

**CDM**

**TMDLs and  
Palm Beach County**

**Status of Florida Activities**

*September 17, 2003*



**Topics of Discussion - TMDLs**

- ◆ Brief review
- ◆ What is the state doing?
- ◆ What should you be doing?

## What are TMDLs?

- ◆ Total Maximum Daily Load (TMDL) is the maximum amount of pollutants that a receiving water can assimilate without exceeding applicable water quality standards
- ◆ Pollution Load Reduction Goal (PLRG) is the reduction necessary to meet the TMDL.
- ◆ TMDL
  - ◆ Waste Load Allocations (WLA) - point sources
  - ◆ Load Allocations (LA) - nonpoint sources
  - ◆ Consideration of Margin of Safety
  - ◆ Consideration of Natural Loads too

## What are TMDLs?

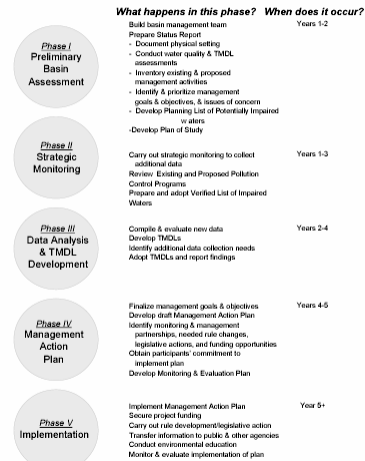
### History

- ◆ Florida Watershed Restoration Act (1999) - modified Ch. 403
  - ◆ Defines process for Development of 303(d) Impaired Water Listing and Delisting
  - ◆ Rules Required for Preparation of 303(d) List and TMDL Allocation Process
- ◆ Impaired Water Technical Advisory Committee (Rule 62-303, Adopted May 2, 2001)
- ◆ TMDL Allocation Technical Advisory Committee (February 2001)

# FDEP Watershed Approach

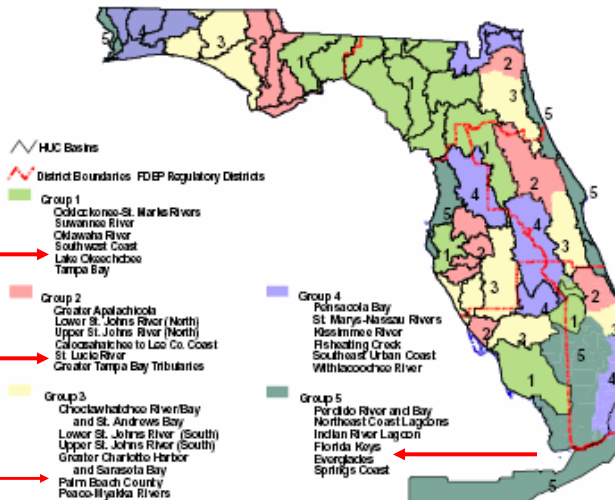
- ◆ State Divided into Groups 1 to 5
- ◆ Groups Assessed in 5 Cycles
  - ◆ Cycle 1: Basin Assessment
  - ◆ Cycle 2: Coordinated Monitoring
  - ◆ Cycle 3: TMDL Development
  - ◆ Cycle 4: Management Plan Development
  - ◆ Cycle 5: Management Plan Implementation

## The Five Phases of the Watershed Management Cycle

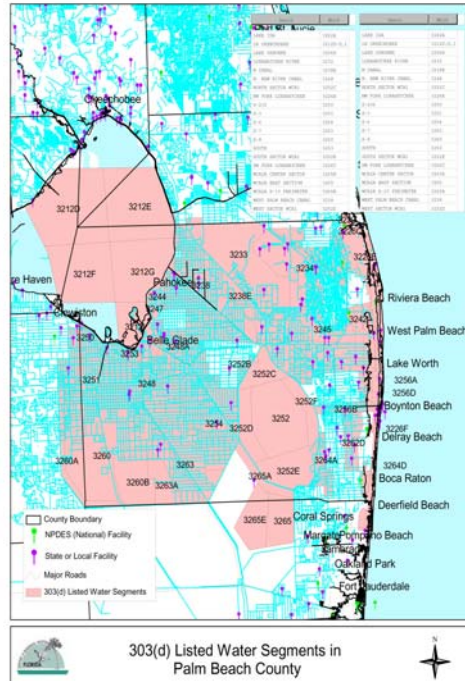


# Watershed Groups

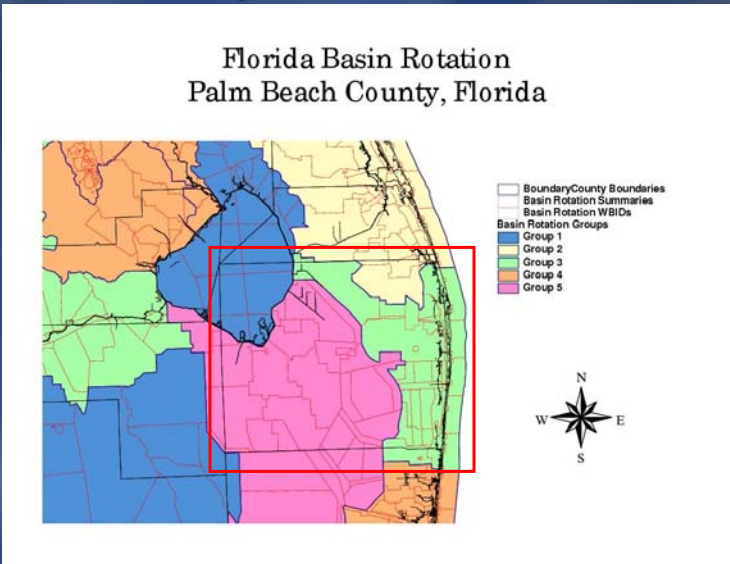
YEAR	00	01	02	03	04	05	06	07	08	09	10
Group 1	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	
Group 2		PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5
Group 3			PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3	PHASE 4
Group 4				PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2	PHASE 3
Group 5					PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 1	PHASE 2



# 1998 303(d) Impaired Waters List for Palm Beach County



# FDEP Groups and Priorities for Palm Beach County



## Category Assignments

- ◆ Category 1 – Attaining All Designated Uses
- ◆ Category 2 – Attaining Some Designated Uses
- ◆ Category 3a – No Data
- ◆ Category 3b – Insufficient Data
- ◆ Category 3c – Meets Planning List Criteria and is Potentially Impaired
- ◆ Category 3d – Meets Verified List Criteria and is Potentially Impaired

## Category Assignments

- ◆ Category 4a – Impaired but Does Not Require TMDL (TMDL has been completed)
- ◆ Category 4b – Impaired but Does Not Require TMDL (Impairment due to ambient conditions)
- ◆ Category 4c – Impaired but Does Not Require TMDL (Pollution Control Measure Will Improve Water Quality)
- ◆ Category 5 – Impaired Waterbody and Requires TMDL

## Where is the state today?

Group 1 watersheds - St. Marks & Ochlockonee, Suwannee River, Tampa Bay, Ocklawaha River, **Lake Okeechobee**, and the Everglades West Coast Basin

- ◆ Impaired Waters List Adopted 8/28/2002
- ◆ Completed TMDLs (prior to WRA):
  - ◆ Lake Okeechobee (Total P)
  - ◆ Halifax River (DO & Nutrients)
  - ◆ Lake Thonotosassa (Total N & Total P)
  - ◆ Manatee River (DO & Nutrients)
  - ◆ Tampa Bay (Nitrogen)

## Group 1 Status – Palm Beach County Okeechobee Basin

WBID	Name	Pollutant	Category	Priority	Year	Note
3212D	Lake Okeechobee	Nutrients	4a	High	2002	TP TMDL Completed
		turbidity	3c			Check background
		Iron	3c			Need data
		DO, un-NH3	2			Delist
3212E	Lake Okeechobee	Nutrients	4a	High	2002	TP TMDL Completed
		turbidity	3c			Check background
		Iron	3c			Need data
3212F	Lake Okeechobee	Nutrients	4a			TP TMDL Completed
		turbidity	3c			Check background
		DO	2			Delist
3212G	Lake Okeechobee	Nutrients	4a	High	2002	TP TMDL Completed
		Iron	3c			Need data
		un-NH3	2			Delist
3212H	Lake Okeechobee	Nutrients	4a			TP TMDL Completed
		turbidity	3c			Check background
3212I	Lake Okeechobee	Nutrients	4a			TP TMDL Completed

## Where is the state today?

- ◆ Group 2 watersheds –Apalachicola/Chipola, Charlotte Harbor, Lower St. Johns, Middle St. Johns, **St. Lucie-Loxahatchee**, Tampa Bay Tributaries
- ◆ Draft Verified List and Delist – Sept 3, 2003
- ◆ Basin Status Report – Feb 2003

[www.dep.state.fl.us/water/basin411/stlucie/status.htm](http://www.dep.state.fl.us/water/basin411/stlucie/status.htm)

## Group 2 Status – Palm Beach County Loxahatchee Basin

WBID	Name	Pollutant	Category	Priority	Year	Note
3224	Johnathan Dickinson	Coliform	5	Medium	2010	
3226C	SW Fork Loxahatchee	Coliforms	5	Low	2010	
		DO	2			Delist
		Nutrients	2			Delist
		Total Coliform	2			Delist
3234	C-18	Coliforms	5	Low	2010	Riverine Portion
		Coliforms	2			Delist Estuarine Portion
3218	C-44	DO	5	Medium	2010	

## Newest Information From FDEP Group 3 Basins



## Group 3 Status for Palm Beach County

WBID	Name	Parameters Potentially Impaired Under 2001 Criteria	Category	1998 303d List Parameters of Concern
3233	L-8 Canal	DO, Iron, Mercury, Turbidity	3d	Nutrients, Turbidity, Fish, DO, Biology
3242	C-17 Canal Segment	DO	3c	Coliforms, BOD, DO
3242A	C-17 Canal Segment (D Canals)	DO, Mercury	3d	N/A
3245	C-51 Canal Segment	DO, Mercury	3d	Coliforms, Nutrients, DO, Iron
3245B	Lake Clarke (C-51)	DO, Mercury	3d	N/A
3256A	Lake Osborne (C-16)	Total Coliforms	3c	Coliforms, DO
3256B	C-16 Canal (Boynton Canal)	DO	3d	Coliforms, Nutrients, BOD, DO
3256D	E-4 Canal Segment (C-16)	N/A	3b	Coliforms, Nutrients, Turbidity
3262	E-4 Canal Segment (C-15)	DO	3d	N/A
3262A	Lake Ida (C-15)	N/A	2	Nutrients, DO
3262D	E-3 Canal (C-15)	DO	3c	Coliforms, Nutrients, DO
3264	Hillsboro Canal	Chlorophyll a, DO, Fish, Lead	3d	N/A
3264A	E-1 Canal Segment (HC)	DO	3c	Coliform, Nutrients, DO
3264D	E-4 Canal Segment (HC)	DO	3c	Coliforms, Nutrients, DO
3226E	AICW Above Royal Palm Bridge	Copper	3c	Coliforms, DO
3226F	AICW Above Pompano	Copper, DO	3c	Coliforms, Nutrients, DO
3226E1	Lake Worth Lagoon - North	Copper, Lead	3c	N/A
3226F2	Lake Worth Lagoon - South	Copper	3c	N/A

## FDEP's TMDL Efforts

- ◆ State and EPA Do Not Agree on Listing Process
  - ◆ State will continue to use Impaired Water Rule
  - ◆ EPA will use own criteria as well as IWR
- ◆ State and EPA have divided up the TMDLs
  - ◆ State will do some and EPA will do some
  - ◆ What happens with EPA issued TMDL that DEP disagrees with?
  - ◆ State issued drafts:

<http://www.dep.state.fl.us/water/tmdl/index.htm>

## FDEP's TMDL Efforts

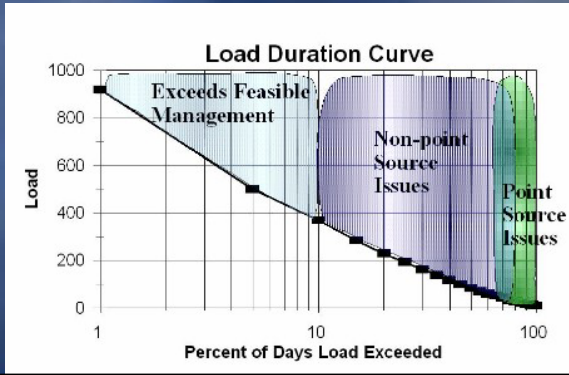
- ◆ Parameters of Continued and Emerging Interest
  - ◆ Metals
    - Mercury, Lead, Copper, Iron
    - Fish
  - ◆ Coliform – Streams
    - Kansas Method
    - High Removals Being Required (~75%)
  - ◆ DO – Streams and Lakes
    - Classic Modeling (e.g., WASP)

## FDEP's TMDL Efforts

- ◆ Parameters of Continued and Emerging Interest
  - ◆ Nutrients – Lakes
    - Chlorophyll a, Secchi disk depth
    - FL Trophic State Index (TSI) rates lake water quality as good, fair, poor based on trophic state
  - ◆ Nutrients – Estuaries
    - Resource Protection

## FDEP's TMDL Efforts

- ◆ Good Effort:
  - ◆ Lower St. Johns River
  - ◆ Cooperative Effort with SJRWMD
- ◆ Controversial Efforts:
  - ◆ Coliform
  - ◆ Kansas Method



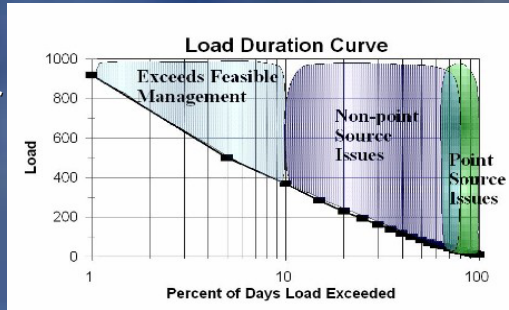
## Definitions for Sources of Coliform

### ◆ Nonpoint Source

- Septic Tanks
- Diffuse stormwater
- SSOs?

### ◆ Point Source

- WWTP
- SSO
- Stormwater pipe (MS4)?



## Non-Human Sources

- ◆ Pets
- ◆ Horses, Cattle, Chickens, etc
- ◆ Wildlife (e.g., Raccoons, Bears, Deer, and Birds - Pigeons, Ducks, Geese)
- ◆ Stormwater Systems (Growth)

## Human Sources

- ◆ WWTPs
- ◆ Leaking Sewers
- ◆ Septic Tanks
- ◆ Sanitary Sewer Overflows - SSOs

## What Should You Be Doing?

- ◆ Continue to Monitor
  - ◆ To Define or Refine Impaired Waters
    - Bacteria source tracking
    - Metals source tracking
  - ◆ To Support NPDES Compliance
  - ◆ To Support the TMDL Analysis
- ◆ Collaborate
  - ◆ Continue and Use Stakeholder Group(s)
    - Technical
    - Political
  - ◆ Continue Discussions with FDEP

## What Should You Be Doing?

- ◆ Continue to Participate
  - ◆ Attend FDEP Sponsored Training/Events
  - ◆ Check FDEP Web Site  
(<http://www.dep.state.fl.us/water/tmdl/index.htm>)

## Potential Tracers

- ◆ Fecal Coliform - Fecal Streptococci  
(Inconclusive)
- ◆ Surfactants/Detergents
- ◆ Coprostanol (Sediments - USGS)
- ◆ Caffeine (Persistent - USGS)

## Potential Tracers

- ◆ Fluoride
- ◆ NH<sub>4</sub>/K Ratio for Potential Septic Tanks
- ◆ Brighteners

## Potential Tracers

- ◆ DNA/RNA
- ◆ Enteric Virus (USGS/CDC)
- ◆ Other Bacteriological Indicators (e.g., Antibiotic Resistance Analysis)

# Questions & Answers