

Introduction to Development of Numeric Nutrient Criteria in the State of Florida



Ephraim King
EPA Office of Water
Office of Science and Technology

EPA Science Advisory Board
December 13–14, 2010
Washington, D.C.

Overview

- Welcome
- Scope
- Background & Context
- Criteria Application
- Next Steps

Why Are We Here?

- Nutrients are a widespread, significant, and growing problem
- Cause and effect relationship between N & P pollution and adverse effects of algal growth is well established
- Current narrative standard is important, but implemented on a waterbody by waterbody, resource intensive and time consuming basis for impaired waters
- An alternative numeric criteria approach is needed that is protective of both impaired and high quality waters, as well as supportive of effective, flexible, and common sense water quality protection
- EPA's guiding principles in developing numeric criteria in partnership with Florida is sound science, rule of law, and transparency

Scope of SAB Review

- Identify Best Available Science, Data, & Tools
- Review Available Methodological Options to Translate Existing Florida Narrative Criteria into Measurable Numeric Criteria to Address
 - Estuarine and Coastal Waters
 - Downstream Protection Values
 - South Florida Waters
- Provide Guidance on Application of Science and Methodologies

Background & Context – CWA

- Clean Water Act Objective
 - “ . . . Restore and maintain the chemical, physical, and biological integrity of our Nation’s waters.” – Section 101(a)
- Clean Water Act Goal
 - “ It is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved . . .” Section 101(a)(2)

Background & Context – CWA Regs

- Water Quality Standards – Minimum Elements
 - Use Designations consistent with CWA Section 101(a)(2) Goal
 - **Water Quality Criteria** Sufficient to Protect the Designated Uses
 - Anti-degradation Policy (40 CFR 131.6)
- Water Quality Criteria
 - Criteria must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use (40 CFR 131.11)
 - Criteria are . . . based on the latest scientific information on the relationship that the effect of a constituent concentration has on particular aquatic species and/or human health (40 CFR 131.2(c))
 - When criteria are met, water quality will generally protect the designated use (40 CFR 131.2(b))

Background & Context – General

- Water Quality Standards
 - Provide the common mechanism by which other implementation sections of the CWA work together to accomplish the overall goals and objective of the Act
- Water Quality Criteria
 - Purpose and type (Numeric/Narrative)
 - Downstream protection
 - Based on best available science
 - Costs and implementation are considered in different context (e.g., designated uses, anti-degradation, variances, compliance schedules)

Background & Context – Florida

- Unique and vulnerable aquatic resources, a history of substantial data collection, and a team of widely recognized scientists and technical experts
- EPA Administrator Determination that “new or revised numeric standards are necessary” to address nutrients
- Related consent decree calls for two-phase rulemaking
 - Inland waters rule – November 2010
 - Estuarine/Coastal and South Florida Rule
 - Proposed rulemaking - November 2011
 - Final rulemaking - August 2012

Florida's Designated Uses

- The State of Florida has previously designated waters as either:
 - *Class I*: Potable water supplies
 - *Class II*: Shellfish propagation or harvesting
 - *Class III*: Recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife
 - *Class IV*: Agricultural water supplies
 - *Class V*: Navigation, utility, and industrial use

Florida's Narrative Nutrient Criterion

- To protect Class I, II, and III waters, the State currently utilizes a narrative criteria statement, which provides in part:

“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.”

Chapter 62-302.530(47)(b) FAC

EPA's Current Focus

- Establish numeric criteria that translate existing Florida narrative standard into measureable values to facilitate and expedite implementation and assure attainment of designated uses.
- Numeric criteria designed to protect those waterbodies subject to existing Florida Class I, II, & III use designations
- EPA is not establishing numeric criteria values for Class IV or V waters.
- Existing Florida Designated Uses Remain In Effect.

Criteria Application

- **Critical-path support for water quality protection tools**
 - Water quality assessments
 - Listing of impaired waters
 - Development of Total Maximum Daily Loads
 - NPDES Permits
 - Protection of high quality waters
- **Available non-criteria costs & implementation flexibility**
 - Use designation revisions
 - Time-limited designated use variances
 - Anti-degradation
 - Compliance schedules
 - Site specific adjusted criteria
 - Triennial State water quality standard reviews to reflect updated science and new information

Next Steps

- Complete SAB public meeting & technical review
- Final SAB Report
- Proposed Coastal & South Florida Rule – November 2011
 - Preamble & *Technical Support Document*
 - Related cost and implementation analysis
- Public notice and comment period
- Extensive review of all comments and supplemental information
- Final Coastal & South Florida Rule – August 2012
 - FDEP/EPA stakeholder technical assistance & planning
 - Site specific alternative criteria
 - implementation tools and flexibility

Presentations to Follow

- Chapter 2: General Approach
- Chapter 3: Florida Estuaries
- Chapter 4: Florida Coastal Waters
- Chapter 5: South Florida Waters
- Chapter 6: Protection of Downstream Estuaries