



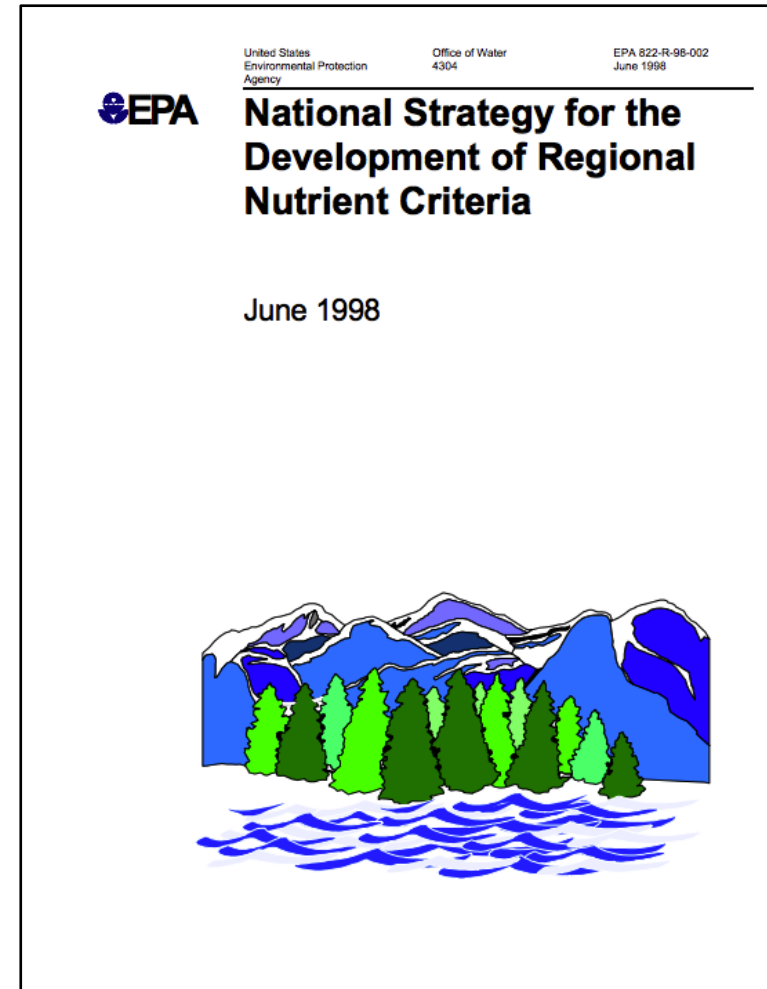
# Nutrient Criteria Progress and Updates

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# Nutrient Criteria Development Plan

- TCEQ Nutrient Criteria Development Plan (NCDP) was developed to comply with 1998 EPA National Nutrient Criteria Strategy.
- TCEQ submitted plans to EPA in 2001, 2006, 2014



# 2014 Nutrient Criteria Development Plan

- Purpose: Provide a framework for the continued development of numeric nutrient criteria for the State of Texas
- 2014 Nutrient Criteria Development Plan
  - [Nutrient Criteria Development Plan \(texas.gov\)](http://texas.gov)



# Strategy of the 2014 NCDP

**RESERVOIRS**

**ESTUARIES**

**RIVERS &  
STREAMS**

**WETLANDS**

**BOUNDARY  
WATERS**



# Strategy of the 2014 NCDP cont.

**RESERVOIRS**

**ESTUARIES**

**RIVERS &  
STREAMS**

**WETLANDS**

**BOUNDARY  
WATERS**

# Ongoing project: Estuaries

- Multispecies Multi-nutrient Plankton Model (MUMPS) in development
- Multi phase contract which started in 2017
- May be used for the evaluation of complex stressor-response relationships in San Antonio, Copano/Aransas, Baffin and Matagorda Bays



## **MUMPS SABS Model Simulator**

A MODELING TOOL FOR THE PREDICTION OF  
ALGAL BIOMASS AND DISSOLVED OXYGEN IN  
TEXAS BAYS

**Sierra Cagle<sup>a</sup>, Daniel Roelke<sup>a</sup>, Joydeb Bhattacharyya<sup>b</sup>,**

*<sup>a</sup>Marine Biology, Texas A&M University, Galveston*

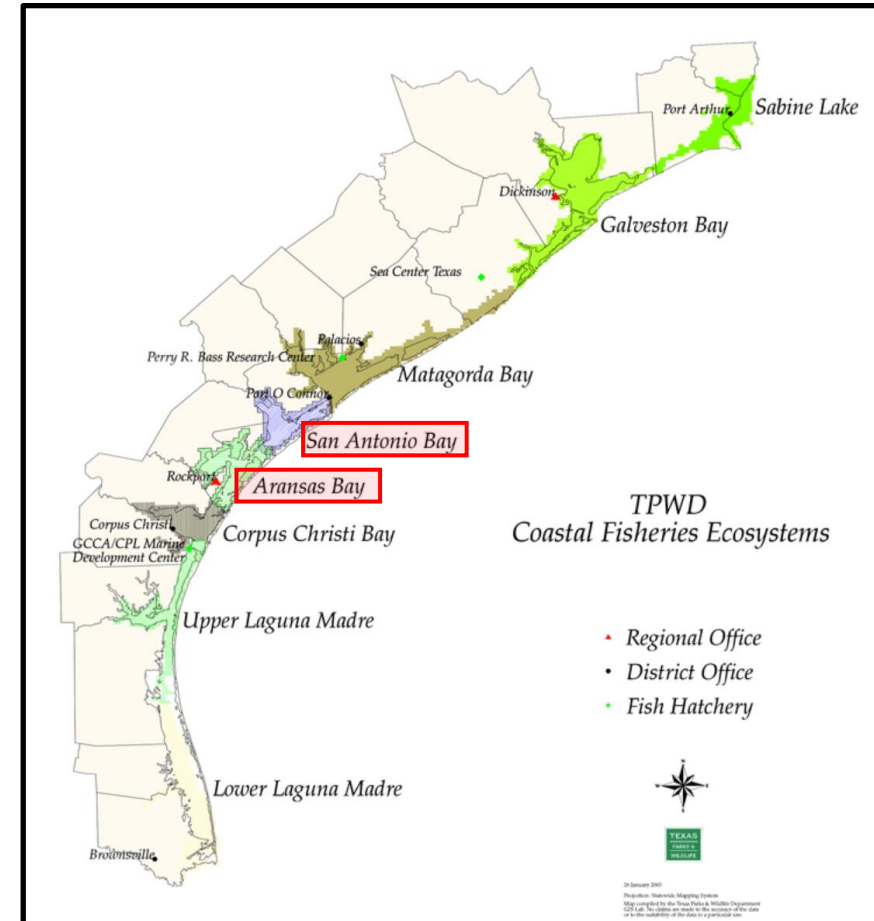
*<sup>b</sup>Department of Mathematics, Karimpur Pannadevi College, Nadia, India*



**TEXAS COMMISSION ON  
ENVIRONMENTAL QUALITY**

# Moving forward: Estuaries

- MUMPS final phase
  - Expand into upper and lower parts of Texas coast





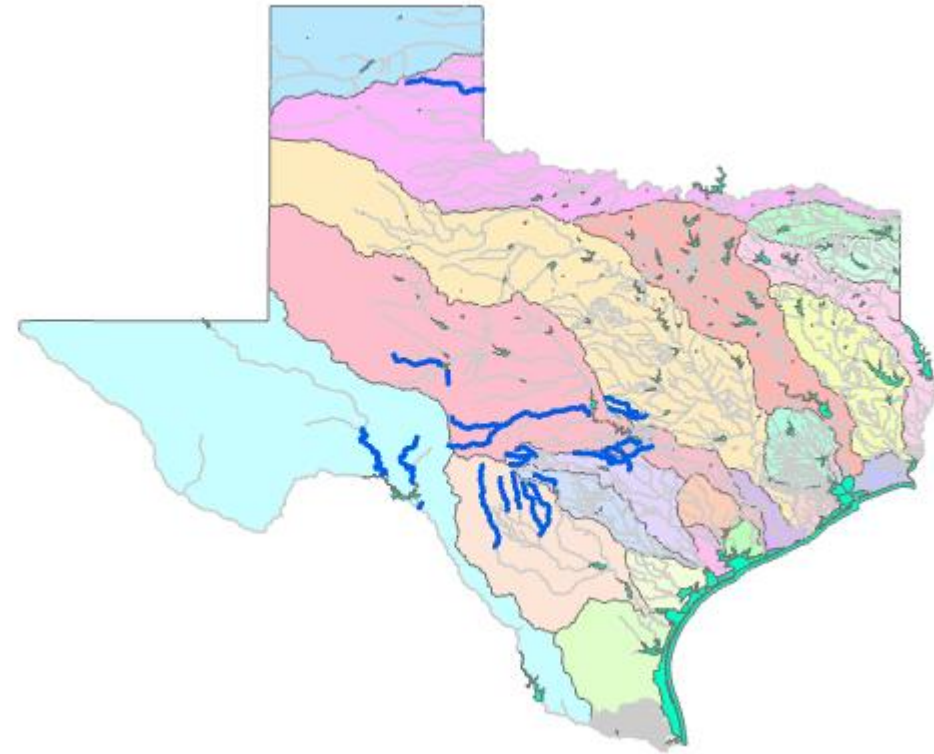
# Moving forward: Reservoirs

- Coordinating with EPA and Tetra Tech through the N-STEPS program
- Focus on 75 reservoirs proposed in the 2010 TSWQS
- Goal:
  - Develop nutrient criteria for Total Phosphorus (TP), Total Nitrogen (TN), and Chlorophyll *a* (Chl *a*) for the 36 reservoirs with disapproved Chl *a* criteria
  - Develop TN and TP criteria for the 39 reservoirs with approved Chl *a* criteria



# Moving forward: Rivers and Streams

- 22 Nutrient sensitive streams
- Background concentration for TP < 0.01 mg/L



# Moving forward: Rivers and Streams cont.

- Limitation: TP data mostly reported at LOQ (0.02 mg/L)
- Question: Can we reliably measure down to 0.01 mg/L for TP?
- CRP laboratory study to address limitation

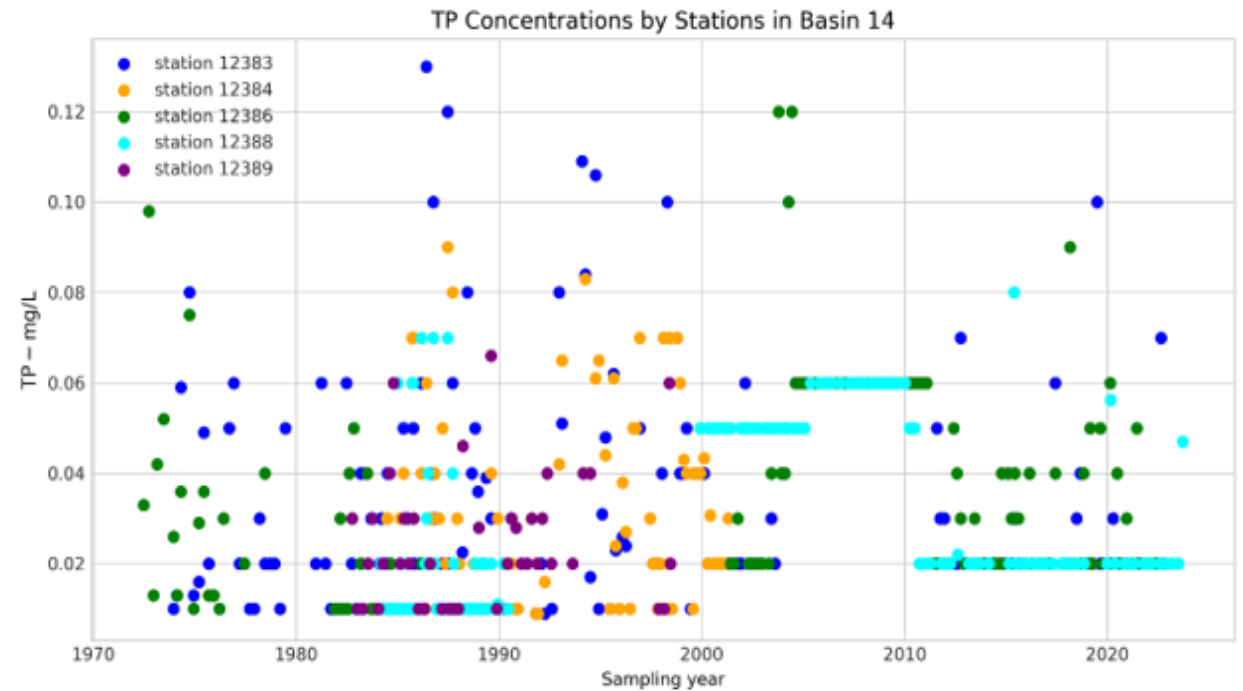


Figure 11: Total phosphorus concentrations for stations 12383, 12384, 12386, 12388 and 12389 located on the Llano River.

# Moving forward: Rivers and Streams cont..

- Why does it matter?
  - studies show ecological impacts at TP concentration of 0.01 mg/L for these types of streams
- first step for the WQS program towards establishment of protective thresholds and development of TP numeric criterion

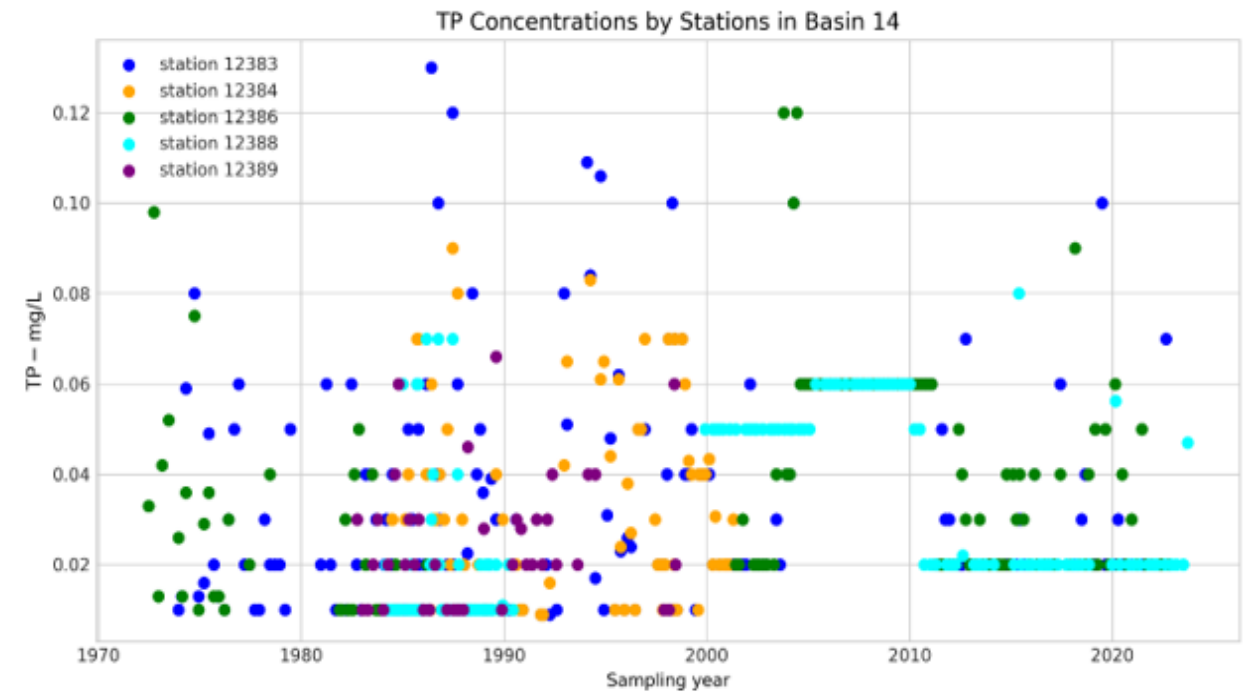


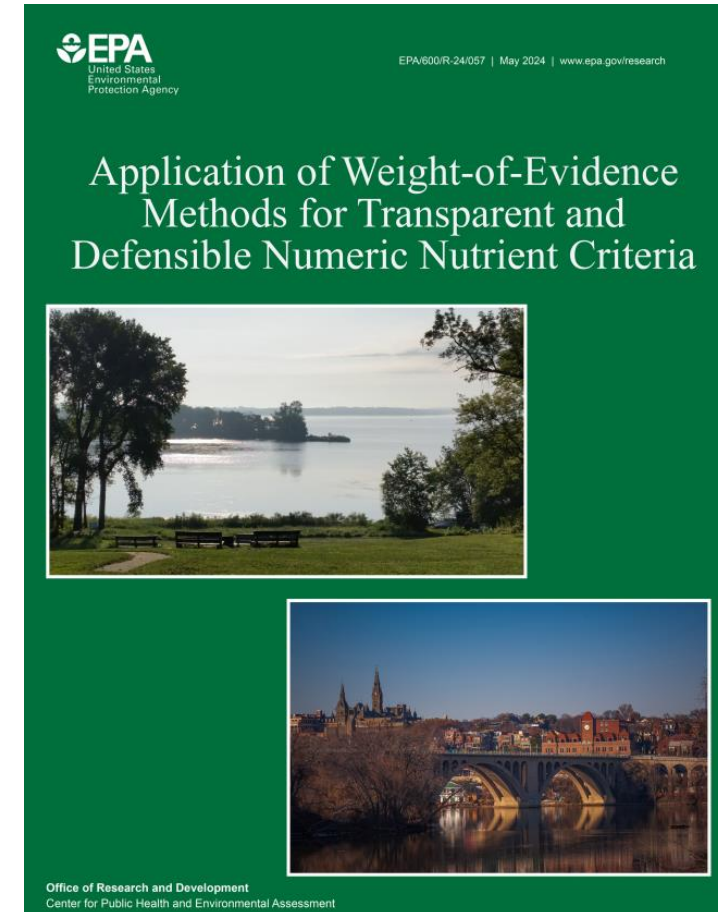
Figure 11: Total phosphorus concentrations for stations 12383, 12384, 12386, 12388 and 12389 located on the Llano River.

# Federal Updates: NNC

- EPA 05/24 Application of Weight-of-Evidence Methods for Transparent and Defensible Numeric Nutrient Criteria

## Purpose:

- Describe the core principles and essential steps of the basic WoE framework and how the framework aligns with the phases of criteria development.



# How to Participate

## Nutrient Criteria Advisory Workgroup

- Sign up for email notifications
- Email List:

[Texas Commission on Environmental Quality  
\(govdelivery.com\)](https://govdelivery.com)



Website:

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



# Questions?

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