



*Florida Department of
Environmental Protection*

Watershed Assessment Program and Strategic Monitoring

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FDEP - Bureau of Assessment and Restoration Support



Watershed Assessment Program

- Assess surface water quality for the purpose of meeting the State's duty under Section 303(d) of the Federal CWA
- Section 303(d) requires states to:
 - Submit lists of waters that do not meet applicable water quality standards, including designated uses
 - Identify pollutant causing or expected to cause impairment
 - Establish/implement TMDLs for these waters on a prioritized schedule in order to restore the waterbody





Uses Addressed by Assessment Methods

- **Aquatic Life**
 - Metals, Nutrients, Pesticides, Biological assessment
- **Primary Contact and Recreation**
 - Bacteria, Beach advisories
- **Fish and Shellfish Consumption**
 - Pathogenic bacteria, Mercury, Shellfish Classification
- **Drinking Water**
 - Metals, Pesticides, Bacteria

**Water Quality Standards 62-302 F.A.C.
Impaired Waters Rule 62-303 F.A.C**

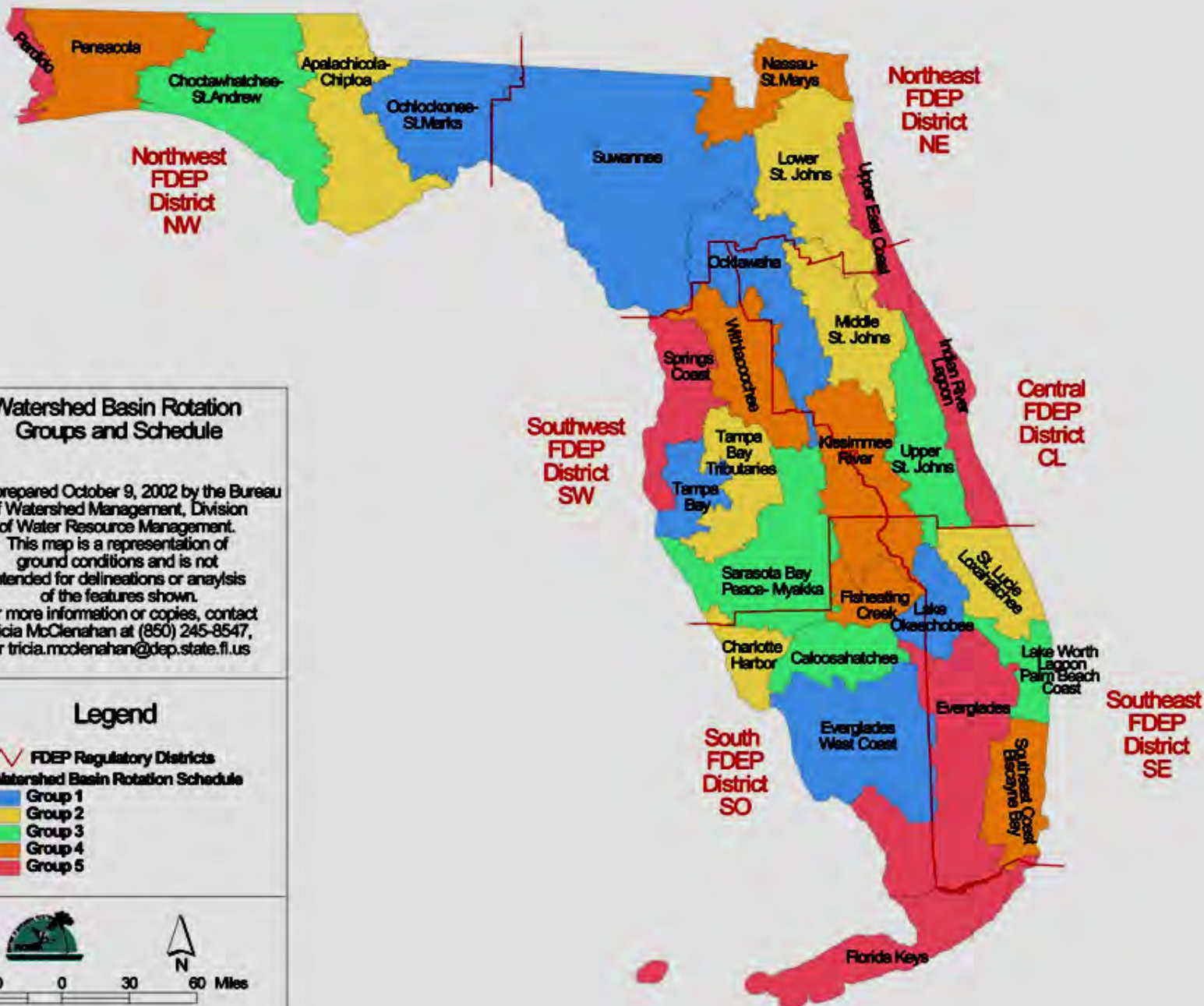




Watershed Management Approach

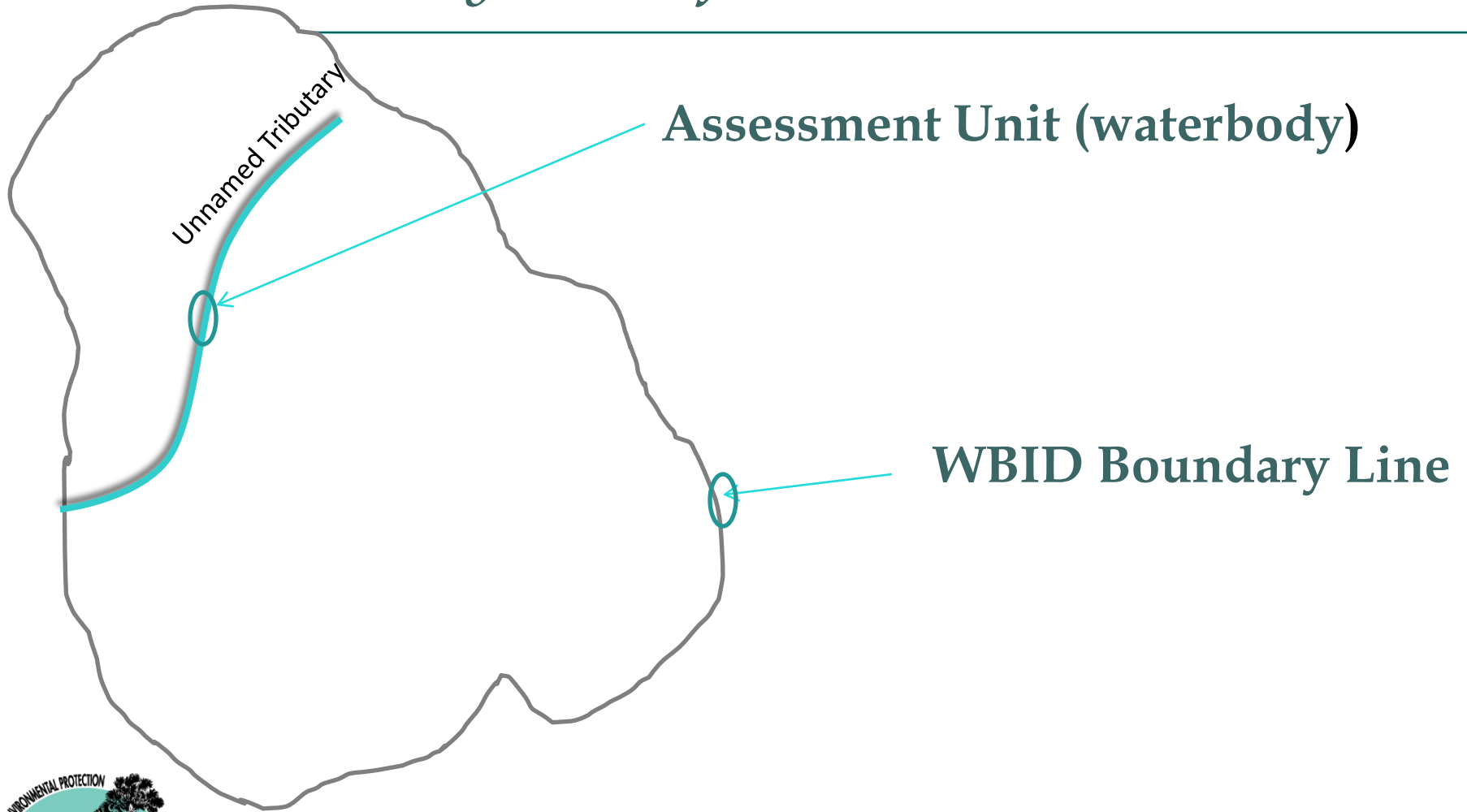
- **DEP implements Assessment Program as part of a Watershed Management Approach**
 - Started in July, 2000
 - Monitoring and Assessment
 - TMDL Development
 - TMDL Implementation
 - Watershed Restoration
- **Watershed Approach involves a five-phase cycle that rotates through all basins in the state over five-year period**
- **Divided state's basins into groups**







Waterbody Identification Number - WBID





Watershed Management Cycle

Phase 1 - Preliminary Assessment

- Produce Planning List (aka Strategic Monitoring Plans)

Phase 2 - Targeted Monitoring and Assessment

- Monitor, Verify impairment, and Adopt Verified List by Secretarial Order

Phase 3 - Develop and adopt TMDLs

Phase 4 - Implement TMDL

- Basin Management Action Plan or
- Other Implementation Option

Phase 5 - TMDL Implementation





Phase 1 – Preliminary Assessment

- **Produce the Planning List (Strategic Monitoring plans) in year prior to implementation**
 - **Waters that meet planning list thresholds in the Impaired Waters Rule (62-303, F.A.C.)**
 - Potentially impaired, but insufficient data to verify
 - Binomial approach with 80% confidence
 - Minimum of 10 samples with 3 exceedances of water quality standards
 - **Data period spans 10 years**
 - **Most data regardless of QA is used**
 - **Period of Record Assessments**
 - **Data in FL STORET from over 100 Data Providers**





Data Assessment Periods

- Data used for the planning list is from a 10-yr planning period
- Data used for assessment is from the most recent 7.5 years

Cycle Rotation	Basin Group	Planning Period	Verified Period
1	1	1989 - 1998	1/1/1995 - 6/30/2002
1	2	1991 - 2000	1/1/1996 - 6/30/2003
1	3	1992 - 2001	1/1/1997 - 6/30/2004
1	4	1993 - 2002	1/1/1998 - 6/30/2005
1	5	1994 - 2003	1/1/1999 - 6/30/2006
2	1	1995 - 2004	1/1/2000 - 6/30/2007
2	2	1996 - 2005	1/1/2001 - 6/30/2008
2	3	1997 - 2006	1/1/2002 - 6/30/2009
2	4	1998 - 2007	1/1/2003 - 6/30/2010
2	5	1999 - 2008	1/1/2004 - 6/30/2011
3	1	1995 - 2004	1/1/2005 - 6/30/2012
3	2	1996 - 2005	1/1/2006 - 6/30/2013
3	3	1997 - 2006	1/1/2007 - 6/30/2014
3	4	1998 - 2007	1/1/2008 - 6/30/2015
3	5	1999 - 2008	1/1/2009 - 6/30/2016



New Considerations for Monitoring

- Implementation of numeric nutrient criteria
 - Waters on the Study list
 - Bioassessment requirements in addition to TN, TP, and chlorophyll-a data
 - Measures of flora and fauna
 - Rapid Periphyton Survey (training available)
 - Linear Vegetation Survey (training available)
 - Stream Condition Index (training available)
 - Seagrass Surveys





Strategic Monitoring Plans

- Purpose is to ensure sufficient data are collected to verify whether or not waters identified as “potentially impaired” are “impaired”
- Ensure that sampling locations and conditions meet objectives
- Use knowledge to determine best monitoring strategy (TMDL vs. SSAC vs. UAA) for waters on the planning and study lists





Temporal Considerations

- Hydrologic conditions can significantly influence results
- Disconnected pools, extreme low flow not representative
 - Leaf litter decomposition (low natural DO), soil leaching (higher nutrients), chlorophyll higher in stagnant conditions
- Hurricanes, floods can mobilize soil organic and inorganic materials
 - Metal adsorbed to soils, low DO, etc.





Representative Stations

- Data are collected for a variety of reasons
 - Ambient monitoring
 - Effects studies
- Waterbodies can be inappropriately classified (gradients between wetlands, lakes, streams)
- Evaluate site information





Spatial Considerations

- Sampling site location is critical in determining what the water quality data actually represent
 - Proper system type (wetland vs. stream, etc.)
- Channelization, obstructions (improperly placed culvert, bridges), canopy cover, etc. can influence water quality results
- Focus on pollutant loading





2012 Strategic Monitoring Activities

- **Basin Group 2**
 - Apalachicola-Chipola Rivers
 - Lower St. Johns River
 - Middle St. Johns River
 - Tampa Bay Tributaries
 - St. Lucie-Loxahatchee Rivers
 - Charlotte Harbor
- **Basin Group 3**
 - Caloosahatchee River
 - Lake Worth Lagoon-Palm Beach Coast
- Began sampling in January 2012 and will sample through December 2012
- Results uploaded to Florida STORET before June 30, 2013

Plans available on website:

<http://www.dep.state.fl.us/water/watersheds/assessment/smplan.htm>





Strategic Monitoring Schedule

- **October 2012 – develop monitoring plans for 2013**
- **November 2012 – provide draft plans to DEP districts for review and input**
- **December 2012/January 2013 – present plans at “kickoff” meetings to local monitoring agencies to coordinate efforts**
- **January/February 2013 – implement monitoring plans**





Highlights

- More data are always needed to ensure good assessments
- Appropriateness of data is important
- Increased need for bioassessment data
- Training available for bioassessment methods
- Strategic Monitoring Plans coming out soon for input and coordination
- **Kickoff meeting coming to a district near you soon!**





Questions?

- **Contact Info:**

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