Florida Department of Environmental Protection

Numeric Nutrient Criteria and Stormwater

June 23, 2014

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Division of Environmental Assessment & Restoration



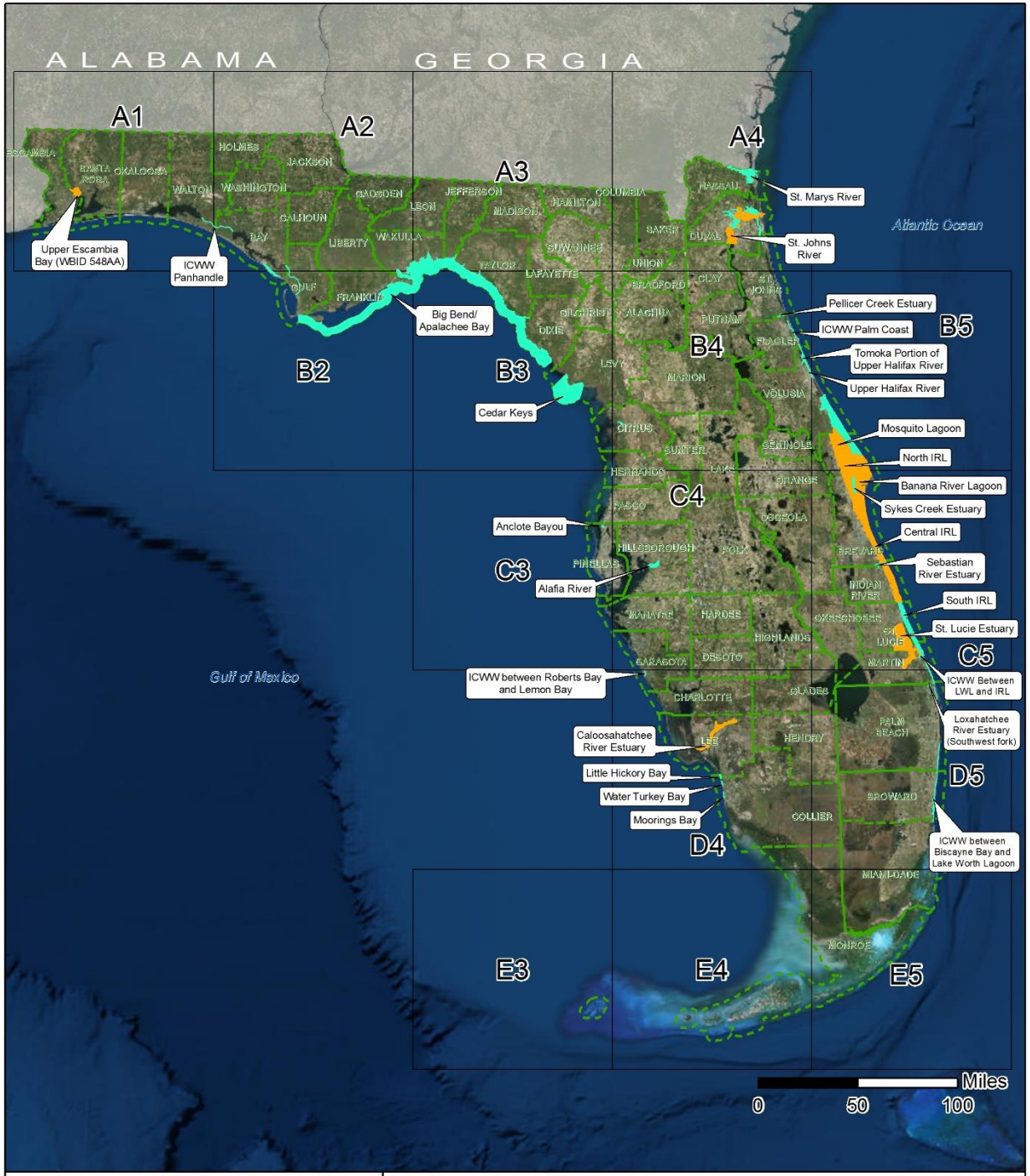


FDEP Rule Effective Date

- Rules go into effect when EPA
  - Approves Florida's criteria
  - States these rules meet the 2009 determination
  - Removes federal numeric nutrient criteria rules, and
  - Ceases further numeric nutrient criteria rulemaking in Florida.

Rule/Water Body	ERC Adoption	Legislative Ratification	EPA Approval	Federal Court Action	In Effect Y / N	Notes
EPA's standards for flowing waters	NA	NA	NA	Vacated	N	Standards were determined to be arbitrary and capricious
EPA's standards for lakes	NA	NA	NA	Found to be valid	Y	The effective date was delayed multiple times by the court, but criteria went into effect on January 6, 2013.
EPA's standards for springs	NA	NA	NA	Found to be valid	Y	The effective date was delayed multiple times by the court, but criteria went into effect on January 6, 2013.
FDEP standards for flowing waters	12-8-2011	Waived by 2012 legislation	11-30-2012	Required	N	In effect if EPA withdraws federal NNC and ceases NNC rulemaking, assuming court approval of changes to Consent Decree
FDEP's Standards for lakes	12-8-2011	Waived by 2012 legislation	11-30-2012	Required	N	In effect if EPA withdraws federal NNC and ceases NNC rulemaking, assuming court approval of changes to Consent Decree
FDEP's standards for springs	12-8-2011	Waived by 2012 legislation	11-30-2012	Required	N	In effect if EPA withdraws federal NNC and ceases NNC rulemaking, assuming court approval of changes to Consent Decree
FDEP's standards for estuaries, Part 1	12-8-2011	Not required	11-30-2012	Not Required	Y	Criteria are in effect and listed in 62-303.532
FDEP's standards for estuaries, Part 2	11-13-2012	Not required	9-26-2013	Not Required	Y	Criteria are in effect and listed in 62-303.532
FDEP's standards for estuaries, Part 3	6-20-2013	Not required	9-26-2013	Required	N	In effect if EPA approves the criteria, withdraws its federal NNC and ceases NNC rulemaking, assuming court approval of changes to Consent Decree [See Chapter 2013-71, Laws of Florida]

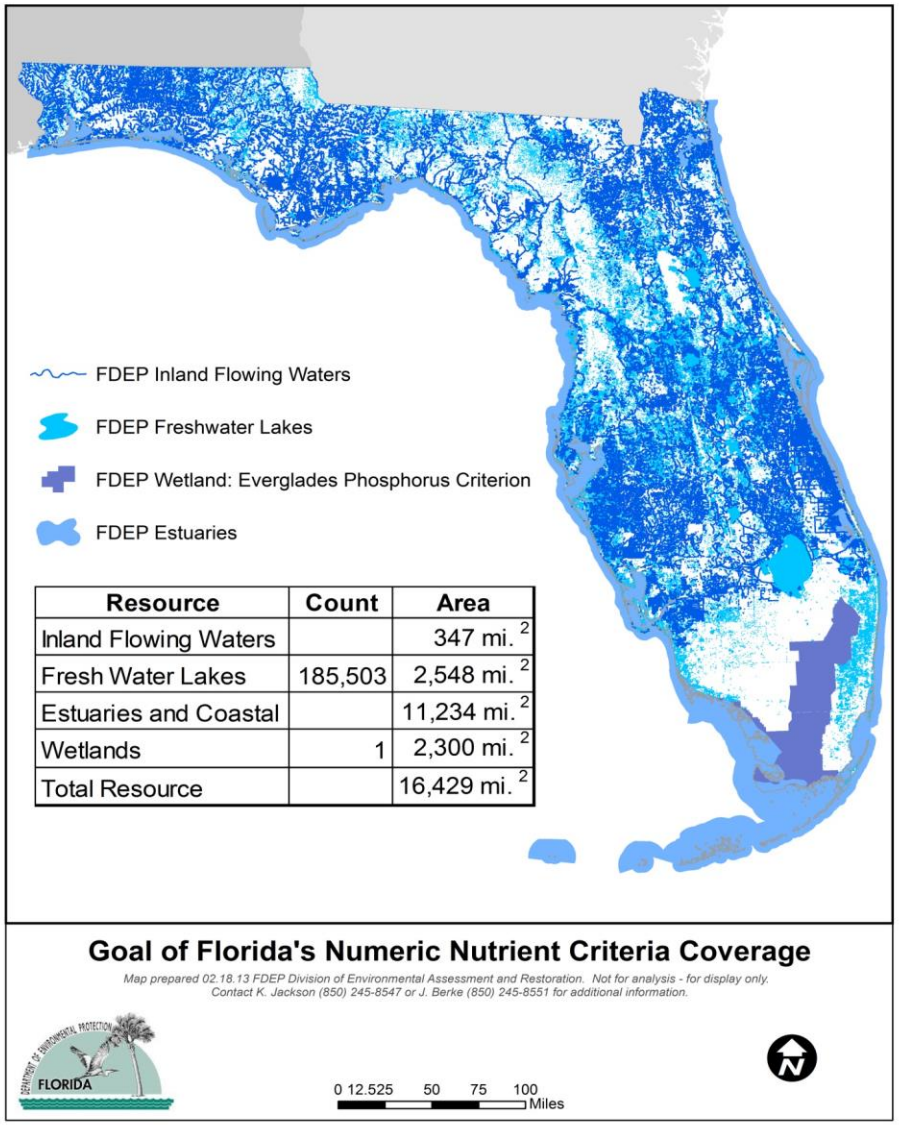
Rule/Water Body	ERC Adoption	Legislative Ratification	EPA Approval	Federal Court Action	In Effect Y / N	Notes
FDEP's standards for estuaries, Part 4	NA	Not required	9-26-2013	Required	N	Narrative standards set forth in Chapter 2013-71, Laws of Florida, approved by EPA. Values in August 1 Report will serve as NNC until final standards adopted by December 2014.
South Florida Canals	12-8-2011		11-30-2012	Required	N	Covered by narrative criteria
Coastal Areas	6-20-2013	Not required	9/26/2013	Required	N	Waiting on EPA Approval
Non perennial streams	12-8-2011	Not required	11-30-2012	Required	N	Covered by narrative criteria once demonstration made that biology representative of wetland or terrestrial conditions
Wetlands	12-8-2011	Not required	11-30-2012	Required	N	Covered by narrative criteria
Man-made or physically altered ditches primarily used as water conveyance	12-8-2011	Not required	11-30-2012	Required	N	In effect if EPA withdraws federal NNC and ceases NNC rulemaking, assuming court approval of changes to Consent Decree. Covered by narrative criteria once demonstration made that used and managed primarily for water management purposes and habitat is poor.


ALABAMA
GEORGIA
A1
A2
A3
A4
B2
B3
B4
B5
C3
C4
C5
D4
D5
E3
E4
E5
Atlantic Ocean
Gulf of Mexico
Upper Escambia Bay (WBID 548AA)
ICWW Panhandle
Big Bend/ Apalachee Bay
Cedar Keys
Anclote Bayou
Alafia River
ICWW between Roberts Bay and Lemon Bay
Caloosahatchee River Estuary
Little Hickory Bay
Water Turkey Bay
Moorings Bay
St. Marys River
St. Johns River
Pellicer Creek Estuary
ICWW Palm Coast
Tomoka Portion of Upper Halifax River
Upper Halifax River
Mosquito Lagoon
North IRL
Banana River Lagoon
Sykes Creek Estuary
Central IRL
Sebastian River Estuary
South IRL
St. Lucie Estuary
ICWW Between LWL and IRL
Loxahatchee River Estuary (Southwest fork)
ICWW between Biscayne Bay and Lake Worth Lagoon
ESCAMBIA
SANTA ROSA
OKALOOSA
WALTON
HOLMES
WASHINGTON
JACKSON
BAY
CALHOUN
LIBERTY
GADSDEN
LEON
JEFFERSON
WAKULLA
FRANKLIN
GULF
TAYLOR
MADISON
HAMILTON
SUWANNEE
LAFAYETTE
COLUMBIA
NASSAU
BAKER
DUVAL
UNION
BRADFORD
CLAY
ST. JOHNS
GILCHRIST
ALACHUA
PUTNAM
DIXIE
FLAGLER
LEVY
MARION
VOLUSIA
CITRUS
SUMTER
SEMINOLE
HERNANDO
LAKE
ORANGE
PASCO
OSCEOLA
HILLSBOROUGH
POLK
BREVARD
PINELLAS
INDIAN RIVER
MANATEE
HARDEE
OKEECHOBEE
ST. LUCIE
HIGHLANDS
SARASOTA
DESOTO
MARTIN
CHARLOTTE
GLADES
LEE
HENDRY
PALM BEACH
BROWARD
COLLIER
MIAMI-DADE
MONROE
Miles
0
50
100

Numeric Nutrient Criteria in Florida

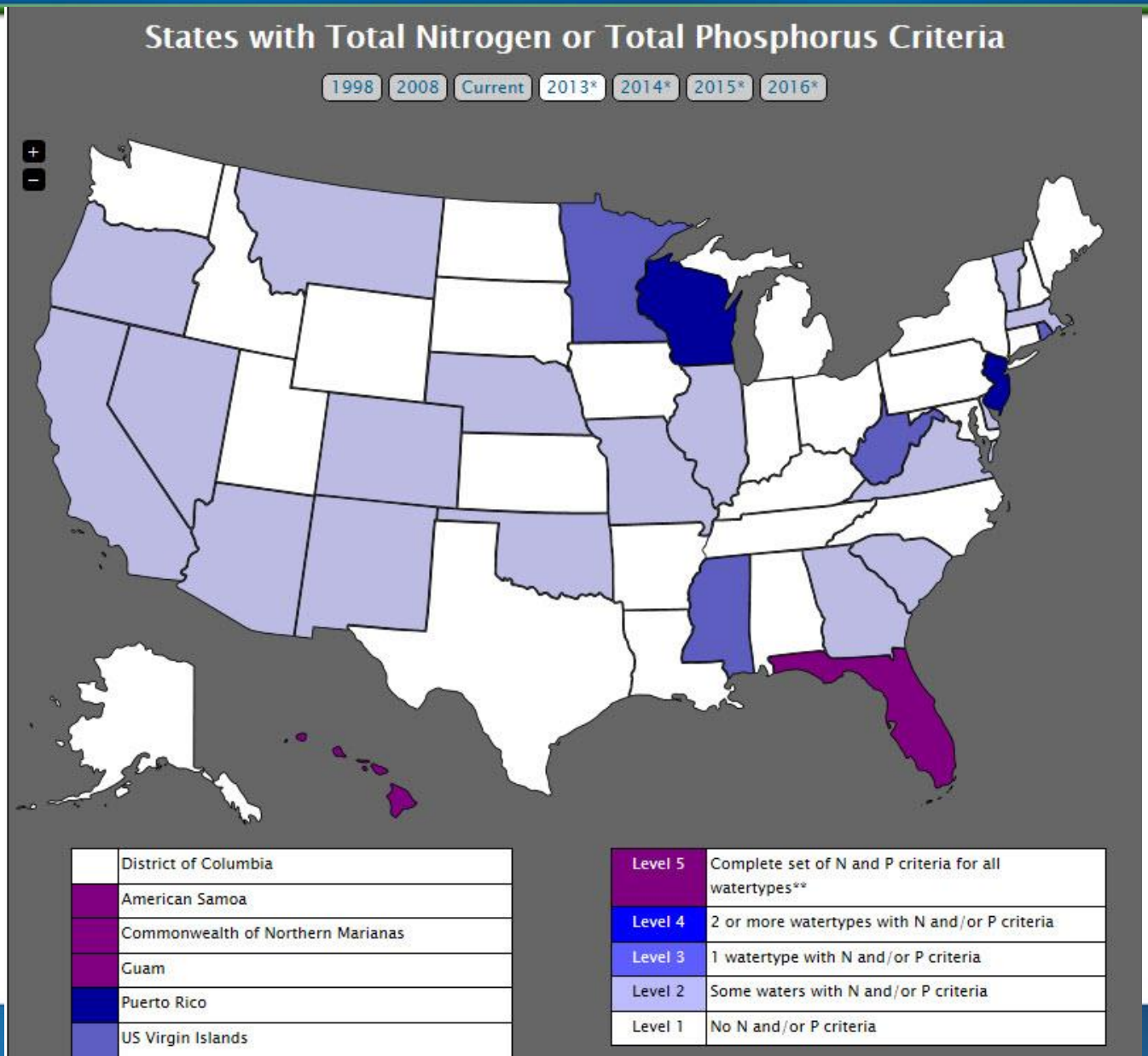
Comprehensive State-Adopted NNC

Upon fulfillment of the Agreement in Principle and Path Forward, Florida will have state-established numeric nutrient criteria for all lakes, springs, estuaries and coastal waters, and the vast majority of flowing waters



Resource	Count	Area
Inland Flowing Waters		347 mi.^{2}
Fresh Water Lakes	185,503	2,548 mi.^{2}
Estuaries and Coastal		11,234 mi.^{2}
Wetlands	1	2,300 mi.^{2}
Total Resource		16,429 mi.^{2}

Numeric Nutrient Criteria Nationally



Hierarchical Approach

Hierarchy 1 (Site-specific)

Level II Water Quality-Based Effluent Limitations,
Nutrient Total Maximum Daily Loads,
Site Specific Alternative Criteria,
Reasonable Assurance Plans, and
Estuary-specific Criteria

Lakes/Springs

Cause –Effect (Statistical) Relationships (lakes & springs)

Streams

Reference-based thresholds (streams)
combined with biological data (flora and fauna)

Narrative

Ditches/canals used for water conveyance,
wetlands, non-perennial streams, tidally fluctuating areas, and
South Florida flowing waters

Hierarchy 1: Site Specific Interpretations

- Total Maximum Daily Loads
- Site Specific Alternative Criteria
- Estuary-specific numeric interpretations
- Other properly noticed site specific interpretations
  - Formally established by Rule or Final Order. For example, as part of:
    - A Restoration Strategy adopted during water quality assessment process, or
    - A permitting decision establishing a water quality based effluent limit
  - Notice must state the intention to establish a site specific numeric interpretation of the narrative

Cause and Effect Relationship for Lakes and Springs

- Established chlorophyll a (chl a), Total Nitrogen (TN) and Total Phosphorus (TP) criteria for Lakes
  - target chl a, and then set TN and TP criteria based on statistical relationship between nutrients and chl a
  - Criteria vary depending on color and alkalinity
  - Expressed as annual geometric means that cannot be exceeded more than once in a three-year period
- For Spring Vents
  - 0.35 mg/L of nitrate-nitrite as an annual geometric mean
  - Not to be exceeded more than once in any three consecutive calendar year period

Hierarchy 3: Reference Based Thresholds Combined with Biological Evaluations

- Only applies to waterbodies without site specific interpretations and stressor/response criteria
- Currently only for streams and designed to fully implement the narrative criteria

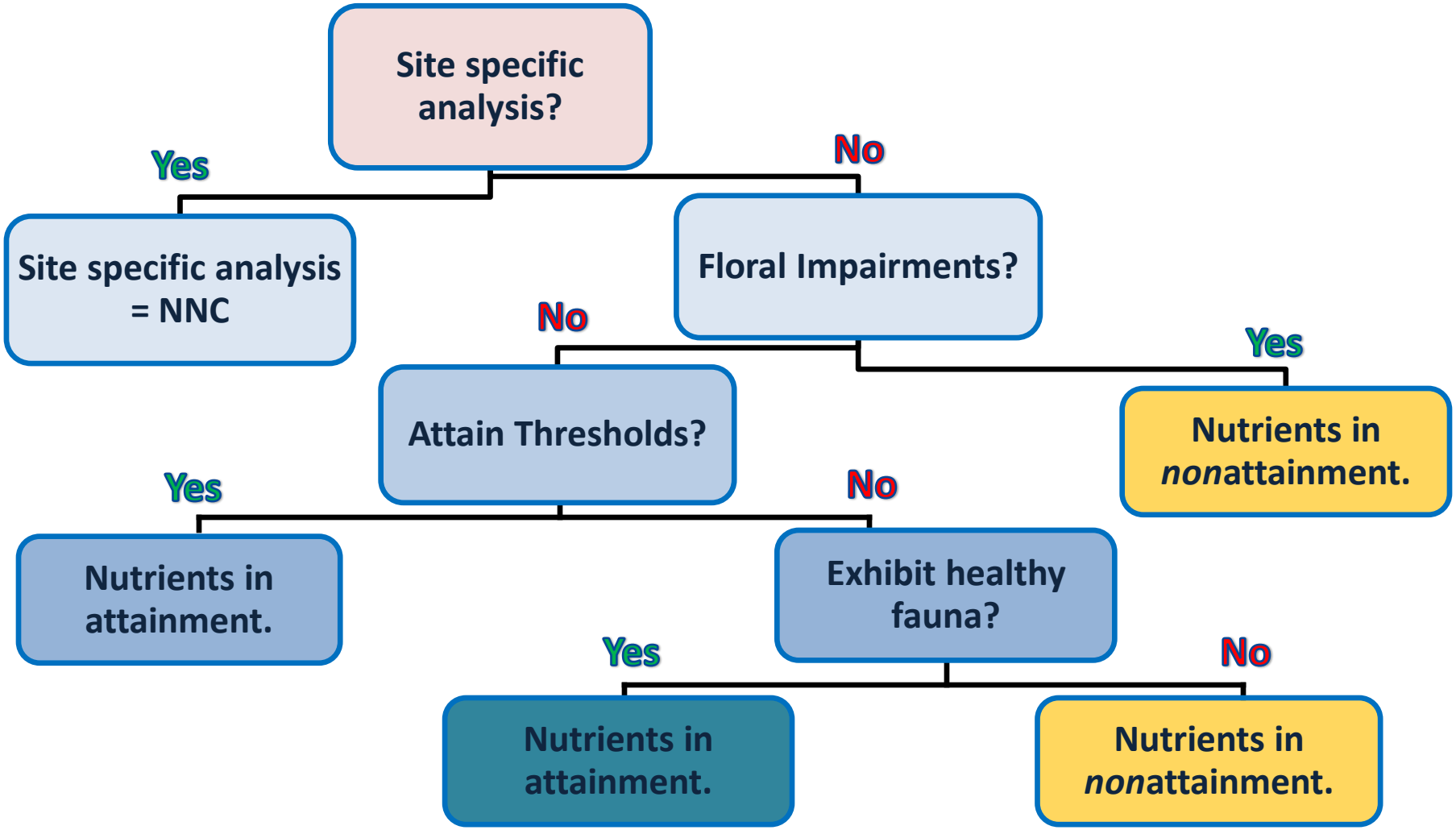
Nutrient Concentrations

Total Phosphorus
Total Nitrogen

Balanced Aquatic Flora or Fauna

Flora:	Chlorophyll *a*
	Evaluation of Algal Mats
	Vegetation (LVS)
Fauna:	Macroinvertebrates (SCI)

FDEP's Process of Applying the Rule to a Stream



Maintained Conveyance

Definitions- Which NNC Applies?

- **The stream definition excludes several types of waters, which affects applicable NNC or if only narrative applies**
  - **Lake criteria apply to "lake-like" sections of streams**
  - **And (after demonstration is made), only the narrative applies to:**
    - **Wetlands**
    - **Intermittent streams**
    - **Ditches/canals used as water conveyances**
    - **Tidal areas that fluctuate between salt and fresh (4,580 µmhos/cm)**
- **Discussed on p. 49 in Implementation Document**

Ditches/Canals used as Water Conveyance

- **The narrative applies in channelized or physically altered ditches, canals and other conveyances that:**
  - **Are primarily used for water management purposes, such as flood protection, stormwater management, irrigation, or water supply; AND**
  - **Have marginal or poor stream habitat or habitat components due to channelization and maintenance for water conveyance purposes**
  - **Page 55 on Implementation Document**

Ditches, Canals, and other Conveyances

- **Information must be provided that the conveyance is primarily used for water management purposes such as flood protection, stormwater management, irrigation, or water supply (*e.*g., maintenance records)**
- **Habitat Assessment (DEP SOP FT 3000, see http://www.dep.state.fl.us/water/sas/sop/sops.htm) used to establish:**
  - **Degree of Artificial Channelization**
  - **Substrate Diversity and Availability**
  - **Overall score**

Non-Perennial Water Segments

- **To qualify, must use biological indicators, such as vascular plants and benthic macroinverterbates, to show that desiccation results in dominance of taxa more typically found in wetland or terrestrial conditions**
  - **e.g., worms (*Dero, Bratislava*), midges (*Kiefferulus, Monopelopia*), mosquitos (Culicidae), grasses (*Chasmanthium*, etc.)**
  - **See page 50 in Implementation Document**

Non-Perennial Water Segments

- **Vascular plants**
  - **Presence of terrestrial, “facultative”, and “facultative wet” herbaceous vascular plant taxa (defined in Chapter 62-340, F.A.C.) in the channel bed would be an indicator that the system is non-perennial**
  - **“Facultative plants” means those plant species listed in subsection 62-340.450(3), F.A.C. “Facultative Wet plants” means those plant species listed in subsection 62-340.450(2), F.A.C.**
  - **These plants can live in more than one specific set of environmental conditions**

Non-Perennial Water Segments

- **Invertebrates**
  - **Shift from stream to wetland taxa (Tables 8 and 9), and reduction in long-lived taxa**
- **Not sufficient to use NHD coverage alone, *must use the biological indicators***
  - **Some “intermittent” systems on map may qualify as a “stream” and NNC would apply**

Contact

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