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THE CROSS SECTION

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THERE IS NO SUBSTITUTE FOR WATER!

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A MONTHLY PUBLICATION OF THE HIGH PLAINS UNDERGROUND WATER CONSERVATION DISTRICT NO. 1, LUBBOCK TX

Dry soil conditions persist throughout Water District service area

Dry soil conditions persist throughout the High Plains Underground Water Conservation District, according to data collected in mid-March during the district's annual pre-plant soil moisture survey.

"The overall average moisture deficit ranged from three inches in the upper three feet of the soil profile to almost five inches in the upper five feet of the soil. This is essentially the same as last year," said Gerald Crenwelge, Field Data Coordinator.

Field technicians used moisture meters to collect data at 96 permanently-installed soil moisture monitoring sites from March 11-20, 2013. These sites were selected to provide an even distribution of data throughout the district's 16-county service area. Swisher County, annexed into the district in Nov. 2010, did not have soil moisture sites installed for use in this year's survey.

Readings are taken at six-inch intervals throughout the five-foot root zone soil profile by lowering a special probe into an aluminum access tube. These data were processed to calculate the current moisture level in the soil (*available moisture*) and how much moisture can still be added (*deficit moisture*) to the soil for plant growth.

The overall average soil moisture deficit reading in 2013 is



PRE-PLANT IRRIGATION IN A FURROW DIKED FIELD

3.10 inches in the upper three feet and 4.88 inches in the upper five feet of the soil. This means that, on

average, 3.10 inches of water was needed to fill the upper three feet of the soil profile or 4.88 inches was

needed to fill the upper five feet at the time of the survey.

This compares to 3.19 inches in the upper three feet and 4.86 inches in the upper five feet of the soil as recorded in 2012.

Crenwelge said a general review of the main crops grown in the district shows those sites where corn and wheat were grown in 2012 had relatively more soil moisture than in 2011. Cotton and grain sorghum sites were shown to have less soil moisture.

The deficit moisture map on Page Two represents the amount of water (*in inches*) that can still be added to

See **SURVEY** Page Two

Brad Heffington appointed Precinct Two District Director

Brad Heffington of Littlefield was appointed to fill an unexpired term as Precinct Two District Director of the High Plains Underground Water Conservation District No. 1 (HPWD). Heffington serves until Nov. 2014.

A graduate of Littlefield High School, Heffington attended Texas Tech University, where he received his Bachelor of Business Administration in 1990. Brad and his wife, Kim Lockwood Heffington, own and operate a farming operation north of Littlefield. They are the parents of three sons, Tanner, Tyler, and Turner Heffington.

Some of his professional activities include Littlefield Athletic Booster Club president; President of Agriculture for the Littlefield Chamber of Commerce; Chairman of the Board of Directors of Plains Cotton Growers, Inc.; and member of the HPWD stakeholder advisory committee. He previously served as a Board Member of Cotton



HEFFINGTON

Incorporated as well as a member of the HPWD's Lamb County Committee.

"I look forward to working with the High Plains Water District as water issues become even more important in the future," Heffington said.

Heffington was appointed and received the Oath of Office during a special April 2 meeting of the HPWD Board of Directors.

Jim Copeland of Anton resigned March 12 after 15 years on the HPWD Board.

First elected in 1998, Copeland was re-elected in Nov. 2010 to serve a four-year term as Precinct Two District Director representing residents of Cochran County, the portion of Hockley County within the district, and Lamb County.

The HPWD Board of Directors held public meetings March 22 at Morton, Levelland, and Littlefield to outline the procedure to appoint a new director to fill the unexpired term in accordance with Chapter 36.051(c) of the Texas Water Code.

R. E. Hensley of Sundown and John Synatschk of Springlake were the other candidates for appointment.

Board President Lynn Tate of Amarillo thanked each for their interest in serving as a District Director. He also thanked residents of the three counties who attended the public meetings to learn about the appointment process.

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VISIT THE HIGH PLAINS WATER DISTRICT'S WEB SITE AT WWW.HPWD.COM

Survey shows general soil moisture trends throughout Water District area

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the soil while the available moisture map on Page Three represents the amount of water (*in inches*) in the soil at the time of the survey.

Soil moisture monitoring sites are represented on the two maps by a “cross hair.” The numbers and codes at each cross hair are explained in the lower left part of the two maps. These data are organized so crop information, irrigation methods, and soil moisture in the upper three and upper five feet of the soil can be evaluated.

The color background on the maps indicate a generalized overall moisture pattern within the Water District service area based on the upper five feet of the soil.

The redder areas are drier (*less available moisture or higher deficit moisture*) and the blue areas are wetter (*more available moisture or lower deficit moisture*).

Color patterns show some sites that are much drier (*redder color*) or wetter (*bluer color*) than the surrounding sites in the area. Typically, this can be caused by factors including limited rainfall, a failed crop in 2012, different farm management or crops than nearby

sites, or a difference in irrigation (*irrigated or dry land*).

The 0-3 foot values will be helpful to producers who irrigate and are primarily concerned with soil moisture management in the upper portion of the soil. On the other hand, the 0-5 foot reading gives an overall soil moisture value, and is useful in dryland farm operations.

Deep soil moisture values can be determined by subtracting the 0-3 value from the 0-5 value for a site. However, depending on the soil and crop, this deep moisture may not be readily available to crops if the soil

has bedrock or is highly calcareous.

“A primary purpose of this survey is to provide general soil moisture information to assist producers in evaluating the need for pre-plant irrigation. Many of

See **MANAGING** Page Three

AgriLife Extension water education network launched

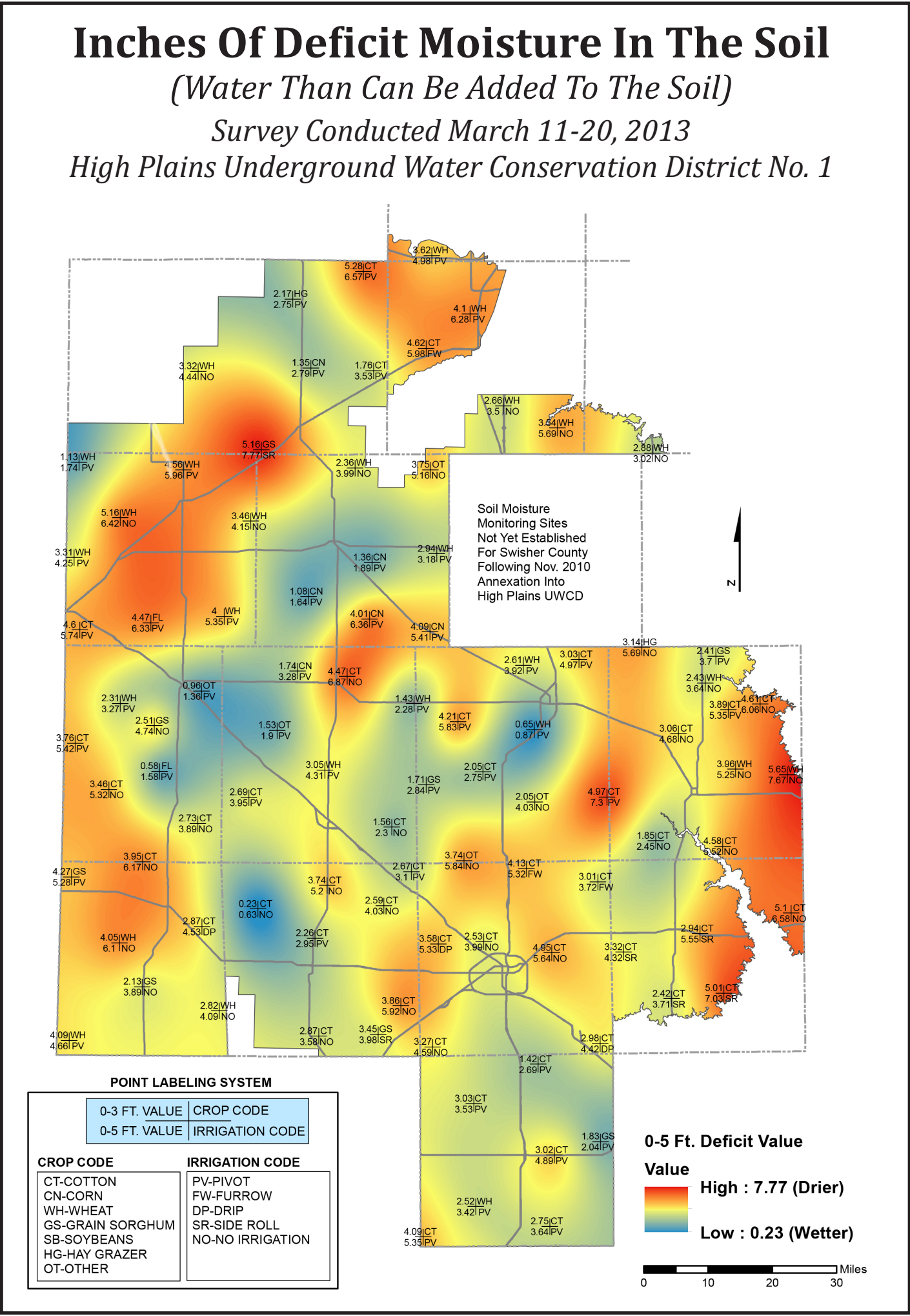
Texas A&M AgriLife Extension Service has launched a water education network to help Texans learn the best ways to manage this precious resource.

The site, <http://water.tamu.edu>, provides a “front door” for all of AgriLife Extension’s information on water conservation, water management, irrigation, and water quality.

“With water being our agency’s number one topic, it was crucial that we develop easy access to water materials,” said Dr. Pete Gibbs, AgriLife Extension associate director.

In addition to the water conservation materials, people can also find links to water-related events, classes, and training offered by AgriLife Extension.

“Water-related resources, such as fact sheets and publications, are being added and catalogued into this web site regularly,” he said.



Managing existing soil moisture important as drought conditions persist

Continued From Page Two

the sites surveyed are in irrigated fields. Soil moisture conditions in dry land fields located near irrigated sites will likely have lower values,” Crenwelge said.

He encourages producers to check soil moisture conditions on

their respective farms to obtain more site-specific information before making pre-plant irrigation decisions.

Crenwelge added that it is important to save as much of the pre-plant soil moisture in storage as possible. Tillage practices are

necessary unless no-till farming is done; however, reducing the number of tillage operations that turn moist soil to the top of the ground will help reduce moisture losses.

Crop residue management is also important. “Maintaining crop residue at or near the soil surface

for as long as possible will save soil moisture and reduce soil erosion by wind and water,” Crenwelge said.

Use of furrow dikes, contour farming, and control of plow pans are always encouraged. These practices can significantly increase the moisture that soaks into the ground during a rain and reduces water runoff from the field.

Furrow dikes, LEPA irrigation systems, and contour farming allow the rain to remain in the field longer so it can soak into the soil without running off the field.

Controlling plow pans allows moisture to move through the top part of the soil faster. These practices are also important to prevent irrigation tailwater which can escape from fields.

An illustrated step-by-step procedure to determine soil moisture is found in the Water District’s Water Management Note, *Estimating Soil Moisture by Feel and Appearance*.

Printed copies are available by contacting the High Plains Water District office at (806) 762-0181 or by e-mail at info@hpwd.com.

A PDF file of the document is also available at <http://tinyurl.com/blm2ga5>.

Texans challenged to reduce water use

Can residents and businesses reduce their average water use by 40 gallons per day?

That’s the question many Texas A&M AgriLife Extension agents are asking as they promote the “40 Gallon Challenge” across the state.

The 40 Gallon Challenge allows Texans to compete against other Americans who are taking the challenge in their own states.

Texans can pledge to adopt indoor/outdoor water-saving practices and see how many gallons of water they can save by visiting the program web site at www.40gallonchallenge.org

The current top three actions pledged to save water are:

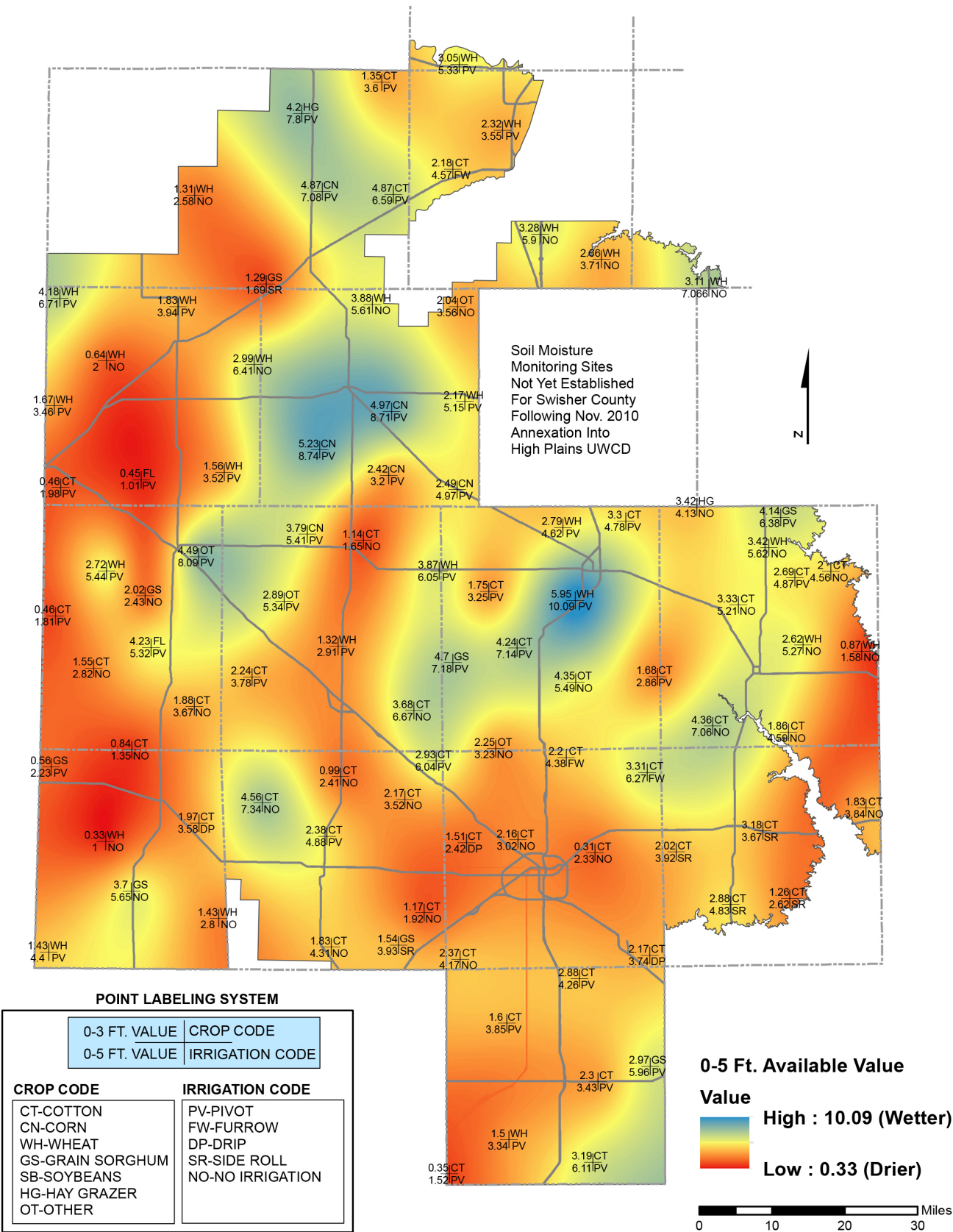
- Reducing irrigation station run times by two minutes.
- Using a broom instead of a hose to clean driveways and sidewalks.
- Fixing leaking toilets.

The current Texas counties registered to save the most water are: Collin, Ellis, and Wichita.

Inches Of Available Moisture In The Soil (Water In The Soil)

Survey Conducted March 11-20, 2013

High Plains Underground Water Conservation District No. 1





Groundwater Management Discussion

HPWD Manager Jim Conkwright (left) discusses groundwater management in Texas with Dr. Masaru Yamada, visiting professor in the Department of Agri-food and Environmental Policy at Meiji University in Kawasaki Japan. Dr. David Doerfert, (right) professor of agricultural communications in the Texas Tech University Department of Agricultural Education and Communications, accompanied Yamada during his visit to HPWD.

Moving? Send change of address

If you have moved or are planning a move, please contact the High Plains Water District office to update your address information on *The Cross Section* mailing list. By doing so, you'll continue to receive the newsletter in a timely manner and can help reduce postage costs to the district.

"The United States Postal

Service implemented new folding and tabbing regulations for self-mailers (*flyers and newsletters*) in January 2013. *The Cross Section* is now delivered as a flat mail piece, rather than an envelope-sized mail piece. Because of this, undeliverable newsletters returned to the district office are now charged at a higher postage rate—so readers are encouraged to make sure their address information is correct," said Carmon McCain, editor.

The Cross Section is a free publication. Persons wanting to receive the newsletter simply need to send their name and address to the HPWD office, 2930 Avenue Q, Lubbock TX 79411-2499.

This information may also be provided by phone at (806) 762-0181; by e-mail at info@hpwd.com or via the HPWD web site at <http://hpwd.com/cross-section-newsletter/subscription-form/>.

Conservation Conversation

News briefs and other conservation-related information

Three area students received special awards from the High Plains Underground Water Conservation District for the best water-related project at the 57th annual South Plains Regional Science and Engineering Fair held at the United Spirit Arena in Lubbock.

ELEMENTARY SCHOOL: "Can Gray Save The Day?" Ryan Ortiz, 4th grade, Christ The King Cathedral School, Lubbock. Ryan's project examined the use of gray water to grow various plants.

MIDDLE SCHOOL: "Dockum Aquifer: Water To Sustain Agriculture In The Texas High Plains." Charles Lascano, 8th grade, Christ The King Cathedral School, Lubbock. Robert's project investigated the possibility of blending groundwater from the Ogallala Aquifer to reduce salinity of the groundwater stored in the Dockum ("Santa Rosa") Aquifer--so that it could be used for agricultural production.

HIGH SCHOOL: "Investigation of Estrogenic Endocrine Disruptors." Nick Hines, 11th grade, Christ The King Cathedral School, Lubbock. Nick's project examined the presence of estrogenic endocrine disruptors in water samples taken from playa lakes both inside and outside the city.

THE CROSS SECTION

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Amarillo precipitation totals 2008-2012

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL
2008	0.24	0.59	0.30	0.38	2.08	4.03	4.96	4.43	1.32	3.87	0.19	0.05	22.44
2009	0.03	0.45	1.01	1.84	0.43	2.79	3.78	8.07	0.83	1.42	0.26	0.32	21.23
2010	0.94	1.29	1.61	3.28	2.18	1.00	8.02	2.55	1.79	0.78	2.88	0.22	26.54
2011	0.06	0.43	0.06	0.05	0.08	0.49	1.00	0.52	0.92	1.23	0.62	1.54	7.00
2012	0.05	0.63	1.16	1.99	1.53	1.72	0.26	1.18	3.25	0.01	0.01	0.54	12.33

Lubbock precipitation totals 2008-2012

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	TOTAL
2008	0.07	0.72	0.10	1.07	5.32	2.91	1.77	3.48	8.70	3.77	0.08	0.01	28.00
2009	0.13	0.73	0.37	1.51	0.68	2.44	1.69	0.47	2.46	0.78	0.13	1.48	12.87
2010	1.41	1.78	2.85	4.65	1.14	2.55	7.14	1.33	0.93	2.61	0.07	Trace	26.46
2011	0.06	0.43	0.35	0.00	0.26	Trace	0.05	0.34	1.25	1.34	0.26	1.52	5.86
2012	0.01	0.57	0.71	1.03	1.33	1.60	0.26	2.91	2.04	0.28	0.01	0.68	11.43

Source: National Weather Service Forecast Offices, Amarillo and Lubbock.

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