

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



**USIBWC CITIZENS' FORUM
AND UPPER RIO GRANDE BASIN
ADVISORY MEETING
JULY 23, 2015**

**LESLIE GRIJALVA AND ANDRES GARCIA
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
- 2015 monitoring sites on Rio Grande:
 - CRP – 67 sites
 - TCEQ – 37 sites
- 11 of those sites are in the El Paso area.

What is the Clean Rivers Program?

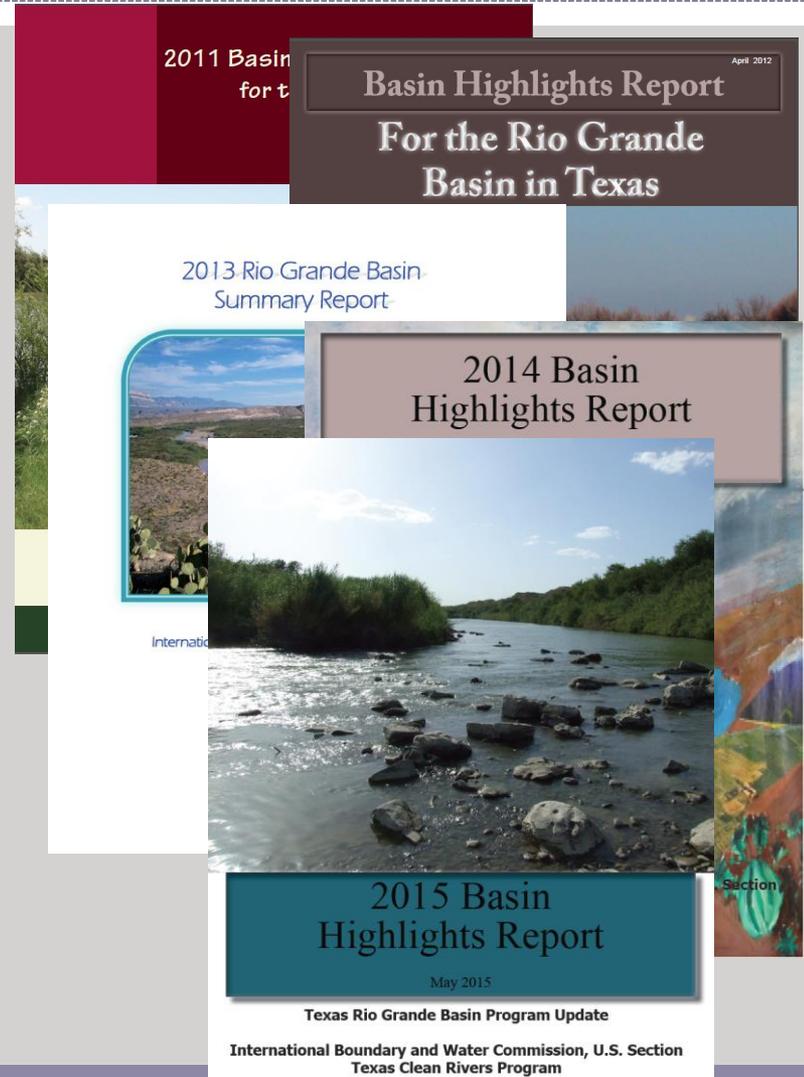


- A state fee-funded program
- A group of federal, state and local organizations that have an interest in the health of our state's streams, rivers and lakes.
- The USIBWC Clean Rivers Program collects water quality data from the Rio Grande and Pecos Rivers.
- We then use that data to:
 - identify and 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 available
- Outreach
- Environmental Education
- Public Participation
 - Basin Advisory Committee



CRP Activities



Students at the EPWU Water Festival performing water quality experiments and learning about water quality.



CRP staff sampling with students from EPCC



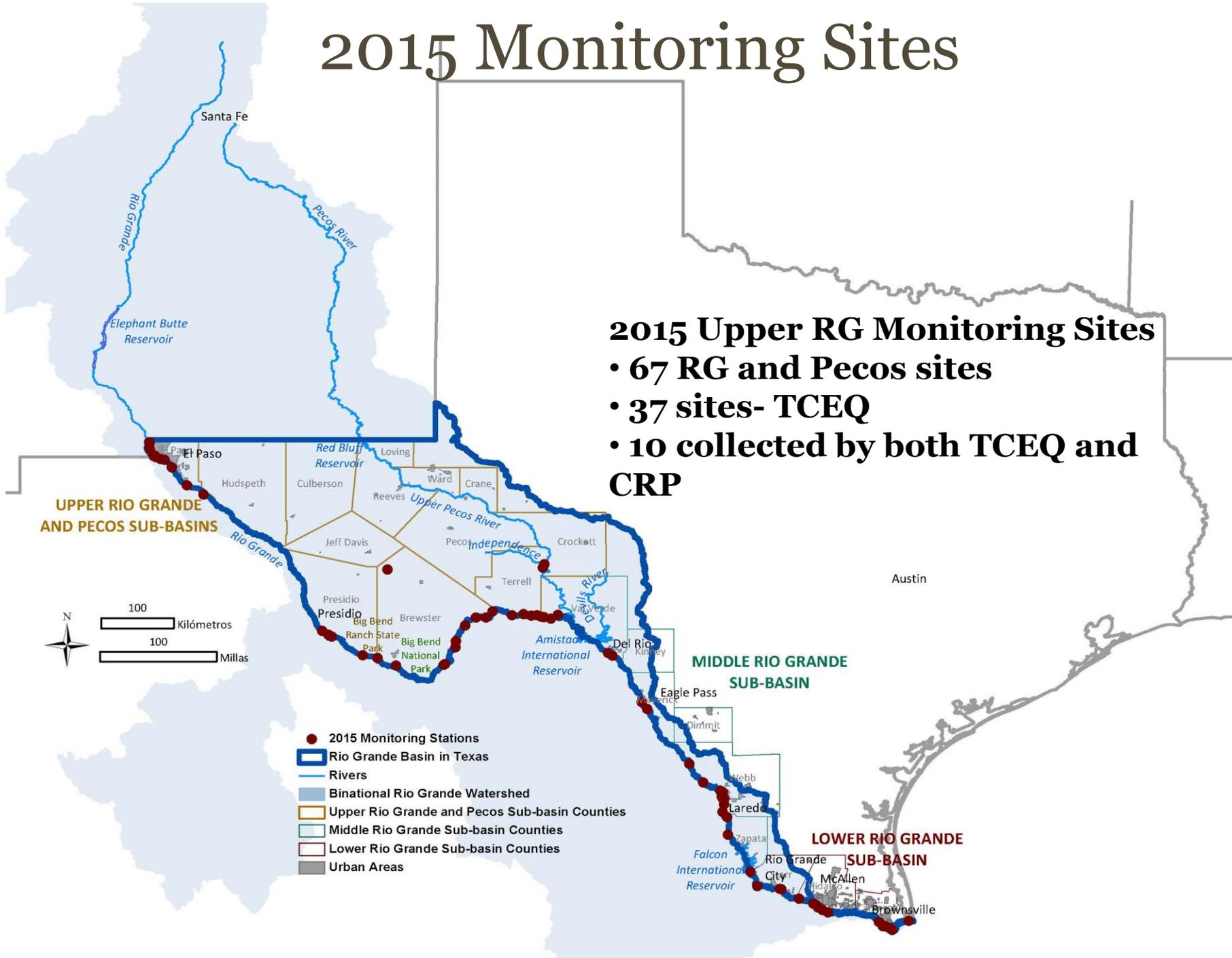
A river cleanup by one of the Adopt-a-River partners

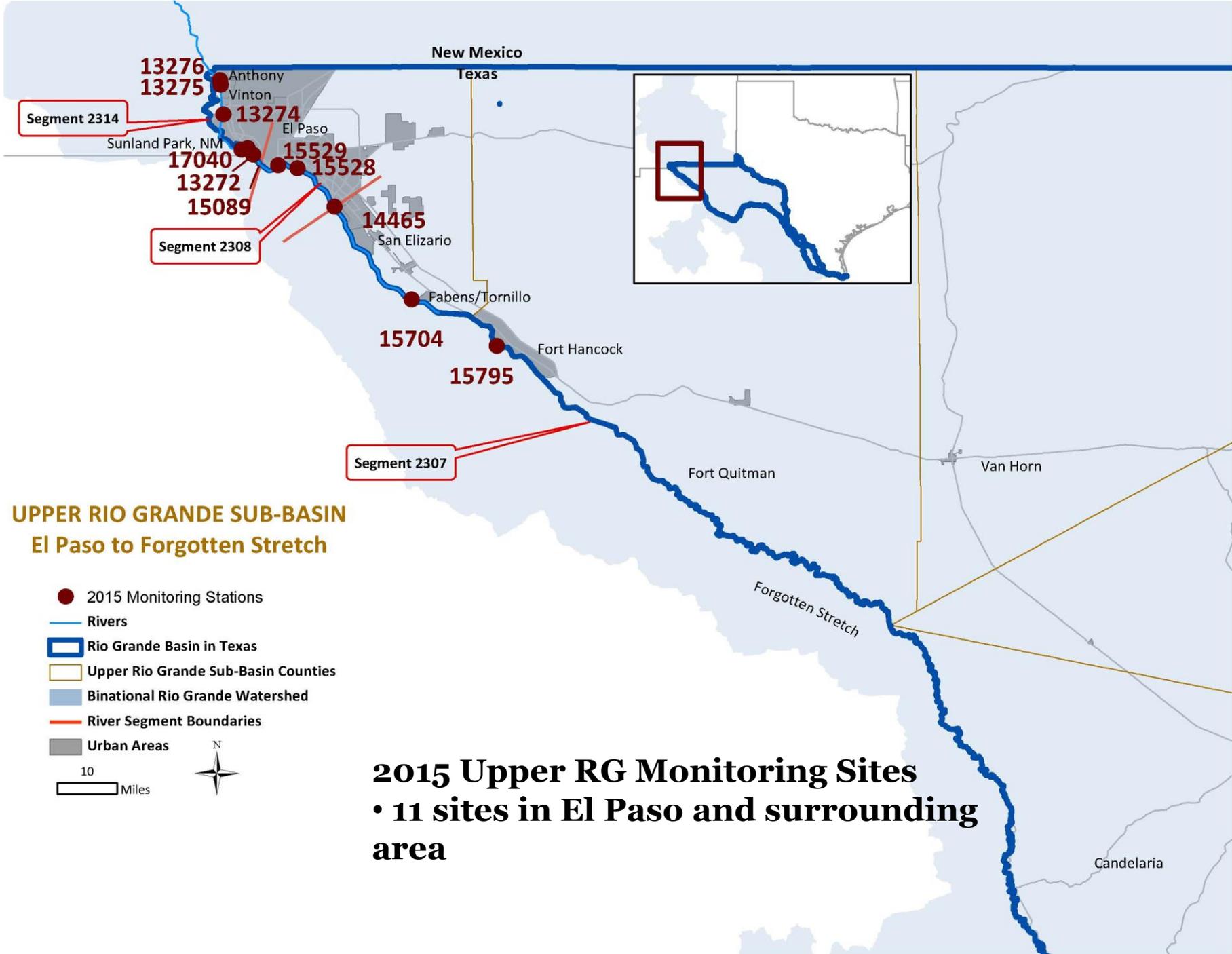
Local Partnerships



- Partners in the Upper Rio Grande help monitor, collect, & analyze samples:
 - USIBWC Field Offices in 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

2015 Monitoring Sites

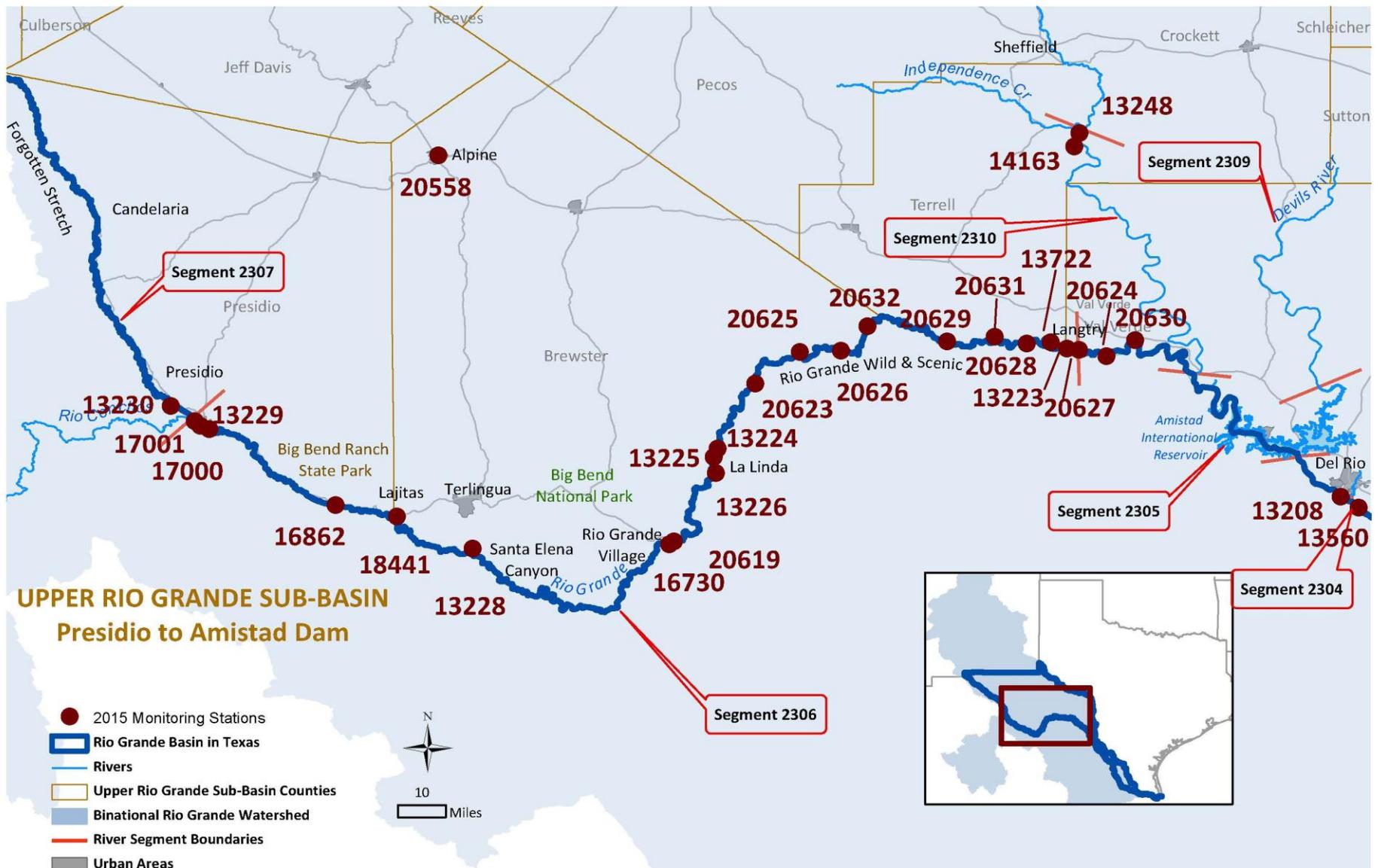




**UPPER RIO GRANDE SUB-BASIN
El Paso to Forgotten Stretch**

- 2015 Monitoring Stations
 - Rivers
 - ▭ Rio Grande Basin in Texas
 - ▭ Upper Rio Grande Sub-Basin Counties
 - ▭ Binational Rio Grande Watershed
 - River Segment Boundaries
 - ▭ Urban Areas
- 10 Miles
- N

2015 Upper RG Monitoring Sites
• 11 sites in El Paso and surrounding area



2015 Upper RG Monitoring Sites

- 26 sites from Presidio to Del Rio
- 2 sites along the Pecos River
- 1 site at Kokernot Springs in Alpine

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.

2014 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
- 2014 assessment lists 2306, 2307, 2308, 2311, 2313, 2314 as impaired
- 2014 assessment did not delist any segments or assessment units for this reach of the Rio Grande

2014 Assessment Impaired Segments



- 2014 assessment lists 2306, 2307, 2308, 2311, 2313, 2314 as impaired
 - 2306_01-08 Chloride, Sulfate, TDS
 - 2307_03-05 Bacteria; 01-05 Chloride and TDS
 - **2308_01 Bacteria *This impairment is new.**
 - 2311_03 Depressed Dissolved Oxygen
 - **2313_01 Bacteria *This impairment is new.**
 - 2314_01 Bacteria
- The 2014 Texas Water Quality Standards were adopted by the Texas Commission on Environmental Quality on February 12, 2014.
 - ✦ Effective for all state permits.
 - ✦ They have not been approved by the EPA at this time.
 - ✦ Until approved by the EPA, the 2010 standards still apply to all Federal permits.

Draft 2014 Water Quality Standards

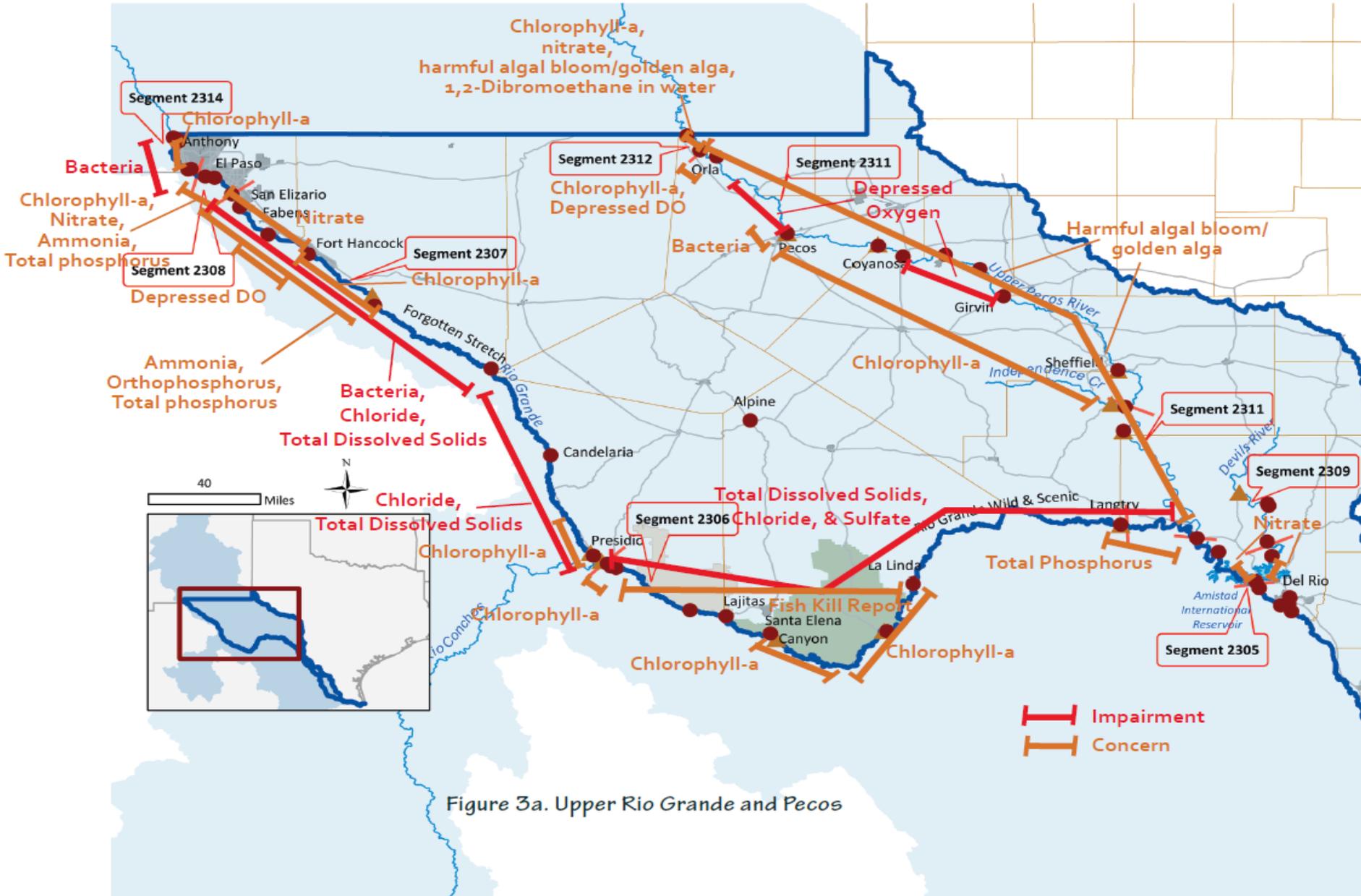
Texas Commission on Environmental Quality
 Chapter 307 - Texas Surface Water Quality Standards
 Rule Project No. 2012-001-307-OW

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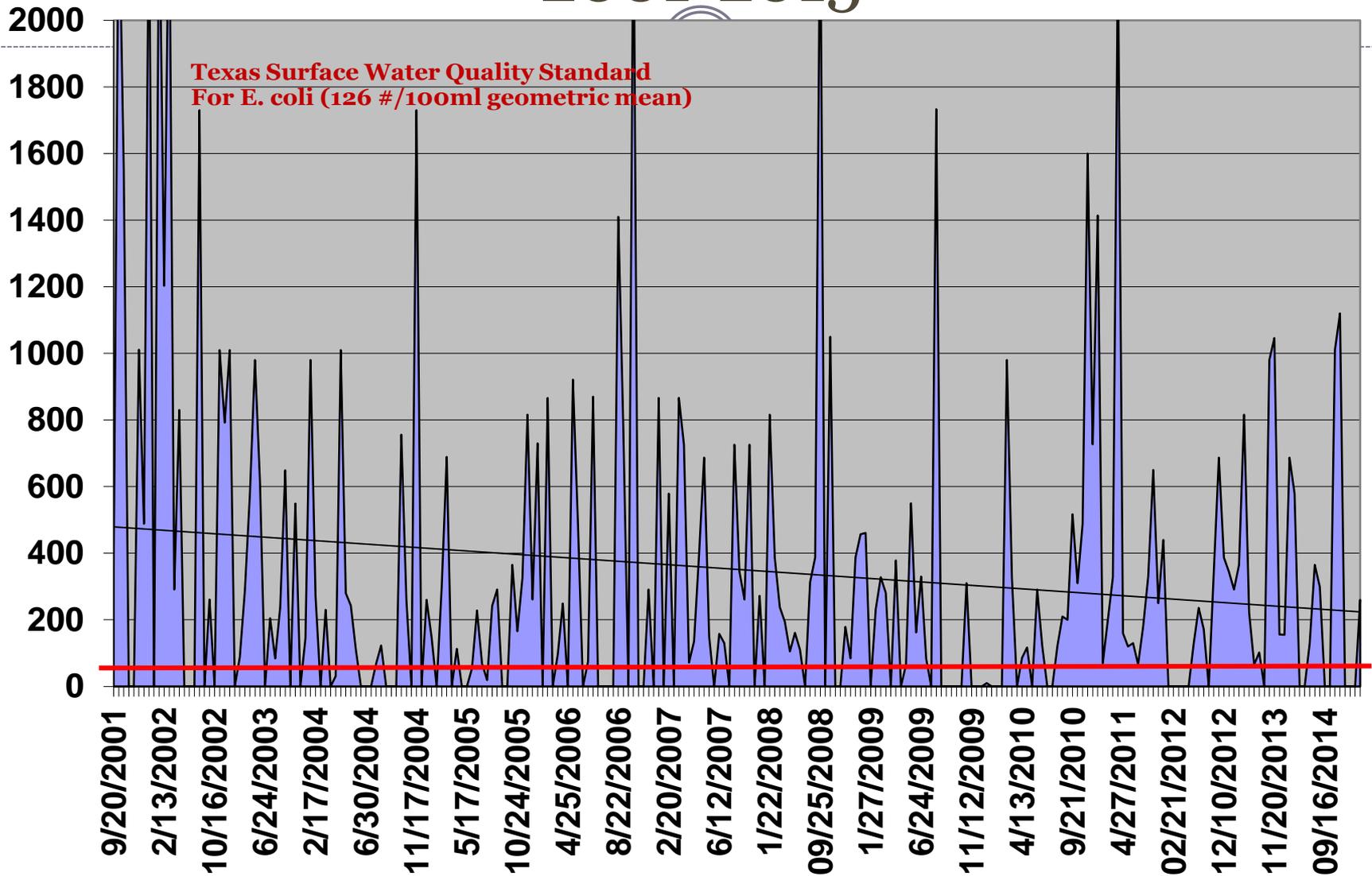
Rio Grande Basin Designated Uses and Numeric Criteria

Segment No.	Rio Grande Basin Segment Names	Recreation Use	Aquatic Life Use	Domestic Water Supply Use	Other Uses	Cl ⁻¹ (mg/L)	SO ₄ ⁻² (mg/L)	TDS (mg/L)	Dissolved Oxygen (mg/L)	pH Range (SU)	Indicator Bacteria ⁴ #/100 mL	Temperature (degrees F)
2301	Rio Grande Tidal	PCR1	E						5.0	6.5-9.0	35	95
2302	Rio Grande Below Falcon Reservoir	PCR1	H	PS		270	350	880	5.0	6.5-9.0	126	90
2303	International Falcon Reservoir	PCR1	H	PS		200	300	1,000	5.0	6.5-9.0	126	93
2304	Rio Grande Below Amistad Reservoir	PCR1	H	PS		200	300	1,000	5.0	6.5-9.0	126	95
2305	International Amistad Reservoir	PCR1	H	PS		150	270	800	5.0	6.5-9.0	126	88
2306	Rio Grande Above Amistad Reservoir	PCR1	H	PS		200	450	1,400	5.0	6.5-9.0	126	93
2307	Rio Grande Below Riverside Diversion Dam	PCR1	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	PCR1	E	PS		50	50	300	6.0	6.5-9.0	126	90
2310	Lower Pecos River	PCR1	H	PS		1,700	1,000	4,000	5.0	6.5-9.0	126	92
2311	Upper Pecos River	PCR1	L			7,000	3,500	15,000	5.0 ⁴	6.5-9.0	33	92
2312	Red Bluff Reservoir	PCR1	H			3,200	2,200	9,400	5.0	6.5-9.0	33	90
2313	San Felipe Creek ³	PCR1	H	PS		50	50	400	5.0	6.5-9.0	126	90
2314	Rio Grande Above International Dam	PCR1	H	PS		340	600	1,800	5.0	6.5-9.0	126	92
2315	Rio Grande Below Rio Conchos	PCR1	H			450	750	2,100	5.0	6.5-9.0	126	93

List of Impairments and Concerns in the Upper Rio Grande



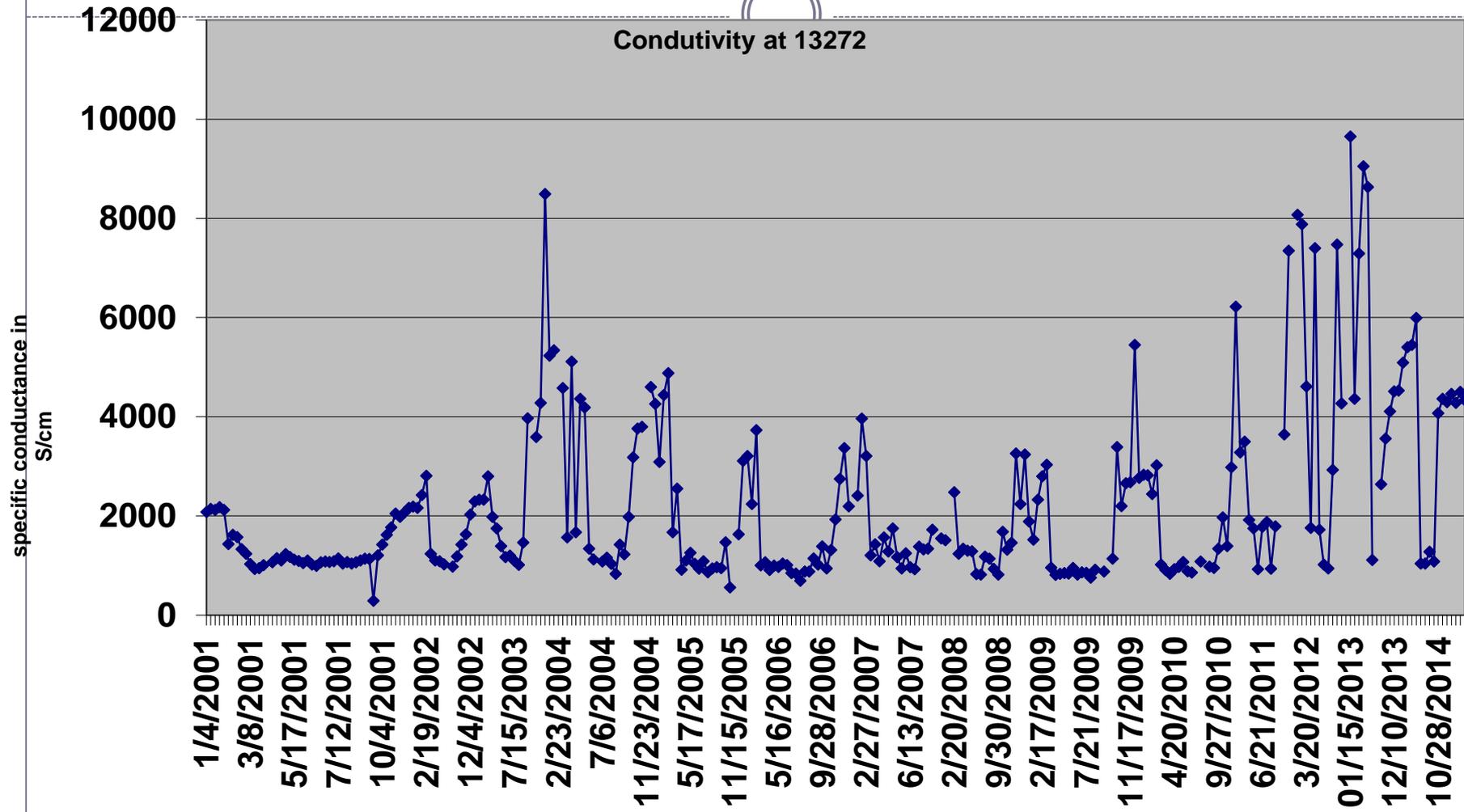
E coli at 13272 in El Paso, 2001-2015



Conductivity at 13272 in El Paso, 2001-2015



Conductivity at 13272



Concerns for El Paso Reach of the Rio Grande



- Recent months have shown increasing levels of bacteria in the El Paso area.
 - Specifically around the Sunland Park, NM/ El Paso, TX area
- Station 17040, about a mile upstream from Station 13272, has shown bacteria levels of up to 24,000 cfu
 - Higher when flows are low, but there have been instances of high levels even when there is water in the river from releases, rain, etc.
- The Clean Rivers Program has alerted the NM Environmental Department and TCEQ Region 6 of the problem.
 - Working together to find a solution to the problem.
 - Monitoring continues.

Mercury Study



- CRP was collecting mercury samples (in water) at numerous stations in the Upper Rio Grande stretch.
 - Started in 2012 for the majority of the stations.
 - Stations in El Paso, Presidio, Big Bend State and National Parks, Del Rio area.
- Samples were collected at a total of 14 sites in the Upper Rio Grande.
- Sent for analysis to the CRP contract laboratory.
- Results were within normal range. Effective September 1, 2015, CRP will drop mercury sampling at all stations.
 - Will only continue in Presidio and the Big Bend parks, due to ongoing mining activities.

Nutrient Criteria



- EPA has mandated that states create **Numeric Nutrient Criteria**
 - TCEQ is tasked with this.
- **2013 Standards:**
 - Chlorophyll-a criteria for 75 Reservoirs
 - Nothing new since 2013
- **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

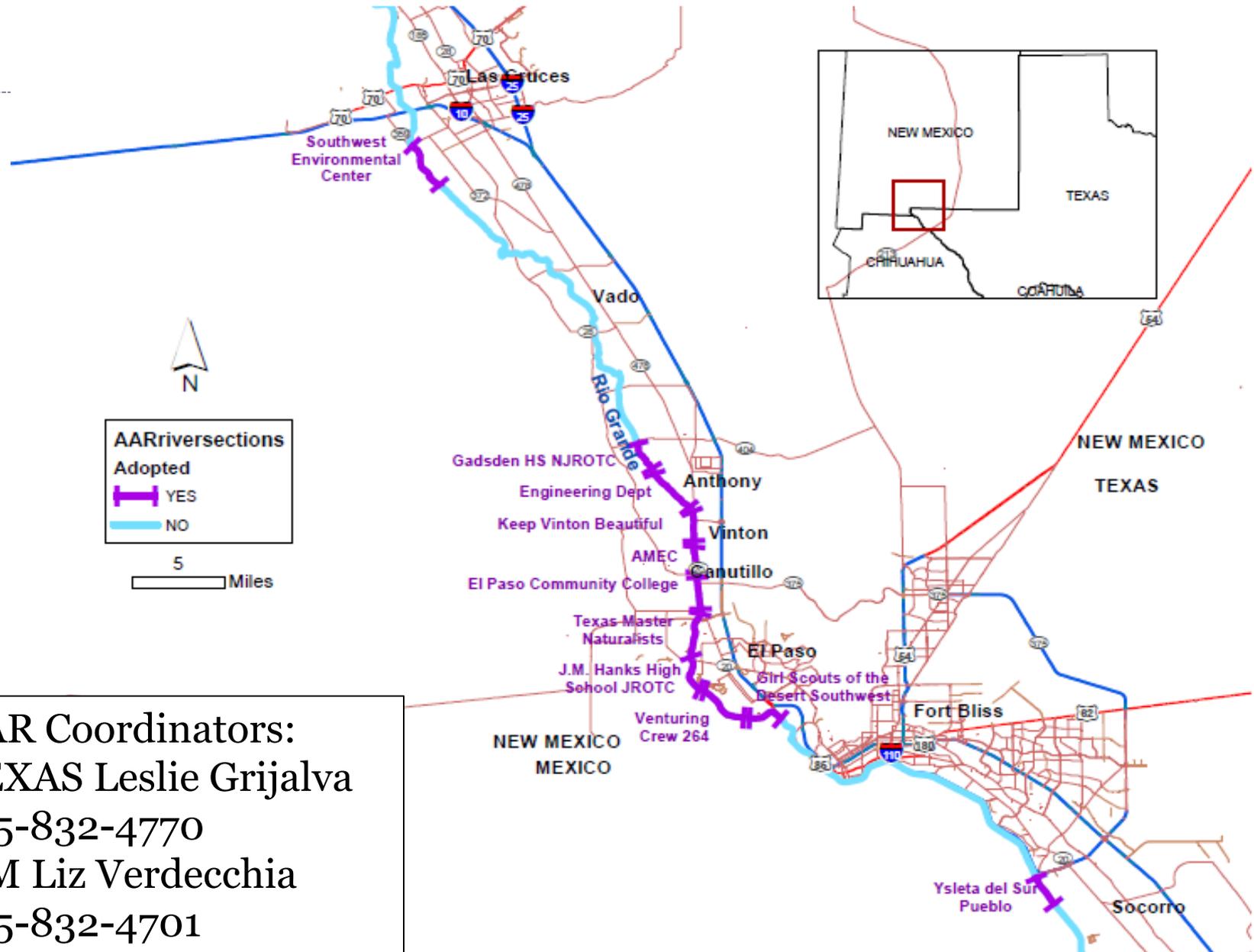
Historical conditions
Stressor Response

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



Adopted River Sections



AAR Coordinators:
TEXAS Leslie Grijalva
915-832-4770
NM Liz Verdecchia
915-832-4701

EPCC Service Learning and RISE Programs



- **The CRP is partnered with EPCC's Service Learning Program**
 - Program integrates community service or special projects into the professor's curriculum.
 - Students have helped the CRP by analyzing data and making graphs, entering data, helping during a river clean-up, and helping with water sampling.
- **RISE (Research Initiative for Scientific Enhancement) Program**
 - Program is aimed at providing underrepresented students research opportunities and encourage them to pursue graduate degrees and biomedical research.
 - EPCC program chapter is a CRP partner
 - Students come with CRP staff and collect water samples.
- **The CRP is always looking for ways to help students learn about the environmental science field, and help them gain exposure to field and sampling techniques.**

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
- Have stakeholder meetings to discuss the projects currently underway
 - Contact Conrad Keyes cgkeyesjr@q.com
or Hilary Bringar hbrinegar@marronic.com

CRP Website

www.ibwc.gov/CRP/Index.htm



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 - Diversion Dams & Related Structures
 - Storage Dams (Reservoirs) / Power Plants
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 - TEXAS CLEAN RIVERS
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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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CRP Website

www.ibwc.gov/CRP/Index.htm