



Texas AgriLife Research Center at El Paso

Examples of El Paso Center Contributions to the Community and Texas.

- Research on beneficial uses of a cooling tower reject water project indicated that almost 1.1 billion gallons of reject water per year could instead be potentially used for beneficial purposes in El Paso such as agricultural irrigation.
- Preliminary research results on improved irrigation scheduling for pecans indicated the possibility of at least one irrigation savings per season. With an estimated 9,000 acres of pecans in EPWID#1, this would translate into a savings of 3,000 acre-feet of freshwater per year.
- Data from the first year of research on salinity management using synthetic organic polymers indicated a reduction in salinity in the effective root zone of pecans. Adoption of this practice could increase irrigation efficiency and possibly yields.
- The Statewide Bacterial Source Tracking (BST) Library, the largest in Texas, housed at the El Paso AgriLife Research Center has been expanded through the addition of over 500 new *E. coli* isolates. This increased capacity will help in identifying sources of fecal contamination and developing effective control measures.
- El Paso Research Center Environmental Microbiology BST analytical capabilities and capacity have been expanded by acquiring new state-of-the-art equipment and personnel supported through TSSWCB funding.
- Research evaluating advanced drinking water treatment for pathogen removal from impaired quality Rio Grande winter return flows was recently conducted in collaboration with El Paso Water Utilities, AwwaRF, USBR, NMSU, UTEP, and CHIWAHA. Results show that nanofiltration is effective for removal of naturally occurring levels of pathogens in winter return flows. However, low level virus breakthrough during virus challenges of the treatment plant emphasized the importance of a multiple barrier approach to water treatment, including the use of a disinfectant.
- Three new bacterial source tracking projects, plus two *Cryptosporidium* projects, and a USDA Rio Grande Basin Initiative project to evaluate the effectiveness of advanced surface water treatment were initiated in 2007 and are ongoing.
- Three studies on rose rootstocks were completed. These evaluated: (1) relative rootstock salinity tolerance; (2) tolerance of rootstocks to salinity with dominant salts of chloride or sulfate common in many arid regions; and (3) drought tolerance of the rootstocks. The results will serve as an important reference for selection of successful rootstocks by commercial nurseries for the Southwest region where salinity and drought are environmental constraints for garden roses.
- Evapotranspiration of selected herbaceous and woody ornamental species was determined to help in identifying additional low water landscape plants. Additional research on the garden performance of other herbaceous flowering plants found that 8 out of the 15 species tested were drought and heat tolerant and can be recommended for use in arid environments such as El Paso and Southwest U.S. These results have expanded the recommended list of low water use species and provide quantitative information on water use and appropriate irrigation of these ornamental plant species. This research has also expanded the number of species the horticultural industry and homeowners can consider when designing water conserving landscapes.

- An El Paso Center scientist serves on a National Research Council Advisory Committee and contributed to the report Prospects for Managed Underground Storage of Recoverable Water published in 2008. This book provides state-of-the-art information on sustainable underground storage technology and implementation, and recommendations on future research and education needs and priorities.
- Alternative potential water sources (gray-water and brackish groundwater) for agricultural irrigation were identified and evaluated. Results showed that both gray-water and brackish water can be used to augment fresh water supplies for cotton and vegetable (tomato, chile and pepper) production. Gray-water irrigation produced more vegetables and cotton lint than brackish water irrigation. No immediate impacts on the soil salinity were observed in the field. Even though long-term impacts need further investigation, both water sources have great potential for agricultural production with good irrigation and field management. Use of these sources could expand existing water supplies for agricultural production.
- Hydrologic models were developed to assess alternative strategies for flood control planning and management and for regional water resources planning in the Rio Grande Project area. Results from this research are providing information needed for decision makers to take measures to prevent or reduce damages caused by floods or droughts. With the rapid assessment of flood control risk this model provides, and timely implementation of appropriate control measures, property damage in the millions of dollars and loss of lives can be reduced or prevented. The hydrologic models also provide information and data to improve the delivery efficiency of Project water operations.
- El Paso Water Utilities and consumers have saved an estimated four million dollars because of El Paso Center research on reclaimed water use, the development of guidelines and management assistance provided by Center scientists.
- The AgriLife Research Center at El Paso's library of over 11,000 bacterial samples is the largest and most characterized collection in the state and is used for determining sources of water contamination and developing effective pollution control strategies. This collection of bacterial samples is maintained at -80 degrees Fahrenheit.
- AgriLife Research Center scientists in collaboration with New Mexico State University scientists found that compared to existing water allocation institutions, future drought damages in the upper Rio Grande Basin could be reduced by 20% to 33% per year through intra-compact and interstate water markets, respectively, that would allow water transfers across water management jurisdictions.
- The AgriLife Research Center at El Paso scientists, in collaboration with the El Paso County Water Improvement District #1, are working to determine conveyance losses and potential water savings by lining canals. Center research has found that by lining 10 miles of canals the El Paso irrigation district could save enough water to supply 1,000 acres of irrigated crops or 8,000 households.

Far West Texas is Unique

Far West Texas produces 25.7 million pounds of Pecans and 27.3 million pounds of cotton each year. El Paso has 96% of the population of Far West Texas and is the 6th largest City in TX, 21st in the U.S. El Paso has the largest inland desalination plant in the world - a capacity of 27.5 million gallons per day. El Paso is closer to San Diego than it is to Houston.

It's a dry heat!

Far West Texans don't talk like other Texans.

We know "chile" ends with an "e", not an "i".

El Pasoans get in-state tuition at NMSU.

The Rio Grande is turned off during the winter (really).