



**Florida Department of Environmental Protection**

## Florida's Triennial Review of Water Quality Standards



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### Agenda Review

- Background on Triennial Review
- Revisions to Chapter 62-4, FAC
- Revisions to Chapter 62-302, FAC
- Revisions to Chapter 62-303, FAC

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### Triennial Review

- Under the Federal Clean Water Act, all states are required to periodically conduct a comprehensive review of their surface water quality standards
- Last May, DEP noticed potential revisions to all surface water quality standards in
  - Chapter 62-4 (Permits),
  - Chapter 62-302 (Surface Water Quality Standards), &
  - Chapter 62-303 (Identification of Impaired Surface Waters or "IWR")

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 **Scope of Triennial Review**  
(continued)

- **Scope of the TR did not include Human Health-Based Water Quality Criteria, which will be addressed in separate rulemaking**
  - Part of last TR, but ERC requested we address several issues
  - We addressed, but rulemaking on hold to get EPA feedback, which we recently received verbally
  - Plan to hold workshops later this year

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 **Triennial Review Status**

- **Proposed rules were approved by Environmental Regulation Commission (ERC) on December 9, and will likely go into effect for State purposes in February 2016**
- **However, must be approved by EPA before go into effect for Clean Water Act purposes, which could take months (to years)**

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 **Revisions to Chapter 62-4, F.A.C. (Permits)**

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### Proposed Revisions to Chapter 62-4

- Change fee for Site Specific Alternative Criteria (SSAC) from \$15,000 per parameter to \$15,000 per petition/application
- Should save money for entities applying for SSACs for nutrients, which often involves Total Nitrogen, Total Phosphorus, and Chlorophyll a
- Also have a variety of minor revisions

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### Revisions to Chapter 62-302, F.A.C. (Surface Water Quality Standards)

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### Overview of Revisions

- Key revisions are new water quality criteria in Rule 62-302.530 and reclassifications of waters from Class III to Class II (Shellfish) in Rule 62-302.400
- Also have a variety of minor revisions

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 **Revision of Bacteria Criteria**

- For recreation use support, changing from fecal coliforms to *E. coli* in freshwater and enterococci in marine waters
  - Based on EPA recommended values
  - EPA's epidemiological bathing beach studies indicate *E. coli* and enterococci correlate better with recreational bather illness than fecal coliforms
- Keeping fecal coliforms for Class II (shellfish) waters

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 **Revision of Bacteria Criteria**  
(continued)

- New criteria will include a monthly geometric mean (MGM) and upper value not to be exceeded in 10% or more of the samples during any 30-day period (Ten Percent Threshold Value or TPTV), with units of cfu/100 mL
  - For *E. coli*, MGM is 126 and TPTV is 410
  - For Enterococci, MGM is 35 and TPTV is 130
  - MGM based on a minimum of either 5 samples (Class I) or 10 samples (Class III) taken over a 30-day period
  - No minimum sample size proposed for TPTV

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 **Freshwater Ammonia Criteria**

- DEP replaced the freshwater un-ionized ammonia criteria with a freshwater total ammonia criteria (TAN)
- Criteria based on EPA's updated freshwater ammonia criteria
  - Recommended in 2013 based on new information on TAN toxicity to unionid mussels and gilled snails
  - Ammonium ion ( $\text{NH}_4^+$ ) can also be toxic at low pH, and although it is not as toxic as the un-ionized fraction, it is generally present in much greater concentrations than un-ionized ammonia

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**Freshwater Ammonia**  
(continued)

- FDEP adopted a single sample maximum criteria and a 30-day average TAN criteria
- Both expressed as an equation, with 4-day average = 2.5 times 30-day average

$$30\text{-day average} = 0.8876 \times \left( \frac{0.0278}{1 + 10^{7.488 - \text{pH}}} + \frac{1.1994}{1 + 10^{20 - 7.488 - \text{pH}}} \right) \times (2.126 \times 10^{0.028 \times (20 - \text{Max}(7, 7))})$$

- At pH = 7.0 and Temperature = 20°C, **example criteria are**
  - 4-day average = 4.8 mg TAN/L, and 30-day average = 1.9 mg TAN/L

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**Freshwater Ammonia**  
(continued)

- Criteria will be more stringent than un-ionized ammonia criterion at pH below 7 and 7.5, for single sample and 30-day criteria, respectively
- Temperature has a small effect

*Current un-ionized vs. EPA's 30-day criterion*

*Current un-ionized vs. EPA's 4-day criterion*

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**Other New Aquatic Life Criteria**

- DEP also proposes to adopt new criteria for four new parameters: carbaryl (Sevin), chlorpyrifos, diazinon, and nonylphenol
- All based on EPA national recommendations, and all intended to provide protection to aquatic life

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 **Aquatic Life Criteria: Carbaryl**

- **Carbaryl (CASRN 63-25-2) is a pesticide primarily used as an insecticide or molluscide, and to thin fruit in orchards**
  - Widely applied insecticide in Florida
  - Trade name is Sevin
  - Toxic to fish, aquatic phase amphibians, and freshwater invertebrates,
- **FDEP proposes to adopt EPA's recommended chronic freshwater criterion (2.1 µg/L) as a single sample maximum to protect aquatic life**
  - No recommended chronic saltwater criterion

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 **Aquatic Life Criteria: Chlorpyrifos**

- **Chlorpyrifos (CASRN: 2921-88-2) is a chlorinated organophosphate pesticide**
  - Currently registered uses include food and feed crops, golf course turf, green houses, non-structural wood treatments such as utility poles and fence posts, bait stations, and as an adult mosquitoicide
  - All homeowner use product registrations have been cancelled except for roach bait station products
- **FDEP proposes to adopt EPA's recommended freshwater (0.041 µg/L) and saltwater (0.0056 µg/L) chronic criteria as single sample maximums to protect aquatic life**

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 **Aquatic Life Criteria: Diazinon**

- **Diazinon (CASRN: 333-41-5) is a broad spectrum organophosphate insecticide effective against flying insects, crawling insects, acarians, and spiders**
  - As of Dec. 31, 2004, all residential uses of diazinon cancelled, but still authorized for limited non-residential use
- **FDEP proposes to adopt EPA's recommended freshwater (0.17 µg/L) and saltwater (0.82 µg/L) chronic criteria as single sample maximums to protect aquatic life**

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 **Aquatic Life Criteria: Nonylphenol**

- Nonylphenols [CASRN: 84852-15-3 (phenol, 4-nonyl-branched) and 25154-52-3 (phenol, nonyl-)] are synthetic organic chemicals used in making antioxidants, lubricating oil additives, detergents and emulsifiers
- FDEP proposes to adopt EPA's recommended freshwater (6.6 µg/L) and saltwater (1.7 µg/L) chronic criteria as single sample maximums to protect aquatic life

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 **Proposed Reclassification of Waters**

- DEP identified a variety of Class III waters that have been designated by the Department of Agriculture and Consumer Services Shellfish Evaluation and Assessment Section (SEAS) for some level of shellfish harvesting, and as such, have an existing use higher than their designated use
  - Approved, conditionally approved, restricted, or conditionally restricted
- DEP reclassifies waters if they have a higher existing use and water quality supports the higher use

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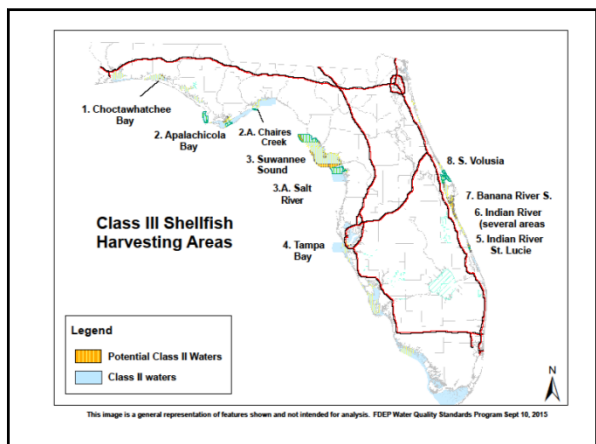
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### Classification System

- Class I** Potable Water Supplies
- Class II** Shellfish Propagation or Harvesting
- Class III** Fish Consumption; Recreation; Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife
- Class III-L** Fish Consumption; Recreation or Limited Recreation; Propagation and Maintenance of Limited Population of Fish and Wildlife
- Class IV** Agricultural Water Supplies
- Class V** Navigation, Utility, and Industrial Use

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### Rule Language

- Reclassified areas are described in Rule 62-302.400, F.A.C.
  - Listed by county
  - At public workshop, proposed “Metes and bounds” type description of the added areas, but we simplified the language and incorporate maps by reference
  - Maps in this PowerPoint show the new areas, while maps incorporated by reference show all (new and old) Class II waters in the county

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### Potential Effects of Reclassification

- Reclassification provides additional protection for existing shellfish harvesting uses, but also may affect regulated activities in reclassified waters or permitted discharges to or upstream of the waters
  - Have to meet more stringent water quality criteria for fecal coliforms, fluoride, and manganese
  - Domestic wastewater facilities cannot directly discharge to Class II waters and indirect discharges must meet storage and disinfection requirements
  - Land application sites must meet setback requirements
  - MS4s could be affected if water listed as impaired and TMDL developed (but not expected to be impacted)

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### Water Quality Criteria that are different for Class II

Parameter	Class II	Class III (marine)
Bacteriological Quality (fecal coliform bacteria)	MPN shall not exceed a median value of 14 with not more than 10% of the samples exceeding 43, nor exceed 800 on any one day.	MPN or MF counts shall not exceed a monthly average of 200, nor exceed 400 in 10% of the samples, nor exceed 800 on any one day. Monthly averages shall be expressed as geometric means based on a min of 10 samples taken over a 30-day period.
Fluorides	≤ 1.5 m/L	≤ 5.0 m/L
Manganese	≤ 0.1 m/L	-----
Odor	Shall not exceed 24 at 60°C as daily avg	-----

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- ### Effects of Reclassification
- DEP also checked to see if there would be any new listings of impaired waters due to revised criteria
  - No new listings based on water quality data, but would be additional listings based on shellfish harvesting classification
    - Under IWR, any new Class II waters that are not fully “approved” for shellfish harvesting will be listed as impaired during next assessment cycle
    - However, most of the reclassified areas are within or adjacent to a WBID (waterbody identification unit) that is already listed as impaired, and as such, there will be few new listings

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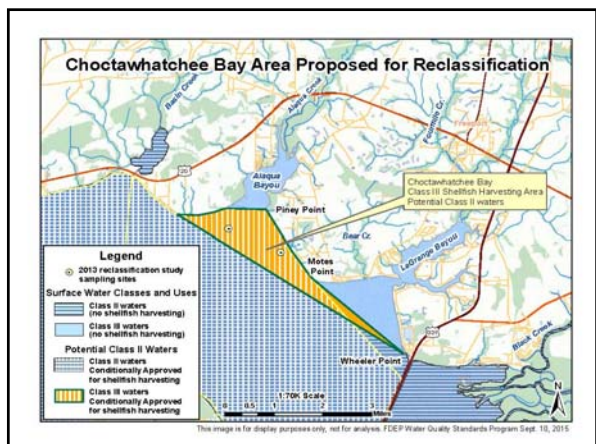
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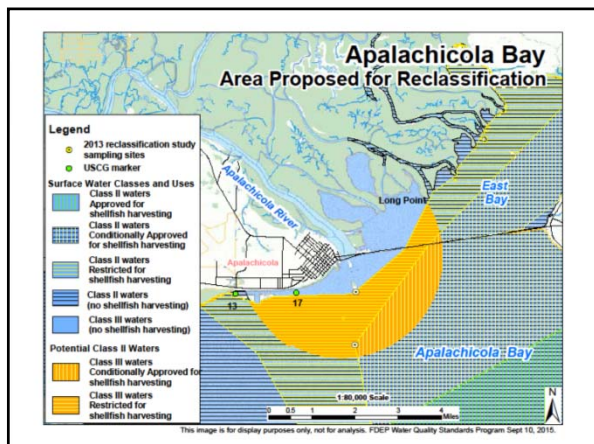
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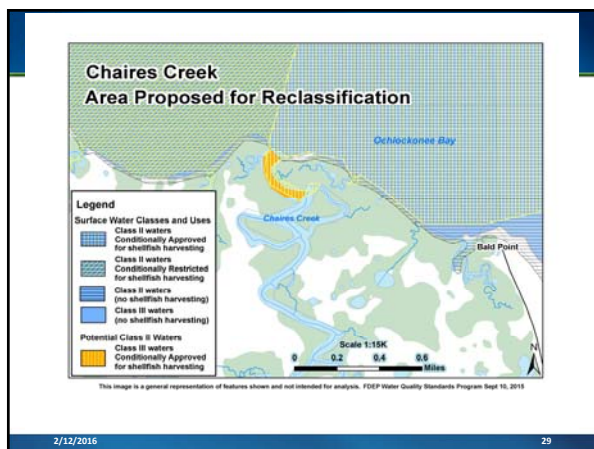
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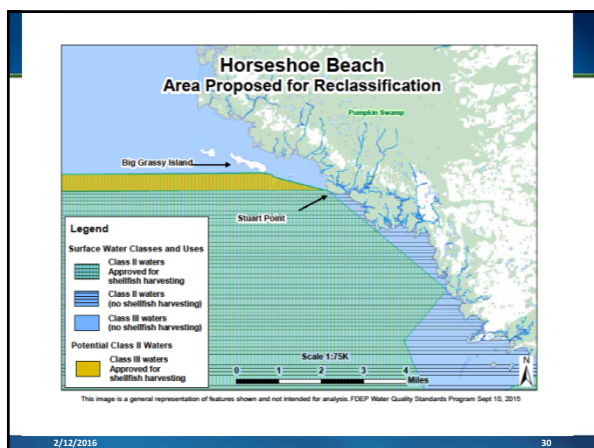
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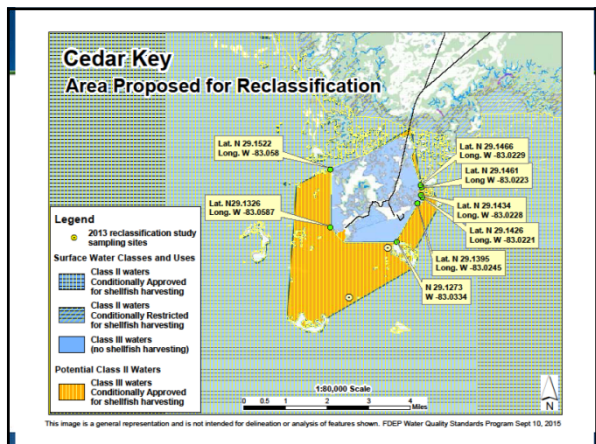
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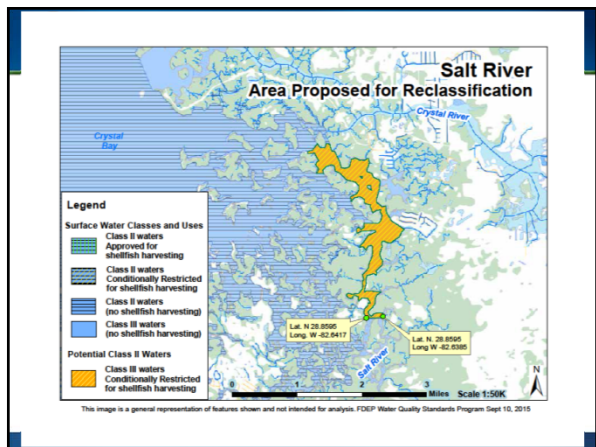
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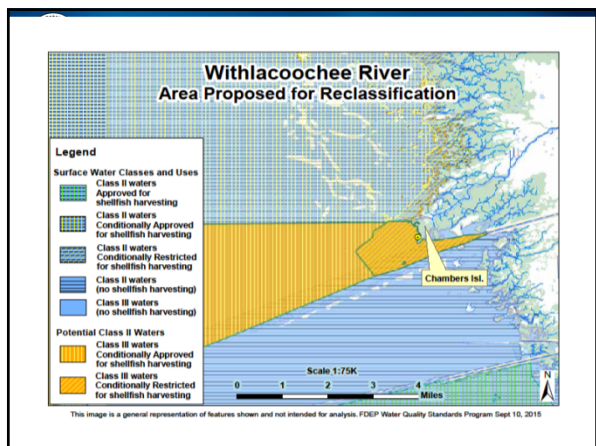
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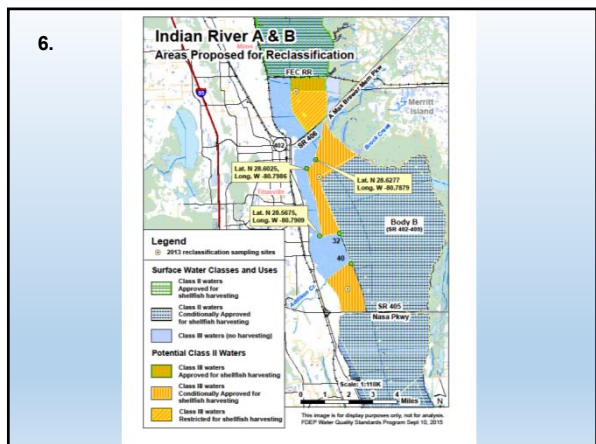
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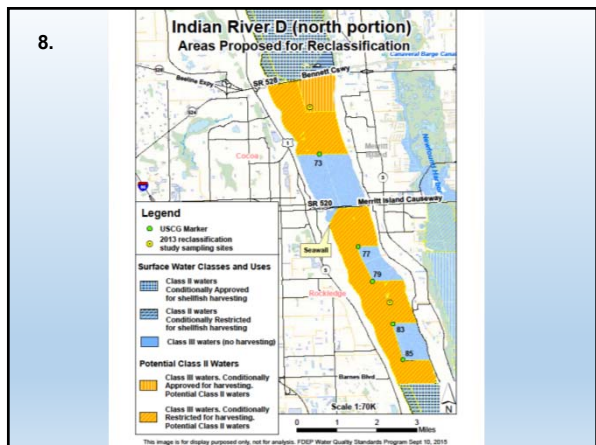
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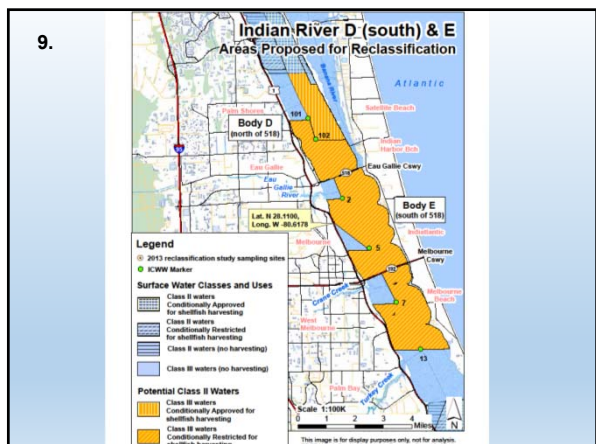
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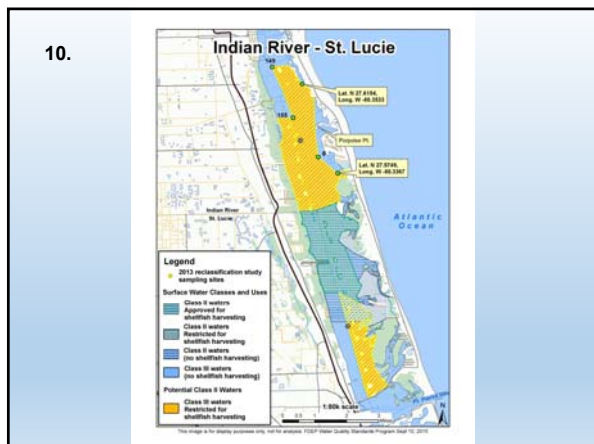
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### Summary of Findings

- All waters proposed for reclassification have an existing use for shellfish harvesting and either achieve more stringent Class II criteria or naturally exceed bacteria criteria (Chaires Creek)
- Will be nine newly listed waters (WBIDs) based on harvesting classification, but would be minimal impacts to permitted discharges
  - MS4s discharging to newly listed waters are minimally impacted because waters meet criteria and resultant TMDL would not require reductions
  - Only one wastewater facility (Fort Pierce Utility Authority WWTP) may need to upgrade to intermediate disinfection, with minimal cost

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### Proposed Revisions to Chapter 62-303, F.A.C. (Impaired Waters Rule)

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### Revisions to Chapter 62-303

- **Wide variety of revisions to the IWR, with most designed to clarify the assessment methodology, but some new provisions related to:**
  - Assessment of numeric nutrient criteria (NNC)
  - Clarifying scope of waters on "Study List"
  - Assessment of new bacteria criteria
  - Assessment of new 30-day ammonia criteria

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### Proposed Revisions to Study List Provisions

- **In Rule 62-303.390, subsection (2) addresses the ways waters can be listed on the Study List,**
  - a) Increased trend in nutrients or chl a
  - b) Failed biology, but no causative pollutant
  - c) Does not meet DO, but no causative pollutant
  - d) Restoration activities planned or on-going
  - e) Streams exceeding TN and TP thresholds, but need bioassessment info
  - f) Waters with insufficient bacteria data, but available data doesn't attain
  - g) Waters not attaining bacteria criteria, but suspected to be due to natural sources
  - h) Waters that exceed a criteria, but FDEP receives a petition for a SSAC

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### Questions & Comments

Questions and comments on the Triennial Review or Water Quality Standards can be addressed to:

**Daryll Joyner**  
Program Administrator  
Water Quality Standards Program  
2600 Blair Stone Road MS 3560  
Tallahassee, FL 32399-2400  
[Daryll.Joyner@dep.state.fl.us](mailto:Daryll.Joyner@dep.state.fl.us)

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