

The Pecos River Ecosystem Project Summary

Background and Purpose

The Pecos River stretches over 300 river miles in Texas, starting near the New Mexico border and slowly meandering south and east to empty into the Rio Grande.

It is the source of water for agricultural producers all along its basin and also serves producers along the Amistad Dam area of the Rio Grande.

But recent droughts coupled with a water-thirsty culprit is causing decreased river flows, lowered groundwater recharge, increased surface soil salinity and increased fire and flooding frequency.

The Pecos's banks are densely covered with saltcedar trees, a species that dominates all native vegetation. Introduced as an ornamental in the early 1900s and then planted for stream bank stabilization in 1925, it has earned a reputation as the most water-hungry plant in Texas.

The Pecos River Ecosystem Project group is composed of various state and federal agencies, irrigation districts and water systems in the area. The group was organized in 1997 after a meeting initiated by the Texas Department of Agriculture to discuss methods of saltcedar control. Funding is administered locally by the Upper Pecos Soil and Water Conservation District.

What has the Project accomplished?

Spraying with the herbicide Arsenal was conducted in 1999, 2000, 2001 and 2002. Approximately 6,341 acres of saltcedar have been treated to date. The most recent spraying took place from August 30 to September 11 and the entire spray project encompassed 120 miles on the Pecos, plus the Red Bluff Lake area and portions of some Pecos tributaries.

Where has funding come from?

Funding for the project was provided in 1999 and 2000 by area water and irrigation districts. For 2001 and 2002, a legislative appropriation of \$1 million was acquired through the Texas Department of Agriculture. Additional research funds are provided through the federally funded Rio Grande Basin Initiative, administered by the Texas Water Resources Institute, Texas A&M University System.

How much water has been salvaged?

Because it's a thirsty plant, saltcedar sends its roots downward until it reaches groundwater, then continuously pumps water from the ground through the plant. By measuring hourly groundwater levels, the research team can estimate water consumption by saltcedar trees along the Pecos River.

- One acre of saltcedar uses about 7.7 acre feet of water annually, or 2.8 million gallons.
- Each tree along the Pecos River uses about 14,000 gallons annually, or 78 gallons per tree per day.
- Controlling one acre of saltcedar salvages enough water to meet the needs for 105 people or irrigate one acre of pecans.
- Two saltcedar trees use the same amount of water as one person annually, while cost to treat these two trees is only \$4.00.
- In 3 years of daily monitoring, estimates show the Pecos Project has salvaged over 36,000 acre feet of water, just under **12 billion gallons**, or roughly **enough water to serve the needs of a city the size of Lubbock for a year**.
- After three years of treatments, no significant re-invasion has been seen. However, assuming a mere 3 year treatment life, **the project has cost \$8 per acre foot of water salvaged**.
- After additional spraying in 2002, potential annual water savings next year are estimated to increase to **48,887 acre feet, or 15.9 billion gallons**.
- \$1 million provided by the state legislature has treated 5,007 acres and salvaged 12.5 billion gallons of water annually or about twice the annual water use of Abilene.
- The project was conducted with administrative funds of only 8%, 92% of the funding went to actual treatment costs.