

Bayou Chico Basin Management Action Plan – Kickoff Meeting February 10th, 2009



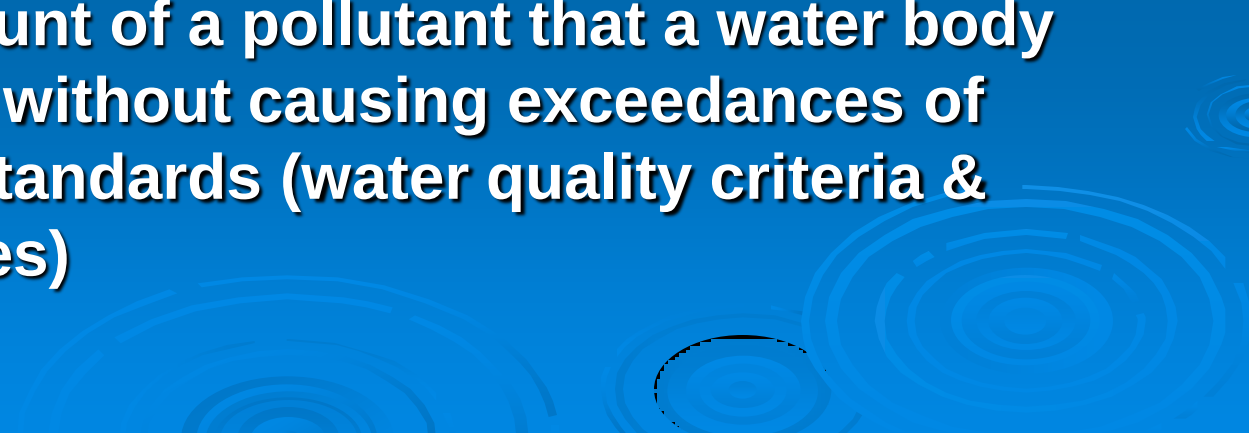
Overview

- Welcome and Introductions
 - Panel of Speakers
 - DEP BMAP Team
 - Audience
- Meeting “Housekeeping”
 - Approach/Ground Rules
 - Breaks
- Overview of the Agenda
 - Bayou Chico TMDL – Description of Impairment and Direction for Implementation
 - Understanding the Basin:
 - Status of Current and Ongoing Projects in the Bayou Chico Watershed
 - Ron Bartel, Director, Division of Resource Management, NWFWMMD
 - Taylor “Chips” Kirshenfeld, Sr. Environmental Programs Manager, Escambia County
 - Tim Haag, Emerald Coast Utility Authority
 - John Naybor, Current President, Bayou Chico Association & Marina Owner/Operator
 - Recognition of Dr. Richard Snyder’s work
 - Break
 - Basin Management Action Plan Overview
 - What Stakeholder Involvement Means
 - Meeting Closure

What Does TMDL stand for?

**Total
Maximum
Daily
Load**

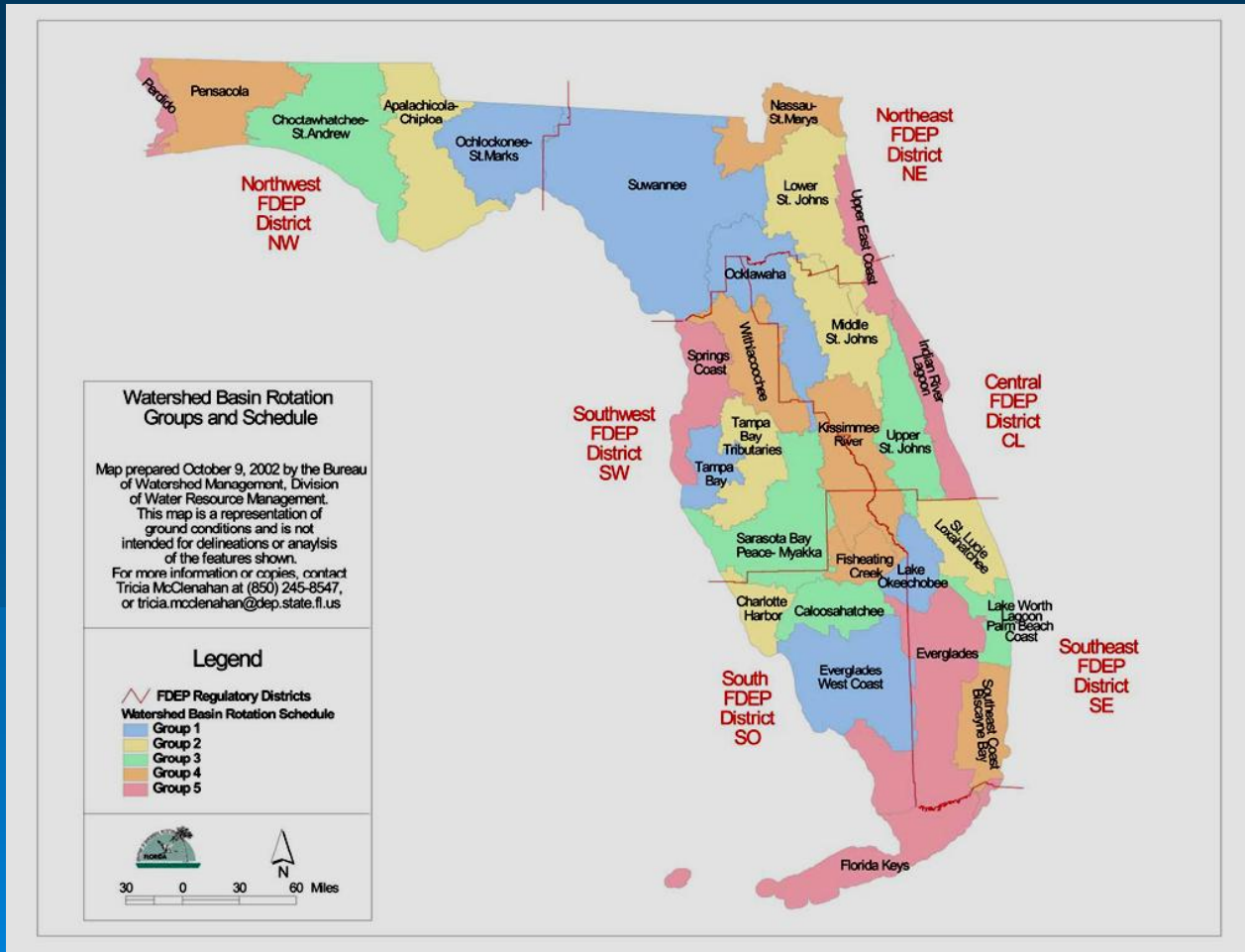
Maximum amount of a pollutant that a water body can assimilate without causing exceedances of water quality standards (water quality criteria & designated uses)



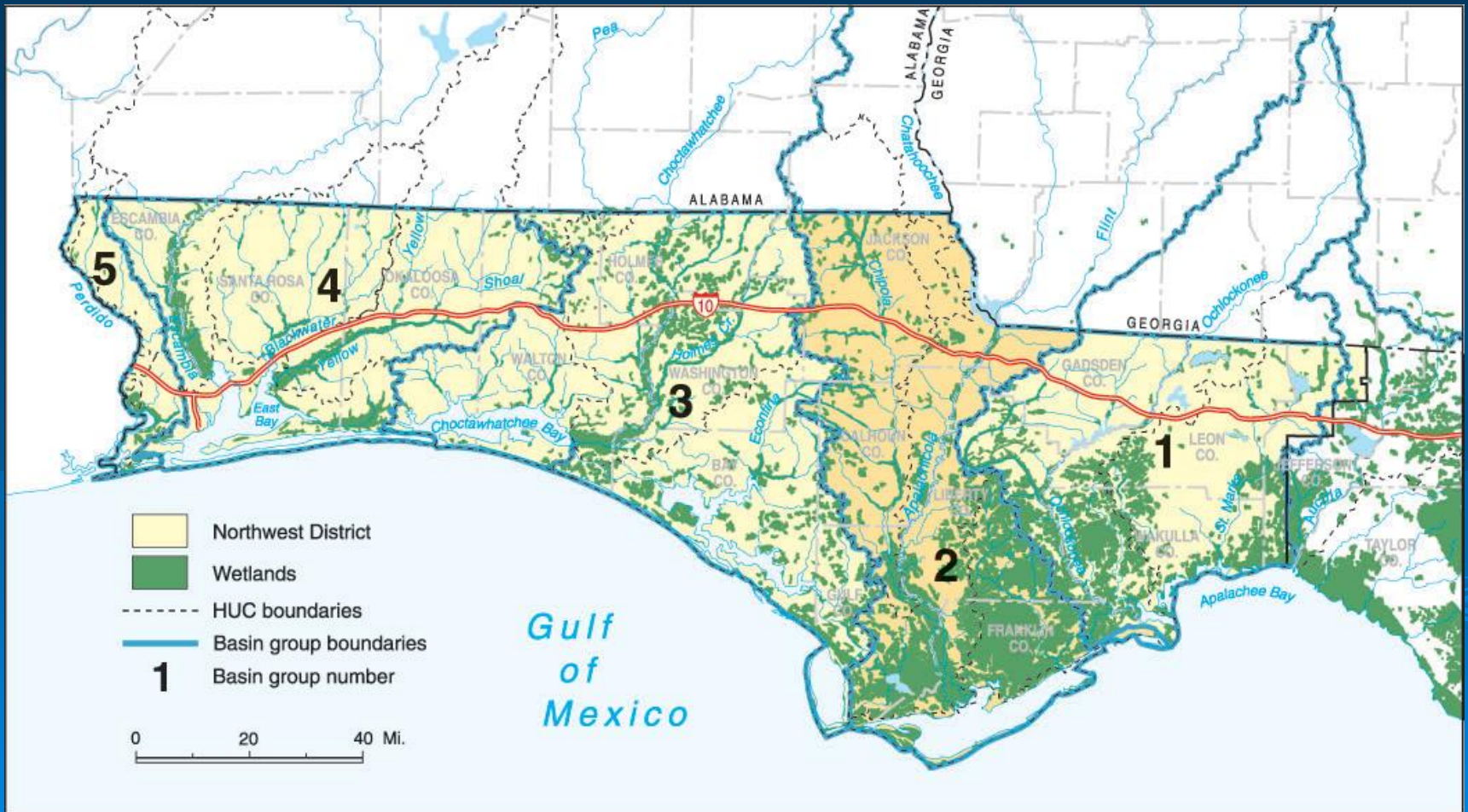
1999 Florida Watershed Restoration Act (403.067, Florida Statutes)

- Clarifies statutory authority for TMDL Program and defines administrative process;
- Rule 62-303, Florida Administrative Code (F.A.C.) (Identification of Impaired Surface Waters Rule, or IWR)
- Florida **Storage** and **Retrieval (STORET)** database water quality criteria exceedances. shall be the primary source of data used for determining water quality impairments

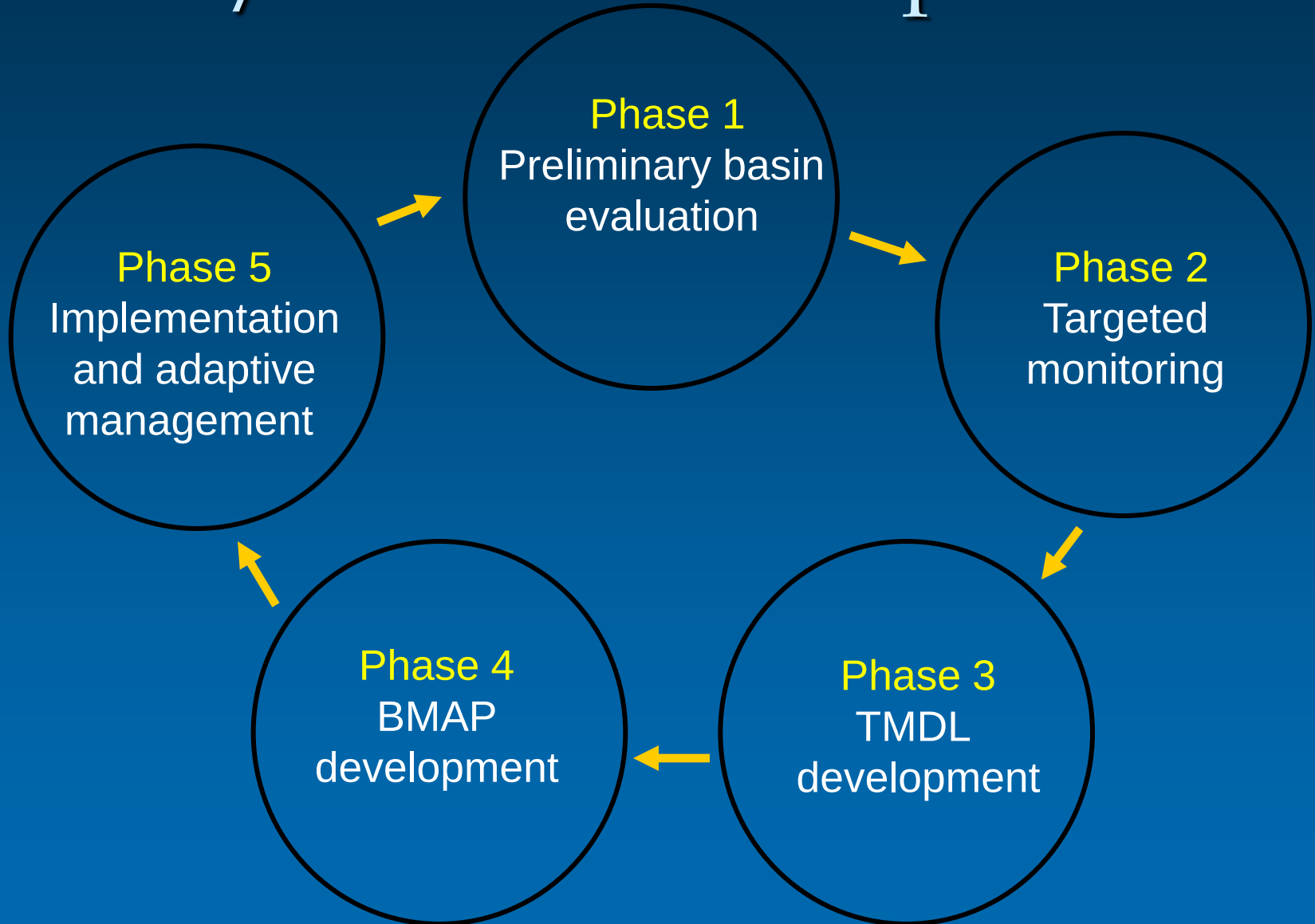
Basin Rotation Map



Basins in the Northwest Florida



TMDL / BMAP Development



TMDL Listing Process

(Phase 2 - Strategic Monitoring & Assessment)

- **Watershed Monitoring**
 - **Sampling, Data Analysis**
- **Impaired Waters Rule (IWR) database**
 - **Data entry, Data Evaluation**
- **Individual Waterbody (WBID) Impairment Determinations**
 - **For specified period of time and for specific water quality criteria that apply**
- **Preparation of Verified Impaired Waters List**
- **Distribution of Draft Lists for Public Review per IWR requirements**
 - **workshops, comments review, DEP response**
- **Lists Approved and Adopted by DEP Secretarial Order**

Group 4 Cycle 1

Adopted Verified List (2006)

OGC Case Number	Planning Unit	WBID	Waterbody Segment	Waterbody Type	Waterbody Class ¹	Parameters Included on the 1998 303(d) List	Parameters Assessed Using the Impaired Waters Rule	Concentration Causing Impairment ²	Priority for TMDL Development ³	Projected Year for TMDL Development ³	Comments* (#Exceedances/#Samples) ⁴
06-0592	Pensacola Bay	846	BAYOU CHICO	ESTUARY	3M	Coliforms	Fecal Coliform	>400 colonies / 100 ml	High	2006	pp = 14 / 51; vp = 15 / 62
06-0593	Pensacola Bay	846	BAYOU CHICO	ESTUARY	3M	Coliforms	Total Coliform	>2400 colonies / 100 ml	High	2006	pp = 13 / 51; vp = 15 / 62
06-0604	Pensacola Bay	846A	JONES CREEK	STREAM	3F	Coliforms	Fecal Coliform	>400 colonies / 100 ml	Low	2011	pp = 20 / 37; vp = 13 / 39
06-0605	Pensacola Bay	846A	JONES CREEK	STREAM	3F	Coliforms	Total Coliform	>2400 colonies / 100 ml	Low	2011	pp = 16 / 37; vp = 14 / 39
06-0607	Pensacola Bay	846B	JACKSON CREEK	STREAM	3F	Coliforms	Fecal Coliform	>400 colonies / 100 ml	Low	2011	pp = 16 / 31; vp = 15 / 38
06-0608	Pensacola Bay	846B	JACKSON CREEK	STREAM	3F	Coliforms	Total Coliform	>2400 colonies / 100 ml	Low	2011	pp = 12 / 31; vp = 17 / 37
06-0609	Pensacola Bay	846CB	BAYOU CHICO BEACH	COASTAL	3M		Bacteria	Exceeds DOH thresholds	Medium	2012	Beach advisories > 21 days/yr for 2001-2004.
06-0611	Pensacola Bay	846CB	BAYOU CHICO BEACH	COASTAL	3M		Fecal Coliform	>400 colonies / 100 ml	Medium	2012	pp = 76 / 420; vp = 123 / 576
06-0613	Pensacola Bay	848DA	SANDERS BEACH	COASTAL	3M		Fecal Coliform	>400 colonies / 100 ml	Medium	2012	pp = 10 / 77; vp = 30 / 201

•PP=Planning Period VP=Verified Period

¹ Florida's waterbody classifications are defined as: 1 - Potable water supplies, 2 - Shellfish propagation or harvesting, 3F - Recreation, propagation, and maintenance of a healthy, well balanced population of fish and wildlife in fresh water, 3M - Recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife in marine water, 4 - Agricultural water supplies, 5 - Navigation, utility, and industrial use. ² The nutrient concentrations represent the 75th percentiles of data from the Verified Period. The target nutrient concentration used in the subsequent TMDL will be determined during the TMDL process. ³ Priorities and schedule for TMDL development are only provided for waters in Category 5. Priorities set under the EPA Consent Decree were retained. Medium priority is used for newly listed waters identified under the IWR.

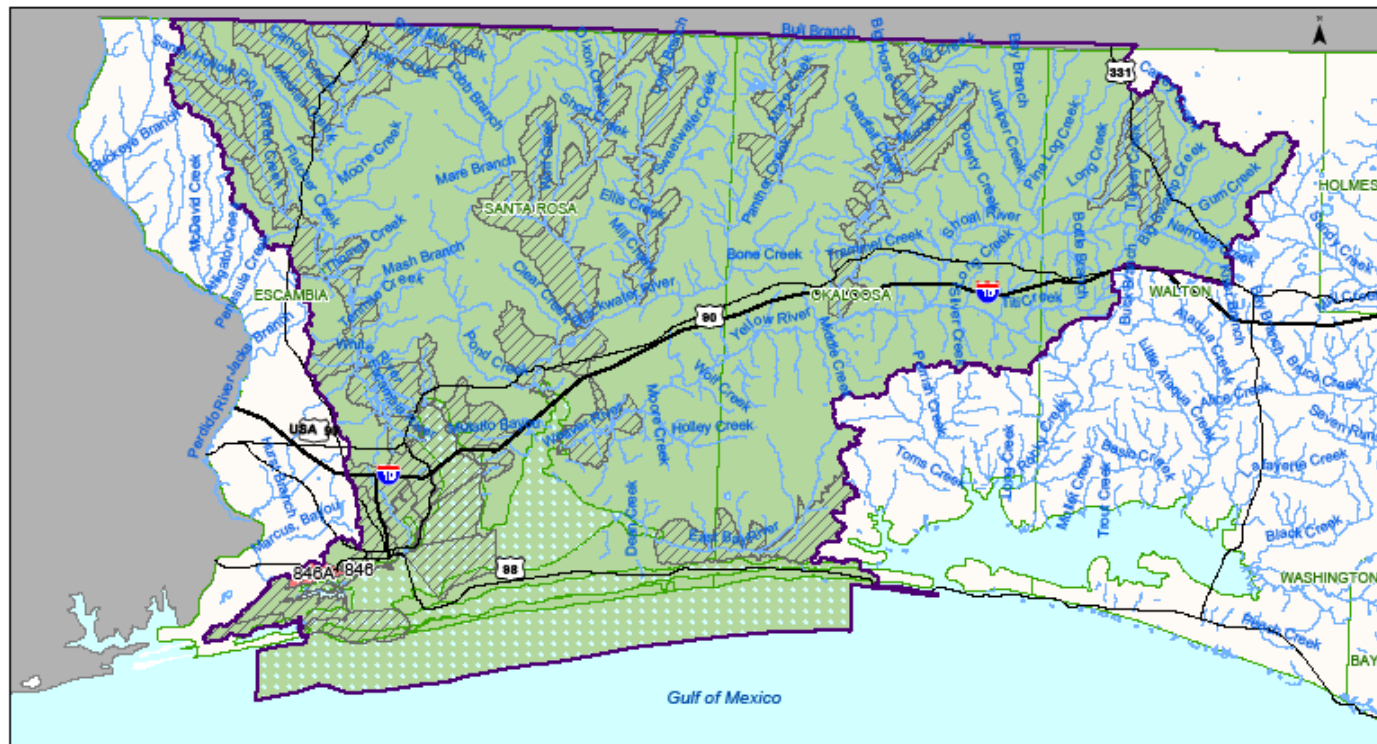
⁴ Planning Period (PP) - 1/1/1993 to 12/31/2002; Verified Period (VP) - 1/1/1998 to 6/30/2005. The Verified List is based on IWR Run 22

TMDL Development Process

(Phase 3)

- **Preparation of Draft TMDL**
 - Compile available data from STORET for targeted watershed
 - Collect additional water quality data (if needed)
 - Coordinate with stakeholders (e.g., DEP, WMD, City/County governments, DACS, DOH, citizen groups)
 - Model water body to determine the Total Maximum Daily Load (TMDL) of each parameter of concern on the “verified list”
 - Develop Draft TMDL documentation
- **Distribution of Draft TMDL for Public Review per IWR requirements**
 - workshops, comments review, DEP response
- **TMDL is Approved by the DEP Secretary and Adopted by Rule**

Group 4 : Pensacola Basin



Pensacola
Group 4
Verified Impairments
Cycle 2



Scale 1:620,000

Map prepared: January 13, 2008 by the Bureau of Watershed Protection,
Division of Environmental Assessment and Monitoring. This map is not for legal
decision making purposes. For more information or copies,
contact: Tisha McCallister at (904) 243-6507, or tisha.mcCallister@fla.gov

- Rivers and Streams
- Interstates
- US Routes
- Counties
- Basin Group
- TMDL Adopted by FDEP
- Basin Group
- 1998 303(d) Listed

Current Census Data for 2000 Census (Source: Census Bureau)

County	Population	Area (sq. mi.)
Alachua	20,000	1,000
Baker	10,000	500
Bay	100,000	1,000
Brevard	200,000	1,000
Broward	2,000,000	1,000
Calhoun	10,000	500
Charlotte	10,000	500
Clay	10,000	500
Collier	10,000	500
Columbia	10,000	500
Dade	2,000,000	1,000
DeSoto	10,000	500
Dixie	10,000	500
Duval	200,000	1,000
Escambia	100,000	1,000
Franklin	10,000	500
Gadsden	10,000	500
Hamilton	10,000	500
Hand	10,000	500
Harris	10,000	500
Hillsborough	1,000,000	1,000
Indian River	10,000	500
Jefferson	10,000	500
Lake	10,000	500
Lee	10,000	500
Leon	10,000	500
Levy	10,000	500
Liberty	10,000	500
Madison	10,000	500
Manatee	10,000	500
Marion	10,000	500
Meigs	10,000	500
Monroe	10,000	500
Morgan	10,000	500
Murray	10,000	500
Nassau	10,000	500
Neptune	10,000	500
Okaloosa	100,000	1,000
Okeechobee	10,000	500
Orange	1,000,000	1,000
Osceola	10,000	500
Palm Beach	100,000	1,000
Palm Bay	10,000	500
Palm Jumeaux	10,000	500
Pasco	10,000	500
Polk	10,000	500
Putnam	10,000	500
Rock	10,000	500
Seminole	10,000	500
St. Johns	10,000	500
St. Lucie	10,000	500
Sumter	10,000	500
Tallahassee	10,000	500
Tamara	10,000	500
Taylor	10,000	500
Union	10,000	500
Volusia	10,000	500
Wakulla	10,000	500
Walton	10,000	500
Washington	10,000	500
Wayne	1,000,000	1,000
Wichita	10,000	500
Wilcox	10,000	500
Yamhill	10,000	500

Bayou Chico TMDL

(Phase 3 TMDL)

Group 4: Cycle 1

Planning Period: January 1, 1993 through December 31, 2002

Verified Period: January 1, 1998 through June 30, 2005

WBID	Parameter	TMDL (% reduction)	WLA		LA	MOS*
			Wastewater (counts/100ml)	NPDES Stormwater	(% reduction)	
Bayou Chico Watershed (WBIDs 846, 846A, 846B, 846C, 846CB, and 848DA)	Fecal Coliform	61%	Point sources must meet permit limits	61%	61%	Implicit

Legend

● Bayou Chico Basin Stations

□ IWR Run 33 WBIDs

NHD Waterbody

--- ArtificialPath

— CanalDitch

— StreamRiver

■ SwampMarsh

■ Estuary

■ LakePond

Bayou Chico Basin Stations



Understanding the Basin

(Status of Current and Ongoing Projects in the Bayou Chico Watershed)

- Ron Bartel, Director, Division of Resource Management, NFWFMD
- Taylor “Chips” Kirshenfeld, Sr. Environmental Programs Manager, Escambia County
- Tim Haag, Emerald Coast Utility Authority
- John Naybor, Current President, Bayou Chico Association & Marina Owner/Operator
- Recognition of Dr. Richard Snyder’s work
- General Discussion

Questions (Current Efforts)

- **What have you or your organization done to protect, maintain, or restore clean water in the Bayou Chico basin?**

BMAP Overview



BMAP Development Process

(Phase 4)

A Basin Management Action Plan (BMAP) is the primary tool for implementing Total Maximum Daily Loads

403.067(7) F.S.

“In developing and implementing the TMDL for a water body, the department ... may develop a basin management action plan that addresses some or all of the watersheds and basins tributary to the water body.”

BMAP Basics

- BMAPs are developed collaboratively with stakeholders
- Point Sources: BMAPs are enforceable through wastewater and municipal stormwater permits
- Nonpoint Sources: BMAPs are linked to Best Management Practice (BMP) implementation
- BMAPs are adopted by DEP Secretarial Order, and can include statements of commitment from stakeholders

Common Principles

- Broad-based representation
- Focus on TMDL waterbodies and parameters
- Consensus decisions based on good science
- Refinement of TMDL
- Transparency
- Commitment
- Adaptive Management

A BMAP must: (F.S. 403.067)

- Integrate existing water quality programs
- Involve the “broadest possible range of stakeholders”
- Equitably allocate pollutant reductions
- Address potential future increases in pollutant loading
- Establish an implementation schedule
- Establish a basis for evaluating plan effectiveness
- Identify feasible funding strategies
- Identify implementation milestones
- Be adopted in whole or in part by DEP Secretarial Order

A BMAP may:

- Include detailed allocations
- Give load reduction credits to discharges that have implemented load reduction strategies prior to the BMAP
(Assuming such actions were not included in the TMDL calculations.)
- Include regional treatment systems or other public works as management strategies
- May provide for phased implementation of these management strategies to promote timely, cost-effective actions
 - Be adopted by local governments and affected parties
 - Incorporate other elements and strategies that benefit water quality
- Take into account the benefits of pollutant load reduction achieved by point or nonpoint sources that have implemented management strategies to reduce pollutant loads, including best management practices, prior to the development of the basin management action plan.

Building a BMAP

Technical Analyses (e.g., what are the issues?, what information exists?, is the current information sufficient to support analysis and decision-making?, who needs to be involved?)



Calculate Detailed Allocations



(if appropriate)

Integrate Related Factors (e.g. monitoring needs, research priorities, resource responses, feasibility, future growth)



Identify Management Actions, Funding, & Tracking Mechanisms (e.g., individual or regional projects, programs, regulations or public outreach)



Secure Commitments

Key BMAP Components

Water quality goals & load reductions

Refined source identification

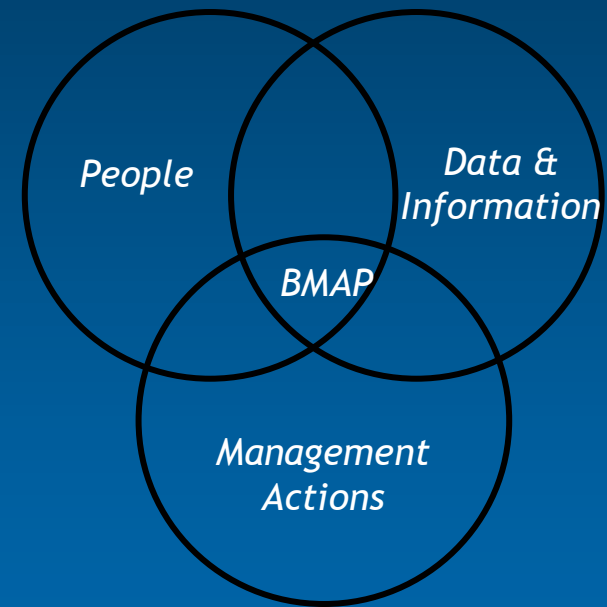
Allocations

Management actions (e.g., projects)

Funding

Monitoring (water quality & projects)

Timeline & commitments



Example - BMAP Coordination

- Basin Working Group Meetings
 - Local, state, federal government representatives
 - Commercial and industrial interests
 - Citizen and environmental interests
- Citizen Input/Public Involvement
- Special Briefings
 - Elected officials
 - Chamber of Commerce
 - Existing organizations (e.g., agricultural, environmental)

Example BMAP Structure

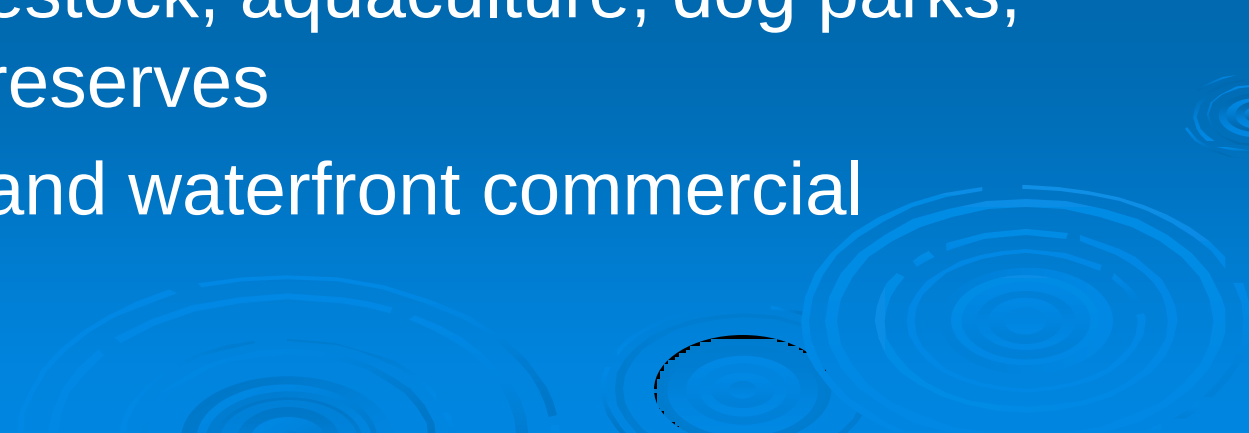
- Background
- Total Maximum Daily Loads
- BMAP Coordination Process
- Source Identification/Allocations
- Management Actions
- Monitoring Program
- Tracking and Follow-up Actions
- Commitment to Plan Implementation

Example Management Actions

- Structural BMPs
 - Quantifiable Load Reductions
 - Reductions Not Currently Quantified
- Agricultural BMPs
- Restoration and Water Quality Improvement Projects
- Regulations, Ordinances, and Guidelines
- Special Studies and Planning Efforts
- Education and Outreach Efforts
- Stormwater Management Program Implementation

Possible Management Action Typical Sources of Fecal Coliform

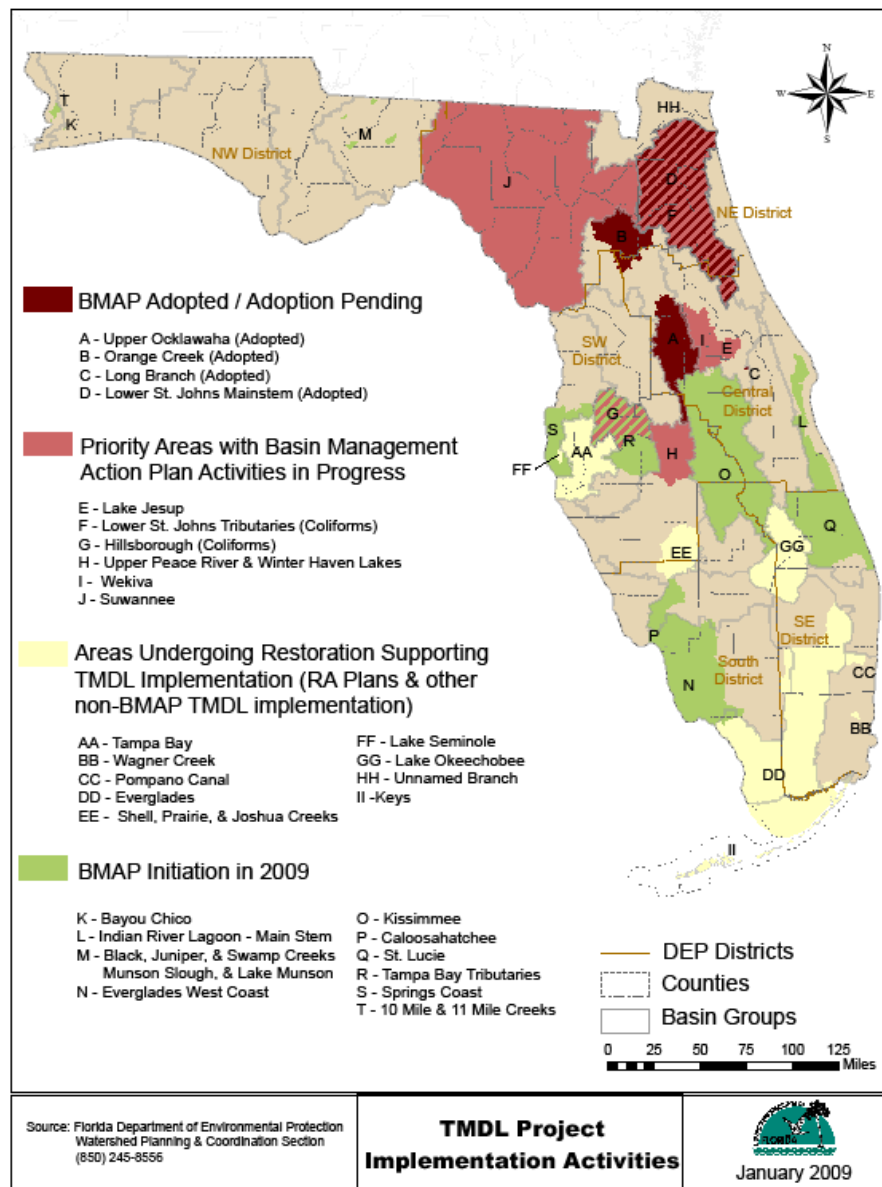
(not an inclusive list)

- Failing Onsite Sewage Treatment and Disposal Systems (OSTDs)
 - Centralized Sewage Infrastructure and sanitary sewer overflows
 - Specific land uses
 - Cattle/livestock, aquaculture, dog parks, wildlife preserves
 - Marinas and waterfront commercial
 - Wildlife
- 

Example Monitoring, Tracking and Follow-up

- BMAP implementation - long-term process
- Tracking and follow-up need to:
 - Ensure BMAP is carried out
 - Measure BMAP effectiveness
- Efforts will include:
 - Tracking of implementation efforts
 - Water quality monitoring
 - Periodic meetings of the BWG
 - Annual (or Progress) Reporting

Status



Statewide Successes

- Improved communication and cooperation among local stakeholders and state agencies
- Improved internal communication within local governments
- Broad application of high-quality science and local information
- Clarified obligations of wastewater point source, MS4 and non-MS4 stakeholders in TMDL implementation
- Enhanced transparency in DEP decision-making
- Relationships built between DEP and local stakeholders have proved fruitful in other areas (e.g. more effective local participation in TMDL development)

Stakeholder Involvement



The Progression of Stakeholder Involvement



Initial effort to
get all
stakeholders
involved

Sustaining
technical effort:

- to collect and synthesize data
- identify issues to be resolved

Increasing
involvement of a
broad range of
stakeholders:

- additional staff
- elected officials
- citizens
- agricultural producers

BMAP Process & Estimated Timeline

- **Identifying Interested Parties**
 - 09/08 - forming a basin working group
- **Understanding the Basin**
 - 09/08 to 06/09- additional data collection and analysis
- **Identifying Responsibilities**
 - 3/09 – 9/09
- **Developing Management Actions**
 - 3/09 – 9/09
- **Securing Stakeholder Commitments**
 - 09/09 – 12/09
- **Revisiting the BMAP**
 - 09/10 and beyond

Questions (Future needs)

- **What additional efforts would help protect, maintain, or restore clean water in the Bayou Chico basin?**

Goals for Stakeholder Involvement in Developing a BMAP

- Understanding that this BMAP is for:
 - Bayou Chico
 - Fecal Coliforms
- Need engagement from stakeholder representatives who:
 - Can garner the resources and support of the staff and management of their organizations for:
 - Information to characterize the impairment (e.g., severity, extent, frequency)
 - Information to identify sources (e.g., septic tank loads, storm events)
 - Resources to address the impairment (e.g., ordinances, education, facility plans, utility improvements)

Potential Stakeholders

(to form a BMAP Basin Working Group)

- State Agencies
 - DEP NW District
 - NFWFMD
 - DOH
 - DCA
 - DOT
- Regional/Local Agencies
 - West Florida Regional Planning Council
 - Bay Area Resource Council (BARC)
 - Escambia County
 - City of Pensacola
 - Emerald Coast Utility Authority (ECUA)
- Local Organizations and Private Entities and Private Citizens
 - Bayou Chico Association
 - Local marinas
 - BREAM Fisherman Association
 - The Nature Conservancy
 - Private citizens

Who else needs to be involved

What is the best way to engage the key stakeholders in the BMAP development process?

What is the best way to inform and engaged the public in the BMAP development process?

What Needs to be Done Next?

- **Identifying Interested Parties**
 - Refine who needs to be involved?
 - Engage them in an effective process?
- **Understanding the Basin:**
 - Identify existing information?
 - Compile additional information:
 - May focus on some stakeholders more than others
 - May require additional analysis
 - Clarify and document the issues (e.g., source identification, water quality trends, correlation of water quality data and storm events)
- **Identify Responsibilities**
- **Document current and proposed management actions:**
 - Projects, ordinances, education, etc.
 - Identify if additional data collection and analysis is needed as a management action to support future decision-making?
- **Securing Stakeholder Commitments**

Examples of Past and Current involvement

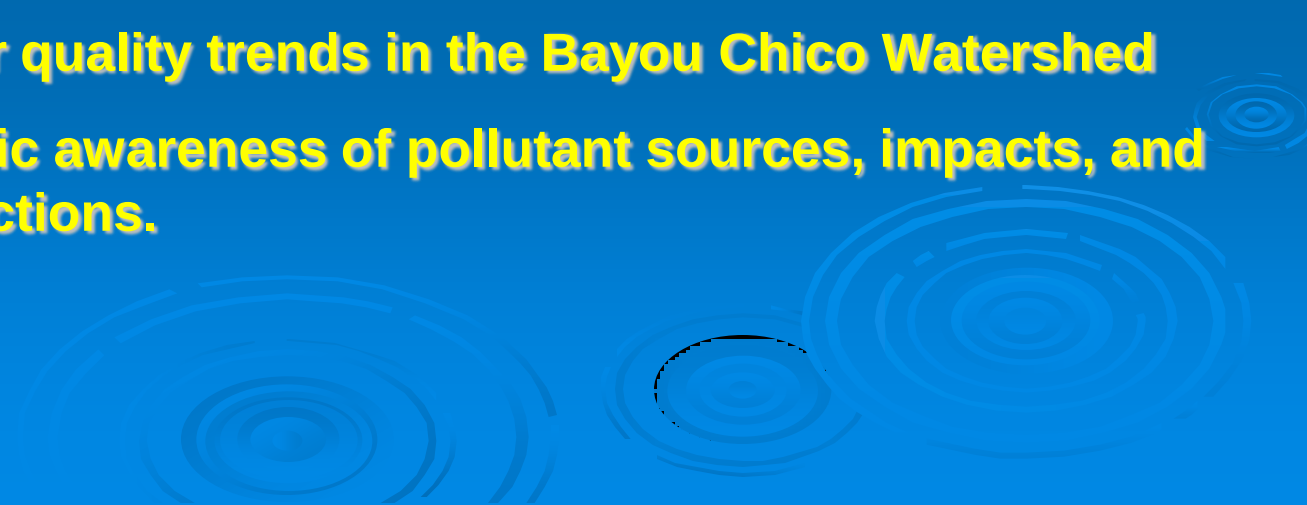
➤ Water Quality Improvement Efforts

- Maggie's Ditch Watershed Retrofit
- "W" Street Wetland Restoration & Sediment Trap
- Eliminated wastewater effluent in 1980s
- ECUA taking steps to remove septic tanks in sensitive areas, and have incentive program to tie into central sewer
- Removal of the old Railroad Bridge and SR 292 enhanced tidal flushing
- Jones Swamp Preserve Educational Boardwalk
- Jackson Branch – "Clark Sand Pit" Stormwater Facility
- FDOT Bridge Replacement – W. Navy Boulevard
- Redevelopment Area Projects (Barrancus, Warrington, Brownsville)

➤ Meetings

- Face-to-Face Data Collection
- Public Meetings

Anticipated Outcomes of BMAP Implementation

- **Decreased loading of (fecal coliform);**
 - **Enhanced understanding of basin hydrology, water quality, and pollutant sources;**
 - **The ability to identify and evaluate management actions and predict their benefits;**
 - **Improved water quality trends in the Bayou Chico Watershed**
 - **Enhanced public awareness of pollutant sources, impacts, and management actions.**
- 

Questions?

Feedback?



Key Contacts

- **Listing:** Julie Espy, Environmental Administrator, Watershed Assessment Section (850) 245-8416
- **TMDL Development:** Jan Mandrup-Poulsen, Environmental Administrator, Watershed Evaluation and TMDL Section, (850) 245-8448
- **Basin Coordinator:** Bonita Gorham, Watershed Planning and Coordination Section, (850) 245-8513
- **John Abendroth, Environmental Administrator**, Watershed Planning and Coordination Section, (850) 245-8555
- **Kathleen Harrigan**, BMAP Facilitator, Assistant Vice President, Science Applications International Corporation (SAIC); 703-608-4583
- **Bob Kelly**, Technical Assistance, Sr. Scientist, SAIC
- **Brad Hartshorn**, Environmental Administrator, Watershed Section, Northwest District FDEP, (850) 595-8300

