

The Arroyo Colorado Watershed Partnership Newsletter



Fall 2019

TWRI, AgriLife Extension and others host training, field days in 2019 for LRGV producers

By Victor Gutierrez

Rio Grande Valley Brush and Forage Management Field Day

About 60 attendees participated in the Rio Grande Valley (RGV) Brush and Forage Management Field Day Oct. 15 at the San Luis Ranch hosted by the Flores family in San Manuel. Texas Water Resources Institute (TWRI) and its partners, including U.S. Department of Agriculture Natural Resources Conservation Service (USDA NRCS), USDA Farm Service Agency, Prairie View A&M University, Texas State Soil and Water Conservation Board (TSSWCB) and Texas A&M AgriLife Extension Service county agents, organized the educational program to inform producers on best management practices for brush management and forage inventory. Since pastures and rangelands have different issues than row crops in terms of irrigation, pests, fertility, etc., this field day focused on major points dealing with managing rangelands. Presentations and a ranch tour were given on brush and forage management. Presentations by Jose “Pepe” Martinez and Henry Gonzalez from USDA NRCS specifically focused on how to properly manage forages during the ranch tour.

A presentation on identifying native and introduced forage species and soil needs by Vivian Garcia (USDA NRCS) was of particular interest during the morning tour. Megan Clayton, AgriLife Extension range specialist, presented on how to properly apply chemicals on brush in pastures, the correct stages plant species need to be for the optimal uptake of the chemicals added and the type of chemicals to use along with the rates recommended to control brush. USDA NRCS and TSSWCB representatives provided information about their cost-share incentive programs and how the programs can help producers implement conservation practices.

Small acreage and disadvantaged producer meetings

This past year, TWRI collaborated with Dr. Samuel Zapata, AgriLife Extension economist; Dr. Juan Anciso, AgriLife Extension vegetable specialist; Dr. Juan Enciso, Texas A&M AgriLife Research irrigation specialist; and county extension agents Vidal Saenz, Hidalgo County; Ashley Gregory, Hidalgo County; Jennifer Herrera, Cameron County; and Ronnie Zamora, Willacy County to produce educational programs targeting small acreage farmers, beginning farmers and historically disadvantaged producers in a series of workshops.

The project team hosted six workshops covering a number of topics ranging from livestock management, fruit production and preparation of products for sale at local and state farmer’s markets along with a value-added workshop demonstrating other avenues for crop commodities. (see *Trainings, field days on page 6*)



Attendees at the Rio Grande Valley Brush and Forage Management Field Day at the San Luis Ranch.



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22nd Annual Rio Grande Valley Beef Improvement Association's Bull Gain Test and Heifer Development Program

By Jaime Flores

The 2019 Bull Gain Test and Heifer Development Program was held on Oct. 9 at Rio Beef Feedyard in San Manuel. Bulls and heifers were delivered to the feedyard early that morning to begin the program. The cattle were tagged, weighed, vaccinated and dewormed. The program's purpose is to provide uniform, economical, nutritional and health management to allow optimal growth and fair comparisons of genetic differences between animals in similar age groups. The test enables Texas A&M AgriLife Extension Service county agents to provide a uniform method of collecting performance data and providing it to consignors and other interested parties. The data collected is also used by the county agents to conduct educational activities based on the results of the program.

These bulls are put on 110-day gain test and are measured for Average Daily Gain (30%), Rib-eye Area/cwt (20%), Weight per day of Age (20%), Percent IMF "Marbling" (20%) and Scrotal Circumference (10%). Bulls are ranked by breed and by age. Heifers are ranked by their

reproductive tract scores, pelvic area and frame size to provide information to breeders of yearling purebred and commercial bulls and heifers for use in selection and marketing to beef cattle producers throughout Texas. Bulls that have an overall test ratio of 100 or better, have passed a fertility test and are negative for trichomoniasis are given a clean bill of health and are eligible to go to auction. This year there were four age groups, Senior Bulls – Spring 2018, Intermediate Bulls – Summer 2018, Junior Bulls – Fall 2018 and Calf Bulls – Spring 2019.

The Rio Grande Valley Beef Improvement Association was created in 1998 to assist cattlemen in improving the quality of their livestock. The bull gain test is an official gain test conducted by Texas A&M AgriLife Extension Service, under the direction of Dr. Joe Paschal, AgriLife Extension beef specialist and AgriLife Extension county agents in Cameron, Hidalgo, Willacy and Starr counties. Successful bull gain tests and heifer development programs have been conducted every year since 1998. A total of 1,608 bulls and 1,110 heifers have been entered in the program since its inception.



Beef Improvement Association's Bull Gain Test and Heifer Development Program conducted by Texas A&M AgriLife Extension Service to assist cattlemen in improving the quality of their livestock by collecting performance data.



Team works on updating the inventory of septic systems in Cameron County

By Gabriele Bonaiti

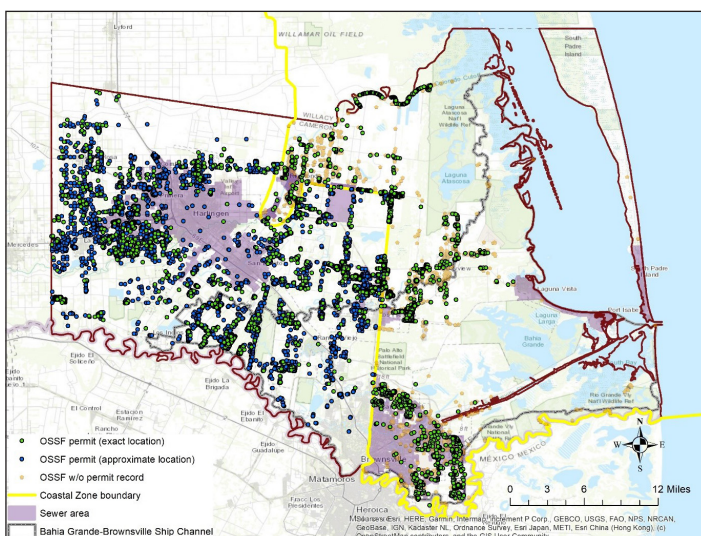
Private residential on-site sewage facilities (OSSFs), commonly referred to as “septic systems” (or Onsite Wastewater Treatment System, OWTS), are estimated in Cameron County to have grown by more than 400 systems in 2018, reaching a total of almost 36,700 systems. OSSFs have various designs based on physical characteristics of the local soils and the level of seasonal groundwater and are generally categorized as “conventional” or “aerobic.” Conventional systems typically consist of one or more septic tanks and a drainage or distribution field and are the most common type in Cameron County. Aerobic systems have an aerated holding tank and typically an above-ground sprinkler for distributing the treated effluent. When properly designed and operated, both types of OSSFs are expected to contribute virtually no fecal bacteria to adjacent water bodies.

During the development of the Arroyo Colorado Watershed Protection Plan, it was decided that a detailed inventory of OSSFs (number, location, type, age, etc.) could be beneficial, and funds were obtained from the Texas Commission on Environmental Quality to start developing an OSSF GIS database. In the first phase of the project, Texas A&M AgriLife Extension Service (AgriLife Extension), Texas Water Resources Institute (TWRI) and University of Texas Rio Grande Valley (UTRGV) created preliminary maps for the Arroyo Colorado watershed and the coastal zone. In

Phase II, AgriLife Extension, TWRI and UTRGV worked with the Cameron County Health Department to develop a complete inventory of OSSFs for the entire county. This phase will last three years.

The adopted method refers to previous experiences in Texas, i.e., the Coastal On-site Sewage Inventory database and the Lampasas River Watershed OSSF Inventory, by AgriLife Extension, and the Houston-Galveston Area Council OSSF Inventory. Identified steps include: a) maps of sewer service areas are obtained from cities and other sewer providers, and used to identify (and exclude) properties reached by collective lines; b) 911 physical addresses and aerial photography are used to identify buildings that likely have an OSSF and that fall outside sewer areas; c) parcels legal description and OSSF permits are used to estimate age and type of OSSFs and to validate OSSF location.

Currently, the main focus is locating OSSF permits in collaboration with Cameron County Health Department. The department agreed to update its database, start collecting XY coordinates of new permits and share data on a regular basis (use of XY coordinates was identified as the most effective method in locating new permits). AgriLife Extension, TWRI and UTRGV provide support to the health department, such as students, software and hardware, data analysis and online tools (e.g., interactive web maps). The county has an electronic database, which includes permits for installed OSSFs since 1988. The project team is working to determine the total count of permits and the number located on a map (some precisely on top of a building and some on an approximate location). Historic OSSFs permits are located using any available information, including appraisal legal description, while new ones are shared monthly by the health department and immediately located on a map based on XY coordinates and physical address. To date, a total of 12,109 OSSFs have been located on a map, as shown in Figure 1. Out of these, 47% have been located precisely on top of the building, while 53% are still on an approximate location (OSSFs with a permit obtained in the years 1988-2017).



Cameron County OSSFs geolocated as of August 2019.



Los Fresnos ISD hosts Falcon Pond Beautification Day

By Jaime Flores

Los Fresnos Independent School District hosted the Falcon Pond Beautification Day (FPBD) on Nov. 16 at the Los Fresnos High School campus. The FPBD is Phase II of the beautification project. Phase 1 was kicked off in March 2019.

The goal of the FPBD was to plant native flowers, shrubs and trees in Falcon Pond and pick up litter and trash in and around the pond.

The volunteers started arriving early Saturday morning. A total of 54 volunteers, including 40 students, two district employees, a school nurse, four campus administrators, five campus teachers/club sponsors and two parents/community members, showed up for the event. The students represented the Los Fresnos High School (Biology Club and AP Biology students), Los Fresnos United (Nature Club), Resaca Middle School (STEAM 6th and 7th grade students), Los Cuates Middle School (Gardening Club) and Liberty Memorial Middle School (Junior National Honor Society members).

Jaime Flores, Arroyo Colorado watershed coordinator, first explained to the students that they were going to plant trees and the reasons why. Rubber boots, shovels and trash pick up sticks were distributed and Flores demonstrated how to dig a hole, remove the tree from the pot and plant it correctly. Then the students broke into groups of 3-5 and started picking up trash and planting.

Falcon Pond is the bed of an abandoned resaca, an ancient distributary channel of the Rio Grande, modified to serve as



Aerial photo marking where volunteers planted flowers, shrubs and trees during the Falcon Pond Beautification Day.

a stormwater retention pond. During rain events, all of the stormwater from the high school flows across and under the school's parking lot and eventually drains into Falcon Pond. The native flowers, shrubs and trees that were planted will serve several purposes: 1) they will filter out sediment, nutrients and pollutants from the stormwater coming from the high school and parking lot, 2) they will bloom and provide nectar that will attract pollinators, such as bees, butterflies and hummingbirds, and 3) they will attract more birds to the pond.

In two hours, the students planted 250 native flowers, shrubs and trees and collected trash to fill one and half 55-gallon trash bags. The flowers, shrubs and trees planted were: Scarlet Sage, Golden Wave Coreopsis, Mexican Capraria, Shrubby Aster, Heliotrope, Crucita, Golden Rod, Runyan Water Willow, Mexican Button Bush, Primrose Willow, Shrubby Aster, Montezuma Cypress, Anacua and Guamuchil.

Phase III of the project will consist of the students developing interpretive signage for the flowers, shrubs and trees that were planted in Falcon Pond, as well as signage discussing nonpoint source stormwater pollution and the role of Falcon Pond in removing pollutants from the stormwater.

The Arroyo Colorado Partnership, Texas Water Resources Institute and Los Fresnos ISD partnered together to implement this project. It is being financed through grants from the U.S. Environmental Protection Agency through the Texas Commission on Environmental Quality.



Los Fresnos High School students planting flowers, shrubs and trees at Falcon Pond Beautification Day.



Irrigation Management Modernization Challenges and Opportunities demo, tour

By Victor Gutierrez

On July 16, Texas Water Resources Institute (TWRI), Texas Water Development Board and Rio Farms facilitated an Irrigation Modernization Challenges and Opportunities program that included a cotton irrigation demonstration trial that was conducted from April–August 2019 in Monte Alto. Rio Farms partnered with TWRI to conduct an irrigation demonstration project on a 16-acre tract of land using cotton as the target crop. The 16-acre block was split into three sections: a control block; a treatment block, which used an irrigation technology called Pipe Planner that uses larger hole sizes to push water faster down the furrows; and a skip row irrigation block. Soil moisture sensors were used to better understand water movement into the soil profile within each block. Three sensor arrays consisting of three sensors each (at 6, 12 and 24 inches deep) were placed in the center of each block at approximately a third of the way down the rows and a third of the way from the end of the row. Data was collected weekly and helped in determining when irrigation was needed. Automatic water metering technology was also used to report water use. A tour of the field highlighted challenges faced, lessons learned and future plans.

Irrigation district field tours

In preparation for the July 16 field day, on July 15, a group of farmers/producers and irrigation district members took a bus tour from Casa de Palmas in McAllen to two different pump houses. The first stop was in Hidalgo at the historic Hidalgo Pump House. The second stop was at the equally historic pump house located in Los Indios to demonstrate how water is pumped from the Rio Grande and then “pushed” into irrigation district reservoirs. Producers were refreshed on the practice of using poly-pipe to efficiently irrigate main row crops produced in the Rio Grande Valley (RGV), including cotton, corn and grain sorghum. Dr. Lucas Gregory, senior research scientist at TWRI, opened the program to irrigation specialists across the state. Irrigation district representatives spoke about improving irrigation district modernization and salinity management. There were more than 30 attendees from across the RGV at this event.



Tom McLemore, general manager, Harlingen Irrigation District, discusses the components and utility of the automated canal gate demonstration channel at the Rio Grande Center for Ag Water Efficiency.



Water level sensor and automated gates in the demonstration channel at the Rio Grande Center for Ag Water Efficiency.



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Training, field days *(cont. from front page)*

Each workshop also included a section that focused on business planning. Landowners were informed about where and how they could apply for cost-share assistance programs and where they could apply for USDA loans.

Every workshop was well attended, averaging 50 people per workshop. This year, based on feedback from participants who attended last year's workshops, producers who were not able to physically attend a workshop could live stream the workshops through Facebook Live and/or see the workshops through the RGV small acreage website: <http://bit.ly/RGVSmallAcreage>.

Irrigation programs

TWRI and partners facilitated back-to-back identical irrigation programs focused on maximizing the efficiency of irrigation water use through technology and irrigation management. These programs were Sept. 25 at the AgriLife Extension annex service center in Cameron County and Sept. 26 at the Echo Hotel Conference Center in Edinburg.

There were presentations on the latest state-of-the-art irrigation technology including soil moisture sensors, drip irrigation and drip tape from local industry representatives Danny Sosebee, Netafim USA and Jeffery Kleypas, Toro Irrigation. Irrigation land-leveling and irrigation pipelines for faster water delivery, both irrigation best management practices, along with chemigation and fertigation process for application were presented by Dr. Juan Enciso, AgriLife Research irrigation specialist.

Salinity issues in irrigation water have become more of an issue over the last several years in the RGV, and producers had requested more information on salinity. In response to this request, Dr. Girisha Ganjegunte, Texas A&M AgriLife Research professor, El Paso, presented on salinity manage-

ment in irrigation water and discussed the option to plant alternative crops. Dr. Dana Porter, AgriLife Extension agricultural engineering specialist, Lubbock, presented on irrigation scheduling tools and approaches to specific to soil and crop needs. Dr. Luis Ribera, AgriLife Extension agricultural economist, spoke on economics and value of irrigation water specific to the RGV, a topic of particular interest to the producers.

Dr. Leyon Greene of the Texas Water Development Board spoke on TexMesonet, a weather tool application to help inform producers on weather conditions and the use and installment of weather stations.

With a little over 70 attendees combined, there was good discussion between irrigation specialists and local producers about their irrigation practices and updates on which best management practices are in the new 2018 Farm Bill. Financial and technical assistance for these BMPs will be funded through USDA NRCS and TSSWCB.

Water conservation for youth

Throughout the year, TWRI participated in youth development programs explaining the importance of water conservation and nonpoint source pollution. Using a watershed model, TWRI educational presentations demonstrated how water is delivered, used and disposed of and, how eventually, it enters into the Arroyo Colorado to be distributed into the Lower Laguna Madre. Sometimes accompanying the watershed model was a live model stream trailer, which demonstrates how a stream flows and the impacts on the riverbank such as soil erosion and sediment and nutrient runoff. Presentations about water conservation have been made to more than 3,000 children this year in the tri-county area of Hidalgo, Cameron and Willacy counties.



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The Arroyo Colorado Watershed Partnership

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