Water quality always on their mind

west virginia



department of environmental protection

A former DEP Watershed Assessment Branch staff member measures flow in Little Sandy Creek (Cheat River Basin) during the cold of winter.



est Virginia water has been in the news a lot lately. State water issues are continually finding their way into headlines, be it water withdrawal and disposal concerns associated with the natural gas drilling boom in the Marcellus Shale; a federal push to reduce nutrient loads in the state's Eastern Panhandle as

part of a massive Chesapeake Bay cleanup plan; or a heightened focus on mining's impact on West Virginia's streams and rivers.

Water quality is the common denominator. And no group knows that better than the Department of Environmental Protection's Watershed Assessment Branch (WAB). The WAB is the agency's boots-on-the-ground

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February 2011

Trainee program benefits agency

By Colleen O'Neill

Being young definitely has its benefits. But when the economy is strained and jobs are scarce, the youth factor can be a deterrent to finding employment.

Kevin Seagle prepares to deploy a water

quality meter in the Mud River.

The federal Office of Surface Mining joined forces with the Southwest Conservation Corps and AmeriCorps to offer the Regulatory Trainee Program. This program enables recently graduated students to stretch their legs in their major within a regulatory program. A win-win situation, the trainee gets needed experience, while getting a feel for his or her major, and the agency benefits from the additional manpower.

The trainees serve in their fields for one year. The Department of Environmental Protection

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Regulatory Trainee Program participants working in the Division of Mining and Reclamation are (from left) Andrew Roberts, Katie Murphy, Mary Kate DeFrancesco and Sarah Miloski. The federal Office of Surface Mining, along with the Southwest Conservation Corps and AmeriCorps, sponsors the program. **inDEPth**

From Colombia to Charleston

Office of Oil and Gas employee says life is much safer these days

By Colleen O'Neill

America is known to many as the land of opportunities. To Bernardo Garcia, it was just that.

Coming from Colombia, he wanted a life that was more stable and less stressful. And he found it, here in West Virginia.

"I left (Colombia) because you just have a number of opportunities in your life and you cannot waste them," said Garcia, who works in permitting in the Department of Environmental Protection's Office of Oil and Gas. "I was tired of working in Colombia because I worked as a consultant and the payment was not enough, compared with the risks I was facing in the areas where oil tion. and gas are found."

Garcia said all of Colombia's major cities are in the mountains, including Bogota, which is located 8,500 feet above sea level. The country's oil and gas reserves are in rural areas at lower eleva-



Bernardo Garcia savs his work in his native Colombia took him to dangerous areas of the country. Fortunately, he did not have any major problems.

"Those areas are plagued by guerrillas and paramilitary forces fighting among themselves," Garcia said. "They're fighting to gain control of certain areas, resources and routes in the country. Thus, I was at risk of being

killed or wounded if I was in the wrong place at the wrong time, or if I had been a suspect for them in any way.

"Fortunately, I did not have any major problems during those

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DEP employee honored

The Association of West Virginia Solid Waste Authorities recognized the DEP's Theodora Plumley for her service to the environmental health of West Virginia during its 2010 conference. Plumley, who works in the Youth Environmental Program out of French Creek, is pictured above being presented by **AWVSWA officer Roger Frame.**



Earl Ray Tomblin Governor **Randy Huffman** Cabinet Secretary Kathy Cosco Communications Director Tom Aluise Editor Public Information Office 601 57th St. S.E. Charleston, WV 25304 Email: Kathy.Cosco@wv.gov; or Thomas.J.Aluise@wv.gov

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Department of Environmental Protection booths were set up on both the House and Senate sides on the second floor of the State Capitol for DEP Day at the Legislature on Jan. 19.

DEP Day at the Legislature

Agency has earlier than usual visit to halls of Capitol

DEP Day at the Legislature came earlier in the session this year (Jan. 19) than in the past.

Several of the DEP's divisions and offices were represented at the State Capitol, where they mixed with legislators and visitors.

Offices and divisions represented included Abandoned Mine Lands; Special Reclamation; Division of Mining and Reclamation; Office of Explosives and Blasting; Rehabilitation Environmental Action Plan; Division of Water and Waste Management; Office of Oil and Gas; Public Information Office: Environmental Enforcement; Project WET; Office of Environmental Advocate; Youth Environmental Program; Division of Air Quality; Human Resources; and the Solid Waste Management Board.

Tom McCarthy answers a question at the Division of Land Restoration's Office of Special Reclamation booth.



DEP Cabinet Secretary Randy Huffman stopped by and visited with DEP staff and other well-wishers.



John Killian helped man the Environmental Enforcement information booth at the Capitol.



New event focuses on unique type of reuse

West Virginia's first ZeroLandfill event to focus on "upcycling," or keeping waste materials intact so they can be reused for another purpose, is being hosted by the Habitat for Humanity of Kanawha & Putnam County Re-Store in Charleston.

The West Virginia Department of Environmental Protection is a sponsor of the event.

ZeroLandfill is a national reuse program that supports the supply needs of local artists and art educators, while reducing pressure on local landfill capacity.

It takes samples traditionally disposed of as waste and turns them into art and education supplies.

On March 18 and 24 and again on April 1, between 9 a.m. and 6 p.m., expired specification samples such as carpet tile, glass, fabric swatches and laminate chips from the architecture and interior design community can be dropped off at the ReStore located at 301 Piedmont Rd.

Once sorted, the "upcycled" items will be available for free to local art teachers and artists at the ReStore from 9 a.m. to 6 p.m. on April 2, 9 and 16.

For more information about the event, contact ZMM's Jill Watkins at 304-342-0159 (ext. 240) or jmw@zmm.com.

Learn more about ZeroLandfill at www.zerolandfill.net. inDEPth

30 years later ...



Current and past DMR employees mingle at DEP headquarters during a celebration of the 30th anniversary of the state being awarded primacy over mining.

DMR takes time to reflect on key day in its history

By Tom Aluise

More than 100 current and past Division of Mining and Reclamation employees filled the Coopers Rock Room at DEP headquarters on Jan. 27 to celebrate the 30th anniversary of West Virginia's primacy over its mining program.

On Jan. 21, 1981, the state's permanent regulatory program was approved by the U.S. Department of the Interior. It marked the culmination of a four-year process during which state regulators either devel-

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The DMR's Joe Hager (left) talks with former Reclamation employee Bill Raney.



Special certificates were awarded to DMR employees who've been in the program 30 years or more. Pictured with DMR Director Tom Clarke (sixth from left) and Cabinet Secretary Randy Huffman (far right) are Larry Alt, Benny Campbell, Frances Browning, Sandy Humphreys, Charlie Sturey and Lewis Halstead.

WET training attracts a crowd

By Tom Aluise

Whole effluent toxicity (WET) testing is a key component to West Virginia's new permitting guidance for surface coal mining operations.

The guidance, which was released last summer by the Department of Environmental Protection, is intended to assist DEP mining permit writers in developing site-specific National Pollutant Discharge Elimination System (NPDES) permit conditions that will protect the state's narrative water quality standards. WET testing is part of that guidance's holistic watershed management approach.

In WET tests, lab-reared aquatic organisms are exposed to various dilutions of effluent for a specific time period, in order to predict at what levels the effluent may cause harm to the organisms.

WET tests are designed to predict the impact and toxicity of effluents discharged from point sources into rivers and streams.

Because it's a new component to mining permits in West Virginia, the DEP hosted an Environmental Protection Agency-sponsored training program on WET testing in January. The two-day train-

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- Kevin Coyne, DWWM
- John Dornblazer, DMR
 Jennifer Mullen-
- Thaxton, OOG
- ► Lester Pritt, DLR
- Samuel Ward, OOG
- Amaris Zirkle, DMR

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years, but I lived in constant stress because of it. I also was traveling a lot and that affects any relationship you may have."

Garcia said the same friend who introduced him to his wife back in Colombia helped pave the way for Garcia to come to America.

"My wife and I had an open mind for new opportunities," Garcia said. "And it happened that a very close friend to both of us — we worked on our undergraduate thesis together and he actually introduced me to my wife — had saved his money and came to West Virginia to study for a master's degree in safety technology at Marshall University.

"When he came here, he learned about the graduate assistantship program at Marshall and called me. He said, 'Check on the university's website and see if you like something. If you do, take the English exam and apply to the university. I know where you can go and find a GA position and study for free.'"

Heading for the United States and Marshall University was an easy decision for Garcia and his wife.

"We both had experience in our professional fields — my wife is a chemical engineer — and we considered the worst-case scenario: We will study practically for free, obtain a master's degree from an American university and improve our English language skills enough to say that we speak and understand English. All of those are very good assets for improving our careers a lot if we have to go back to Colombia."

After college, Garcia accepted an internship with the Office of Oil and Gas. Through that, he met and worked for James Martin, the chief of OOG, and Gene Smith, the regulatory compliance manager.

"He kept up with the register and when we had an opening, he applied," Smith said. "He's a great guy. We weren't the only office at DEP at which he was interviewing.' That was almost two years ago

and Garcia has been an OOG employee since.

"I have been in this position for almost two years now and luckily my bosses have helped me by sponsoring my working visa," Garcia said.

He still has family back in Colombia and has remained close. His family members are frequent visitors to the U.S.

"Our family visits us on a regular basis," Garcia said. "I have to tell you that we live with people in our house almost two months per year. Our sisters visit us, our parents visit us and our cousins visit us."

Garcia continues to be impressed with the opportunities that are available in America.

"You have free education, better economics than a third world country, more resources available like the Internet and libraries, lower interest rates, better infrastructure and help from people and groups of people who care about the needs of the others," Garcia said.

As for the food, Garcia said there is a considerable difference not only in quality but quantity.

"In tropical countries, we have a very tasty and fresh variety of fruits and vegetables," he said. "I would dare to say that the quality is better over there. I also have found there is too much food here, too much waste, too. Please do not waste food and natural resources."

One homegrown delicacy Garcia can't find in America is roasted ants. Garcia recently did a presentation on the Colombian snack in his Dale Carnegie class. The ants, called Hormigas Culonas, are roasted, salted and eaten like nuts. They are an expensive delicacy.

"By the time I was done with my presentation, many in the class said they would try them," Garcia said. "You can't get them here. A pound of ants is about triple the value of a pound of coffee in Colombia."

DEP, EPA partnering on ENERGY STAR Webinars

The DEP, in partnership with the U.S. Environmental Protection Agency and ENERGY STAR®, is providing three free Webinars to help West Virginians save money and protect the environment through energy-efficient products and practices.

Webinar Schedule:

Thursday, March 10, 1 p.m. Overview of ENERGY STAR Program (90 minutes) — Webinar provides introduction to energy conservation and energy efficiency.

Thursday, April 28, 1 p.m.

ENERGY STAR — Changing Behaviors and Getting Buy-In (60 minutes) — Webinar discusses ENERGY STAR tools for promoting energy awareness and behavior change.

Tuesday, May 24, 10 a.m.

Using ENERGY STAR Portfolio Manager (90 minutes) — Webinar provides detailed introduction to the ENERGY STAR Portfolio Manager building benchmarking tool.

To register for one or more of the Webinars go to: <u>http://</u> <u>apps.dep.wv.gov/registration</u>. For more information contact Greg Adolfson, at 866-568-6649 (ext. 1332) or

gregory.e.adolfson@wv.gov.





More than 80 people turned out for two days of WET Training.

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ing was conducted at DEP headquarters and attracted more than 80 participants, including mining and water permit writers and Watershed Assessment and Environmental Enforcement staff.

The Division of Mining and Reclamation had the most representatives at the training, which also attracted regulators from Virginia.

"WET testing is a cornerstone of the new guidance that went out for mining," said Pat Campbell, an assistant director in the Division of Water and Waste Management. Campbell helped organize the WET training. "We wanted them to have a solid foundation as they go forward putting these WET requirements into permits.

"We had a primer on the (WET) lab methods in 2008," Campbell said. "We knew then there were a lot more permit questions — how you put this into a permit, how you develop permit limits.

"This course went back and refreshed folks on the lab methods, but it was a little more focused on how you develop permit limits and what to look for in the data you receive from the lab. The feedback I've heard has been positive."

Jeff Parsons, who heads up NPDES permitting for DMR, said the WET training was extremely beneficial to his staff.

"This class started with an overview of the NPDES WET program and then went through the entire process from beginning to end," Parsons said. "In my opinion, the most helpful topics were the determination of reasonable potential (RP) and RP exercises in conjunction with the permit development and WET limit calculation exercises. These procedures will be utilized by the DMR/NPDES permitting staff to write permits that are protective of the narrative water quality standards.'

DMR

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oped new or revised existing state mining laws, regulations and procedures to meet the standards established by the Surface Mining Control and Reclamation Act (SMCRA) of 1977.

The state's Department of Natural Resources' Reclamation Division was the regulatory authority for all surface mining in the state until 1985, when the state Department of Energy took over regulatory duties.

Beginning in 1991,



Current and past DMR staff filled up the Coopers Rock Room at DEP headquarters.

the Division of Environmental Protection and ultimately the Department of Environmental Protection became the regulatory agency. In remarks to DMR staffers gathered for the anniversary event, DEP Cabinet Secretary Randy Huffman said the mining industry has evolved in ways no one could have predicted.

"The industry has required you to be more educated and sophisticated and you've stepped up to that," Huffman said.

He also praised the DMR's ability to function efficiently and professionally amid the growing criticism and controversy surrounding the mining industry.

"You continue to rise above all that noise and mess and do your job day in and day out," Huffman said. "You guys manage to stay on the high road."

In memory

Lucy Pontiveros, 67, died on Dec. 27, 2010. Lucy was an assistant director for Hazardous and Solid Waste in the Division of Air Quality and had 28 years of service in state government. She lived in St. Albans.

Lucy is survived by husband, Benny Pontiveros, who retired from the DEP in 2002, and six grown children. Lucy moved to the U.S. in 1981 from her native Philippines.

Lucy will be remembered for her quiet and gentle nature. She was a conscientious, dedicated worker who held high

expectations for herself, as well as her employees. Her greatest joy was the devotion she had for her family and her pets.

PROGRAM

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has four trainees, three housed in the Division of Mining and Reclamation, and one in the Information Technology Office. All four work for DMR. Some work in data entry, which involves looking at water quality data or creating a separate database, complete with hydrologic information, such as the pH and flow of the water, on some mining permits. One trainee is mapping mining permit boundaries and mining limits, enabling accurate visualization and thus, better decisions.

The trainees are Mary Kate DiFrancesco, 22; Sarah E. Miloski, 24; Katie M. Murphy, 25; and Andrew C. Roberts, 26. Murphy and Roberts are from Charleston. Miloski hails from New York and DiFrancesco is a Massachusetts native.

What began in mid-October as a one-year stint to gain experience and network, might turn into permanent positions for some of the trainees.

"I've applied for a GIS position at DEP," said DiFrancesco, who's a graduate of Salem State College, where she majored in geography. "I knew the basics of GIS, but through training and daily use, I've gained more knowledge about the tools and the potential of GIS. I've gained valuable hands-on experience." Roberts has also applied for a position at DEP. He graduated from West Virginia University with a degree in geology.

"I enter the baseline data, such as pH of water or the air flow on mining permits into the Environmental Resource Information System," he said. "I also write reports when needed. I wrote one to the governor's actuary committee about some mining permits."

None of the program participants are eager to leave DEP — or West Virginia.

"The people are nice," said Murphy, who has a master's degree in biology from Marshall. She has been entering water quality data into EQUIS.

Safety Committee reminds staff to keep sick kids home

For the well-being of Department of Environmental Protection employees, children of DEP staff too sick to attend school or daycare facilities, or are being sent home from school or daycare should not be brought into the workplace, according to a reminder from the DEP Safety Committee.

Sick children could be contagious and spread illness throughout the workplace.

Employees who bring ill children to work will be sent home, as directed by management.

"I'm not opposed to sticking around. My family is here."

Miloski received her master's in biology, with a specialty in herpetology, from Marshall. She lives in Huntington and carpools to Charleston with Murphy.

DiFrancesco said she was considering the Peace Corps when her father suggested checking into the AmeriCorps Program.

"I knew I just had to get out of Massachusetts," DiFrancesco said. "I was looking at the Peace Corps and my dad told me about the Ameri-Corps Program. I checked it out on the Internet and it looked like something I'd be interested in."

WATER

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team responsible for monitoring the state's streams for general overall condition and for possible violations of water quality standards

"We're always thrown into these hot issues," said Pat Campbell, who heads up the WAB for the Division of Water and Waste Management. "We were immersed in the Dunkard Creek fish kill, the South Branch fish kills and we're immersed in Marcellus Shale issues. Everything that comes up, we're in, whether it's mining issues, water quality standards issues or antidegradation issues. "Our data informs all of these issues. So, we're inherently involved in them."

Fully staffed, the WAB consists of 29 employees, including biologists, engineers and environmental scientists. Its roots stretch back to the mid 1990s, when the Environmental Protection Agency urged the DEP to begin monitoring more of the state's waters and provided startup federal funding to do so.

Today, the WAB has



Watershed Assessment Branch staff sort fish collected from the North River (Cacapon River Basin).

two legs, its Watershed Assessment Section (WAS), under the direction of John Wirts, and its Total Maximum Daily Load (TMDL) Section, headed up by Dave Montali.

The Watershed Assessment Section's main focus is to measure the water quality and biological health of the state's rivers and streams through various monitoring programs.

Staffers can use instruments on site to measure a stream's flow, temperature, dissolved oxygen, pH and conductivity. Samples, however, must be taken to a lab to test for fecal coliform bacteria, alkalinity, nutrients and other pollutants such as aluminum. iron and manganese.

The Watershed Assessment Section determines the biological health of a stream by analyzing its aquatic life communities. It provides to the lab samples of benthic macroinvertebrates or "bugs" (insects, snails, worms, etc) that, when analyzed, can provide a clearer picture of what's been happening in a stream months prior derway in all five of the to the collection.

"What we do is more than fill sample bottles," Campbell said. "There is a detailed habitat assessment that goes with every biological sample. There are all these

measurements made: What is the condition of the streambank? What does the substrate of the stream look like?

"We have a welldeveloped standard operating procedure that we go through. We try to make sure our data is as good as it can be.'

Data compiled by the Watershed Assessment Section is used to produce various reports for the general public and government agencies. It's also used to compile the state's 303(d) list of impaired streams and to support the development of TMDLs for those streams. A TMDL is a plan of action used to clean up streams not meeting water quality standards. The WAB completed its first TMDL in 2005. Prior to that. the EPA, subject to a lawsuit by environmental groups, developed TMDLs for the state.

Currently, there is TMDL development unstate's hydrologic groups. West Virginia is divided into 32 major watersheds, accounting for over 32,000 stream miles and each water-

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Dive team adds two new members

By Colleen O'Neill

Two new members have joined the Department of Environmental Protection's dive team.

Division of Water and Waste Management staffers George Dasher and Sarah Horton filled the team's two vacancies.

"I like to dive, and would like to spend more time on, and in, the water," said Dasher, a geologist with the Groundwater Program.

Dasher has been diving since 1971 and has logged 216 dives.

The DEP dive team consists of four divers, one alternate diver and three support staff. The

"... And because God gave reef fish the first choice of all the colors in the world, it was a very colorful, moving wall of fish between us."

George Dasher DEP geologist, talking about some of his more memorable dives

team had two spots open one for an active diver, which Dasher filled, and one for an alternate diver, which Horton filled.



Horton works in the DWWM's Watershed Assessment Branch.

"I tried out for the dive team because I thought it would be a fun addition to my responsibilities at the DEP. Horton said. "I never thought Dasher that when I got my certification in college that I would become a

Horton

figures the experienced DEP divers she'll be joining — Dave Chaney, Doug Wood, John King, and now

Horton

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DIVE

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Dasher — will pass along their wisdom. "I am not as worried about my inexperience because the team knows about it and they are going to be there to help me learn the ropes," Horton said. "I hope to get some more training and obviously experience by going on dives."

Chaney, who captains the dive team and has 37 years of experience, believes Dasher and Horton will contribute to the quality of the team.

"George is a skilled

WATER

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shed is placed in one of the five hydrologic groupings.

Campbell said there is plenty of overlap between the WAB's Watershed Assessment and TMDL sections.

"It's sort of like we're one big happy family, with not a lot of internal boundaries," he said. All of the WAB staff

works out of DEP headquarters.

"We do all the monitoring for the state from right here," Campbell said. "Every Monday morning, people are leaving here to go out and collect samples for the week."

Sampling and monitoring are done throughout the year, in any weather. Since 1995, when the agency closed its labs in Water Resources, all analytics have been done by contract labs.

That doesn't mean the WAB isn't busy all the time.

"We do so many different things," Campbell said. "We're involved in the Chesapeake Bay TMDL; we have to do the 303(d) list every two years, which comes with its share of controversy; we participate in fish advisories and collect a lot of fish for the state's advisories program; we do a lot of work supportdiver and as a geologist, he has done considerable work with caving," Chaney said. "He is very talented with navigation and mapping knowledge.

"Sarah is a biologist and is a recent graduate of Marshall University. Her work with Watershed Assessment makes her an asset to the team. She is the youngest member of the team and has a willingness to gain new skills."

Dasher said he has logged some memorable dives.

"My girlfriend and I went to New Smyrna Beach, which is on the east coast of Florida, and dove on two wrecks — we were only five or so feet apart and couldn't see each other for the reef fish," Dasher said. "And because God gave reef fish the first choice of all the colors in the world, it was a very colorful, moving wall of fish between us. It was a wonderful dive.

"I also dove on the Oriskany on another trip," Dasher said. "That's a big Korean and Vietnam (war) aircraft carrier that has been sunk (on purpose) off Pensacola.

"That was a neat deep dive where I got to play with an octopus. She thought one of my fingers was food and attacked it and would not let go.

"Octopuses have slightly abrasive suction cups, which are not painful at all. I had to pull very gently on my finger for a long time, before she let go, and when she did let go, she immediately turned from a pale pink to a dark red. I figured she was mad that she didn't end up with my finger. "That was also an

"That was also an impressive dive because we were diving on a U.S. warship.

"There were also a lot of spider crabs and sea urchins on the wreck, which were also neat to see."



The WAB staff recently got together for a group photo.

ing permits in DWWM and the mining program; and we've been at the heart of the selenium issue.

"We're the ones who have collected thousands and thousands of samples that are being used by the EPA and ourselves to understand what impact on biology mining has had."

As the controversy continues to swirl over mining-related water issues, Campbell said it's important to stress that the WAB's role has always been and will continue to be simply to collect data, not to portray a particular industry as good or bad.

"It was our job to go collect the data and the results are the results," Campbell said.

"To allow us to efficiently assess more waters we started doing bug work in 1996. By the time we got to 2005, there was enough information to start looking back and saying we're seeing some patterns. When you start getting into 3,000 to 4,000 samples from across the state, you can begin to draw correlations. You have plenty of enough data to start graphing bugs vs. pH, bugs vs. fecal coliform, or bugs vs. sediment with enough statistical validity that nobody can doubt what you're saying."

Campbell said the WAB is providing one measure of success for the agency's regulatory programs.

"All of these programs are out there to protect our water quality standards," he said. "We're out there seeing if that's achieved. When it's not, we might be viewed as the people causing problems. But we're just reporting back what we find."

At the end of the day, Campbell said, West Virginia's streams are pretty darned healthy.

"We're always quick to

Watershed Assessment Branch

Jeff Bailey Pat Campbell Chris Daugherty Jeff Ginger Jake Harrell Mathias Hickman Sarah Horton lim Laine Scott Lemons Ben Lowman Mike McDaniel Karen Maes Dave Montali Jason Morgan Nick Murray Mike Ong Ryan Pack Susan Rose Kevin Seagle Kim Smith Janice Smithson Nick Snider Steve Stutler James Summers Mike Whitman John Wirts Doug Wood Steve Young

talk about the bad streams," he said. "But in reality, West Virginia has many, many high quality streams. Twothirds of our streams are in pretty good shape."

Campbell said the success of the WAB comes from its people.

"Our folks are knowledgeable, dedicated and passionate about what they do; they make the WAB what it is."