT BRANCH AB LITTLE GUMHE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
61.00	FORT DRUM CREEK AB JIM GREEN C	63	69	85	1.0	0.8	168	5	2.0	22	1.6	-1	16	6.2	20	1.12	0.05	8	1300	-1	-1.0	-1.0	-1	245	46	50
62.00	DEEP CREEK AB ST JOHNS RIVER	206	64	86	4.0	-1.0	-1	-1	2.1	24	-1.0	-1	-1	-1.0	-1	1.23	0.05	-1	-1	-1	-1.0	-1.0	-1	295	0	71
62.10	COW CREEK AB DEEP CREEK	2	85	86	-1.0	-1.0	-1	8	6.5	66	0.8	-1	-1	6.8	16	1.40	0.05	3	-1	-1	-1.0	-1.0	-1	73	-1	28
64.00	SALT SPRING RUN AB LAKE GEORGE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
67.00	WOLF CREEK #1 AB ST JOHNS RIVE	130	56	85	4.5	0.9	100	-1	6.4	70	0.8	-1	18	7.0	56	0.88	0.05	-1	-1	-1	-1.0	-1.0	-1	198	7	32
68.00	PENNYWASH CREEK #1 AB ST JOHNS	2	56	70	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	0.02	-1	-1	-1	-1.0	-1.0	-1	-1	-1	10
69.00	TENMILE CREEK #1 AB WOLF CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
70.00	WOLF CREEK #2 AB TENMILE CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
71.00	SIXMILE CREEK AB WOLF CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03080101 ST JOHNS (UP)

* WATER BODY TYPE: LAKE

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
2.00	LAKE GEORGE ABOVE ST JOHNS RIVER	UNKNOWN	UNKN	....	....	....	.										
3.00	LAKE GEORGE ABOVE ST JOHNS RIVER	PARTIAL	FAIR	--*-	*--.	---*	-..	***	0	....	.00.	.000	-.	*	* *	*	UPSTREAM ST. JOHNS RIVER POINT SOURCES AND NONPOINT SOURCES CAUSE MINOR EUTROPHICATION PROBLEMS.HEAVY BOAT TRAFFIC, HEAVILY USED CAMPGROUNDS, SHORT TERM MOORINGS, AND PRIVATE RESIDENCES ON PHAYTON ISLAND CONTRIBUTE TO THE PROBLEM.
4.00	LAKE GEORGE ABOVE ST JOHNS RIVER	PARTIAL	FAIR	--*-	---*	----	-*.	***	0	..0*	*00.	-000	0.	*	* *	*	UPSTREAM ST. JOHNS RIVER POINT SOURCES AND NONPOINT SOURCES CAUSING MINOR EUTROPHICATION PROBLEMS.HEAVY BOAT TRAFFIC, HEAVILY USED CAMPGROUNDS, SHORT TERM MOORINGS, AND PRIVATE RESIDENCES ON PHAYTON ISLAND CONTRIBUTE TO THE PROBLEM.
9.00	LAKE WOODRUFF ABOVE ST JOHNS RIVER	PARTIAL	FAIR	----	---.	---*	-..		.	....	....	....	..	*			
10.00	LAKE WOODRUFF ABOVE ST JOHNS RIVER	PARTIAL	FAIR	----	---.	----	-..		*	..**	*00.	.**0	+.	*		*	UPSTREAM ST. JOHNS RIVER POINT SOURCES AND NONPOINT SOURCES CAUSING MINOR EUTROPHICATION PROBLEMS.SAND MINES LOCATED IN THE AREA CONTRIBUTE TO THE PROBLEM.
15.00	LAKE NORRIS ABOVE BLACK WATER CREEK	YES	UNKN	....	....	....	.									*	SAND MINES LOCATED IN THE VICINITY.
16.00	LAKE NORRIS ABOVE BLACK WATER CREEK	YES	UNKN	....	....	....	.								*		NEW ORANGE GROVES IN THE AREA.
18.00	SELLARS LAKE ABOVE ALEXANDER SPRING	YES	GOOD	-*--	---.	----	--.	**	0	....	....	....	..		*	*	COUNTY PARK AREA HAS BEEN CLOSED TO SWIMMING.
22.00	LAKE MONROE ABOVE ST JOHNS RIVER	NO	POOR	----	---.	-*-*	-.*	***	0	..00	000.	00-0	0.	*	* **	**	SANFORD WWTP (6 MGD) DISCHARGES TO LAKE, ALONG WITH POLLUTION FROM UPSTREAM SOURCES IN THE ST. JOHNS RIVER. SEVERAL SPECIAL STUDIES ON LAKE. MANY MORE WWTP DISCHARGE SITES DOWNSTREAM.UNTREATED URBAN STORMWATER IS ALSO A FACTOR.
23.00	LAKE MONROE ABOVE ST JOHNS RIVER	NO	POOR	----	---*	-*-*	--.	***	-	0000	-00.	-000	0.	*	* **	**	SANFORD WWTP (6 MGD) DISCHARGES TO LAKE ALONG WIYH POLLUTION FROM UPSTREAM SOURCES IN THE ST. JOHNS RIVER. SEVERAL SPECIAL STUDIES ON LAKE. MANY MORE WWTP DISCHARGE SITES DOWNSTREAM.
26.00	LAKE JESSUP ABOVE ST JOHNS RIVER	NO	POOR	*-*-	*--*	****	**.	***	-	**00	000.	-0--	0.		* *	*	VERY POOR HISTORIC WATER QUALITY IN THE LAKE. RECENT IMPROVEMENTS AFTER DIVERSION OF WWTP EFFLUENT FROM UPSTREAM LAKE HOWELL.CATTLE GRAZING IN THE AREA ALSO CONTRIBUTE TO THE PROBLEM.
26.12	LAKE KATHRYN ABOVE FAIRY LAKE	YES	GOOD	--*-	--*.	.---	-..	*	0	..0.	000.	.000	0.		*		
26.13	FAIRY LAKE ABOVE LAKE WINDMERE	YES	GOOD	----	*--.	..--	-..		.	....	....	....	..		*		DOCUMENTED OXYGEN DEPLETION IN SUMMER MONTHS, SALMONELLA PROBLEMS, LAKE RECEIVES DIRECT DISCHARGE FROM 17-92.
26.25	LAKE HOWELL ABOVE HOWELL BRANCH	NO	POOR	*-*-	*--.	**-*	*..		-	..-.	000.	----	-.				LAKE RECEIVED 2 WWTP EFFLUENTS UNTIL 1983, EFFLUENT WAS DIVERTED TO REGIONAL PLANT, NOW SHOWS IMPROVEMENT. WLA STUDY IN 1984.
26.29	LAKE MAITLAND ABOVE	YES	GOOD	--*-	---.	----	-..	***	.	....	....	....	..		**	**	ROOTED MACROPHYTES WOULD BE MAJOR PROBLEM IF NOT HEAVILY TREATED BY CITY OF WINTER PARK.
27.00	LAKE JESSUP ABOVE ST JOHNS RIVER	NO	POOR	*---	--..	-***	-..	* *	0	..*.	.00.	..00	0.		* *	*	VERY POOR HISTORIC WATER QUALITY IN THE LAKE.RECENT IMPROVEMENTS AFTER THE DIVERSION OF WWTP EFFLUENT FROM UPSTREAM LAKE HOWELL.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
31.00	LAKE HARNEY ABOVE ST JOHNS RIVER	PARTIAL	GOOD	----	----	---*	-*.	***	-	0000	000.	-00-	0.	*	* *	*	A TREND TOWARDS IMPROVED WATER QUALITY DURING THE PAST 3 YEARS, POSSIBLY DUE TO IMPROVED TREATMENT AT WWTP ON THE ECON RIVER.CATTLE GRAZING IN THE AREA ARE ALSO A FACTOR.
32.00	LAKE HARNEY ABOVE ST JOHNS RIVER	PARTIAL	FAIR	----	----	-*--	--.	***	-	..0-	-0*0	-00-	0.	*	* *	**	A TREND TOWARDS IMPROVED WATER QUALITY IN THE LAST 3 YEARS, POSSIBLY DUE TO IMPROVED TREATMENT AT THE WWTP ON THE ECON RIVER.A LARGE CATTLE RANCH DIRECTLY ON RIVER AND SEPTIC TANKS IN LOW AREAS ARE BOTH CONTRIBUTING FACTORS.
44.00	LAKE POINSETT ABOVE ST JOHNS RIVER	YES	FAIR	--*-	--..	----	-..		0	....	.00.	.000	0.				
45.00	LAKE POINSETT ABOVE ST JOHNS RIVER	YES	GOOD	----	----	----	--.		0	..*0	0*0.	-000	+.				
48.00	LAKE WINDER ABOVE ST JOHNS RIVER	YES	UNKN	....	....	....	.	***							*	*	CATTLE RANCH OPERATIONS AND AGRICULTURE PUMPING POSE A THREAT TO CONTINUED SUPPORT.
49.00	LAKE WINDER ABOVE ST JOHNS RIVER	YES	GOOD	----	-*..	----	-..	***	0	...0	000.	...0	0.		*	*	PREVIOUSLY REPORTED AS STREAM.AGRICULTURAL PUMPING AND CATTLE RANCH OPERATIONS CONTIBUTE TO CONDITIONS WHICH MAY BRING ABOUT A DECLINE IN WATER QUALITY.
52.00	LAKE WASHINGTON ABOVE ST JOHNS RIVE	YES	GOOD	----	*---	----	-*.	***	0	..00	000.	000*	+.		* *	*	PREVIOUSLY REPORTED AS STREAM. FISH CAMP GRAVITY CANALS AND GRAZING CATTLE ARE FACTORS OF CONCERN.
53.00	LAKE WASHINGTON ABOVE ST JOHNS RIVE	YES	GOOD	----	---.	----	-..	***	0	....	0*0.	0.00	+.		* *	*	PREVIOUSLY REPORTED AS STREAM. FISH CAMP GRAVITY CANALS AND GRAZING CATTLE ARE CONTRIBUTING FACTORS TO A POTENTIAL FOR A DECLINE IN WATER QUALITY.
54.50	LAKE HELLEN BLAZES ABOVE ST JOHNS R	YES	FAIR	--*-	--..	----	-..		0	....	.0*.	.*00	+.				NATURALLY HIGH COLOR AND LOW SECCHI DEPTH.
58.00	BLUE CYPRESS LAKE ABOVE BLUE CYPRES	YES	FAIR	----	----	----	--.	***	0	..00	000.	0000	0.		*	*	LOW SECCHI DEPTH DUE TO NATURALLY HIGH COLOR.FARMING ACTIVITIES AND STORMWATER FROM FELLSMERE FARMS HAVE AN AFFECT, SINCE DISCHARGE IS DIRECT INTO BIG M CANAL. OLD SEPTIC TANKS ARE WITHIN 50 FT. OF SURFACE WATER.
63.00	LAKE ASHBY ABOVE DEEP CREEK	YES	GOOD	----	.-..	.*--	-..		.	....	....	....	..		*	*	LOW SECCHI DEPTH DUE TO HIGH NATURAL COLOR.POTENTIAL PROBLEMS FROM SEWAGE SLUDGE FROM IRON BRIDGE PLANT AND NEW URBAN DEVELOPMENT EXIST.
65.00	LAKE KERR ABOVE SALT SPRING RUN	YES	GOOD	----	--..	----	--.		0	..-.	000-	.000	0.		*	*	
66.00	PUZZLE LAKE ABOVE ST JOHNS RIVER	PARTIAL	UNKN	....	....	....	.	* *							*		CATTLE RANCH OPERATION IS A CONTRIBUTING FACTOR.
* WATER BODY TYPE: STREAM																	
1.00	ST JOHNS RIVER ABOVE OKLAWAHA RIVER	YES	GOOD	---*	---.	....	-..		.	....	....	....	..				
7.00	ST JOHNS RIVER ABOVE LAKE GEORGE	YES	FAIR	--*-	----	....	--.	***	0	..00	.00.	0000	0.		* *	*	ALL WATER QUALITY INDICIES INDICATE GOOD QUALITY,ALTHOUGH HEAVY BOAT TRAFFIC,NUMEROUS FISH CAMPS AND MARINAS POSE A THREAT TO WATER QUALITY.
11.00	ST JOHNS RIVER ABOVE LAKE WOODRUFF	YES	FAIR	----	---.	....	--*	*	0	..**	*00.	**0-	0.		* *		
12.00	WEKIVA RIVER ABOVE ST JOHNS RIVER	YES	GOOD	----	---.	....	-..		.	....	....	....	..		* *		RUNOFF FROM WEKIVA SPRINGS SUBDIVISION AND ADJACENT RANCH LANDS POSE A THREAT WATER QUALITY.
13.00	BLACK WATER CREEK ABOVE WEKIVA RIVE	YES	GOOD	----	*-..	....	-..		0	....	*...	..00	0.				
13.10	SEMINOLE CREEK ABOVE BLACK WATER CR	UNKNOWN	POOR	.-.-	.-..	....	...		.	....	....	....	..				
17.00	ALEXANDER SPRING CR/TRACY CANAL ABO	YES	GOOD	----	-*--	....	--.		0	....	.00.	....	00				SPRING WATER HAS NATURALLY LOW DO.THE AREA IS HEAVILY USED BY WEEKEND CAMPERS.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
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'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
19.00	WEKIVA RIVER ABOVE BLACK WATER CREE	YES	GOOD	----	---.	....	-..	**	0	..0.	000.	.00*	-.	*	* **	* *	LIMITED HISTORIC DATA SHOWS SLIGHT BACTERIA AND NUTRIENT PROBLEM (SEE LITTLE WEKIVA RIVER).EXTENSIVE URBAN DEVELOPMENT WITHOUT STORMWATER TREATMENT AND SAND MINES EXASCERBATE THE PROBLEM. COUNTY PARK AREA HAS BEEN CLOSED TO SWIMMING.
19.01	LITTLE WEKIVA RIVER ABOVE WEKIVA RI	NO	FAIR	*---	----	....	--.	*	0	00*0	000.	000*	0.	*		*	REGIONAL WWTP ONLINE IN 1970'S CAUSING CONSIDERABLE IMPROVEMENT IN DO. SEVERAL POINT SOURCES AND SPECIAL STUDIES. TURBIDITY AND TP HAVE BEEN INCREASING RECENTLY.
19.10	WEKIVA RIVER ABOVE WEKIVA RIVER	YES	GOOD	----	---.	....	-.*	**	.	....	....	....	..		* **	*	NATURALLY LOW DO.UNTREATED URBAN STORMWATER, EXTENSIVE URBAN DEVELOPMENT AND RANCH LAND ACTIVITIES CONTRIBUTE TO THE PROBLEM.COUNTY PARK HAS BEEN CLOSED TO SWIMMMING.
19.11	ROCK SPRINGS RUN ABOVE ROCK SPRINGS	YES	UNKN	....	....	....	.	**							*	*	COUNTY PARK HAS BEEN CLOSED TO SWIMMING.
20.00	ST JOHNS RIVER ABOVE WEKIVA RIVER	YES	FAIR	--*-	---.	....	-..	**	.	....	....	....	..		* *		
20.10	SMITH CANAL ABOVE ST JOHNS RIVER	PARTIAL	POOR	*-.-	--..	....	-..		.	....	....	....	..	*			LOW DO AND INCREASED TP REPORTED IN 1984 WLA STUDY.
24.00	ST JOHNS RIVER ABOVE LAKE MONROE	PARTIAL	FAIR	----	---.	....	-..	***	0	..0.	000.	0000	0.	*	* **	*	UPSTREAM IMPACTS FROM LAKE JESSUP.UNTREATED URBAN STORMWATER,GRAZING CATTLE AND THE ACTIVITIES ASSOCIATED WITH A LARGE MARINA CONTRIBUTE TO WATER QUALITY DEGRADATION.
26.10	SOLDIER CREEK ABOVE LAKE JESSUP	NO	UNKN	....	....	....	.	* *							* *	*	
26.11	GEE CREEK ABOVE SOLDIER CREEK	PARTIAL	FAIR	*---	--*.	....	-..	* *	-	..0.	0--.	.0-0	-.	*	* *	*	CASSELBERRY WWTP DISCHARGED TO CREEK CAUSING DO, BACTERIA AND NUTRIENT PROBLEMS.WATER QUALITY HAS IMPROVED RECENTLY.CATTLE GRAZING IN THE AREA ARE ALSO A FACTOR.
26.15	SOLDIER CREEK ABOVE GEE CREEK	PARTIAL	FAIR	--*-	---.	....	-..	* *	.	....	....	....	..	*	* *	*	SMALL WWTP CAUSED MINOR WATER QUALITY PROBLEMS.CATTLE GRAZING IN THE AREA CONTRIBUTE TO THE PROBLEM.
26.20	HOWELL CREEK ABOVE LAKE JESSUP	PARTIAL	FAIR	*---	---.	....	-..	***	0	..0.	-00.	--0-	0.		* *	*	DOWNSTREAM OF LAKE AFFECTED BY WWTP. EFFLUENT REMOVED IN 1983. SHOULD IMPROVE.ACTIVITIES ASSOCIATED WITH CITRUS FARMING,GRAZING CATTLE, BOAT TRAFFIC,AND STORMWATER RUNOFF FROM A NEARBY SCHOOL ARE ALSO A FACTOR IN DIMINISHED WATER QUALITY.
26.27	HOWELL BRANCH ABOVE LAKE MAITLAND	PARTIAL	FAIR	*---	---.	....	-..		.	....	....	....	..				RECEIVED WINTER PARK WWTP EFFLUENT AND DISPLAYED DO AND NUTRIENT PROBLEMS. IN 1983 IT WAS DIVERTED TO REGIONAL PLANT. IT SHOULD SHOW IMPROVEMENT FOLLOWING REMOVAL OF EFFLUENT.
28.00	ST JOHNS RIVER ABOVE LAKE JESSUP	YES	FAIR	----	---.	....	-.-	***	*	..00	*00.	.000	0.		* **	* *	RUNOFF FROM A NEARBY AIRPORT LANDFILL,UNTREATED URBAN STORMWATER,GRAZING CATTLE,AND ACTIVITIES ASSOCIATED WITH THE OPERATION OF A LARGE MARINA,POSE A POTENTIAL THREAT TO WATER QUALITY.
29.00	ST JOHNS RIVER ABOVE DEEP CREEK	YES	FAIR	----	--..	....	-..		.	....	....	....	..				
34.00	ECONLOCKHATCHEE RIVER ABOVE LAKE HA	PARTIAL	FAIR	*---	----	....	--.	* *	0	00*0	---0	-0--	00	*	* **	*	DOWNSTREAM OF LITTLE ECON RIVER WHICH RECEIVES WWTP EFFLUENT.WATER QUALITY HAS IMPROVED RECENTLY.UNTREATED URBAN STORMWATER AND CATTLE GRAZING IN THE AREA CONTINUE TO POSE A PROBLEM.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
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'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
35.00	LITTLE ECONLOCKHATCHEE RIVER ABOVE	NO	POOR	*---	--..	....	--*	* *	-	..*0	---.	-0--	0.	*	* **	***	RECEIVED MAJOR SEWAGE FLOW FROM ORLANDO. REGIONAL WWTP WENT ONLINE 1983 CAUSING IMPROVEMENTS IN STREAM WATER QUALITY. SEVERAL STUDIES AVAILABLE.CATTLE RANCH RUNOFF AND UNTREATED URBAN STORMWATER ARE CONTRIBUTING FACTORS.
35.10	CRANE STRAND ABOVE LITTLE ECON RIVE	NO	POOR	*-*-	***.	....	..*	*	.	....	....	....	..		**	**	RECEIVED WWTP EFFLUENT IN THE PAST.NO RECENT DATA.EXTENSIVE DAMAGE TO WETLANDS FROM FILL OPERATIONS. LARGE DEGREE OF CHANNELIZATION.
36.00	ECONLOCKHATCHEE RIVER ABOVE LITTLE	YES	GOOD	----	*---	....	---	*	0	....	....	....	..		***	**	CONSTRUCTION OF A LARGE INDUSTRIAL PARK IS IMMINENT. ORANGE CO. WWTP DISCHARGE VIA WETLANDS.
38.00	ST JOHNS RIVER ABOVE LAKE PUZZLE	YES	FAIR	----	--..	....	--.	***	-	..*0	-00.	000-	0.		** *	* *	WATER QUALITY HAS BEEN DECLINING.POOR SEPTIC TANK DRAINAGE CONDITIONS ARE A CONTRIBUTING FACTOR.
38.10	TOOTOOSAHATCHEE CREEK ABOVE ST JOHN	YES	GOOD	----	-*-.	....	.*.		.	....	....	....	..				LOW DO AND HIGH COLOR DUE TO NATURAL CONDITIONS, ALSO METALS OF UNKNOWN ORIGIN.
39.00	JIM CREEK ABOVE ST JOHNS RIVER	YES	GOOD	----	---.	....	-*.		-	...0	.--.	0.0-	0.				LOW DO AND HIGH COLOR MAY BE DUE TO NATURAL CONDITIONS, ALSO HIGH INORGANIC TOXICS.
40.00	ST JOHNS RIVER ABOVE JIM CREEK	YES	GOOD	----	--..	....	-..	***	0	..-0	00*.	0000	0.		** *	* *	LOW DO MAY BE A NATURAL CONDITION.WATER QUALITY HAS BEEN DECLINING DUE IN PART TO CATTLE OPERATIONS AND POOR SEPTIC TANK DRAINAGE CONDITIONS.
41.00	TAYLOR CREEK ABOVE ST JOHNS RIVER	YES	GOOD	----	---.	....	--.		-	...-	-00.	-..-	0.				
42.00	ST JOHNS RIVER ABOVE TAYLOR CREEK	YES	GOOD	----	--..	....	--.	**	0	..0.	.00.	..0*	00		*	*	
46.00	ST JOHNS RIVER ABOVE LAKE POINSETT	YES	GOOD	----	--..	....	-..		0	...-	000.	-000	0.				
50.00	ST JOHNS RIVER ABOVE LAKE WINDER	YES	FAIR	----	-*-.	....	-..	***	*	..00	-**.	-000	0.		* *	**	POOR SEPTIC TANK DRAINAGE CONDITIONS ALONG WITH AGRICULTURAL PUMPING,CATTLE RANCHING,AND FISH CAMP OPERATIONS CREATE A POTENTIAL FOR A FUTURE DECLINE IN WATER QUALITY.
54.00	ST JOHNS RIVER ABOVE LAKE WASHINGTO	YES	GOOD	----	*--.	....	---	***	*	..00	0**.	0***	0+		* *	**	NATURALLY LOW DO.FISH CAMP GRAVITY CANAL,GRAZING CATTLE,AGRICULTURAL PUMPING AND POOR SEPTIC TANK DRAINAGE CONDITIONS EXASCERBATE CONDITIONS AND MAY EVENTUALLY CAUSE A CHANGE IN SUPPORT STATUS.
55.00	CRABGRASS CREEK ABOVE NORTH BRANCH	PARTIAL	FAIR	-.*-	.-..	....	...		.	....	....	....	..				TURBIDITY APPEARS TO BE CREATING A PROBLEM.
56.00	JANE GREEN CREEK ABOVE CRABGRASS CR	YES	GOOD	----	-*-.	....	-..		0	....	.00.	....	+0				NATURALLY LOW DO.
57.00	BULL CREEK ABOVE CRABGRASS CREEK	YES	GOOD	----	-*..	....	-..		.	....	....	....	..				
59.00	BLUE CYPRESS CREEK ABOVE COW LOG BR	YES	FAIR	----	-*..	....	-..	*	0	...0	000.	...0	0.		*		
60.00	PADGETT BRANCH ABOVE LITTLE GUMHEAD	YES	UNKN	....	....	....	.	*							*		
61.00	FORT DRUM CREEK ABOVE JIM GREEN CRE	YES	FAIR	----	-*-.	....	-..	*	0	...0	000.	00.0	-.		*	*	AREA IN PROXIMITY TO THE CREEK HAS BEEN DRAINED AND DIKED FOR CITRUSPRODUCTION AND CATTLE RANCHES.
62.00	DEEP CREEK ABOVE ST JOHNS RIVER	YES	POOR	-.--	.*..	....	...		.	....	....	....	..				NATURALLY OCCURRING LOW DO.
62.10	COW CREEK ABOVE DEEP CREEK	YES	GOOD	----	--..	....	-..		.	....	....	....	..				
64.00	SALT SPRING RUN ABOVE LAKE GEORGE	YES	UNKN	....	....	....	.										
67.00	WOLF CREEK #1 ABOVE ST JOHNS RIVER	YES	GOOD	----	--..	....	-..		0	....	....	..-0	..				
68.00	PENNYWASH CREEK #1 ABOVE ST JOHNS R	UNKNOWN	GOOD	-...	....	....	...		.	....	....	....	..				
69.00	TENMILE CREEK #1 ABOVE WOLF CREEK #	PARTIAL	UNKN	....	....	....	.	**							*	*	AGRICULTURAL BACKPUMPING, CATTLE, CANAL RUNOFF, SOD FARM RUNOFF AND DRAINAGE FROM A STAGNANT MARSH ALL CONTRIBUTE TO THE PROBLEM.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS: NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS: W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES: IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
70.00	WOLF CREEK #2 ABOVE TENMILE CREEK #	PARTIAL	UNKN	....	....	....	.	**							*		AGRICULTURAL BACKPUMPING, CATTLE, CANAL RUNOFF, SOD FARM RUNOFF,DRAINAGE FROM A STAGNANT MARSH AND OTHER FARMING ACTIVITIES AFFECT WATER QUALITY IN THIS REACH.
71.00	SIXMILE CREEK ABOVE WOLF CREEK	PARTIAL	UNKN	....	....	....	.	**							*		AGRICULTURAL BACKPUMPING,CATTLE, CANAL RUNOFF, SOD FARM RUNOFF, STAGNANT MARSH WATER,AND ROW CROP PRODUCTION ACTIVITIES ARE ALL CONTRIBUTING FACTORS IN THE DECLINE IN WATER QUALITY.

ST. MARKS RIVER BASIN

General Description of the Basin

The St. Marks River basin drains approximately 1180 square miles and extends from south Georgia to the Gulf of Mexico. The major river in the basin is the St. Marks River which has an average flow of 700 cfs at a point 11 miles upstream of the confluence of the St. Marks and Wakulla Rivers. The Wakulla River is spring fed and has an average flow of 400 cfs. Land use within the basin is predominately forest with about 10% urban.

Specific Water Quality Problems and Sources

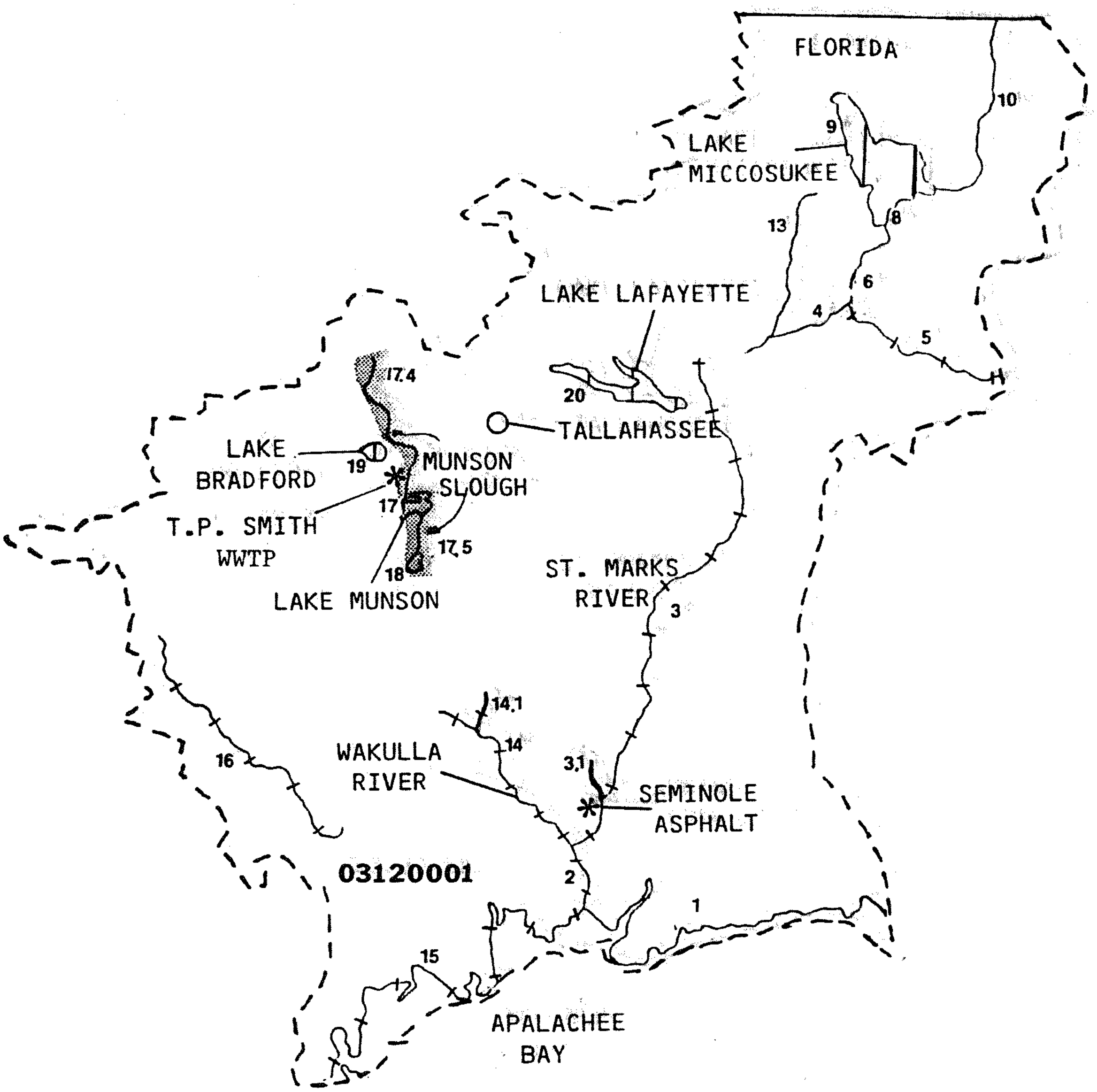
Water quality is excellent in much of this basin; however, many of the reaches have not been recently sampled. There are two areas in the basin which have water quality problems. Munson Slough drains portions of the Tallahassee urban area and receives treated wastewater from small package plants and runoff from the city WWTP sprayfield. The stream system enters Lake Munson and then disappears in a sinkhole several miles downstream of the lake. The lake and stream system exhibit poor water quality with algal blooms, high nutrients, bacteria and transparency problems. Effluent from the major WWTP in Tallahassee has been diverted from Munson Slough to a land spreading operation. The lake still has problems relating to urban runoff from Tallahassee.

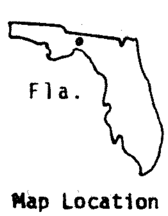
A Lake Munson study has recently been prepared by the Department to determine the status of water and sediment quality as a first step toward a proposed restoration project. The study indicated very positive results. Since the diversion of treated wastewater from Munson Slough the algal growth potential has decreased tenfold and the biological community has relatively good diversity. It was also determined that the low nutrient, highly tannic swamp waters draining into the lake have had a beneficial effect on the lake's recovery.

The St. Marks River has been declared an Outstanding Florida Water except for the portion downstream of Rattlesnake Branch (the lower 3-4 river miles). This section of the river receives effluent from Seminole Asphalt industry (which was found in 1985 to be acutely toxic to bioassay organisms) and Purdom Power Plant. The former company is under consent order from the Department and is no longer operating. Its current discharge is just circulation water; however, it does pass through an oil and grease contaminated marsh before reaching the river. In addition, there are docking and pumping stations for oil barges and a few recreational boats. There have been several major and minor oil spills in the past, and sediments in the area are coated with oil. A restoration program of dredging the contaminated deposits has had to be abandoned because a site for dumping the spoil could not be found.

The Wakulla River is fed by one of Florida's highest discharge springs and has excellent water quality. The upper portion of the river was recently bought by the state and made into a state park; however, the lower portion of the river is threatened by continued waterfront development with insufficient buffer areas along the river's edge.

ST. MARKS RIVER BASIN





AVERAGE OVERALL WATER QUALITY 1970-1987 STORET DATA		
RIVERS/STREAMS		LAKES/ESTUARIES
	GOOD	
	FAIR	
	POOR	
	UNKNOWN	
EPA WATER QUALITY INDEX	AND	FLORIDA TROPHIC STATE INDEX

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03120001 ST MARKS RIVER																										
* WATER BODY TYPE: LAKE																										
8.00	LAKE MICCOSUKEE AB LLOYD CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	LAKE MICCOSUKEE AB LLOYD CREEK	28	65	81	2.5	18.3	30	1	5.5	64	1.9	-1	7	5.9	5	0.94	0.04	6	1	-1	-1.0	-1.0	-1	27	-1	37
17.00	LAKE MUNSON AB MUNSON SLOUGH	36	68	80	31.5	0.4	100	41	15.4	180	17.9	91	24	9.2	92	5.03	1.39	134	412	945	-1.0	-1.0	-1	302	-1	88
18.00	EIGHTMILE POND/AMES SINK AB MU	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
19.00	LAKE BRADFORD AB LAKE HIAWATHA	8	66	71	1.7	-1.0	200	-1	5.9	77	-1.0	-1	-1	4.3	0	0.49	0.04	-1	-1	-1	-1.0	-1.0	-1	28	-1	46
20.00	LAKE LAFAYETTE AB PINEY Z LAKE	17	74	75	3.0	-1.0	40	3	4.7	51	1.7	-1	-1	6.6	10	0.80	0.03	-1	1215	16	-1.0	-1.0	-1	68	-1	40
* WATER BODY TYPE: OCEAN																										
1.00	APALACHEE BAY AB GULF OF MEXIC	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
15.00	APALACHEE BAY AB GULF OF MEXIC	2	79	80	2.0	1.6	33	18	7.2	84	0.6	-1	6	7.6	-1	-1.00	0.03	10	56	-1	4.2	-1.0	-1	38650	-1	-1
* WATER BODY TYPE: STREAM																										
2.00	ST MARKS RIVER AB GULF OF MEXI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	ST MARKS RIVER AB WAKULLA RIVE	78	66	86	1.4	-1.0	10	-1	7.1	79	-1.0	-1	6	7.9	110	0.33	0.05	-1	-1	-1	-1.0	-1.0	-1	260	594	12
3.10	MORIAH CREEK AB ST MARKS RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	ST MARKS RIVER AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	LLOYD CREEK AB ST MARKS RIVER	6	65	71	5.3	-1.0	60	-1	7.4	81	-1.0	-1	-1	6.1	11	0.50	0.15	-1	-1	-1	-1.0	-1.0	-1	47	7	29
6.00	LLOYD CREEK AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
10.00	WARD CREEK AB LAKE MICCOSUKEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.00	UNNAMED CREEK AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	WAKULLA RIVER AB ST MARKS RIVE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.10	MCBRIDE SLOUGH AB WAKULLA RIVE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.00	LOST CREEK AB COW SWAMP	4	75	85	5.2	-1.0	340	1	6.9	79	-1.0	-1	27	5.0	1	0.65	0.03	-1	-1	-1	-1.0	-1.0	-1	43	143	25
17.40	MUNSON SLOUGH(AB LAKE MUNSON)	5	71	74	24.0	-1.0	100	28	6.1	73	14.7	112	20	7.9	190	6.96	7.52	-1	3100	33500	-1.0	-1.0	-1	1000	-1	73
17.50	MUNSON SLOUGH(BELO LK MUNSON)	4	71	74	25.0	-1.0	90	31	8.5	105	7.4	89	18	8.8	99	6.38	1.95	-1	1920	2300	-1.0	-1.0	-1	1200	-1	67

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03120001 ST MARKS RIVER																	
* WATER BODY TYPE: LAKE																	
8.00	LAKE MICCOSUKEE ABOVE LLOYD CREEK	UNKNOWN	UNKN	....	....	....	.										
9.00	LAKE MICCOSUKEE ABOVE LLOYD CREEK	YES	GOOD	----	---.	----	--.	*	.	....	....	....	..		*	*	GOOD OVERALL LAKE WATER QUALITY, NATURALLY LOW DO.HYDROMODIFIED(DAM ON SOUTHERN END OF LAKE). WEED BUILDUP.
17.00	LAKE MUNSON ABOVE MUNSON SLOUGH	NO	POOR	***-	*-*.	****	*..	***	.	....	....	....	..		*	***	WATER QUALITY IMPROVED AFTER DIVERSION OF 12 MGD OF TREATED SEWAGE FROM LAKE, BUT THERE IS STILL A NONPOINT SOURCE PROBLEM. A LAKE RESTORATION PROJECT IS PROPOSED.8 FEET OF MUCK AT NORTH END, DAM AT SOUTH END. EUTROPHIC CONDITIONS.
18.00	EIGHTMILE POND/AMES SINK ABOVE MUNS	NO	UNKN	....	....	....	.	***							*	*	
19.00	LAKE BRADFORD ABOVE LAKE HIAWATHA	YES	GOOD	-*--	.-..	..--	..-	*	.	....	....	....	..		*		DEVELOPMENT ON SHORELINE. MOTOR BOAT POLLUTION.
20.00	LAKE LAFAYETTE ABOVE PINEY Z LAKE	YES	GOOD	----	---.	..--	-..	***	.	....	....	....	..		* *	*	GOOD OVERALL QUALITY. NATURALLY LOW DO.FISHKILL APPEARED TO ORIGINATE FROM HOLDING POND WEST OF WEEMS ROAD. DEVELOPMENT ACTIVITIES ON SHORELINE AND IN WATERSHED. LAKE EUTROPHICATION PROCESS, ALMOST 90% OF LAKE AFFECTED.
* WATER BODY TYPE: OCEAN																	
1.00	APALACHEE BAY ABOVE GULF OF MEXICO	UNKNOWN	UNKN	....	....	....	.										
15.00	APALACHEE BAY ABOVE GULF OF MEXICO	YES	UNKN	----	----	--.-	-..		.	....	....	....	..			*	
* WATER BODY TYPE: STREAM																	
2.00	ST MARKS RIVER ABOVE GULF OF MEXICO	YES	UNKN	....	....	....	.										SPILLS FROM LARGE PETROLEUM OPERATIONS.
3.00	ST MARKS RIVER ABOVE WAKULLA RIVER	YES	GOOD	----	--..	....	--*		0	..0.	.0*.	..00	00		*	*	EXCELLENT WATER QUALITY. POSSIBLE DEGRADING TREND IN NITROGEN AND DISSOLVED OXYGEN CONCENTRATIONS.HOUSING DEVELOPMENT IN FLOODPLAIN AND POWER BOAT ACTIVITY ASSOCIATED WITH DEVELOPMENT.
3.10	MORIAH CREEK ABOVE ST MARKS RIVER	UNKNOWN	UNKN	....	....	....	.										
4.00	ST MARKS RIVER ABOVE	UNKNOWN	UNKN	....	....	....	.										
5.00	LLOYD CREEK ABOVE ST MARKS RIVER	YES	GOOD	----	.-..	....	...		.	....	....	....	..				GULF CHEMICALS (NOW CLOSED).
6.00	LLOYD CREEK ABOVE	UNKNOWN	UNKN	....	....	....	.										
10.00	WARD CREEK ABOVE LAKE MICCOSUKEE	UNKNOWN	UNKN	....	....	....	.										
13.00	UNNAMED CREEK ABOVE	UNKNOWN	UNKN	....	....	....	.										
14.00	WAKULLA RIVER ABOVE ST MARKS RIVER	YES	UNKN	....	....	....	.								**	*	CONTINUED DEVELOPMENT OF RIVERFRONT PROPERTIES AND ADJACENT UPLANDS WILL LEAD TO DECREASED WATER QUALTIY.
14.10	MCBRIDE SLOUGH ABOVE WAKULLA RIVER	UNKNOWN	UNKN	....	....	....	.										
16.00	LOST CREEK ABOVE COW SWAMP	YES	GOOD	-*--	--..	....	--.		.	....	....	....	..				
17.40	MUNSON SLOUGH(AB LAKE MUNSON) ABOVE	NO	POOR	*-*-	*-*.	....	*..	***	.	....	....	....	..		*	*	WATER QUALITY IMPROVED AFTER DIVERSION OF 12 MGD OF WWTP EFFLUENT FROM LAKE, BUT A NONPOINT SOURCE PROBLEM STILL EXISTS. A LAKE RESTORATION PROJECT IS PROPOSED.EUTROPHIC CONDITIONS WITH ORGANIC OOZE ON BOTTOM.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
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REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
17.50	MUNSON SLOUGH(BELO LK MUNSON) ABOVE	NO	POOR	*-*-	*-*.	....	*..	***	.	....	....	....	..		*	**	WATER QUALITY IMPROVED AFTER DIVERSION OF 12 MGD OF WWTP EFFLUENT FROM LAKE, BUT A NONPOINT SOURCE PROBLEM STILL EXISTS. A LAKE RESTORATION PROBLEM IS PROPOSED.SUSPECTED POLLUTION FROM LAKE MUNSON AS WELL AS WWTP SPRAY IRRIGATION.

ST. MARYS RIVER BASIN

General Description of the Basin

The St. Marys River is the northeast border between Florida and Georgia. It is formed by the convergence of the North and South Prong and flows first north and then east into the Atlantic Ocean. The North Prong originates in the Okeefenokee Swamp in Georgia. The entire basin encompasses 1610 square miles with 216 river reach miles in Florida. The principal inflow of water to the system is ground water and the average flow of the river is about 1200 cfs. The lower portion of the St. Marys River is tidally influenced and reverse flows occur daily. Amelia River forms the estuarine portion of the basin and has a drainage area of approximately 5 square miles. The primary land use within the basin is forest.

Specific Water Quality Problems and Pollution Sources

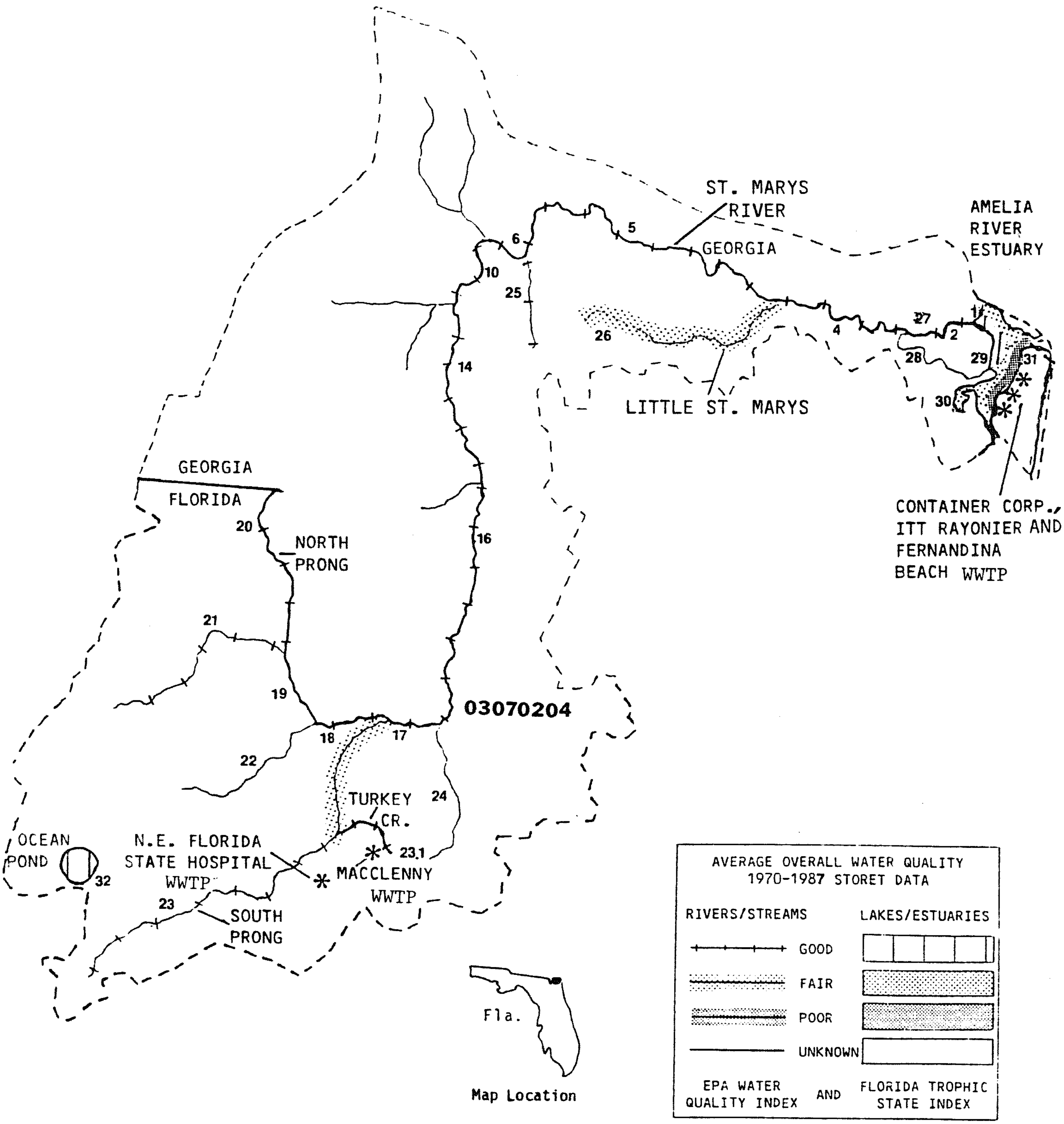
The St. Marys River with its extensive marsh system generally has excellent water quality. Low pH occurs naturally in the upper reaches of the basin especially the North Prong, due to swampy drainage conditions. There are three areas of concern in the basin: the South Prong, Little St. Marys and Amelia River.

The South Prong has borderline high bacteria and nutrient concentrations and low dissolved oxygen. These minor problems are probably due to the effluents from the MacClenny WWTP and the N.E. Florida State Hospital WWTP, which both discharge to tributaries of the South Prong. A DER intensive survey in 1982 found poor water quality in Turkey Creek below the MacClenny WWTP outfall. Wasteload allocations were issued for these two dischargers in 1982 and 1983.

Limited sampling of the Little St. Marys River found some low dissolved oxygen values and slightly elevated nutrient values. This reach receives effluent from a small WWTP and a fruit growing company which may be responsible for the water quality conditions. The portion of St. Marys River below Little St. Marys River has historically had some DO, bacteria and nutrient problems, which might partially be explained by two Georgia WWTPs that discharge to tributaries of this reach.

Finally, the Amelia River estuary exhibits fair water quality with DO, water clarity and nutrient problems due to the Fernandina Beach WWTP and several Florida and Georgia pulp and paper mills. A site specific alternative criterion of 3.2 mg/l dissolved oxygen has been issued for the Amelia River in the vicinity of the ITT Rayonnier (paper mill) discharge point during certain tidal flows. Intensive sampling of this area found a significant percentage (10-40% per month) of the water samples were below this alternative criterion. There is also rapid development occurring on Amelia Island.

ST. MARYS RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03070204 ST MARYS RIVER																										
* WATER BODY TYPE: ESTUARY																										
1.00	ST MARYS RIVER AB AMELIA RIVER	1	71	71	84.0	-1.0	300	300	0.0	0	-1.0	220	-1	7.2	196	-1.00	0.29	-1	1700	-1	-1.0	-1.0	-1	-1	-1	-1
29.00	AMELIA RIVER AB ATLANTIC OCEAN	9	73	87	4.4	1.1	40	29	7.0	91	0.9	-1	4	7.8	-1	0.51	0.11	1	44	14	-1.0	-1.0	-1	39000	-1	45
30.00	AMELIA RIVER AB ATLANTIC OCEAN	150	69	87	6.7	0.7	40	72	5.1	65	1.6	147	7	7.5	86	0.70	0.14	2	345	49	3.2	-1.0	-1	37375	1	58
31.00	AMELIA ISLAND AB ATLANTIC OCEA	455	69	85	8.0	0.8	40	73	5.4	67	1.3	196	6	7.6	75	0.86	0.14	1	490	79	3.1	-1.0	-1	38550	2	57
* WATER BODY TYPE: LAKE																										
32.00	OCEAN POND AB OLUSTEE CREEK	56	66	84	5.0	1.1	72	1	7.7	92	0.9	27	-1	4.7	1	0.47	0.07	4	33	4	-1.0	-1.0	-1	46	-1	42
* WATER BODY TYPE: STREAM																										
2.00	ST MARYS RIVER AB ICWW	14	71	87	5.0	0.8	48	25	6.2	76	1.1	249	6	7.9	534	0.54	0.10	2	200	33	3.7	-1.0	-1	35500	1	34
4.00	ST MARYS RIVER AB ST MARYS RIV	222	61	87	4.8	0.6	200	11	5.6	64	0.9	78	21	6.5	11	0.72	0.09	1	790	110	2.3	1.6	9	4160	1	42
5.00	ST MARYS RIVER AB LITTLE ST MA	25	71	85	2.8	0.6	220	2	6.7	73	1.6	67	30	5.0	5	1.11	0.06	-1	285	110	-1.0	-1.0	-1	44	-1	33
6.00	ST MARYS RIVER AB PIGEON CREEK	135	58	86	3.5	-1.0	210	-1	6.0	69	1.0	-1	26	5.7	9	-1.00	0.04	-1	-1	90	-1.0	-1.0	-1	54	-1	38
10.00	ST MARYS RIVER AB SPANISH CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	ST MARYS RIVER AB SUWANNEE CAN	16	84	86	-1.0	0.9	239	2	7.5	77	1.5	-1	-1	5.2	0	0.75	0.04	0	-1	-1	-1.0	-1.0	-1	53	-1	20
16.00	ST MARYS RIVER AB ST MARYS RIV	5	75	85	2.5	0.9	250	5	8.6	84	1.5	68	31	4.6	25	1.03	0.06	-1	330	70	-1.0	-1.0	-1	38	-1	29
17.00	ST MARYS RIVER AB DEEP CREEK	186	58	86	2.1	0.6	200	-1	7.7	84	0.8	0	22	5.3	5	0.70	0.05	1	167	28	-1.0	-1.0	-1	48	350	21
18.00	ST MARYS RIVER, NORTH PRONG AB	108	61	87	2.0	0.6	245	1	7.2	79	0.8	73	32	4.5	2	0.91	0.11	0	490	110	2.6	3.2	23	48	-1	29
19.00	ST MARYS RIVER, NORTH PRONG AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
20.00	ST MARYS RIVER, NORTH PRONG AB	45	58	85	1.8	0.9	160	3	6.5	68	1.6	73	33	4.3	1	1.04	0.05	-1	635	120	-1.0	-1.0	-1	59	53	37
21.00	ST MARYS RIVER, MIDDLE PRONG A	37	66	81	2.0	-1.0	280	4	6.2	68	0.9	94	36	4.0	9	0.85	0.04	-1	760	20	-1.0	-1.0	-1	55	36	31
22.00	CEDAR CREEK AB ST MARYS R, N P	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
23.00	ST MARYS RIVER, SOUTH PRONG AB	10	66	80	2.0	0.7	85	2	5.5	61	1.1	57	-1	5.8	-1	0.67	0.22	-1	1295	335	-1.0	-1.0	-1	54	6	53
23.10	TURKEY CREEK AB ST MARYS R, S	10	72	85	2.0	-1.0	80	4	5.8	62	0.8	40	-1	6.1	26	0.54	0.10	-1	490	95	-1.0	-1.0	-1	62	1	35
24.00	DEEP CREEK AB ST MARYS RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
25.00	PIGEON CREEK AB ST MARYS RIVER	24	65	74	2.9	-1.0	100	-1	7.4	83	-1.0	-1	-1	6.0	7	0.40	0.02	-1	-1	-1	-1.0	-1.0	-1	34	1	22
26.00	LITTLE ST MARYS RIVER AB ST MA	29	65	85	5.0	0.8	160	18	5.3	57	1.8	-1	-1	6.1	21	1.82	0.27	-1	1300	170	-1.0	-1.0	-1	80	0	56
27.00	ST MARYS RIVER AB NORTH RIVER	11	71	87	6.0	0.8	75	26	5.7	70	0.7	249	-1	7.4	384	0.66	0.13	2	220	185	1.7	-1.0	-1	31500	-1	42
28.00	BELLS RIVER AB ICWW	1	75	75	-1.0	-1.0	-1	-1	7.6	95	1.5	-1	-1	7.8	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	29000	2	30

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03070204 ST MARYS RIVER																	
* WATER BODY TYPE: ESTUARY																	
1.00	ST MARYS RIVER ABOVE AMELIA RIVER	PARTIAL	UNKN	--*.	**-.	...*	...		.	....	....	....	..		****	**	INSUFFICIENT DATA COVERAGE TO CLASSIFY REACH.
29.00	AMELIA RIVER ABOVE ATLANTIC OCEAN	YES	GOOD	--*-	---.	----	-..		.	....	....	....	..				
30.00	AMELIA RIVER ABOVE ATLANTIC OCEAN	PARTIAL	FAIR	--*-	*---	---*	--.		0	--*0	000*	.000	0.	**	*	*	SEVEN SPECIAL STUDIES OF INDUSTRIAL EFFLUENTS (PULP MILLS) AND WWTP. SSAC GIVEN TO MEET DO OF 3.2 MG/L IN ESTUARY. VARIOUS CYCLIC TRENDS OVER PAST 15 YEARS.
31.00	AMELIA ISLAND ABOVE ATLANTIC OCEAN	NO	FAIR	--*-	*---	---*	--*		0	00*0	0*0*	.0-0	+.	**	*	*	SEVEN SPECIAL STUDIES OF INDUSTRIAL EFFLUENTS (PULP MILLS) AND WWTP. SSAC GIVEN TO MEET DO OF 3.2 MG/L IN ESTUARY. VARIOUS CYCLIC TRENDS OVER PAST 15 YEARS.THIS TIDAL MARSH CREEK IS IN A HEAVILY DEVELOPING AREA ON AMELIA ISLAND.
* WATER BODY TYPE: LAKE																	
32.00	OCEAN POND ABOVE OLUSTEE CREEK	YES	GOOD	-*--	---.	----	--.		*	0.-0	00..	.0.0	..				THE WATER QUALITY INDEX INDICATES WORSENING CONDITIONS DURING THE 1980-1984 TIME PERIOD.
* WATER BODY TYPE: STREAM																	
2.00	ST MARYS RIVER ABOVE ICWW	YES	GOOD	--**	*---	....	-..		.	....	....	....	..		****	**	
4.00	ST MARYS RIVER ABOVE ST MARYS RIVER	YES	GOOD	---*	---*	....	-*.		0	00*0	000.	-000	0.		****	**	
5.00	ST MARYS RIVER ABOVE LITTLE ST MARY	YES	GOOD	-*--	*--.	....	-..		.	....	....	....	..		****	**	
6.00	ST MARYS RIVER ABOVE PIGEON CREEK	YES	GOOD	----	---.	....	-..	*	0	.00.	*000	...0	0.		****	***	POSSIBLE DECREASE IN OXYGEN CONCENTRATION AND INCREASE IN BOD OVER THE LAST SEVERAL YEARS.
10.00	ST MARYS RIVER ABOVE SPANISH CREEK	YES	UNKN	....	....	....	.								****	**	RIVER UNDERGOING RAPID DEVELOPMENT. EROSION PROBLEMS ON BLUFFS OF FEEDER CREEKS.
14.00	ST MARYS RIVER ABOVE SUWANNEE CANAL	YES	GOOD	----	--..	....	-..		0	...0	000.	0.00	0.		****	**	RIVER UNDER GOING RAPID DEVELOPMENT. EROSION PROBLEMS ON BLUFFS OF FEEDER CREEKS.
16.00	ST MARYS RIVER ABOVE ST MARYS RIVER	YES	GOOD	-*--	*--.	....	-..		.	....	....	....	..				
17.00	ST MARYS RIVER ABOVE DEEP CREEK	YES	GOOD	----	---.	....	--.		.	....	....	....	..				
18.00	ST MARYS RIVER, NORTH PRONG ABOVE S	YES	GOOD	-*--	*---	....	-..		0	00*0	000.	-00-	0.				
19.00	ST MARYS RIVER, NORTH PRONG ABOVE C	UNKNOWN	UNKN	....	....	....	.										
20.00	ST MARYS RIVER, NORTH PRONG ABOVE S	YES	GOOD	-*--	*--.	....	-..		.	....	....	....	..				NATURALLY LOW pH.
21.00	ST MARYS RIVER, MIDDLE PRONG ABOVE	YES	GOOD	-*--	*--.	....	--.		.	....	....	....	..		*	*	RIVER UNDERGOING RAPID DEVELOPMENT. EROSION PROBLEMS ON BLUFFS OF FEEDER CREEKS.
22.00	CEDAR CREEK ABOVE ST MARYS R, N PRO	YES	UNKN	....	....	....	.								*		RUNOFF PROBLEMS FROM DIRT ROADS
23.00	ST MARYS RIVER, SOUTH PRONG ABOVE S	PARTIAL	FAIR	----	---.	....	-.*		.	....	....	....	..	*	* **		FIVE SPECIAL STUDIES AROUND MACCLENNY WWTP AND NE FLORIDA HOSPITAL WWTP. INTENSIVE SAMPLING SHOWS SLIGHT ELEVATED BACTERIA IN SOUTH PRONG.DEVELOPMENT ALONG RIVER'S SWAMP WITH DOMESTIC GARBAGE DUMPING PROBLEMS. UPPER PORTION OF RIVER HAS GOOD QUALITY.
23.10	TURKEY CREEK ABOVE ST MARYS R, S PR	YES	GOOD	----	---.	....	-..		.	....	....	....	..		* **		DEVELOPMENT ALONG RIVER'S SWAMP WITH DOMESTIC GARBAGE DUMPING PROBLEMS.
24.00	DEEP CREEK ABOVE ST MARYS RIVER	UNKNOWN	UNKN	....	....	....	.										
25.00	PIGEON CREEK ABOVE ST MARYS RIVER	YES	GOOD	----	.-..	....	...		.	....	....	....	..				

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
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REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
26.00	LITTLE ST MARYS RIVER ABOVE ST MARY	PARTIAL	FAIR	----	---.	....	-..		.	....	....	....	..	*	*		SLIGHT DO PROBLEM, MAY BE NATURAL OR DUE TO EFFLUENT FROM TWO, LOW VOLUME POINT SOURCES.
27.00	ST MARYS RIVER ABOVE NORTH RIVER	YES	GOOD	--**	*---	....	-..		.	....	....	....	..				
28.00	BELLS RIVER ABOVE ICWW	UNKNOWN	GOOD	.-.*	--..	....	...		.	....	....	....	..				

STEINHATCHEE RIVER BASIN

General Description of the Basin

This basin covers about 55 miles of Florida coastal panhandle and includes several small coastal river systems. The Steinhatchee River and its two tributaries, Eightmile Creek and Kettle Creek, drain approximately 586 square miles, most of which are low wetlands. Spring Warrior Creek drains 242 square miles of forest and wetlands. The Econfina River drains approximately 299 square miles of mostly wooded land. The above three systems are to a large extent not impacted by pollution point sources. A large portion of the upper coastal basin has recently been purchased by the state.

The Fenholloway River is not typical of streams in this area due to the discharge of a large volume of effluent from a paper mill. This effluent makes up most of the flow in this system during the dryer portions of the year. The drainage area of the river and its tributaries is approximately 405 square miles.

Specific Water Quality Problems and Pollution Sources

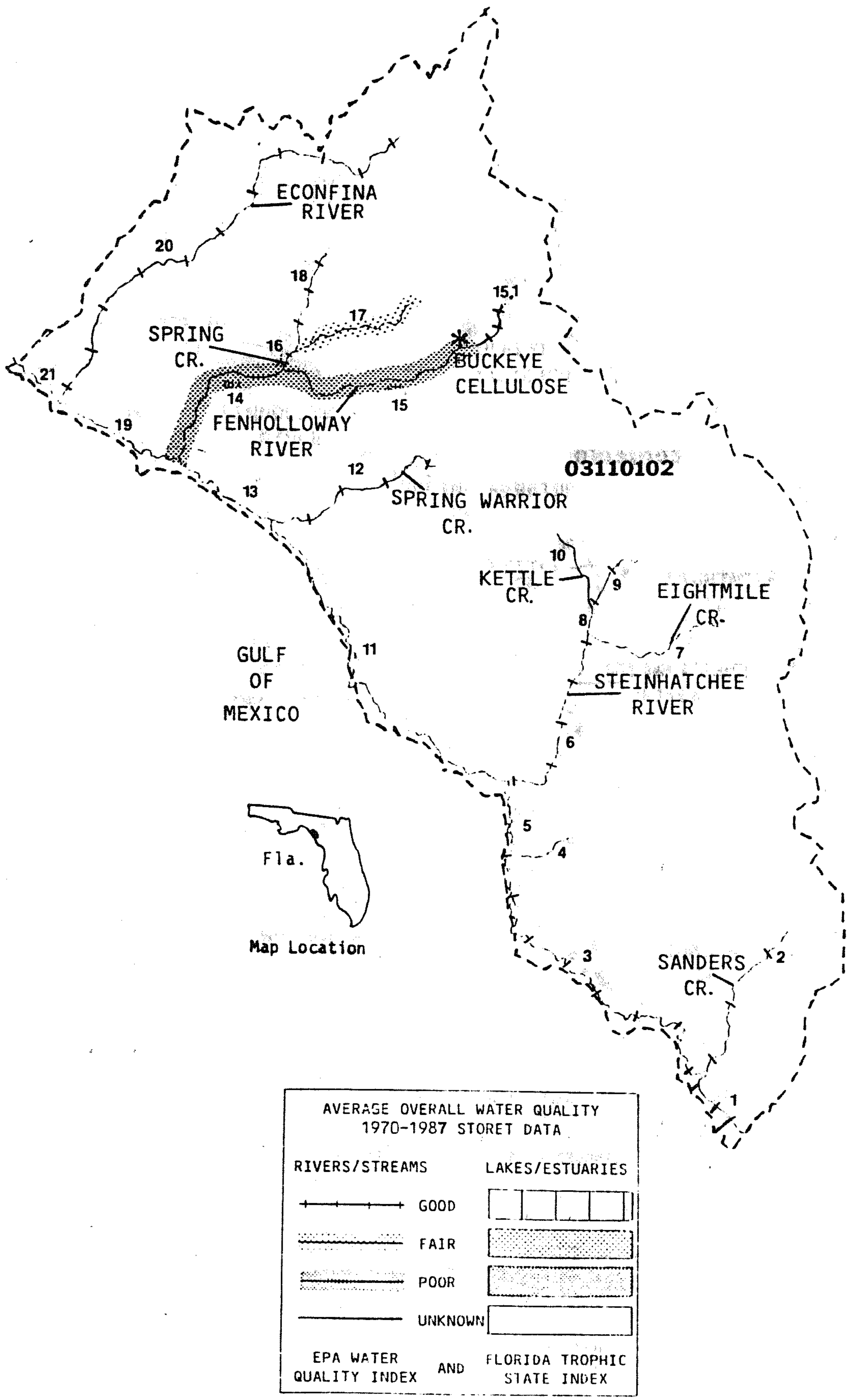
Most of the streams in this coastal area are meeting the use designation. Low pH and DO values are believed to be due to the sluggish flow of the headwaters of these streams. Bacterial counts are sometimes greater than that expected from natural wildlife populations. These values have not been fully explained. For the most part, the streams originate in areas of swampland. Much of this basin is intensively logged and the rivers and tributaries receive periodic impact (mostly turbidity) from both planting and logging operations.

The Econfina River appears to have degraded somewhat since the late seventies but still meets the use designation. No cause for this decline has been determined. There is some controversy about the lower Steinhatchee. Local fish camp owners contend that fish populations are declining because of higher freshwater flow from upstream due to logging operations. DER is currently conducting a basin assessment of the area.

The Fenholloway River does not meet even the low Class V (industrial use) DO standard below the pulpmill plant, Buckeye Cellulose, which discharges to the river. Over the last 15 years about 70% of the DO samples were less than 2.0 mg/l. Several miles downstream, DO recovers to levels above the 2.0 mg/l required in Class V waters, however, 50% of the samples still do not meet the standards. Improvement in dissolved oxygen levels has been noted during the historical monitoring period, however, nutrient levels remain high and recent DO violations have been noted.

The lower portion of Spring Creek has historically had bacteria problems likely due to the City of Perry WWTP and a package plant which discharge upstream.

STEINHATCHEE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03110102 STEINHATCHEE R																										
* WATER BODY TYPE: OCEAN																										
1.00	GULF OF MEXICO AB SUWANNEE RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	GULF OF MEXICO AB SANDERS CREE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	GULF OF MEXICO AB ROCKY CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.00	GULF OF MEXICO AB STEINHATCHEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.00	GULF OF MEXICO AB SPRING WARRI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
19.00	GULF OF MEXICO AB FENHOLLOWAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	GULF OF MEXICO AB ECONFINA RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: STREAM																										
2.00	SANDERS CREEK AB GULF OF MEXIC	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	ROCKY CREEK AB GULF OF MEXICO	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	STEINHATCHEE RIVER AB GULF OF	111	66	86	1.6	0.6	125	4	6.5	72	1.1	69	26	7.3	91	0.92	0.07	5	340	130	2.4	-1.0	11	225	170	32
7.00	EIGHTMILE CREEK AB STEINHATCHE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.00	STEINHATCHEE RIVER AB EIGHTMIL	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	STEINHATCHEE RIVER AB KETTLE C	12	71	83	2.8	0.5	283	2	6.1	62	0.6	84	-1	7.1	72	0.55	0.16	-1	360	49	-1.0	-1.0	-1	110	-1	36
10.00	KETTLE CREEK AB STEINHATCHEE R	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	SPRING WARRIOR CREEK AB GULF O	10	76	83	1.8	0.6	240	0	8.7	80	3.2	62	8	6.8	59	0.60	0.11	22	490	330	3.0	-1.0	-1	335	-1	32
14.00	FENHOLLOWAY RIVER AB GULF OF M	31	70	85	3.0	0.3	735	6	1.2	11	6.0	153	27	7.3	183	2.37	0.62	0	1500	330	-1.0	-1.0	-1	830	-1	69
15.00	FENHOLLOWAY RIVER AB SPRING CR	163	56	85	4.7	0.2	1260	16	0.7	7	11.5	392	106	7.1	180	2.96	0.89	0	700	111	0.8	-1.0	-1	1240	93	72
15.10	FENHOLLOWAY RIVER HEADWATERS A	67	66	85	3.6	0.5	750	2	5.8	61	0.5	171	66	4.5	0	1.25	0.08	-1	240	60	3.8	-1.0	-1	80	42	41
16.00	SPRING CREEK AB FENHOLLOWAY RI	14	74	85	2.0	0.8	203	1	6.0	62	0.8	51	27	7.2	122	1.08	0.19	-1	1345	490	2.8	-1.0	-1	287	-1	37
17.00	SPRING CREEK AB ROCKY CREEK	19	70	73	3.5	-1.0	22	7	3.5	39	1.8	0	-1	7.5	146	-1.00	0.32	-1	3300	490	-1.0	-1.0	-1	-1	-1	54
18.00	ROCKY CREEK AB SPRING CREEK	7	74	74	3.6	-1.0	60	4	5.8	65	0.8	83	-1	7.3	200	-1.00	-1.00	-1	490	220	-1.0	-1.0	-1	315	-1	40
20.00	ECONFINA RIVER AB GULF OF MEXI	103	66	83	2.0	0.6	350	1	5.7	61	0.8	83	31	6.8	60	0.72	0.07	1	408	79	3.0	-1.0	27	138	94	35

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS WQ	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03110102 STEINHATCHEE R																	
* WATER BODY TYPE: OCEAN																	
1.00	GULF OF MEXICO ABOVE SUWANNEE RIVER	YES	UNKN	....	....	....	.										
3.00	GULF OF MEXICO ABOVE SANDERS CREEK	UNKNOWN	UNKN	....	....	....	.										
5.00	GULF OF MEXICO ABOVE ROCKY CREEK	UNKNOWN	UNKN	....	....	....	.										
11.00	GULF OF MEXICO ABOVE STEINHATCHEE R	UNKNOWN	UNKN	....	....	....	.										
13.00	GULF OF MEXICO ABOVE SPRING WARRIOR	UNKNOWN	UNKN	....	....	....	.										
19.00	GULF OF MEXICO ABOVE FENHOLLOWAY RI	UNKNOWN	UNKN	....	....	....	.										
21.00	GULF OF MEXICO ABOVE ECONFINA RIVER	UNKNOWN	UNKN	....	....	....	.										
* WATER BODY TYPE: STREAM																	
2.00	SANDERS CREEK ABOVE GULF OF MEXICO	YES	UNKN	....	....	....	.	*							*		
4.00	ROCKY CREEK ABOVE GULF OF MEXICO	UNKNOWN	UNKN	....	....	....	.										
6.00	STEINHATCHEE RIVER ABOVE GULF OF ME	YES	GOOD	----	----	....	--.	*	0	00*0	000.	..00	00		***	**	DIRT ROAD RUNOFF. GEORGIA PACIFIC AND BUCKEYE CELLULOSE TREE PLANTING ACTIVITIES AND LACK OF BMPS. POSSIBLE CONTAMINATION FROM SEPTIC TANKS SITUATED TOO CLOSE TO RIVER. URBANIZATION IN AREA AROUND MOUTH OF RIVER.
7.00	EIGHTMILE CREEK ABOVE STEINHATCHEE	YES	UNKN	....	....	....	.	*							*		
8.00	STEINHATCHEE RIVER ABOVE EIGHTMILE	YES	UNKN	....	....	....	.								**	*	NUTRIENT INPUTS FROM DAIRIES AND OTHER AGRICULTURAL AREAS. ALTERATIONS NEAR HEADWATERS.
9.00	STEINHATCHEE RIVER ABOVE KETTLE CRE	YES	GOOD	----	---.	....	-..		.	....	....	....	..		*	*	NUTRIENTS FROM DAIRIES & OTHER AGRICULTURAL OPERATIONS CONSTITUTE A POTENTIAL THREAT TO WATER QUALITY.
10.00	KETTLE CREEK ABOVE STEINHATCHEE RIV	UNKNOWN	UNKN	....	....	....	.										
12.00	SPRING WARRIOR CREEK ABOVE GULF OF	YES	GOOD	----	----	....	-..		0	....	....	....	..		*		
14.00	FENHOLLOWAY RIVER ABOVE GULF OF MEX	NO	POOR	*---	**-.	....	-..		.	....	....	....	..	*		**	PULP MILL WASTE DEGRADES STREAM WITH 70% OF DO SAMPLES BELOW 2.0 MG/L. BIOASSAY STUDY IN 1984.BUCKEYE TREE PLANTING OPERATIONS, FLOW ALTERATIONS ARE ALSO CONTRIBUTING FACTORS.
15.00	FENHOLLOWAY RIVER ABOVE SPRING CREE	NO	POOR	*---	**-*	....	-*-		0	0**-	-00.	.-00	+.	*		*	UPSTREAM PULP MILL EFFLUENT DEGRADES STREAM WITH 50% OF DO SAMPLES BELOW 2.0 MG/L. 1984 DER BIOASSAY STUDY.
15.10	FENHOLLOWAY RIVER HEADWATERS ABOVE	YES	GOOD	-*--	*---	....	-..		0	-000	.0..	.0..	..			*	HEADWATERS OF FENHOLLOWAY ABOVE PULPMILL DISCHARGE.BUCKEYE TREE PLANTING OPERATIONS.
16.00	SPRING CREEK ABOVE FENHOLLOWAY RIVE	YES	GOOD	----	--*-	....	-..		.	....	....	....	..	*		*	BACTERIA PROBLEM POSSIBLY DUE TO UPSTREAM WWTP.BUCKEYE TREE PLANTING OPERATIONS.
17.00	SPRING CREEK ABOVE ROCKY CREEK	PARTIAL	FAIR	---.	-**.	....	...		.	....	....	....	..	*		*	MINOR PROBLEMS DUE TO PERRY WWTP. 1981 WLA STUDY.
18.00	ROCKY CREEK ABOVE SPRING CREEK	YES	GOOD	.---	---.	....	...		.	....	....	....	..			*	
20.00	ECONFINA RIVER ABOVE GULF OF MEXICO	YES	GOOD	----	*---	....	--.		*	0**0	0*0.	.0-*	+.			*	BUCKEYE TREE PLANTING OPERATIONS CONSTITUTE A POTENTIAL THREAT.

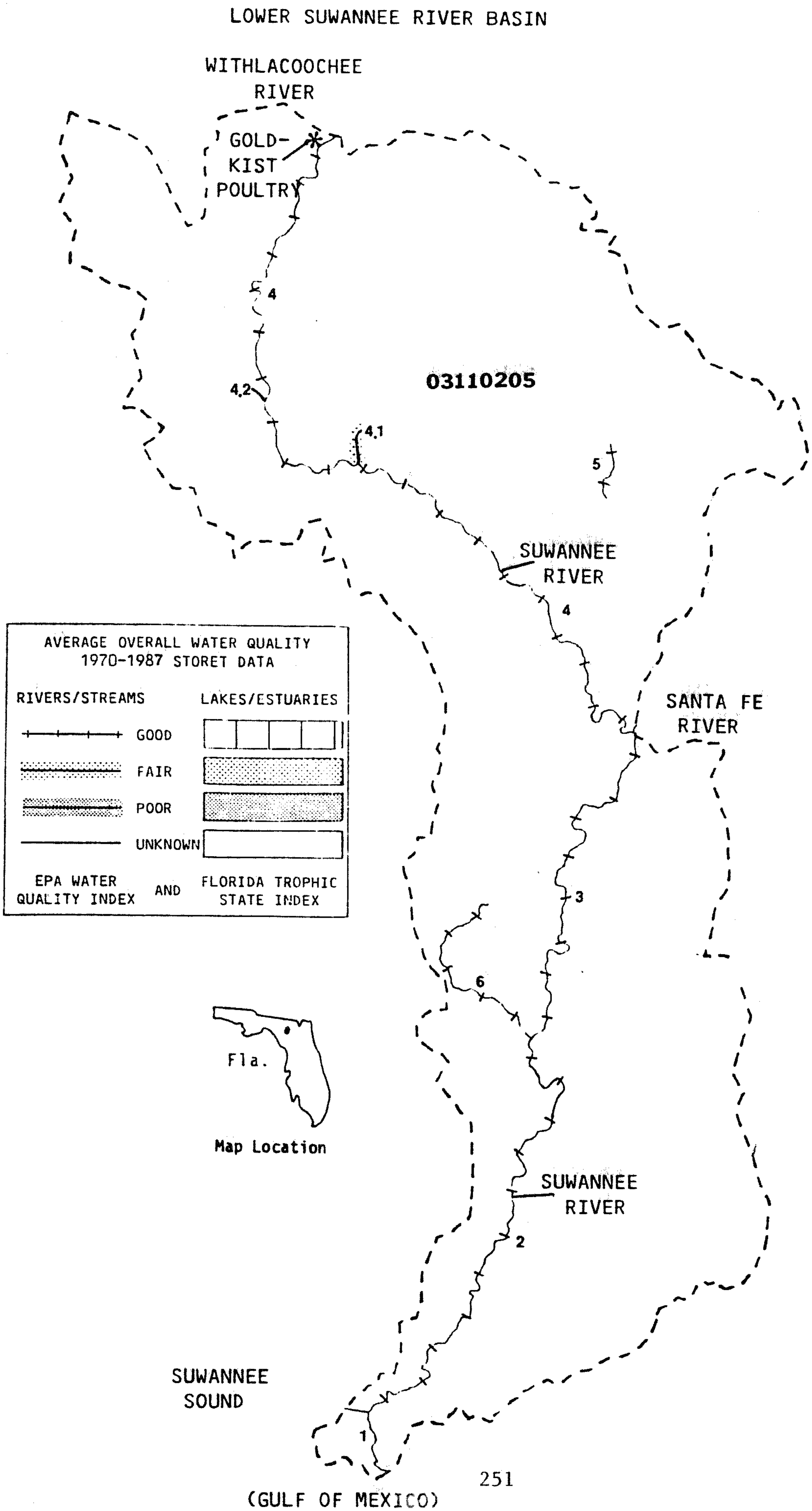
LOWER SUWANNEE RIVER BASIN

General Description of the Basin

The Lower Suwannee River Basin begins at the junction of the Withlacoochee River where the Suwannee River renews its southerly course. From the headwaters, the downstream increase in flow reflects not only the larger drainage area but also a major contribution of groundwater from the Floridan Aquifer to the river system. The river also receives flow from two major tributaries: the Withlacoochee River with a discharge of 1600 cfs, and the Santa Fe River with an average flow of 2000 cfs. The lower reach of the Suwannee River south of the confluence of the Santa Fe River flows through poorly drained coastal lowlands. Major land use in this portion of the basin includes forest and agriculture. There is little or no domestic or industrial discharge to the lower reach of the river, and there are no major urban areas.

Specific Water Quality Problems and Pollution Sources

The Suwannee River has been designated an Outstanding Florida Water and is considered by many to be one of the state's treasures. Water quality is good in all reaches of the lower Suwannee River. Phosphorus concentrations are higher than normal and are apparently contributed by mining operations which are located in the upper Suwannee River basin. In addition, Gold Kist, Inc. poultry farm discharges near the confluence of the Withlacoochee River. Several small city WWTPs discharge to the Withlacoochee River. The Withlacoochee also receives effluent from the Owens-Illinois paper mill in Georgia. This discharge increases turbidity and BOD in the river and exerts an undesirable influence on the Suwannee downstream of the confluence. Eutrophication, however, is not a severe problem in the Suwannee because of the relatively rapid flushing of the system and the considerable spring inflow to the river. The effects of this enrichment on the receiving estuary, Suwannee Sound, have not been determined. The lower river is threatened by housing developments within the floodplain.


LOWER SUWANNEE RIVER BASIN
WITHLACOOCHEE RIVER
GOLD-KIST POULTRY
4
4,2
4,1
03110205
5
SUWANNEE RIVER
4
SANTA FE RIVER
AVERAGE OVERALL WATER QUALITY
1970-1987 STORET DATA
RIVERS/STREAMS
LAKES/ESTUARIES
GOOD
FAIR
POOR
UNKNOWN
EPA WATER QUALITY INDEX
AND
FLORIDA TROPHIC STATE INDEX
3
6
Fla.
Map Location
SUWANNEE RIVER
2
SUWANNEE SOUND
1
(GULF OF MEXICO)

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT: 03110205 SUWANNEE R (LO)

* WATER BODY TYPE: STREAM

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
2.00	SUWANNEE RIVER AB GULF OF MEXI	369	63	87	3.2	1.1	90	4	6.5	74	0.9	24	11	7.2	107	1.04	0.21	1	305	41	2.3	3.3	16	235	8690	30
3.00	SUWANNEE RIVER AB *B	53	81	86	5.1	1.0	105	4	6.9	74	0.4	-1	-1	7.2	112	1.47	0.40	10	1025	74	3.2	-1.0	-1	205	-1	39
4.00	SUWANNEE RIVER AB SANTE FE RIV	725	14	86	2.5	0.8	120	3	5.9	66	0.8	38	12	7.1	80	1.08	0.30	1	230	33	2.8	3.6	15	198	5867	35
4.10	PEACOCK SPRINGS AB SUWANNEE RI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.20	ALLEN MILL POND SPRING AB SUWA	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	LITTLE RIVER AB CRAB CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	*B AB SUWANNEE RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT CODE: 03110205 SUWANNEE R (LO)

* WATER BODY TYPE: STREAM

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
2.00	SUWANNEE RIVER ABOVE GULF OF MEXICO	YES	GOOD	----	----	....	-*.	*	0	**00	0000	0000	00		**	* **	POSSIBLE TREND OF INCREASED NUTRIENTS FROM 1970-1981,FOLLOWED BY DECREASE IN THE LAST SEVERAL YEARS.OFW STATUS. EXTENSIVE DEVELOPMENT WITH BULKHEADS AND BUILDING IN FLOODPLAIN.
3.00	SUWANNEE RIVER ABOVE *B	YES	GOOD	----	----	....	--.	*	.	....	....	....	..		*	* *	SOMEWHAT ELEVATED NUTRIENTS BELOW SANTA FE RIVER, BUT GOOD OVERALL QUALITY.
4.00	SUWANNEE RIVER ABOVE SANTE FE RIVER	YES	GOOD	----	----	....	-**		0	***0	000.	.*0-	00		* *		INCREASE IN PHOSPHORUS FROM 1970-1982, FOLLOWED BY DECREASE.HEAVY USE IN SUMMER NO RESTROOMS, AND RAW SEWAGE IS APPARENT. NUTRIENT INPUT FROM DAIRIES AND OTHER AGRICULTURAL ACTIVITIES CONSTITUTE A POTENTIAL THREAT.
4.10	PEACOCK SPRINGS ABOVE SUWANNEE RIVE	PARTIAL	UNKN	....	....	....	.										HEAVY USE IN SUMMER, NO RESTROOMS AND RAW SEWAGE IS APPARENT.
4.20	ALLEN MILL POND SPRING ABOVE SUWANN	UNKNOWN	UNKN	....	....	....	.										
5.00	LITTLE RIVER ABOVE CRAB CREEK	YES	UNKN	....	....	....	.								*		
6.00	*B ABOVE SUWANNEE RIVER	YES	UNKN	....	....	....	.								*		COMMERCIAL CAMPSITE.

UPPER SUWANNEE RIVER BASIN

General Description of the Basin

The Upper Suwannee River basin drains portions of two states, encompassing a total area of 11,020 square miles. Approximately 926 square miles of the drainage area are located in north central Florida; the remainder of the watershed drains parts of south central Georgia. Traveling a total distance of 245 miles from the headwaters, the Suwannee River ultimately discharges into the Gulf of Mexico. The Suwannee River and its principal tributaries (Alapaha River, Withlacoochee River, and Santa Fe River) are fast-flowing streams with deep channels underlain by karst topography and characterized by numerous sinks and springs.

Headwaters of the Upper Suwannee River near Fargo, Georgia, are formed by the convergence of numerous channels flowing from the southwest corner of the Okeefenokee Swamp. Flow measured below the swamp averages 1,800 cfs. Average daily flow 30 miles above the mouth of the Suwannee is 11,000 cfs. The southward flowing river turns sharply westward near White Springs, Florida. The Alapaha and Withlacoochee Rivers originate in Georgia and join the Suwannee River as it renews its southward course. The average discharge rate of the Alapaha River and the Withlacoochee is 1,600 cfs/each.

Land use in the Upper Suwannee River basin is primarily forest with some agriculture. Barren land (1%) reflects phosphate mining operations in the area. Industrial discharge from a phosphate benefication plant is the primary point source in this reach of the river. There are several small urban areas including Valdosta, Georgia that discharge into the Withlacoochee and Alapaha Rivers.

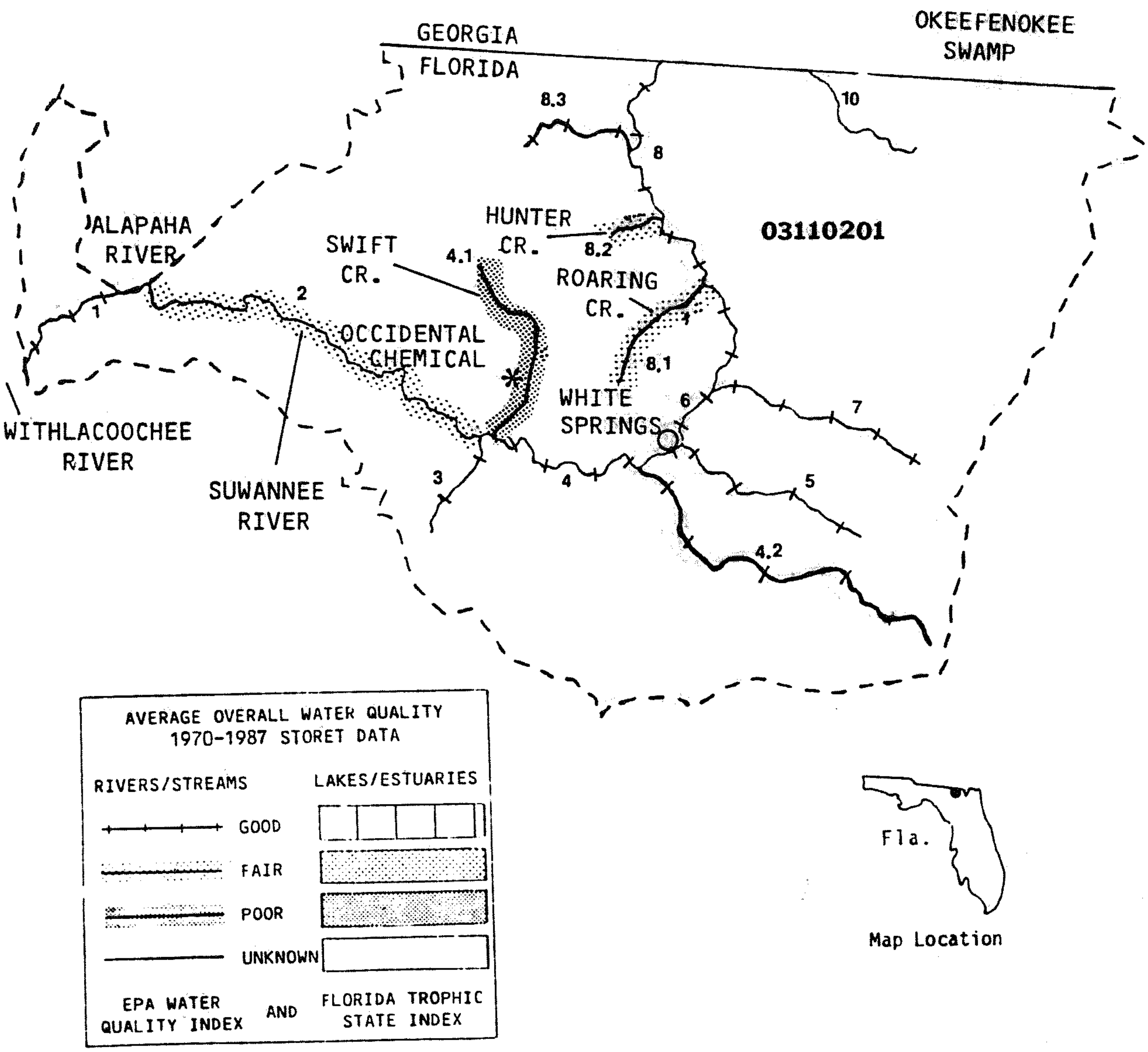
Specific Water Quality Problems and Pollution Sources

The Suwannee River is an Outstanding Florida Water and sections of the river have very good water quality. The Upper Suwannee River basin consists of the drainage area between the Withlacoochee River and the Georgia state line. It generally exhibits low pH, high color and low conductivity. These conditions are typical of waters draining swampland.

The river receives a large loading of phosphates and fluorides at Swift Creek from Occidental Chemical Company. The elevated nutrient values are evident downstream until they become diluted from flows of the Withlacoochee and Alapaha Rivers and several springs. Hunter Creek, which also receives Occidential effluent, exhibits high phosphorus values. Roaring Creek is an intermittent stream that has been dry more often in recent years due to mining operations. Coliform levels are high in Roaring Creek, Swift Creek, Hunters Creek and the Suwannee River area above and below the confluence of Swift Creek.

A detailed study of the Suwannee River has recently been published by the Department of Environmental Regulation. It emphasizes the marked difference in the upper and lower rivers, predominantly caused by a drastic pH change (from about 4 to 7) in the area of the Withlacoochee/Alapaha Rivers resulting from the inflow of the springs. Another study of the area, a type of environmental impact statement called a Development of Regional Impact study, is pending in association with a controversial proposal to build a large campground and trailer park in the river's floodplain.

UPPER SUWANNEE RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03110201 SUWANNEE R (UP)																										
* WATER BODY TYPE: STREAM																										
1.00	SUWANNEE RIVER AB WITHLACOOCHE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
2.00	SUWANNEE RIVER AB ALAPAHA RIVE	249	56	87	2.7	0.6	245	4	6.5	74	1.0	87	32	5.8	21	1.34	0.91	1	640	110	-1.0	-1.0	-1	90	1160	40
3.00	ROCKY CREEK AB SUWANNEE RIVER	35	79	86	1.5	0.4	500	3	4.0	47	1.0	223	31	4.2	4	1.03	0.27	2	570	70	-1.0	-1.0	-1	74	6	40
4.00	SUWANNEE RIVER AB ROCKY CREEK	401	66	87	2.1	0.6	240	2	6.7	75	0.9	83	34	4.8	8	1.11	0.23	3	795	79	2.8	3.3	22	59	1196	34
4.10	SWIFT CREEK AB SUWANNEE RIVER	395	67	87	8.0	0.5	125	14	5.8	66	4.3	68	18	6.5	34	5.90	9.60	14	2300	280	1.7	2.4	18	440	43	64
4.20	FALLING CREEK AB SUWANNEE RIVE	11	77	80	-1.0	-1.0	375	-1	8.5	91	-1.0	-1	-1	5.2	7	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	63	45	0
5.00	ROBINSON CREEK AB SUWANNEE RIV	31	76	81	1.5	-1.0	283	2	6.0	68	0.7	-1	42	5.6	23	0.94	0.11	-1	-1	-1	-1.0	-1.0	-1	75	10	35
6.00	SUWANNEE RIVER AB ROBINSON CRE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	DEEP CREEK AB SUWANNEE RIVER	30	76	81	1.5	-1.0	340	6	6.8	76	1.1	-1	38	4.9	10	1.00	0.13	-1	1300	470	-1.0	-1.0	-1	64	24	38
8.00	SUWANNEE RIVER AB DEEP CREEK	300	56	87	2.0	0.6	290	1	6.2	74	0.9	112	39	4.0	2	0.95	0.14	1	355	40	-1.0	-1.0	-1	56	1016	30
8.10	ROARING CREEK AB SUWANNEE RIVE	93	67	87	2.0	0.3	280	3	4.8	54	1.2	91	44	5.4	17	0.92	0.72	1	2125	490	-1.0	0.8	20	74	3	50
8.20	HUNTER CREEK AB SUWANNEE RIVER	179	67	87	5.5	0.3	140	8	6.2	70	1.8	64	18	6.5	29	1.71	1.31	2	1500	245	-1.0	-1.0	-1	252	12	56
8.30	ROCKY CREEK AB SUWANNEE RIVER	80	70	83	1.8	-1.0	480	6	5.7	65	0.9	-1	61	4.1	1	1.31	0.10	-1	515	73	-1.0	-1.0	-1	83	14	39

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03110201 SUWANNEE R (UP)																	
* WATER BODY TYPE: STREAM																	
1.00	SUWANNEE RIVER ABOVE WITHLACOOCHEE	YES	UNKN	....	....	....	.								*		
2.00	SUWANNEE RIVER ABOVE ALAPAHA RIVER	PARTIAL	GOOD	*---	*--.	....	-*.		0	0000	00-0	.0--	00	*	**	*	LARGE NUTRIENT AND FLUORIDE LOADS FROM SWIFT CREEK WITH INCREASING CONCENTRATIONS IN RECENT YEARS. SEE DER 1985 SPECIAL STUDY.HEAVY RECREATIONAL USE DURING SUMMER, NO RESTROOMS AT SITE,RAW SEWAGE APPARENT. DEVELOPMENT OF REGIONAL IMPACT IS PENDING.
3.00	ROCKY CREEK ABOVE SUWANNEE RIVER	YES	GOOD	-*--	*--.	....	--.		0	00*.	0**.	.000	0.				
4.00	SUWANNEE RIVER ABOVE ROCKY CREEK	YES	GOOD	-*--	*---	....	--.		0	0000	000.	.000	+0			*	POTENTIAL SEDIMENTATION DISCHARGE THROUGH CREEKS.
4.10	SWIFT CREEK ABOVE SUWANNEE RIVER	NO	POOR	*---	*---	....	-*-	*	0	00--	-000	0---	+0	*		*	CHEMICAL COMPANY INPUTS VERY LARGE LOADS OF PHOSPHORUS AND FLUORIDE. TEN YEAR TREND OF DECREASING LEVELS OF NUTRIENTS,HOWEVER, CONCENTRATIONS ARE STILL EXCESSIVE. SEE DER 1985 SPECIAL STUDY.
4.20	FALLING CREEK ABOVE SUWANNEE RIVER	YES	GOOD	.-.-	.-..	....	...		.	....	....	....	..				INSUFFICIENT PARAMETER COVERAGE TO CLASSIFY REACH.
5.00	ROBINSON CREEK ABOVE SUWANNEE RIVER	YES	GOOD	----	*-..	....	--.		.	....	....	....	..				
6.00	SUWANNEE RIVER ABOVE ROBINSON CREEK	YES	UNKN	....	....	....	.									*	
7.00	DEEP CREEK ABOVE SUWANNEE RIVER	YES	GOOD	-*--	*--.	....	--.		.	....	....	....	..				
8.00	SUWANNEE RIVER ABOVE DEEP CREEK	YES	GOOD	-*--	*--.	....	--.		0	0*00	*000	.000	+0			*	INCREASING LEVELS OF PHOSPHORUS IN THIS REACH DURING PAST 10 YEARS.
8.10	ROARING CREEK ABOVE SUWANNEE RIVER	PARTIAL	FAIR	*---	*-**	....	--.	*	0	0000	000.	..00	0.	*		*	CHEMICAL COMPANY IMPACTS STREAM WHICH IS DRY MORE IN RECENT YEARS DUE TO MINING. SEE 1985 DER SPECIAL STUDY.
8.20	HUNTER CREEK ABOVE SUWANNEE RIVER	PARTIAL	FAIR	*---	---.	....	--.	*	-	00--	0---	..-0	00	*		*	CHEMICAL COMPANY IMPACTS STREAM WATER QUALITY. SEE 1985 DER STUDY.
8.30	ROCKY CREEK ABOVE SUWANNEE RIVER	YES	GOOD	-*--	*--.	....	--.		.	....	....	....	..				

TAMPA BAY BASIN

General Description of the Basin

Tampa Bay is a multi-lobed (roughly Y-shaped) estuarine system which opens into the Gulf of Mexico approximately midway down the west central coast of peninsular Florida. The bay is generally considered divisable into six sub-areas: Old Tampa Bay, Hillsborough Bay/McKay Bay, Middle Tampa Bay, Lower Tampa Bay, Boca Ciega Bay, and Terra Ceia Bay. The Manatee River estuary is also sometimes considered a section of the bay. Geomorphology and a difference in certain chemical and physical properties of the sub-areas are the normal criteria utilized to sub-divide the system.

Tampa Bay is approximately 35 miles long, 10 miles wide, and covers a total surface area of about 346 square miles with a shoreline of 212 statute miles. The overall estuary is a rather shallow water body, having a mean depth of 11 feet, with 90 percent of the total bay area less than 22 feet deep. Tampa Bay was reported as being the second largest estuarine system of the 40 estuaries examined along the entire Gulf Coast. River systems that empty into the bay include the Hillsborough River, the Alafia River, the Little Manatee River and, just south of Terra Ceia, the Manatee River. Major cities include Tampa and St. Petersburg.

The tremendous increase in Florida's population over the past several decades has resulted in increased development along the shoreline of the bay. This development, together with increased pollutant loading, shoreline and bay bottom alterations, and wetland destruction has led to a gradual degradation of the Tampa Bay estuary. Various ecological changes in the bay system over this period of time have been documented chemically, physically and biologically.

The Bay degradation has spurred intensive efforts over the last ten years by local scientists, environmental organizations, politicians and engineers to reverse the trends. Protective management policies, legislation and regulation have been adopted. As a result, at least one portion of the Bay, Hillsborough Bay, has shown some recovery.

Specific Water Quality Problems and Pollution Sources

Biological and water quality degradation of the Tampa Bay complex has been well documented. The primary factor responsible for this degradation is the intensive residential and industrial development of the area which has led to:

1. Vegetative denudation and concomitant erosion and stormwater runoff problems in the coastal zone area;

2. Alteration of bay circulation patterns by channels, causeways and spoil islands;

3. Dredging and filling projects related to harbor development, industrialization, and finger fills for increased housing; and

4. Increased pollutant loading related to all of the above factors, and exacerbated by the naturally slow flushing rate of the bay.

In the past 30 years, loss of coastal vegetation (primarily mangroves) and seagrasses in the bay system has been substantial in terms of total acreage. According to Lewis and Phillips (1980, Seagrass Mapping Project, Hillsborough County. Final Report, Mangrove Systems, Inc. for the Tampa Bay Cooperative Seagrass Project. Report No. 2, 15pp), the total decline in seagrass meadow coverage of the bay bottom represents an 80 percent loss. There is also an estimated 44 percent loss of the original marine wetlands bordering Tampa, due to filling used for residential and commercial development. The overall importance of these losses is directly related to biological integrity of the estuary since the wetlands vegetation (both submerged and emergent) serves as an important food source, nursery grounds and substrate habitat for many species of marine organisms.

Nonpoint source pollution is a serious problem in the bay system. With the shift from wetland and upland vegetation to streets, lawns and buildings, the quality of runoff severly decreases while the quantity increases. The bay also serves as a shipping channel to the port and is subject to oil and grease pollution, sewage, and occasional fuel and/or cargo spills. The port itself serves as a loading and unloading facility for items such as fertilizers, pesticides, concrete and oil. Small spills and waste can be washed into the bay water during rains.

In addition to the substantial habitat destruction and nonpoint pollution problems, several point source dischargers affect the bay. The worst water quality problems are found in Hillsborough and McKay Bays. This area receives 60 MGD of treated wastewater from Hooker's Point advanced treatment plant, 1268 MGD of cooling and process water from the Teco Power Company, and, via Delaney Creek, about .5 MGD of highly nitrogenous wastes from Nitram, Inc. There are also several other small industrial discharges in this portion of the bay.

The Hillsborough River enters the northern portion of the bay, and, while the lower river has no point sources, it receives nutrient loading from Tampa urban runoff. The Alafia River, which has extensive phosphate mining and fertilizer production operations in its headwaters, enters the southeastern part of Hillsborough Bay. Near the mouth of the river, Gardinier phosphate processor discharges effluent which contains very high concentrations of nitrogen and phosphorus, and has historically caused frequent pH and chloride violations. Gardinier has made efforts to improve the quality of its effluent; however, a 1987 release of about 14 million gallons of highly acidic process water burned hundreds of acres of productive Tampa Bay wetlands. The water was dumped during a heavy rainstorm that threatened to collapse a huge gypsum stack, and the company was fined $200,000. In addition, Gardinier has also agreed to provide safer storm discharge options and create an on-site wetland. In an unrelated settlement, Gardinier has agreed to dredge a portion of the Bay's bottom sediments which have been encrusted with calcium fluorite from historical discharges.

The smaller tributaries in Hillsborough Bay area also have problems. A 1985 intensive survey of Delaney Creek indicated that there were frequent DO violations and nutrient problems. Nitram, a nitrogen fertilizer company, discharges to Delaney Creek and causes extremely high nitrogen values. The creek may also receive leachate or accidential spills from a battery splitting operation which was found to be extremely toxic to bioassay organisms in 1984. It is currently under hazadous waste cleanup enforcement. Although metals violations were not found in the water column in the 1985 intensive survey, it is recommended that sediment samples be taken from the creek for analysis due to the potential for metals contamination.

Palm River and Sixmile Creek have nutrient, bacteria and DO problems. The dischargers to these reaches include phosphorus and nitrogen processors and the Eastside WWTP (which discharges to Sixmile Creek via Harvey Creek). Effluent from the Eastside WWTP was found to have some toxicity problems in 1980. The worst water quality problems, however, appear to be caused by the historical pollutant loading and the current nonpoint runoff entering this small river system which flows through a heavily developed portion of Tampa and has been extensively ditched, channeled, and walled.

In summary, Hillsborough Bay suffers the highest concentration of pollution sources. It has historically had the worst water quality in the basin. However, there has been some notable improvement since the Hookers Point plant went to advanced treatment in the early 1979. There has also been a net improvement of the industrial discharges. However, continued vigilence of discharges and the abatement of runoff is required to maintain or improve conditions in Hillsborough Bay.

Old Tampa Bay also has problematic tributaries. Sweetwater Creek exhibits high nutrient concentrations and low DO values. Rocky Creek has an elevated bacteria count as well as nutrient and DO problems. Alligator Creek has high nutrient concentrations; and finally, the Cross Bayou Canal has nutrient, bacteria and DO problems. Many of these problems are caused by the numerous, small WWTPs operating under temporary permits (TOP). The treatment processes of many of these facilities are inadequate to meet required treatment levels. There was also a legislative bill passed that requires all domestic dischargers to Tampa and Sarasota Bays to attain advanced treatment standards. This condition is still far from being satisfied. This bill has been somewhat controversial among environmentalists because it has had the effect of increasing permit requests for surface discharge as opposed to looking to more inovative methods such as water reuse. Recently Old Tampa Bay appears to be maintaining an improving trend.

Tampa Bay proper exhibits better water quality than Old Tampa Bay or Hillsborough Bay because it has greater mixing and dilution with the Gulf of Mexico waters and less concentrated pollution sources. Development is fairly intense along its shoreline, and there are both domestic and industrial discharges. Cockroach Bay, located on the east side of Tampa Bay, has fairly good water quality which is somewhat affected by septic tanks and some illegally discharging package plants.

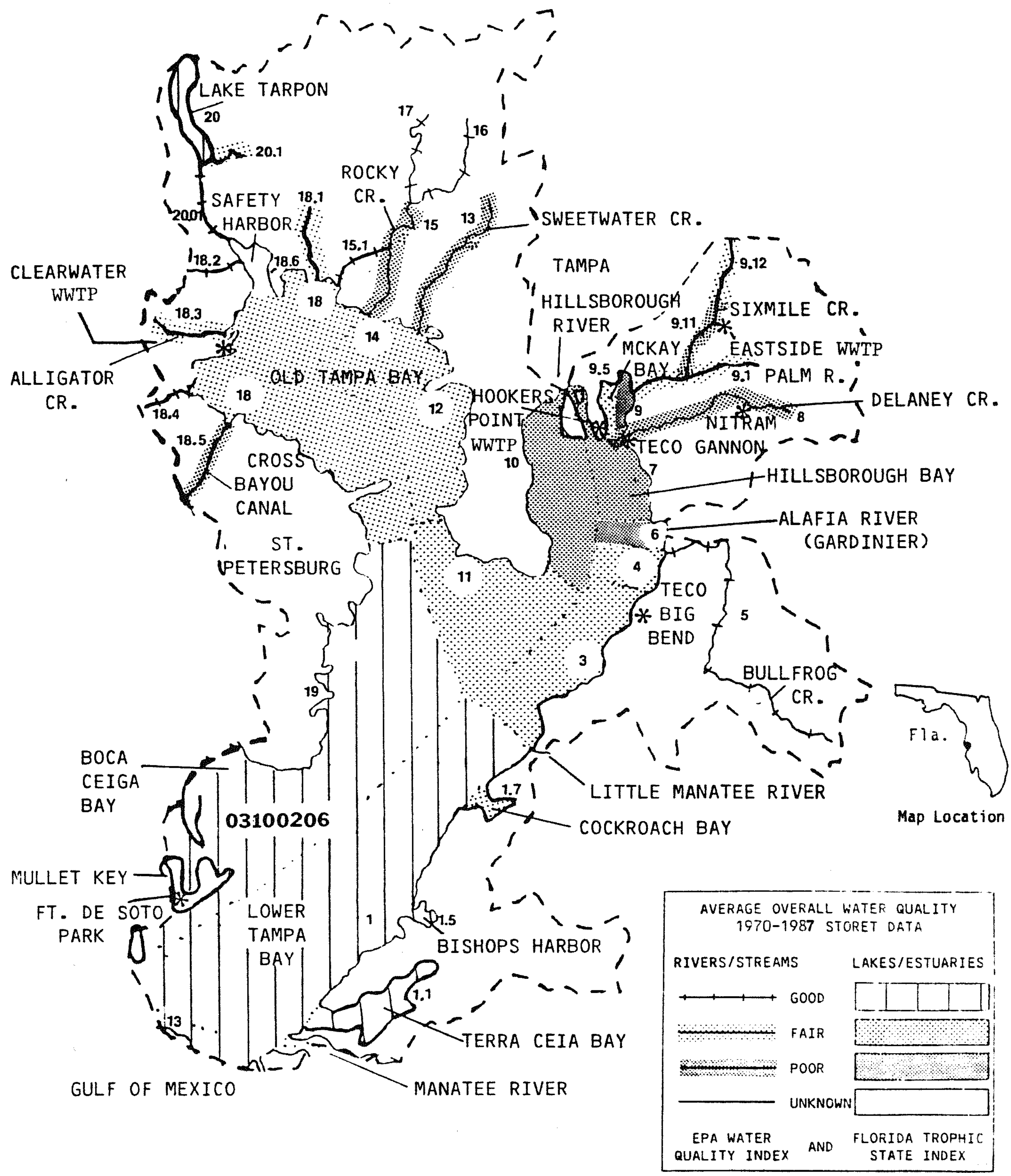
Terra Ceia Bay has very good water quality and has recently been declared an Outstanding Florida Water. Development around this bay threatens it with increased runoff and mangrove cutting; although there have been some enforcement cases which will hopefully deter the latter. The Pinellas County portion of Tampa Bay is also designated as an OFW to protect it from further degradation; however, under current law, many of the existing discharges to the bay will be allowed to continue operating.

Finally, the Gulf waters in the immediate vicinity of Mullet Key, at the mouth of Tampa and Boca Ceiga Bays, have wastewater pollution problems. The Ft. DeSoto Park, on the southern tip of the key, has had repeated problems with 3 of the 4 county WWTPs at the park resulting in violations of DO, coliform bacteria, and chlorine standards. A portion of the area is closed to shellfish harvesting. The county has signed a Consent Order to correct the problem.

The Coastal Zone Management Section of DER has been conducting sediment metals surveys of port areas and also some "ambient" sites within estuaries. Seven different metals were measured. The Tampa Bay results show metals enrichment (particularly lead, zinc and cadmium) in the sediment throughout much of Hillsborough Bay and associated with navigation channels. Another "hot spot" for metals enrichment was the port of St. Petersburg. Although not a part of this project, it should be noted that radium and radon levels are high in the Bay; in fact, studies from the University of South Florida found them to be the highest of any Gulf Coast continental shelf area. The suspected source is the Alafia River from the mining activities there or perhaps leachate from fissures under nearby gypsum stacks.

In summary, Tampa Bay has suffered impacts from wetland and seagrass destruction and coastline alteration; severe stormwater pollution from residential and commercial sources; dredging and harbor activities; litter; fertilizer, food processing, and other industrial discharges; and a heavy load of domestic wastewater from power and sewage treatment utilities. The bay has extremely high phosphorus levels and is nitrogen limited. Recent trends in water quality show improving conditions in Hillsborough Bay. The new SWIM legislation will target Tampa Bay as one of the waterbodies to receive funding for restoration projects.

TAMPA BAY BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L   -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03100206 TAMPA BAY																										
* WATER BODY TYPE: ESTUARY																										
1.00	TAMPA BAY AB MANATEE RIVER	5319	67	87	3.0	2.2	5	36	7.0	82	1.4	-1	4	8.2	103	0.38	0.33	5	153	16	-1.0	-1.0	-1	47000	-1	35
1.10	TERRA CEIA BAY AB TAMPA BAY	1106	67	87	4.3	-1.0	20	-1	6.8	93	2.5	-1	-1	8.4	-1	-1.00	0.65	-1	17	8	-1.0	-1.0	-1	36400	-1	-1
1.50	BISHOPS HARBOR AB TAMPA BAY	334	67	87	4.9	1.1	20	22	6.7	86	4.5	-1	6	8.2	129	0.66	0.40	11	20	10	4.1	2.1	-1	37500	-1	48
1.70	COCKROACH BAY AB TAMPA BAY	156	73	85	4.0	0.6	21	25	5.8	75	2.6	-1	8	8.0	99	0.39	0.59	14	300	250	-1.0	-1.0	-1	31725	-1	55
3.00	TAMPA BAY AB LITTLE MANATEE RI	2715	69	85	4.5	1.1	10	34	6.5	76	2.0	-1	6	8.2	100	0.53	0.94	13	100	100	2.9	-1.0	-1	40200	-1	49
4.00	HILLSBOROUGH BAY AB TAMPA BAY	749	71	85	4.2	0.9	11	44	6.8	80	2.2	-1	6	8.2	96	0.66	1.28	16	200	100	-1.0	-1.0	-1	39200	-1	53
6.00	HILLSBOROUGH BAY AB BULLFROG C	543	71	85	5.1	0.7	14	39	6.9	80	2.8	-1	8	8.4	94	0.73	1.03	23	200	100	1.4	-1.0	-1	37000	-1	58
7.00	HILLSBOROUGH BAY AB ALAFIA RIV	1061	71	85	6.0	0.8	12	39	6.9	78	2.9	-1	7	8.2	96	0.80	1.60	22	350	150	-1.0	-1.0	-1	36500	-1	58
9.00	HILLSBOROUGH BAY AB DELANEY CR	1491	70	85	5.0	0.8	14	40	7.0	80	3.5	-1	8	8.2	95	0.86	1.51	25	400	150	-1.0	-1.0	-1	36950	-1	60
9.50	MCKAY BAY AB HILLSBOROUGH BAY	1506	71	85	5.0	0.8	13	40	6.4	72	3.3	-1	7	8.2	97	0.64	1.08	23	600	200	-1.0	-1.0	-1	37000	-1	58
10.00	HILLSBOROUGH BAY AB HILLSBOROU	1060	71	85	5.0	0.7	15	35	6.5	78	3.6	-1	8	8.2	99	0.68	1.24	23	400	450	-1.0	-1.0	-1	35500	-1	59
11.00	TAMPA BAY AB HILLSBOROUGH BAY	1543	71	85	3.7	1.2	10	33	7.2	83	2.0	-1	6	8.3	99	0.64	1.13	12	200	110	-1.0	-1.0	-1	40400	-1	49
12.00	OLD TAMPA BAY AB TAMPA BAY	2769	65	85	3.5	1.2	10	38	7.1	82	2.0	-1	6	8.3	97	0.56	0.71	11	150	100	3.4	2.2	-1	39000	-1	49
14.00	OLD TAMPA BAY AB SWEETWATER CR	860	71	85	4.3	0.9	12	40	7.0	79	2.2	-1	7	8.2	98	0.69	0.71	12	200	154	-1.0	-1.0	-1	38250	0	53
18.00	OLD TAMPA BAY AB ROCKY CREEK	4318	71	85	4.0	1.1	10	40	7.0	80	2.1	-1	7	8.2	97	0.60	0.72	11	100	100	-1.0	-1.0	-1	38000	-1	50
18.60	SAFETY HARBOR AB OLD TAMPA BAY	80	66	76	5.5	-1.0	10	-1	6.2	77	2.6	-1	11	8.2	102	0.90	1.10	1	-1	-1	-1.0	-1.0	-1	37600	-1	40
19.00	TAMPA BAY AB OLD TAMPA BAY	3060	71	85	3.0	1.7	6	38	7.3	86	1.7	-1	5	8.2	103	0.49	0.43	7	100	8	-1.0	-1.0	-1	45450	-1	43
* WATER BODY TYPE: LAKE																										
20.00	LAKE TARPON AB BROOKER CREEK	475	64	86	1.5	2.0	78	-1	7.3	86	0.8	-1	15	6.5	11	0.76	0.04	0	125	15	2.2	-1.0	4	960	0	45
* WATER BODY TYPE: STREAM																										
5.00	BULLFROG CREEK AB HILLSBOROUGH	400	56	86	3.0	0.4	46	5	7.5	86	1.2	-1	10	7.3	47	0.68	0.28	3	3200	1000	-1.0	-1.0	-1	356	17	34
8.00	DELANEY CREEK AB HILLSBOROUGH	269	76	85	5.0	0.3	62	12	4.0	46	3.4	-1	14	7.3	-1	19.94	1.33	12	8500	1500	-1.0	-1.0	-1	2157	-1	71
9.10	PALM RIVER AB HILLSBOROHGH BAY	364	61	85	4.0	0.7	16	30	6.0	67	3.8	678	9	8.0	109	0.98	0.91	26	650	650	-1.0	-1.0	-1	29138	-1	52
9.11	SIXMILE CREEK AB PALM RIVER	313	56	85	4.0	0.6	18	22	2.9	38	3.9	-1	6	7.8	123	0.89	0.71	26	500	300	-1.0	-1.0	-1	23500	28	57
9.12	TAMPA BYPASS CANAL AB SIXMILE	218	74	86	2.5	-1.0	30	-1	6.9	79	2.7	-1	9	7.7	120	0.99	0.22	-1	280	-1	-1.0	-1.0	-1	440	45	36
13.00	SWEETWATER CREEK AB OLD TAMPA	403	65	86	6.0	0.6	36	18	3.5	42	2.0	-1	13	7.2	39	1.39	1.20	12	4000	1000	-1.0	-1.0	-1	390	2	62
15.00	ROCKY CREEK AB OLD TAMPA BAY	377	57	86	5.0	0.8	40	13	3.7	44	1.9	-1	12	7.0	43	1.02	0.28	10	1550	550	-1.0	-1.0	-1	332	7	55
15.10	DICK CREEK AB OLD TAMPA BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
16.00	BRUSHY CREEK AB ROCKY CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	ROCKY CREEK AB BRUSHY CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.10	DOUBLE BRANCH AB OLD TAMPA BAY	179	74	85	5.0	0.6	49	18	4.7	52	1.8	-1	14	7.4	95	0.88	0.45	5	1150	325	-1.0	-1.0	-1	20150	-1	57
18.20	BISHOP CREEK AB SAFETY HARBOR	49	68	71	5.0	-1.0	15	-1	7.4	88	-1.0	-1	18	7.7	71	0.66	0.13	-1	-1	-1	-1.0	-1.0	-1	8320	0	43
18.30	ALLIGATOR CREEK AB OLD TAMPA B	232	65	86	31.5	-1.0	50	22	6.9	80	2.2	40	16	7.5	92	1.44	0.41	-1	-1	-1	-1.0	-1.0	-1	373	5	45
18.40	ALLEN CREEK AB OLD TAMPA BAY	54	72	80	8.5	-1.0	50	-1	6.3	80	2.4	32	17	-1.0	50	1.42	0.26	-1	68500	24000	-1.0	-1.0	-1	388	10	39
18.50	CROSS BAYOU CANAL AB OLD TAMPA	11	72	75	8.1	-1.0	-1	6	4.2	50	2.8	-1	-1	7.7	160	5.25	0.48	18	8325	575	-1.0	-1.0	-1	16030	1	66
20.01	TARPON CANAL AB SAFETY HARBOR	128	72	86	-1.0	-1.0	100	-1	6.3	77	1.1	-1	14	7.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	1090	0	35
20.10	BROOKER CREEK AB LAKE TARPON	352	64	86	2.0	-1.0	200	2	3.8	42	1.2	-1	28	5.9	9	1.12	0.05	-1	1800	68	-1.0	-1.0	-1	110	4	57

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS WQ	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03100206 TAMPA BAY																	
* WATER BODY TYPE: ESTUARY																	
1.00	TAMPA BAY ABOVE MANATEE RIVER	YES	GOOD	--*-	---.	---*	-**		-	---*	-**-	--*-	+.				
1.10	TERRA CEIA BAY ABOVE TAMPA BAY	YES	UNKN	*---	---.	...*	...		.	....	....	....	..				ONLY ONE NUTRIENT SAMPLE.BAY IS CLASS II WATERS
1.50	BISHOPS HARBOR ABOVE TAMPA BAY	YES	GOOD	--*-	*---	---*	-*-	**	.	....	....	....	..		*		
1.70	COCKROACH BAY ABOVE TAMPA BAY	PARTIAL	FAIR	*-*-	---.	-*-*	-..		0	000.	0000	0.00	0.				INCREASED CONCENTRATIONS OF TP,AND TURBIDITY AND A REDUCTION IN SECCHI DEPTH.
3.00	TAMPA BAY ABOVE LITTLE MANATEE RIVE	PARTIAL	GOOD	*-*-	----	---*	-*-		-	--00	-*00	0-0-	0.	**			PROBLEMS CAUSED BY HILLSBOROUGH BAY AND ALAFIA RIVER INPUTS. ALSO SEVERAL OTHER POINT SOURCES DISCHARGE TO THIS REACH.
4.00	HILLSBOROUGH BAY ABOVE TAMPA BAY	PARTIAL	FAIR	*-*-	---.	---*	-*-		0	..0.	0000	0-0-	0.	**		*	PROBLEMS CAUSED BY POLLUTANT INPUTS BY HILLSBOROUGH BAY AND THE ALAFIA RIVER ALONG WITH SEVERAL OTHER POINT SOURCES.
6.00	HILLSBOROUGH BAY ABOVE BULLFROG CRE	NO	FAIR	*-*-	----	---*	-*.		-	--00	-0*-	--00	0.	*		*	WATER QUALITY PROBLEMS ASSOCIATED WITH INCREASED CONCENTRATIONS OF TP,CHLOROPHYLL a,TURBIDITY,AND METALS.
7.00	HILLSBOROUGH BAY ABOVE ALAFIA RIVER	NO	FAIR	*-*-	---.	---*	-*-		0	--0.	0*00	-00-	0.	**		*	UPPER PORTION OF HILLSBOROUGH BAY RECEIVES TAMPA WWTP EFFLUENT, INDUSTRIAL DISCHARGES AND URBAN RUNOFF. POOR OVERALL QUALITY. POSSIBLY SOME IMPROVEMENT DURING RECENT YEARS. BIOASSAY OF TWO INDUSTRIAL SOURCES.
9.00	HILLSBOROUGH BAY ABOVE DELANEY CREE	NO	POOR	*-*-	*--.	---*	-**		-	--0*	-**-	-0--	0.	**		*	AREA BEHIND DAVIS ISLAND HAS VERY POOR WATER QUALITY. TAMPA URBAN RUNOFF, LARGE WWTP EFFLUENT INPUTS AND SHIPPING CHANNEL ACTIVITIES CONTRIBUTE TO PROBLEM. DER DOING SPECIAL STUDY OF AREA FOR WATER QUALITY CLEANUP PROJECT.
9.50	MCKAY BAY ABOVE HILLSBOROUGH BAY	PARTIAL	FAIR	*-*-	---.	---*	-*.		-	--**	-**-	----	+.	**		*	AREA ABOVE HOOKERS POINT WWTP HAS SECCHI DEPTH, CHL a AND PHOSPHORUS PROBLEMS.
10.00	HILLSBOROUGH BAY ABOVE HILLSBOROUGH	NO	FAIR	*-*-	*--.	---*	-*.		-	--0.	-000	0-0-	+.	**		*	UPPER HILLSBOROUGH BAY SHOWS WATER QUALITY PROBLEMS FROM TAMPA WWTP EFFLUENT, INDUSTRIAL DISCHARGES AND NONPOINT SOURCE RUNOFF. DER AREAWIDE STUDY UNDERWAY.
11.00	TAMPA BAY ABOVE HILLSBOROUGH BAY	PARTIAL	GOOD	*-*-	---.	---*	-*.		0	-00*	-**0	0-0-	+.	**			UPPER TAMPA BAY HAS BETTER WATER QUALITY THAN UPSTREAM HILLSBOROUGH BAY DUE TO DILUTION FROM GULF WATERS.
12.00	OLD TAMPA BAY ABOVE TAMPA BAY	PARTIAL	GOOD	*-*-	----	---*	-*.		-	--0*	-**-	--0-	+.	*		*	AREA RECEIVES RUNOFF FROM TAMPA URBAN AREA AND HAS HIGH PHOSPHORUS CONCENTRATION AND FAIR CHL a AND SECCHI DEPTH VALUES.
14.00	OLD TAMPA BAY ABOVE SWEETWATER CREE	PARTIAL	FAIR	*-*-	---.	---*	-*.		0	--0.	000-	0000	0.	*		*	RECEIVES RUNOFF FROM TAMPA AREA AND SOME SMALL WWTP'S EFFLUENTS.
18.00	OLD TAMPA BAY ABOVE ROCKY CREEK	PARTIAL	FAIR	*-*-	---.	---*	-*.	*	-	--0*	0**-	--0-	+.	*		*	UPPER OLD TAMPA BAY RECEIVES WWTP EFFLUENTS FROM LARGO, CLEARWATER AND OLDMAR WWTP'S.
18.60	SAFETY HARBOR ABOVE OLD TAMPA BAY	PARTIAL	GOOD	*---	--..	-.-*	-..	*	.	....	....	....	..			*	OLD DATA. AREA IS CLASSIFIED AS PARTIAL BY PROFFESSIONAL JUDGEMENT.
19.00	TAMPA BAY ABOVE OLD TAMPA BAY	YES	GOOD	--*-	---.	---*	-*.	*	-	-00*	-**-	--0-	+.			*	BEACHES CLOSED TO SWIMMING AFTER STORMS. DECLINE IN FISHERY NOTED.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
* WATER BODY TYPE: LAKE																	
20.00	LAKE TARPON ABOVE BROOKER CREEK	YES	GOOD	----	---*	----	--.	***	0	....	.000	..00	0.		**	**	LAKE SHORELINE DEVELOPMENT.REPORTS OF ALGAL BLOOMS.WATER QUALITY BORDERING ON FAIR CONDITIONS.
* WATER BODY TYPE: STREAM																	
5.00	BULLFROG CREEK ABOVE HILLSBOROUGH B	YES	GOOD	----	--*.	....	-..		0	0000	0000	-00-	00		* *		BACTERIA PROBLEM MAY EXIST. AN INTENSIVE STUDY WAS DONE IN 1979 FOR A 201 PROJECT. CAUSE OF WATER QUALITY PROBLEM IS NOT KNOWN.
8.00	DELANEY CREEK ABOVE HILLSBOROUGH BA	NO	POOR	*--*	*-*.	....	*-*		0	--**	0000	0*00	0.	*			VERY POOR WATER QUALITY. SIX SPECIAL STUDIES, INCLUDING BIOASSAY OF NITRAM (FERTILIZER), WHICH ACCOUNTS FOR HIGH INSTREAM NITROGEN VALUES. 1985 INTENSIVE SURVEY LISTED PROBLEMS. BIOASSAY ON CHLORIDE INC., METALS DIVISION.
9.10	PALM RIVER ABOVE HILLSBOROHGH BAY	PARTIAL	FAIR	*-**	*-*.	....	--.		0	000.	-000	--00	0.	*			DRAINS INDUSTRIALIZED AREA OF TAMPA. HAS SOME TOXIC METALS PROBLEMS.
9.11	SIXMILE CREEK ABOVE PALM RIVER	NO	FAIR	*-**	**-.	....	-.*		-	000.	00-0	-000	0.	*			SEVERAL INDUSTRIAL POINT SOURCES IN AREA. SEVERAL BIOASSAYS.
9.12	TAMPA BYPASS CANAL ABOVE SIXMILE CR	PARTIAL	GOOD	----	---.	....	--.		-	..0.	--00	..0*	0.	*			NUTRIENTS AND DO PROBLEM . DRAINS PORTION OF TAMPA.IMPROVEMENT RECENTLY IN DO AND BOD.
13.00	SWEETWATER CREEK ABOVE OLD TAMPA BA	NO	POOR	*---	-**.	....	-..	*	0	000.	000-	--00	00	*	*	*	SOME NUTRIENT AND DO PROBLEMS. 1979 WLA STUDY OF CARROLWOOD WWTP.
15.00	ROCKY CREEK ABOVE OLD TAMPA BAY	NO	FAIR	----	-**.	....	--.		0	000.	0000	0-0*	00	*	*		DO AND BACTERIA PROBLEMS CAUSED BY WWTP EFFLUENT.
15.10	DICK CREEK ABOVE OLD TAMPA BAY	YES	UNKN	....	....	....	.								*		
16.00	BRUSHY CREEK ABOVE ROCKY CREEK	YES	UNKN	....	....	....	.								*		
17.00	ROCKY CREEK ABOVE BRUSHY CREEK	YES	UNKN	....	....	....	.								*		
18.10	DOUBLE BRANCH ABOVE OLD TAMPA BAY	PARTIAL	FAIR	---*	---.	....	-..		0	**0.	0000	0000	0.		*		INCREASED BACTERIA AND TSS.
18.20	BISHOP CREEK ABOVE SAFETY HARBOR	YES	GOOD	---*	--..	....	...		.	....	....	....	..				
18.30	ALLIGATOR CREEK ABOVE OLD TAMPA BAY	PARTIAL	FAIR	--*-	--..	....	--.	*	0	...0	000.	..00	0.	*	**	*	SHOWS SLIGHT NUTRIENT PROBLEM.
18.40	ALLEN CREEK ABOVE OLD TAMPA BAY	YES	GOOD	-.--	--*.	....	.*.	*	.	....	....	....	..		**	**	
18.50	CROSS BAYOU CANAL ABOVE OLD TAMPA B	NO	POOR	*--*	--*.	....	..*		.	....	....	....	..	**	*		DO AND NUTRIENT PROBLEMS, NO RECENT DATA. TWO SMALL POINT SOURCES AND TWO BIOASSAYS OF THESE SOURCES.
20.01	TARPON CANAL ABOVE SAFETY HARBOR	YES	GOOD	.-.-	--..	....	...		.	....	....	....	..				
20.10	BROOKER CREEK ABOVE LAKE TARPON	PARTIAL	FAIR	----	**-.	....	-..	**	0	....	.**0	...0	00		* **	**	SHOWS DO PROBLEM, UNKNOWN SOURCE.

TAYLOR CREEK BASIN

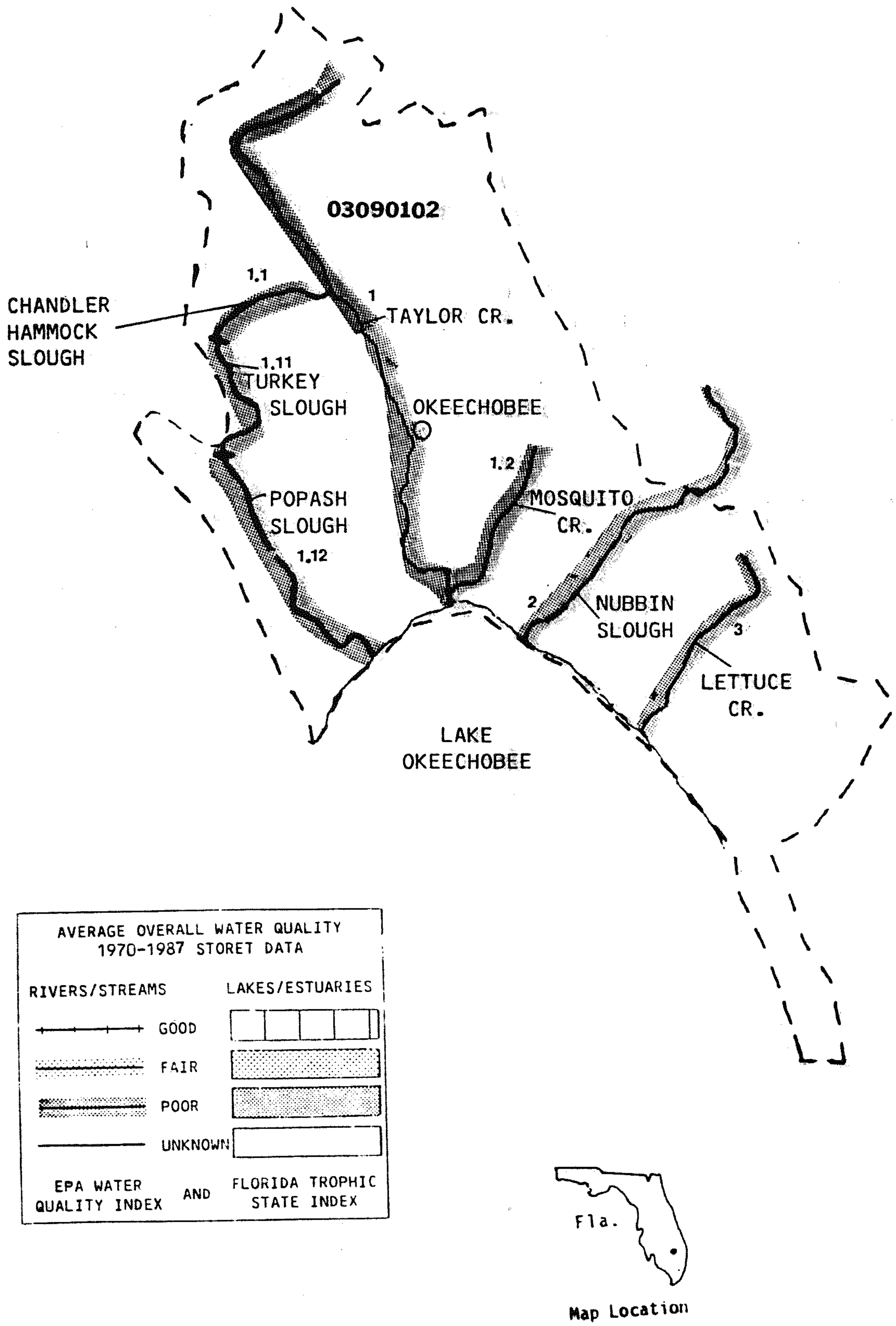
General Description of the Basin

The Taylor Creek basin forms a portion of the northeast drainage basin of Lake Okeechobee. The basin drains 282 square miles and Taylor Creek has an average flow of 100 cfs 9 miles above the mouth at Lake Okeechobee. The basin is highly developed with agriculture lands and rangelands. There are many dairies in the basin.

Specific Water Quality Problems and Pollution Sources

All of the reaches in this basin have severe pollution problems. There are frequent violations of the DO standard. Fifty percent of the Taylor Creek DO samples and about 80% of the Nubbin Slough DO samples were less than 5.0 mg/l. In addition, the reaches have elevated bacteria and nutrient levels. The majority of the problems are due to dairy farm runoff which contains high concentrations of BOD and nutrients. The Okeechobee WWTP has also increased nutrient and bacteria concentrations in Taylor Creek.

TAYLOR CREEK BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

** USGS HYDROLOGIC UNIT: 03090102 TAYLOR CREEK

* WATER BODY TYPE: STREAM

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
1.00	TAYLOR CREEK AB CHANDLER HAMMO	1317	58	87	5.3	0.7	130	8	4.8	61	2.6	-1	20	7.2	77	1.84	0.60	97	357	98	2.2	2.0	3	434	11	60
1.10	CHANDLER HAMMOCK SLOUGH AB TUR	3	84	85	32.4	0.2	400	-1	1.7	20	-1.0	-1	-1	6.2	-1	2.81	1.46	-1	-1	-1	-1.0	-1.0	-1	272	-1	80
1.11	TURKEY SLOUGH AB POPASH SLOUGH	11	78	85	1.7	0.6	180	5	1.5	18	-1.0	-1	31	6.6	58	1.35	0.25	-1	-1	130	-1.0	-1.0	-1	274	-1	55
1.12	POPASH SLOUGH AB LAKE OKEECHOB	10	78	85	3.7	0.6	300	23	0.2	2	-1.0	-1	26	6.4	26	2.13	0.81	-1	-1	180	-1.0	-1.0	-1	356	-1	62
1.20	MOSQUITO CREEK AB TAYLOR CREEK	479	73	87	3.8	0.8	141	12	2.3	25	-1.0	-1	42	7.0	87	4.65	1.89	-1	-1	620	-1.0	-1.0	-1	656	121	63
2.00	NUBBIN SLOUGH AB LAKE OKEECHOB	453	77	87	6.3	0.6	212	4	3.4	41	-1.0	-1	25	6.7	71	2.36	0.92	13	363	290	1.6	1.8	2	344	0	69
3.00	LETTUCE CREEK AB LAKE OKEECHOB	14	73	85	3.0	0.5	500	18	1.1	14	-1.0	-1	57	6.6	244	2.26	1.37	-1	-1	351	-1.0	-1.0	-1	221	-1	71

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
** USGS HYDROLOGIC UNIT CODE: 03090102 TAYLOR CREEK																	
* WATER BODY TYPE: STREAM																	
1.00	TAYLOR CREEK ABOVE CHANDLER HAMMOCK	NO	POOR	*---	---*	....	-..	***	0	.-0.	.00.	.000	0.	*	* *	**	DATA SHOWS 48% DO VIOLATIONS DUE TO AGRICULTURAL OPERATIONS, DAIRY FARM RUNOFF AND WWTP EFFLUENT. 1980 WLA FOR CITY OF OKEECHOBEE WWTP. IMPROVED FECAL COLIFORM IN 1980-1987.
1.10	CHANDLER HAMMOCK SLOUGH ABOVE TURKE	NO	POOR	*-*-	.*..	....	...	**	.	....	....	....	..		*		VERY POOR DO LEVELS. DAIRY FARMING AND AGRICULTURAL OPERATIONS IN THIS AREA.
1.11	TURKEY SLOUGH ABOVE POPASH SLOUGH	NO	FAIR	----	**-.	....	-..	***	.	....	....	....	..		* *	*	VERY POOR DO LEVELS. DAIRY FARMING AND AGRICULTURAL OPERATIONS IN THIS AREA.
1.12	POPASH SLOUGH ABOVE LAKE OKEECHOBEE	NO	POOR	*-*-	-*-.	....	-..	***	.	....	....	....	..		* *	*	VERY POOR DO LEVELS. DAIRY FARMING AND AGRICULTURAL OPERATIONS IN THIS AREA.
1.20	MOSQUITO CREEK ABOVE TAYLOR CREEK	NO	POOR	*---	***.	....	-..	***	0	..0.	....	..-0	..		* *	*	DO, BACTERIA AND NUTRIENT PROBLEMS.MAIN CAUSE OF PROBLEM IS DAIRY WASTES.
2.00	NUBBIN SLOUGH ABOVE LAKE OKEECHOBEE	NO	POOR	*---	-*-.	....	-..	***	0	-00*	.00.	.000	0.		* *	**	DATA SHOWS 77% DO VIOLATIONS DUE TO AGRICULTURAL AND DAIRY OPERATIONS.CANALIZATION OF WATERBODY CAUSING WATER QUALITY PROBLEMS (UNABLE TO FILTER POLLUTANTS).
3.00	LETTUCE CREEK ABOVE LAKE OKEECHOBEE	NO	POOR	*---	**-.	....	*..	***	.	....	....	....	..		* *		DO PROBLEMS DUE TO AGRICULTURAL RUNOFF,AND DAIRY WASTES.

WACCASASSA RIVER BASIN

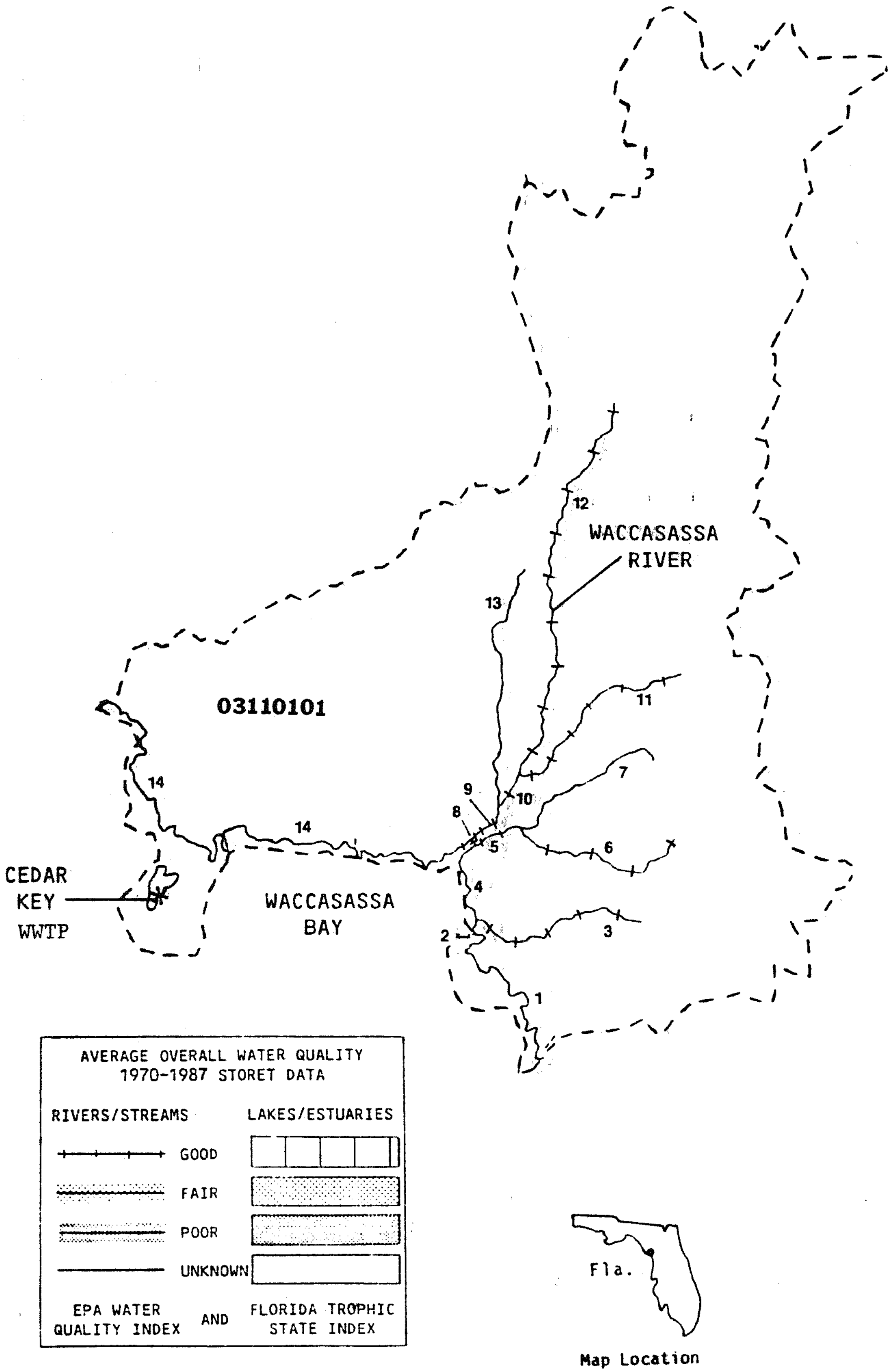
General Description of the Basin

The Waccasassa River drains 936 square miles of forest land and wetland. The average flow of the river is approximately 300 CFS. There are no major urban areas in the basin.

Specific Water Quality Problems and Pollution Sources

This basin has very good water quality and few sources of pollution. The only point source in the basin is the Cedar Key WWTP discharging only 0.1 MGD into Waccasassa Bay. Forestry clear-cutting in the basin could be a potential nonpoint source of pollution. The river has a relatively high sediment load, possibly from forest runoff.

WACCASASSA RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03110101 WACCASASSA RIV																										
* WATER BODY TYPE: OCEAN																										
1.00	WACCASASSA BAY AB GULF OF MEXI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
2.00	WACCASASSA BAY AB GULF OF MEXI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
4.00	WACCASASSA BAY AB GULF OF MEXI	19	85	85	-1.0	0.7	38	24	6.1	73	-1.0	-1	-1	8.1	-1	0.86	0.11	11	-1	-1	-1.0	-1.0	-1	32516	-1	58
8.00	WACCASASSA BAY AB GULF OF MEXI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
14.00	WACCASASSA BAY AB GULF OF MEXI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: STREAM																										
3.00	SPRING RUN AB WACCASASSA BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	COW CREEK AB WACCASASSA BAY	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	TENMILE CREEK AB COW CREEK	78	63	77	20.0	-1.0	185	-1	5.5	66	1.1	-1	26	6.9	12	0.64	0.04	-1	-1	-1	-1.0	-1.0	-1	251	3	47
7.00	COW CREEK AB TENMILE CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	WACCASASSA RIVER AB WACCASASSA	11	85	85	-1.0	0.9	61	14	5.0	62	-1.0	-1	-1	7.7	-1	0.94	0.12	6	-1	-1	-1.0	-1.0	-1	19782	-1	57
10.00	WACCASASSA RIVER AB OTTER CREE	78	63	85	3.5	1.7	48	3	5.7	72	0.8	-1	4	7.3	106	0.39	0.06	2	-1	-1	-1.0	-1.0	-1	420	343	26
11.00	WEKIVA RIVER AB WACCASASSA RIV	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	WACCASASSA RIVER AB WEKIVA RIV	208	56	85	0.9	-1.0	170	-1	5.2	59	1.2	-1	19	6.5	6	0.94	0.11	-1	-1	-1	-1.0	-1.0	-1	85	3	46
13.00	OTTER CREEK AB WACCASASSA RIVE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS					1980-1987 TRENDS					SOURCES			PRESENT CONDITIONS AND CLEANUP EFFORTS
				NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	IM NU	ASCU GVNR	MLHS NDMT	
** USGS HYDROLOGIC UNIT CODE: 03110101 WACCASASSA RIV																	
* WATER BODY TYPE: OCEAN																	
1.00	WACCASASSA BAY ABOVE GULF OF MEXICO	UNKNOWN	UNKN	....	....	....	.										
2.00	WACCASASSA BAY ABOVE GULF OF MEXICO	UNKNOWN	UNKN	....	....	....	.										
4.00	WACCASASSA BAY ABOVE GULF OF MEXICO	YES	FAIR	--*-	.-..	----	-..		.	....	....	....	..				
8.00	WACCASASSA BAY ABOVE GULF OF MEXICO	YES	UNKN	....	....	....	.									*	
14.00	WACCASASSA BAY ABOVE GULF OF MEXICO	UNKNOWN	UNKN	....	....	....	.										
* WATER BODY TYPE: STREAM																	
3.00	SPRING RUN ABOVE WACCASASSA BAY	YES	UNKN	....	....	....	.								*		
5.00	COW CREEK ABOVE WACCASASSA BAY	UNKNOWN	UNKN	....	....	....	.										
6.00	TENMILE CREEK ABOVE COW CREEK	YES	FAIR	--*-	--..	....	...		.	....	....	....	..				
7.00	COW CREEK ABOVE TENMILE CREEK	UNKNOWN	UNKN	....	....	....	.										
9.00	WACCASASSA RIVER ABOVE WACCASASSA B	YES	FAIR	---*	.-..	....	-..	*	.	....	....	....	..		*	*	NATURALLY HIGH SALINITY VALUES CAUSE WQI TO BE ELEVATED.
10.00	WACCASASSA RIVER ABOVE OTTER CREEK	YES	GOOD	----	--..	....	-..	*	.	....	....	....	..		*	*	
11.00	WEKIVA RIVER ABOVE WACCASASSA RIVER	YES	UNKN	....	....	....	.	*							*	*	
12.00	WACCASASSA RIVER ABOVE WEKIVA RIVER	YES	FAIR	----	--..	....	-..	*	.	....	....	....	..		*		
13.00	OTTER CREEK ABOVE WACCASASSA RIVER	UNKNOWN	UNKN	....	....	....	.										

NORTH FLORIDA WITHLACOOCHEE RIVER BASIN

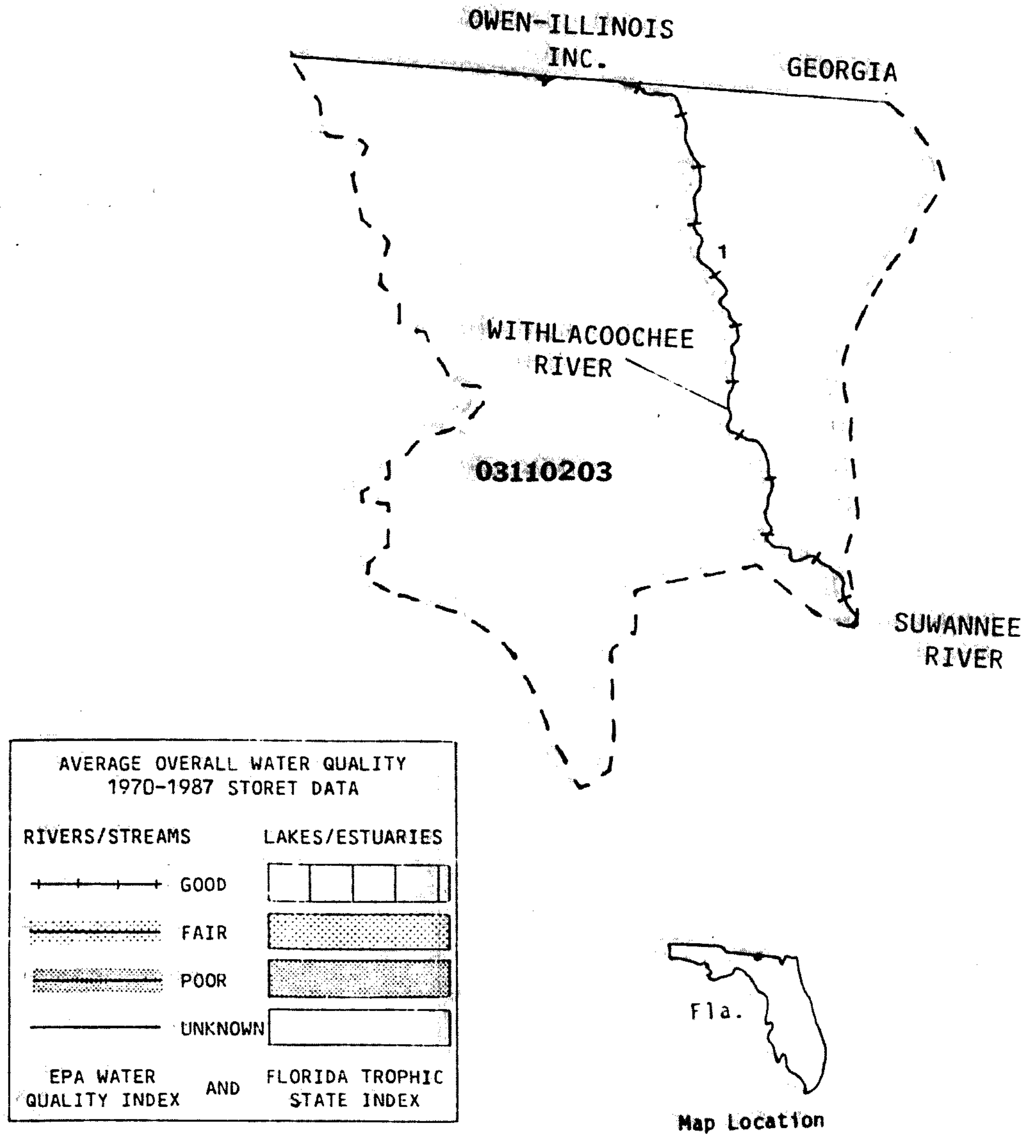
General Description of the Basin

The Withlacoochee River basin originates in Georgia and terminates in the Suwannee River about 20 miles south of the Georgia-Florida border. The basin is 1510 square miles in area and has 338 miles of river reach, but only 31 miles of river reach are located in Florida. The Florida portion of the basin is about half forest land and half agriculture. The Withlacoochee River has a flow of 1600 cfs before it enters the Suwannee River. There is a large paper industry located just above the Georgia-Florida border which discharges 12 MGD of effluent to the river (according to NPDES permit). There are also several city WWTPs in Georgia that discharge upstream.

Specific Water Quality Problems and Pollution Sources

The Withlacoochee River exhibits borderline good/fair water quality. The river is characterized by an unusually high sediment load for Florida rivers. The Owen-Illinois paper mill was shown in a DER special study to impact DO and conductivity in the river. STORET data also indicate increasing bacterial levels. The Florida portion of the river receives a significant input of high quality ground water from one first order magnitude spring (123 cfs) and several small springs.

WITHLACOOCHEE RIVER (NORTH FLORIDA) BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03110203 WITHLACOOCHEE N																										
* WATER BODY TYPE: STREAM																										
1.00	WITHLACOOCHEE RIVER AB SUWANNE	399	57	87	5.8	0.7	120	5	5.8	63	1.4	40	14	6.9	49	1.13	0.21	1	380	70	2.1	3.2	24	176	810	43

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                                                      WATER QUALITY ASSESSMENT REPORT
                                               SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
                                           '*'=PROBLEM OR DEGRADING TREND  '0'=NO TREND  '.'=NO DATA
                                            '-'= NO PROBLEM OR IMPROVING TREND  (SEE LEGEND PAGE 7)

                                             MEETS   WQI |  SCREENING PROBLEMS   | | 1980-1987 TRENDS   | |   SOURCES    | PRESENT CONDITIONS AND CLEANUP EFFORTS
REACH REACH NAME                              USE   RANK |-----------------------| |--------------------| |--------------|
----- ----------------------------------- ------- ---- |NPSS|BDBD|CSTT|AMB|FAB| |W|TFTT|BDDT|CSTT|TF| |IM|ASCU|MLHS|
                                                        |PHIA|OOAI|HDNP|MEI|KWL| |Q|CCUS|OOSO|HDNP|EL| |NU|GVNR|NDMT|

** USGS HYDROLOGIC UNIT CODE: 03110203 WITHLACOOCHEE N

* WATER BODY TYPE: STREAM
  1.00 WITHLACOOCHEE RIVER ABOVE SUWANNEE  YES     GOOD |----|----|....|-*-|*  | |0|**0-|0000|.*0-|+0| |  |**  |   *|
```

WITHLACOOCHEE RIVER BASIN

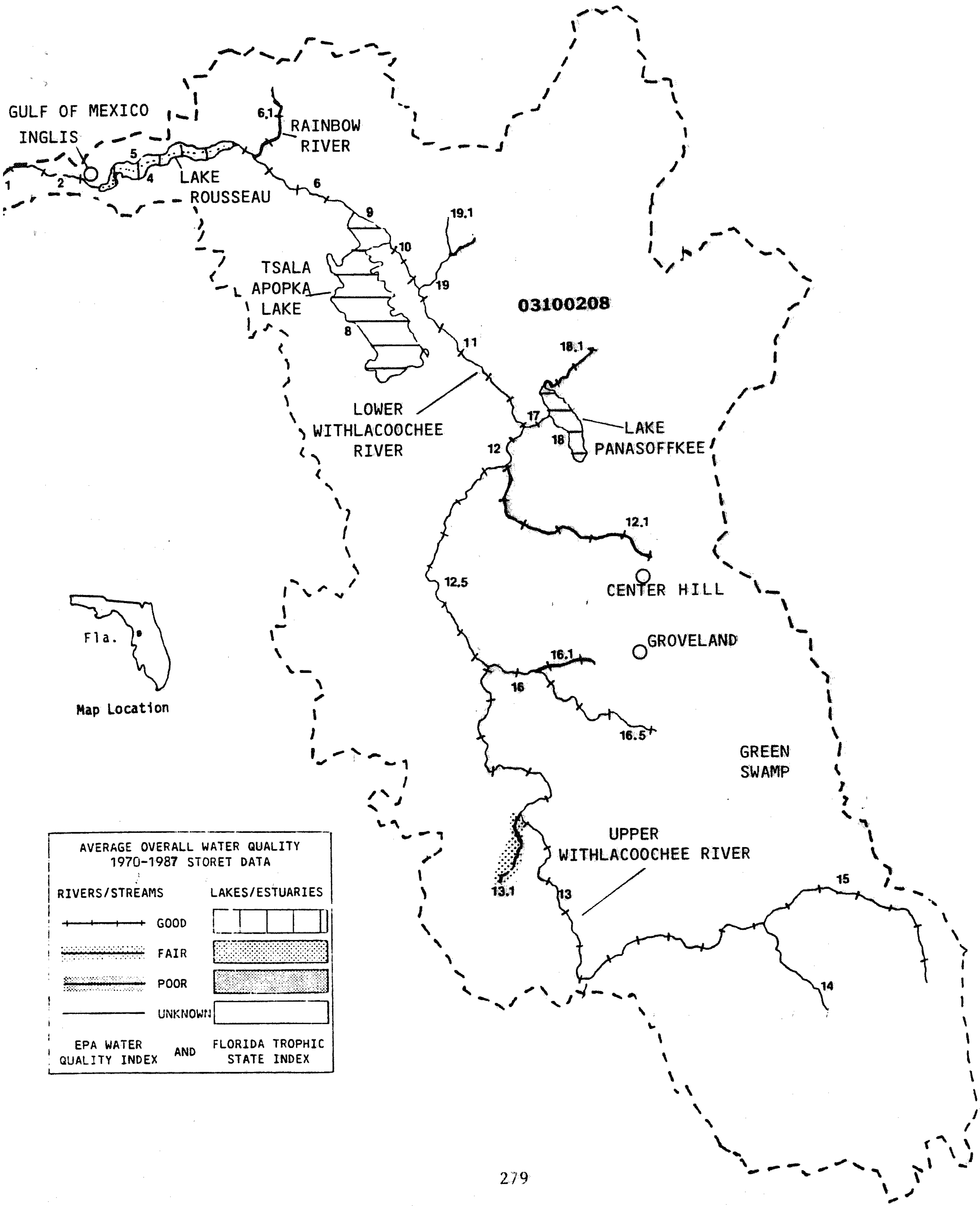
General Description of the Basin

Originating from Green Swamp near the junction of Lake and Polk Counties, the Withlacoochee River flows generally west and north for approximately 157 miles and drains 2090 square miles of West Central Florida before discharging to the Gulf of Mexico. The average flow of the Withlacoochee River is estimated to be 1800 cfs at the mouth of the river. A major portion of the flow is contributed by the Floridan aquifer. The Withlacoochee contains numerous lakes and springs. The largest lake, Tsala Apopka, has a surface area of over 19,000 acres. The map is somewhat misleading because the river actually flows through the lake. Tsala Apopka is really more like a large grass swamp with isolated pools of open water. The Withlacoochee is impounded at Inglis Reservoir in Citrus County. Although originally constructed as part of the Cross Florida Barge Canal, the dam is now being considered for hydro-electric power. Land use in the Withlacoochee River basin consists primarily of agriculture in the upper reaches of the river basin and forest in the lower portion of the basin. There is also considerable drainage from wetlands.

Specific Water Quality Problems and Pollution Sources

Water quality in this basin is very good with all monitored reaches meeting their designated use. The Rainbow River in the northern portion of the basin is designated as an Outstanding Florida Water. The Water Management District is considering the purchase of major portion of Tsala Apopka Lake. Much of the Withlacoochee River has periods of low DO during high flows due to swampland drainage.

From Tsala-Apopka to the river's mouth, shoreline development is occurring rapidly. There have been some problems with septic tanks and also with shoreline alterations (i.e., finger canals). Also in the lower basin, the Dunellon WWTP which discharges to the lower Rainbow River has caused bacterial violations in the river. Corrective action is being taken to remove this source. The other major sources of pollution are limestone mining contributing turbidity to the lower river, orange juice processing and canning centered around Groveland and Center Hill, and Lykes-Pasco and Evans meat packing companies near Dade City.


GULF OF MEXICO
INGLIS
RAINBOW RIVER
LAKE ROUSSEAU
TSALA APOPKA LAKE
03100208
LOWER WITHLACOOCHEE RIVER
LAKE PANASOFFKEE
CENTER HILL
GROVELAND
GREEN SWAMP
UPPER WITHLACOOCHEE RIVER
1
2
4
5
6
6.1
8
9
10
11
12
12.1
12.5
13
13.1
14
15
16
16.1
16.5
17
18
18.1
19
19.1
Fla.
Map Location
AVERAGE OVERALL WATER QUALITY
1970-1987 STORET DATA
RIVERS/STREAMS
LAKES/ESTUARIES
GOOD
FAIR
POOR
UNKNOWN
EPA WATER QUALITY INDEX
AND
FLORIDA TROPHIC STATE INDEX

WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	SAMPLE RECORD BEG YR	SAMPLE RECORD END YR	WATER CLARITY TURB	WATER CLARITY SD	WATER CLARITY COLOR	TSS	DISSOLVED OXYGEN DO	DISSOLVED OXYGEN %SAT	OXYGEN DEMAND BOD	OXYGEN DEMAND COD	TOC	PH ALKALINITY PH	PH ALKALINITY ALK	TROPHIC STATUS NITRO	TROPHIC STATUS PHOS	CHLA	COLIFORM TOTAL	COLIFORM FECL	SPECIES DIVERSITY NAT	SPECIES DIVERSITY ART	SPECIES DIVERSITY BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03100208 WITHLACOOCHEE R																										
* WATER BODY TYPE: LAKE																										
4.00	LAKE ROUSSEAU AB WITHLACOOCHEE	1492	63	84	2.0	2.4	21	-1	6.7	77	1.0	-1	6	7.7	105	0.47	0.04	1	80	10	-1.0	-1.0	-1	260	70	42
5.00	LAKE ROUSSEAU AB WITHLACOOCHEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.00	TSALA-APOPKA LAKE AB WITHLACOO	484	65	86	2.0	1.3	120	-1	7.0	83	1.4	-1	18	7.3	51	0.70	0.04	8	-1	-1	-1.0	-1.0	-1	208	0	46
18.00	LAKE PANASOFFKEE AB OUTLET RIV	360	8	86	2.0	1.3	30	-1	8.0	94	1.1	-1	10	7.9	102	0.65	0.03	5	-1	-1	-1.0	-1.0	-1	265	152	
* WATER BODY TYPE: OCEAN																										
1.00	WITHLACOOCHEE BAY AB GULF OF M	80	84	86	-1.0	1.8	9	11	6.9	78	-1.0	-1	-1	8.2	-1	0.45	0.09	6	-1	-1	-1.0	-1.0	-1	35802	-1	41
20.00	WITHLACOOCHEE BAY AB GULF OF M	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
* WATER BODY TYPE: STREAM																										
2.00	WITHLACOOCHEE RIVER AB WITHLAC	267	67	86	2.0	1.9	30	3	7.0	82	0.8	-1	7	7.5	99	0.45	0.04	2	106	12	-1.0	-1.0	-1	270	1065	20
6.00	WITHLACOOCHEE RIVER AB LAKE RO	135	66	86	2.0	-1.0	25	-1	6.0	71	0.5	-1	8	7.4	106	0.52	0.03	-1	70	0	-1.0	-1.0	-1	260	903	20
6.10	BLUE RUN/RAINBOW RIVER AB WITH	62	18	81	1.4	-1.0	5	2	7.0	80	0.6	5	1	7.8	102	0.45	0.04	-1	180	15	-1.0	-1.0	-1	241	658	10
9.00	WITHLACOOCHEE RIVER AB TSALA-A	378	50	86	1.3	1.6	32	-1	6.0	66	0.7	-1	11	7.5	107	0.68	0.03	-1	235	10	-1.0	-1.0	-1	285	668	22
10.00	WITHLACOOCHEE RIVER AB TSALA-A	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.00	WITHLACOOCHEE RIVER AB DEAD RI	195	66	86	2.3	1.8	40	1	5.5	64	0.9	20	14	7.5	107	0.72	0.04	0	180	18	3.4	2.7	23	261	507	35
12.00	WITHLACOOCHEE RIVER AB OUTLET	279	56	86	5.6	-1.0	40	-1	5.8	66	1.0	-1	16	7.3	125	0.58	0.05	-1	-1	-1	-1.0	-1.0	-1	247	170	40
12.10	JUMPER CREEK AB WITHLACOOCHEE	187	66	86	8.0	-1.0	9	-1	8.4	96	0.5	-1	6	7.9	190	0.31	0.03	-1	-1	-1	-1.0	-1.0	-1	405	22	8
12.50	WITHLACOOCHEE RIVER AB JUMPER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
13.00	WITHLACOOCHEE RIVER AB LITTLE	600	56	86	1.8	1.2	118	2	5.4	60	1.1	18	30	6.9	118	1.00	0.06	0	175	30	3.1	3.2	16	158	76	39
13.10	DADE CITY CANAL AB WITHLACOOCH	166	65	86	3.0	-1.0	10	-1	2.0	27	2.3	-1	6	6.9	139	0.68	0.08	-1	-1	-1	-1.0	-1.0	-1	331	27	61
14.00	MATTRESS DRAIN AB WITHLACOOCHE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
15.00	WITHLACOOCHEE RIVER AB MATTRES	186	56	86	3.0	0.2	320	-1	3.3	37	0.7	-1	48	4.6	5	1.21	0.05	-1	-1	-1	-1.0	-1.0	-1	81	13	55
16.00	LITTLE WITHLACOOCHEE RIVER AB	239	58	86	3.9	-1.0	85	-1	4.2	48	1.1	-1	31	6.5	155	0.90	0.04	-1	-1	-1	-1.0	-1.0	-1	130	17	58
16.10	BIG GANT CANAL AB LITTLE WITHL	182	70	86	-1.0	-1.0	-1	-1	3.8	49	1.1	-1	6	7.4	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	347	15	50
16.50	LITTLE WITHLACOOCHEE RIVER AB	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	OUTLET RIVER AB WITHLACOOCHEE	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.10	LITTLE JONES CREEK AB LAKE PAN	87	77	86	1.0	1.0	10	-1	6.2	73	0.8	-1	6	7.6	110	1.13	0.04	-1	-1	-1	-1.0	-1.0	-1	313	-1	20
19.00	DEAD RIVER AB WITHLACOOCHEE RI	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
19.10	GUM SLOUGH AB DEAD RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03100208 WITHLACOOCHEE R																	
* WATER BODY TYPE: LAKE																	
4.00	LAKE ROUSSEAU ABOVE WITHLACOOCHEE R	YES	GOOD	----	---.	----	-..	***	.	....	....	....	..		* **	**	INTENSE LAKEFRONT DEVELOPMENT. DOCUMENTED SEPTIC TANK FAILURES. HEAVY HYDRILLA GROWTH.
5.00	LAKE ROUSSEAU ABOVE WITHLACOOCHEE R	YES	UNKN	....	....	....	.	***							* **	**	DOCUMENTED SEPTIC TANK FAILURES. LAKEFRONT DEVELOPMENT. HEAVY HYDRILLA GROWTH.
8.00	TSALA-APOPKA LAKE ABOVE WITHLACOOCH	YES	GOOD	----	--..	----	--.	**	*	..-.	.**.	...*	-.		* **	**	EXTENSIVE HYDROMODIFICATIONS (FLOW CONTROL STRUCTURES). ACCELERATED EUTROPHICATION IN PROGRESS. WEED PROBLEM IS INTERMITTENT THROUGHOUT THE CHAIN OF LAKES. POOR SURFACE WATER RUNOFF CONTROLS. EXTENSIVE LAKESHORE DEVELOPMENT.
18.00	LAKE PANASOFFKEE ABOVE OUTLET RIVER	YES	GOOD	----	--..	----	--.	***	*	..-.	.00-	.0**	00		* *	* **	
* WATER BODY TYPE: OCEAN																	
1.00	WITHLACOOCHEE BAY ABOVE GULF OF MEX	YES	GOOD	----	.-..	----	-..	**	.	....	....	....	..		* **	**	DOCUMENTED SEPTIC TANK FAILURES. INTENSE RIVERFRONT DEVELOPMENT. EROSION PROBLEMS. BOATSLIP CONSTRUCTION ACTIVITIES.
20.00	WITHLACOOCHEE BAY ABOVE GULF OF MEX	UNKNOWN	UNKN	....	....	....	.										
* WATER BODY TYPE: STREAM																	
2.00	WITHLACOOCHEE RIVER ABOVE WITHLACOO	YES	GOOD	----	---.	....	-..	**	0	....	.00.	..0*	+.		* **	**	INTENSE RIVERFRONT DEVELOPMENT WITH NEGATIVE RIVER IMPACTS. DOCUMENTED SEPTIC TANK FAILURES. WEED PROBLEM IS THROUGHOUT MOST OF THE RIVER.
6.00	WITHLACOOCHEE RIVER ABOVE LAKE ROUS	YES	GOOD	----	---.	....	-..	**	0	....	.000	....	0.		* **	**	HYDROMODIFICATION. RIVERFRONT DEVELOPMENT. DOCUMENTED SEPTIC TANK FAILURES AND EROSION PROBLEMS. WEED PROBLEM IS THROUGHOUT MOST OF THE RIVER.
6.10	BLUE RUN/RAINBOW RIVER ABOVE WITHLA	YES	GOOD	----	---.	....	-..		.	....	....	....	..		*	*	SEPTIC TANK FAILURES.
9.00	WITHLACOOCHEE RIVER ABOVE TSALA-APO	YES	GOOD	----	---.	....	--.	**	0	..0.	.000	..0*	00		* **	**	HYDROMODIFIED (WYSONG DAM). WEED PROBLEM THROUGHOUT MOST OF THE RIVER. DOCUMENTED SEPTIC TANK FAILURES.
10.00	WITHLACOOCHEE RIVER ABOVE TSALA-APO	YES	UNKN	....	....	....	.	**							* **	**	HYDROMODIFIED (WYSONG DAM). WEED PROBLEM THROUGHOUT MOST OF RIVER.
11.00	WITHLACOOCHEE RIVER ABOVE DEAD RIVE	YES	GOOD	----	----	....	--.	**	0	....	.000	....	00		* **	**	WEED PROBLEM IS THROUGHOUT MOST OF RIVER.HYDROMODIFIED (WYSONG DAM).
12.00	WITHLACOOCHEE RIVER ABOVE OUTLET RI	YES	GOOD	----	--..	....	-..	**	0	....	.000	..00	00		* **	**	HYDROMODIFIED (WYSONG DAM).WEED PROBLEM IS THROUGHOUT MOST OF THE RIVER.
12.10	JUMPER CREEK ABOVE WITHLACOOCHEE RI	YES	GOOD	----	--..	....	-..	*	0	....	.--0	....	00		*	* *	
12.50	WITHLACOOCHEE RIVER ABOVE JUMPER CR	YES	UNKN	....	....	....	.	**							****	**	HYDROMODIFIED (WYSONG DAM). WEED PROBLEM IS THROUGHOUT MOST OF RIVER.
13.00	WITHLACOOCHEE RIVER ABOVE LITTLE WI	YES	GOOD	----	*---	....	--*	*	0	..-.	0000	..00	00		** *	**	WEED PROBLEM THROUGHOUT MOST OF RIVER.
13.10	DADE CITY CANAL ABOVE WITHLACOOCHEE	PARTIAL	POOR	----	-*..	....	...		0	....	.00.	....	00				VERY LOW DO LEVELS. AREA IS RIGHT BELOW DADE CITY. UNKNOWN POLLUTION SOURCE.
14.00	MATTRESS DRAIN ABOVE WITHLACOOCHEE	UNKNOWN	UNKN	....	....	....	.										
15.00	WITHLACOOCHEE RIVER ABOVE MATTRESS	YES	FAIR	-*--	**..	....	--.	*	0	....	.00.	..00	+0		**	*	NATURALLY LOW DO AND pH DUE TO SWAMPY CONDITIONS.
16.00	LITTLE WITHLACOOCHEE RIVER ABOVE WI	YES	FAIR	----	*-..	....	-..	*	-	....	.000	..*0	00		** *	**	HIGH TOC. POSSIBLY NATURAL SOURCES.

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND 'O'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS: NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS: W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES: IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
-----	---------------------------------	-------	----														
16.10	BIG GANT CANAL ABOVE LITTLE WITHLAC	YES	FAIR	.-.-	-*..	....	...		0	....	.00.	....	0+		** *	**	LOW DO, POSSIBLY NATURAL SOURCES.
16.50	LITTLE WITHLACOOCHEE RIVER ABOVE BI	YES	UNKN	....	....	....	.	*							*	* **	
17.00	OUTLET RIVER ABOVE WITHLACOOCHEE RI	YES	UNKN	....	....	....	.	**							* **	* *	COMMERCIAL STORMWATER MANAGEMENT SYSTEM FAILURES.
18.10	LITTLE JONES CREEK ABOVE LAKE PANAS	YES	GOOD	----	--..	....	--.		.	....	....	....	..				
19.00	DEAD RIVER ABOVE WITHLACOOCHEE RIVE	UNKNOWN	UNKN	....	....	....	.										
19.10	GUM SLOUGH ABOVE DEAD RIVER	UNKNOWN	UNKN	....	....	....	.										

YELLOW RIVER BASIN

General Description of the Basin

The Yellow River basin originates in Covington County, Alabama and flows southward for approximately 92 miles emptying into Blackwater Bay in Florida. The Yellow River Basin drains roughly 860 square miles of northwestern Florida. The largest tributary, the Shoal River, joins the Yellow River near Crestview, Florida discharging an average of 1,100 cfs. The rate of flow for the Yellow River (40 miles above the mouth) averages 1,500 cfs. Land use in the Yellow River Basin is primarily forest and agricultural. Milligan and Crestview are the largest towns in this basin. Sources of pollution in this area include agricultural and urban runoff, and domestic wastewater discharges.

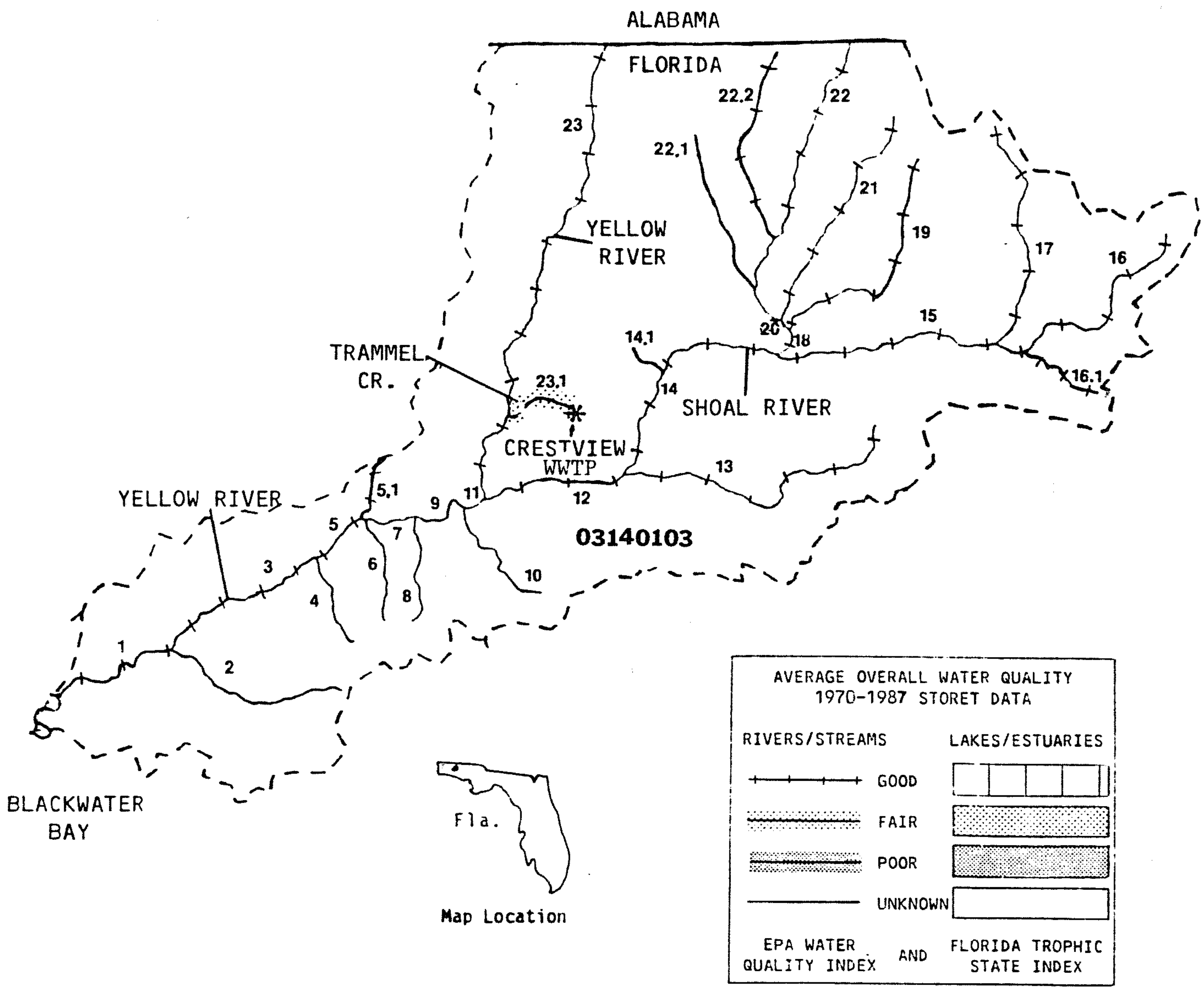
Specific Water Quality Problems and Pollution Sources

The Yellow River exhibits some of the most pristine water quality in the state of Florida. Shoal River has been declared an Outstanding Florida Water. All stream reaches in the basin which have been sampled exhibit good overall quality except for Trammel Creek.

Trammel Creek receives treated wastewater from the City of Crestview WWTP (1.5 MGD design capacity). The creek exhibits nutrient and turbidity problems. The Crestview plant has had a history of treatment problems. They have recently upgraded, but it is too soon yet to determine if the effluent or instream water quality will significantly improve.

In addition, some areas in the basin near agricultural areas are threatened by nutrient, silt and BOD loadings from runoff. There are reports of organic soils covering the typically sandy shorelines of the lower reaches after heavy rainfall.

YELLOW RIVER BASIN



WATER QUALITY DATA FOR 1970-1987

(MOST UNITS IN MG/L -1 INDICATES MISSING DATA)
(SEE LEGEND PAGE 7)

REACH	REACH NAME	SAMPLE RECORD MAX #OBS	BEG YR	END YR	WATER CLARITY TURB	SD	COLOR	TSS	DISSOLVED OXYGEN DO	%SAT	OXYGEN DEMAND BOD	COD	TOC	PH ALKALINITY PH	ALK	TROPHIC STATUS NITRO	PHOS	CHLA	COLIFORM TOTAL	FECL	SPECIES DIVERSITY NAT	ART	BECK	COND	FLOW	WQI
** USGS HYDROLOGIC UNIT: 03140103 YELLOW RIVER																										
* WATER BODY TYPE: STREAM																										
1.00	YELLOW RIVER AB PENSACOLA (EAS	9	69	81	23.0	-1.0	100	-1	7.6	88	0.7	21	-1	6.8	8	1.18	0.05	-1	7900	-1	-1.0	-1.0	-1	39	-1	20
2.00	BOILING CREEK AB YELLOW RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
3.00	YELLOW RIVER AB BOILING CREEK	5	80	81	-1.0	-1.0	-1	-1	7.3	82	-1.0	-1	-1	6.2	-1	-1.00	0.05	-1	-1	-1	-1.0	-1.0	-1	41	-1	20
4.00	WOLF CREEK AB YELLOW RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
5.00	YELLOW RIVER AB WOLF CREEK	43	58	81	10.0	0.9	57	12	7.5	81	0.7	21	6	6.4	12	0.54	0.03	0	510	130	2.3	3.9	49	34	-1	29
5.10	TRAWICK CREEK AB YELLOW RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
6.00	METTS CREEK AB YELLOW RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
7.00	YELLOW RIVER AB METTS CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
8.00	MALONE CREEK AB YELLOW RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
9.00	YELLOW RIVER AB MALONE CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
10.00	TURKEY GOBBLER CREEK AB YELLOW	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
11.00	YELLOW RIVER AB TURKEY GOBBLER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
12.00	SHOAL RIVER AB YELLOW RIVER	20	66	86	16.0	-1.0	-1	-1	7.5	85	-1.0	-1	-1	6.4	62	0.33	0.04	-1	-1	-1	-1.0	-1.0	-1	28	572	20
13.00	TITI CREEK AB SHOAL RIVER	4	69	85	6.4	0.4	8	33	8.3	94	0.7	-1	-1	5.7	2	0.26	0.04	-1	3800	490	-1.0	3.3	-1	13	22	26
14.00	SHOAL RIVER AB TITI CREEK	46	66	85	9.5	0.8	50	8	8.9	90	0.6	32	-1	6.3	7	0.58	0.04	9	920	140	-1.0	-1.0	50	28	-1	30
14.10	MOCCASIN BRANCH AB SHOAL RIVER	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
15.00	SHOAL RIVER AB POND CREEK	20	66	85	5.5	0.7	40	11	7.8	94	0.6	-1	-1	6.2	3	0.61	0.04	-1	2200	280	-1.0	-1.0	-1	18	120	20
16.00	GUM CREEK AB CANEY CREEK	2	69	70	6.6	-1.0	40	-1	6.6	70	-1.0	-1	-1	5.8	2	0.35	0.03	-1	-1	-1	-1.0	-1.0	-1	16	5	30
16.10	NARROWS CREEK AB GUM CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
17.00	CANEY CREEK AB GUM CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
18.00	POND CREEK AB SHOAL RIVER	2	85	85	7.5	-1.0	35	13	8.6	102	0.6	-1	-1	6.5	4	0.58	0.07	-1	3000	170	-1.0	-1.0	-1	36	-1	30
19.00	LONG CREEK AB POND CREEK	2	69	70	6.3	-1.0	20	-1	6.5	72	-1.0	-1	-1	6.4	2	0.33	0.03	-1	-1	-1	-1.0	-1.0	-1	16	14	28
20.00	POND CREEK AB LONG CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
21.00	PINE LOG CREEK AB POND CREEK	2	69	70	6.4	-1.0	20	-1	7.5	85	-1.0	-1	-1	7.1	11	0.29	0.03	-1	-1	-1	-1.0	-1.0	-1	34	10	22
22.00	POND CREEK AB PINE LOG CREEK	4	75	78	8.0	1.3	55	4	9.5	85	0.5	-1	-1	5.9	5	0.70	0.04	-1	1300	220	-1.0	-1.0	-1	28	-1	25
22.10	JUNIPER CREEK AB POND CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
22.20	HORSEHEAD CREEK AB POND CREEK	0	0	0	-1.0	-1.0	-1	-1	-1.0	-1	-1.0	-1	-1	-1.0	-1	-1.00	-1.00	-1	-1	-1	-1.0	-1.0	-1	-1	-1	-1
23.00	YELLOW RIVER AB SHOAL RIVER	321	57	87	10.5	0.5	51	7	7.8	86	0.8	20	5	6.8	16	0.47	0.04	4	930	130	3.9	3.5	-1	55	704	25
23.10	TRAMMEL CREEK AB YELLOW RIVER	15	72	75	24.0	-1.0	35	17	7.9	78	3.1	-1	-1	6.7	26	4.82	0.56	-1	1070	400	-1.0	-1.0	-1	262	-1	56

WATER QUALITY ASSESSMENT REPORT
SCREENING LEVEL PROBLEMS-TRENDS-SOURCES-CLEANUP
'*'=PROBLEM OR DEGRADING TREND '0'=NO TREND '.'=NO DATA
'-'= NO PROBLEM OR IMPROVING TREND (SEE LEGEND PAGE 7)

REACH	REACH NAME	MEETS USE	WQI RANK	SCREENING PROBLEMS NPSS PHIA	BDBD OOAI	CSTT HDNP	AMB MEI	FAB KWL	1980-1987 TRENDS W Q	TFTT CCUS	BDDT OOSO	CSTT HDNP	TF EL	SOURCES IM NU	ASCU GVNR	MLHS NDMT	PRESENT CONDITIONS AND CLEANUP EFFORTS
** USGS HYDROLOGIC UNIT CODE: 03140103 YELLOW RIVER																	
* WATER BODY TYPE: STREAM																	
1.00	YELLOW RIVER ABOVE PENSACOLA (EAST)	YES	GOOD	--*-	--*.	....	--.		.	....	....	....	..				
2.00	BOILING CREEK ABOVE YELLOW RIVER	UNKNOWN	UNKN	....	....	....	.										
3.00	YELLOW RIVER ABOVE BOILING CREEK	YES	GOOD	--.-	.-..	....	...		.	....	....	....	..				
4.00	WOLF CREEK ABOVE YELLOW RIVER	UNKNOWN	UNKN	....	....	....	.										
5.00	YELLOW RIVER ABOVE WOLF CREEK	YES	GOOD	----	----	....	--.		.	....	....	....	..		*		
5.10	TRAWICK CREEK ABOVE YELLOW RIVER	YES	UNKN	....	....	....	.										SILTATION FROM INTERSTATE.
6.00	METTS CREEK ABOVE YELLOW RIVER	UNKNOWN	UNKN	....	....	....	.										
7.00	YELLOW RIVER ABOVE METTS CREEK	UNKNOWN	UNKN	....	....	....	.										
8.00	MALONE CREEK ABOVE YELLOW RIVER	UNKNOWN	UNKN	....	....	....	.										
9.00	YELLOW RIVER ABOVE MALONE CREEK	UNKNOWN	UNKN	....	....	....	.										
10.00	TURKEY GOBBLER CREEK ABOVE YELLOW R	UNKNOWN	UNKN	....	....	....	.										
11.00	YELLOW RIVER ABOVE TURKEY GOBBLER C	UNKNOWN	UNKN	....	....	....	.										
12.00	SHOAL RIVER ABOVE YELLOW RIVER	YES	GOOD	----	.-..	....	...		.	....	....	....	..		*		
13.00	TITI CREEK ABOVE SHOAL RIVER	YES	GOOD	--*-	--*-	....	-..		.	....	....	....	..				
14.00	SHOAL RIVER ABOVE TITI CREEK	YES	GOOD	----	----	....	--.	*	.	....	....	....	..				CRESTVIEW SEWAGE OVERFLOW.
14.10	MOCCASIN BRANCH ABOVE SHOAL RIVER	UNKNOWN	UNKN	....	....	....	.										
15.00	SHOAL RIVER ABOVE POND CREEK	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
16.00	GUM CREEK ABOVE CANEY CREEK	YES	GOOD	----	.-..	....	...		.	....	....	....	..				STREAM BANK EROSION.
16.10	NARROWS CREEK ABOVE GUM CREEK	YES	UNKN	....	....	....	.										UNPAVED ROAD RUNOFF.
17.00	CANEY CREEK ABOVE GUM CREEK	YES	UNKN	....	....	....	.										BORROW PIT, STREAM BANK EROSION AND UNPAVED ROAD RUNOFF.
18.00	POND CREEK ABOVE SHOAL RIVER	YES	GOOD	----	---.	....	-..		.	....	....	....	..				
19.00	LONG CREEK ABOVE POND CREEK	YES	GOOD	----	.-..	....	...		.	....	....	....	..				
20.00	POND CREEK ABOVE LONG CREEK	UNKNOWN	UNKN	....	....	....	.										
21.00	PINE LOG CREEK ABOVE POND CREEK	YES	GOOD	----	.-..	....	...		.	....	....	....	..				
22.00	POND CREEK ABOVE PINE LOG CREEK	YES	GOOD	----	---.	....	-..	***	.	....	....	....	..		*	*	WWTP BREAKDOWNS AND FERTILIZER RUNOFF.
22.10	JUNIPER CREEK ABOVE POND CREEK	UNKNOWN	UNKN	....	....	....	.										
22.20	HORSEHEAD CREEK ABOVE POND CREEK	YES	UNKN	....	....	....	.								*		
23.00	YELLOW RIVER ABOVE SHOAL RIVER	YES	GOOD	----	----	....	--.	*	*	****	-0-.	.*00	00		*		TRAIN DERAILMENT ANHYDROUS AMMONIA SPILL. LOGGING OPERATIONS. CRESTVIEW SEWAGE OVERFLOW.
23.10	TRAMMEL CREEK ABOVE YELLOW RIVER	PARTIAL	FAIR	*-*-	---.	....	-.*		.	....	....	....	..	*			CRESTVIEW WWTP DISCHARGE CAUSED PROBLEMS IN TRAMMEL CREEK. 1980 WLA ISSUED REQUESTING IMPROVEMENT IN TREATMENT AND RELOCATION OF DISCHARGE OUTFALL.

INDEX TO MAJOR STREAMS, BAYS AND LAKES