

North Plains Water News



A Publication of the NORTH PLAINS GROUNDWATER CONSERVATION DISTRICT

VOLUME 64, NO. 3

FALL 2018

2018 Agricultural Water Use Demonstrations

With the 2018 growing season marking the first year ever that cotton acres outnumbered corn acres planted on the North Plains, demonstrations at the North Plains Water Conservation Center (WCC) will focus more on data related to cotton production.

Specifically, the district is presenting a side-by-side comparison of crop water use and yield data for a cotton crop and a corn crop, using the latest center pivot technology and sub-surface drip (SDI) systems. To accomplish this comparative demonstration, the east 120-acre circle and the north 20-acre field of SDI was planted in cotton, while the west 80-acre circle and the south 20-acre field of SDI was planted in corn. Both pivots employ Low Energy Precision Application (LEPA) on 4-year old Reinke center pivots with drops no more than 18 inches above the ground. Bubbler-type nozzles were used on the east pivot, while a shroud-type nozzle was used on the west pivot.

At the time of this writing irrigation has stopped and harvest has begun at the WCC. Plant populations, fertilizer, irrigation and rainfall have been monitored throughout the season and a full report on findings will be presented once harvest is completed.

Other demonstrations conducted by the district this year include on-farm weather stations, a strip-till and no-till comparison, and a cover crop demonstration. Since it is the first year for these demonstrations, valuable baseline information will be gathered this year with the expectation of more conclusive data in the future. For more information on the district's demonstrations visit our website at www.northplainsgcd.org.



In response to the expansion of cotton acres in the district, demonstrations at the North Plains Water Conservation Center focus more on cotton production and water use, compared to the corn focus of past demonstrations.

Rainwater Harvesting Class Offered October 30th

After months without any measurable precipitation, the Panhandle has had a relatively wet summer and quite a soaking in October. Rain harvesting can help you take advantage of those wet periods and use the water throughout the year.

Collecting and storing rainwater for future use will not only help keep water in the aquifer, but also keeps money in your wallet. Using captured rainwater instead of water from the hose or tap will save you money on your water bill, and rain harvesting equipment is tax exempt according to the Texas Water Development Board.

Rainwater harvesting can mean many different things, from capturing a few gallons for supplemental yard watering, to installing sophisticated infrastructure for off-the-grid living. Learn more at North Plains Groundwater Conservation District's informational class on rainwater harvesting on Tuesday, October 30th from 7pm-8:30pm at the North Plains Water Conservation District office at 603 E, 1st St. in Dumas. The class is free, but please RSVP by calling Julia at 806-930-6934 or e-mail jstanford@northplainsgcd.org.



Photo courtesy of Garden Gate Magazine, www.gardengatemagazine.com

2019 Cotton Demonstrations & Education

Plans have been approved and are underway for a new cotton production education program presented by North Plains Groundwater Conservation District (NPGCD) and the Texas A&M AgriLife Extension Service. According to the proposal prepared by AgriLife Extension, the program will involve the agency's County Agents, regional Agronomists, Entomologists, and Plant Pathologists in cooperation with NPGCD and the district's Cotton Program Advisory Committee to provide cotton production education for the producers of the district. The educational program will dovetail with AgriLife Extension's existing Replicated Agronomic Cotton Evaluations (RACE) variety trials across NPCGD.

County Extension Agents (CEAs) representing the eight counties that comprise the district will coordinate with Dr. Jourdan Bell, regional AgriLife Extension Agronomist, to provide weekly video programs from six RACE trials across the district. It is anticipated that the Entomologists and Pathologists will be invited to provide timely videos depending on insect and disease pressure. Reporting from RACE trials provides the CEAs and Agronomist the opportunity to evaluate and report on interactions between genetics, environment, and management. Videos will be approximately three to four minutes in duration. Weekly reports are expected to include the following information in addition to location and planting date for a minimum of two entries in the trial being discussed:

- Weekly Plant Growth Stages
- Current Growing Degree Days Accumulated
- Environmental Conditions
- Irrigation Practice and Amount
- Plant Growth Regulator Timing
- Plant Disease Identification and Management Tips
- Insect Identification and Management Tips
- Irrigation Termination
- Harvest Aid Management

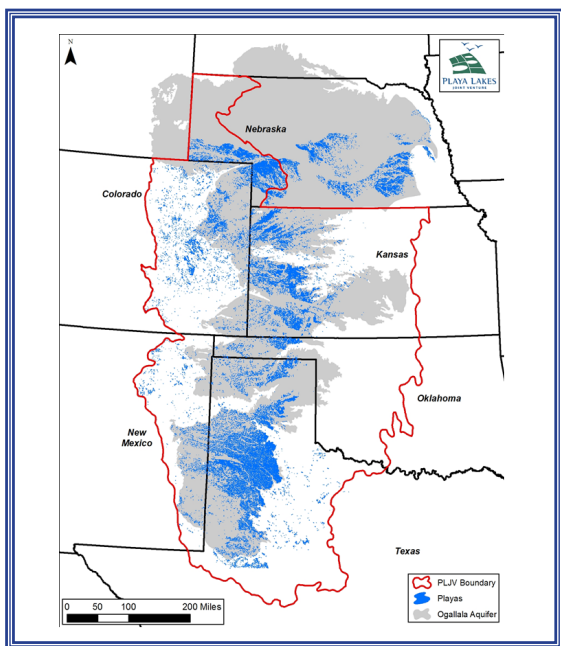
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Understanding Playa Lakes

This article is the first in a two-part series contributed by Odell Ward, North Plains GCD Program Coordinator

When people think of playa lakes, they may picture a landscape dotted with small lakes covered with ducks, geese and other types of water birds. In reality, that view of a playa lake is a rare treat. Playas are ephemeral and only contain standing water about 10% of the time. When wetted by precipitation events, playas seldom hold water for more than a few days or weeks. It is more common for playa lakes to remain under dry conditions than to have standing water. Large playas can stay dry for decades without receiving enough runoff to seal up the bottoms allowing water to pond. Large playas can retain standing water for months and in some cases, longer than a year. Small playas can often fill with runoff each spring and quickly dry up within a few days.

Playa lakes cover less than two percent of the total land area of the region with 87% of the playas having less than 30 acres of surface area. Playas average three feet in depth and have a holding capacity of approximately 45 acre-feet of water. To accumulate water, playas need short, heavy, intense precipitation events that produce two to three inches of rainfall over a few hours or even a few days. During the summer months, 50-60% of all available water in the playa is lost to evaporation. The remaining 40-50% infiltrates into the soil through cracks in the clay soils before the cracks seal up. Of the water that infiltrates into the soil during the first few hours of a ponding event, only an estimated 20% reaches the water table to recharge the aquifer. Studies show that infiltration under the playas occurs ten to twenty times faster than the areas between playas. Water percolation downward towards the water table moves at a rate of between one millimeter and 500 millimeters per year. Ponding events in the fall usually last longer than events occurring in the spring.



Regionally there are about 66,000 recognized playas in the central and southern High Plains that make up Eastern New Mexico, the Texas Panhandle, West Texas, the Oklahoma Panhandle, Southwestern Kansas, and Southeastern Colorado. Considering the Canadian River as a dividing line between the Central Plains and the Southern Plains, playa lake concentrations are much higher to the south. North of the Canadian River the density of playas per square mile can be as low as one in every ten to fifteen square miles. South of the river, densities can reach one playa for every two square miles.

The lakes to the north of the Canadian River tend to be larger and hold water for more extended periods than the playas to the south. Many studies suggest that the reason for the larger size is due mostly to climatic differences. Average seasonal temperatures increase north to south, significantly influencing the duration of water ponding in the playas. Although the High Plains is a semi-arid to arid region, precipitation varies from north to south as well as from west to east. Average annual rainfall amounts can reach over 22 inches a year in northeast Nebraska and as little as 14 inches in west Texas. Evaporation rates in southern west Texas are also much higher than in the northeastern Plains states.

Playa lakes are not only crucial for recharging the aquifer, but they help maintain the quality of the water reaching the aquifer as well. The water running off into playas tends to have high levels of total dissolved solids, chlorides, sulfates, nitrates, and pesticide residues. The clay soils of the playa bottoms filter out these contaminants and hold them in the soil until they can be weathered and broken down into less harmful forms that can be utilized by plants that inhabit the playas. 💧

2019 Cotton Demonstrations & Education

(continued from page 1)

Rotating videos between trials will provide district cotton producers real-time variety comparisons under the respective environmental and management systems. Videos will occur every three weeks from each field (two fields per week). On-site weather data for each location, along with calculated growing degree days (GDDs) will be displayed on the district's website at www.northplainsgcd.org. Because there are uncertainties about GDD accumulation with development of newer cotton varieties in northern production regions, weekly evaluation of the current growth stage and the respective GDD for each field will provide a solid dataset to evaluate the historical GDD model and create a data base to ground-truth a revised GDD model being supported by Cotton Incorporated.

In addition to the weekly video reports, data will be compiled and presented at regional Texas A&M AgriLife Extension Cotton Programs in Dalhart, Dumas, Spearman, and Perryton. An end of year report will be provided to supplement the RACE trial variety report. The RACE trial report includes cotton production, quality, and loan values for the evaluated varieties. The report for the district will emphasize irrigation practices with a focus on the crop's water use over the season and water-use efficiencies of the two varieties being evaluated. This data will be used to assess current cotton irrigation practices in order to provide recommendations for irrigation strategies to cotton producers within NPGCD in order to minimize groundwater withdrawals. 💧

Chris Hanes Joins NPGCD Staff

With decades of irrigated farming experience, Chris Hanes was already familiar with most of the tasks of a North Plains GCD Natural Resource Specialist such as reading well meters, inspecting wells for compliance, and making sure water was not wasted. Since joining the team in June, Chris has enjoyed traveling throughout the northern Panhandle and seeing the beautiful countryside, offering a farmer's perspective as he completes his job duties.

Chris Hanes was looking for a change of pace when he saw a job advertisement in the Amarillo Globe-News in May of this year. After inheriting the family farm right out of high school, Chris spent years growing corn and cotton in Castro County. Growing concerns over water availability led him to leave farming several years ago. Chris and his wife, Shelly, then began flipping houses throughout Texas. They still have a few in the Amarillo area, but now that he's working for North Plains GCD, most of Chris' spare time is spent being a Grandpa to his 2 granddaughters.

With his farming background, Chris says it is easier for him to see farmers' concerns. His pet project is curing well owners' annoyances with low pressure drains by recommending proper placement of cut off valves. He believes that the district rules are in the best interest of farmers, and that the regulations do a good job of protecting an extremely valuable resource.

North Plains GCD is happy to have Chris Hanes on the field team. If you see him out and about, be sure to wave hello! 💧



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North Plains GCD now offers our district newsletters by email. If you would like us to send you a digital copy of the newsletter, you can go online at www.northplainsgcd.org/sign-e-news/ and fill out the form, or just email info@northplainsgcd.org. You can also go online to download previous newsletters, and find us on Facebook, Twitter and Instagram.



District's WaterWise Program Saves Millions of Gallons

This year's fifth grade Water Wise Conservation Education Program is projected to save almost 25 million gallons of water over the next six years. "The activities are educational and the water kits are well received by students and parents," said Nancy Donges, fifth grade science teacher at Dalhart Intermediate School. "I believe this program really does make a difference," added Donges. The district began the WaterWise program for fifth graders in 2010, offering water conservation kits and education free of charge to teachers, students and their families throughout the district.

"This year 617 students and their families made changes in their behavior that will result in more than 4-million gallons of water being saved annually," said Kirk Welch, the district's assistant general manager for outreach. "The WaterWise Program was chosen to be offered by the district because of its unique combination of in-class conservation education and interactive, home-based conservation activities." WaterWise achieves additional results that are difficult to measure by causing families to adjust their attitudes and actions regarding our most precious resource.

The program begins with classroom discussions teaching the importance of using water and energy efficiently, followed by hands-on, creative problem solving. Next, participants take home a WaterWise Kit that contains conservation tools. With the help of their parents or guardians, they install the tools in their home and complete a home survey. Here are a few samples of questions asked on the home survey

- Did you install the high efficiency showerhead? Yes - 47%
- Did you install the kitchen faucet aerator? Yes - 38%
- Did you use the shower timer? Yes - 77%

Before installing the conservation tools in their homes, parents or guardians and students measured the efficiency of pre-existing devices so they could calculate savings generated using the new devices. Using the data from a home survey as the basis for this calculation, 617 households are expected to save the following resource totals. Savings from these actions and new behaviors will continue for many years to come.

PROJECTED ANNUAL SAVINGS		PROJECTED LIFETIME SAVINGS	
4,311,916	gallons of water saved	24,492,196	gallons of water saved
14,706	therms of gas saved	86,679	therms of gas saved
135,311	kwh of electricity saved	798,916	kwh of electricity saved
4,311,916	gallons of wastewater saved	24,492,196	gallons of wastewater saved

By installing and monitoring the new efficiency tools in their own homes, students can measure what they learned with actual water, energy, and monetary savings! These savings benefit both the participating student households and their communities.

The school-based WaterWise Program is fully implemented and designed to generate immediate and long-term savings by bringing interactive "real world" education home with motivated students. Materials meet state and national educational standards, which allow the program to easily fit into teachers' existing schedules and requirements. All of the teachers responding to a post-program survey reported that the materials were well written and easy for students to use. "I really liked the labs and I wish we could have done them all." -- Linda Henderson, Stratford Junior High School

Students were asked to complete a ten-question test before the program was introduced and then again after it was completed to determine the knowledge gained through the program. On average students answered 64-percent of the questions correctly prior to being involved in the program and improved to answer 77-percent correctly following participation.

This article was compiled from excerpts from the 2017-2018 North Plains GCD WaterWise Program Summary Report. ♦

NPGCD IN THE COMMUNITY



Tips & Sips: Earn CPE Hours at Water Education Series

North Plains Groundwater Conservation District is pleased to offer Tips & Sips, a series of professional development sessions to help educators in the northern Texas Panhandle enhance students' understanding and appreciation of our shared water resources.

In each 1.5 hour session teachers will learn about natural resources and participate in hands-on lessons that they can take back to the classroom. Many lessons will come from the Project WET curriculum. Project WET (Water Education for Teachers) is an activity guide recognized around the world for its excellent interdisciplinary lessons, all related to water resources. This workshop series will focus on activities and concepts for K-8 audiences. Lessons will be most applicable to a science classroom, but teachers and informal educators from all subjects are welcome to attend and find new ways to make interdisciplinary connections.

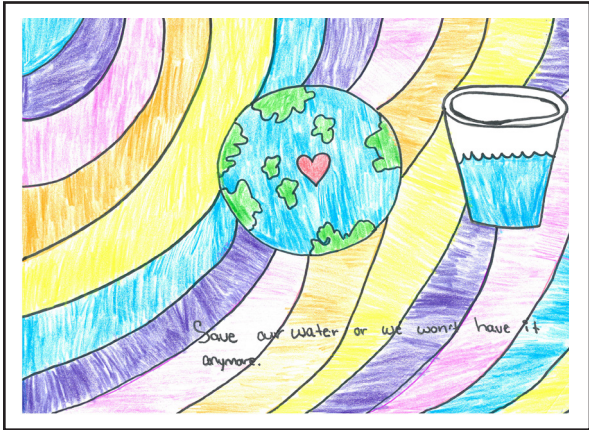
Putting a new spin on professional development, the Tips & Sips series will take place in a private room at The Plaza Restaurant in Dumas. They are generously supporting local educators by offering a free drink to everyone in attendance. Participants will experience activities as their students would, share ideas, and collaborate over chips and dips, provided by North Plains GCD.

Sessions will take place once a month on Tuesday evenings, from 7:00pm-8:30pm on November 6th, December 4th, January 15th, and February 12th. TEA-approved Continuing Professional Education hours will be awarded at each session, and anyone attending the entire series will be recognized as a Project WET certified educator and will receive the full Project WET Activity Guide with 64 lessons.

The Tips & Sips education series is presented free of charge to educators within North Plains Groundwater Conservation District, but spaces are limited and pre-registration is required. E-mail jstanford@northplainsgcd.org or call Julia at 806-930-6934 to register. ♦

Art Contest Winners Highlight Conservation and Creativity

From sweet conservation sentiments using all the colors of the rainbow to detailed examples of at-home water tips, the entries of this year’s Water Conservation Calendar Art Contest showed the heartwarming intelligence and creativity of youth in the North Plains. Now in its twelfth year, the art contest is offered by North Plains Groundwater Conservation District. Students in fourth, fifth, and sixth grades are invited every year to submit artwork relating to water conservation in hopes of winning a spot on the next year’s calendar and a prize!



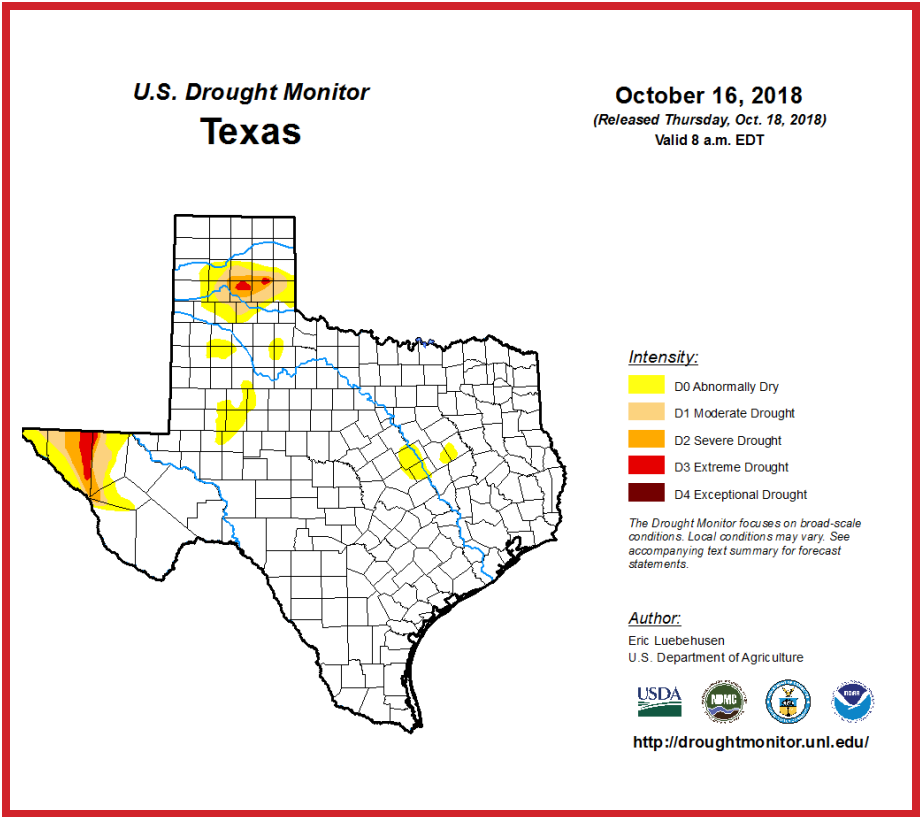
After receiving hundreds of entries from all over the northern Texas Panhandle, North Plains GCD staff members screened and voted on the submitted artwork to determine one grand prize winner to be featured on the calendar’s cover and twelve additional winners to appear throughout the year. This year’s grand prize winner is Hector Fuentes from Mrs. Robinett’s fourth grade classroom at Morningside Elementary School in Dumas. His artwork is titled “Save Our Water!” and depicts earth and a glass of water on a multicolored background, with “Save our water or we won’t have it anymore” written along the bottom. Hector’s parents are Hector Fuentes and Esperanza Yudit Cereceres.

The twelve second-place winners are: Odalys Sanchez of Hartley ISD, Daniel Acosta of Morningside Elementary, Alejandro Flores of Dalhart Intermediate, Reese Taylor of Gruver Elementary, Suchi Bhakta of St. Anthony of Padua Catholic School, Genesis Celis of Sunset Elementary, Maggie Meeks of St. Anthony of Padua Catholic School, Laurn Heiskell of Dalhart Intermediate, Avere Koehn of Dalhart Intermediate, Christian Vejar of Dalhart Intermediate, Sarah DeLeon of Dalhart Intermediate School, and Kaden White of Hartley ISD. Congratulations to all the winners, and many thanks to all the teachers and students that participated! 💧

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- ## Upcoming Events
- October 30 – Rainwater Harvesting Class
 - November 6 – Tips & Sips, Session 1
 - November 12 – District office closed for Veterans Day
 - November 13 – Board of Directors Meeting
 - November 22-23 – District office closed for Thanksgiving
 - November 27-29 – Amarillo Farm & Ranch Show
 - December 4 – Tips & Sips, Session 2