



Connecting Working Forests and Clean Drinking Water



During a tour on Nov. 8, 2017, Brad Dreyer from the Molpus Woodlands Group explained forestry Best Management Practices to the Arkansas Statewide Forestry and Drinking Water Forum on a rainy Wednesday afternoon tour. *Photograph credit: Matthew Rich*

By Dr. Robert Morgan

On Nov. 7 and 8, 2017, 65 professionals from water and forestry demonstrated their commitment to the notion that “Healthy Forests = Clean Drinking Water” when they gathered at scenic Lake DeGray Lodge to exchange information, brainstorm and take a physical tour of a project that demonstrates this core idea. The color from the leaves of trees surrounding the lake and forests at the park provided a fitting setting for this important gathering.

Arkansas’ Forest and Drinking Water Steering Committee invited participants

and hosted this second Statewide Forum on Forestry and Drinking Water at DeGray Resort State Park near Bismarck, Ark., which is south and west of Hot Springs in southwest Arkansas on the banks of Lake DeGray. A diverse group of stakeholders spent a day and a half digging into learning, networking and brainstorming to advance the vision that “Healthy Managed Forests and Clean Drinking Water” go hand-in-hand.

Participants included private forest landowners, forest industry professionals, drinking water utility *Continued on page 2*

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managers, conservation organization representatives, state and federal foresters, and state natural resource management agency personnel. While meeting, the group focused on the following goals:

1. Generate interest in South-Central Arkansas Projects,
2. Recap the goals and accomplishments from the first statewide forum held in 2015,
3. Provide examples of how linkages between forests and water utilities are being made, and
4. Continue to improve communications between the forest and water sectors.

Joe Fox, Arkansas State Forester, initiated the forum by welcoming attendees and summarizing the interdependence of drinking water and forestry in Arkansas. Dr. Bob Morgan then provided a background for the forum and the Arkansas Forest and Drinking Water Steering Committee, which was formed following the first Statewide Forum in 2015.

Jane Hurley of Central Arkansas Water (CAW) followed by challenging audience members to imagine one day without water. CAW serves customers in Little Rock/North Little Rock and surrounding cities, towns, and communities. The forum then transitioned to a session discussing current effective programs to protect drinking water through good forest management.

Raven Lawson, also of CAW, updated the group on efforts conducted by the utility in the Lake Maumelle watershed in central Arkansas. John Pennington, executive director of the Beaver Watershed Alliance (BWA), provided discussion of private landowner outreach being conducted by BWA in the Beaver Lake watershed, the source water for Beaver Water District and northwest Arkansas. Together, CAW and BWA efforts contribute to protecting the drinking water of more than one-quarter of all

Arkansans. Scott Meek, Green Bay Packaging Company, followed the water presentations with a discussion of the Sustainable Forestry Initiative (SFI).

A second learning session was conducted that explored current hot issues in drinking water including harmful algal blooms (HABs) and sedimentation of water supplies followed by the forest industries approach to addressing those issues. A strategic effort was made to not present problems without solutions. Dr. Brian Haggard, director of the Arkansas Water Resources Center presented information on HABs. Dr. Jami Nettles then presented Weyerhaeuser's forestry practices related to nutrient management in response. Hurley then provided discussion of the impact that sediment in source water makes on drinking water treatment processes. Clay Knighton from the Arkansas Field Office of The Nature Conservancy provided a review of their unpaved roads management program. Unpaved roads are one of the most significant sources of excess sediment in streams and lakes in Arkansas. All seven presenters then returned to the podium for a panel discussion.

An essential part of building effective collaborative projects is getting to know the people who can provide necessary skills to carry out the project. Networking is always one of the most valuable components of this type of forum. Following an afternoon of presentations, the group retired to a reception and dinner where participants networked and got to know each other. During dinner, Dr. Don Bragg, from the United States Forest Service, provided a brief history of forestry in Arkansas and an even briefer glimpse of forestry futures. Dr. Bragg's presentation set the stage for Wednesday's discussions.

Wednesday morning, the forum started with an address by Scott Simon, director of the Arkansas Field

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Office of The Nature Conservancy, on the value of collaboration. Simon covered examples of successful collaborative projects in Arkansas, keys to an effective partnership, and what makes a good partner. The presentation set the forum up for breakout sessions consisting of facilitated discussion of how to advance the steering committee's mission. Breakouts were organized by geographic region including central Arkansas, southwest Arkansas, northwest Arkansas, and groundwater source areas.

Action Items developed by the breakout groups follow below.

The Central Arkansas Breakout Group made specific recommendations regarding potential implementation projects in Garland and Conway counties.

The Southwest Arkansas Breakout Group recommendations on expanded outreach included building a speaker's bureau consisting of foresters and water professionals to present at regional meetings including Arkansas Water Works & Water Environment Association District meetings for water operators, Arkansas Association of Conservation District's Area meetings and local chapters of the Society of American Foresters; interaction between forestry industry and county judges regarding unpaved roads; and working with local municipalities and counties on parks and other recreational facilities to incorporate water quality projects and provide an educational opportunity for the benefits of forests on water quality.

The Northwest Arkansas Breakout Group recommendations included identifying non-traditional friends with whom to partner; developing a Piney Bay Alliance; conducting a regional forum to include Arkansas, Missouri and Oklahoma; conducting a media campaign to expand public awareness; and developing a website where small land-owners can turn to for information on forestry and water quality practices as

well as how to reach technical and/or financial assistance providers.

The Groundwater Breakout Group recommendations included reaching out to operators of water systems using groundwater as their source through presentations at the Arkansas Water Works & Water Environment Association District meetings; sharing of data on karst areas including GIS files; working on getting the word out; and helping people understand the regulatory framework related to groundwater.



Molpus Woodlands tour.

Photograph credit: Ozarks Water Watch & David Casaletto.

The forum concluded with a tour of forestry best management practices as practiced by the Molpus Woodlands Group. Arkansas' Second Statewide Forum on Forestry and Drinking Water was made possible by a Landscape Scale Restoration Grant from the Southeast Region of the National Forest Service and the following sponsors:

- Arkansas Chapter of the American Water Resources Association,
- Beaver Water District
- Central Arkansas Water
- Green Bay Packaging Company

Special thanks also go to the Arkansas Forestry Association, Arkansas Forestry Commission, Arkansas Department of Health, and Dr. Hal Leichty for assistance in planning and conducting the forum.

Fortenberry One of Three Recipients of Inaugural John Lewis Leadership Award from Elevate Performance; Other BWD Staff News & Awards



Alan Fortenberry (center) receives John Lewis Leadership Award from Tim McFarland (left) and Scott Van Laningham.

On Nov. 14, 2017, Elevate Performance, a company that brings together leaders in peer advisory forums, named three well-known Northwest Arkansas leaders -- including Alan D. Fortenberry P.E., CEO of Beaver Water District -- recipients of the inaugural John Lewis Leadership Award. The award is named for the Fayetteville business leader who founded the Bank of Fayetteville and was actively involved in community-building efforts until his passing in 2007. Lewis served on the Beaver Water District Board of Directors from 1975-2007. For a majority of that time, he filled the position of president of the Board. Lewis is remembered for his dedication to the cause of clean, safe drinking water for Northwest Arkansas and safeguarding the source of that water, Beaver Lake and its watershed.

"Receiving this award means so much to me," said Fortenberry. "John unselfishly gave his time and energy to Beaver Water District. I learned so much from him and I'm extremely honored."

The three honored with the first awards include Fortenberry, as well as Lowell Grisham and Joe Fennel. Fortenberry has been the

CEO of Beaver Water District since 2001. Under his leadership, the organization has grown to deliver almost 19 billion gallons of water a year to municipalities across Northwest Arkansas. Since being named CEO, capital improvements in excess of \$125 million dollars have been accomplished, which has positioned the District to meet water needs in Northwest Arkansas for many years to come. Fortenberry has championed the protection of Beaver Lake throughout his tenure. He established a separate Environmental Quality Department and encouraged the development of a Beaver Lake watershed protection strategy through the Northwest Arkansas Council, which resulted in the formation of the Beaver Watershed Alliance. Most recently, a significant accomplishment with respect to the protection of Beaver Lake was the dedication of a specific revenue stream from the District's wholesale water rate for the purpose of source water protection. This dedicated fee of \$0.04/1000 gallons of water sold has been recognized nationally by water industry trade groups as a benchmark for other water utilities to attain.

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On Oct. 17, 2017, Beaver Water District's team placed 1st in the Southwest Section-American Water Works Association (SWAWWA) Top Ops Challenge in Oklahoma City for the fourth year in a row. The team members are (from left) Steven Caudle of Lowell, BWD Plant Operator II; Nikki Holloway of Springdale, BWD Laboratory Analyst; and Gabe Frost of Siloam Springs, Plant Operator II. Now the team will compete for the fourth time in the American Water Works Association (AWWA) Top Ops Challenge in Las Vegas during AWWA's 2018 Annual Conference & Exposition, which will be held June 11-14. This event gathers together more than 13,000 water professionals from around the world. Top Ops is the "College Bowl" or "Jeopardy!" of the water industry.

On Nov. 17, 2017, Fortenberry received the Watershed Guardian Award from the Beaver Watershed Alliance for being a staunch advocate of protecting and preserving the water quality of Beaver Lake and its watershed. The Alliance noted that during his tenure of almost two decades, Fortenberry oversaw the development of one of the nation's first source water protection pro-

grams and was pivotal in establishing the Beaver Watershed Alliance. His crowning achievement as a watershed advocate was his role in establishing a source of funding for source water protection programs. In 2016, the BWD board approved a measure to designate four cents per every thousand gallons sold to source water protection initiatives. These funds will be used exclusively for programs and initiatives that will maintain the water quality of Beaver Lake for all generations

Gov. Asa Hutchinson reappointed Larry Lloyd P.E., COO of Beaver Water District, to a term on the state's Nutrient Water Quality Trading Advisory Panel. The appointment expires on June 8, 2019. Nutrient trading involves allowing one wastewater discharger to meet its permit discharge limits by negotiating with another discharger to lower the nutrient level in its discharge.

Adam Motherwell, CFO of Beaver Water District, has been appointed a member of the Audit Committee of the AWWA. He will serve through 2020. Motherwell also has completed the Basic Management and Supervisory Leadership Training Program of AWWA.

Steve Caudle, Plant Operator II at Beaver Water District, was elected Vice Chair of the Young Professionals for the Southwest Section of the AWWA.

Bill HagenBurger, Plant Engineer for Beaver Water District, has been appointed a member of the Engineering and Construction Division Committee for the AWWA. He also is participating in the Elevate Performance Emerging Leader Forum VII.

James McCarty, Beaver Water District's Manager of Environmental Quality, was one of several authors recognized for the award-winning project "Reconciled Landscape: Urban Watershed Framework Plan, Conway, AR, USA." The award was made by Lafarge Holcim Awards (2017 Acknowledgement Prize). This is an international awards program that focuses on recognizing noteworthy sustainable design projects.

Beaver Lake “Secchi Day” Data Released; Water Quality Parameters Close to 12-year Average



On Aug. 19, 2017, for the 12th year in a row, volunteer citizen scientists collected water quality data on Beaver Lake near Rogers in Northwest Arkansas during the annual Secchi Day event, always held on the third Saturday each August. Beaver Water District (BWD) staff then analyzed data and produced a report that helps answer this question: How is the water quality in Beaver Lake doing?

Matthew Rich, Environmental Specialist with Beaver Water District (BWD), spoke about results and data

from Secchi Day with attendees at the regularly scheduled meeting of the Northwest District of the Arkansas Water Works & Water Environment Association (AWW&WEA) meeting held Wednesday (Oct. 11, 2017) in Eureka Springs.

During Secchi Day, sampling teams take Secchi disk readings to determine water clarity, and collect water samples which are tested for chlorophyll-a, total phosphorus, and nitrate, to determine algal density and nutrient concentration. Secchi depth is a measure of water transparency that involves lowering a black and white disk into the water and recording the maximum depth in which the black and white pattern can be distinguished from above the water's surface.

“After 12 years of collecting data, we are finally getting a picture of the variability in water quality at the different sites,” Rich said. “On Beaver Lake, as you travel from Hwy. 412 bridge to the dam, chlorophyll-a decreases and Secchi transparency increases. This is because as water moves through the lake, nutrients are used up and suspended particles like sediment and algae fall to the bottom, making the northern part of the lake less productive.”

This year's data shows that most water quality parameters were fairly close to the 12-year average. The average lake Secchi depth this year was around 9 feet, which is slightly higher than the long-term average of 8.8 feet. The average lake chlorophyll-a this year was 6.39 parts per billion (ppb) which was slightly lower than the longer term average of 7.32 ppb.

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Beaver Lake "Secchi Day" continued from page 6

Both of these values point to 2017 as being a year with better than average water quality. However, there are a lot of factors that play into those numbers and the amount and timing of rainfall is one of the largest contributors.

"Secchi Day started as a way to engage citizen scientists but has given us some really good data. We are committed to the long haul on this data and will likely only start to see trends play out on timescales of multiple decades. As the watershed around the lake changes, Secchi Day is there as a measure of how the lake will respond to that change," Rich said.

James McCarty, BWD's Manager of Environmental Quality, added that "Secchi Day is only one example of the work we do. In fact, all year-round BWD, the United States Geological Survey, the Arkansas Department of Environmental Quality and the Arkansas Water Resources Center collect data on Beaver Lake and its tributaries. Nutrient loads to Beaver Lake are a major driver of algae production so we work with many different partners to encourage programs that monitor

for and help to reduce sources of nutrients. For example, just this last year, BWD and partners assembled an \$8.6 million multi-year grant to reduce sources of nutrients in the West Fork of the White River, a major tributary to Beaver Lake."

To read this year's Secchi report, link to BWD's website at bwdh2o.org then go to the Secchi Day page here (<https://www.bwdh2o.org/education-outreach/secchi-day/>) and the report will be on the bottom left. Next year's event will be held on Aug. 18, 2018. Secchi Day on Beaver Lake is made possible by 12 partners including BWD, the U.S. Army Corps of Engineers-Beaver Lake, the U.S. Geological Survey, the University of Arkansas Cooperative Extension Service, Northwest Arkansas Stormwater, Hobbs State Park, Northwest Arkansas Master Naturalists, Beaver Watershed Alliance, Arkansas Game & Fish Commission, Ozarks Water Watch, One Community, and Girl Scouts Diamonds of Arkansas, Oklahoma and Texas. Secchi Day is one of the premiere water public awareness and education events in Arkansas.

FY 2017 "Record" Water Sales Year for NWA validates rapid growth in population



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Northwest Arkansas' largest drinking water supplier, Beaver Water District, broke its record for sales in Fiscal Year 2017, and the two-county area's other primary water provider will approach an all-time sales record.

Both the Beaver Water District (the District) and the Benton/Washington Regional Public Water Authority delivered more water to their

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customers even though summer temperatures were below average. Those record sales in a year with cooler-than-normal summer weather indicate the region’s rising population is driving increased water consumption, said Larry Lloyd, the Beaver Water District’s chief operating officer.

The Beaver Water District’s four customers — the cities of Bentonville, Fayetteville, Rogers and Springdale — consumed an average of 51 million gallons a day in Fiscal Year 2017, which ended Sept. 30. That was up from 48.1 million in FY2016. FY 2017’s water sales of 18.6 billion gallons eclipsed the record sales in 2016 by 6.06 percent. Additionally, Fiscal Year 2018 is starting strong as well, with sales in October 6 percent higher in 2018 than in 2017, Lloyd told District Board members at their meeting on Nov. 16.

“Overall, the biggest increase among the four cities is Bentonville. They are setting about 800 new meters each year,” Lloyd told the Board. “We just keep selling more and more water and it’s not because it’s hot and dry,” he said. “None of our record months were in the summer, and that alone suggests it’s all about the growth in the region.”

The Northwest Arkansas Council gathered water consumption data from the two providers because it’s a way to validate the rapid growth in population that’s indicated each year by the U.S. Census Bureau.

Meanwhile, sales at the Benton/Washington Regional Public Water Authority, more commonly referred to as

“Two-Ton,” are on pace to be within 1 percent of its best sales year despite the cooler summer weather. Scott Borman, the water authority’s general manager, said August’s average high temperature was near 83 degrees. The average August high over the past 40 years is 89 degrees, he said.

Through nine months of 2017, Two-Ton’s customers purchased 2.3 billion gallons. Those customers, who include 16 rural water providers and small cities, sold 3.1 billion gallons last year. It’s clear to Borman that the additional sales are generally to residential customers as its 16 members have about 1,000 more water meters than in 2016, Borman said.

For the Beaver Water District, the biggest growth is in Bentonville, where water consumption was up 11 percent over FY2016. Consumption increased in Fayetteville (5.6 percent), Rogers (4.5 percent) and Springdale (4.4 percent), too.

Both water wholesalers are well positioned to handle higher demand as they pull more water from Beaver Lake. Through the year’s first nine months, Two-Ton’s peak consumption was near 24 million gallons a day with its daily average near 9.5 million gallons. Its plant can deliver 40 million gallons to customers if necessary.

The Beaver Water District can treat up to 140 million gallons daily, and its peak day in Fiscal Year 2017 was near 68 million gallons.

(Sources: Northwest Arkansas Council, Beaver Water District, and Benton/Washington Regional Public Water Authority)