



# Restoring Water Quality in Texas Surface Waters

Sandra A. Alvarado, Project Manager

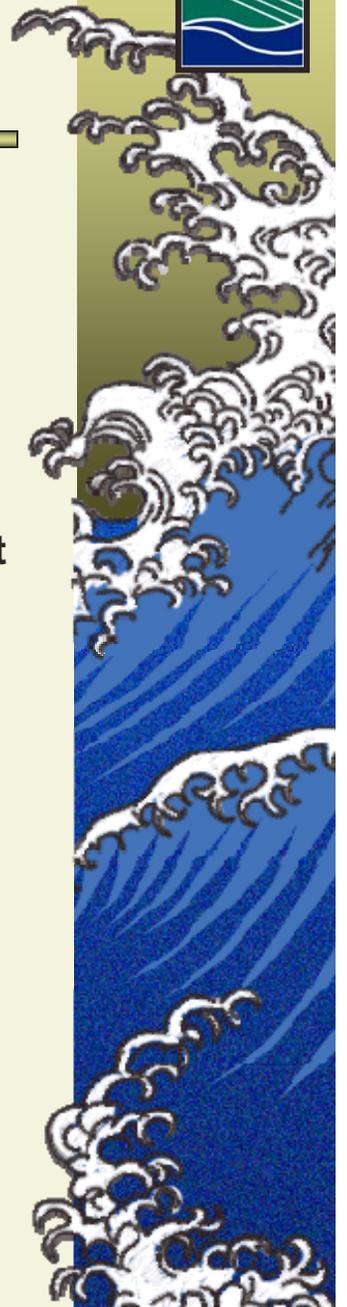
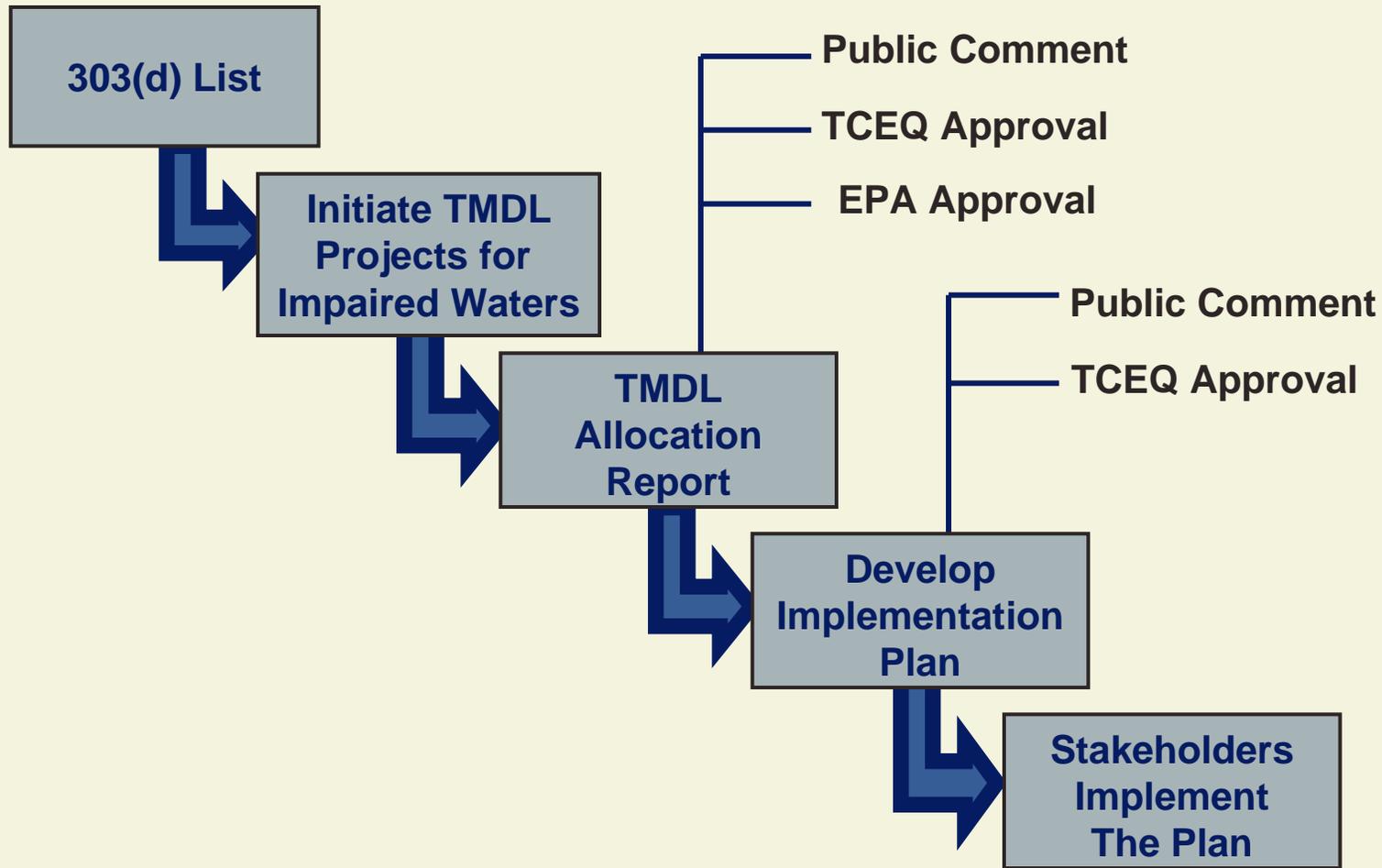
Earlene Lambeth, Outreach Coordinator

**Total Maximum Daily Load Program**

Texas Commission on Environmental Quality

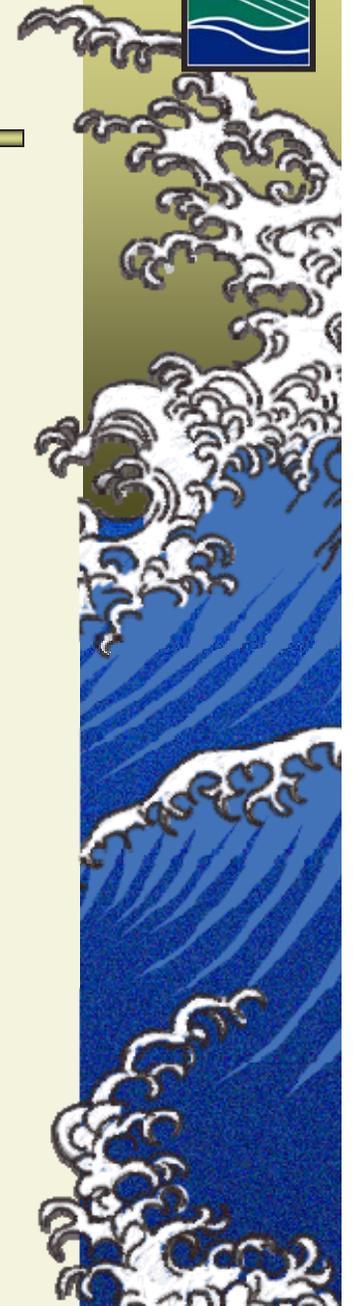


# TMDL Development Process



# Texas TMDL Program

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- ▲ Clean Water Act
  - ▲ list impaired waters
  - ▲ take action to restore
- ▲ Impaired
  - ▲ does not meet the criteria for support of its beneficial uses
  - ▲ *Texas Surface Water Quality Standards.*
- ▲ *Texas Water Quality Inventory and 303(d) List*
- ▲ Restoration
  - ▲ establish a total maximum daily load
  - ▲ develop an implementation plan.

# Key Elements of the Program

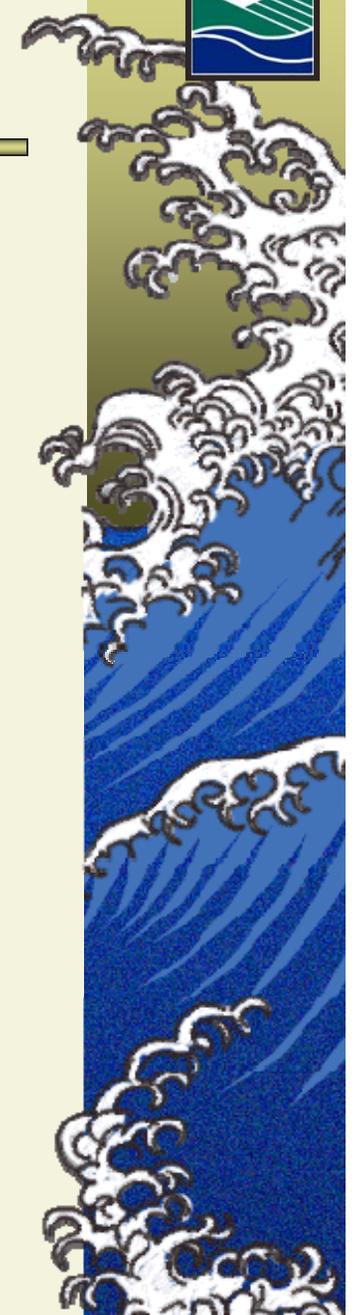
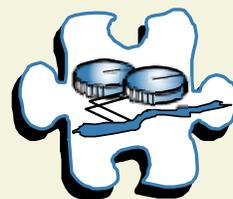
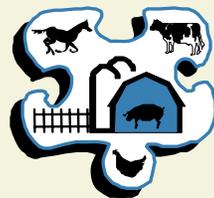
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## ▲ **TMDL – Total Maximum Daily Load**

Determines the maximum amount (load) of a pollutant that a water body can receive and still maintain the beneficial uses, and allocates this load to pollutant sources in the watershed.

## ▲ **Implementation Plan**

A detailed description of the regulatory and voluntary management measures necessary to achieve the pollutant reductions identified in a TMDL.

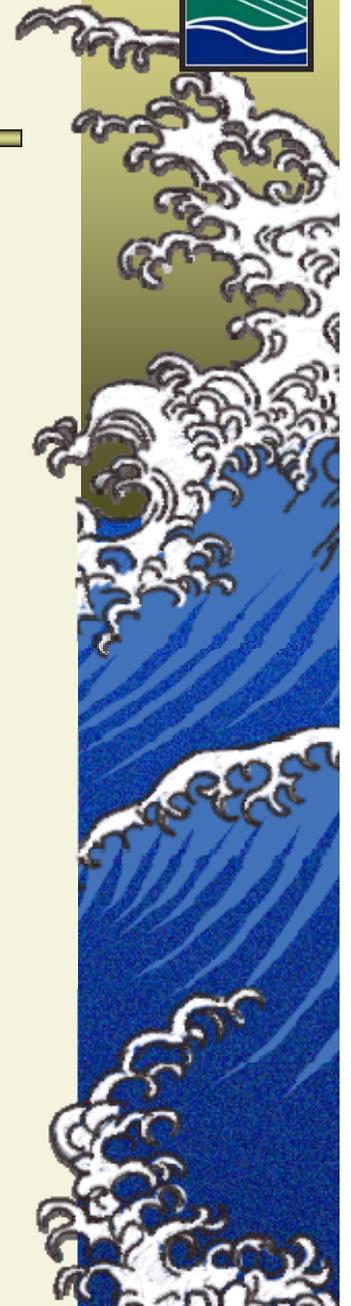


# 2004 303(d) List

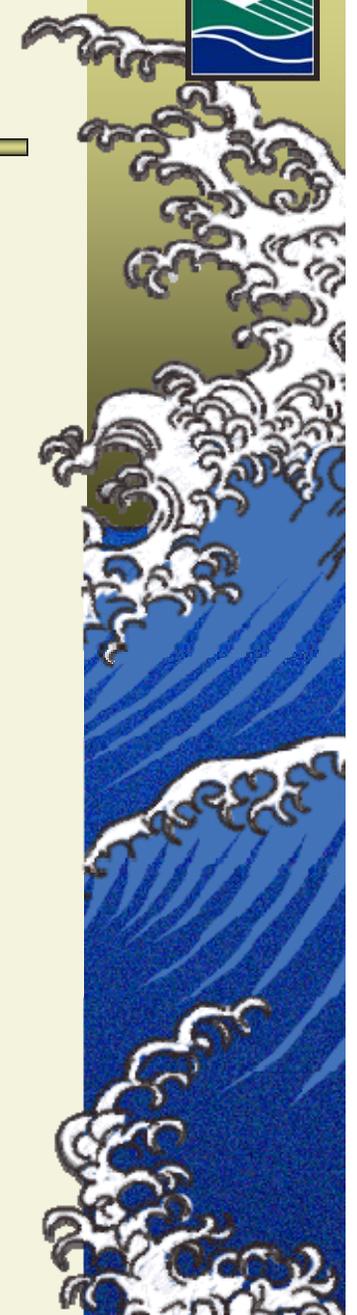
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- ▲ **Carancahua Bay (2456)**
  - ▲ **High pH**
  - ▲ **Bacteria Oyster Waters**
- ▲ **Matagorda Bay (2451)**
  - ▲ **Depressed Dissolved Oxygen**
  - ▲ **Bacteria Oyster Waters**
- ▲ **Tres Palacios Bay (2452)**
  - ▲ **Depressed Dissolved Oxygen**
  - ▲ **Bacteria Oyster Waters**

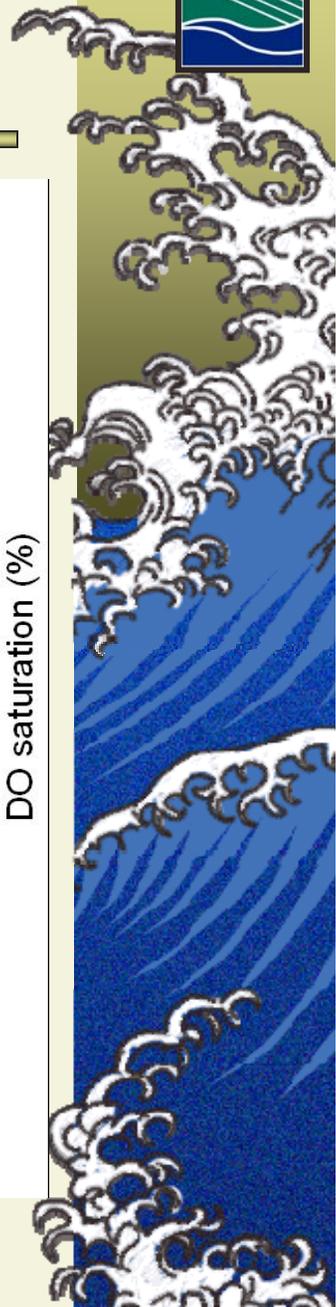
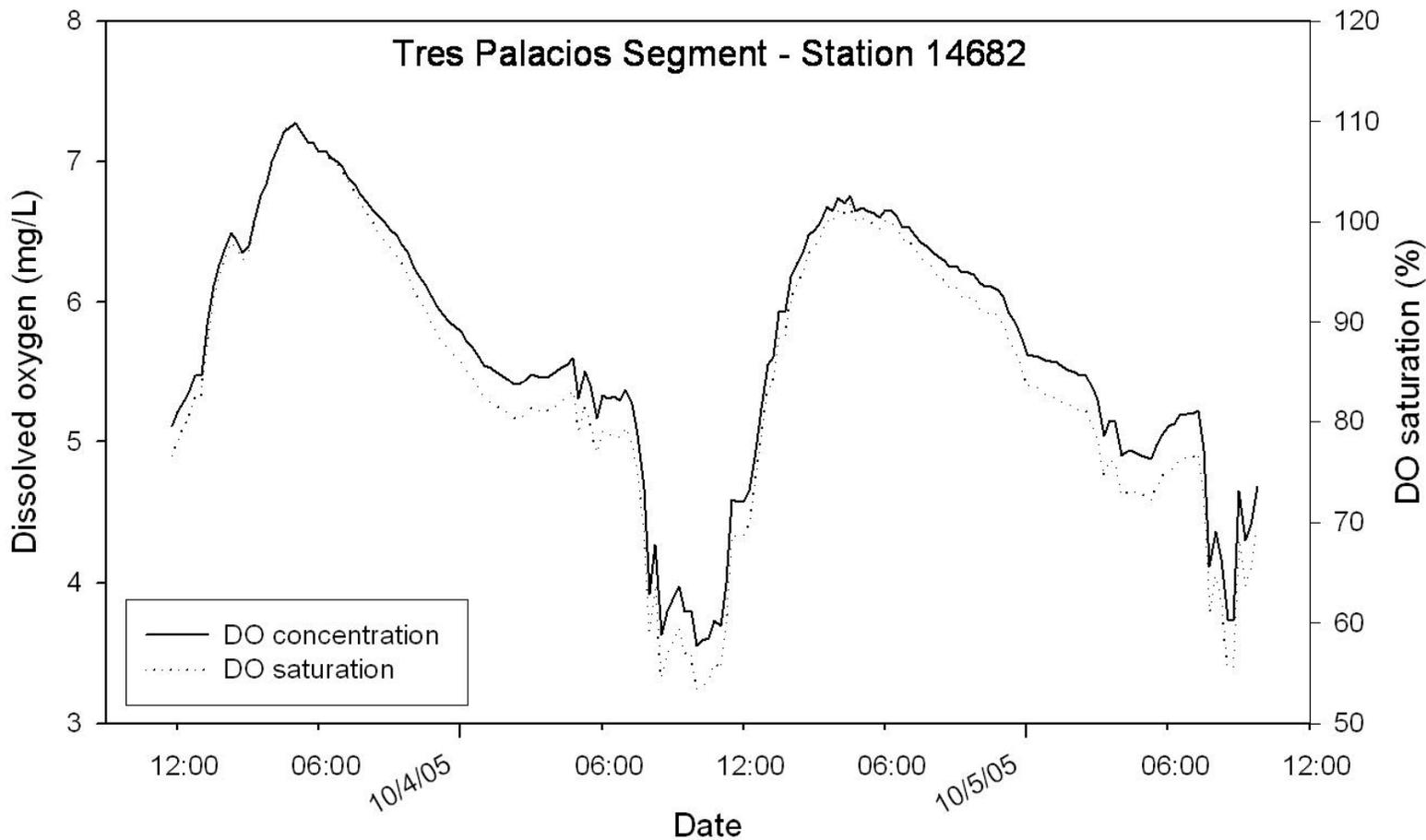


# Aquatic Life Use and 24-Hour Dissolved Oxygen Criteria



<b>Aquatic Life Use</b>	<b>Average Criteria</b>	<b>Minimum Criteria</b>
<b>Exceptional</b>	<b>5</b>	<b>4</b>
<b>High</b>	<b>4</b>	<b>3</b>
<b>Intermediate</b>	<b>3</b>	<b>2</b>
<b>Limited</b>	<b>3</b>	<b>-</b>
<b>No Significant Use</b>	<b>2</b>	<b>-</b>

# 24-Hour Dissolved Oxygen Measurements





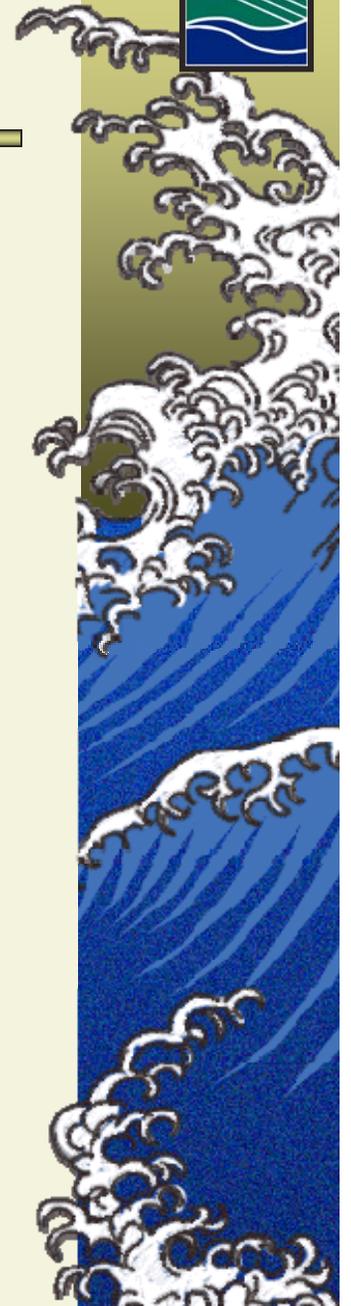
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Questions?

# Next Steps?

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- ▶ Recommended for removal from 2006 303(d) List
  - ▶ Carancahua Bay (2456)
  - ▶ Matagorda Bay (2451)
- ▶ Continues to be listed as impaired on 2006 303(d) List
  - ▶ Tres Palacios Bay (2452)



# Options for Tres Palacios Bay (2452)

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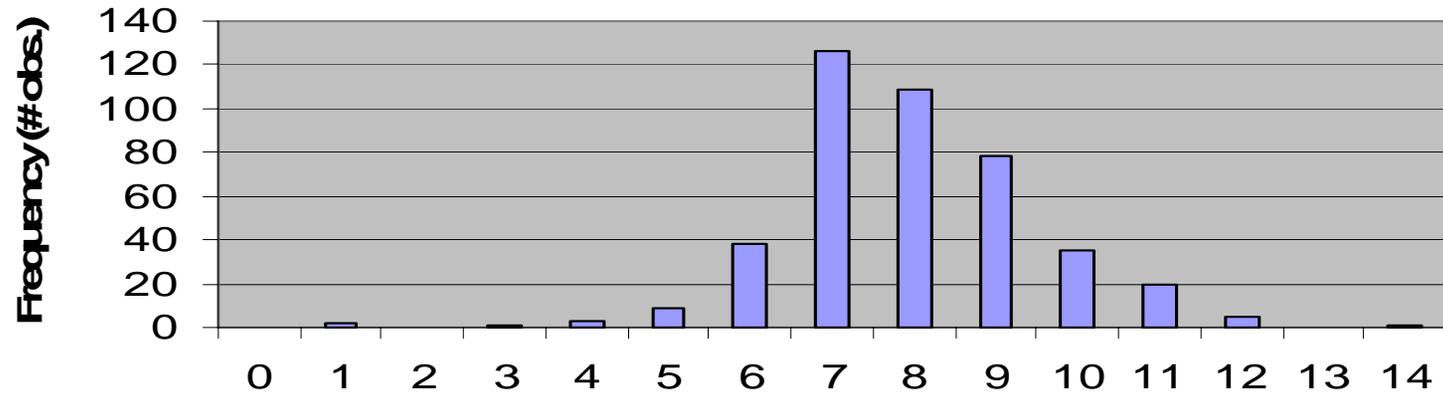


1. Consider changing the designated use from “exceptional” to “high” aquatic life use.
2. Do not include data collected from the harbor station 13382 in the assessment since it is not representative of bay conditions.
3. Develop a TMDL that reduces oxygen-demanding substances.

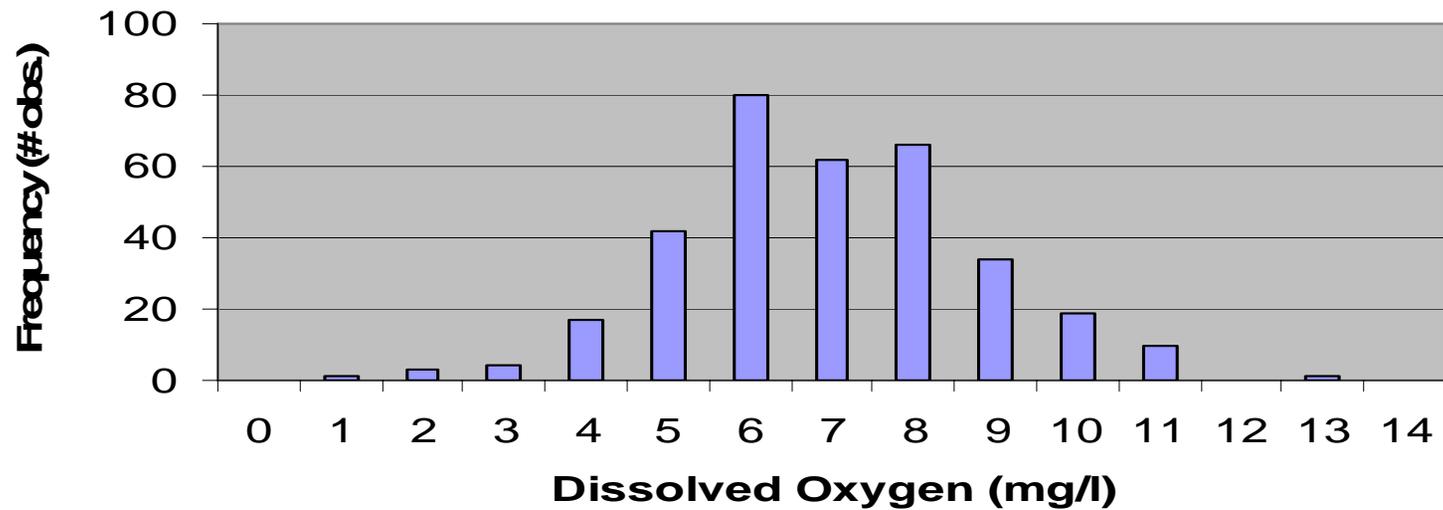




### Dissolved Oxygen Tres Palacios Bay Station 13381 1969-2005 (n=428)



### Station 13382 1969-2005 (n=340)



# Texas Commission on Environmental Quality

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## Total Maximum Daily Load Program

**Sandra A. Alvarado**

**[salvarad@tceq.state.tx.us](mailto:salvarad@tceq.state.tx.us)**

**Ph. (512) 239-6643**

**Earlene Lambeth**

**[elambeth@tceq.state.tx.us](mailto:elambeth@tceq.state.tx.us)**

**Ph. (512) 239-3129**

