



Bacteria Levels in the Lower Rio Grande

Annual Water Quality Update and Basin Advisory Meeting

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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

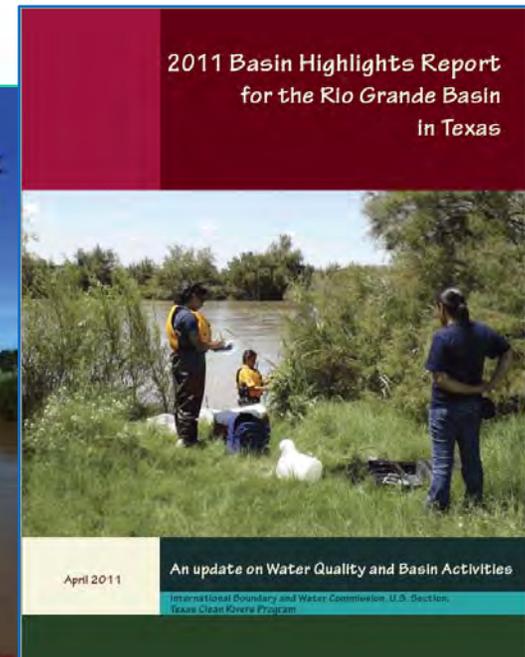
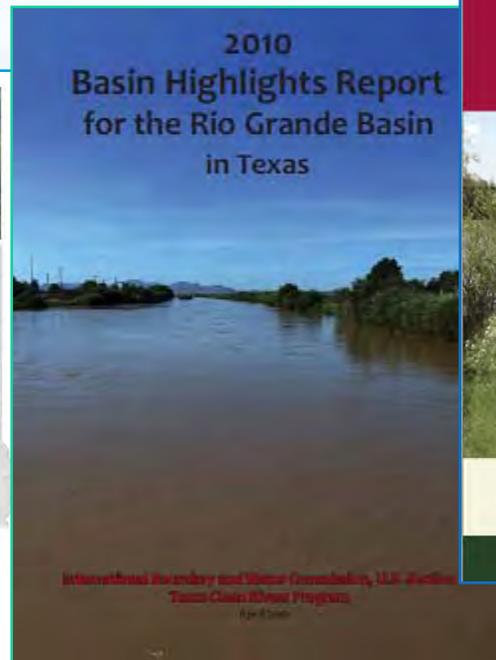
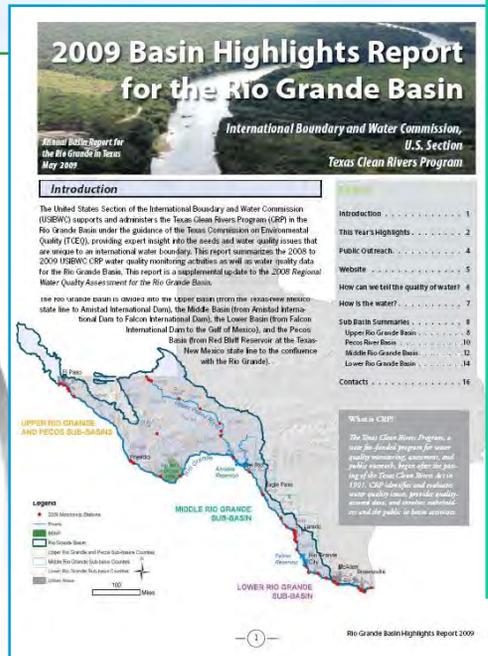
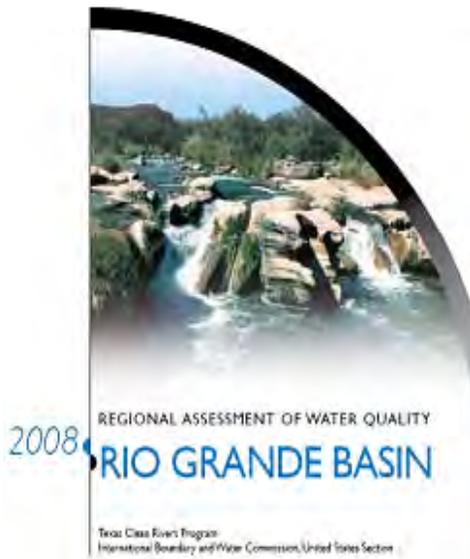
- Routine monitoring
- Special Studies



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?



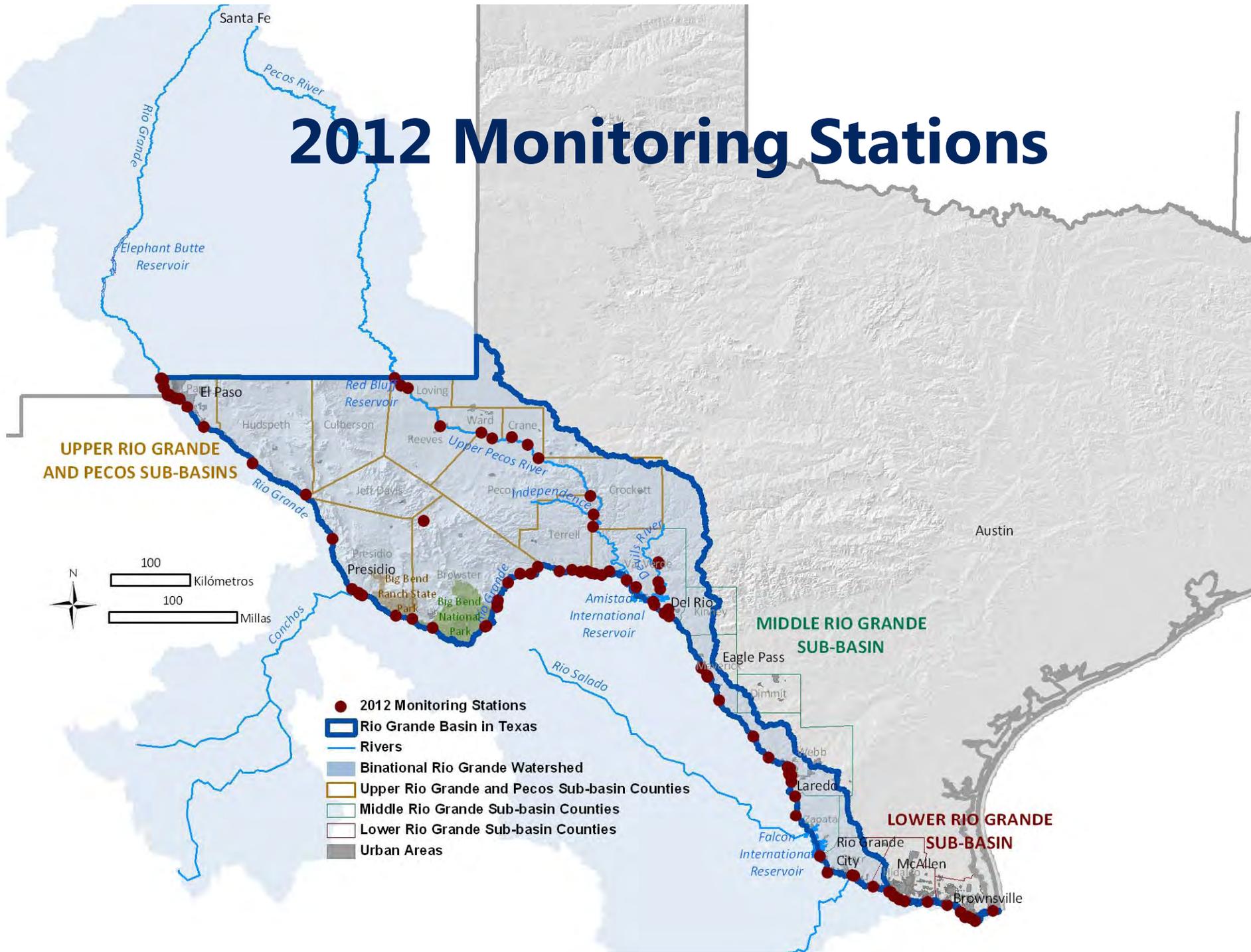
Routine parameters

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

Non-routine

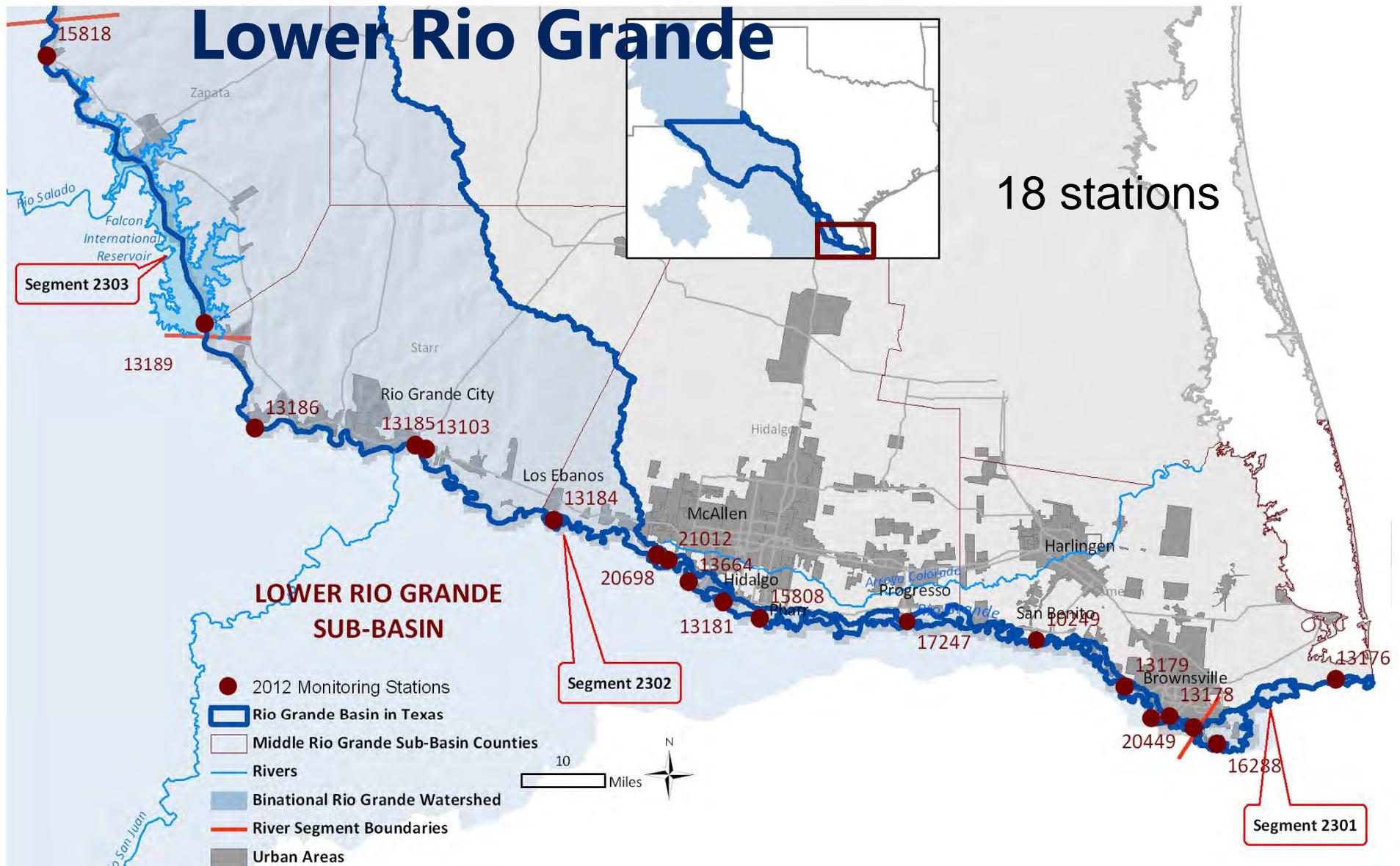
- organics in sediment
- metals
- biological data

2012 Monitoring Stations



2012 Monitoring Stations –

Lower Rio Grande



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

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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

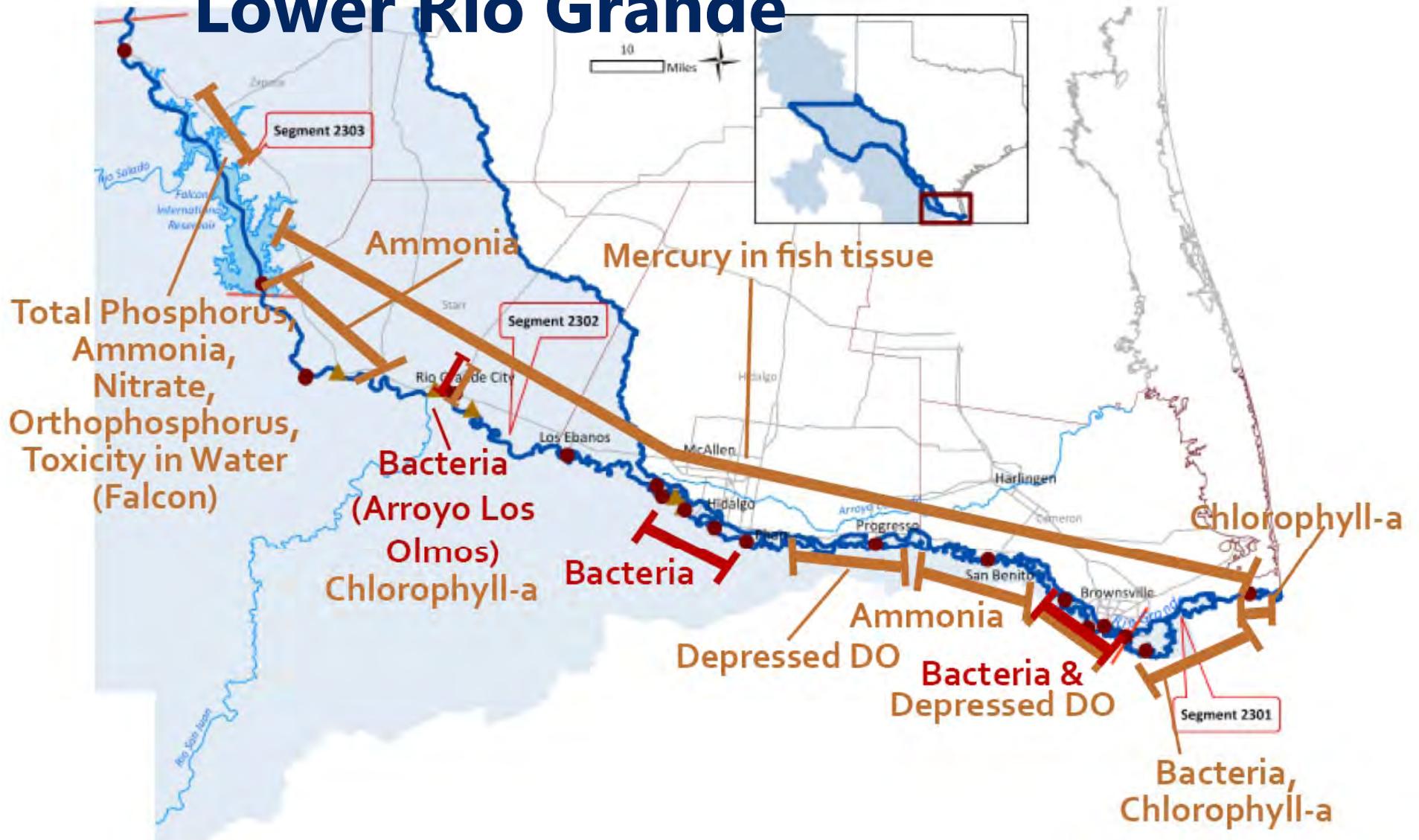
SEGMENT	USES	TDS (mg/l)	Bacteria (#/100 ml)
2301 – Tidal	<ul style="list-style-type: none"> • Primary Contact Recreation • Excellent Aquatic Life 	--	35 Enterococci
2302 – Below Falcon	<ul style="list-style-type: none"> • Primary Contact Recreation • High Aquatic Life • Sole-source public drinking supply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

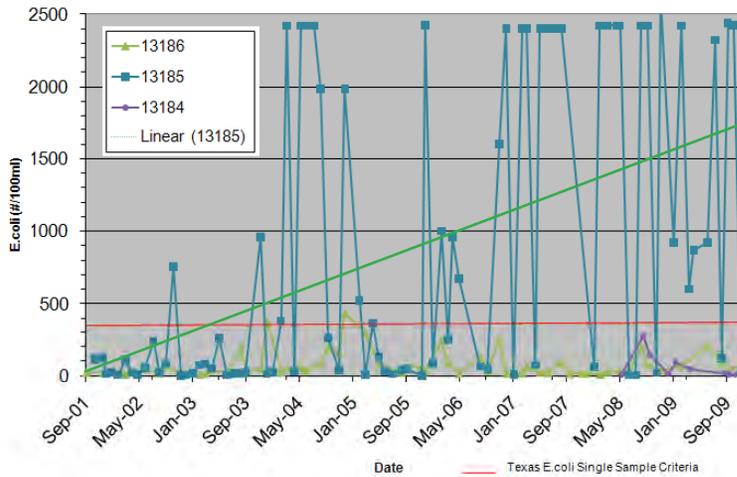
CONCERNS → almost don't meet standards,
or have high values of parameters for which
there are no standards

2010 Impaired Waters in the Lower Rio Grande

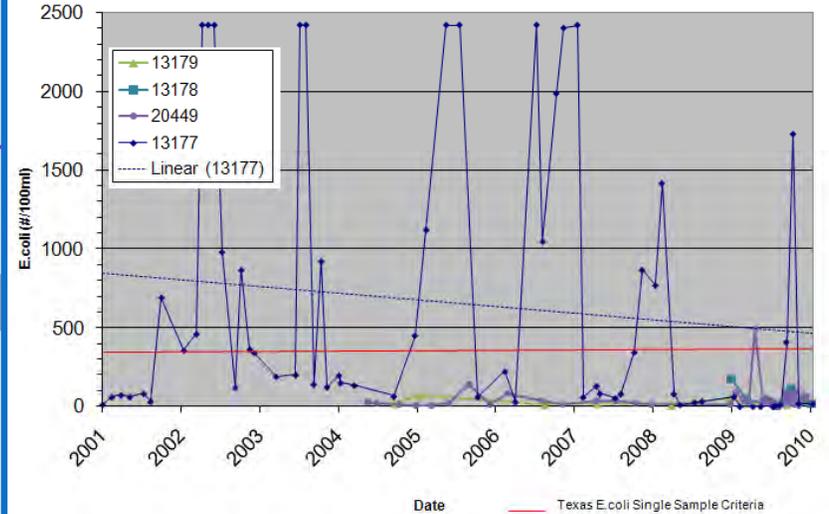


Bacteria – Lower RG

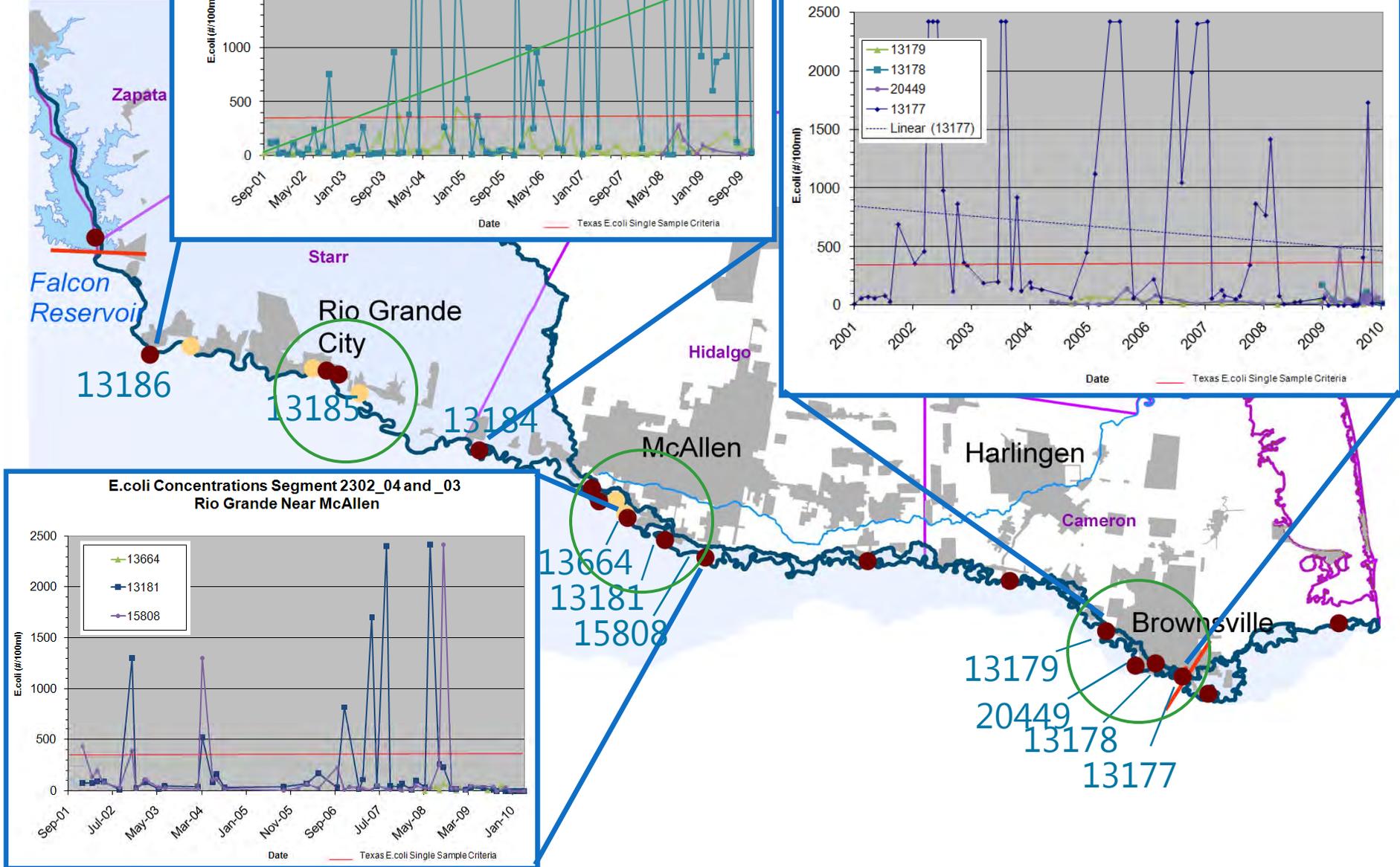
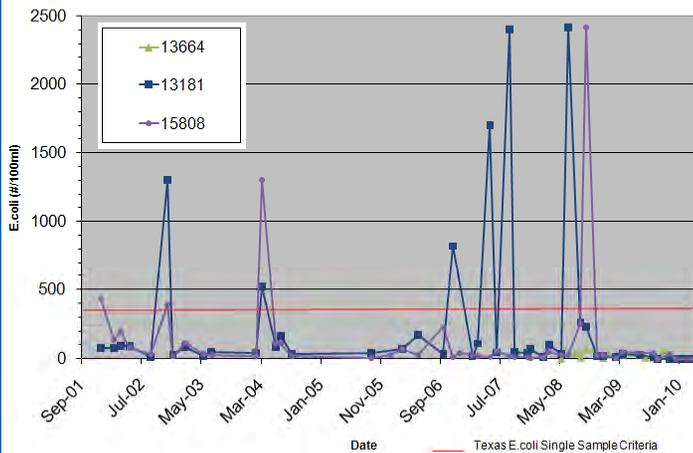
**E.coli Concentrations Segment 2302_06
Rio Grande Near Rio Grande City**



**E.coli Concentrations Segment 2302_01
Rio Grande Near Brownsville/Matamoras**



**E.coli Concentrations Segment 2302_04 and _03
Rio Grande Near McAllen**



Arroyo Los Olmos



Alex Flood Bacteria Sampling



- To support IBWC Mercedes flood operations
- USIBWC CRP collected 59 bacteria samples in structures, floodways, and Rio Grande flood waters
- Bacteria low

Brownsville Bacteria Special Study

To characterize bacteria impairment in Brownsville

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

Study did not pick up historically high bacteria



Brownsville Bacteria Special Study

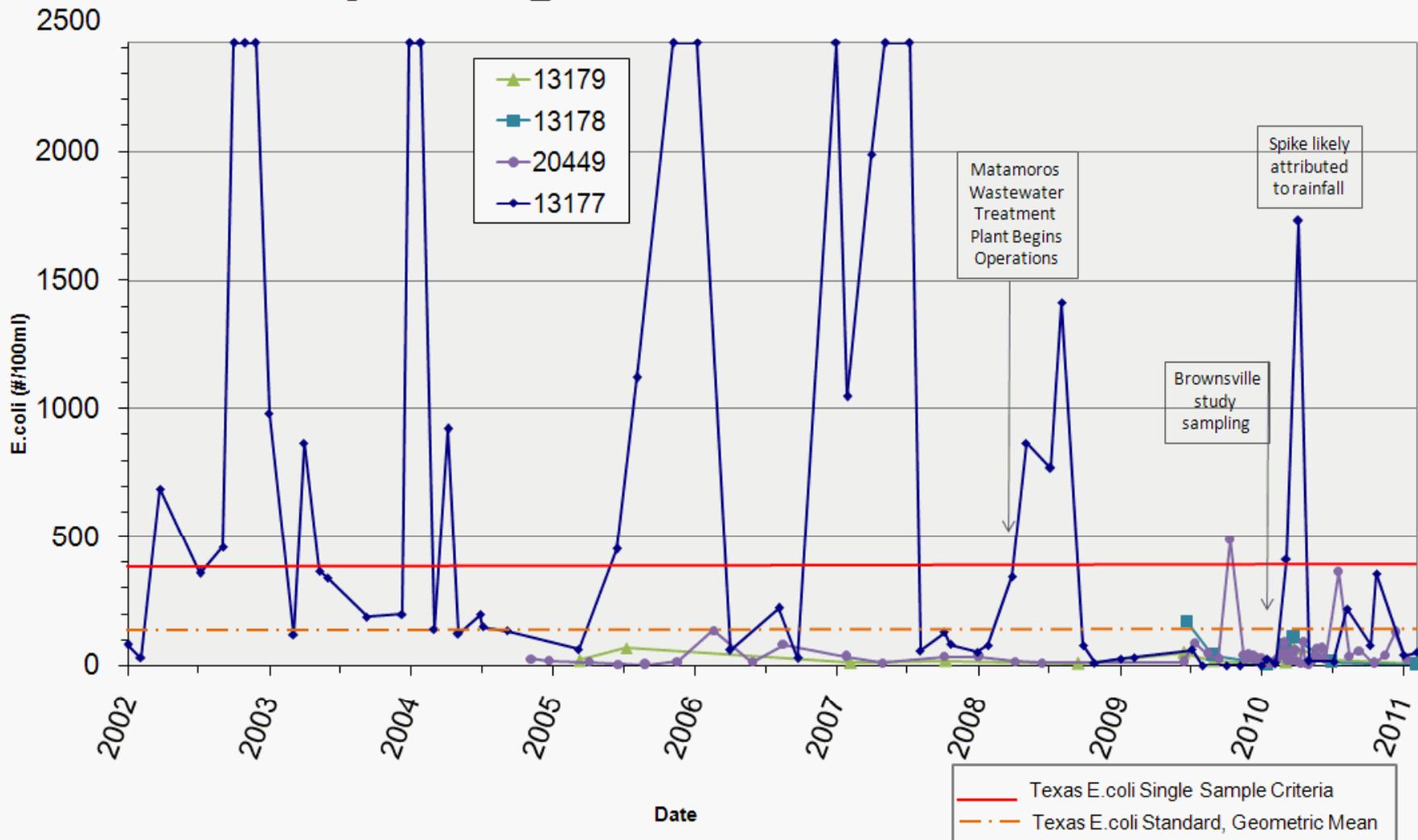
RESULTS

- 63 total bacteria samples were taken
- Study did not pick up historically high bacteria
- Report documents total of 37 features on both banks
 - Pipes, drains, outfalls, structures
 - Trash dumps, goat trails
- No one feature could be pointed to as a likely cause
- Wastewater infrastructure improvements likely cause of decrease bacteria



Bacteria in the Brownsville Area

Historical E.coli Concentrations 2002 to 2011
Segment 2302_01 - Rio Grande Near Brownsville/Matamoros



Matamoros Wastewater Plant



- First WWTP in Matamoros
 - Certified by BECC
 - Funded by NADBank in 2003
 - Completed 2008
 - Inaugurated 2009
- Secondary Treatment, Capacity 390 l/s
- Comprehensive Water and Sanitation Project



→ improving bacteria in the RG

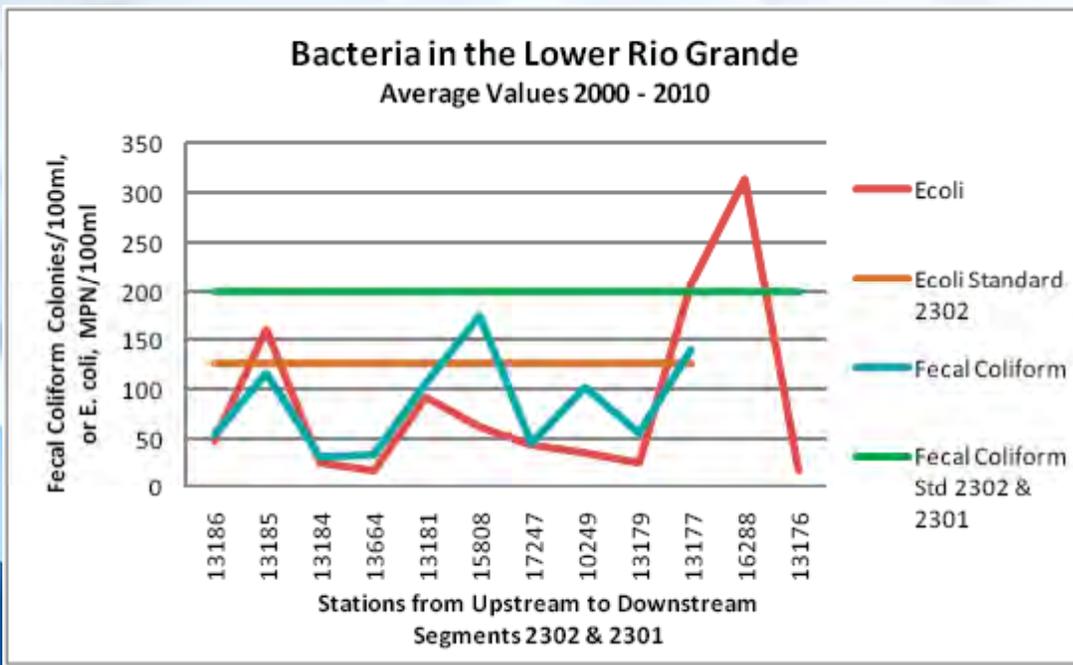
Lower RG Bacteria Summary

Increasing bacteria:

- Rio Grande City
- Hidalgo/McAllen

Decreasing bacteria

- Brownsville (impaired section)



Projects in the Lower RG

Addressing bacteria and water quality



Lower Rio Grande Watershed Initiative



USIBWC CRP Watershed Characterization



TCEQ Continuous Monitoring

Project
Address



Lower Rio Grande
Watershed
Initiative

Lower RG Watershed Initiative

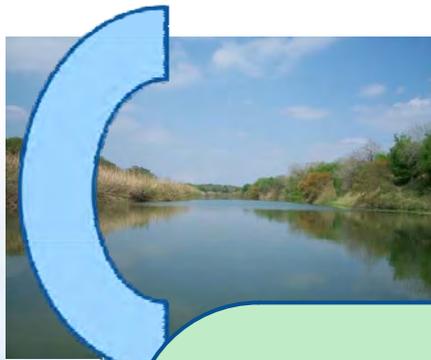
- Bilingual initiative
- Pilot project to restore and protect water quality in the Lower Rio Grande/Río Bravo below Falcon Reservoir.
- Goal → develop a bilingual watershed-based plan to reduce and mitigate pollutants of concern
- Serve as an institutional model

Initial Aspects Include:
Institutional analysis

Stakeholder/ community interviews and surveys
Preliminary identification of data gaps
outreach

Projects in the Lower RG

Addressing bacteria and water quality



Watershed Characterization

- Spatial Analysis Project to characterize impaired water bodies
 - Review land-use, discharges, hydrology, water quality, tributaries, etc
 - Evaluation of sources of contamination
 - → Series of maps and recommendations

Continuous Monitoring

- Continuous Water Quality Monitoring (CWQM)
 - Evaluate TDS (salinity)
 - 8 CWQM stations used by TCEQ RG Watermaster
 - → important for irrigation



**TCEQ
Continuous
Monitoring**

CRP Website

www.ibwc.gov/CRP/Index.htm

International Boundary & Water Commission
United States and Mexico
United States Section
Est. 1889

Celebrating Our 120th Year Anniversary
1889 - 2009

RECOVERY.GOV

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USIBWC Texas Clean Rivers Program

for the Rio Grande Basin

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...](#)

THE TEXAS CLEAN RIVERS PROGRAM

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 DAPP.

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
- Links, etc

Thank you!



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