Current Projects and Activities in the Pecos River Basin



The Pecos River meanders over 400 river miles through Texas, before flowing into the Rio Grande River just above Amistad Reservoir

Riaris Mounts

Baldy Peol

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Mentone

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Midland

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Noelke Hill

actie Mounts Kees Mounts

Bakersfield

Sanderson

Garden City

Big Lake

terling City

Goldsmit

Granofalls

El Stockton

Imperial

Rosenfeld



One mature saltcedar tree can consume as much as 200 gallons of water per day?????

Current Projects along the Pecos River

Pecos River Ecosystem Project

- Sponsoring Agency: Upper Pecos Soil and Water Conservation District
- Technical Support by:
 - Texas Cooperative Extension
 - Natural Resources Conservation Service
 - Texas Department of Agriculture
 - Texas Forest Service
- Pecos River Advisory Committee
 - Red Bluff Water & Power Control District
 - Pecos River Compact Commission
 - Pecos River Irrigation and Water Improvement Districts
 - Soil and Water Conservation Districts
 - Private landowners
- Pecos Basin Assessment Program
 - A multi-agency approach to assessment of the Pecos River Basin
- Rio Grande Basin Initiative
 - Providing funding for the monitoring and evaluation of the Pecos River Project

History of the Pecos River Ecosystem Project

- September 97 first meeting in Pecos.
- May 98 second meeting in Pecos.
- June 1999 third meeting in Pecos and tour of New Mexico saltcedar work.
- June 1999 completed first draft of 24(c) supplemental label.
- September 1999 submitted final 24(c) label to EPA, began first saltcedar treatments

Pecos River Advisory Committee

- Began meeting monthly in January 2005
- Purpose of the Advisory Committee:
 -to advise and be a sounding board for projects along the Pecos River in Texas including the Pecos River Ecosystem Project and the Pecos River Basin Assessment Program.





Pecos River Advisory CommitteeMission

To improve water quality and quantity of the Pecos River, to research, develop, and implement wildlife habitat improvement and agricultural practices unique to the Pecos River in Texas through the development of a long-term management plan



Pecos River Management Plan: 1) Herbicide application on saltcedar

2) Debris removal through prescribed burning

3) Long-term management: biological control, spot spraying, native plant restoration.

10.10.2001





Application Technology

Concerns:

Limiting herbicide contact with off-target vegetation.

Traditional application methods presented several problems.

Spraying at 25-30 mph allows turning without banking



Three section spray boom 15 – 30 – 45 ft. swath width controlled from cockpit

mm

.028 Accuflo Nozzle 1000 Micron Droplet 15 g/acre TSV





Pecos River Ecosystem Project

1999-2000

- Red Bluff Water and Power Control District
- Seven local water districts
- **2001**
 - □ Red Bluff Water and Power Control District
 - □ State of Texas
- **2002**
 - □ State of Texas
- 2003-2004
 - USDA NRCS EQIP
 - State Brush Control Program

Pecos River Ecosystem Project Acres Treated 1999-2004

Year	Cost	Total Acres	River Acres
Incalcu		ITCAICU	IICalcu
1999	\$125,020	658	658
2000	\$128,535	676	676
2001	\$263,000	1439	1417
2002	\$660,000	3567	2279
2003	\$783,300	3730	2667
2004	\$566,170	2697	1967
Total	\$2,526,015	12,767	9,664

Pecos River Ecosystem Project \$Funding\$

Year	Local	State	Federal*	Total
1999	125,020			125,020
2000	128,535			128,535
2001		263,000		263,000
2002		660,000		660,000
2003		195,825	587,475	783300
2004		141,540	424,620	566,160
Total	253,555	1,260,365	1,012,095	2,526,015
Percent	10%	50%	40%	

*Unofficial cost estimates

Pecos River Ecosystem Project Spray Areas 1999-2004







Pecos River Miles Treated 1999-2004

Segment	Miles	Cumulative	Miles Treated	Miles Left
Red bluff to Mentone bridge	40	40	40	0
Mentone bridge to Barstow dam	26	66	26	0
Barstow dam to I-20	20	87	20	0
I-20 to Grandfalls	37	124	37	0
Grandfalls to Girvin	89	213	34	55
Girvin to Iraan	53	266	32	21
Iraan to I-10	19	285	18	1
I-10 to Val Verde Co. line	56	341	42	14
Val Verde Co. to hwy 90 bridge	77	418	22	55
SUM	418		271	147
	Percent of River Miles Treated		64.8%	

Pecos River Ecosystem Project 1999-2004

- 11,500 total estimated acres on Pecos Main Stream
- 9,664 acres treated through 2004
- Estimated 1,830 acres left to treat
- 84% completion of initial phase





Mentone Bridge Pre-Treatment



Mentone Bridge 12 Months Post-Treatment



Mentone Bridge 24 Months Post-Treatment



Mentone Bridge 36 Months Post-Treatment



Mentone Bridge 48 Months Post-Treatment



Mentone Bridge 60 Months Post-Treatment












Phase 2 Debris Burning



Pecos River Basin Assessment Program





Multi-Agency Effort

- Texas Cooperative Extension
- Texas Agricultural Experiment Station
- Texas Water Resources Institute
- International Boundary and Water Commission – Clean Rivers Program

Need for the Project

- Largest U.S. river sub-basin flowing into the Rio Grande
 - Only perennial surface water source between the Colorado & Rio Grande rivers
 - A significant portion of economic activity in river basin is dependent on the Pecos river and adjacent ground water.
- Accounts for 11% of stream inflow into Amistad Reservoir
- Contributes 29.5% of total salt loading into Amistad

Need for the Project

- Invasive plant species
- Biological diversity
- Water quality





Project Objectives

- Task 1: Assess physical features of the Pecos River basin
- Task 2: Facilitate communications with stakeholders and landowners
- Task 3: Monitoring/Research Program
 Task 4: Develop long-term Watershed Management Plan for Pecos River in Texas

Task 1: Basin Assessment

Identify, characterize, and evaluate physical features of the Pecos River

Aspects will be viewed from a historical perspective as well as current conditions

Task 1: Basin Assessment

- Environmental, Social, & Economic Inventories of:
 - Historical information
 - Land & water use
 - Economic modeling
 - □ Riparian vegetation
 - □ Aquatic habitats





November 1936



October 1961

March 2005



Task 1: Basin Assessment

- Detailed salinity evaluation and model
 - Evaluate and map salinity sources including influence of tributaries.
 - Salinity modeling of influences on Red Bluff Reservoir.
 - Evaluate salinity effects of Pecos River on Amistad Reservoir.
 - Evaluate alternative long-term strategies to minimize salt loading.

Task 2: Educational Programming

Publications

□ Historical progression of Pecos River basin

Summary of the multi-disciplinary approach to monitoring the river and basin

Detailed summary of the watershed plan to be developed

Development of a website to disseminate information

Task 2: Educational Programming

Educational Meetings

Informational

Project awareness

Skill Developing

- Natural Resources training for landowners
- Discovery
 - Stakeholder involvement in plan development
- Public comment
 - Feedback on proposed management plan

Task 3: Monitoring Program

- Develop a Quality Assurance Project Plan (QAPP) for sampling protocol
- Water Quality Monitoring

 Total Dissolved Solids (TDS)
 Total Suspended Solids (TSS)
 Parts Hydrogen (pH)
 Dissolved Oxygen (DO)
 Electrical Conductivity (EC)



Task 3: Monitoring Program

- Quantity and fate of water salvage due to saltcedar control
 - Determine water salvage
 - Characterize the aquifer with borehole exploration & monitoring wells
 - □ Evaluate flow regimes
 - Model hydrologic impacts of saltcedar control



Using Shallow groundwater wells with pressure sensitive data loggers for calculating water loss.



Pecos River Well Data

November 2000 Site A



Pecos River Well Data

June 2001 Site A



Untreated Site, July 2001-2003



Treated Site, July 2001-2003



Total Water Loss on Sites A&B from Well 1



Site A saltcedar treated after 2001 growing season shows dramatic decrease in water loss. Site B remains untreated through 2003.

Fate of salvaged water

Field measurement
 ✓ Water levels
 ✓ Water quality
 ✓ River flows





Develop cross sectional profiles of treated and untreated areas along with detailed flow measurements between sites



Task 4: Watershed Management Plan

- Develop initial plan
- Modify plan to include ongoing research & stakeholder input
- Develop final plan for public comment
- Submit final Watershed Management Plan

For more information:

pecosbasin.tamu.edu

💟 Pecos River Basin Assessment Program - Mozilla Firefox - 0 × Bookmarks Tools Edit View GO Help 🔽 🔘 Go 🗔 🔝 🏫 🗋 http://pecosbasin.tamu.edu/ • 🖒 • 🚭 🔁 Personal 🔁 Markets 🗁 Misc Resources 🗁 Media 🗁 TCE Sites PECOS RIVER BASIN ASSESSMENT PROGRAM NAMGATE PHOTOS "DEVELOPING A PLAN FOR RESTORATION THROUGH ASSESSMENT, AWARENESS, AND INVOLVEMENT" HOME Objectives **PROJECT OVERVIEW** Establish a research baseline for the Watershed for water quality and quantity PROJECT PERSONNEL monitoring. **PROJECT DOCUMENTS** Educate rural and urban stakeholders on issues relating to water guality and guantity PUBLICATIONS issues in the Pecos River Basin. PECOS RIVER ECOSYSTEM o Develop a Watershed Protection Plan for Pecos River segments 2312, 2311 and

- MAPS
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PROJECT

PECOS RIVER AWARENESS SURVEY

Components

2310.

- Basin Assessment: Texas Agricultural Experiment Station researchers will develop a baseline assessment on the Pecos River Basin with regards to stream channel morphology, riparian vegetation, land use, salinity mapping, water inflows and outflows, aquatic habitats, historical perspectives and economic modeling
- Educational Programming: Texas Cooperative Extension will work with various state and local agencies to assemble a series of publications and organize and conduct a series of educational meetings targeted at landowners, stakeholders and policymakers in the Pecos River Basin.
- Monitoring Programs: Through data collection and analysis as well as water use studies, personnel will estimate the effect of salt concentration and fate of water salvaged through saltcedar control in the Pecos River Watershed.

Done

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2:21 PM

PECOS RIVER BASIN ASSESSMENT PROGRAM

NAMGATE PHOTOS 4







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PECOS RIVER ECOSYSTEM PROJECT "WORKING TO RESTORE THE PECOS RIVER IN TEXAS"



Pecos River Prior to Saltcedar Treatments



Pecos River 3 Years after Treatment

Some of the following files are large in size, and may be slow to download using a dial-up Internet connection. File sizes over 1 MB are given in parentheses.

Slide Shows

- » Water Salvage Estimates from Saltcedar Control on the Pecos River 🖄
- » Pecos River Pictures 🖄
- » Application Technology 🖄

- A second se Second se Second sec

PECOS RIVER BASIN ASSESSMENT PROGRAM

NAVIGATE PHOTOS





PECOS RIVER ADVISORY COMMITTEE

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Rio Grande

Basin Initiative

Search

What's New

- O Download the August 2005 issue of RGBI Outcomes 12
- O View the 2005-06 Deliverables (MOAs)
- View 2005-06 Projects & Activities A list of activities grouped by RGBI Participants and their projects

Featured Articles

- Mexican Irrigation Boosts Economy (Part 3) Mexican farmers buying bulk of irrigation equipment from U.S.
- <u>Collaboration and Support</u>
 Both sides of the border work together for water conservation
- Polypipe Technology Conserves Water (Part 2)
 Tests in Mexico could lead to 50 percent water savings

Improving Irrigation Efficiency and Water Conservation

Through Extension and research efforts, the Texas A&M University Agriculture Program and the New Mexico State University College of Agriculture and Home Economics are implementing strategies for meeting present and future water demand in the Rio Grande Basin. These strategies expand the efficient use of available water

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