



## USEPA Freshwater Numeric Nutrient Criteria Schedule

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- January 15<sup>th</sup> draft proposed rule released
- USEPA public meetings:
  - February 16<sup>th</sup> in Tallahassee
  - February 17<sup>th</sup> in Orlando
  - February 18<sup>th</sup> in West Palm Beach
- March 29<sup>th</sup> written comments deadline
- October 2010 final rule deadline

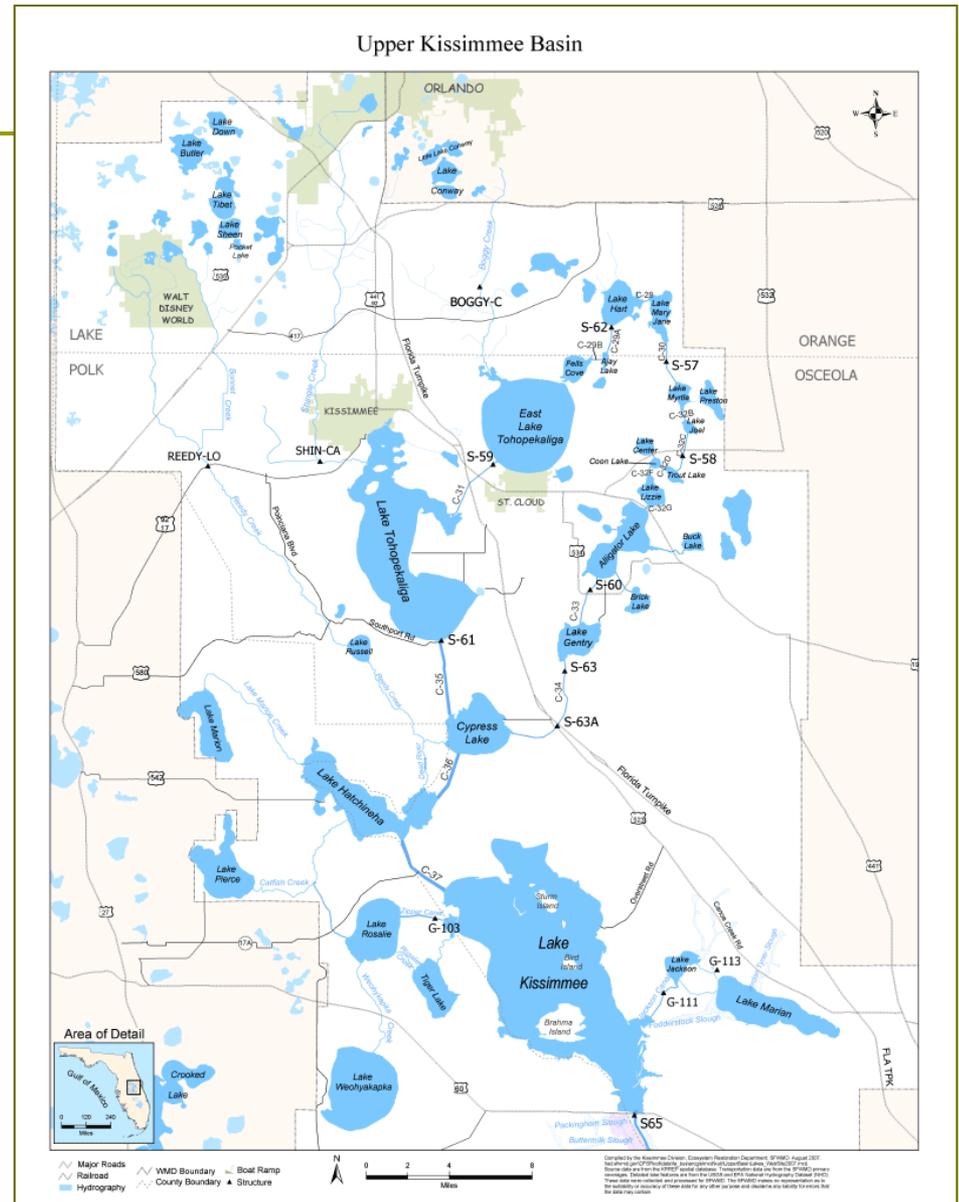
## USEPA public meetings

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- Over 230 speakers over the three days of meetings
- Approximately 75% of speakers had major concerns with some portion of the criteria and/or methodologies
- District made comments with focus on:
  - Challenges for our restoration projects
  - South Florida Canals methodology
  - Need for sufficient time to establish and review rule

# Lakes

- Primary District areas: Lake Okeechobee and northern watersheds
- Nitrogen and phosphorus criteria based on relationships to chlorophyll a criterion
- 3 different sets of criteria based on 3 lake types
  - Color
  - Clear, alkaline
  - Clear, acidic



## Numeric Nutrient Criteria: Color Lakes

Total Phosphorus = 50 parts per billion (ppb)\*

Total Nitrogen = 1.23 parts per million (ppm)\*

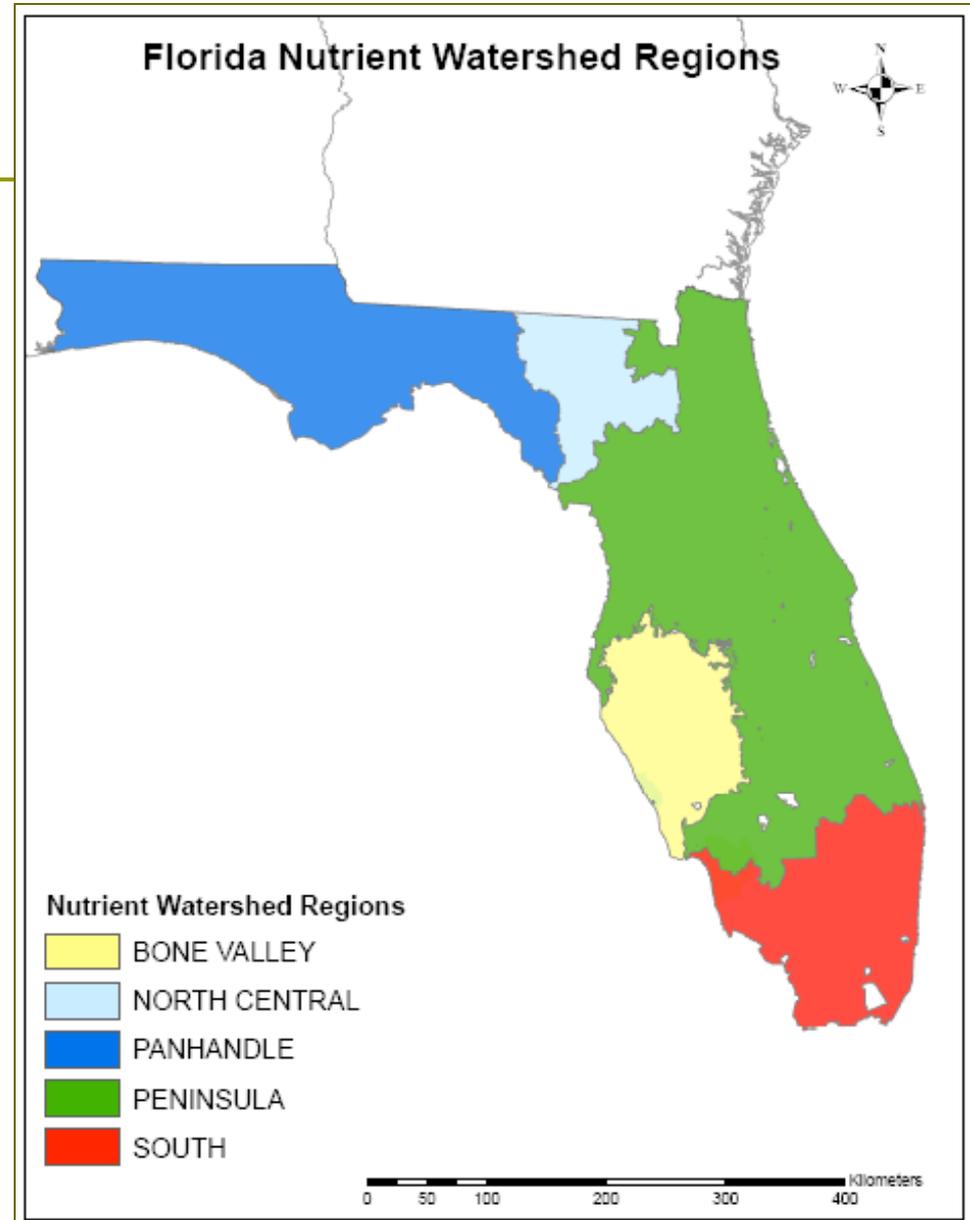
Chlorophyll a = 20 ppb



\* Modified criteria are within rule and allow for higher TP and TN levels as long as chlorophyll a criterion met

## Rivers and Streams

- Reference approach used in Nutrient Watershed Regions
- Nutrient (TN/TP) data compiled from river/streams with 'healthy' biology
- 75<sup>th</sup> percentile of TP and TN data sets criteria for each region
- No chlorophyll a criterion



## Numeric Nutrient Criteria for Rivers and Streams in Peninsula Region

Total Phosphorus = 107 parts per billion (ppb)\*

Total Nitrogen = 1.205 parts per million (ppm)\*

**Fisheating  
Creek**



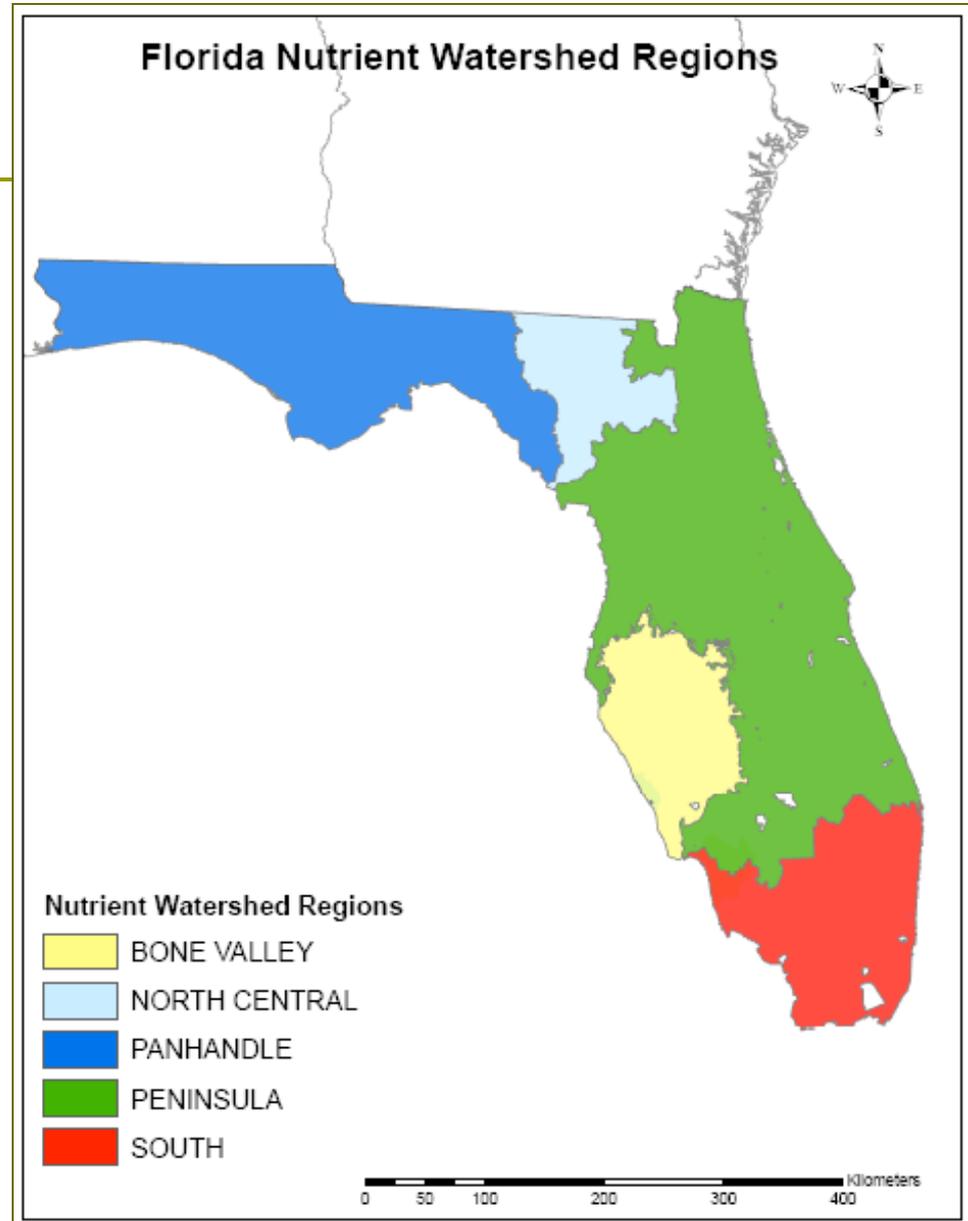
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\* An equation that evaluates downstream protection of lakes could lower TP and/or TN criteria

## South Florida Canals

- USEPA computed criteria from subset of canals not on impaired waters lists
- Created an 'inference model' to perform an reference approach using 75<sup>th</sup> percentile
- Utilized chlorophyll a similar to lakes to protect canal designated uses
- Covers all canal types (Class I – III) within region



## Numeric Nutrient Criteria for South Florida Canals

Total Phosphorus = 42 parts per billion (ppb)\*

Total Nitrogen = 1.6 parts per million (ppm)

Chlorophyll a = 4 ppb



\*TP criterion = 10 ppb for canals within  
Everglades Protection Area

## Other Key Items in Rule

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- Total Maximum Daily Loads (e.g., Lake Okeechobee and its tributaries) and Site Specific Alternative Criteria
- Restoration Water Quality Standards (WQS) Provision appears to be similar to FDEP's Basin Management Action Plan concept
- Other areas of state have downstream protective total nitrogen values for estuaries (Charlotte Harbor is our only one)

## District Staff Actions

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- Teams are reviewing criteria and methodologies
- Potential effects of rule on District's operations and projects
- Canal Science Inventory
- Plan to submit final comments on rule by March 29<sup>th</sup>

## FDEP's comments on USEPA's rule

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- “USEPA’s Application of “Reference Approach” for stream criteria is not appropriate”
- “USEPA’s method to establish stream criteria for Protection of Downstream Lakes is too simplistic”
- “USEPA’s Chlorophyll a Criteria for South Florida Canals is not appropriate”
- “USEPA’s estimate of economic costs is inadequate”

(Full set of FDEP’s Comments are in your handout)

# FDEP Estuaries/Coastal Waters Numeric Nutrient Criteria

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- Upcoming FDEP estuarine/coastal workshops
  - Florida Bay, Biscayne Bay, the Keys, SE Coast (March 2<sup>nd</sup> and 3<sup>rd</sup> in Miami, RSMAS)
  - Rookery Bay and Ten Thousand Islands (March 4<sup>th</sup> in Naples, Rookery Bay NEER)
  - St. Lucie, IRL, Loxahatchee, Lake Worth Lagoon, Coastal Waters (March 31<sup>st</sup> in Ft. Pierce, Harbor Branch)

## Questions?

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- USEPA's web site:

<http://www.epa.gov/waterscience/standards/rules/florida/>

- FDEP's web site:

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



## Lakes Criteria: Generalized overview

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>
Long Term Average Lake	Chlorophyll <i>a</i> (µg/L)	Baseline Criteria	
<b>Color and Alkalinity</b>		<b>TP (mg/L)</b>	<b>TN (mg/L)</b>
<b>Colored Lakes</b> > 40 PCU	20	0.050	1.23
<b>Clear Lakes, Alkaline</b> ≤ 40 PCU <sup>d</sup> and > 50 mg/L CaCO <sub>3</sub> <sup>e</sup>	20	0.030	1.00
<b>Clear Lakes, Acidic</b> ≤ 40 PCU <sup>d</sup> and ≤ 50 mg/L CaCO <sub>3</sub> <sup>e</sup>	6	0.010	0.500

Note: Modifying provisions are also included in the table that allow higher TN and TP criteria than baseline if the chlorophyll *a* criteria are being met

# Lakes Criteria

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>
Long Term Average Lake	Chlorophyll $a^f$ ( $\mu\text{g/L}$ ) <sup>a</sup>	Baseline Criteria <sup>b</sup>		Modified Criteria (within these bounds) <sup>c</sup>	
Color and Alkalinity		TP (mg/L) <sup>a</sup>	TN (mg/L) <sup>a</sup>	TP (mg/L) <sup>a</sup>	TN (mg/L) <sup>a</sup>
Colored Lakes > 40 PCU	20	0.050	1.23	0.050-0.157	1.23-2.25
Clear Lakes, Alkaline $\leq 40$ PCU <sup>d</sup> and > 50 mg/L CaCO <sub>3</sub> <sup>e</sup>	20	0.030	1.00	0.030-0.087	1.00-1.81
Clear Lakes, Acidic $\leq 40$ PCU <sup>d</sup> and $\leq 50$ mg/L CaCO <sub>3</sub> <sup>e</sup>	6	0.010	0.500	0.010-0.030	0.500-0.900

## Rivers and Streams Criteria

Nutrient Watershed Region	Instream Protection Value Criteria	
	TN (mg/L) <sup>a</sup>	TP (mg/L) <sup>a</sup>
Panhandle <sup>b</sup>	0.824	0.043
Bone Valley <sup>c</sup>	1.798	0.739
<b>Peninsula <sup>d</sup></b>	<b>1.205</b>	<b>0.107</b>
North Central <sup>e</sup>	1.479	0.359

Rule has equations in place for downstream effects of these criteria on Lakes (and Estuaries) could potentially lower these criteria

## South Florida Canals: Criteria

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	Chlorophyll <i>a</i> ( $\mu\text{g/L}$ )	Total Phosphorus (TP) ( $\text{mg/L}$ )	Total Nitrogen (TN) ( $\text{mg/L}$ )
Canals	4.0	0.042	1.6

Note: Canals in Everglades Protection Area will have a TP criterion of 0.010 mg/l