EPA's US/Mexico Border Infrastructure Program Impacts on Water Quality

Miguel Flores, EPA Region 6

IBWC Binational Border Sanitation and Water Quality Summit

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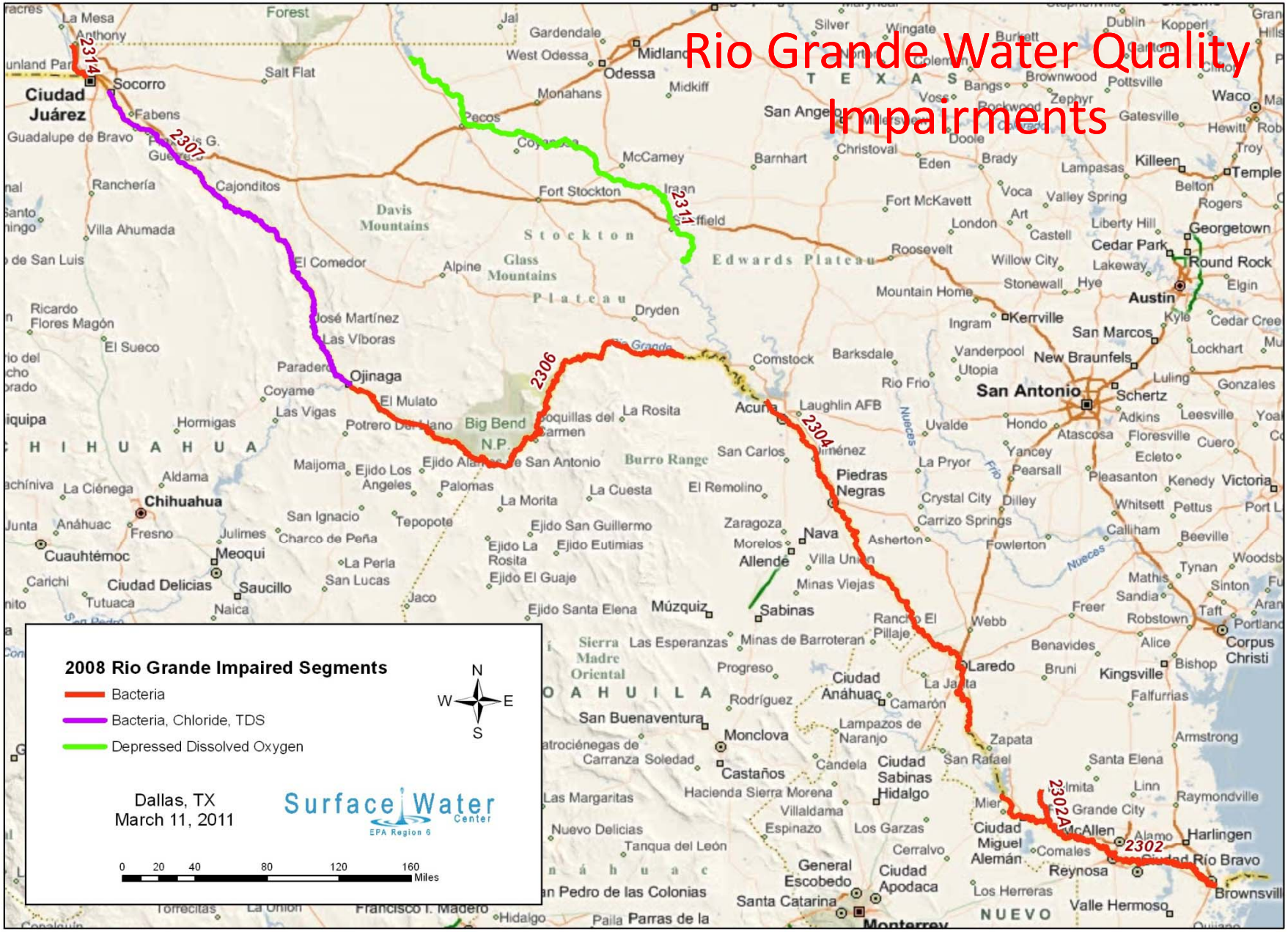
Environmental and Public Health Issues

Valle de Juarez, Chihuahua
Outhouses throughout project area

Surface sewage discharge in Colonia Esperanza, Chihuahua

City of Pharr, Texas Sanitary Sewer Overflow

Rio Grande Water Quality Impairments



Reynosa, Tamaulipas

Inoperable Lagoon WWTP and discharge to Rio Grande

EPA's US/Mexico Border Infrastructure Program

- Created as a result of NAFTA
- Established BECC and NADB
- Purpose
  - Assist economically distressed communities
  - Provide safe drinking water and basic sanitation facilities
  - Assist communities within 62.1 miles (100 Km) from either side of US/Mexico Border

Program Partners

- USEPA
  - Headquarters (OWM) provides program policy, direction and funding
  - Regions 6 and 9 administer, manage and oversee program individual projects
- BECC (Border Environment Cooperation Commission)
  - Planning & Design: Project Development Assistance Program (PDAP)
- NADB (North American Development Bank)
  - Construction: Border Environment Infrastructure Fund (BEIF)
- CONAGUA
  - Partner on Mexican water infrastructure projects

Border Environment Cooperation Commission Role

Administer the Project Development Assistance Program (PDAP):

- Prioritization process
- Engineering Studies and plans
- Public participation process
- Environmental Review
- Final Design

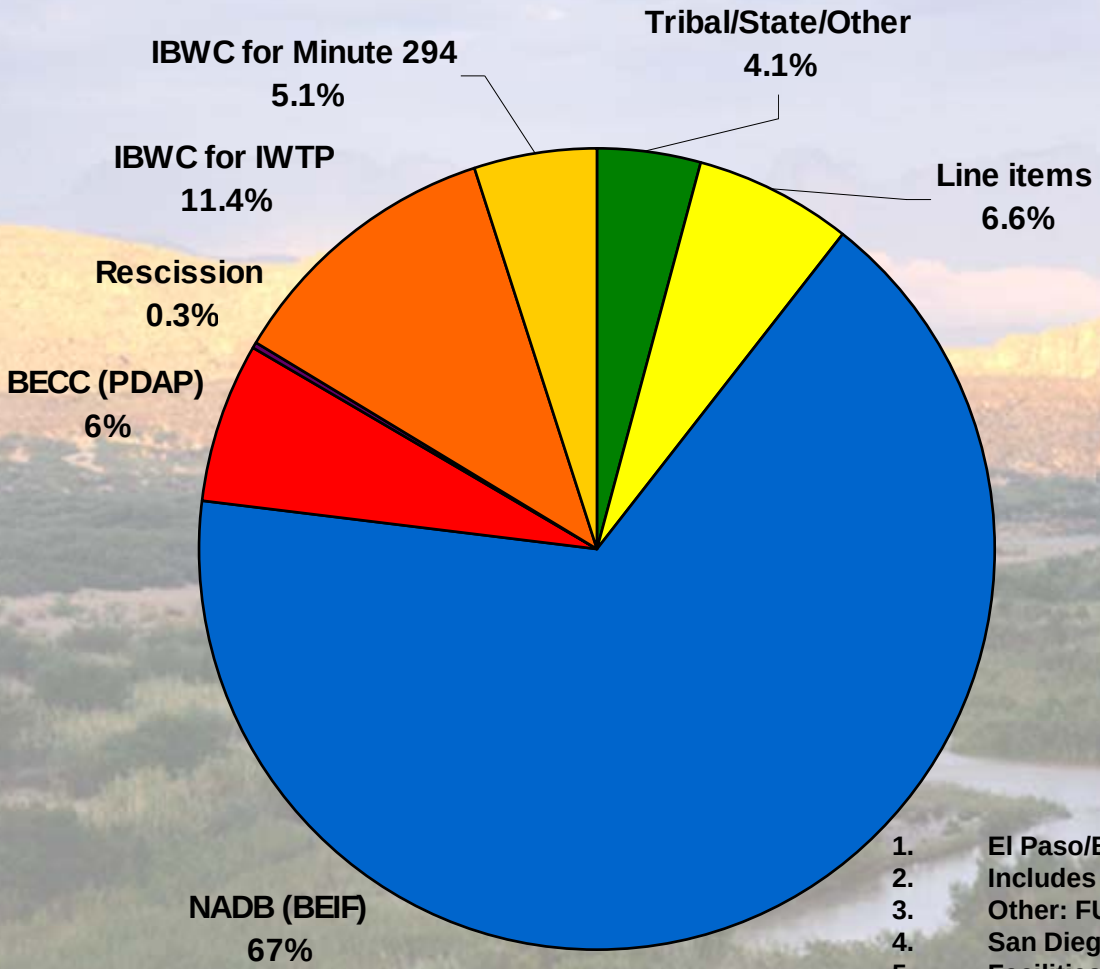
North American Development Bank Role

Administer the Border Environment Infrastructure Fund (BEIF):

- Preparation of financial analysis
- Deal sheet
- Procurement and signing of contracts
- Execution of subgrant agreement
- Construction oversight

Distribution of U.S./Mexico Border Infrastructure Program, in Millions

(Cumulative FY94 - FY09) $973



- Tribal/State/Other $39.5M
- Line items[1] $64.3M
- NADB (BEIF)[2] $645.1M
- BECC (PDAP) $60.5M
- Rescission[3] $3.2 M
- IBWC for IWTP[4] $110.5M
- IBWC for Minute 294[5] $49.7M

1. El Paso/Brownsville/Nogales
2. Includes reprogrammed IBWC funds.
3. Other: FUMEC $3.5 M: Tijuana Planning $2.1 M
4. San Diego International Wastewater Treatment Plant (IWTP)
5. Facilities Planning Program for the Solution of Border Sanitation Problems. The objective of Minute 294 is to develop projects through the planning stage in order to make them eligible for BECC certification.

Program Accomplishments

- 88 projects BECC/NADB certified
  - 51 completed to date; 10 more in 2010 (8 in Region 6)
- More than 8.4 of 14.6 million border residents benefitted
  - nearly 4 million people benefiting from completed projects
- BEIF project approvals of $537M; total construction > $1.5B
- 2012 Goals: New Water and Wastewater Connections

	Target	Thru FY09	Thru FY10
DW	24,629 homes	30,480	31,180
WW	172,681 homes	178,950	278,950

FY 09/10 Prioritization Process

	No. of Applications Submitted	Est. Construction Cost[1]
Arizona	19	$73.5 M
California	21	$78.6 M
New Mexico	7	$36.2 M
Texas	87	$609.6 M
US Total	134	$797.9 M
Baja California	20	$51.8 M
Chihuahua	13	$43.9 M
Coahuila	24	$66.2 M
Nuevo Leon	2	$ 27.4 M
Sonora	7	$4.0 M
Tamaulipas	12	$110.0 M
Mexico Total	78	$303.3 M

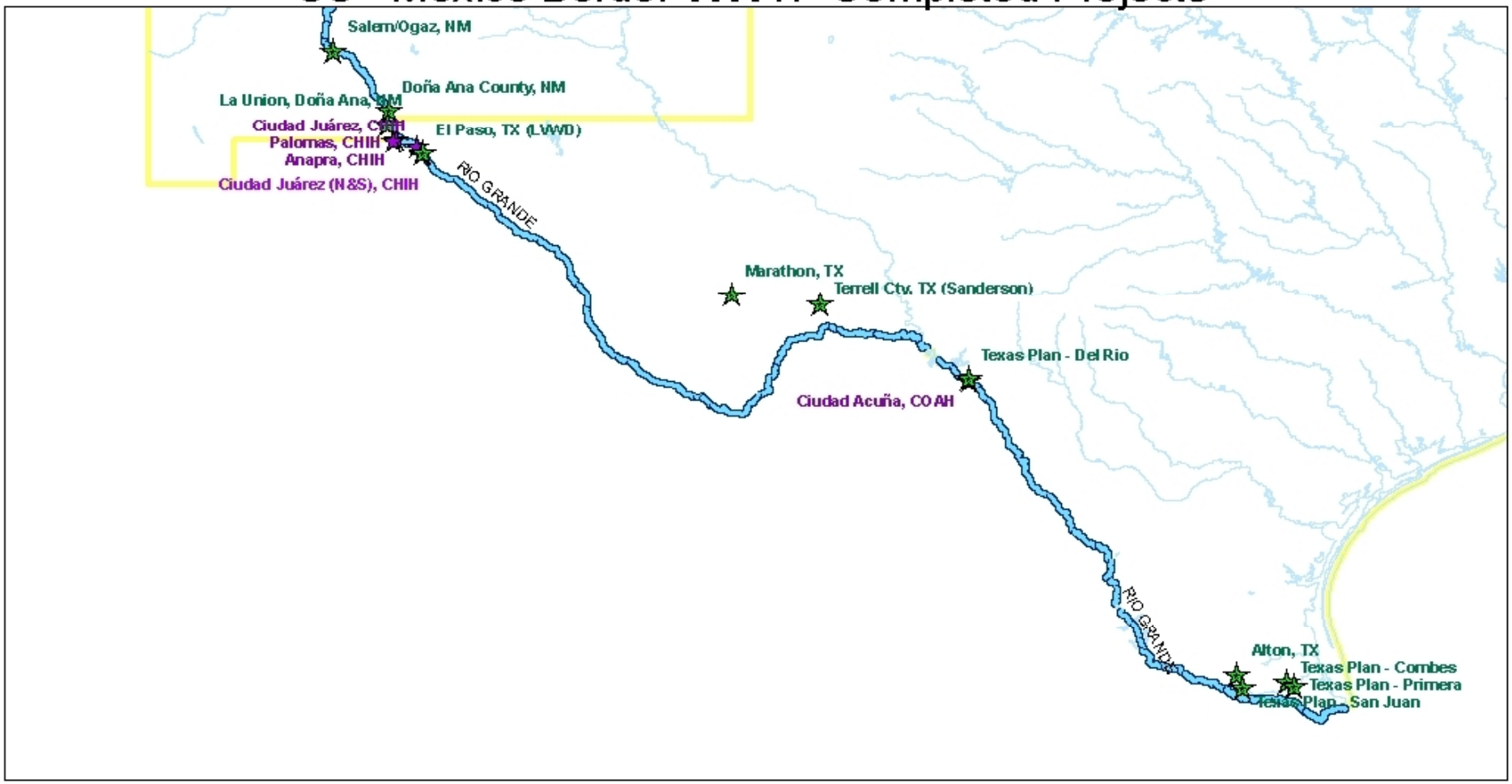
[1] Estimated total construction cost $1.1B. BEIF portion more than $350M using preliminary construction cost estimates.

Infrastructure Projects

Reynosa, Tamaulipas

- $83.4 million project
- Comprehensive wastewater project
- WWTP #1 22.8 MGD; WWTP #2 5.7 MGD
- Benefitting 420,000

US - Mexico Border WWTP Completed Projects



0 25 50 100 150 200 Miles

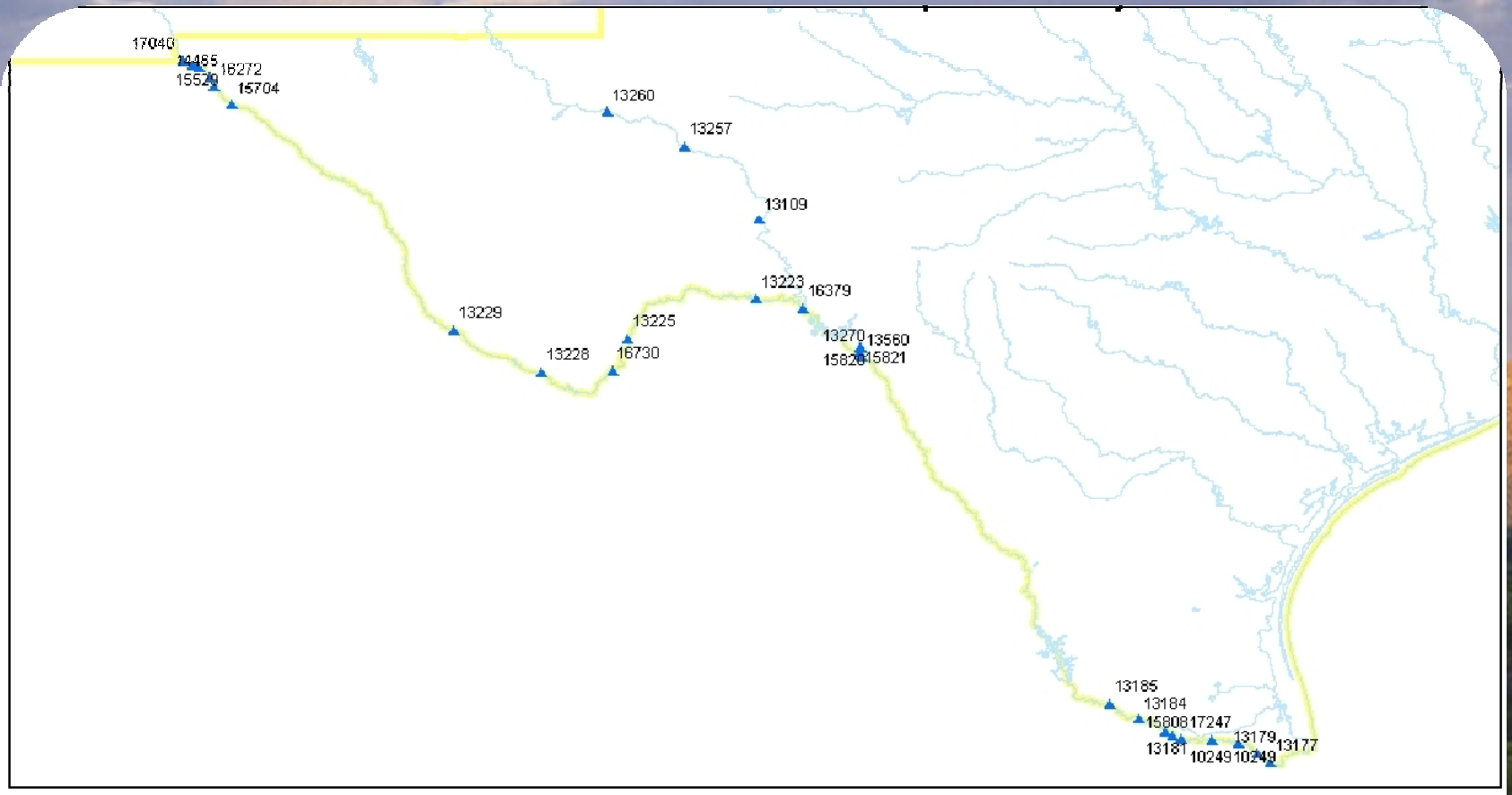
N W E S

Legend

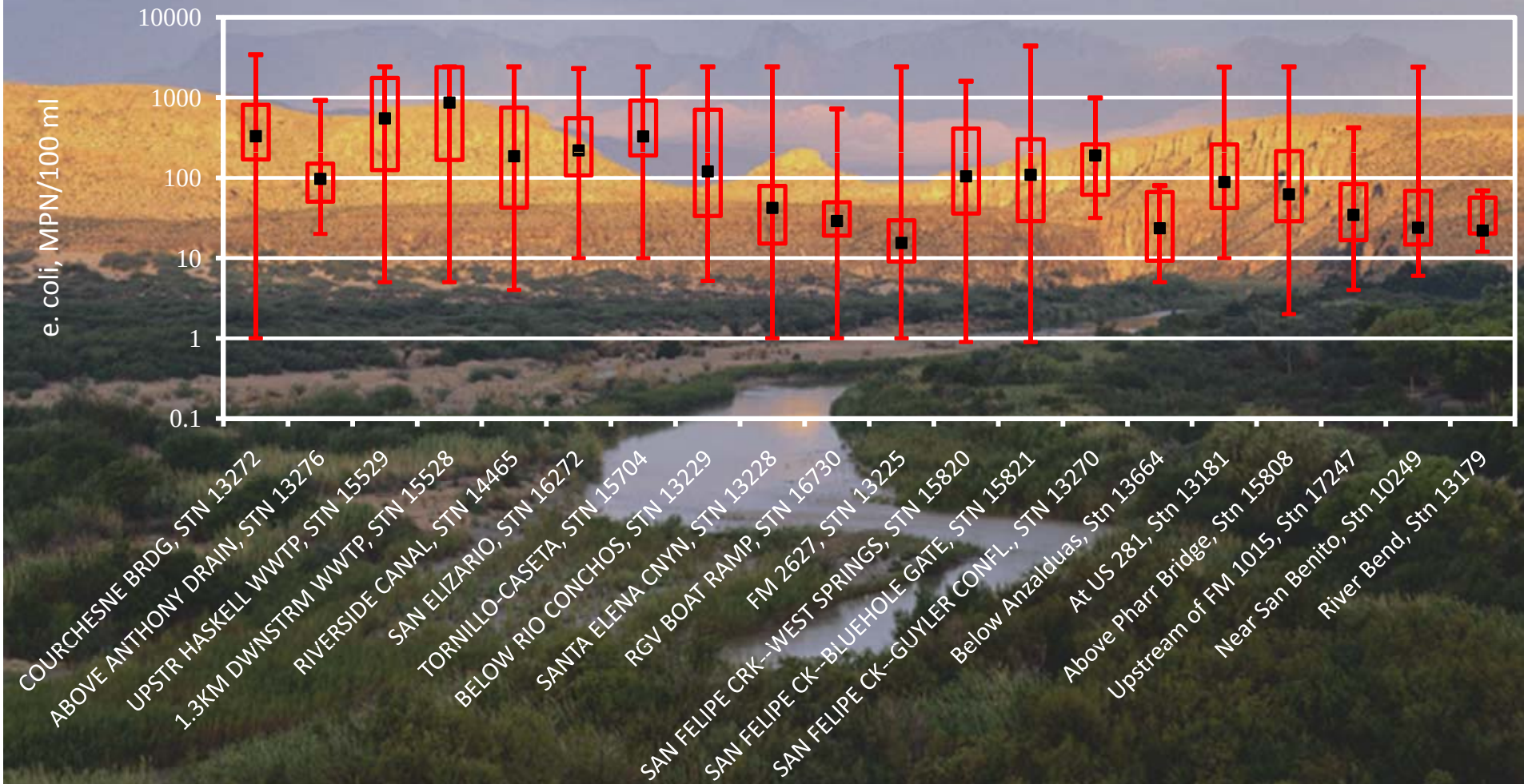
- USA_Facilitiesshp
- MexicoFacilities
- Rio_Grande
- r6rivers
- State_Boundary

Map created March 2, 2009
sns

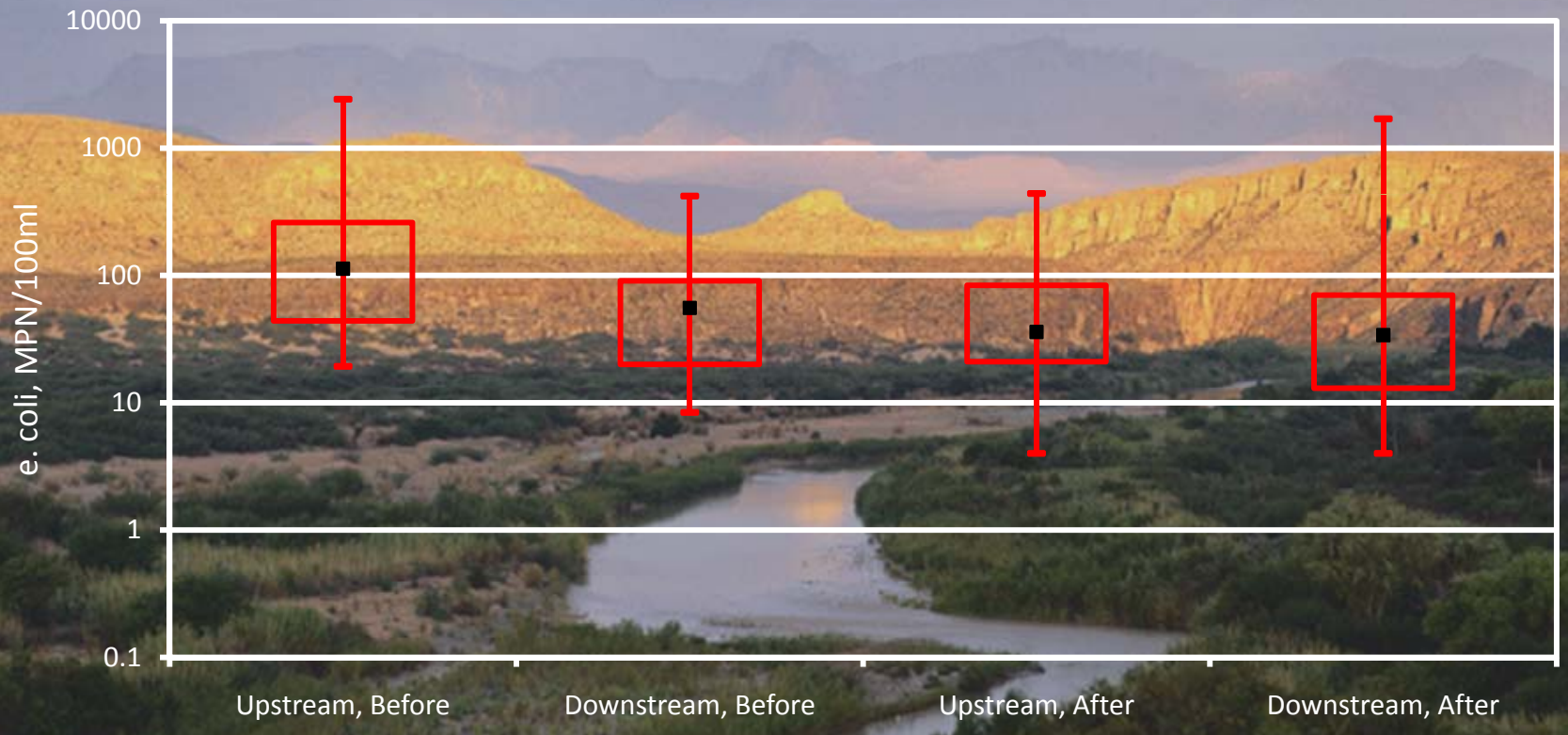
Water Quality Stations



e. Coli Concentrations
El Paso to Brownsville, 2001-2010

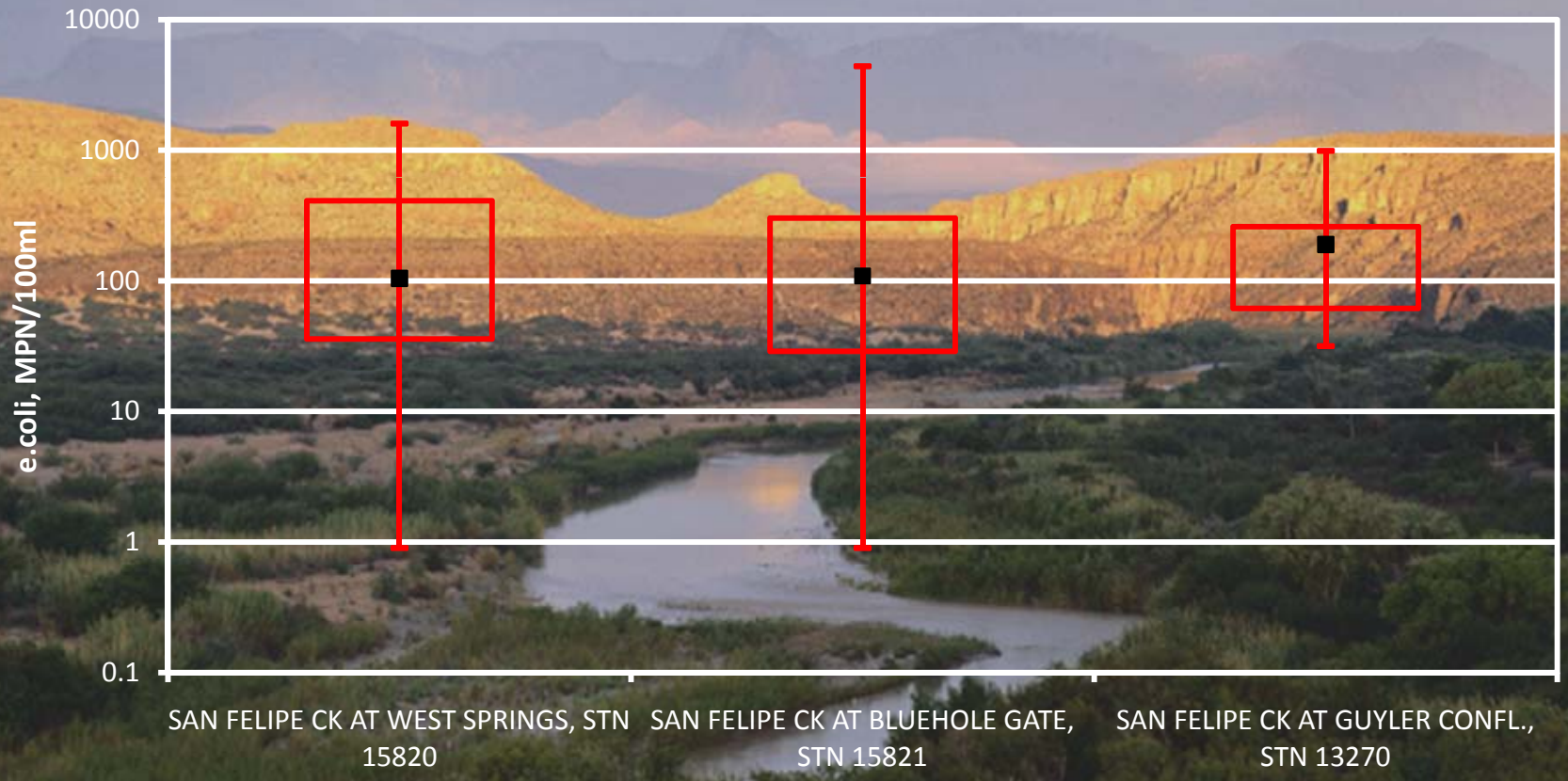


e. coli Concentrations
Upstream/Downstream of San Juan WWTP
Completed May 31, 2005



Upstream Stn: 15808 / Downstream Stn: 17247

e. coli Concentrations Upstream/Downstream of Del Rio WWTP Completed April 21, 2003



Conclusions

- The Rio Grande is heavily impaired for various pollutants, primarily pathogens
- Some improvement in pathogen concentrations can be seen at several locations after WWTPs were built
- Lack of improvement point to other sources of impairments
  - Urban stormwater runoff
  - Non-point source pollution

Recommendations

- Monitoring must be increased up/downstream of WWTPs to measure true improvements in water quality
- The US and Mexico must develop comprehensive, binational watershed restoration plans
- Reduction in contaminants in urban and agricultural runoff has to occur to meet water quality standards
- Harmonized water quality standards are necessary to achieve a common water quality objective