

Annual Update on Water Quality for the Rio Grande and the Clean Rivers Program



USIBWC CITIZENS' FORUM
AND UPPER RIO GRANDE BASIN
ADVISORY MEETING
NOVEMBER 6, 2013

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TEXAS CLEAN RIVERS PROGRAM
U.S. SECTION,
INTERNATIONAL BOUNDARY AND WATER COMMISSION



TX Clean Rivers Program History



- 1991 Texas Clean Rivers Act
- 1998 TCEQ-USIBWC partnership
- 2014 monitoring sites on Rio Grande:
 - CRP – 65 sites
 - TCEQ – 37 sites

What is the Clean Rivers Program?

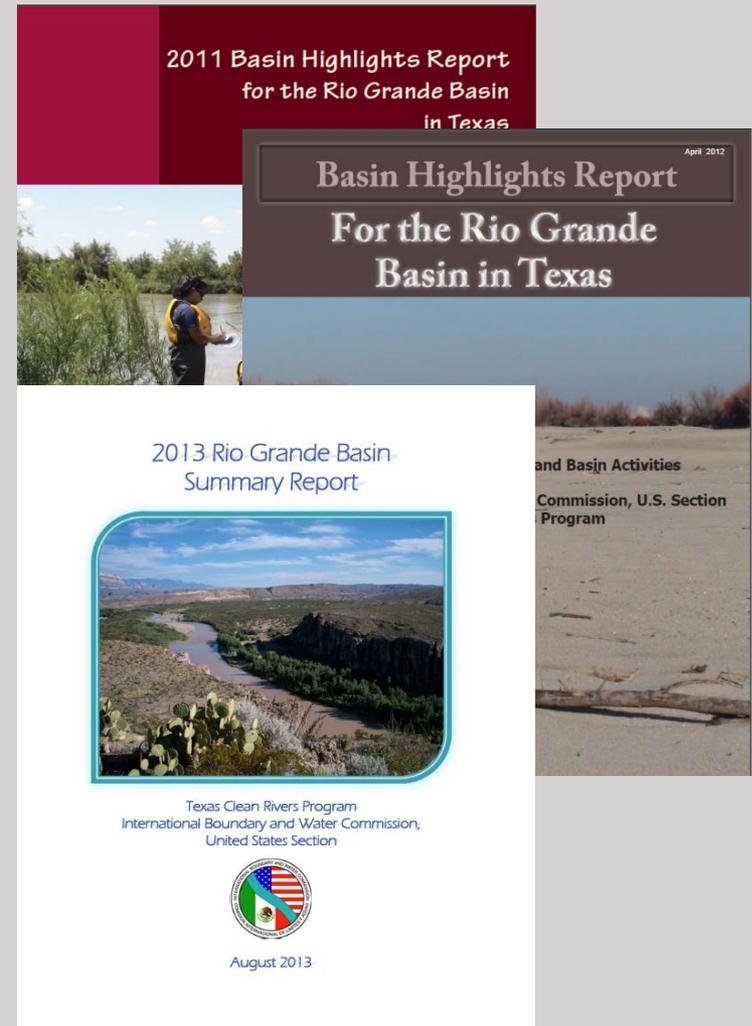


- A state fee-funded program
- A group of federal, state and local organizations that have an interest in the health of our state's streams, rivers and lakes.
- The USIBWC Clean Rivers Program collects water quality data from the Rio Grande and Pecos Rivers.
- We then use that data to:
 - identify and evaluate water quality issues
 - establish priorities for corrective actions
 - work to implement those actions.

CRP Activities



- **Water Quality Monitoring**
 - Routine monitoring
 - Special studies
- **Water Quality Assessment**
- **Publications**
 - Annual Basin Highlight Report
 - 5-year Basin Summary Report 2013 now available
- **Outreach**
- **Environmental Education**
- **Public Participation**
 - Basin Advisory Committee



CRP Activities



Upcoming Student Drawing and Essay Contest



- Asking schools in the Rio Grande Basin to submit their student's artwork and essays (intended for 9-12).
 - The importance of water
 - How the Rio Grande was important to them
 - How they enjoy the river
- Accepting entries now until December 6, 2013.
- Three categories (K-4, 5-8, 9-12)
- Winners are used in the 2014 Basin Highlight Report and the first place drawing winner will be the cover!

THE TEXAS CLEAN RIVERS PROGRAM



Student Drawing and Essay Contest

Contest Rules

- Contest is open to all schools within the Rio Grande Watershed in Texas.
- All drawing and essay submissions must be received by 4pm Friday December 6, 2013.
- Drawings can be in color or black and white and can be done with any flat medium such as pencil, paint, pastels, colored pencils, marker, etc. Flat collages will also be accepted.
- Entries can be submitted as hardcopies or electronic copies. Hardcopies must be 8.5" by 11". Electronic submissions must be scanned between 300 to 600 dpi with a maximum file size of 10MB.
- All submissions must be made by a teacher and must include: name of artist/writer, age, school and city, teacher's name, and age group:
- Winning entries will be judged by a committee on creativity, representation of the Rio Grande, or representation of the importance of water.
- Winning entries will be published in the 2014 USIBWC CRP Rio Grande Basin Highlights Report.
- All participants will receive a printed copy of the report.
- Teachers will be notified of winning entries and should include their contact information.
- Submit hardcopy entries to USIBWC CRP, 4171 N Mesa C100, El Paso, TX 79902. Submit email entries to the email address below.
- For more information, contact Lisa Ramirez at 915-832-4779, lisa.ramirez@ibwc.gov

Drawing Contest Age Groups

- 1) Kindergarten to fourth grade
- 2) Fifth grade to eighth grade
- 3) Ninth grade to twelfth grade

Essay Contest

- 1) Ninth grade to twelfth grade but all ages are welcome to submit entries.

- Entries will not be returned and may be used in USIBWC reports or website.
- There will be at least 3 winning entries, one in each age group.

Teachers! Here's your opportunity to talk about water and the Rio Grande in your classroom. Have your students draw how water is important to them, how the Rio Grande (or any of its tributaries) is important to them, or how they enjoy the river. Your students' work could be published in our 2014 Rio Grande Basin Highlights Report!



EPCC Service Learning Program



- EPCC grant for STEM students through Service Learning
- IBWC CRP is a collaborating entity (with Zoo & Keystone)
- Students can gain hands-on experiences with CRP in:
 - Water quality monitoring
 - River cleanups
 - Outreach activities
 - Scientific literature reviews, etc
 - Creation of materials – videos, brochures, websites, etc
- Grant includes training of teachers to incorporate SL in classroom.

CRP EPCC Service Learning Program Activities



- Adopted a river section through the Adopt-a-River Program.
- Graphing of data
- Current projects:
 - Nutrient data analysis
 - Outreach with CRP



Are you interested in monitoring?



- Texas Stream Team - Volunteer WQ Monitoring Program
- Great for teachers
- <http://txstreamteam.meadowscenter.txstate.edu/>
- Contact Leslie Grijalva

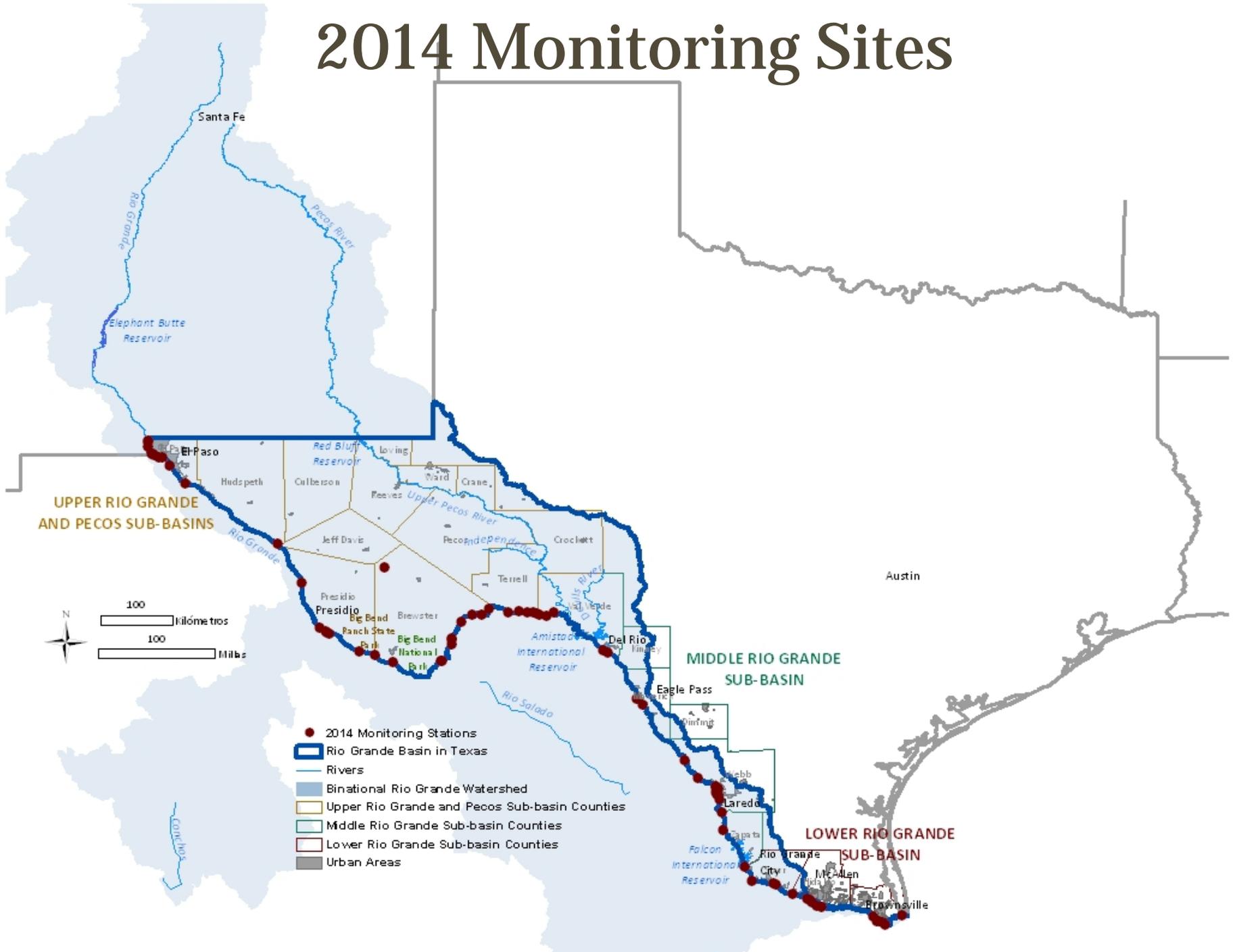


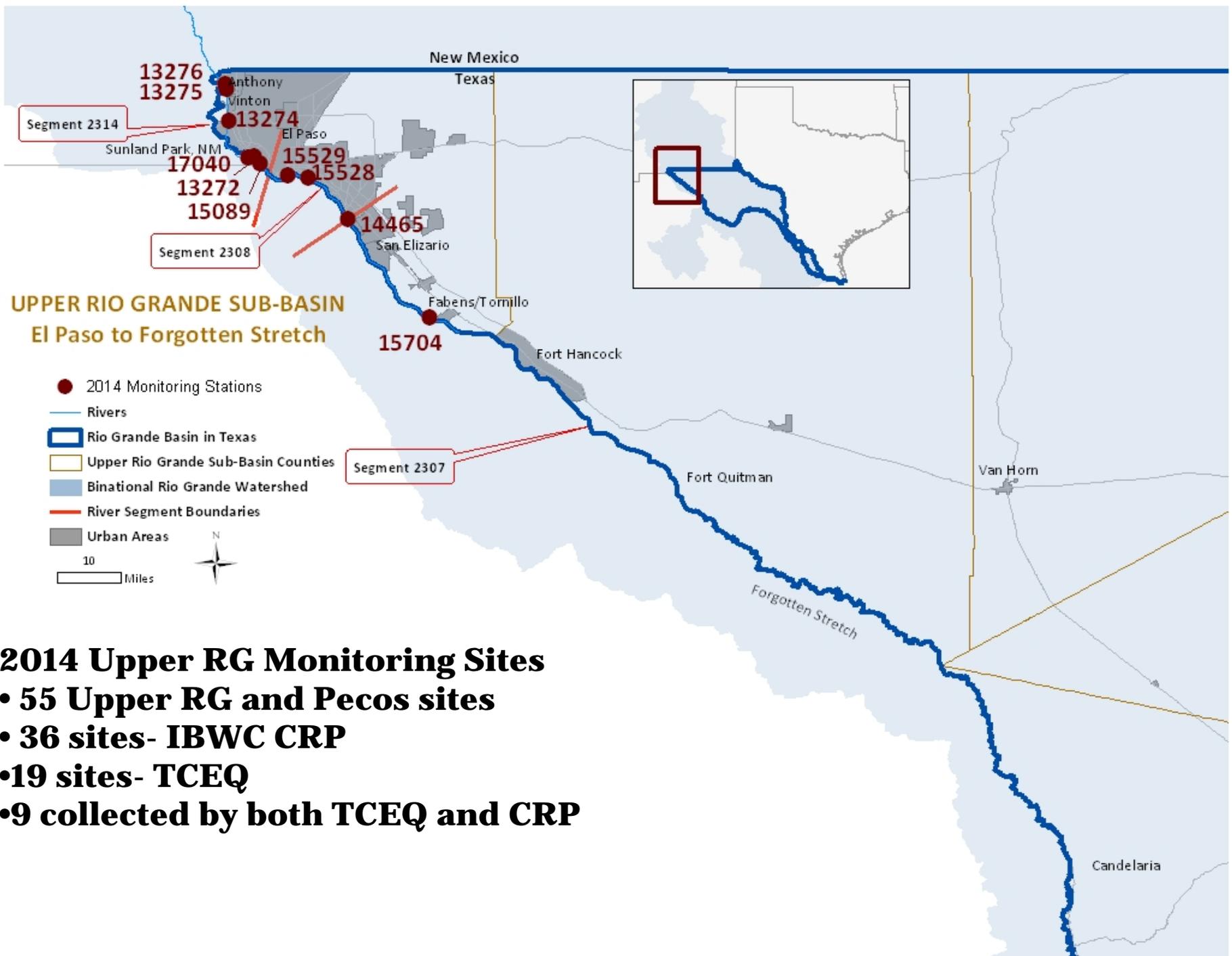
Local Partnerships



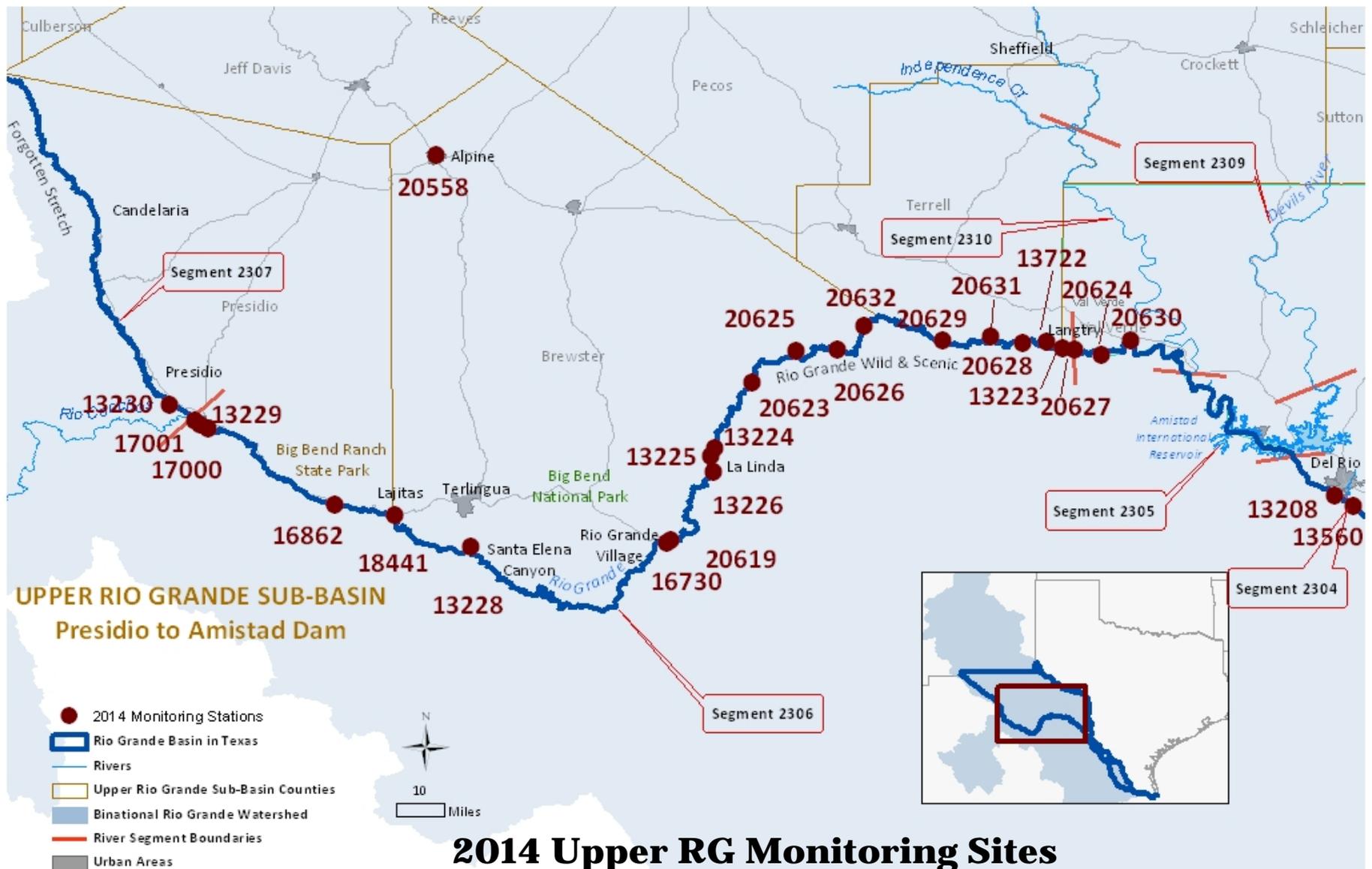
- **Partners in the Upper Rio Grande help monitor, collect, & analyze samples:**
 - USIBWC Field Offices at El Paso and Presidio
 - University of Texas at El Paso
 - El Paso Community College
 - El Paso Water Utilities
 - TCEQ El Paso Field Office
 - Big Bend National Park
 - Big Bend Ranch State Park
 - TCEQ Continuous Water Quality Monitoring Program
- **All use TCEQ sampling procedures and an accredited laboratory for analysis**

2014 Monitoring Sites





- 2014 Upper RG Monitoring Sites**
- 55 Upper RG and Pecos sites
 - 36 sites- IBWC CRP
 - 19 sites- TCEQ
 - 9 collected by both TCEQ and CRP



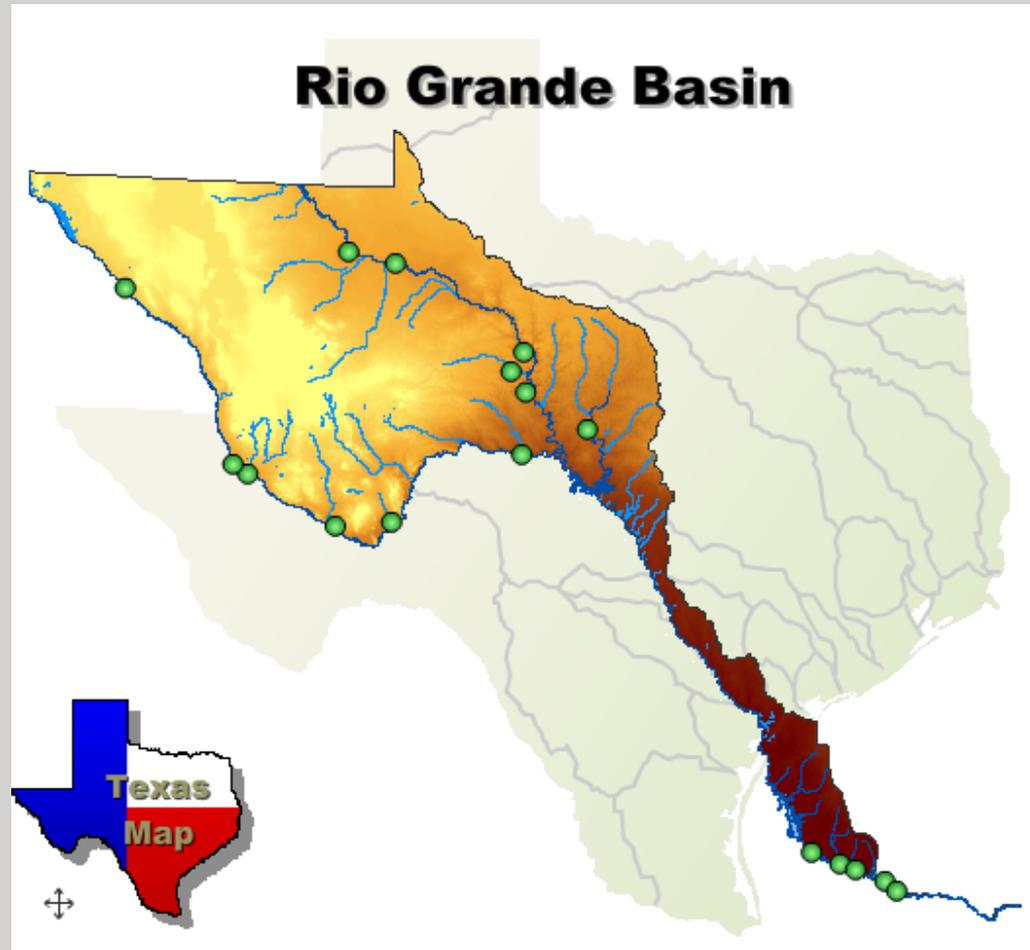
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TCEQ Continuous Water Quality Monitoring



- www.texaswaterdata.org
- 16 CWQM stations in RGB
 - Temp
 - pH
 - sp cond
 - water level
 - TDS
 - DO



Main Rio Grande Water Quality Issues



- **Bacteria**
- **Nutrients**
- **Salts**
- **Depressed DO**
- **Fish kills**
- **Illegal discharging**
- **Trash**
- **Exotic species**

Main Issues



An example of discharging.



An example of an invasive species, in this case aquatic weeds.

Main Issues



A large fish kill



**Fish kill in Presidio, TX,
June 2011**



**Foam in the Rio Grande, possibly due to
high phosphate levels.**

2012 Assessment (Integrated Report)



- States are required by the Clean Water Act to “assess” the health of the river basins
- Water bodies not meeting state water quality standards are listed on the impaired waters list (303d list)
 - Impairments → not meeting standards
 - Concerns → near non-attainment of standards, or
→ issues with parameters where standards don't exist
- 2012 assessment lists 2306, 2307, 2311, 2314 as impaired
- 2012 assessment delisted 2306_08 for bacteria and 2311_04 for depressed dissolved oxygen

2012 Assessment Impaired Segments



- **2012 assessment lists 2306, 2307, 2311, 2314 as impaired**
 - 2306_01-08 Chloride, Sulfate, TDS
 - 2307_03-05 Bacteria; 01-05 Chloride and TDS
 - 2311_03 Depressed Dissolved Oxygen
 - 2314_01 Bacteria

List of Impairments and Concerns in the Upper Rio Grande

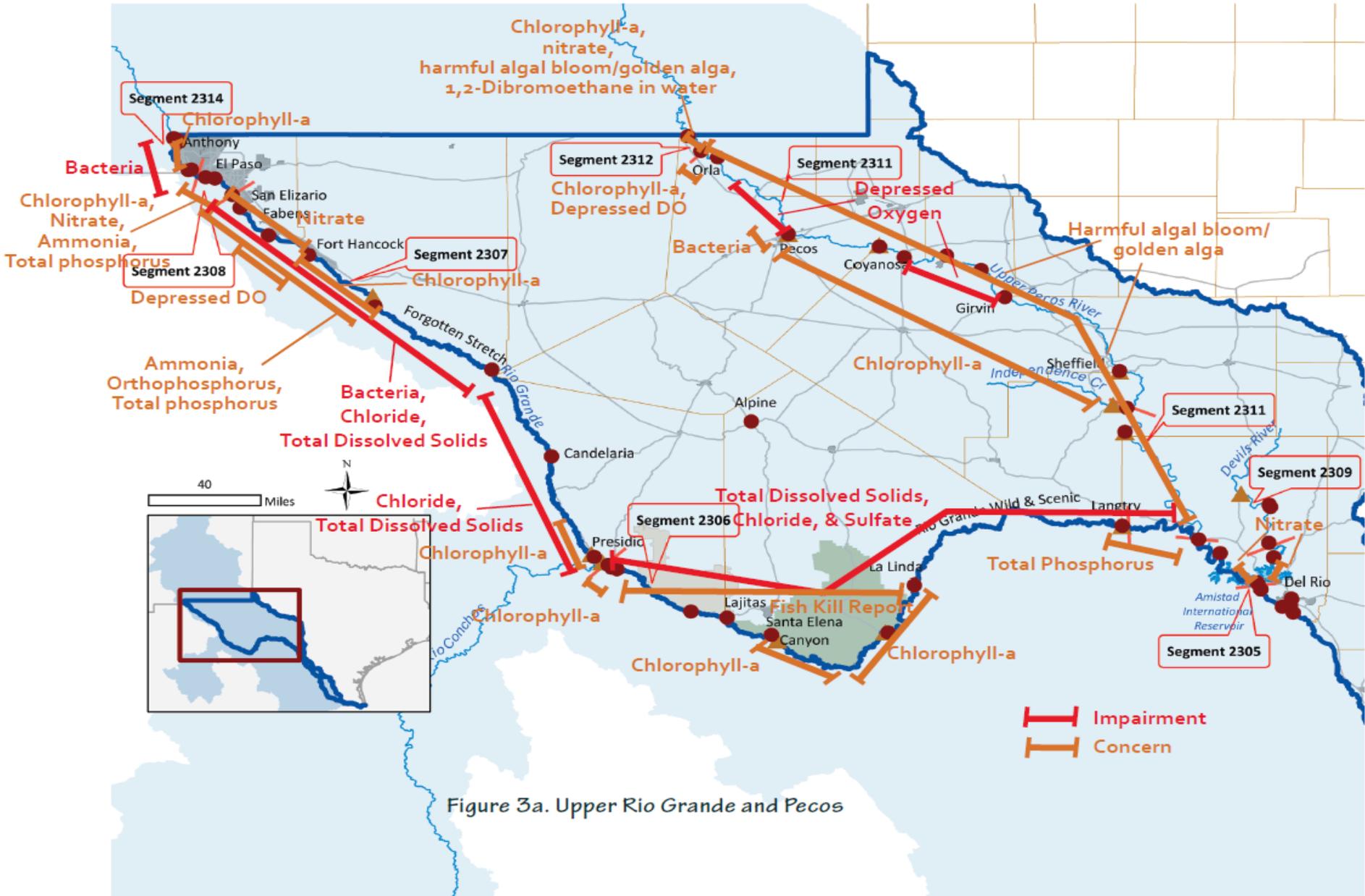
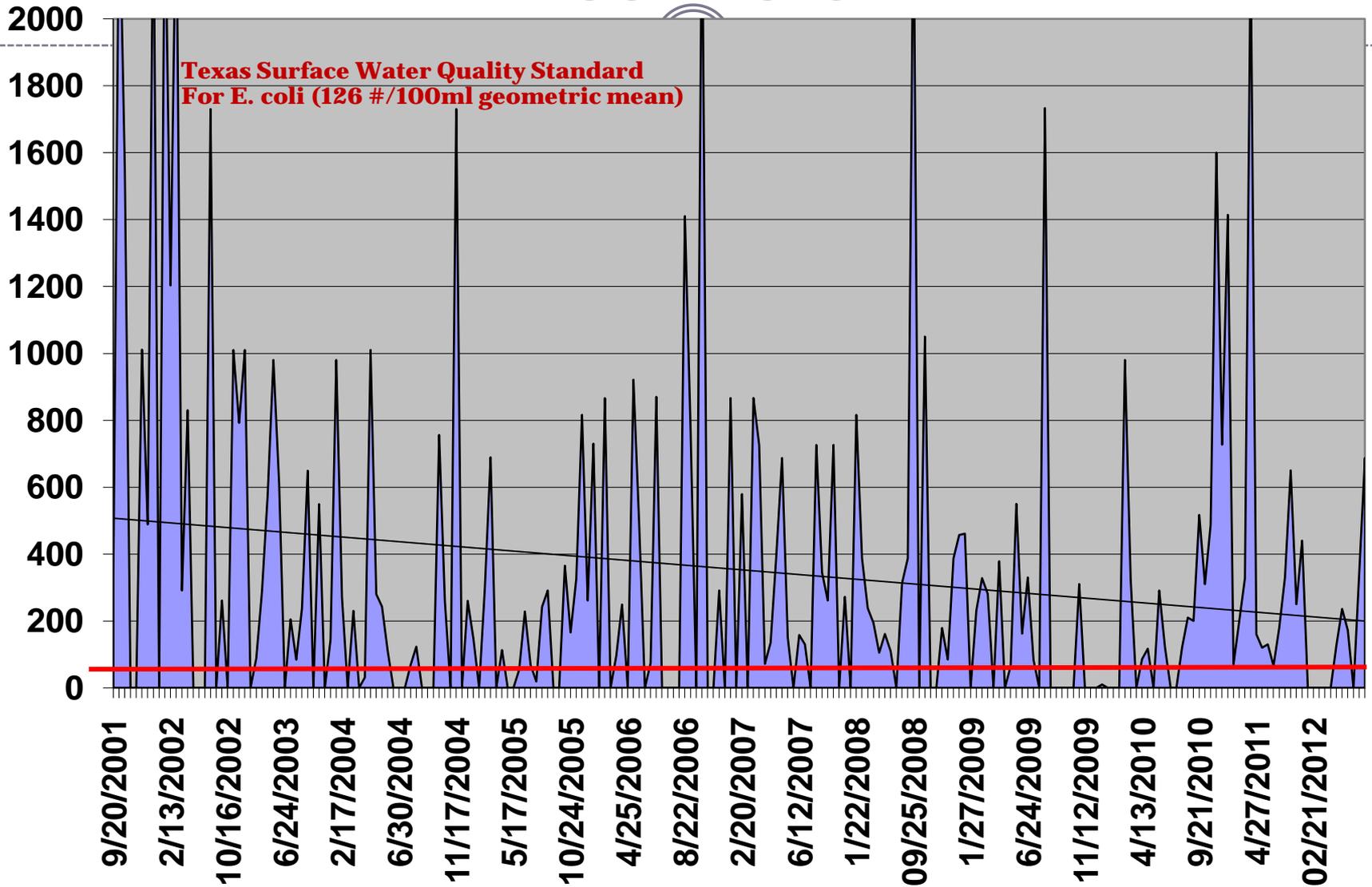
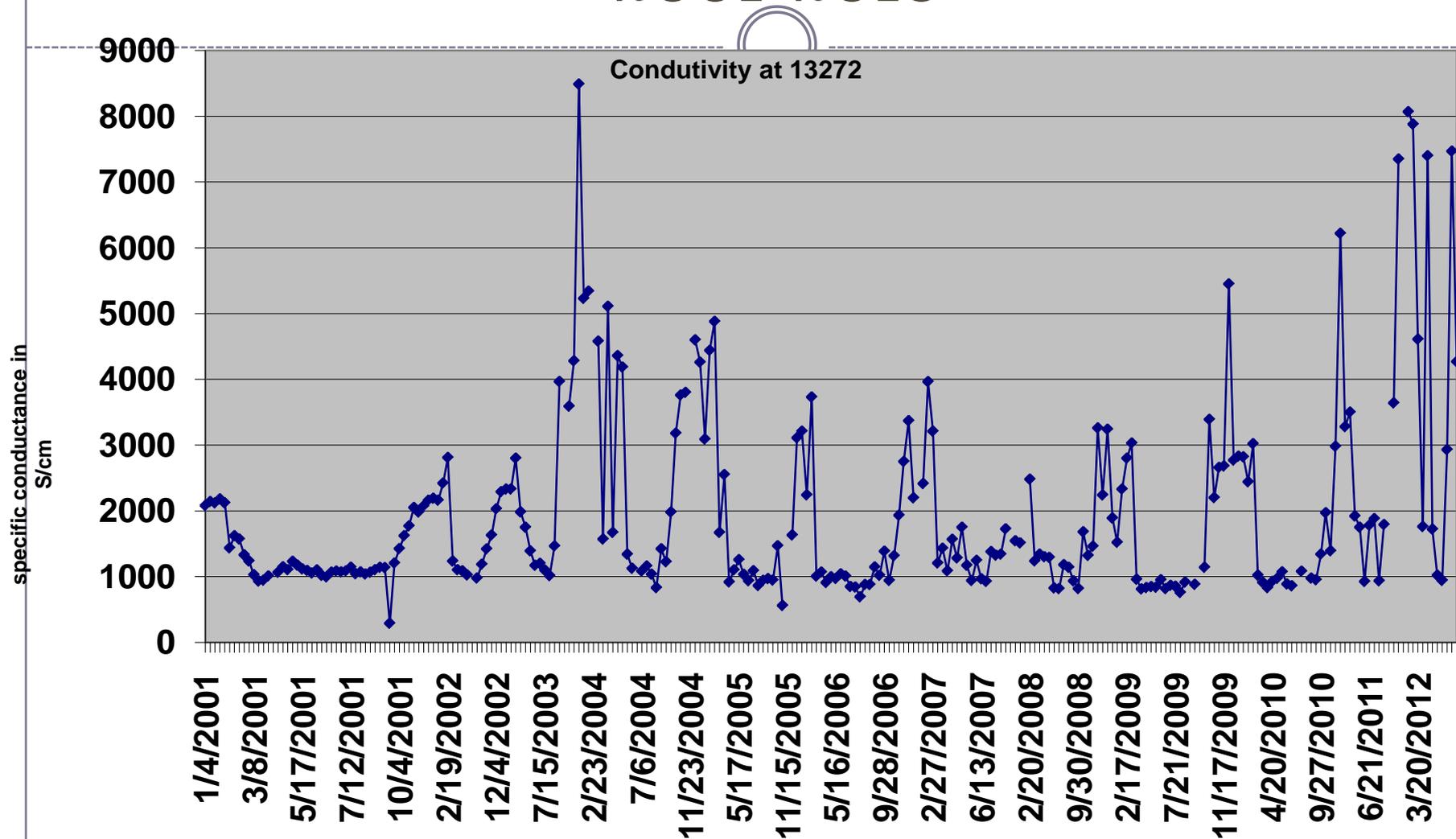


Figure 3a. Upper Rio Grande and Pecos

E coli at 13272 in El Paso, 2001-2013



Conductivity at 13272 in El Paso, 2001-2013



2010 TSWQ Standards Revisions – Affects to RG Basin



- Contact Recreation → primary and secondary (all in RG are still primary) → E. coli Bacteria standards have not changed
- Entero → bacteria indicator in saline water (Pecos, tidal)
- Nutrient criteria added for Red Bluff Reservoir (chlorophyll-a) 25.14 ug/L
- TEXAS ADMINISTRATIVE CODE - [TITLE 30](#) ENVIRONMENTAL QUALITY [PART 1](#) TEXAS COMMISSION ON ENVIRONMENTAL QUALITY [CHAPTER 307](#) TEXAS SURFACE WATER QUALITY STANDARDS RULE §307.10

Draft 2012 Water Quality Standards

Texas Commission on Environmental Quality
Chapter 307 - Texas Surface Water Quality Standards
Rule Project No. 2007-002-307-PR

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RIO GRANDE BASIN		USES				CRITERIA						
		Recreation	Aquatic Life	Domestic Water Supply	Other	Cl ⁻¹ (mg/L)	SO ₄ ⁻² (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Indicator Bacteria ¹ #/100ml	Temperature (°F)
Segment No.	SEGMENT NAME											
2301	Rio Grande Tidal	PCR	E						5.0	6.5-9.0	35	95
2302	Rio Grande Below Falcon Reservoir	PCR	H	PS		270	350	880	5.0	6.5-9.0	126	90
2303	International Falcon Reservoir	PCR	H	PS		200	300	1,000	5.0	6.5-9.0	126	93
2304	Rio Grande Below Amistad Reservoir	PCR	H	PS		200	300	1,000	5.0	6.5-9.0	126	95
2305	International Amistad Reservoir	PCR	H	PS		150	270	800	5.0	6.5-9.0	126	88
2306	Rio Grande Above Amistad Reservoir	PCR	H	PS		300	570	1,550	5.0	6.5-9.0	126	93
2307	Rio Grande Below Riverside Diversion Dam	PCR	H	PS		300	550	1,500	5.0 ²	6.5-9.0	126	93
2308	Rio Grande Below International Dam	NCR	L			250	450	1,400	3.0	6.5-9.0	605	95
2309	Devils River ³	PCR	E	PS		50	50	300	6.0	6.5-9.0	126	90
2310	Lower Pecos River	PCR	H	PS		1,700	1,000	4,000	5.0	6.5-9.0	126	92
2311	Upper Pecos River	PCR	H			7,000	3,500	15,000	5.0	6.5-9.0	33	92
2312	Red Bluff Reservoir	PCR	H			3,200	2,200	9,400	5.0	6.5-9.0	33	90
2313	San Felipe Creek ³	PCR	H	PS		50	50	400	5.0	6.5-9.0	126	90
2314	Rio Grande Above International Dam	PCR	H	PS		340	600	1,800	5.0	6.5-9.0	126	92

¹ The indicator bacteria for freshwater is *E. coli* and Enterococci for saltwater. The indicator bacteria and alternate indicator for Segments 2311 and 2312 are Enterococci and fecal coliform, respectively.

² The dissolved oxygen criterion in the upper reach of Segment 2307 (Riverside Diversion Dam to the end of the rectified channel below Fort Quitman) is 3.0 mg/L when headwater flow over the Riverside Diversion Dam is less than 35 ft³/s.

³ The critical low-flow for Segments 2309 and 2313 is calculated according to §307.8(a)(2)(A) of this title.

Nutrient Criteria



- EPA has mandated that states create **Numeric Nutrient Criteria**

- **2013 Standards:**

- Chlorophyll-a criteria for 75 Reservoirs

- **Still in development:**

- Criteria for rivers and streams

- **→ will impact WWTP effluent limits**

- **→ agriculture**

- USDA 2010 report estimates 65% of farmers are not optimizing nutrient management

Total Phosphorus
Total Nitrogen
Chlorophyll-a
Turbidity

Historical conditions
Stressor Response

Mercury Study



- **CRP will collect water samples for mercury analysis.**
- **Samples will be collected at 14 sites in the Upper RG.**
- **Sent for analysis to the CRP contract laboratory**

TCEQ Least Disturbed Streams

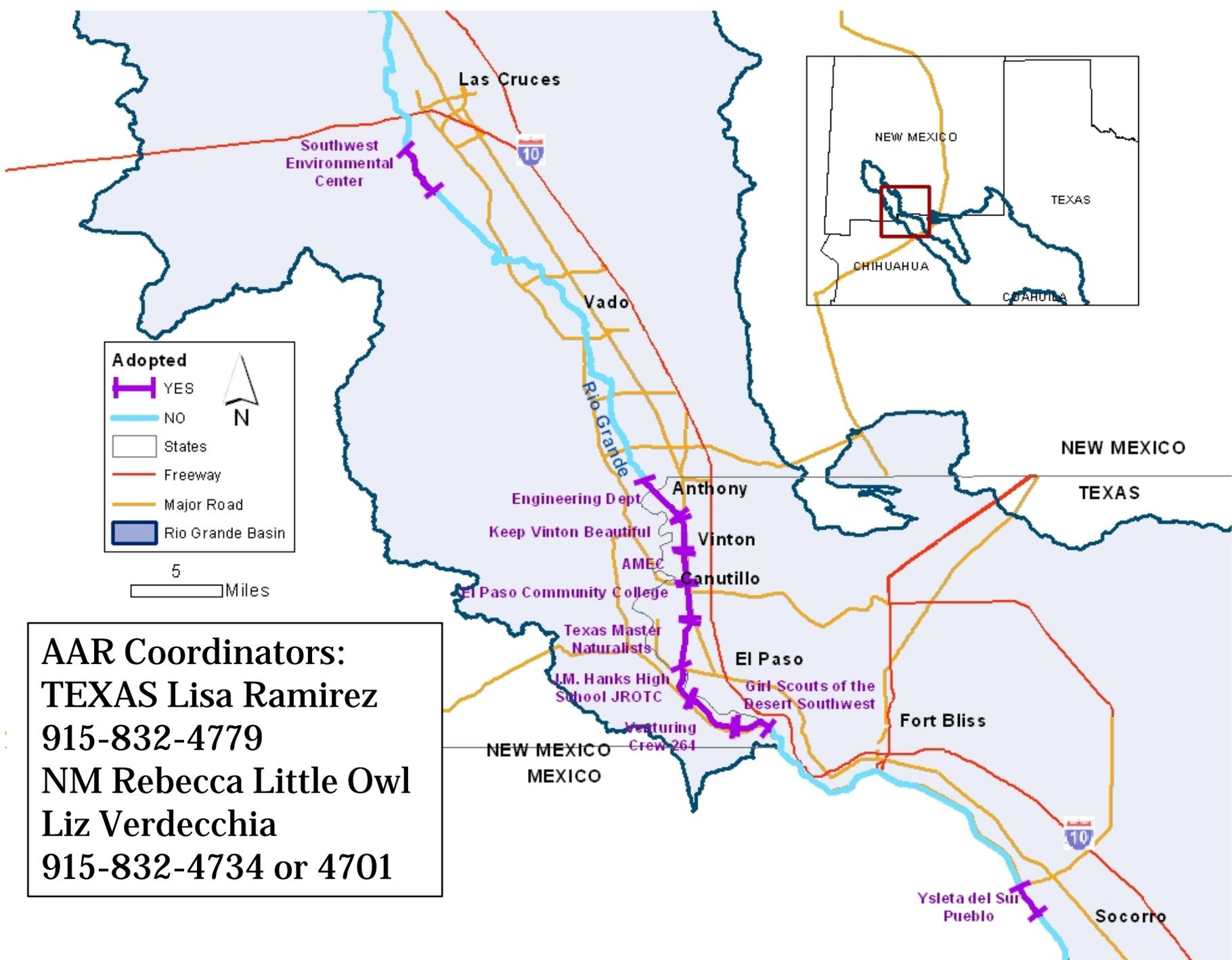


- TCEQ Surface Water Quality Monitoring Program, TCEQ Regional Staff, TPWD
- Sampling over next several years
- Evaluate the biological condition of least disturbed streams in ecoregions throughout Texas
- Includes 2306, Alamito Creek, Devils River, Live Oak Creek, Independence Creek

USIBWC's Adopt-a-River Program

- Community groups adopt a 2-mile section of river for 2 years
- Commit to 2-3 cleanups per year
- Community groups leave trash bags on levee
- IBWC picks up and disposes of trash
- Sign acknowledging group posted
- Sections in NM still available for adoption





Paso del Norte Watershed Council



- Address watershed issues from Elephant Butte to Presidio
- Received grant for watershed plan (319)
 - Intensive bacteria monitoring
 - Bacteria source-tracking
- Currently having monthly stakeholder meetings to update Watershed Restoration Action Strategy
 - Contact Conrad Keyes cgkeyesjr@q.com
or Hilary Bringar hbringar@marronic.com

CRP Website

www.ibwc.gov/CRP/Index.htm



- RECOVERY.gov
- Home
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- Organization
- Mission Operations
 - Flood Control Levee Systems
 - Diversion Dams & Related Structures
 - Storage Dams (Reservoirs) / Power Plants
 - Wastewater Treatment Plants
 - Field Offices
 - TEXAS CLEAN RIVERS
 - Emergency Management
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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...](#)



OCTOBER/NOVEMBER 2013:
LOWER RIO GRANDE CITIZENS FORUM AND BASIN ADVISORY COMMITTEE MEETING RESCHEDULED 11/6/13
2013 RIO GRANDE BASIN SUMMARY REPORT NOW AVAILABLE
PLEASE CHECK THE [CALENDAR](#) FOR THE DATES FOR ANY UPCOMING MEETINGS.

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
Partner Links Access links to the Clean Rivers Program partners and planning agencies and links for	Adopt-a-River Info about USIBWC's Adopt-a-River cleanup

- Data
- Maps
- Calendar
- Publications
- Projects & studies
- Outreach
- RG info
- Photos & videos
- Links, etc

Questions?



USIBWC – CRP

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Or send an email to crp@ibwc.gov

CRP Website

www.ibwc.gov/CRP/Index.htm