Summertime is the busiest time of year for the environmental quality department at Beaver Water District (BWD). The majority of environmental sampling for the year occurs during the summer growing season from May through October.

Almost every summer for the past six years, BWD has conducted biological sampling in streams that will eventually become the source of drinking water for much of Northwest Arkansas, streams that flow to Beaver Lake.

Stream health is like a three-legged stool supported by the chemical, physical, and biological properties of the stream. In the portion of our summer sampling that focuses on the biological properties, we collect and analyze fish and aquatic insects. We are able to tell a lot about a stream based on the organisms we find there. We can make comparisons to pristine water bodies called “reference streams,” water bodies that have had minimal impact or degradation due to human influence. Most importantly though, the biological properties, such as diversity and quantity of fish identified in a stream, give us an
indication as to the health of the stream. A video highlighting BWD’s efforts to monitor the health of the streams that ultimately become our source of drinking water is available at https://www.bwdh2o.org/beaver-lake/source-water-protection/.

Summertime also tends to be the time during which we accomplish the most work on our Source Water Protection program with our partner organizations in the watershed. In 2019, BWD’s partners finished the third year of a five-year restoration project on the West Fork of the White River, an $8.6 million dollar program to implement agricultural best practices and restore stream reaches along the West Fork.

Additionally, BWD completed multiple research projects and maintained a robust data collection effort to inform long-term water quality trends in Beaver Lake and its watershed. BWD provided stewardship funding for a 100-acre conservation easement in the Brush Creek watershed with the Northwest Arkansas Land Trust (NWALT) ensuring that the property continues to provide environmental services to the watershed.

Also in 2019, BWD provided input to help guide the selection of species for a 100-acre conservation easement in the Brush Creek watershed with the Northwest Arkansas Land Trust (NWALT) ensuring that the property continues to provide environmental services to the watershed.

Matthew Rich, Environmental Specialist for Beaver Water District, records species of fish identified during a fish survey on Clifty Creek.
of new funding priorities for the National Water Quality Initiative, a program of the Natural Resource Conservation Service that is funded through the Farm Bill.

BWD’s updated Source Water Protection Plan guided many of these accomplishments. For example, the current “action plan” describes quantifiable objectives for the future of the Source Water Protection program. The plan features a new focus on the alignment of forestry and drinking water industries, a renewed commitment to conserve land in the watershed, research into technologies to reduce nutrient transport to our streams and lake, and finally, efforts to participate with the Natural Resource Conservation Service at the local, state, and federal level.

All of these actions will help BWD to preserve land with the greatest environmental benefit and secure funding for programs to accomplish the Beaver Lake Watershed Protection Strategy. At the end of the day, the goal is to reduce the most important contaminant in our drinking water source, sediment and nutrient transport to Beaver Lake.

Looking to the future, we have some big ideas that we hope are going to make an impact on water quality for the long term.

For example, BWD is taking the lead on forming a decentralized sewer system task force. Septic systems and decentralized sewer systems are a contemporary topic right now in Northwest Arkansas. BWD wants to capitalize on that momentum by addressing a significant source of nutrients and pathogens in the Beaver Lake watershed. With that in mind, BWD will be forming a task force to look at current state and local regulations regarding decentralized wastewater treatment to look for best practices to help improve wastewater systems in the watershed.

BWD is working with Ozarks Water Watch (OWW), which has been very successful in securing state and federal dollars to rejuvenate failed systems in the nearby Table Rock Lake watershed in Missouri. OWW will help us with technical guidance on best practices.

BWD also will be conducting multiple prescribed burns on its forest and prairie properties. Forest and pasture management, including scheduled burns, can be excellent tools to improve forest stand health, habitat, and water quality of surrounding streams. We want to be good stewards of our land holdings and be an example for other landholders in the watershed.

Finally, BWD will be working with the Northwest Arkansas Land Trust on a new easement purchase pilot program. The Beaver Lake Watershed Protection Strategy prescribed land conservation as one of the best practices to maintain the water quality of our drinking water source. The Strategy recommended conserving 8,000 acres of pasture, 13,000 acres of forest, and 1.5 million linear feet of streambank. To date, BWD has protected 530 acres and 16,200 linear feet of streambank. In order to achieve the goals in the protection strategy to reduce sediment and nutrient transport to the lake, BWD will continue to work with partner organizations – including NWALT, OWW, the Beaver Watershed Alliance, and the Watershed Conservation Resource Center — to “think outside the box.”

The goal is to protect our drinking water source, which means adhering to our vision: Beaver Water District will lead the citizens, businesses and communities of Northwest Arkansas to cooperatively maintain the quality of Beaver Lake for all generations.
On Aug. 17 for the 14th year in a row, volunteer citizen scientists collected water quality data on Beaver Lake in Northwest Arkansas during the annual Secchi Day on Beaver Lake event. Beaver Water District (BWD) staff then analyze data and produce a report that helps answer this question: How is the water quality in Beaver Lake?

Matthew Rich, Environmental Specialist with BWD, spoke about results and data from Secchi Day with the BWD’s Board of Directors at their monthly meeting held on Oct. 17.

This year, 37 teams collected data and water samples from 35 duplicated sample sites throughout the lake. Sampling teams take Secchi disk readings to determine water clarity. They also collect water samples that are then tested by BWD lab staff for chlorophyll-a, total phosphorus, 
and total nitrogen 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.

“Secchi depth is inversely related to the concentration of chlorophyll-a. Therefore, as chlorophyll-a decreases, Secchi depth increases,” Rich said. “When it comes to producing drinking water, greater Secchi depths and lesser chlorophyll-a and nutrient concentrations are best,” he added. “While Secchi Day is only one day out of the year, the data collected provides a better picture of the interannual variability in water quality at the different sites that are sampled every August.”

This year’s data shows that most water quality parameters deviated away from previous 13-year averages. The whole-lake average Secchi depth this year was around 8.2 feet, which is a slight decrease in clarity from the long-term average of 8.9 feet. The whole-lake average chlorophyll-a this year was 9.01 parts per billion (ppb) which was significantly greater than the long-term average of 7.49 ppb. The higher-than-average chlorophyll-a concentration, and lower-than-average Secchi depths, this year were driven in part by unusually high rainfall totals in the watershed in the weeks and months leading up to Secchi Day. These late season rains delivered increased sediments and nutrients into Beaver Lake. However, both Secchi depth and chlorophyll-a averages were well within the normal variations for the 13-year dataset.

“Year after year, Secchi Day continues to provide BWD with excellent data concerning the water quality in Beaver Lake. There has been quite a bit of variability in the last thirteen years, but the silver lining is that at this point, according to Secchi Day data, we do not have any indication that water quality is degrading,” Rich said.

James McCarty, BWD’s Manager of Environmental Quality, added that “Secchi Day is only one example of our ongoing efforts to monitor and maintain the water quality of the lake. We look at this data and much more to help us keep watch on key indicators of water quality problems and assess our restoration and protection efforts within the watershed.”

To read this year’s Secchi report, go to the Secchi Day page on the BWD website at https://www.bwdh2o.org/education-outreach/secchi-day/ and the report will be on the bottom left. Mark your calendar now. The 15th Annual Secchi Day on Beaver Lake will be held Aug. 15, 2020.

The event includes many partners such as 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, Beaver Lake Fire Department, Ozarks Water Watch, OneCommunity, The Ozark Society, 3W Magazine, KNWA, North American Lake Management Society, and Girl Scouts Diamonds of Arkansas, Oklahoma and Texas. Secchi Day is one of the premiere water public awareness and education events in Arkansas.
The title of this quarterly newsletter has many connotations. Journalists might rely on a “source” to get an early lead on a breaking news story or for a publication. As I write this column, many Razorback football fans around the state and nation are claiming on social media that they have an inside “source” and claim know who the next head coach is going to be. And of course, this “Source” provides regular updates on the activities and challenges facing Beaver Water District and, of course, Beaver Lake, the “source” of our drinking water in Northwest Arkansas. The familiar saying “You can’t see the forest for the trees” occasionally rings true for what topics are chosen to be highlighted each quarter in this newsletter. There is so much activity and there are so many important opportunities and challenges we face each day, I thought it was important to take a step back and refocus.

The source of our drinking water, Beaver Lake, comprises a watershed of more than 750,000 acres. Within that watershed basin are seven sub-basin watersheds, including War Eagle Creek, Richland Creek, the Middle Fork of the White River, and the West Fork of the White River. For generations, individuals and families throughout our region have created ties to these waters and the surrounding land. Establishing homes, raising families, and making our livings are intrinsically tied to communities like Springdale, Siloam Springs, Eureka Springs, Woolsey, Goshen, and so many more because of a “source” of clean, abundant water. My personal connection to this watershed is the West Fork of the White River. Both of my parents’ families are from towns established along the West Fork and Highway 71, which follows the meandering river south into the Boston Mountains. I’ve spent my life in, on, and around the West Fork—raising cattle and children, baling hay, fishing, swimming, Continued on page 7
and exploring. This picture, from 1972, is of my grandfather holding me up in a clear, deep swimming hole in the West Fork. The old photograph may no longer be very clear, but the memories are still crisp and vivid in my mind.

As this region continues to grow, the impacts we have on our streams and in our watersheds will continue to become more critical. We can choose, however, whether those impacts are negative or positive. Protecting this Beaver Lake watershed and preserving the quality of water in the lake is the foundation of the District’s Source Water Protection Plan. Providing high quality drinking water starts with protecting the source of that water; for it is that “source” that is our heritage and our future.

Mission
To serve our customers’ needs by providing high quality drinking water that meets or exceeds all regulatory requirements and is economically priced consistent with our quality standards.

Beaver Water District “Top Ops” Team Places 1st Regionally; headed to Nationals

(From left) Dustin Mayhew of Springdale, Gabe Frost of Siloam Springs, and Steven Caudle of Lowell, all Beaver Water District (BWD) Plant Operators II, placed first to win the regional Top Ops Challenge competition held Oct. 22 in Branson, Mo., during the 2019 Southwest Section American Water Works Association’s annual convention. Now the team will compete for the 6th consecutive year in the American Water Works Association (AWWA) Top Ops Challenge in Orlando during AWWA’s 2020 Annual Conference & Exposition, which will be held June 14-18. Top Ops is the “College Bowl” or “Jeopardy!” of the water industry. It is designed to promote excellence and professionalism and provide an opportunity for water professionals to showcase their talents in all aspects of water operations.
“YOUR WATER FOR LIFE”

La tua acqua per la vita ★ מים לכל החיים ★ Vannet ditt for livet ★ Həyat üçün su ★ A víz az életedre ★ ‘Okou wai no ke ola ★ जीवन के लिए आपका पानी ★ 你的生命之水 ★ Ditt vatten för livet ★ Yaşam için suyunuz ★ قَلِيلٌ مِّنْ مَاءِ الْحَيَاةِ ★ Votre eau pour la vie ★ Ваша вода за живот ★ To νερό για ζωή ★ Dein wasser fürs leben ★ نِيرُ النَّاسِ لِلْعَيْشِ ★ Airmu seumur hidup ★ Via akvo por vivo ★ Lateva aigua per a la vida ★ Zure bizitza bizitzarako ★ Biyahaagu nolosha ha ahaadaa ★ जीवनरे जन्य आपनार जल ★ Do chuid uisce ar feadh an tsaoil ★ Sinunvesi elämääsi ★ 一闪而過的水 ★ Vatnið þitt fyrir lífið ★ Tu agua por vida ★ воя вода для жизни ★ Avè we ji bo jiyanè ★ Eich dŵr am oes ★ Vasha voda na vse zhyttya ★ Banyu kanggo urip ★ ഒരുഭാഗ് ജീവിതം പോലുള്ള ജീവിതം ★ Do uisge airson beatha ★ Σιζδίν ομιρινής ύσιν συ ★ Dân in mour ★ Twoja woda na całe życie ★ Banyu kanggo urip ★ दोस्तुद्ध स्वयं बलादफ़ुस्तस ★ Vašata voda za život ★ Dlo ou pou lavi ★ Maji yako kwa uzima ★ Lau vai mo le ola ★ ते जीवन के लिए इच्छाः ★ Твоя вода для жизни ★

Beaver Water District

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