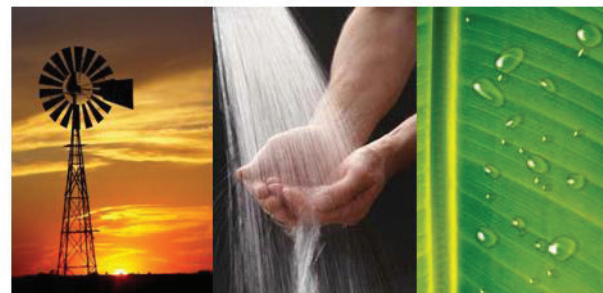


North Plains Water News



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SPRING 2017

Leon New Receives Blue Legacy Award

District Conservationist and Demonstration Project Lead Leon New received the 2017 Blue Legacy Award for Agriculture (Non-Producer) during Texas Water Day at the capital in Austin on March 22. From 2010-2014, New was the project lead on the district's "200-12 Reduced Irrigation on Corn Demonstration" (200-12 Project). The district agriculture committee won the Blue Legacy award in 2011 for the "200-12 Project." The next year, the "200-12 Project," under New's direction, won the Texas Environmental Excellence Award, the state's highest conservation award. While earning awards, the "200-12 Project" also averaged a savings of more than five inches per acre when compared to traditional irrigation protocols. A five acre-inch savings over the district's 1-million irrigated acres would result in a savings of over 400,000 acre-feet annually.

When the "200-12 Project" concluded in 2014, New built upon its success and devised and managed the district's follow-up demonstration, the "3-4-5 Gallon Production Maximization (GPM) Project." The "3-4-5 GPM Project" will conclude with the 2017 season, marking eight consecutive years that New has led the district's agricultural demonstration projects, showing irrigators how to get more from every drop of irrigation.

Eight years of leading award-winning programs with the district is a noteworthy accomplishment, but New's outstanding work started long before that. "New has spent his career working directly with hundreds of growers throughout the state and the nation to improve their irrigation efficiency and improve their on-farm management practices," said North Plains GCD General Manager Steve Walthour.

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Leon New receives the 2017 Blue Legacy Award for Agriculture (Non-Producer) from the Water Conservation Advisory Council (WCAC). Pictured Left to Right: Karen Guz, WCAC; Danny Krienke, NPGCD Board VP; Leon New; Harold Grall, NPGCD Board President; and Bech Bruun, Chairman of the Texas Water Development Board.

District Congratulates a New Graduating Class of Master Irrigators

A second group of truly progressive farmers has completed the course work necessary to attain the distinction of Master Irrigators. The 2017 Master Irrigator graduating class includes 23 irrigating growers from the North Plains Groundwater Conservation District (NPGCD) and an engineer from the USDA's Natural Resources Conservation Service (NRCS). All 24 graduates completed approximately 24 hours of training in the latest irrigation practices and technologies to achieve this recognition, preparing themselves to make the most of every drop of irrigation water they use in their operations.



Twenty-four graduates make up the Master Irrigator Class of 2017. Graduates attended four, full-day sessions to complete the course and qualify for a specially designated Natural Resources Conservation Service, Environmental Quality Incentives Program fund.

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2016 3-4-5 GPM Project Shows More Water is not Necessarily Better in Corn Production

The second year of the "3-4-5 Gallon Production Maximization (GPM) Project" was a year of further confirmation that pouring more water on a corn crop is not the best business decision for irrigated corn producers in the North Plains Groundwater Conservation District (NPGCD). A highlight of the program was one cooperator who produced a 200-plus bushel per acre (bpa) corn crop with only 2.5 gallons per minute (gpm) of irrigation available for the season. This demonstration topped both his 4 and 5 gpm plots by 12-18 bpa.

"This cooperator applied a management strategy including planting dates, seeding rates, and hybrid selection, in addition to soil health benefits from historical crop residue, that was specifically intended to increase yield potential at his lower irrigation capacity," said Leon New, project lead for the "3-4-5 GPM Project". While project coordinators recommend certain practices, many of the variables are at the discretion of the individual cooperating producers. Consequently, results vary from one demonstration site to another. However, even the varying practices and results provide valuable insight into best practices for maximizing the net return from the grower's groundwater, based on his or her specific production and management goals.

The overview of the 2016 "3-4-5 GPM Project" shows that, with adequate rainfall, it is possible to grow 200+ bushel corn crops with limited irrigation. With rainfall ranging from 6.41 to 13.86 inches, all but one of the 3 gpm demonstrations were within +/- 5-percent of a 200 bpa yield. In fact, only 3 out of 10 of the 3 gpm plots fell below 200 bpa, with one site reaching 216 on only 13.57 inches of irrigation and a total of 22.35 inches of irrigation and rainfall. Soil moisture totals were not available at the time of this writing. One of the 3 gpm fields that did not

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Funds Still Available Through NRCS for Specific Conservation Practices

Over \$114,364 is still available to agricultural irrigators to purchase conservation equipment such as flow meters, soil moisture monitoring equipment and chemigation check valves. The money is available as part of a cooperative effort between the United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS), North Plains Groundwater Conservation District (NPGCD) and several other groundwater conservation districts in the Panhandle-High Plains.

A total of \$185,636 worth of projects had been selected for funding at the time of this writing, including \$103,652 worth of NPGCD projects. Projects within the NPGCD amount to more than 55-percent of the total, so far.

The support is part of the NRCS Regional Conservation Partnership Program (RCPP). The RCPP provided \$300,000 to those within the districts to enhance water conservation practices. While much of the available funding has been obligated, the NRCS will continue to fund requests until the money is all distributed.

The RCPP encourages agricultural water-users to use less water from the Ogallala aquifer by addressing irrigation efficiency and moisture management concerns through adoption of on-farm water conservation strategies or improved irrigation efficiency.

The RCPP priority areas and partners include High Plains UWCD, Hemphill County UWCD, Llano Estacado UWCD, Mesa UWCD, NPGCD, Sandy Land UWCD, and South Plains UWCD. High Plains UWCD in Lubbock serves as the lead partner for the five-year program (2016-2020). Participating groundwater conservation districts do not receive any funding for the program, but will be providing in-kind services to assist with water conservation efforts.

RCPP builds upon existing USDA-NRCS programs to address water conservation needs. These include the Agriculture Conservation Easement Program (ACEP), Conservation Stewardship Program (CSP), and Environmental Quality Incentives Program (EQIP). While RCPP funding counts toward the EQIP limit, it does not require NRCS to prioritize applicants; therefore,

RCPP funding can be approved faster than regular EQIP.

According to the USDA-NRCS, the conservation program encourages partners to join efforts with producers to increase the restoration/sustainable use of soil, water, wildlife, and other related natural resources on a regional or watershed basis. The NRCS and its partners will help producers install and maintain conservation practices in selected project areas. Partners leverage RCPP funding and report on benefits achieved. RCPP will address irrigation water management and soil moisture management in the Panhandle-South Plains region.

USDA-NRCS allocated approximately \$300,000 per year for those within the seven participating groundwater conservation districts. The funding is on a first-come, first-serve basis while allocations last. The RCPP is available for five years, but it is only guaranteed for three years, when a new farm bill will go into effect. By leveraging state and local cost-share for the purchase of equipment, this project will result in enhanced adoption of conservation practices.

Participation in RCPP is entirely voluntary. Interested producers can sign up now for the program at their local USDA-NRCS service center.

Additional information about RCPP is available at <https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/farmbill/rcpp/>. USDA is an equal opportunity provider, employer, and lender.

For more information on the RCPP, contact any of the following, Carmon McCain, Information/Education Group Supervisor, (806) 762-0181, info@hpwd.org; Jason Coleman, HPWD General Manager, (806) 762-0181, jason.coleman@hpwd.org; Darren Richardson, Asst. State Conservationist, USDA-NRCS, Lubbock, (806) 283-9924, darren.richardson@tx.usda.gov; or Quenna Terry, USDA-NRCS Public Affairs Specialist, (806) 283-9935, quenna.terry@tx.usda.gov.



Funds are available for soil moisture sensors through the RCPP.



Flow meters, soil moisture monitoring equipment and chemigation valves are funding priorities for the RCPP.

Leon New Receives Blue Legacy Award

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As an extension specialist with Texas A&M AgriLife for 40 years, New worked with irrigators in one-on-one consultation and as part of demonstration and research initiatives. "His assistance inevitably became lessons that would make us all better farmers and water stewards," said Danny Krienke, NPGCD board vice-president and Ochiltree County irrigator.

New's contributions include pumping plant efficiency testing and analysis, use of flow meters as a management tool for producers, and research that led to the development of Low Energy Precision Application (LEPA) technology to dramatically increase the application efficiency of center pivot irrigation. These practices and technologies are widely used by Panhandle-High Plains irrigators today.

New makes complex concepts understandable to producers, while maintaining the respect of his peers in the technical community. "He (New) was my go to person when I had a question about irrigation pumping plant performance, testing, or troubleshooting. I left Amarillo in 1993 to serve my agency as the NRCS State Irrigation Engineer for Texas, but still called Leon from time-to-time with questions," said Jerry Walker, USDA-NRCS agricultural engineer.

"Dr. Leon New shaped the way producers in our area water their crops today," said C.E. Williams, general manager of Panhandle Groundwater Conservation District. "With almost 50 years of service in water conservation, his dedication and expertise are second to none." The NPGCD board of directors and staff congratulate Leon New on this much-deserved recognition of his outstanding career and his dedication to stewardship of the region's groundwater.

District Recognized for 12th Year as Groundwater Guardian

North Plains Groundwater Conservation District (NPGCD) was created to conserve, protect and preserve the area's groundwater. Groundwater is the water the residents of the northern Panhandle drink. It's the water that grows our food, and the water that nourishes our lives. The district Groundwater Guardian team has implemented activities that help protect the resource and educate others about it. For example, in 2016 the team was instrumental in the district's agriculture irrigation demonstrations, the first year of the Master Irrigator training program, and the 11th annual children's water festivals, known as the "Save The Planet's Water Festivals".

Groundwater Guardian is a program that encourages and recognizes local groundwater protection and education activities. Groundwater Guardians form teams of local stakeholders that implement activities to address local groundwater concerns and issues. The district's team members include district board members and staff, along with area educators.

The district is proud to have been designated as a Groundwater Guardian for the last 12 years. Groundwater Guardian is a program of the Groundwater Foundation, a nonprofit organization based in Lincoln, Nebraska. "Our Groundwater Guardians embody The Groundwater Foundation's mission to educate people and inspire action to ensure sustainable, clean groundwater for future generations," says Groundwater Foundation President Jane Griffin. "We're so grateful for their commitment to groundwater protection."



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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 and fill out the form on the right side of the page, or just email aholguin@northplainsgcd.org. You can also go online to download previous newsletters and find us on Facebook, Twitter and Instagram.

More Water is not Necessarily Better in Corn Production

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reach 200 bpa suffered significant hail damage and other mitigating circumstances that negatively impacted yield.

The three year “3-4-5 GPM Project” builds on the district’s award winning “200-12 Project” that ended in 2014. Participants in the “3-4-5 GPM Project” are using variable rate irrigation (VRI) to simulate 3, 4, and 5 gallons per minute, per acre irrigation conditions in side-by-side, production-scale demonstrations. The “3-4-5 GPM Project” uses a comprehensive resource management approach including irrigation scheduling and management technologies, maximized delivery systems, conservation tillage practices, hybrid technology, and pest and nutrient management to optimize conditions for water savings and maximum yield.

“We learned from the various levels of irrigation used during the ‘200-12 Project’ that we were normally over-irrigating with 5 gpm, and the yields at 3 and 4 were not that much less,” said New. “The idea is that irrigators can strategically use less water, improve their irrigation efficiency and maintain profitable yields.” Producers with higher irrigation capacity can reduce the amount of irrigation applied through nozzle package adjustments or by use of VRI speed control.

Year two of this three-year project saw an even greater level of management through a variety of planting dates, seeding rates, hybrid selections and irrigation application methods, all aimed at increasing yield potential at lower irrigation capacities. Planting dates ranged from April 25th to June 12th with most of the fields planted in the last week of May 2016. One of the highest yielding demonstrations was the corn planted the earliest. The 3 gpm field yielded 231 bpa with only 14 inches of irrigation; however, this plot benefitted from the highest rainfall total of any in the project with almost 14 inches of in-season rain. This cooperator utilized an early-late planting combination with 3-4 weeks between plantings and an irrigation capacity of 3.14 gpm per acre on 180 acres of corn. He learned the technique during the “200-12 Project”.

Seeding rates ranged from 26-38,000 seeds per acre, but yields did not increase proportionately without the application of a disproportionate volume of irrigation water for the highest seeding rates. The resulting increase in input costs from seed, irrigation, fertilizer and harvest will reduce any increase in revenue and cause a reduction in overall efficiency.

Hybrid selection strategies ranged from using high yielding, drought tolerant varieties, to focusing on high ear-flex varieties. Varieties with enhanced ear-flex can grow larger ears, and therefore, increase yields if additional water is available. On the other hand, many of the higher yield, drought tolerant varieties tend to have more of a fixed ear size. Ear-flex allows the grower to reduce seeding rates, and therefore, the water requirement, while allowing the opportunity to take advantage of any additional rainfall.

Year two also marked the first year of the side-by-side comparison between subsurface drip irrigation (SDI) and Low Energy Precision Application (LEPA) center pivot irrigation. LEPA applies the irrigation water in a bubble or similar pattern no more than 18 inches above the soil using drop hoses. It is reported to reach application efficiency levels of 95 percent. SDI uses drip lines buried in the ground delivering water directly to the crop root zone. This demonstration was located at the North Plains Water Conservation Center (WCC). The WCC provides the opportunity to compare the two high-efficiency systems side-by-side. In the 2016 side-by-side comparison, the LEPA system out-performed the SDI by an average of about 8 bpa. “In only the first year of the comparison and operation of the SDI system at the WCC, these numbers are not conclusive,” said New. “More data is necessary, but this is valuable information for beginning to understand these systems better in terms of water efficiency, yield performance and cost feasibility.” These demonstrations are made possible by the district’s corporate partner, Crop Production Services in cooperation with WCC farm operator and demonstration cooperator, Stan Spain.

Finally, the district continued demonstrations initiated in 2015 to compare Precision Mobile Drip Irrigation (PMDI) to LEPA. PMDI involves drip hoses being pulled around the field by the center pivot system and applying the irrigation directly to the soil. While there were some technical problems with the PMDI comparison in 2015 that negatively impacted results, in 2016 the PMDI out-performed LEPA by an average of 10 bpa. More data is still needed to develop any definitive conclusions, but this year’s PMDI results are promising.

Overall, New says the increased efficiency that is possible by reducing the amount of water used to grow corn creates options and opportunities for growers. “On one hand, by managing production cost through irrigation, seeding rates, hybrids, and fertility, in combination with strategic crop residue and soil practices, growers may put more money in the bank, while leaving water in the ground and some profit on the table for later,” said New. “On the other hand, a grower with adequate capacity may seize the opportunity to operate more efficiently, but over more acres, putting more money in the bank now.” New summarized by saying this demonstration project presents district growers, and all who see these results, with the question, “Where, how and when will I use my water?”

Our Condolences

The district board and staff extend their deepest sympathies to the family and friends of Megan Nichole Hendrix in the wake of her untimely passing. Hendrix was the daughter of former District Director David Moore.

Megan was born March 11, 1986 in Bartlesville, Oklahoma. She was a graduate of Amarillo High School and went on to attend the Milan Institute. She married Chuck Hendrix in Amarillo, her partner in life for over fourteen years. She excelled in her profession and not only became an instructor at Milan, but also a successful permanent makeup artist. She was also working on obtaining her real estate license.

She is survived by her husband Chuck Hendrix of Amarillo; two daughters, Jordan Nichole and Jimi Vanae Hendrix; her parents, Meshell and David Moore of Frisco; her sister Abbigayle Lee Moore of the Colony; Her grandparents, Donia Caldwell, Warner and Theresa Ford and Linda Moore, all of Amarillo, Kenneth Hendrix Sr. of Dallas; her aunts, Sheriece and Larry Strickland of Albuquerque, NM, Carla Ford of Austin and Cheryl Harris of Amarillo. Her uncles Bruce Moore and Gary Moore of Amarillo. Her sisters-in-law, Tonya and Juan Pinon and Sudie Hendrix of Dallas. Her canine babies, Ghostface, Ashton, Gizmo and Nefi, also meant a great deal to her.

Family suggests memorials be made to the Megan Hendrix Memorial Fund, C/O Wells Fargo Bank, 3249 Bell Street, Amarillo, Texas 79109 or the SPCA, 11901 South Coulter, Amarillo, Texas 79119.

District Congratulates a New Graduating Class of Master Irrigators

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Master Irrigator presenter/farmer, Bryce Howard, demonstrates the drone he uses in a variety of ways in his own operation. Class of 2017 graduates (l to r) Travis Spence, Darren Stallwitz, and Rex McCloy observe.

The Master Irrigator program is a collaborative effort between NPGCD and NRCS. The program is designed to increase adoption of proven conservation technologies and practices by reducing the learning curve for irrigators. NRCS State Irrigation Engineer Keith Sides, said this program has far reaching positive effects. “Any time you can educate producers about newer technologies and bring another tool into their toolbox for water conservation, that helps production ag in the High Plains and in the State of Texas overall.”

As a bonus, these graduates have earned priority access to a special NRCS Environmental Quality Incentives Program (EQIP) fund to be used to put some of the techniques and technologies into practice on their own farms. Master Irrigator trains farmers about advanced irrigation management and conservation practices that work together to save water, conserve energy and build healthy soil. “The producers in the first two years of the Master Irrigator program farm over 100,000 acres in the NPGCD. That means these ideas have reached the people with the ability to implement conservation on about 10-percent of the irrigated acres in the district in just two years,” said Steve Walthour, NPGCD general manager.

The assistance continues even when the classes are over. Participants will have technical in-season consultation available to make sure implementation is effective. NPGCD and NRCS personnel, as well as industry experts will be available to answer questions, and even make house calls if necessary, to assist growers with the deployment of their new conservation practices.

For more information about the Master Irrigator program contact Kirk Welch at kwelch@northplainsgcd.org or go online to northplainsgcd.org/masterirrigator. For additional information about the EQIP program, contact your local NRCS office or access www.tx.nrcs.usda.gov. USDA is an equal opportunity provider, employer and lender.

North Plains GCD Annual “Save the Planet’s Water Festivals” Reach 800 Plus Students!

The North Plains Groundwater Conservation District’s annual “Save the Planet’s Water Festivals” reached over 800 students in three towns over three days! The events were Tuesday, Wednesday and Thursday May 16-18, starting out in Perryton, then transitioning to Dalhart , and finally ending in Dumas. The fourth graders learned about their water resources and other natural resources through engaging and fun activities, designed to show the students how they can make a positive impact on their environment.

Students attended various interactive presentations during the day to learn more about water and water conservation. This is the twelfth annual children’s water festival and one teacher says she’s been coming since the beginning. “It is a great combination of learning and fun that makes an impact that stays with the students for years to come,” said Sherry Robinett, Dumas fourth grade teacher.

For the fifth year, the festivals all featured a grand finale with an entertaining and educational program from Kevin Barnes, “The Green Magician.” Barnes has had a successful career presenting “entertainment only” magic performances, but then combined his passion for the environment with his love of magic to present environmental stewardship in an entertaining and informative way. He has since

presented for 19 consecutive years at the Orange County Water Education Festival, the largest event of its kind in the country with an annual attendance of 5,000 students.

“The district presents the water festivals to fourth graders because they are at an important developmental stage in their lives, and we want to give them important information about their natural resources that will hopefully inform their future decisions as adults,” said Steve Walthour, NPGCD general manager.



Aquatic Artwork lines the walls of the festival building in Dumas. This activity challenges the students to the listen to water sounds, think about what water means to them, and then express that through art.

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District Compliance Coordinator Casey Tice leads students in the “We All Live Downstream” activity at the 2017 “Save the Planet’s Water Festival” in Dalhart. Over 800 area 4th graders participated in the children’s water festivals that took place in Dalhart, Dumas and Perryton on three consecutive days. “We All Live Downstream” teaches students about pollution and how we can all have an effect on the quality of our water.

