



THE TEXAS
**CLEAN
RIVERS**
PROGRAM

Water Quality in the Lower Rio Grande

Annual Water Quality Update and Basin Advisory Meeting

Leslie Grijalva, USIBWC Texas Clean Rivers Program, April 18, 2012

What is the Texas Clean Rivers Program?

- State fee-funded program
- In every river basin in TX
- USIBWC collects water quality in the Rio Grande and Pecos rivers
 - Water quality monitoring
 - Assessment
 - Public Outreach

Identify &
Evaluate
Water Quality
Issues

Provide data so
that corrective
actions can be
prioritized and
implemented

Texas Clean Rivers Program History

1991

Texas Clean Rivers Act

1998

TCEQ-USIBWC partnership established

2012

Monitoring sites on the Rio Grande

- USIBWC CRP – 68 sites
- TCEQ – 35 sites
 - 9 duplicate
 - Total 91 stations

What Does CRP do?

Water Quality Monitoring

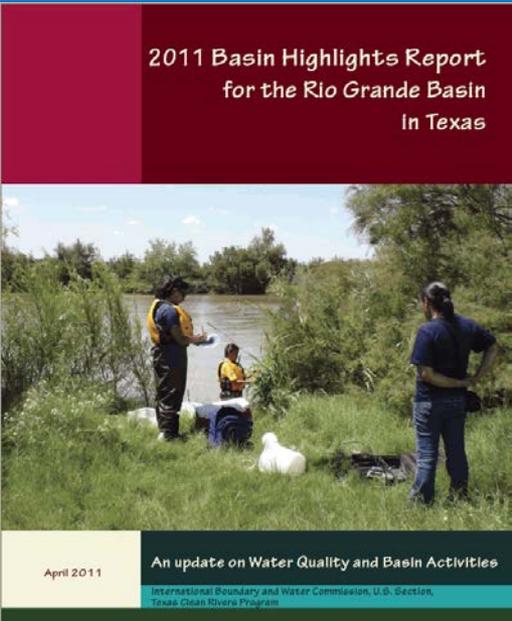
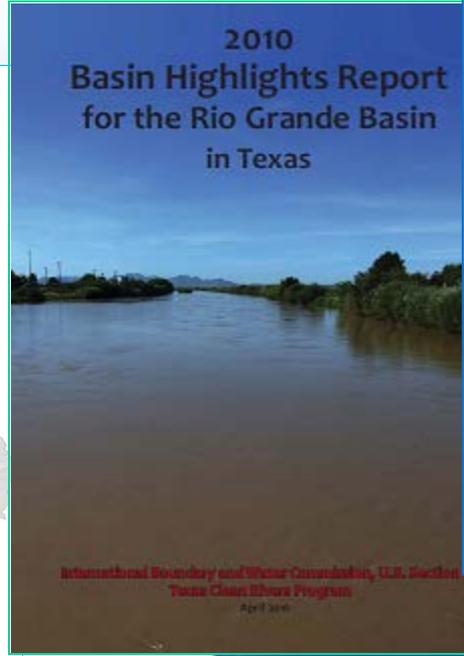
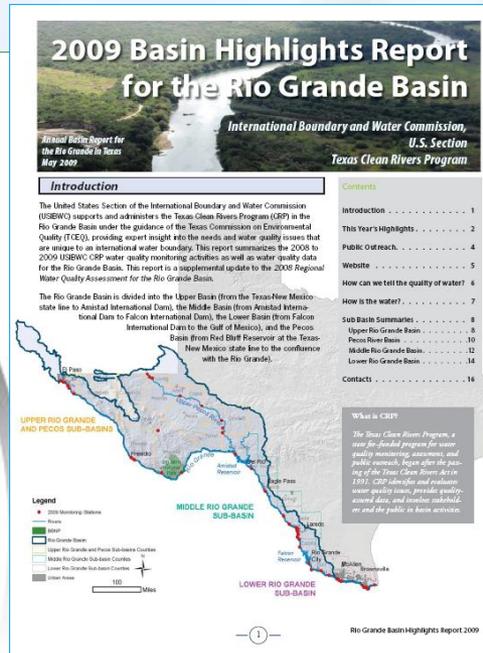
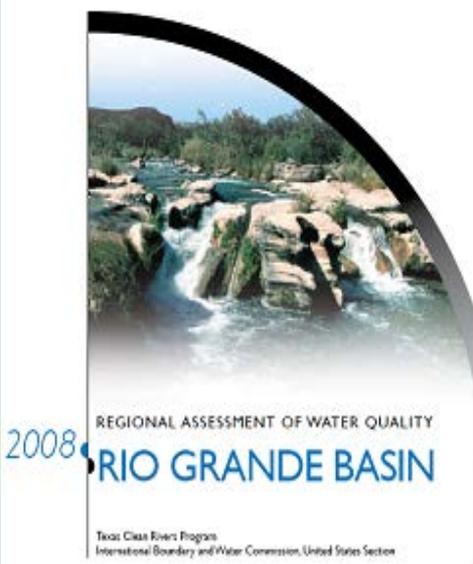
- Routine monitoring
- Special Studies



What Does CRP do?

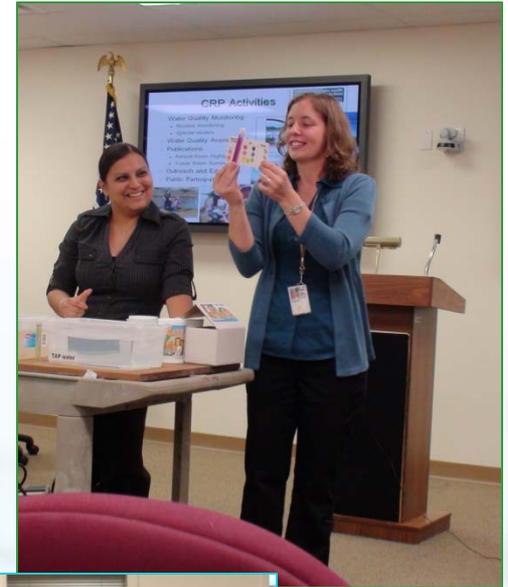
Water Quality Assessment and Publications

- Annual Basin Highlights Report
- 5-year report
- Watershed characterizations



What Does CRP do?

Public Participation, Outreach, & Education



What kind of data does CRP collect?



Routine parameters

- Field data (pH, DO, EC, Temp)
- Conventional (nutrients, salts, BOD)
- Bacteria

Non-routine

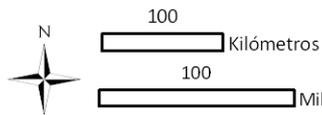
- organics in sediment
- metals
- biological data

2012 Monitoring Stations

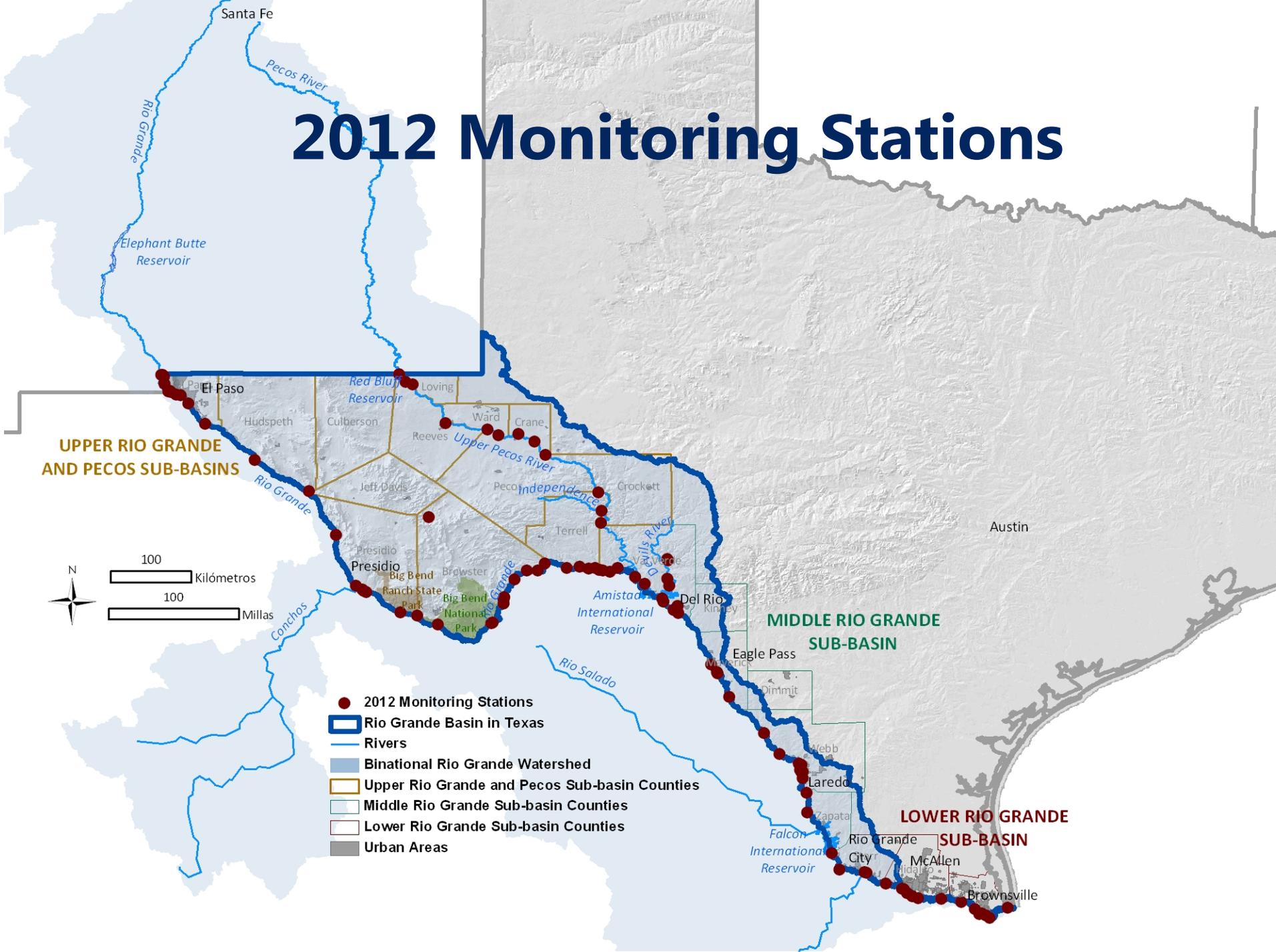
UPPER RIO GRANDE AND PECOS SUB-BASINS

MIDDLE RIO GRANDE SUB-BASIN

LOWER RIO GRANDE SUB-BASIN



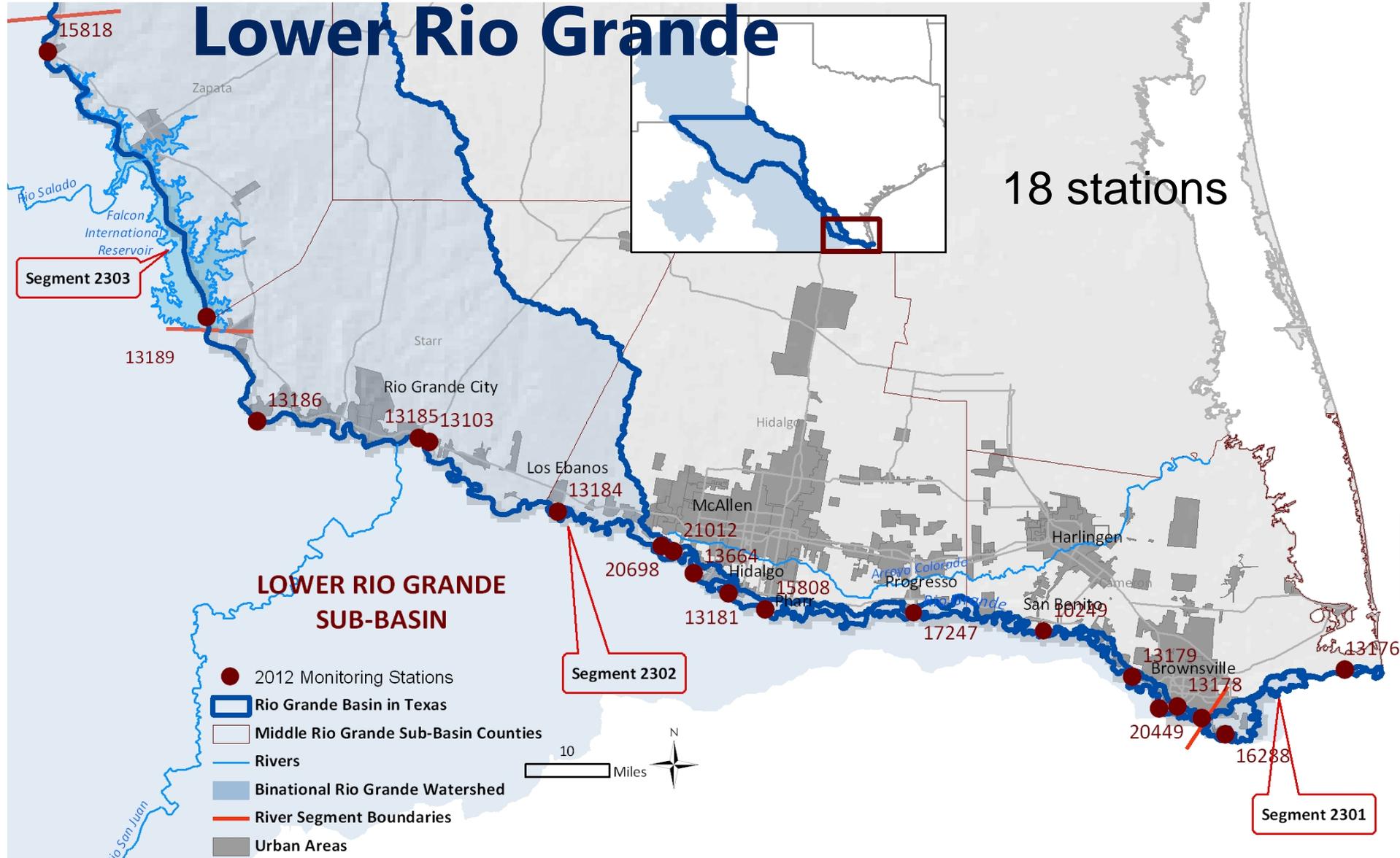
- 2012 Monitoring Stations
- ▭ Rio Grande Basin in Texas
- Rivers
- ▭ Binational Rio Grande Watershed
- ▭ Upper Rio Grande and Pecos Sub-basin Counties
- ▭ Middle Rio Grande Sub-basin Counties
- ▭ Lower Rio Grande Sub-basin Counties
- ▭ Urban Areas



2012 Monitoring Stations –

Lower Rio Grande

18 stations



Local Partnerships – Lower RG

HELP MONITOR, COLLECT, AND ANALYZE:

USIBWC MERCEDES

USIBWC FALCON

SABAL PALM SANCTUARY

UT BROWNSVILLE

US FISH & WILDLIFE

BROWNSVILLE PUB

USGS

TCEQ HARLINGEN

TCEQ CONTINUOUS WQ MONITORING

What happens to the data?

CRP and TCEQ regional offices collect and review data

```
graph TD; A[CRP and TCEQ regional offices collect and review data] --> B[Submit Data to TCEQ]; B --> C[TCEQ compares data to Standards]; C --> D[Segments not meeting standards are listed as impaired on the 303d List];
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Submit Data to TCEQ

TCEQ compares data to Standards

Segments not meeting standards are listed as impaired on the 303d List

Texas Surface Water Quality Standards

For the Lower Rio Grande

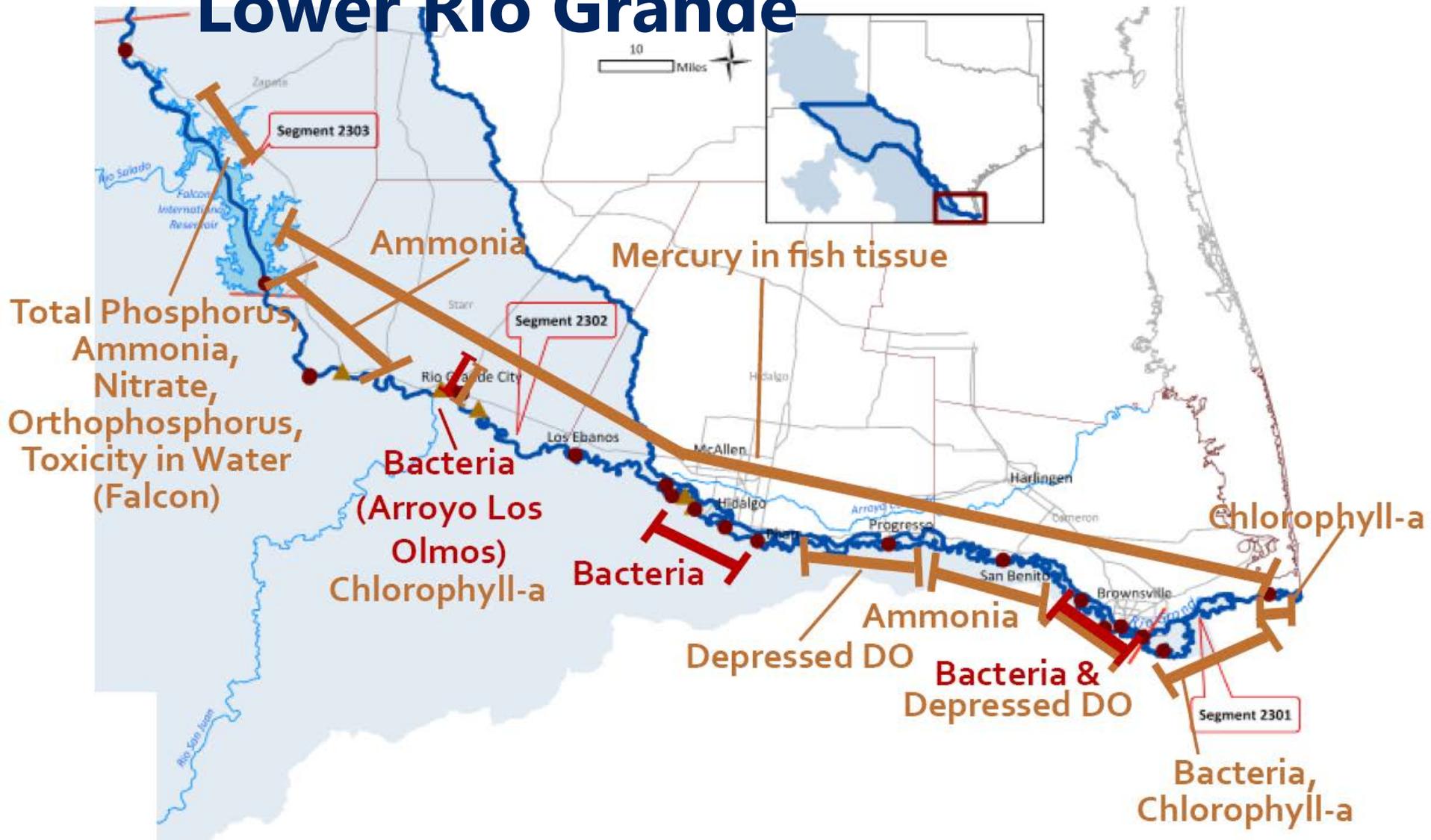
SEGMENT	USES	TDS (mg/l)	Bacteria (#/100 ml)
2301 – Tidal	<ul style="list-style-type: none">• Primary Contact Recreation• Excellent Aquatic Life	--	35 Enterococci
2302 – Below Falcon	<ul style="list-style-type: none">• Primary Contact Recreation• High Aquatic Life• Sole-source public drinking supply	880	126 E. Coli
2303 – Falcon Reservoir	<ul style="list-style-type: none">• Primary Contact Recreation• High Aquatic Life• Sole-source public drinking supply	1,000	126 E. Coli

Integrated Report 303d List

IMPAIRMENTS → don't meet standards

CONCERNS → almost don't meet standards,
or have high values of parameters for which
there are no standards

2010 Impaired Waters in the Lower Rio Grande



Brownsville Bacteria Special Study

•To characterize bacteria impairment in Brownsville

- Planning Phase 2008-2009
- Sampling 2010
- Final Report Summer 2011

•Study did not pick up historically high bacteria

- No one feature could be pointed to as a likely cause
- Wastewater infrastructure improvements likely cause of decrease bacteria
- Bacteria has remained low
- Final report can be found on the CRP website:
 - <http://www.ibwc.gov/CRP/studies.htm>



Lower RG Bacteria Summary

Decreasing bacteria

- Brownsville (impaired section) since the plant went online
- Most likely due to the first wastewater treatment plant in Matamoros, which went online in 2008.

→ improving bacteria in the RG

Increasing bacteria:

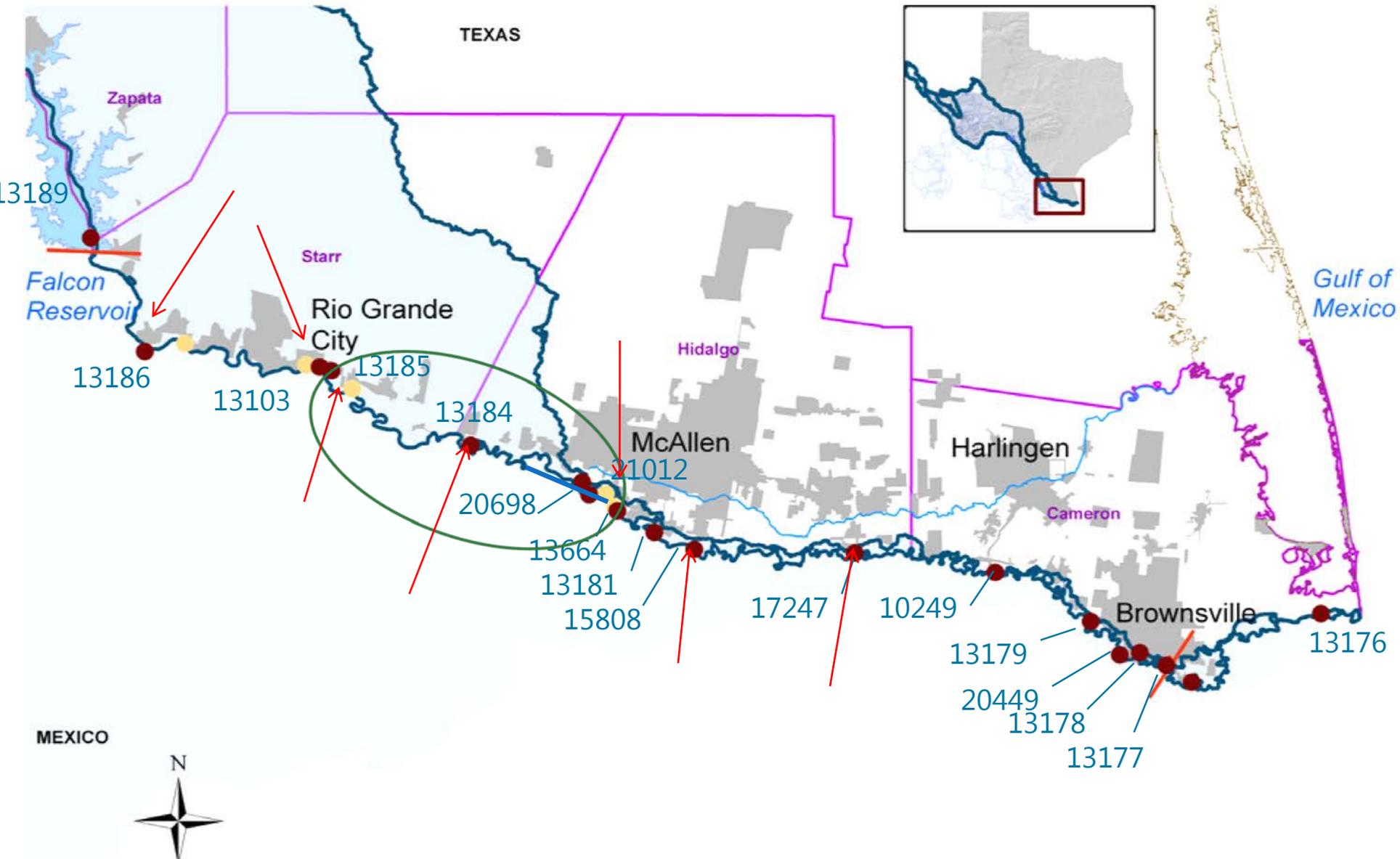
- Rio Grande City
- Hidalgo/McAllen



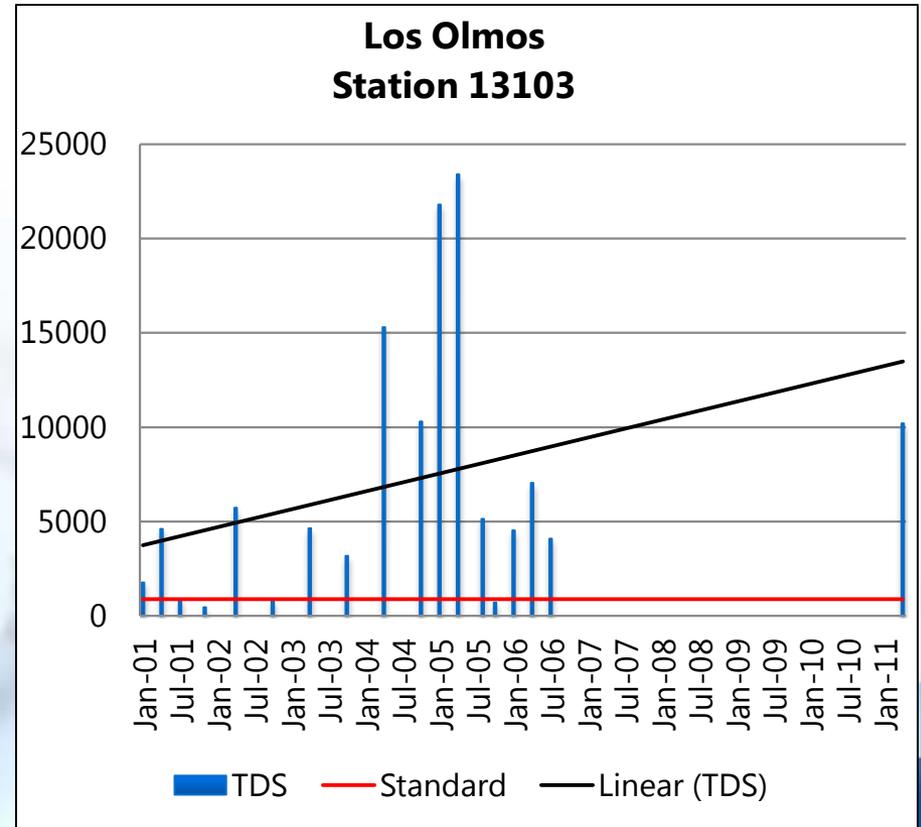
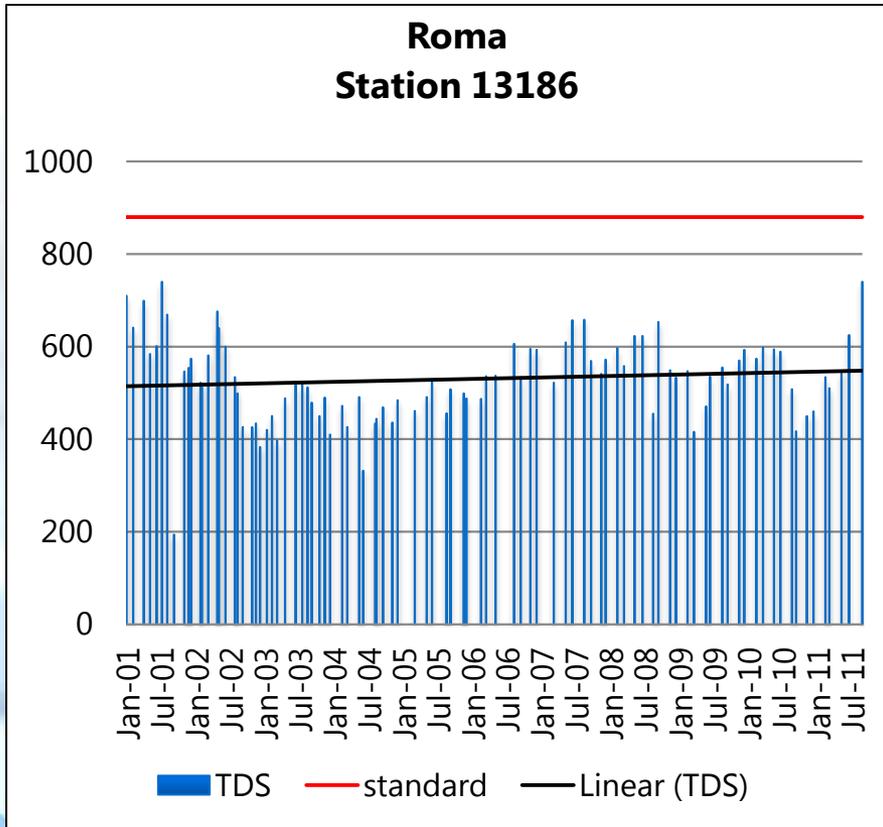
Salinity in the Lower RG

- **High salinity was noticed in some water deliveries made to farmers by the Rio Grande Watermaster's office.**
- **Salinity may lead to the need to increase water deliveries.**
 - Higher volume of water is needed to dilute the salinity of the water.
- **There were questions and concerns about salinity from local stakeholders and irrigators.**
 - CRP looked at data from the routine monitoring stations in the area in response to the concerns.
 - Looked at trends in the data at our stations, both upstream and downstream of the area of concern.

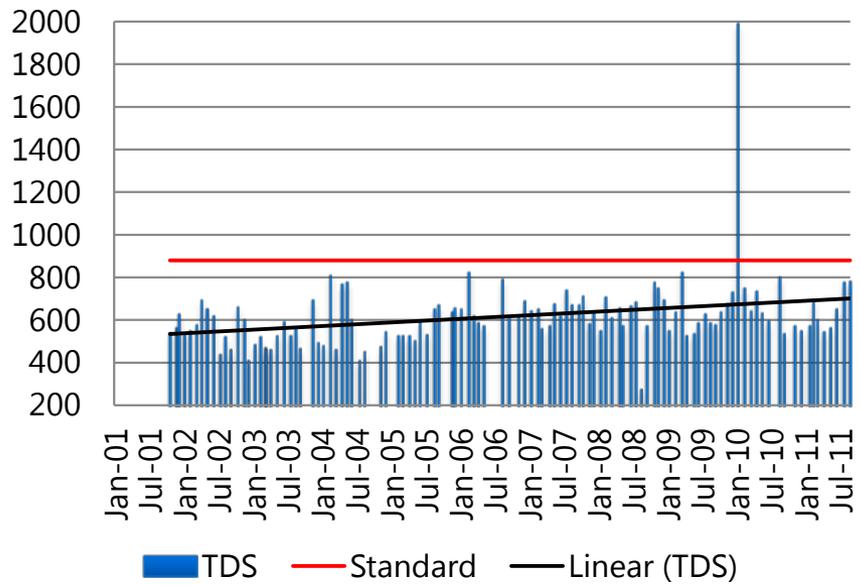
TDS – Lower RG



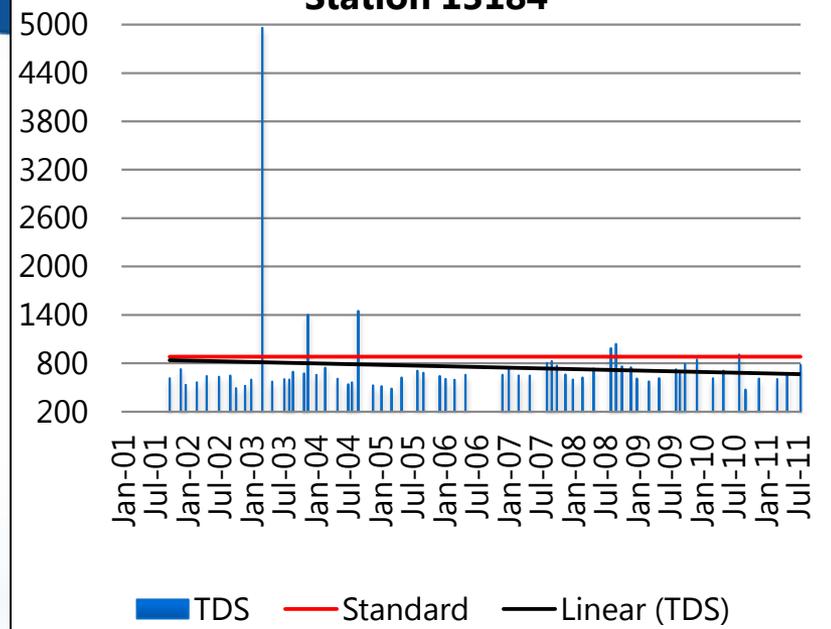
TDS – Upstream of RG City



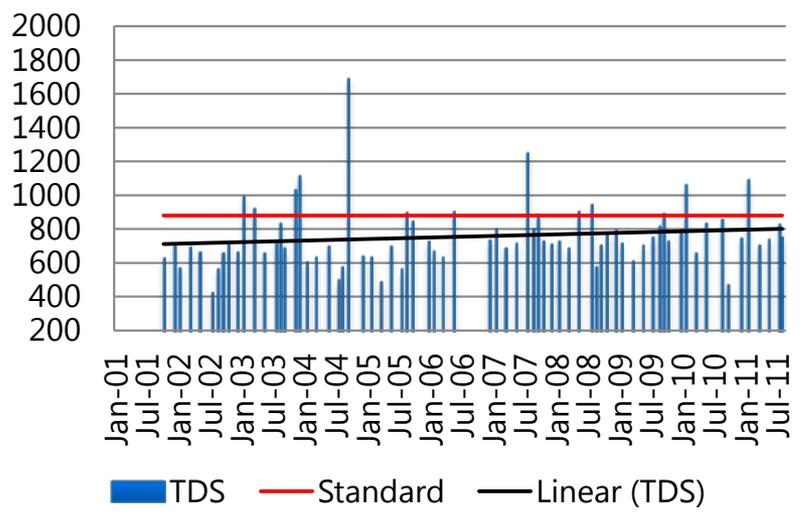
Rio Grande City Station 13185



Los Ebanos Station 13184

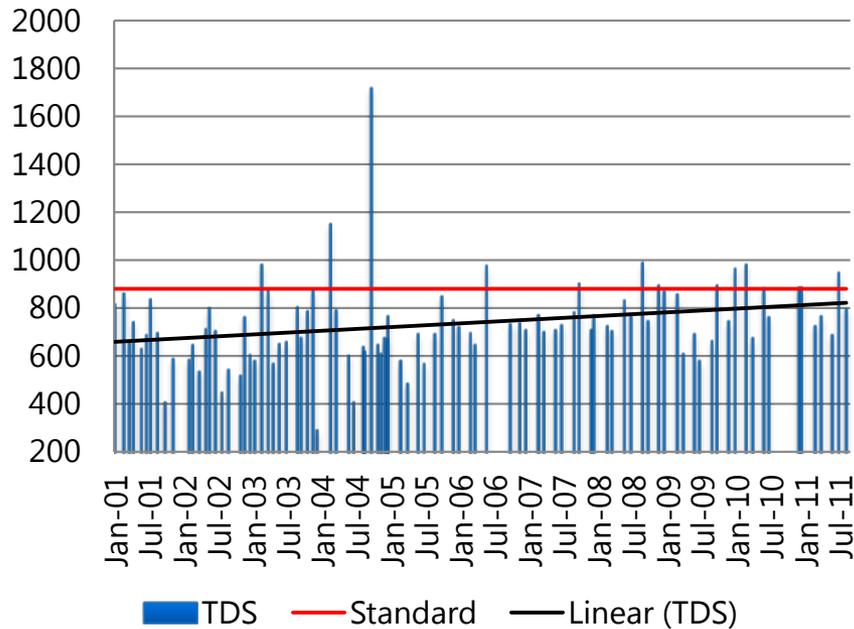


Anzalduas Station 13664

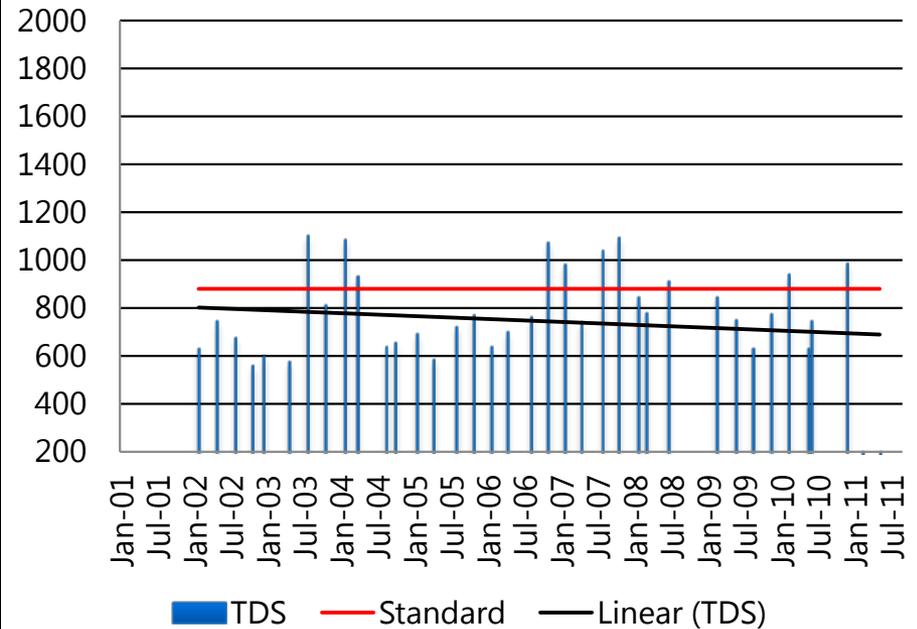


TDS – Downstream of McAllen

Pharr Station 15808



Progresso Station 17247



What the data shows

- **Data is inconclusive**

- Data is not consistently showing increasing salinity, as seen in the graphs.
- Data does not indicate an impairment for salinity in the Lower RG Valley.
- Currently meeting the standard.

- **May be a non- point source problem rather than a point source.**

- Rainfall and storm water runoff may be contributing factors.

- **CRP needs to look at additional possibilities.**

- Additional monitoring or stations.
- Interested in possibly doing a special study on salinity in the area.

- **Group at El Paso Community College is doing a nutrient study. A report will be out Summer/Fall 2012.**

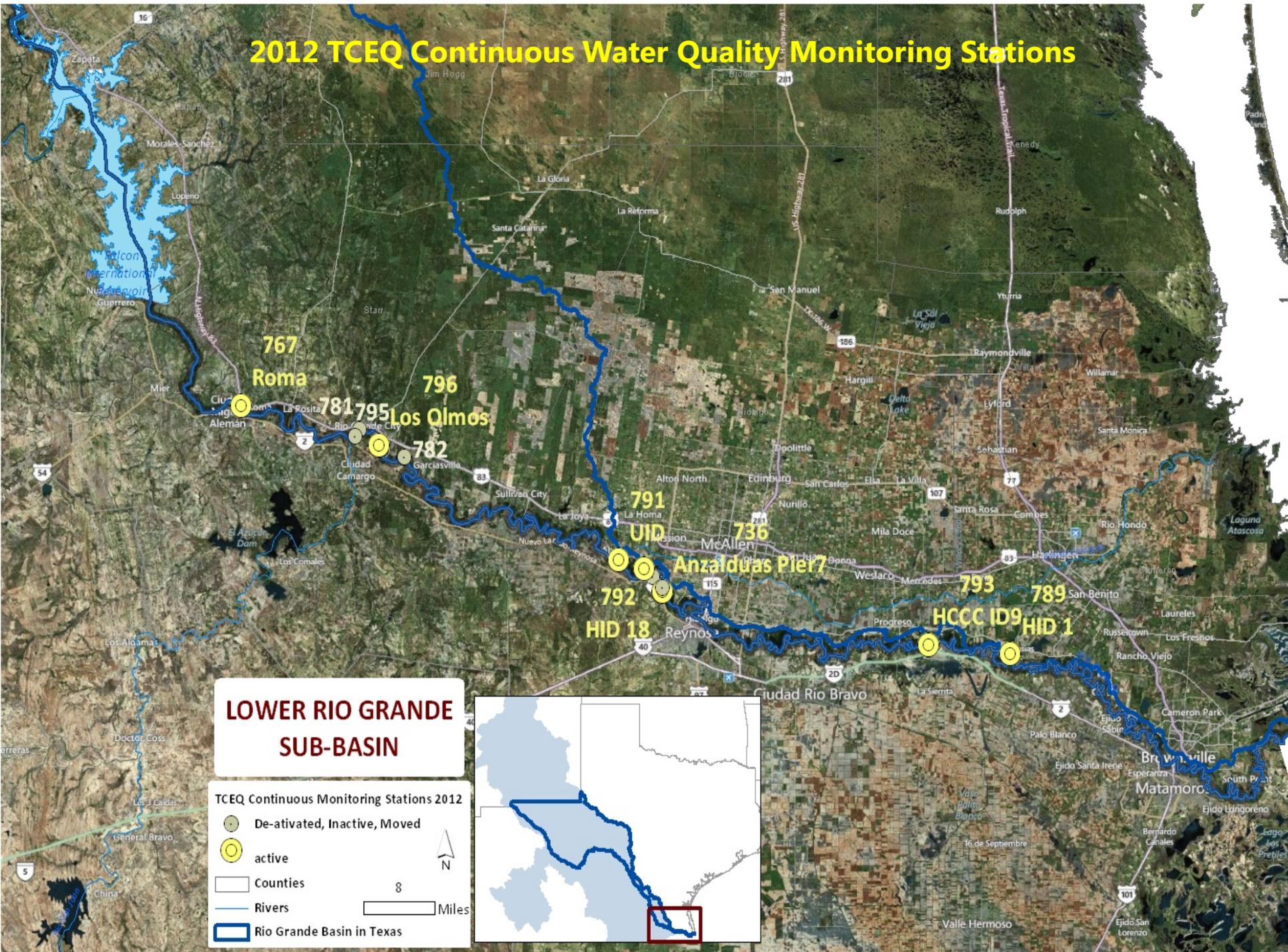
Projects in the Lower RG addressing bacteria and water quality

TCEQ Continuous Water Quality Monitoring

- Continuous Water Quality Monitoring (CWQM) stations monitor water quality parameters in selected watersheds throughout Texas on a 24- hour basis.
- Data is transmitted to the TCEQ and is reported at “near real time.”
- Evaluate TDS (salinity), but can monitor other parameters as well.
- 7 CWQM stations used by TCEQ RG Watermaster in the Lower RG area.
 - important for irrigation



2012 TCEQ Continuous Water Quality Monitoring Stations

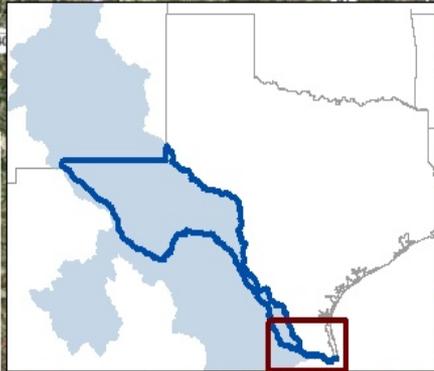


LOWER RIO GRANDE SUB-BASIN

TCEQ Continuous Monitoring Stations 2012

- De-activated, Inactive, Moved
- active
- Counties
- Rivers
- Rio Grande Basin in Texas

N
 8 Miles



Projects in the Lower RG addressing bacteria and water quality

USIBWC CRP Basin Summary Report

- 5-year report
- Will include watershed characterization and spatial analysis
- May review land use, discharges, hydrology, water quality, tributaries, and any other useful characteristics.



Projects in the Lower RG addressing bacteria and water quality

Lower RG Watershed Initiative

- **Binational conceptual project**
- **Pilot project** to address water quality problems and concerns in the Lower Rio Grande/Río Bravo below Falcon Reservoir (Segment 2302) through binational cooperation.
- **Goal** → is to develop a **binational watershed-based plan** for reducing bacteria levels in the southernmost stretch of the Rio Grande.
 - Additional water quality concerns may also be addressed (e.g. salinity and dissolved oxygen)
- Serve as an **institutional model** for addressing additional trans-boundary water quality issues in other portions of the Rio Grande.



CRP Website

www.ibwc.gov/CRP/Index.htm



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The International Boundary and Water Commission, U.S. Section (USIBWC) Texas Clean Rivers Program (CRP) is responsible for collecting water quality data throughout the Texas portion of the Rio Grande Basin. CRP is a state fee-funded program for water quality monitoring, assessment, and public outreach, and aims to maintain and improve the quality of water within each river basin in Texas through partnerships with the Texas Commission on Environmental Quality (TCEQ) and participating entities. [More...](#)



NEWS JUNE 2011:
LOWER RIO GRANDE BASIN ADVISORY MEETING SCHEDULED FOR JUNE 22 IN WESLACO, TX.
FINAL 2011 BASIN HIGHLIGHTS REPORT POSTED ON PUBLICATIONS PAGE.
LAREDO BACTERIA SPECIAL STUDY SAMPLING CONDUCTED MAY 2011. STUDY PLAN AND MEDIA ARTICLES POSTED ON STUDIES PAGE.
WORLD WATER DAY STUDENT DRAWING CONTEST WINNING ENTRIES WILL BE POSTED ON GALLERY IN LATE JUNE.
UPPER PECOS AQUATIC LIFE MONITORING VIDEO AVAILABLE ON GALLERY.
USIBWC CRP CONTINUES TO WORK WITH EPCC FOR SERVICE LEARNING PROGRAM OPPORTUNITIES.

Study Area Locate IBWC stream gages, data and other useful map information using the USIBWC GIS Interactive Map page. Also has static maps of the Rio Grande Basin	Monitoring Station Data View a list of monitoring stations by segment in the Rio Grande basin. Click on the station ID to view an Excel file with water quality data for that station from 1995 to present
Calendar / Current Activities Learn about upcoming events and current activities of the Clean Rivers Program	Publications View the CRP Basin Reports, outreach publications, administrative docs, and QAPP
Media Gallery See photos and videos of past CRP events and monitoring activities	Participation Learn about the CRP Basin Advisory Committee and ways to get involved

- Data
- Maps
- Calendar
- Publications
- Studies
- Photos
- Videos
- Links, etc

Thank you!



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