

Numeric Nutrient Criteria Update

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Lake Worth Lagoon Initiative

**Joint Meeting Water Resources and Habitat
Working Groups**

November 13, 2013

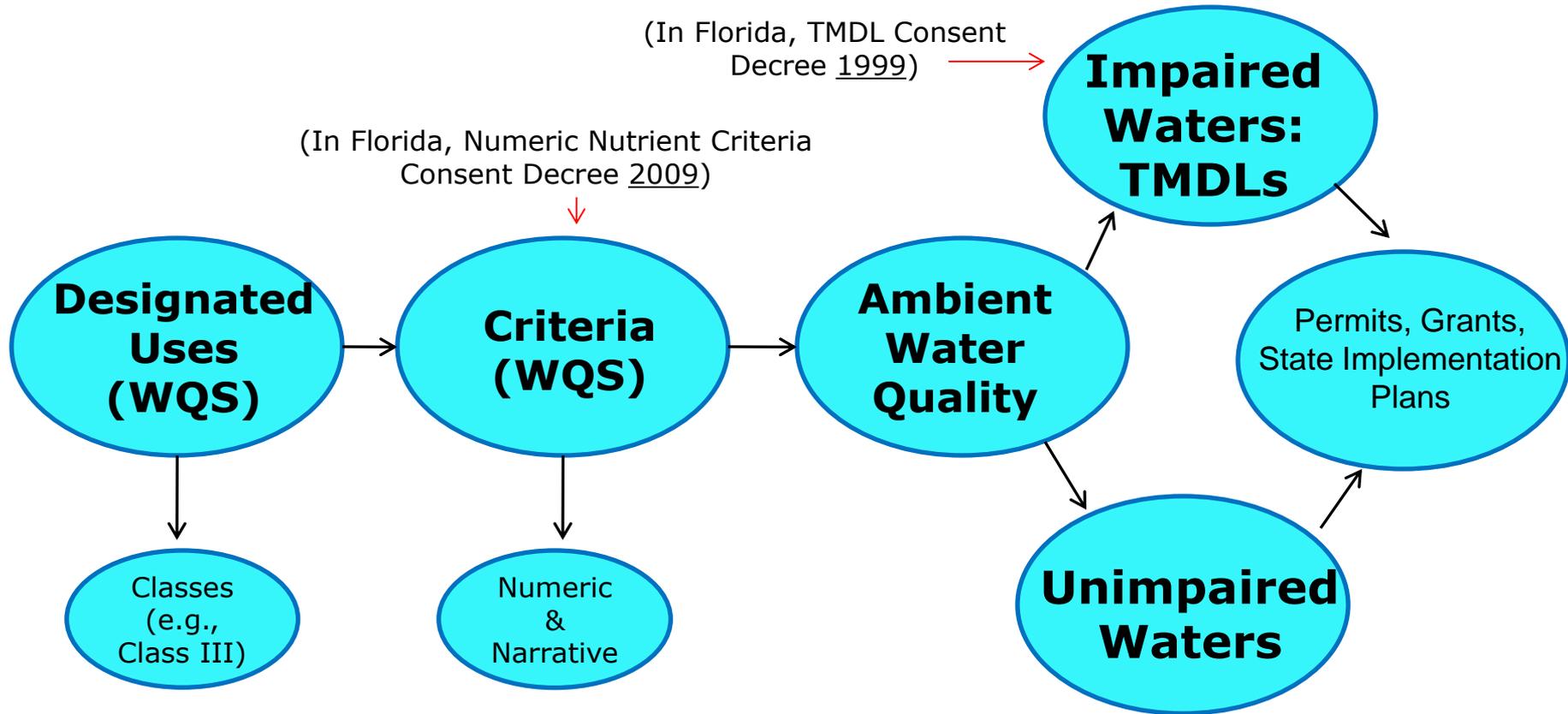
West Palm Beach, FL

Today's Presentation

- Briefing on why there are Numeric Nutrient Criteria (NNC) and history of NNC development
- Current status of the federal and state efforts
- NNC update for local waterbodies in Palm Beach County, including Lake Worth Lagoon



The Federal Clean Water Act's General Framework



WQS = Water Quality Standards
TMDLs = Total Maximum Daily Loads

Florida's Narrative Nutrient Criteria

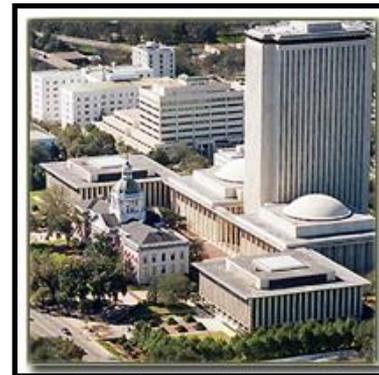
Florida Administrative Code (FAC) 62.302.530(47)(b)

- “In no case shall nutrient concentrations of a body of water be altered so as to cause an imbalance in natural populations of aquatic flora or fauna.”
- This has been part of the narrative nutrient criteria since the 1970s



Florida Numeric Nutrient Criteria (NNC): A Very Abbreviated History

- 2001 – 2008: Florida Department of Environmental Protection (DEP) works closely with United States Environmental Protection Agency (EPA) to develop Numeric Nutrient Criteria (NNC)
 - Primary focus is on freshwaters (e.g., lakes)
- 2008 – 2009: Federal litigation process begins, including the NNC consent decree, leading to EPA's federal rulemaking efforts starting in 2010



3 “Components” of NNC Rulemaking

■ EPA Phase 1 rule:

- Freshwater Lakes, Springs, Rivers, Streams, and Downstream Protection Values

■ EPA Phase 2 rule:

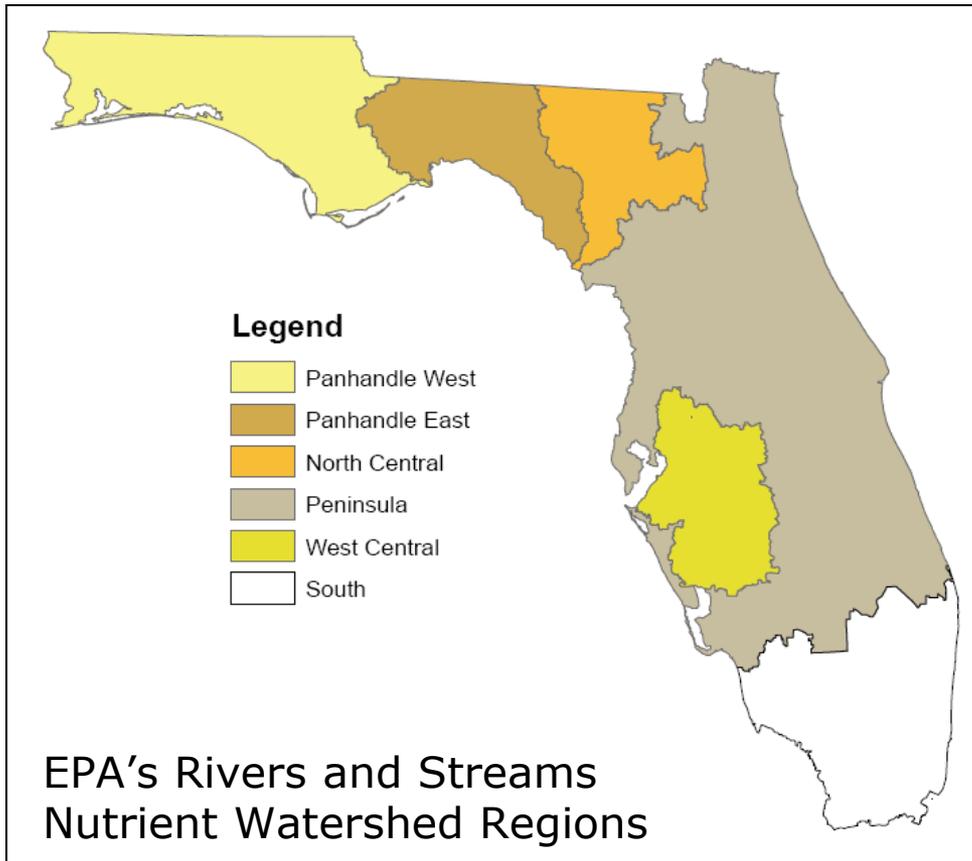
- All Estuaries, Offshore Waters, Downstream Protection Values and South Florida Canals

■ DEP rules:

- Freshwaters Lakes, Springs, Rivers and Streams, and Most Estuaries:
 - FAC 62-302 Water Quality Standards
 - FAC 62-303 Impaired Waters Rule



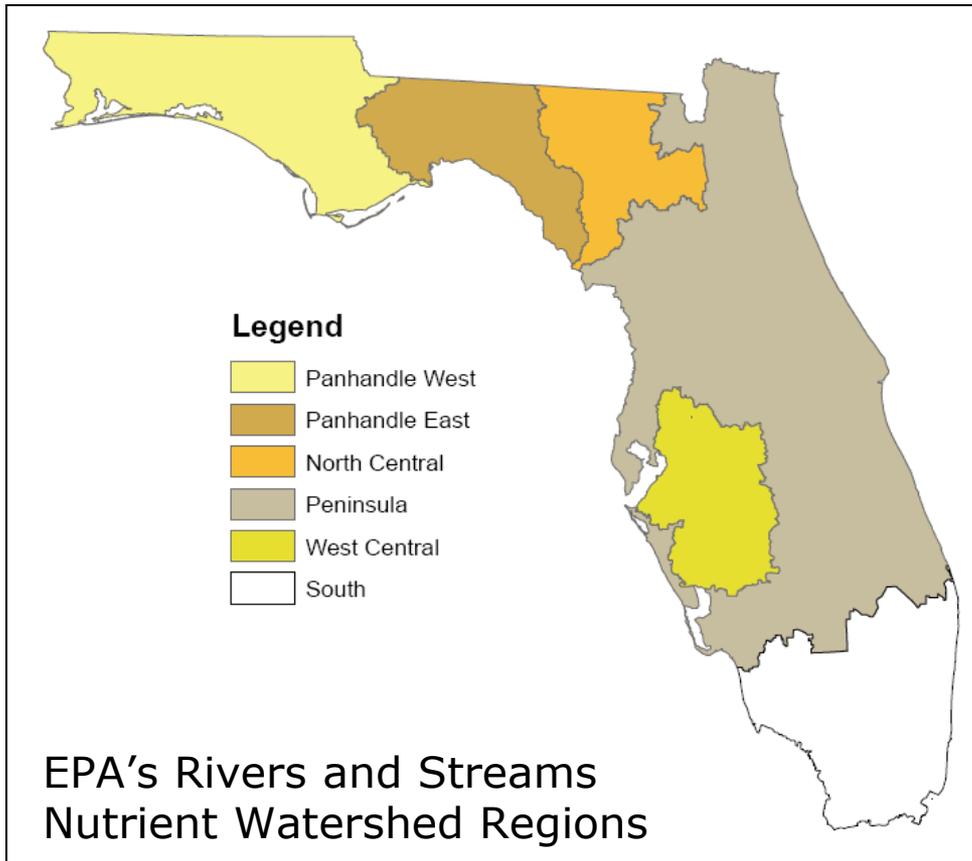
EPA's Final Phase 1 Rule: Dec. 6, 2010



- Lakes and Springs (covers entire state)
- 5 of the 6 Rivers + Streams* regions: (Struck down in Federal Court Feb. 2012; new version proposed Nov. 30, 2012)
- South Florida flowing waters (i.e., Canals):
 - Part of draft rule Jan. 2010
 - Removed from draft rule in Jun. 2010

* Downstream Protection Values component in rule that takes into account lakes

EPA's Proposed Phase 2 NNC Rulemaking: Nov. 30, 2012



* Downstream Protection Values component in rule for rivers, streams, and canals that take into account estuaries

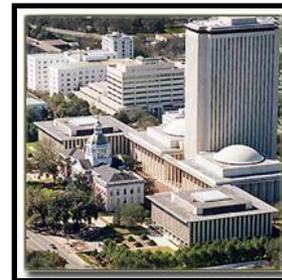
- Proposed Estuarine NNC where, at the time, DEP had:
 - Narrative Criteria (including Lake Worth Lagoon, LWL)
 - TMDLs
- Coastal Waters NNC uses satellite imagery technology
- South Florida flowing waters (i.e., Canals):

EPA approved DEP's NNC: November 30, 2012

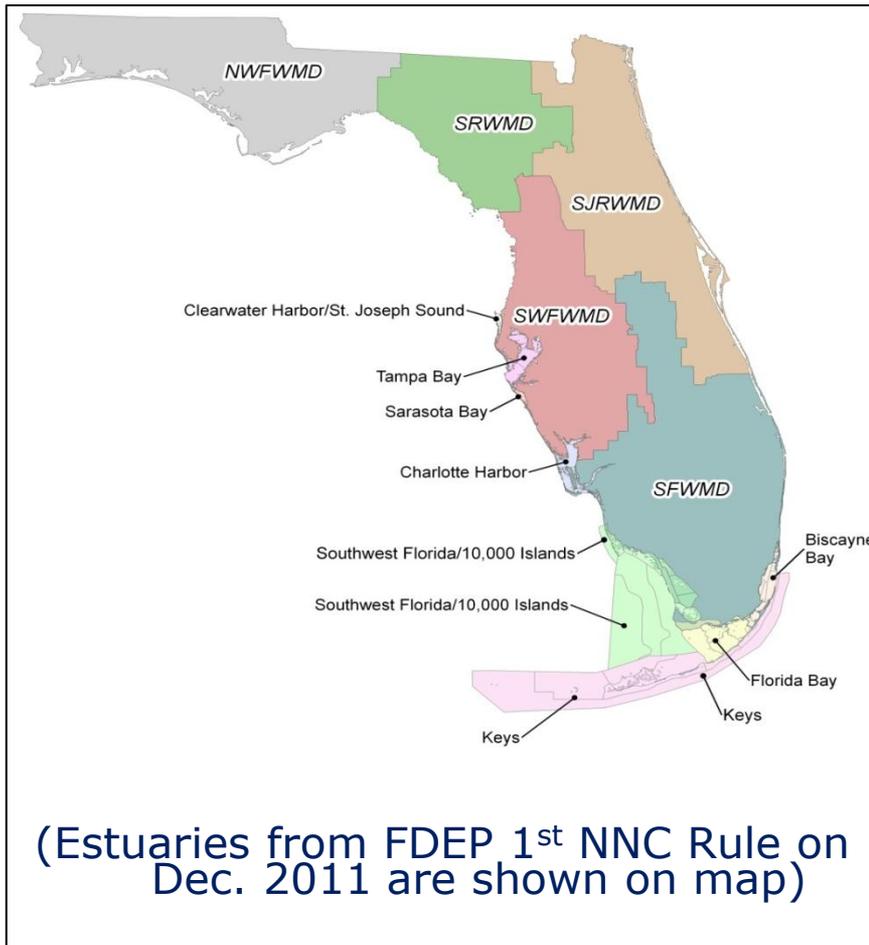
- **DEP's NNC** is a Hierarchy of Site Specific Numeric Interpretation of Narrative Nutrient Criterion:
 - 1) Nutrient Site Specific Analyses (e.g., Most Estuaries)
↓
 - 2) Cause and Effect Relationships (e.g., Lakes & Springs)
↓
 - 3) Reference-based Thresholds Combined with Biological Data to Evaluate Attainment (e.g., Rivers and Streams)
↓
 - 4) Narrative standard continues where numeric interpretation is unavailable (e.g., Wetlands, Canals, Intermittent Streams)

EPA and DEP agree on the Path Forward: March 15, 2013

- If executed, EPA does not plan to finalize their NNC; **DEP's rule** would be the NNC for Florida
- As part of path forward, DEP agreed to and has accomplished since March 2013:
 - Adopted NNC Implementation Document and other rule provisions with new state legislation by Jun. 2013
 - Adopted state NNC for additional coastal and estuarine areas (e.g. Lake Worth Lagoon) by Jul. 1, 2013
 - Submitted coastal and estuarine NNC status document to Governor and Legislature by Aug. 1, 2013



DEP's General Approach for Estuary NNC (e.g., Lake Worth Lagoon)*



- Develop estuary-specific nutrient criteria rather than generic criteria
- Work with local scientists and EPA to reach consensus on methods and resultant criteria
- Derive criteria that protect and restore designated uses
- Promulgate scientifically sound criteria that can be approved by EPA

*Adapted from DEP NNC presentation (D. Joyner)
West Palm Beach April 15, 2013

DEP's reference approach for LWL NNC*:

- Compiled and screened water quality data, as well as established 3 LWL segments →
- Evaluated if a LWL segment was meeting its designated uses based on 3 biological endpoints:
 - Seagrass depth, chlorophyll *a*, and dissolved oxygen
- Data from specific years that met designated uses utilized in statistical development of TN, TP, and chlorophyll *a* criteria for each LWL segment



*Adapted from DEP NNC presentations (D. Joyner and K. Cox)
West Palm Beach April 15, 2013

DEP's Final LWL NNC

Annual Geometric Means not to be exceeded more than once in a 3 year period

- North LWL:
 - Total Nitrogen = 540 ppb
 - Total Phosphorus = 44 ppb
 - Chlorophyll a = 2.9 ppb
- Central LWL:
 - Total Nitrogen = 660 ppb
 - Total Phosphorus = 49 ppb
 - Chlorophyll a = 10.2 ppb*
- South LWL:
 - Total Nitrogen = 590 ppb
 - Total Phosphorus = 50 ppb
 - Chlorophyll a = 5.7 ppb

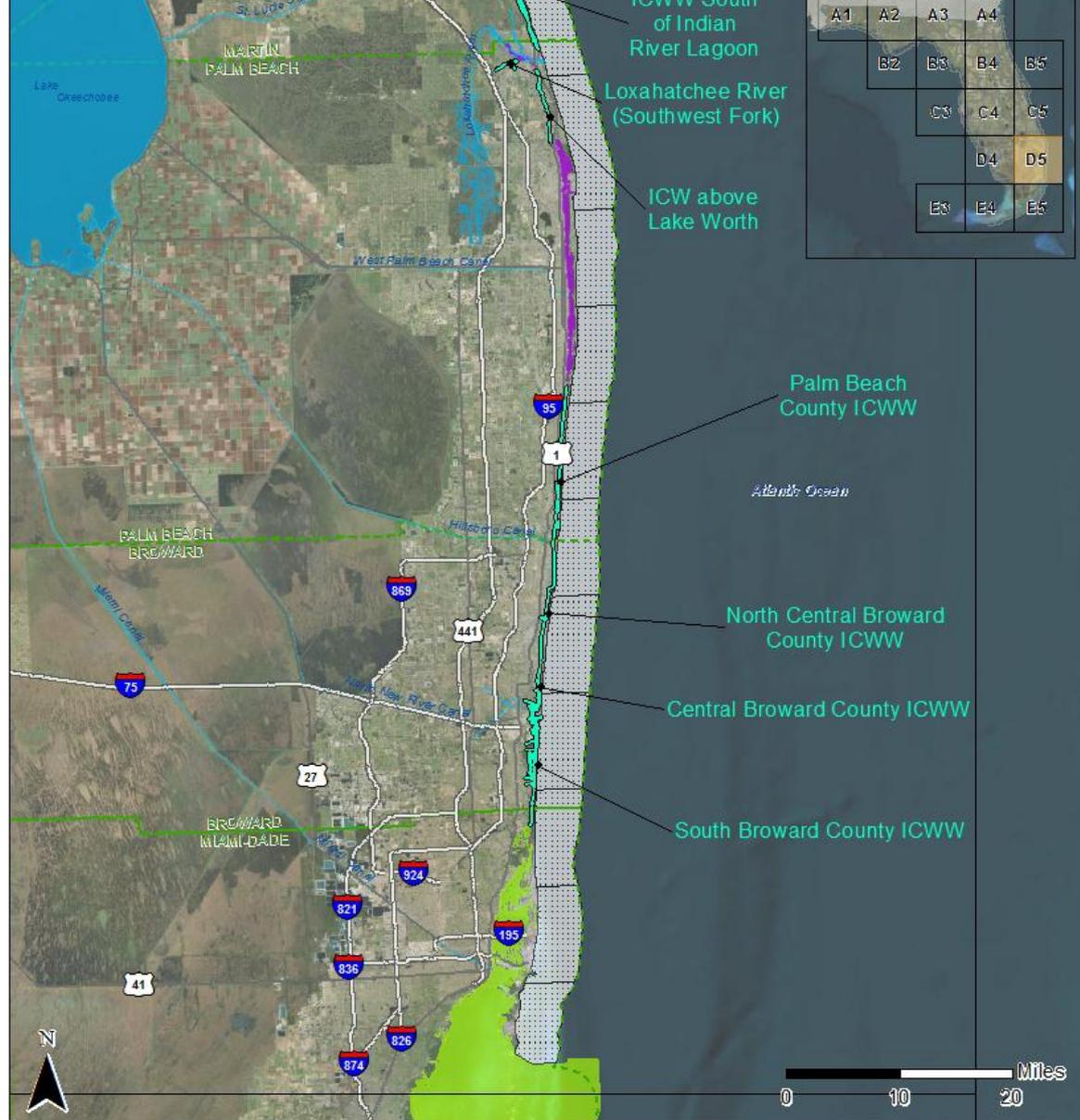
ppb = parts per billion

* Only NNC not an annual geometric mean



Other Palm Beach County Estuarine Waters

- DEP's Aug. 2013 Report to the Governor and the Legislature:
 - Remaining Estuaries to have NNC by Dec. 2014
 - Includes Intracoastal Waterway South and North of Lake Worth Lagoon



Numeric Nutrient Criteria Coastal Coverage Status - D5



EPA and DEP Path Forward (March 15, 2013): Recent Update

- Jun. 2013: EPA formally approved DEP's NNC Implementation Document and released a 2nd Amended Determination Letter
- Sep. 2013: EPA approved the remaining DEP Estuarine NNC (includes Lake Worth Lagoon and Loxahatchee Estuaries) and Path Forward Elements
- Sept. 24, 2013: Federal Hearing on all pending motions occurred and awaiting Judge Hinkle's decision



Discussion and Contact Information

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Please stay tuned to DEP and EPA web sites:

<http://www.dep.state.fl.us/water/wqssp/nutrients/>

http://water.epa.gov/lawsregs/rulesregs/florida_index.cf