

September 2010

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Upcoming Meetings

GMD 5 Board Meeting

7 p.m.

September 9, 2010

GMD 5 office, Stafford

Lower Arkansas BAC

9 a.m.

September 22, 2010

GMD 5 office, Stafford

Middle Arkansas Baseflow Conditions in 2009

During 2009, Division of Water Resources staff measured Middle Arkansas River streamflow in March and August. The manual measurements are important to the continuous study of the subbasin because they provide baseflow values. Baseflow is the amount of natural flow in the stream under normal conditions, or times without precipitation. In essence, baseflow is groundwater that discharges to the stream. Precipitation events can have a significant impact on streamflow, so to get the most accurate determination of baseflow, staff wait a minimum of three days following a rain event before measuring streamflow.

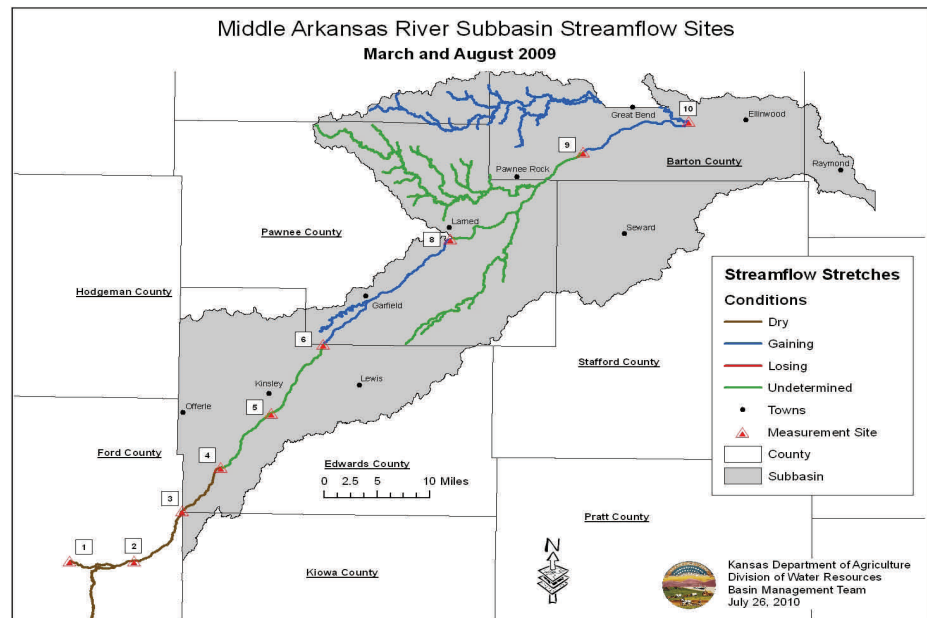


Figure 1: Middle Arkansas Streamflow Stretches for 2009

The subbasin has 10 manual streamflow measuring sites beginning in Ford County and ending in Barton County. Each stretch is evaluated based on the difference in discharge between consecutive gage sites. If the downstream gage shows more flow than the upstream gage, the reach is “gaining.” When two consecutive sites have zero flow, it is considered a dry stretch because there are no discharge numbers to compare. Table 1 shows measurements taken during the year and the map compares the measurements to determine if stream stretches are gaining, losing, dry or undetermined between gage sites (Figure 1). Red indicates a losing stretch of stream, blue a gaining stretch, brown a dry stretch and green an undetermined stretch. An undetermined stretch of stream indicates the flow was equal in conditions. Staff calculate baseflow for each stretch in cubic feet per second. Many of the upper stretches were dry in 2009, but the downstream stretches had streamflow and were often gaining. More information regarding Middle Arkansas streamflow is available on the Basin Management Team [website](#).

(continued on page 2)

Middle Arkansas Baseflow Conditions in 2009 Table

(continued from page 1)

| Site | MA01 | MA02 | MA03 | MA04 | MA05 | MA06 | MA07 | MA08 | MA09 | MA10 |
|-------------------|------|------|------|------|------|------|------|------|-------|------|
| March | 0 | 0 | 0 | 0 | 4 | 0 | N/A | 4.5 | 14.28 | 54.6 |
| Flow (cfs) | | | | | | | | | | |
| Condition | | Dry | Dry | Dry | Gain | Loss | | | Gain | Gain |
| August | 0 | 0 | 0 | 0 | 0 | 0 | 5.2 | 6.1 | 4.3 | 33.8 |
| Flow (cfs) | | | | | | | | | | |
| Condition | | Dry | Dry | Dry | Dry | Dry | Gain | Gain | Loss | Gain |

Big Bend GMD 5 Model is Complete

After nearly two years of cooperation between agencies, the Big Bend Groundwater Management District #5 model is complete. The final technical advisory committee meeting was Thursday, July 29, 2010. Attendees included representatives of GMD 5, DWR and U.S. Fish and Wildlife Service. GMD 5 contracted with Balleau Groundwater, Inc. of Albuquerque, New Mexico, to build the model, and DWR hired Steve Larson of S.S. Papadopoulos & Associates, Inc., of Bethesda, Maryland, to provide the peer review for the model. The groundwater model will be used by both GMD 5 and DWR to further study the area and inform management decisions.

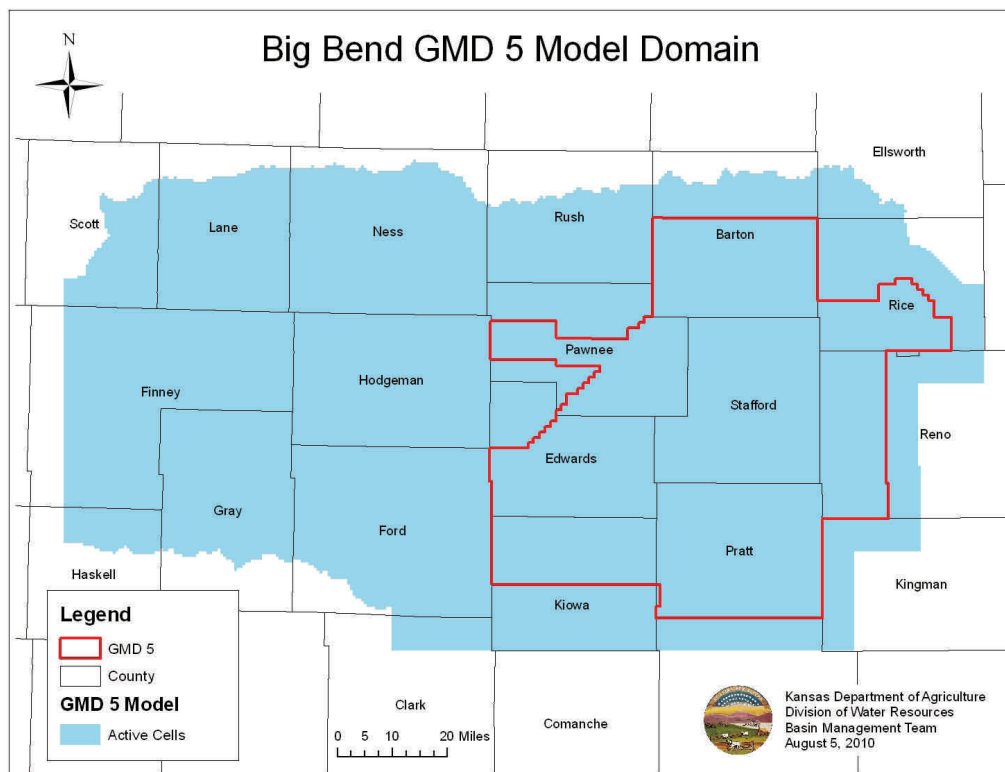


Figure 2: Big Bend GMD 5 Model Domain.

Kansas Wetlands Education Center Teaches About Alternative Aquatic Recreation

Written by Curtis Wolf

Manager, Kansas Wetlands Education Center

Western Kansas is not known for abundant surface water resources. And, many Kansans do not realize that lakes and rivers are not the only wet places in the state of Kansas. Barton and Stafford counties in central Kansas are the sites for two of the largest, most unique wetlands in the United States: Cheyenne Bottoms and Quivira National Wildlife Refuge. Cheyenne Bottoms consists of both the Cheyenne Bottoms Wildlife Area that is managed by the Kansas Department of Wildlife and Parks and the Cheyenne Bottoms Preserve managed by The Nature Conservancy. The United States Fish and Wildlife Service manages the Quivira National Wildlife Refuge.

Both Cheyenne Bottoms and the Quivira National Wildlife Refuge are critical stopovers for migrating birds along the North American Central Flyaway. The wetlands also provide important habitat to other wildlife and provide important ecological services. Additionally, each property provides many opportunities for nature enthusiasts, whether it is for bird and wildlife watching, photography or hunting.

Now visitors to the area have the opportunity to enhance their experience at these two important wetlands. The Kansas Wetlands Education Center opened in April 2009 at the southeast corner of the Cheyenne Bottoms Wildlife Area along K-156 Highway and along the Wetlands and Wildlife National Scenic Byway. The Kansas Wetlands Education Center is operated as a branch museum of Fort Hays State University's Sternberg Museum of Natural History. The 11,000 square foot building is home to the Koch Wetlands Exhibit Gallery, a classroom with live animal exhibits, an auditorium and the Wetlands Gift Store. A walking trail and observation point also provide a glimpse of what Kansas wetlands are. Through the exhibits, visitors learn the importance of wetlands and what 'critters' they may encounter while visiting either Cheyenne Bottoms or the Quivira National Wildlife Refuge. Staff at the Kansas Wetlands Education Center will answer questions about the wetlands and give advice for how the average visitor can experience Cheyenne Bottoms and the Quivira National Wildlife Refuge, which together were voted one of the 8 Wonders of Kansas by the Kansas Sampler Foundation. Staff can also help travelers with their plans to visit area attractions in one of the surrounding communities of Claflin, Ellinwood, Great Bend, Hoisington, Stafford or St. John.

While in the area, plan to visit the Kansas Wetlands Education Center, Cheyenne Bottoms and the Quivira National Wildlife Refuge. Each have FREE admission and are open year-round.

The Kansas Wetlands Education Center is open Tuesdays-Saturdays 8 a.m. to 5 p.m. and Sundays 1 p.m. to 5 p.m. It is closed on Mondays, Thanksgiving Day, Christmas Day and New Year's Day. Feel free to call the Kansas Wetlands Education Center (1-877-243-9268) for more information to help plan your visit or to hear program schedules.



The Kansas Wetlands Education Center, Cheyenne Bottoms

To sign up for other Basin Team newsletters, please visit www.ksda.gov/subbasin/mailling_list/.

Central Kansas Water Bank Association Five-Year Review

Written by Sharon Falk—Big Bend Groundwater Management District #5

Established in 2005, the first water bank in Kansas will be reviewed this fall to determine if it is meeting the objectives set forth in the Kansas Water Banking Act. As required by statute, a team was formed to conduct the review. The team will recommend to the chief engineer of the Division of Water Resources whether the bank should be extended for an additional seven years or whether it should be allowed to lapse under terms recommended by the team. There will be many factors to consider while evaluating the bank's operation.

As with any new program, the water bank has faced many challenges. Formed in 2005, and operated out of Big Bend GMD #5, the bank was designed to allow flexibility to water users while conserving groundwater. The program allowed for depositing and leasing water and establishing safe deposit accounts. Although the bank has not seen a significant amount of participation, many believe the program has merit and should be extended for an additional seven years.

GMD 5 Gets a New Manager

On August 2, 2010, Wes Essmiller became the fourth manager of [Big Bend Groundwater Management District No. 5](#) that formed in 1976.

Essmiller succeeds Sharon Falk, who worked at GMD 5 for 30 years, including the past 22 years as its manager. Falk is retiring effective August 30, although she has agreed to continue working for GMD 5 part time for a few months.

Born and raised in Great Bend, Essmiller has agricultural roots in the area.

"We produce the whole gamut at our family farm," said Essmiller, "including alfalfa, wheat, corn, soybeans and milo. We irrigate 400 acres."

Essmiller holds a bachelor's degree in agriculture, with an emphasis in horticulture, from Kansas State University. He currently is completing requirements for a master's degree in landscape architecture from K-State. Prior to his graduate work, Essmiller worked as irrigation foreman for a landscaping company in Topeka.

"I've always been interested in water, both in its uses and conservation of the natural resources," Essmiller said about his new job. He cites ongoing work to improve streamflow in Rattlesnake Creek and to better manage water in the Mid Ark basin among top priorities for the GMD.

Chief Engineer David Barfield extended congratulations to both Mr. Essmiller and Ms. Falk.

"With change comes renewed opportunity for cooperation and new energy to address water resources issues in south-central Kansas," said Barfield. "We look forward to working with Wes, and we wish Sharon the best in her new endeavors."



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Basin Management Team

Mission Statement

To analyze aquifers and stream systems in targeted areas and collaborate with stakeholders to develop and assess water resource management tools and strategies to protect water rights and improve water resource sustainability. Visit www.ksda.gov/subbasin/ to learn more.