

Boy Scout Jamboree



The Division of Mining and Reclamation's Richard Roy, a former Boy Scout, enjoys talking patches with Scouts during the recent national Jamboree in Fayette County.

Serving the Scouts



Ed Andrews, from the DEP's Division of Air Quality, demonstrates a BioLite camp stove to Scouts. The stove uses a thermoelectric generator to convert heat from the fire into electricity. A USB port with the stove will charge phones.

The DEP was represented by 66 of its employees during last month's National Boy Scout Jamboree.

Staffers worked various shifts at the DEP's tents during the agency's eight-day presence as an exhibitor at the inaugural Jamboree on the Summit Bechtel Reserve in Fayette County.

For more on the DEP's involvement and additional photos, see **Page 5.**

Interim director talks goals

By Colleen O'Neill

The interim director for the Division of Land Restoration is a familiar face around the DEP.

She has been an active member of many DEP programs since the

agency's inception in 1992.

"I worked for the Water Resources office of the Division of Natural



Hickman

Resources in the 1980s for a time, and then joined the DEP in 1992," said Patty Hickman. "I've been with the agency for 22 years."

Hickman was named the DLR's interim director on

See DLR, Page 8

Gov. Tomblin visits DEP



Gov. Earl Ray Tomblin paid a visit to DEP headquarters on Aug. 19. In addition to meeting with the Executive Staff, he toured the building and met with employees.

— Page 2

DEP welcomes Gov. Tomblin

It's not often you'll bump into West Virginia's governor as you stroll down a hallway at DEP headquarters.

But during the afternoon of Aug. 19, several surprised agency workers were treated to impromptu meetings with Gov. Earl Ray Tomblin as he toured the building.

Gov. Tomblin first met with the agency's Executive Staff in the West Virginia Room before making his way through the building, along with Cabinet Secretary Randy Huffman and others.

He ended his visit in the Coopers Rock Training Room (right).



Photo courtesy of **Steve Rotsch**

Gov. Tomblin took some time to meet with DEP employees in the Coopers Rock Room following his brief tour of the agency's headquarters. He thanked the staff for its hard work.

Gov. Tomblin began his visit by meeting with the agency's Executive Staff. Secretary Randy Huffman and Chief of Administration Melinda Campbell are seen in the photo at right, along with Chris Weikle, from the Governor's Office.



Photo courtesy of **Steve Rotsch**



Gov. Tomblin learns about the DEP's third floor Memorial Wall, which honors agency workers who died while employed at the DEP.

Great Kanawha River cleanup set for Sept. 14

Area residents can do their part in making the banks of the Kanawha River free of trash and debris.

The 24th annual Great Kanawha River Cleanup is scheduled from 9 a.m. to noon on Saturday, Sept. 14 at various locations along the river.

The event is sponsored by the West Virginia Department of Environmental Protection's REAP program.

Cleanup sites include Kanawha Falls at Glen Ferris; Magic Island in Charleston; Winfield Beach/Locks; Daniel Boone Park in Charleston; and Roadside Park in St. Albans.

REAP (Rehabilitation Environmental Action Plan) will provide cleanup materials to volunteers and arrange for trash to be hauled away. All volunteers also will receive a T-shirt. Last year, despite a



A mother and son walk the banks of the Kanawha River at Magic Island in Charleston last year during the Great Kanawha River Cleanup, sponsored by the DEP.

steady rain, volunteers turned in 288 man hours and collected two tons of debris from the Kanawha's banks.

Over the last five years, volunteers have removed more than 30 tons of trash from the river and around 400 tires.

For more information, contact REAP's Travis Cooper at: Travis.L.Cooper@wv.gov or call 304-926-0499, ext. 1117.



Earl Ray Tomblin

Governor

Randy Huffman

Cabinet Secretary

Kathy Cosco

Communications Chief

Tom Aluise

Editor

Public Information Office

601 57th St. S.E.

Charleston, WV 25304

Email:

Thomas.J.Aluise@wv.gov

InDEPth is published monthly by the West Virginia Department of Environmental Protection, an affirmative action, equal opportunity employer.

Volunteer Monitoring Conference

Attendees are tuned in to topics

By Tom Aluise

It's always encouraging for educational conference organizers when engaged participants are still hungry for more information, even after a 90-minute session or workshop.

And that's exactly what transpired during the Mid-Atlantic Region Volunteer Monitoring Conference during its two-day run earlier this month at the National Conservation Training Center in Shepherdstown.

Session leaders routinely were approached following presentations and asked additional questions by attendees eager for more knowledge.

"The sessions were an hour and a half in length and most of the time people wanted them to be longer," said the Department of Environmental Protection's Tim Craddock.

Craddock, from the Division of Water and Waste Management's Nonpoint Source Program, organized the Volunteer



Participants in the Volunteer Monitoring Conference watch a demonstration of a simple cross section measurement during the stream restoration session.

Monitoring Conference with help from a grant from the U.S. Environmental Protection Agency. It was the first time West Virginia had hosted the event since 2005.

In addition to West Virginia, participants came from

Maryland, Virginia, Pennsylvania and Delaware. More than 80 people from watershed groups, government agencies, education and other organizations attended

See TOPICS, Page 4



AML's newest doser on the Blackwater River is flanked by the original limestone drum station (left) and an outdated doser.

Team effort boosts latest AML treatment station

By Tom Aluise

With clicks on a keyboard, state Division of Natural Resources' staffers sitting in the DNR's Elkins' office can adjust the settings on a lime doser stationed on the Blackwater River.

The high-tech doser, located near Davis in Tucker County, is the newest among the nine dosers funded by the DEP's Abandoned Mine Lands program and situated throughout the state. And it is at the core of a joint effort among state and federal agencies that is making a positive difference in water quality on the Blackwater River, long impacted by acid mine drainage from pre-law

See AML, Page 9

DEP retirements

Maureen Clemons

Homeland Security and Emergency Response
Last day: Aug. 16, 2013
Years of service: 20

Stephen Moore

Division of Mining and Reclamation
Last day: Sept. 24, 2013
Years of service: 33

Connie Bledsoe

Division of Water, Waste Management
Last day: Nov. 27, 2013
Years of service: 32

Paul Ancion

Division of Water, Waste Management
Last day: Dec. 31, 2013
Years of service: 10



Cabinet Secretary Randy Huffman delivers his remarks during a ceremony to dedicate the Mingo County section of the King Coal Highway to the late Mike Whitt.

Visionary honored

Secretary Huffman helps pay tribute to one of Mingo County's leaders of post mine land use, Mike Whitt



Secretary Huffman is pictured with Whitt's wife, Regina.

By Tom Aluise

Cabinet Secretary Randy Huffman was among a contingent of state and federal officials, as well as West Virginia politicians, to honor the late Mike Whitt during a road dedication ceremony in Mingo County.

The event was conducted at the Taylorville/Red Jacket connector of the King Coal Highway, the massive road project that, when completed, will run parallel to U.S. 52 from the outskirts of Huntington to near Bluefield.

The Mingo County section of the King Coal Highway will now be known as the "Mike Whitt Memorial Highway" in honor of Whitt's vision, and then his persistence in making the road a reality for his home county. As director of the Mingo County Redevelopment Authority, Whitt saw the potential in post mining lands to be used for highway construction.

Whitt, who died in November 2011, also helped create the Hatfield McCoy Trail System and championed

other projects such as the new Mingo County High School; the Mingo County Fish Hatchery; the Air Transportation Park; and the TransGas coal-to-liquids plant.

"It's only fitting that we recognize Mike today and that this road be named in his honor," Huffman said during the dedication ceremony. "If we stick to the model Mike developed — that is to never accept 'no' for an answer — we can finish this road. Mike would have expected no less."

Huffman told the crowd he first got to know Whitt some 20 years ago during Huffman's tenure as head of the DEP's Pollution Prevention and Open Dump Program. Whitt called Huffman to inquire about the state helping Mingo County with some trash problems.

But Whitt didn't want the state to do the work for the county or simply provide money, Huffman said.

"I was pleasantly surprised when Mike went on to describe the commitments he had from

TOPICS

Continued from Page 3

the conference.

"It's targeted toward anyone involved in volunteer monitoring," Craddock said. "Essentially, it's an opportunity to network and familiarize yourself with what is going on regionally. It's a way for us to touch base and learn from each other."

Sessions were conducted on a wide range of topics, with an emphasis on current issues such as shale gas development.

Craddock and the DEP's Glenn Nelson conducted a session on macroinvertebrate identification, while the DEP's Nicki Taylor, Tomi Bergstrom and Sebastian Donner led a session on MS4 (Municipal Separate Storm Sewer System) permits.

"Our agency was well-represented and I received positive comments about the speakers we had from the DEP," Craddock said.

"This was one of the better conferences, not necessarily because it was the best attended, but because the overall response was good from most of the participants. And I think that had a lot to do with the presenters and the fact that it was actually at a training facility."

Craddock said he's confident the event resulted in a more informed group of citizens, better prepared to do what's best to promote a healthy environment.

"I want people to participate in an intelligent manner in the state government process and help us decide what the correct choices are for the environment."

Additional information, abstracts and presentations are available at: <http://www.dep.wv.gov/WWE/getinvolved/sos/stories/Pages/EPAVolMonConf.aspx>

See VISIONARY, Page 6



Opening ceremonies of the Boy Scout Jamboree brought more than 20,000 Scouts together on the Summit Bechtel Reserve.

Scouts ‘perfect audience’ for DEP message

By Colleen O’Neill

Although sweltering and sticky, employees of the Department of Environmental Protection spread the agency’s message of promoting West Virginia’s healthy environment to the attentive ears of thousands of Boy Scouts. It was Fayette County in mid-July and it was the National Jamboree for the Boy Scouts of America.

“It was a great opportunity for the DEP to share its environmental message, and for West Virginia to showcase its beauty and hospitality to Scouts from all over the country,” said

See SCOUTS, Page 7



Matt Critchley, from the Division of Mining and Reclamation, explains the processes of surface mining using an HO scale model made especially for the DMR.



Nick Murray, from the DEP’s Watershed Assessment Branch, talks about stream health to a group of Scouts. Murray had an array of insects to help him drive home his points.



Rich Boehm, from the Division of Air Quality, hands out magnets to Scouts who took on the challenge of the DEP’s multi-cache geocaching exercise.

Stream restoration

DEP helps Upper Shavers Fork

By Tom Aluise

Support from the West Virginia Department of Environmental Protection has played a major part in fish habitat restoration efforts in the Upper Shavers Fork watershed in Randolph County.

Most recently, the DEP contributed \$150,000 in In-Lieu Fee Program funding toward a construction project on Lamothe Run, a native brook trout spawning tributary of Upper Shavers Fork. The project helped restore full bi-directional access to Lamothe Run, which had been obstructed from upstream fish passage near its mouth by a hanging 36-inch culvert.

The state Division of Natural Resources Stream Restoration Program and West Virginia University partnered on the project, along with the DEP and several other agencies. It was completed this spring.

“The Lamothe Run project complemented a 4½-mile mainstem habitat mitigation project recently completed by the Tygart Valley Conservation District and the Natural Resources Conservation Service,” said Steve Brown, program manager for DNR’s Stream Restoration Program. “The mainstem mitigation project was also approved by DEP regulatory staff.”

The brunt of the Lamothe Run work involved excavating the existing hanging culvert under the West Virginia Central Railroad and



The DEP’s Ed Hamrick stands near a natural stream restoration step-pool complex entering the baffled fish passage culvert on Lamothe Run.

replacing it with a 60-inch culvert equipped with 16, 2-foot notched baffles. The baffles help create a “fish ladder” and resting areas for trout trying to return to the cool waters of Lamothe Run. Two 36-inch culverts also were installed for flood flow capacity.

“Like salmon, the brook trout want to go back home to spawn,” said Paul Kinder, a research scientist with the WVU Natural Resource Analysis Center. “It’s also important to give them cool water refuge from the heating of the mainstem river during the summer.”

The DNR estimates the Lamothe Run project amounts to four miles

of restoration.

“It was an ideal situation,” Kinder said. “We used our time and other funding sources to plan and design the project. Then, the DEP came in and helped with the funding of construction. It allowed us to take a portion of the money that we had for construction and apply it to other projects. It expanded the scope of the WVU/ DNR cooperative stream restoration project.

“The bottom line is we couldn’t have done this without the DEP’s involvement. The DEP’s support has not only allowed us to have a phenomenal project at Lamothe Run, it’s extended our ability to do other good things in this watershed.”

The DNR, along with partners such as WVU, DEP, other state and federal agencies, and private contractors, has been working on brook trout-focused stream restoration projects on Upper Shavers Fork since 2009. In addition to Lamothe Run, fish passage projects were completed on Beaver Creek and Oats Run, where barriers and obstructions were hindering brook trout expansion and sustainability.

“The more than 16 miles of Upper Shavers Fork restoration is a great example of what can be accomplished for our state’s natural resources when all agencies work together,” said the DEP’s Ed Hamrick, who has helped coordinate the agency’s work on Upper Shavers Fork.

VISIONARY

Continued from Page 4

businesses and the political leadership of the county,” Huffman said.

“He had a plan and needed another partner. This was the template Mike would use for the next 20 years to help transform Mingo County and position it for a prosperous future.

“What started as an ambitious task of simply cleaning up trash transpired into the development of post mining land uses,” Huffman said.

Other speakers at the dedication ceremony included U.S. Senator Joe Manchin and West Virginia Transportation Cabinet Secretary Paul Mattox.

Agency transactions

Recent DEP hires

- ▶ **Jason Foster**
Office of Abandoned Mine Lands
- ▶ **Jillian Harris**
Division of Air Quality
- ▶ **Allison Miller**
Division of Mining and Reclamation
- ▶ **Matthew Miller**
Division of Mining and Reclamation
- ▶ **Mandy Moore**
Office of Abandoned Mine Lands
- ▶ **Savannah Perry**
Division of Water, Waste Management

- ▶ **Heather Rice**
Division of Mining and Reclamation
- ▶ **Lori Saylor**
Office of Administration

Internal Transfers

- ▶ **Ann Baldwin**
Division of Mining and Reclamation
- ▶ **Jamie Hopen**
Division of Land Restoration
- ▶ **Joseph McCourt**
Office of Oil and Gas

SCOUTS

Continued from Page 5

Cindy Lawson, an employee with the Division of Mining and Reclamation.

Lawson coordinated the DMR’s involvement in the DEP’s Jamboree exhibit, which included educational and interactive displays from the Division of Air Quality, REAP, the Division of Water and Waste Management’s Nonpoint and Watershed Assessment branches, and the Youth Environmental Program.

A total of 66 DEP employees worked various shifts for eight days throughout the Jamboree. The DEP’s exhibit materials were housed under two tents, situated on the Conservation Trail at the Summit Bechtel Reserve.

The DMR’s HO scale surface mine model was especially popular with the Scouts and Jamboree visitors, many of whom were aware of the Jamboree site’s long history of being both underground and surface mined. The DEP’s Abandoned Mine Lands program spent close to \$13 million reclaiming much of the property before turning it over to the Scouts.

Lawson handled the logistics of creating the surface mine model, which was built by the Island Creek Model Railroad Club of Peach Creek, W.Va.

“The model depicted the various stages of surface mining, from undisturbed, clearing, grubbing, upper and lower seam mining, loading, backfilling, reclaiming, and returning the area to the approximate original contour or an approved post mining land use,” Lawson said.

The Jamboree offered the Scouts many outdoor activities, from whitewater rafting, canoeing and hiking, to rock climbing and zip-lining. The Scouts also spent time in surrounding counties fulfilling their community service requirements. The National Jamboree is staged every four years and the Summit Bechtel Reserve will be its permanent headquarters.

Because this was the inaugural Jamboree at the new location, it had its share of glitches, from transportation issues to exhibit setup and storage issues.

And, of course, there was the heat and humidity.

“The setup was brutal, between the heat and the hill. We had to haul all of our materials up and down a hill in wagons,” said the DAQ’s Gene Coccari.

Still, no spirits were dampened and, in fact, were lifted by the Scouts themselves.

“All the Scouts I dealt with were



The Division of Air Quality’s Gene Coccari doesn’t miss this photo opportunity with Woody Owl and Smokey Bear during the Boy Scout Jamboree. Right: The DEP exhibit area on the Conservation Trail included two tents which tended to get crowded at times with Scouts and visitors.



polite to the utmost, and really wanted to hear the DEP’s message,” Coccari said. “I think it was the best outreach event the DEP has ever been involved in. I was proud to be involved with the DEP’s effort.”

“I felt very fortunate to have been able to work with such a great bunch of kids,” said the DAQ’s Mike Egnor, who coordinated the DEP exhibit’s multi-cache geocaching exercise for interested Scouts. “It was a perfect audience for our outreach message.”

The Jamboree also opened the door for chance meetings for people like Rick Pino, an employee with DMR’s Oak Hill field office.

Pino, who worked the DEP exhibit a couple of days, returned to the Jamboree with his 16-year-old son, who is currently a Life Scout completing the final documentation of his Eagle Scout project.

Pino and his son were taking in the exhibits when he got a blast from the past.

“We were walking along and started a conversation with three men about the site,” Pino said. “One of the men said he had grown up in nearby Mount Hope and he had been telling the other two what the site was like when he was a kid.

“I asked if he went to school with my cousins. He was my cousin’s escort when she was Miss Mustang at Mount Hope High School!

“He pulled out his phone and took a picture of us together to

“I think it was the best outreach event the DEP has ever been involved in.”

Gene Coccari

DAQ employee on the Boy Scout Jamboree

post on his Facebook page so that my cousin would see it.”

For the DMR’s Richard Roy, working at the Jamboree took him back 50-plus years when he attended the same event as a 13-year-old, wide-eyed Scout.

“I attended the 1960 Jamboree in Colorado Springs,” Roy said. “I tried to take everything in. I was in Troop 50 from the Chief Cornstalk Council (Boone, Logan, Mingo counties and Pike County, Ky.).

“There was nothing wilder than riding a train filled with Scouts going to the Jamboree. I don’t believe I slept for the two-plus days on the train while traveling to the Jamboree.”

The Jamboree enabled Roy to see and experience things that otherwise would have been out of his reach.

“While traveling to and attending the Jamboree, I was able to see and experience things that I had only read about,” said Roy, “like the U.S. Air Force Academy, the Garden of the Gods Park, Pikes Peak and the Cog Railway. I even got to see the president of the United States, Dwight Eisenhower, and other celebrities.”

Adopt-A-Highway picnic

Volunteers are the focus of annual picnic

By Colleen O'Neill

"It's the least we can do."

That's what Sherry Thaxton, the Adopt-A-Highway coordinator, said about the appreciation picnic conducted annually to thank her many volunteers.

Thaxton pointed out that by giving of their time and effort in cleaning up West Virginia's roadways, the volunteers save the state a lot of money.

"It would cost the state approximately \$2 million to pay a contractor or other state employees to do the work done by these volunteers," she said.

This year, the AAH appreciation picnic was conducted on Aug. 3 at Cheat Lake in Morgantown. With



Youth Environmental Program Director Diana Haid shows her artistic side during the annual AAH appreciation picnic.

indoor facilities available, the uncooperative weather did not spoil the fun. Approximately 400 volunteers attended, which represents the largest turnout since Thaxton took over the program three years ago.

"There were plenty of activities for everyone,"

she said. "Most of the adults played bingo which had prizes consisting of folding chairs, golf umbrellas and digital banks. The kids enjoyed face painting, a caricature artist, and other crafts. At the end of the day was the annual cake walk where 20 people went home with a

dessert.

"There also were four door prizes: a GPS, a digital camera, a weather radio, and a Kindle Fire," Thaxton said. "I want people to know that we appreciate their efforts."

Thaxton also offered two different classes that the volunteers could take free of charge — basket weaving and cake decorating. The AAH program supplied all needed material.

AAH backpacks containing recycled pens, pencils and activity books were given to children.

"With all of the prizes, we make sure everyone leaves the picnic with something," Thaxton said. "Because of their hard work and dedication, West Virginia is a cleaner state."

DLR

Continued from Page 1

July 1 to replace Ken Ellison, who retired.

"My previous jobs have provided me with the opportunity to gain field experience, as well as experience performing technical reviews of project work," she said. "I've worked in enforcement programs where compliance is compelled, and in programs where parties voluntarily address their site cleanup needs."

"In addition to working as an inspector and project manager, I managed the Underground Storage Tanks Program in the Office of Environmental Enforcement; and the Leaking Underground Storage Tank, Voluntary Remediation and Brownfields programs in the Office of Environmental Remediation," Hickman said.

A veteran of protecting the environment, Hickman looks forward to putting her mark on the DLR from a leadership position. She intends to use her past experience to understand the new programs with which she will work.

"DLR's programs are blessed with experienced staff members who strive to excel, while taking great pride in their work," Hickman said. "My immediate goal is to provide each program with the administrative support they need to further their success."

What plans does she have for the division?

"My longer-term goals include developing a strong succession plan for identifying and training well-qualified employees to fill technical and management positions; ensuring that all DLR programs are appropriately funded to enable continued oversight of their respective objectives and projects; and with the help of the program managers, identifying areas where improvements

"DLR's programs are blessed with experienced staff members who strive to excel, while taking great pride in their work."

Patty Hickman

Interim director, Division of Land Restoration

may be implemented," Hickman said.

The DEP headquarters are in Charleston, but Hickman resides in Wheeling, where she also has an office. Her solution?

"As interim director, I am in Charleston each Monday, and often other days to accommodate meetings and such," she said.

"This is similar to my previous position, as it also involved statewide program oversight and often entailed attending or conducting meetings in Charleston. I can still be reached through the Wheeling phone number, as well as through my secretary, Jessica Henson, in the Charleston office."

If her last name sounds familiar, it's because Hickman's husband, Joe Hickman, is an assistant chief inspector with Environmental Enforcement. It could be said that environmental protection runs in their veins.

"Joe and I met when we both were working as summer park naturalists for the West Virginia State Parks," Hickman said.

"We've been married 28 years. We have a daughter and son in their 20s, and one daughter in high school."

EMPLOYEE RECOGNITION



Rewards and Recognition — Renu Chakrabarty, Mike Dorsey and Tim Carroll, Charleston

The Division of Air Quality’s Renu Chakrabarty and Tim Carroll, along with Mike Dorsey, chief of Homeland Security and Emergency Response, received Rewards and Recognition honors for their roles in developing three legislatively mandated studies on environmental impacts associated with horizontal well drilling.

These individuals were asked to develop a project scope, negotiate a contract, secure a contractor, oversee and orchestrate the three studies, and report back to the state legislature within a year.

The studies could not have been completed (especially in the time given) without these individuals’ expertise.

Chakrabarty was the lead air expert and occupied the driver’s seat for the whole process. Carroll was the lead air quality monitoring expert. And Dorsey was the project manager on the pits and impoundments study.



August EOM — Nick Murray, DWWM, Charleston

August Employee of the Month Nick Murray has great skills in talking and presenting to the public and often volunteers with DEP-sponsored public outreach programs, such as Earth Day and Junior Conservation Camp.

Murray began with the DWWM’s Watershed Assessment Branch in 2005 and was quickly recognized for his quality of work.

By the beginning of 2012, he held second place among the staff in the amount of field forms entered into the WAB database, and held first place in the number of field forms proofed for Quality Assurance. By no means are either of these tasks glamorous or exciting, but Murray got the job done and got it done correctly.

AML

Continued from Page 3

mining.

The doser, which feeds hydrated lime into the river to neutralize the acid drainage, replaced the original limestone drum station and outdated doser at the same location.

It has been operational since spring and is maintained by the DNR, with costs for operation and maintenance covered by the AML’s Set-Aside Fund.

A modem system allows the DNR to control, from offsite, the amount of neutralizing materials released from the doser into the river. A U.S. Geological Survey stream gauge, downstream from the doser, was recently equipped to monitor both pH and temperature, and provides real-time water quality data to the DNR — and anyone with an Internet connection — which the Elkins’ office uses to determine doser settings.

The remote access to the doser saves time and money for the DNR and AML Program, said AML Chief Rob Rice.

“It reduces the amount of time someone from the DNR office has to be up there when changes need to be made, as well as reducing the amount of neutralizing material dispensed,” Rice said.

DEP Division of Water and Waste Management Deputy Director Pat Campbell worked with the USGS to retrofit its Blackwater stream gauge to measure pH and temperature. AML is partnering with the USGS on funding for the gauge.

“Pat was instrumental in making this happen,” Rice said. “We were trying to figure out a way to make this work and some way to have a downstream monitor from the doser. The easiest solution was to install a pH monitor on the existing stream gauge.”

Said Campbell, “This is a good example of AML, DWWM, the USGS and DNR all working together. The end result is real-time information that AML and DNR need, with co-benefits to anglers and those of us who learn from continuous stream monitoring data.”

Continuous and real-time water quality data are relatively new tools state environmental regulators have to make informed decisions on how to treat polluted streams.

The USGS has 21 stream gauges deployed around the state that are equipped to provide real-time data on parameters such as temperature, conductivity, pH and dissolved oxygen, in addition to their more common use for stream flow and height.

The information is viewable on the USGS Web site and is monitored by the DWWM’s Watershed Assessment Branch. The WAB funds several of the USGS gauges and benefits tremendously from the large amount of continuous, real-time data available.

“It’s a huge increase in the number of samples,” said WAB Director John Wirts. “The key point to make is it helps us understand the daily cycles and seasonal cycles.

“I didn’t realize how much pH and conductivity change on a daily basis.

“We’ve also been able to understand better how water quality responds to storm and big rain events, droughts and how things differ during high and low flow.”

Wirts said the WAB has 20 to 25 of its own gauges that provide the same type of continuous information as the USGS units, but the data is not available in real time. Information must be downloaded from gauge.

To view Blackwater River data, follow this link:
http://waterdata.usgs.gov/wv/nwis/uv/?site_no=03066000&PARAMeter_cd=00010,00095,00400,63680,00300,00011,00047