FIRST DRAFT OF THE PECOS RIVER WPP UPDATE

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WPP Update Overview

- Provides an incremental update to the WPP
- WPPs are meant to be living documents and incorporate an adaptive management component

- Update Includes:
  - Look at implementation progress
  - Discussion of new information or arising needs
  - Evaluation of water quality

Drought and Reservoir Releases

- Historic drought conditions influenced conditions in the river
- River flows from New Mexico to Texas have diminished
- Red Bluff Reservoir has ceased irrigation water deliveries and suspended their 12 cfs river maintenance flow

Salinity

- Malaga Bend Project
  - Began pumping brine January, 2013
  - Harvests salt from water evaporation ponds
  - Will decrease brine intrusion into the Pecos River

- Salt Source ID Project
  - Will identify salinity sources and help better understand the hydrology between Coyanosa and Girvin
    - More on this later!

Salinity

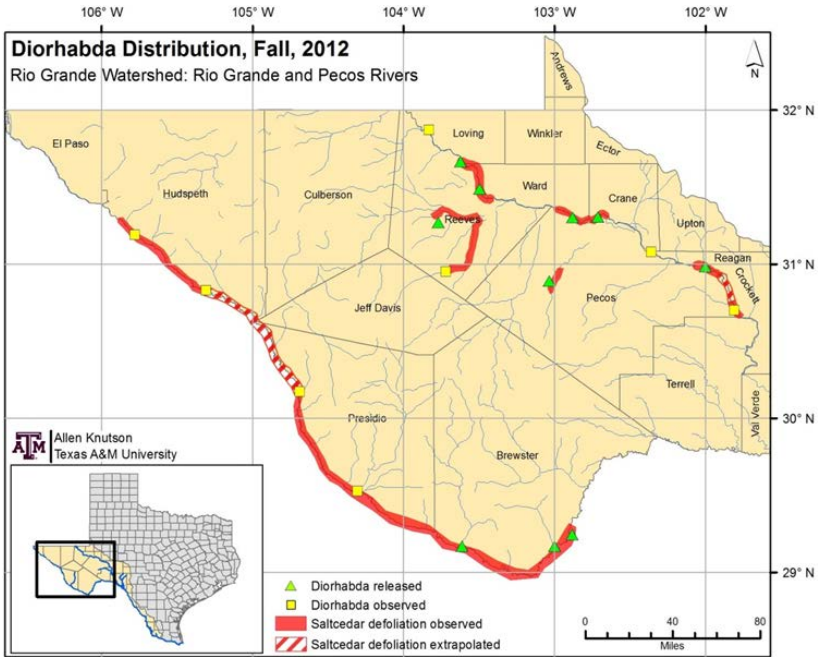
- New Mexico to Texas Water Delivery Scheduling
  - Drought has caused New Mexico to Texas water delivery to only be irrigation tail water
  - Endangered species flow requirements influence when reservoir releases occur
- Pecos River Watershed Assessment
  - Evaluation by the USACE to solve watershed management problems employing a basin wide approach
  - Only recommendations will result from this effort

Chemical Saltcedar Control

- 1,775 previously unsprayed acres on the river planned to be sprayed as part of WPP
  - Landowner interest along the river was low
  - Regrowth treatment was a larger concern
- 2,642 previously unsprayed acres actually sprayed along the main stem and tributaries
- About 1,600 additional acres signed up for spraying

Biological Saltcedar Control

- Crete and Tunisian beetles
- First released in 2006 and every subsequent year
- To date, 187,000 beetles released at 29 sites
  - Beetles are well established and dispersing on their own
- Need for future releases is minimal; monitoring where they are is a bigger need



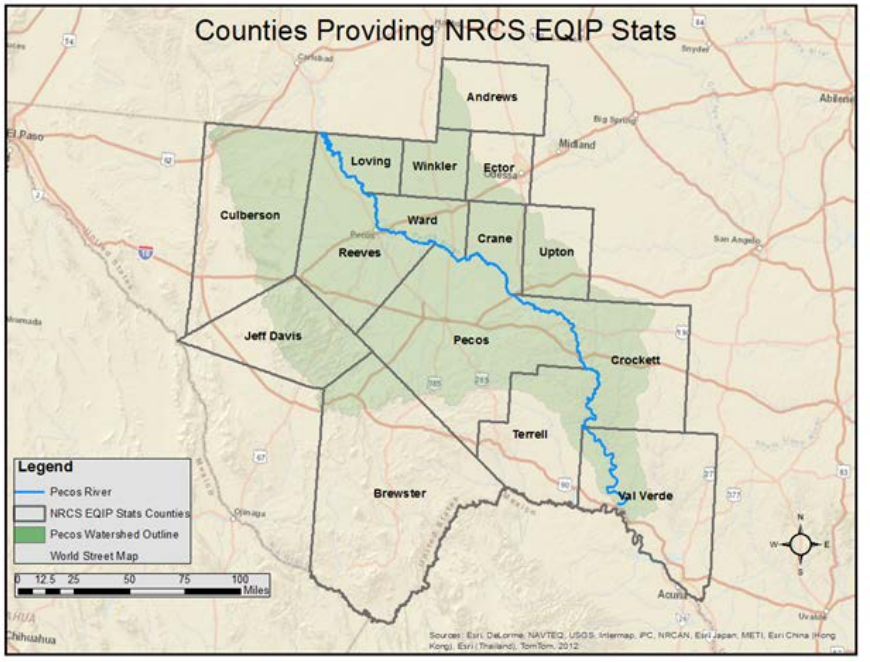
Saltcedar Debris Burning

- Focused on river riparian areas to remove saltcedar debris left from spraying
- As of May 22, 2013, approximately 35 river miles have been burned

Brush Control

- Brush control was the top priority for resource management in the watershed

- EQIP fund have supported 81,311 acres of brush control since 2008



Water Quality Management Plans

- Goal to implement 20 WQMPs in first 3 years
- Currently there are 15 certified WQMPs and 2 in the process of being approved
- Initially focused on the river, but low landowner interest prompted SWCDs to allow their development away from the river

Riparian Revegetation

- Revegetation to date has been all natural

- Revegetation program needed to speed regrowth and promote native species growth
  - Natives are better adapted to harsh climates; better competitors with saltcedar
  - Native seed stocks are practically unavailable
  - Trans Pecos Native Plant Materials Initiative
    - Effort to expand native plant availability
    - Need collaborators and demonstration plots

Dissolved Oxygen

- Assessment of the problem was a big need
  - TIAER conducted a computer based evaluation of the problem and potential strategies to improve the impairment
    - More on this later
- Artificial Riffles
  - Not viewed as a favorable solution
  - Would require numerous riffles to increase minimum DO levels and would increase hydrologic modification

Well Plugging

- The Railroad Commission reports 14,928 known inactive oil and gas wells and 315 known orphan wells
  - Orphan wells are likely to be the problem wells
- Number of orphan wells reduced by 22 since WPP implementation began
- Identifying flowing well locations remains a need

Nutrient Concerns

- Monitored nutrient levels in Red Bluff were a concern when WPP was developed
- Recent monitoring shows nutrient level have decreased
  - Likely drought influenced
- Chlorophyll-a levels remain high though

Water Quantity

- Reservoir Release Scheduling and Canal Audits
  - Drought has prevented improvements: No Releases

- Irrigation System Improvements thru EQIP
  - 22 drip systems on 1,090 acres
  - 15 new sprinklers totaling 2,097 feet
  - 8 properties land leveled: 495 acres
  - 21 producers installed 56,049 feet of irrigation pipeline

Aquatic Life

- In 2011, TCEQ and USIBWC performed two aquatic life monitoring sampling events
- Results show that the aquatic community has remained mostly unchanged
- Another aquatic life survey is underway

Clean Rivers Program

- CRP monitoring continues to collect water quality data across the watershed
- 10 sites in the watershed were being monitored when WPP implementation began
- 9 sites will be monitored next fiscal year
  - 8 of the original 10 are still in place
    - 2 stations removed
      - 13261 near Pecos & 16379 downstream of US 90
    - 1 new station added
      - 20558 Kokernot Springs in Alpine

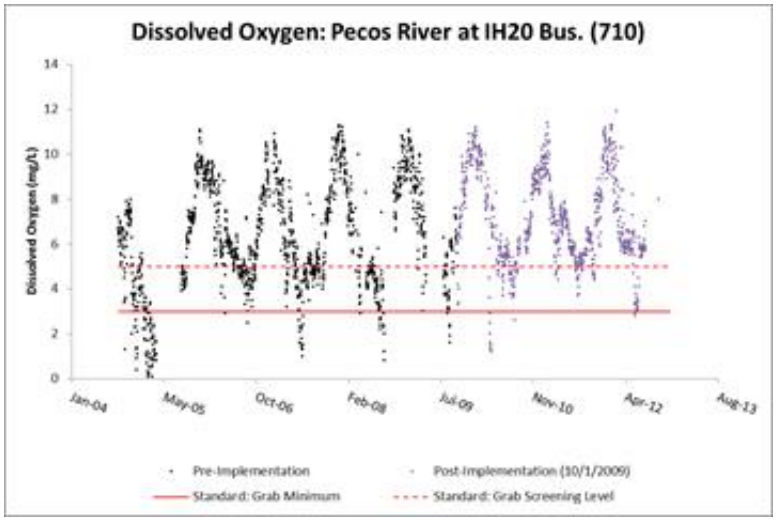
CWQMN Stations

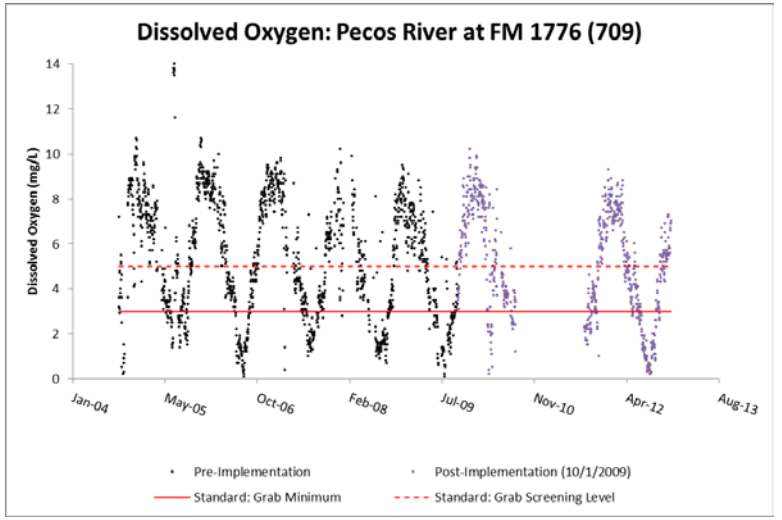
- 5 continuous water quality monitoring network stations were in place when WPP implementation began
- Record pH, DO, temperature, conductance
- During implementation, 4 new stations added
  - Pecos River near Red Bluff, NM
  - Pecos River near Orla, TX
  - Pecos River near Girvin, TX
  - Pecos River near Langtry, TX

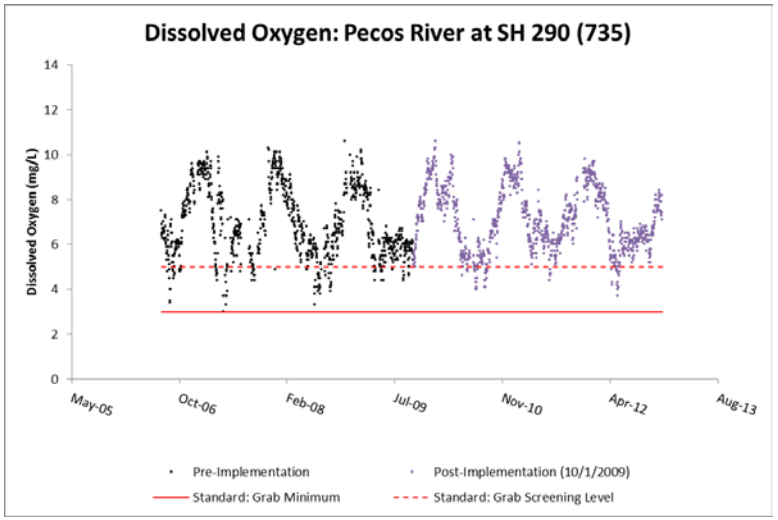
Education and Outreach

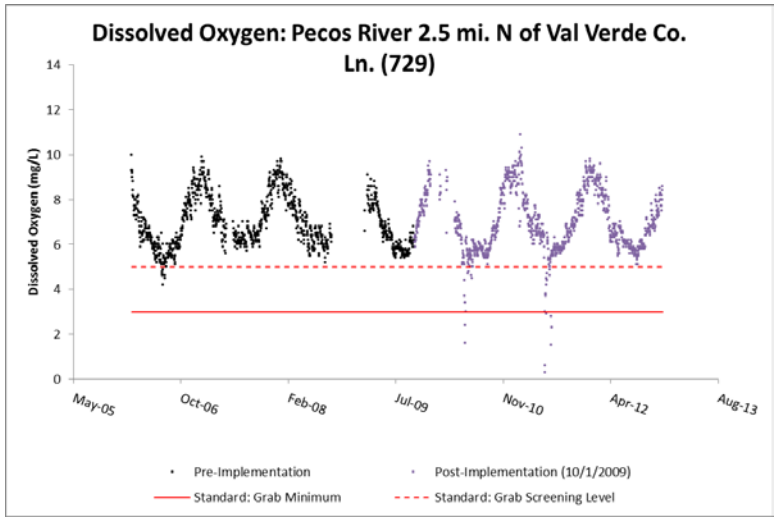
- Pecos River Information Management System

Water Quality Update: DO

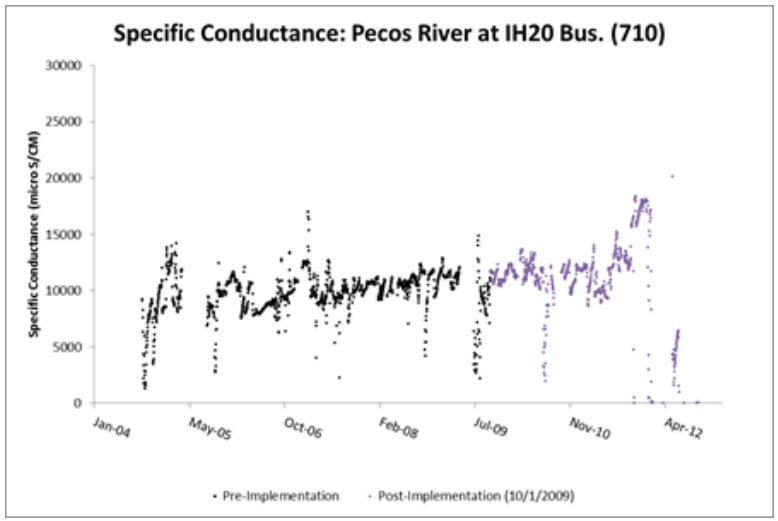


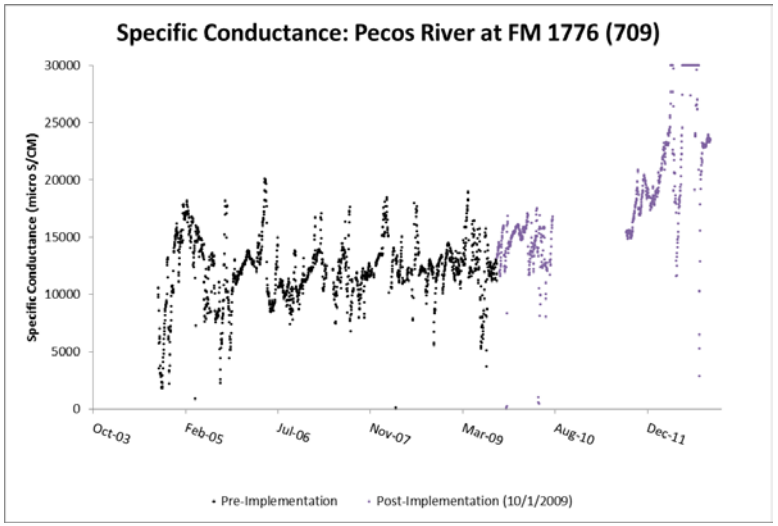


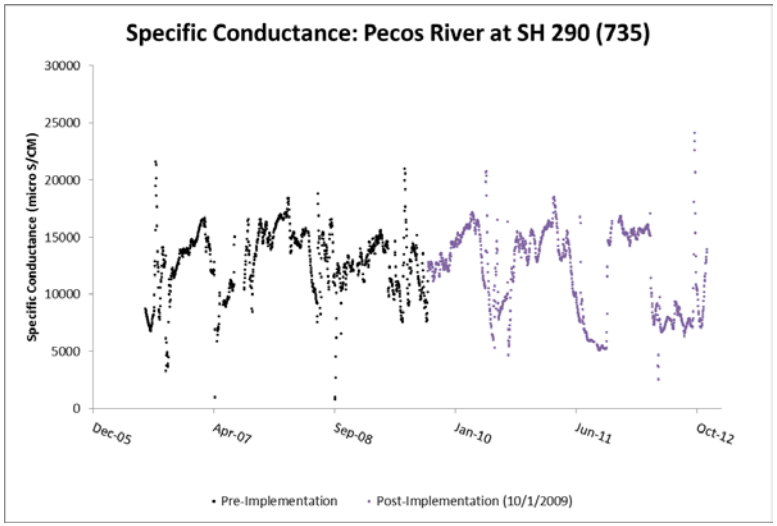


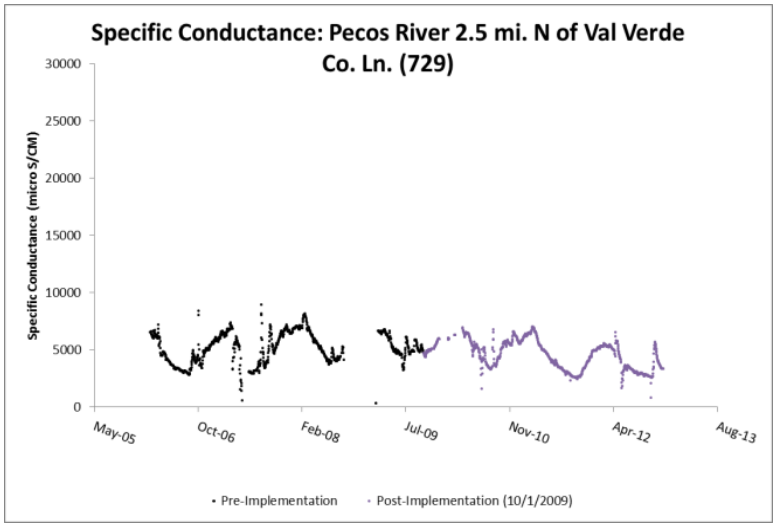


Water Quality Update: Conductance









2012 *Texas Integrated Report*

- Only segment between Ward Two Irrigation Turnout and US 67 (Girvin) is impaired for low DO now
- Nutrient concern for elevated ammonia in Red Bluff no longer there
- Chlorophyll-a concern still present
- 2 new bacteria concerns; limited number of samples

Implementation Schedule and Progress

- Last 4 pages of the update document show WPP implementation progress
- Some goals have been achieved and exceeded while others have fallen short
- Please review table and think about what should be added and what should be removed

Review and Comment

- 45 day review and comment period
- Comments due to Lucas by July 22nd
- 3 ways to submit comments:
  - Email: lfgregory@ag.tamu.edu
  - Mail: 1500 Research Parkway, Ste 110
    2260 TAMU
    College Station, TX 77843-2260
  - Phone: 979-845-7869

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QUESTIONS/COMMENTS