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THE CROSS SECTION

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THERE IS NO SUBSTITUTE FOR WATER!

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New TWDB members appointed

Carlos Rubinstein, Bech Bruun, and Mary Ann Williamson were appointed August 16 by Governor Rick Perry to oversee the Texas Water Development Board (TWDB) in Austin.

House Bill 4, passed during the 83rd Texas Legislature, changed the composition of the TWDB from six general members to three full-time members.

One member must have experience in engineering, one must have experience in public or private finance, and one must have experience in either law or business.

In addition, the legislation requires appointment of a new Executive Administrator for the TWDB.

Carlos Rubinstein

Rubinstein was appointed to serve as chairman of the Board. He is currently a commissioner of the Texas Commission on Environmental Quality (TCEQ) and has held that appointment

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Groundwater management in Texas still challenged by increasing population and persistent drought

EDITOR'S NOTE—Future issues of *The Cross Section* will feature articles based upon information presented at the recent 2013 Texas Groundwater Summit—CEM.

Increasing population and lingering drought continues to make management of the state's surface and groundwater resources a challenge, said Senator Troy Fraser during remarks at the second Texas Groundwater Summit held Aug. 27-29 at the Embassy Suites Hotel and Conference Center in San Marcos.

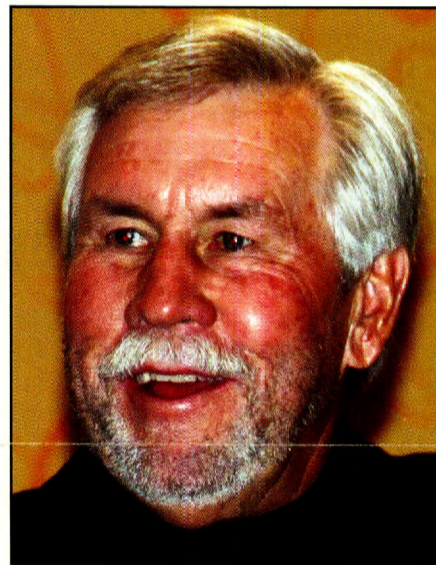
"There was a time in 1988 when I stopped and wondered if the cost of a barrel of water would be more than the cost of a barrel of oil. Now, 25 years later, we see that water is driving every aspect of public policy in Texas," Fraser said. He is chairman of the Senate Committee on Natural Resources.

He noted that much has changed in Texas during the past two years.

"About 97 percent of Texas is in either severe or exceptional drought. The state's surface water reservoirs will be lower at the end of the month than they were in 1955. Evaporation losses this summer will exceed the total water use from the state's reservoirs.

"The main difference between the drought of record and today is the state's population increase. Back in 1955, we did not have an estimated 1,000 people moving to Texas each day. This means an extra 1,000 people go into their kitchens or bathrooms each day, turn on the faucet, and expect a reliable stream of clean water for their use," he said.

Fraser noted that businesses moving to Texas are thirsty for



SENATOR TROY FRASER

water—especially the oil and gas industry. "I grew up in the Coahoma (Texas) area and know the importance of dependable, potable water. I have a huge concern about the oil and gas boom and how it will impact water use...especially in those areas with limited water supplies," he said.

Fraser added that water conservation districts will have a very difficult job ahead in managing the state's groundwater resources. "The legislature still supports districts as the preferred method of groundwater management in Texas. However, the districts must start the debate with the legislature on a wide range of subjects, including management of brackish groundwater, groundwater depletion, fracking in the oil and gas industry, standardized rules between districts, and other technical issues," Fraser said.

For example, he said there is not enough science for a clear

understanding of the state's brackish groundwater resources.

"How much brackish groundwater is available and how will we manage it? The legislature hopes TAGD will set up sub-groups to allow its member districts to discuss these issues and make recommendations during the interim," Fraser said.

Other keynote speakers at the summit included Texas Commissioner of Agriculture Todd Staples, General Land Office Commissioner Jerry Patterson, Representative Doug Miller, and Dr. Robert Mace, interim Executive Administrator of the Texas Water Development Board. (See related story-Page Three).

The other 42 presenters covered a wide range of groundwater-related topics, including the ABCs of GCDs, bills introduced during the 83rd Texas Legislature, brackish groundwater, case law, Endangered Species Act update, energy and groundwater, groundwater district operation, groundwater ownership, and science/technology.

HPWD Board President Lynn Tate of Amarillo and Board Member Ronnie Hopper of Petersburg attended the conference, along with Interim General Manager Carmon McCain.

The sold-out conference was sponsored by the Texas Alliance of Groundwater Districts (TAGD). This year marks TAGD's 25th anniversary as an organization which supports conservation districts and their efforts to conserve, preserve, and protect groundwater resources.

"The organization has grown

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

Legislation requires reorganization of TWDB leadership positions

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since August 2009.

He is a member of the Texas Environmental Flows Advisory Group and is the Texas representative to the Western States Water Council; the Border Governors' Conference Sustainable Development worktable; the Environmental Council of the States; the Good Neighbor Environmental Board; and the Governmental Advisory Committee.

Rubinstein has also served as deputy executive director of TCEQ and as Rio Grande Watermaster. He is also a former city manager for the City of Brownsville.

His term expires Feb. 1, 2017, and he will serve as chair of the board for a term to expire at the pleasure of the governor.

"As the population of Texas grows, it becomes more necessary than ever to conserve, manage and protect the water that will guarantee our state's healthy economic growth and the benefits that it will bring to all Texans," Rubinstein said.

"I would like to thank Governor Perry for his trust in appointing me as Chairman of the Texas Water Development Board. I look forward to working with my fellow board members; the TWDB staff; other state agencies; and other organizations and individuals in moving the State Water Plan forward," he said.

Bech Bruun

Bech Bruun is director of governmental appointments for the Office of the Governor and

TAGD thanks summit participants

Continued From Page One

considerably since 11 groundwater conservation districts met in Lubbock in 1988 to create the organization.

"Now with 82 member districts and nearly two dozen associate members, TAGD works to achieve its goal of exchanging information with all stakeholders in the groundwater arena," said TAGD Executive

previously served as the government and customer relations manager for the Brazos River Authority.

A native of Corpus Christi, he also served as chief of staff to State Representative Todd Hunter. Bruun is former general counsel to the House Committee on Judiciary and Civil Jurisprudence, past executive director of Texas Victory 2008, and is a member of the State Bar of Texas, Knights of the Austin Symphony, and the Onion Creek Club Board of Governors.

He received a bachelor's degree in business administration from the University of Texas at Austin and a law degree from the University

HPWD offers easy tips to help conserve water at home

Here are some easy tips to help save water in the home throughout the year.

In The Bathroom...

- Install a low-flow showerhead that restricts the flow of water from the shower to 2.5 gallons per minute.
- Install a low-flow toilet that uses only from 0.8 to 1.6 gallons of water per flush.
- Take short showers. Install a showerhead with a cutoff valve or turn the water off while soaping and turn it back on again to rinse.
- When brushing teeth, turn the water off until it is time to rinse.
- Do not let the water run while washing hands. Turn the water off while soaping and turn it on again to rinse.
- When shaving, fill the lavatory with hot water instead of letting the water run continuously.
- Test toilets for leaks. Add a few drops of food coloring or a dye

Director Stacey Steinbach.

"Once again, we are grateful for the tremendous support and effort of our 11 sponsors, 15 exhibitors, and 326 attendees. They truly made the second Groundwater Summit a great success," she added.

Presentations from the 2013 Texas Groundwater Summit are available on-line at <http://tinyurl.com/kcobk6r>.

of Texas School of Law. His term expires Feb. 1, 2015.

Mary Ann Williamson

Mary Ann Williamson is owner of MKS Natural Gas Company. She is a board member and current chair of the Texas Lottery Commission, a board member of the Texas Alliance of Energy Producers, and a member of the Texas Society of Certified Public Accountants.

She is also a member of the Austin Colony Chapter of the Daughters of the American Revolution and past president of the Weatherford Independent School

District Community Education Advisory Council.

Williamson received a bachelor's degree in accounting from the University of Texas at Austin and a master of business administration from Texas Christian University. Her term will expire Feb. 1, 2019.

"We are excited the new Board has been named and we are looking forward to working with them," said Interim Executive Administrator Dr. Robert Mace. "With widespread interest in the state water issues, we believe there is momentum to address state water needs."

Mace is currently serving as interim executive administrator until the Board names a permanent executive administrator on or before Oct. 1, 2013. He is Deputy Executive Administrator for the TWDB Water Science and Conservation Division.

tablet to the water in the toilet tank, but do not flush the toilet. Wait a few minutes to see if the coloring appears in the bowl. If so, the toilet has a silent leak that needs to be repaired.

▪ Never use the toilet as a trash can to dispose of bugs, cigarette butts, or other items. Unnecessary flushing wastes water and places an unneeded burden on sewage treatment plants and septic tanks.

In The Kitchen...

▪ Never run the dishwasher without having a full load.

▪ Keep a container of drinking water in the refrigerator instead of running water from the tap until it is cool.

▪ Keep conservation in mind when working in the kitchen. Small water savings, such as not making too much coffee or letting ice cubes melt in a sink, can add up over time.

In The Laundry...

▪ Wash only a full load when using the washing machine.

Remember--using less water today means we will have more available for our use in the future!

THE CROSS SECTION

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Desalination of brackish groundwater possible water management strategy

“As drought continues in Texas, it is important to look at all water sources for future use—including brackish water,” said Dr. Robert Mace, interim Executive Administrator of the Texas Water Development Board (TWDB) in Austin.

Mace was the keynote speaker during the Aug. 28 luncheon at the Texas Groundwater Summit in San Marcos.

There is an estimated 2.7 billion acre-feet of brackish groundwater in Texas, according to the TWDB.

Use of brackish groundwater in Texas can be traced to the mid-1800s when there was a boom in drilling for artesian water.

“The ‘first’ artesian well in Texas was drilled in 1845 at a location where Gen. Zachary Taylor’s troops camped before the founding of Corpus Christi. Since 1854, the well site at Artesian Park in Corpus Christi has been a place for healings, speeches, concerts, and gatherings,” Mace said.

He added that Mineral Wells was another center of interest in the late 1880s.

“Some people hit fresh water while others hit brackish water. Some of this water had trace minerals in it and was touted for health benefits. Legend has it that a woman drank mineral water from a well and it allegedly cured her dementia. The well was later known as the ‘Crazy Well’ and the water was later bottled and distributed. By the early 1900s, Mineral Wells was a major spa resort in the south where people would come to drink or bathe in the ‘healing’ waters,” he said.

It was 66 years later that President Lyndon B. Johnson created the Office of Saline Water to research this as a future water supply.

The first desalination plant in Texas was constructed in Dell City and is still in use today.

“If you drill deep enough, you will find brackish groundwater in Texas. Most of the minor aquifers in Texas, such as the Dockum, Blaine, and Bone Springs, are brackish,” he said.

Brackish groundwater can be identified by the amount of total dissolved solids measured in milligrams per liter (mg/l) in the water. “Some define fresh water as 0 to 1,000 mg/l and brackish (saline) as more than 1,000 mg/l. Others classify brackish water as being from 1,000 to 30,000 mg/l. I like



Mace's Musings

TWDB Interim Executive Administrator Robert Mace offered the following haiku about brackish groundwater during his keynote speech at the Texas Groundwater Summit in San Marcos.

**“Brackish groundwater
Moving slowly through ground
I must desalt you.”**

to think of it as being from 1,000 to 35,000 mg/l. The latter would be the equivalent of seawater,” Mace said.

He added that brackish groundwater is being used today for municipal use and for fracking in the oil and gas industry as an alternative to fresh water supplies.

Water for potable use must be treated either through desalination or blended with other water to reduce the amount of dissolved solids and other minerals.

Blending is also needed to reduce the likelihood of scaling and corrosion problems in water wells/treatment equipment.

Brackish groundwater can also cause problems with many industrial processes.

The Texas Commission on Environmental Quality (TCEQ) has set a secondary standard of 1,000 mg/l for public water supply systems. Brackish groundwater with up to 3,000 mg/l of dissolved solids can be used for irrigation, livestock, and poultry watering. Desalination or diluting is needed if higher concentrations are found.

“There are several towns and cities in Texas which rely on brackish groundwater as a source for their municipal water supply. The Kay Bailey Hutchison Desalination Plant is a joint project of El Paso

Water Utilities and Fort Bliss. It can produce 27.5 million gallons of fresh water per day from brackish groundwater stored in the Hueco Bolson aquifer. Dell City and several towns in the Southern High Plains also use brackish groundwater in excess of 1,000 ppm,” he said.

According to the 2012 State Water Plan, five of the 16 regional water planning groups (Regions E, F, L, M, and O) have included desalination of brackish groundwater as part of the recommended water management strategies in their respective plans.

This would help produce 181,568 acre-feet of new water supplies per year by 2060 (*Approximately 2 percent from desalination of brackish groundwater and 1.4 percent from desalination of sea water*).

However, there is still much to be learned about the brackish aquifers in the state, Mace said.

In 2009, the TWDB requested and received funding from the 81st Legislature to implement a program to characterize the aquifers.

Known as the Brackish Resources Aquifer Characteristics System (BRACS), the project will

help map and characterize brackish aquifers in great detail by using existing geophysical well logs and aquifer data to build groundwater availability models (GAMs).

“It is hoped that these data will help estimate aquifer productivity and develop tools to help communities better assess the viability of their brackish groundwater supplies. Our primary research is focusing on the Pecos Valley, Gulf Coast, Queen City-Sparta, Carrizo-Wilcox, and Gulf Coast Aquifers,” he said.

Desalination is an emerging technology that can be included in best water management practices in the state.

However, there is concern about proper disposal of the super salty concentrate, which is a by-product of the desalination process.

Some disposal methods for the concentrate include evaporation in solar ponds or disposal in deep injection wells.

“Use of brackish groundwater has a promising future in Texas. Again, we can’t overlook its use—especially with increasing population and limited surface / groundwater supplies,” he said.

Conservation Conversation

News briefs and other conservation-related information

HONORS — **J. D. Ragland of Canyon, Texas** A&M AgriLife Agricultural Agent for Randall County, recently received the Distinguished Service Award, which is the highest award a county agent can receive from the National Association of County Agricultural Agents. **Caitlin Jackson of Crosbyton, AgriLife Extension Agent** for Crosby County, was honored with the Early Career Award for those with less than five years’ service. **Steve Byrns of San Angelo, AgriLife Extension Editor and Communications Specialist**, received the Specialist Award for Distinguished Service (district level). These awards were presented at the annual Texas County Agricultural Agents Association meeting at Horseshoe Bay.

REGIONAL WATER PLANNING MEETING—The **Llano Estacado Regional Water Planning Group** (“Region O”) meets at 10 a.m., October 17, at the HPWD office, 2930 Avenue Q, in Lubbock. Additional information about the regional planning group meeting is available at www.llanoplan.org.

RETIREES -- Several underground water conservation district managers were recognized on their recent/upcoming retirement during the second annual Texas Groundwater Summit in San Marcos. They include: **David Alford**, Pineywoods GCD; **Luana Buckner**, Medina County GCD; **Jerry Chapman**, North Texas GCD; **Jim Conkwright**, High Plains UWCD; **W. F. (Kirk) Holland**, Barton Springs/Edwards Aquifer Conservation District; **Mike Mahoney**, Evergreen UWCD; **Jim Parks**, North Texas Municipal Water District; **Roy Rodgers**, Neches and Trinity Valley GCD; and **Cindy Weatherby**, Santa Rita UWCD.

Combined USDA, AgriLife Research laboratory offers ag advancements

By Kay Ledbetter
Texas AgriLife Extension

AMARILLO – The repeated message during a 75th anniversary celebration of research on the High Plains was: scientific efforts have been tremendous, research outcomes have changed the way agriculture operates in the High Plains, and the job is not over.

Agency leaders and commodity representatives expressed those sentiments during the recent “75 years of Southern High Plains Agricultural Advancements - Innovations in Soil, Water and Environment Management since 1938” field day and seminar at the joint Texas A&M AgriLife Research and U.S. Department of Agriculture-Agricultural Research Service facility near Bushland.

The Conservation and Production Research Laboratory, established in 1938 for wind erosion research after the Dust Bowl era, demonstrates the partnership between the Agricultural Research Service, USDA’s chief scientific research



Conservation Comments

Dr. Qingwu Xue, Texas A&M AgriLife Research, discusses conservation tillage and other practices at the recent 75th anniversary field day and seminar at the Conservation and Production Research Laboratory at Bushland. (Texas A&M AgriLife Research photo by Kay Ledbetter)

agency, and the Texas A&M University System, including AgriLife Research and Texas A&M AgriLife Extension Service.

“This center here – the partnership – has done some remarkable things,” said Dr. Craig Nessler, AgriLife Research director in College Station. “I’m very proud of it and the leadership. We will be a part of solving the world’s problems. There’s going to be 9 billion people on this planet and they need to eat.

“As someone coming from A&M with a long military history, I want to send people who can teach the world to produce food, rather than have to send our young people to fight,” Nessler said. “We need to keep their bellies full and need to help the population of the world be enriched and have opportunities because they have a good sound food security system.”

But that takes continued research, he said. And it takes continued funding for research, which is difficult to gain support and understanding as the distance grows between the general public and their agricultural roots.

“We have gone from a high of 60 percent of the population involved in agriculture down to today’s 2 percent,” Nessler said. “The danger is that the people who vote – the people in the cities and suburbs – don’t understand where their food comes from, how much work goes into it, and why we need to do research to make sure the food supply is safe and affordable.”

Dr. Dan Upchurch, USDA-ARS Southern Plains Area director in College Station, added, “There’s been tremendous progress, but the need for research has not been done away with.”

“This laboratory has been able to shift its focus as needs shift – always with the focus on our natural resources,” Upchurch said. “The real value of this research is to sustain rural communities that depend on those natural resources. It’s the history and the future of this facility and this partnership. We must ensure we provide sound science on which policies related to natural resources are written.”

Caleb Pool, district representative for state Rep. Mac Thornberry, said, “This facility keeps production and conservation practices up to date and ahead of the curve, and that gives policy makers a chance to understand how the changing face of agriculture needs policies based on sound science.

“Keeping the general public aware of where their food and fiber, meat and milk come from is challenging,” Pool said. “Education on production agriculture is key to understanding the significance of policy, especially when few people have representatives with a direct tie to agriculture.”

Ben Weinheimer, vice president at Texas Cattle Feeders Association in Amarillo, agreed, saying limiting factors to the cattle feeding industry have been and will continue to be water and regulatory intervention in the day-to-day business practices.

The industry relies on the ability to use science to help inform the regulatory community about what is realistic and not, in terms of expectations.

Since its birth in the region, the cattle feeding industry has seen everything from water quality work, nutrient management, air quality, water conservation, cattle health and nutrition, and even feed yard construction and design techniques transformed by research here, Weinheimer said.

“You continue to bring change and progress over time through multidisciplinary research, where dollars are spent to answer not one, but 10 questions at one time,” he said. “There’s a willingness to embrace new industries and help us answer the questions that we need to become better in our businesses and produce better products for our customers.”

Kyle Ingham, Panhandle Regional Planning Commission representative from Amarillo, said research must continue to focus on managing the finite water resources from the Ogallala Aquifer and identifying ways to keep the economy going.

“There’s no use in having a municipal water supply if the agricultural economy is not going strong and providing jobs to fill up the municipalities,” Ingham said.

Continued research and data-driven results that come out of this laboratory are needed to counter misinformation that is sometimes used by regulators, he said.

Mike Schouten, owner of Mission Dairy near Hereford, said “we have to get out to the general public and educate them on the ideas that come from this research facility and tell them these are the things they need to know, rather than be reactive to issues.”

David Cleavinger, an Oldham County producer, said education and research are dependent on facilities such as the one at Bushland.

There is a difference between private and public research, and with government funding dwindling, that will become a huge issue.

“Much of what comes from Bushland is research that private industry doesn’t want to do because it isn’t profitable immediately,” Cleavinger said.

“You have to look at things that might not be profitable today, but in 10 to 20 years, it might be one of those things that change the world.”

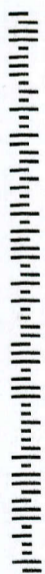
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