

# Nutrient Criteria Update

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Brazos River Basin Steering Committee Meeting  
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# Effects of Excess Nutrients

- Phytoplankton algae in open water
- Attached and Floating algae
- Rooted vegetation
- Aesthetic effects on recreation
- Water supplies: Trihalomethanes, taste & odor
- Aquatic-life: fisheries  $\uparrow\downarrow$  habitat  $\uparrow\downarrow$  D.O. at night  $\downarrow$  diversity  $\downarrow$



# Nutrient Criteria

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## Why Nutrient Criteria

- Assess monitoring data (impaired?)
- Evaluate proposed discharge permits
- Set targets for TMDLs
- Meet federal mandates



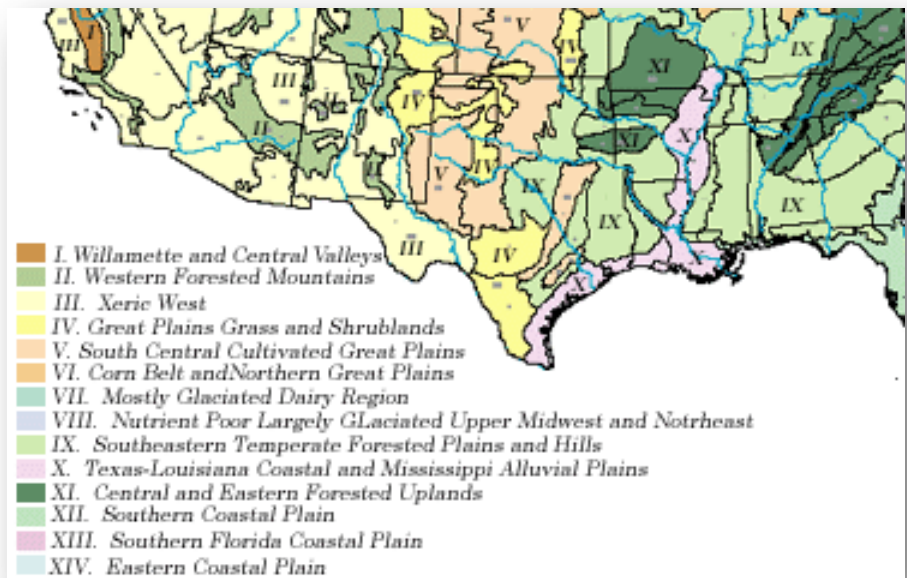
# Nutrient Criteria: EPA Guidance

## ➤ EPA and Numerical Nutrient Criteria

- 1998 mandate: NNC by 2004
- Allowed state development plans and schedules – current plan from 2006
- National guidance criteria
- Lots of recent guidance and memos , i.e., Nancy Stoner Memo

## ➤ National Developments

- EPA promulgation of FL
- Require limits as result of narrative in permitting



# EPA Nutrient Criteria: Florida

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- Lawsuit from Florida Wildlife Fed. & others in 2008
  - Consent decree with EPA in 2009 settles lawsuit
  - Florida countersuit December 2010
    - Agriculture and Utility groups
  - Florida DEP petition to withdraw April 2011
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- EPA promulgation of criteria for Florida lakes & streams:
    - Initial promulgation Nov 2010
    - Effect March 2012
    - Extended June 2012
  - EPA estuary criteria: March 2012 / November 2012
  - Florida → EPA draft rule October 2011



# Nutrient Reduction Strategy Memo

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- Prioritize watersheds on a statewide basis
- Set watershed load reduction goals
- Ensure effectiveness of point source permits
- Agricultural areas
- Storm water and septic systems
- Accountability and verification measures
- Annual public reporting of implementation activities & biannual reporting of load reductions
- Develop work plan, schedule for numeric criteria



# WQ Standards: Now

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## Narrative Nutrient Criterion [307.4(e)]:

“Nutrients from permitted discharges or other controllable sources must not cause excessive growth of aquatic vegetation that impairs an existing, designated, presumed, or attainable use. Site-specific nutrient criteria, nutrient permit limitations, or separate rules to control nutrients in individual watersheds are established where appropriate after notice and opportunity public participation and proper hearing. Site –specific numeric criteria related to chlorophyll *a* are listed in Appendix F of 307.10 F of this title.”



# Appendix F – Chlorophyll *a* Criteria

- Originally proposed two options for 96 reservoirs
- Result was stand alone chl *a* criteria for 75 reservoirs
- Chl *a* criteria – upper prediction interval





# EPA Review

- WQ Standards
  - Adopted by TCEQ - 6/30/2010
  - Still under review by EPA
  - EPA request for more information regarding nutrient criteria - 5/17/2011
- TCEQ responded to all EPA requests



# The Road Ahead: Streams and Rivers

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- Categorize and group based on
  - Geography?
  - Hydrology?
  - Chemical similarities?
- Option 1: Base criteria on historical levels in reference streams and rivers
- Option 2: Stressor/response analyses, relating TN, TP to biological indices, D.O., Chl *a* (in rivers), attached algae (smaller streams)



# The Road Ahead: Estuaries

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- Criteria Development Options
  - Historical levels (Chl *a*, TP, TN, transparency)
  - Relate TP and TN to response of Chl *a*, transparency
  - Incorporate models of nutrient loading / response
- Project identifying nutrient effect levels in estuaries
  - Historical data
  - Statewide



# Upcoming Prospects

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- Update nutrient criteria development plan
- Consider ways to incorporate weight-of-evidence
- Revisit reservoir criteria
- Develop criteria option for selected rivers and estuaries based on historical conditions
  - Individual water bodies
  - Reference groupings
- Develop criteria option based on stressor/response analyses (may require more data collection in estuaries)



# What Now.... UPDATE THE PLAN

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## ➤ Update the plan

- Jane Watson letter Dec. 20, 2011
- Last update - 2006
  - Updates needed include:
    - Reservoir Chl a Criteria
    - Current studies
    - New methodologies
    - Schedule – Milestones



# Questions?

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Nutrient Criteria Development Workgroup:

[http://www.tceq.texas.gov/waterquality/standards/stakeholders/nutrient\\_criteria\\_group.html](http://www.tceq.texas.gov/waterquality/standards/stakeholders/nutrient_criteria_group.html)

Surface Water Quality Standards Advisory Workgroup:

<http://www.tceq.texas.gov/waterquality/standards/stakeholders/swqsawg.html>