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 Charleston, WV



The Highlands Voice

The Monthly Publication of the West Virginia Highlands Conservancy

Volume 48

No. 4

April, 2015

Putting Our Feet Down ... and Speaking Up

By Cindy Rank

A couple hundred feet stomping on the asphalt parking lot of the WV Department of Environmental Protection (WV DEP) might not have made much sound, but the sight of nearly two hundred people in red t-shirts at the People's Foot rally March 16th surely made an impression on agency.

The Rally

Organized by individuals with the ACHE (Appalachian Community Health Emergency) Campaign, aided primarily by Coal River Mountain Watch and OVEC, the crowd called for an end to permitting large strip mine permits because of the serious health hazards associated with those operations.

Participants came from all corners of WV – and KY as well.

We gathered to put our collective foot down and

to demand a stop to new permits for mountaintop removal strip mines. We came mindful of community and family members young and old who suffer daily from unprecedented health issues, spurred

on by over two dozen peer-reviewed health studies that indicate people living near big strip mines are at a greater risk of cancer, birth defects, lung and heart problems, and premature death, and angered by the lack of agency consideration of these issues in permitting mountaintop removal and other big strip mines,



West Virginia Highlands Conservancy Mining Committee chair Cindy Rank tells it like it is.

As Department of Environmental Protection personnel watched from behind the large glass walls of their offices, speakers and musicians outside called for the agency to open its eyes to the growing

body of research and peer-reviewed health studies. ... To recognize and listen to people whose homes and communities lie directly in the path of the poisoned air and water emanating from mining upwind and upstream. ... To consider these serious health issues before granting one more permit for large-scale strip mining.

Speaking were community members who experience and witness the impacts daily. They were joined by representatives of the ACHE Campaign, Coal River Mountain Watch, Ohio Valley Environmental Coalition, Sierra Club, Kanawha State Forest Coalition, Keepers of the Mountain, Christians for the Mountains and West Virginia Highlands Conservancy. Musicians and community activists Tonya Adkins and T. Paige dalPorto sang their

hearts out for the appreciative crowd.

When the presentations were finished people walked across the parking lot into the lobby of the WV DEP. Arrangements had

(More on p. 3)

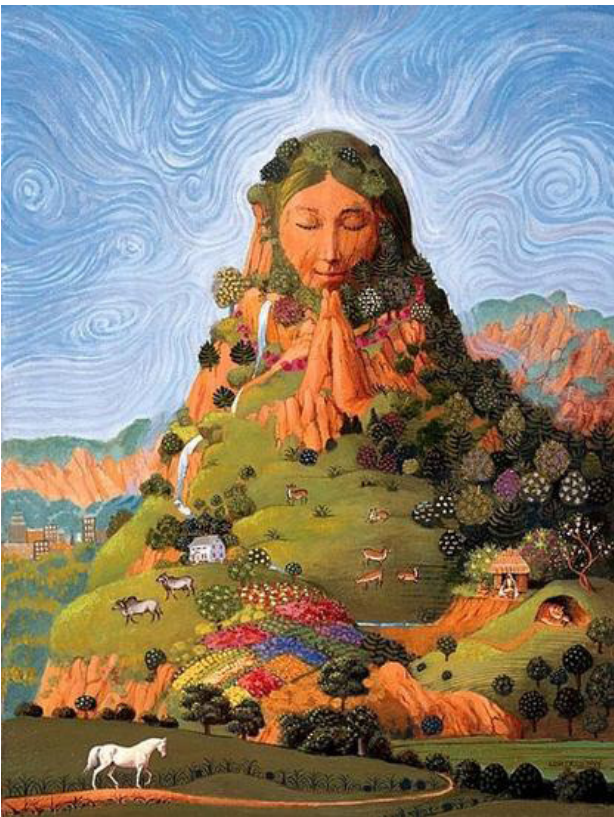
What's inside:

Thoughts from President Cindy	2	March madness	8	Reader writes	15
Clean water at the legislature	4	A look at the future?	9	Shopping extravaganza	16
More on clean water	5	Counting birds	9		
Surveying in the George Washington	5	The rest of the story	9		
Mountaintop removal and illness	6	Book review	10		
How to join	7	Get a Hiking Guide	11		
Get a history book	7	What lies beneath	12		
A portent?	7	Musings	14		
Roster of officers	8	Suing about surveys	15		

Ramblin' the Ridges

By Cynthia D. Ellis

Earth Day has been cancelled. Federal, state and local officials agreed that, while we all have fond memories of the celebration in the past, there is no longer any need for the commemoration. The air is clean. All our waters are free-flowing and protected. We have learned to live with the land, so it too suffers no impacts and our human activities work in harmony with natural rhythms and patterns. Our economic revolutions have achieved a



balance so that there is a sustainable level of enough and plenty for all of us here on the big blue marble.

Well, admittedly that paragraph is written as a bit of April Fool and wishful thinking.

This is the 45th year for Earth Day and, on April 22, 2015, we still need it.

In 1969, peace activist John McConnell, at a UNESCO Conference, proposed a day of peace and honoring the earth on the first day of spring in the Western Hemisphere. Celebrations began in earnest in 1970, when a separate but similar Earth Day “teach-in” was launched by Senator Gaylord Nelson of Wisconsin and co-chaired by conservative Republican Pete McCloskey. Twenty million people, nationwide, participated. Meanwhile, the McConnell suggestion led to an event in

Earth Day, Mama!

San Francisco and the notion was picked up and expanded by the United Nations.

A look back at that first event is a little short on one thing. Few women are depicted. Surely there were Mamas as well as Papas helping, but the historical accounts don't reflect that. One piece does give a nod to Rachel Carson as planting a seed for thought with “Silent Spring” and there is one girl in a photo of the cast of “Hair” as they conducted a concert for 20,000 people in Philadelphia on the night before the day, but most of the credit--- for the idea, its execution, and for the speakers at celebrations in 1970--- goes to men.

Possibly the best Earth Day event I attended was conducted by a mama. At a school where I taught, one parent marshalled some others and organized a terrific hands-on fun day for the students. She coached her friends on how to keep each kid group engaged and moving, and our entire schoolyard was a colorful carousel-like whirl of simultaneous activities focused on water, soil, air, and all. We teachers had only to tag along and be charmed and educated too!

So too in this year, there will be Earth Day festivals, in 192 countries.

EarthDay.org says, “Earth Day broadens the base of support for environmental programs, rekindles public commitment and builds community activism around the world through a broad range of events and activities. Earth Day is the largest civic event in the world, celebrated simultaneously around the globe by people of all backgrounds, faiths and nationalities. More than a billion people participate in our campaigns every year.”

Here, events at West Virginia University in Morgantown will include a drive to collect and repair bicycles for local families, to raise funds for solar projects for overseas families, a campus-wide clean-up, and a wildflower walk. Marshall University has entitled its celebration “There's No Place Like Earth” and activities will center around “zones” such as Health Zone, Earth Day For Kids, Artist Grove, Eco Village, Empowerment Zone (Grassroots organizations), Critter corner, and Campus Student Groups. At MU and WVU, Sustainability Departments plan year

round activities; the departments are each supported by a student-initiated “Green Fee”.

But, to repeat, though this is the 45th year for Earth Day efforts, we still need it. Those who deny climate projections and who have never embraced green initiatives, scoff and claim that the dire predictions of 1970 did not materialize. Others of us scroll varied news sources and see an onslaught of alarming photos and worry that “too late” is here. At the least, we are glad to try to be “rekindled.”

For me, I'm remembering my own Mama. Quite a few years ago, at home, I taped a message for an answering machine greeting. It said, “You have reached 757-7394, where we hope it can be Earth Day Every Day.” But Mama did not hear the message exactly that way. I played back her affectionate but chiding reply message, “Now, now, don't be greedy. ‘Birthday Every Day’---indeed!” No Mama. Not “birthday.” Well, then again, yes, maybe a birth day. Birth of ideas. Birth of energy. Birth of resolve.

Happy Earth Day. To papas, and babies...and to mamas.



The People Speak (Continued from p. 1)

been made for a dozen people to meet with WV DEP Deputy Director, representatives of the Air Division, a toxicologist, and the regional representative of the United States Environmental Protection Agency. Rally

permitting long before serious human health issues became a problem....

BUT....

But we had to be there....

Because inadequate implementation and enforcement of those laws that are meant to protect human lives as well as critters and fish have just not prevented even the basic quality of our air and water, let alone prevent the serious health problems experienced by so many in communities downwind and downstream.

We spoke. Who knows what was heard, or how much any individuals actually listened, but the rally surely added to the groundswell of attention to the issues.

The end of the story is yet to be written, but a bit of encouragement can be found in the commitment by WV DEP Director Randy Huffman and WV Bureau for Public Health Commissioner Rahul Gupta, with the blessing of WV Governor Tomblin, to FINALLY review the growing amount of research and number of peer-reviewed studies that were the focus of the rally (See story on p. 6)

It's a start and none too soon for the people and communities at risk.



Cindy X 2 (Ellis and Rank) yuck it up at the rally.

participants called off the meeting when no available meeting space could be arranged that would accommodate the entire group gathered in the lobby.

The Aftermath

We should not have had to be there stomping feet and speaking out... Violations of broad environmental laws such as the Clean Water Act, National Environmental Protection Act, etc. have provided sufficient red flag warnings to slow and stop the



The Highlands Voice is published monthly by the West Virginia Highlands Conservancy, P. O. Box 306, Charleston, WV 25321. Articles, letters to the editor, graphics, photos, poetry, or other information for publication should be sent to the editor via the internet or by the U.S. Mail by the last Friday of each month. You may submit material for publication either to the address listed above or to the address listed for Highlands Voice Editor elsewhere in this issue. Submissions by internet or on a floppy disk are preferred.

The Highlands Voice is always printed on recycled paper. Our printer uses 100% post consumer recycled paper when available.

The West Virginia Highlands Conservancy web page is www.wvhighlands.org.

The West Virginia Highlands Conservancy is a non-profit corporation which has been recognized as a tax exempt organization by the Internal Revenue Service. Its bylaws describe its purpose:

The purposes of the Conservancy shall be to promote, encourage, and work for the conservation—including both preservation and wise use—and appreciation of the natural resources of West Virginia and the Nation, and especially of the Highlands Region of West Virginia, for the cultural, social, educational, physical, health, spiritual, and economic benefit of present and future generations of West Virginians and Americans.

Legislature Tampers With the Clean Water Act

By John McFerrin

The “Coal Jobs and Safety Act” which the West Virginia Legislature passed in March, 2015, was the subject of much controversy. Most of the public discussion was focused upon what the Act did to roll back mine safety requirements. The roll back of safety requirements was not, however, all that the Act did. In an attempt to make all (or as many as possible) of the coal industry’s dreams come true, the Legislature also included some changes to the West Virginia Clean Water Act.

The first change is in how industry must protect state streams and rivers.

There are two ways in which state waters are protected. The first is through the National Pollutant Discharge Elimination System (NPDES) program. The original goal (and one still contained in the Act) of the Clean Water Act was the eventual elimination of polluting discharges to the waters of the United States. While this goal remains in the Act, as things have developed over the past thirty years the system has evolved into one of permitting. Companies get permits which allow them to discharge small amounts of pollution. Typically a mining permit would require that the water leaving the site contain no more than X milligrams per liter of iron, Y milligrams per liter of manganese, Z milligrams per liter of aluminum, etc. Those permits (called NPDES permits) are supposed to allow only enough pollution that, even after it is added, the stream will still be fishable, swimmable, etc.

The second way is what are called Narrative Water Quality Standards. These are a list of conditions which are not allowed in state waters. West Virginia regulations list nine categories of conditions which are not allowed in state waters, including anything that causes a biologic impairment. The idea is that—even if an NPDES permit does not contain a specific limit for a particular pollutant—companies still have to avoid causing any condition that is not allowable in state waters. This would include anything that causes a decline in population and species of the aquatic life in the stream that indicates stream life is being damaged.

The requirement that it comply with narrative water quality standards has been an inconvenience for the coal industry. It

has contended unsuccessfully in various courts that satisfying the limits in the NPDES permit is sufficient and that it does not have to meet water quality standards. See the September, 2013, July, 2014, January, 2015, and February, 2015 issues of *The Highlands Voice*.

Now the Legislature has done for the coal industry what the courts (being sworn to uphold the law and all) could not. It has changed the law so that companies who comply with the limits in their NPDES



permits do not have to meet narrative water quality standards. Under the “Coal Jobs and Safety Act” the companies would still be in compliance with the Clean Water Act even if they were creating conditions that are not allowable in state waters.

As if relieving it of the irritant of meeting water quality standards were not enough, the Legislature dropped another jewel into the coal industry’s stocking. It changed the way the amount of aluminum that can be discharged into state waters is calculated. The new way of calculating aluminum discharges depends upon the hardness of the receiving stream. Although how it is figured gets complicated and technical, the bottom line is that the revisions could equate to greater than a 13-fold and 46-fold increase over the current criteria for acute and chronic aluminum toxicity to aquatic life respectively.

The rule would weaken the current criterion for trout waters at all hardness values. In any but the most pristine streams, the rule would weaken the existing aluminum criteria.

And in high-hardness conditions witnessed typically in streams that are impacted by coal mining and quarrying, the rule represents a significant weakening of the existing criteria. And, as hardness increases, it will become increasingly less stringent, allowing more of the toxic metal to be dumped into our rivers and streams.

So why is this important?

It’s important to us because dissolved aluminum kills fish and other aquatic life. It has been shown to bind with other compounds in the water to coat the gills of fish, causing suffocation, death, stunting of growth and decrease in reproduction. Total aluminum (dissolved and undissolved) can leave a white coating on the streambed, smothering all stream life.

The actions of the Legislature are not, of course, the end of the story. Control of water pollution is one of the places where we use what some call “cooperative federalism” (nice, jargony term, too bad there is no acronym). The United States Congress passes a law such as, in this case, the federal Clean Water Act. It sets forth minimum standards. States may then enact their own statute and their own regulatory program which must be as effective as the federal statute. This is what West Virginia has done.

Because of this cooperative federalism, the United States Environmental Protection Agency must approve major changes to West Virginia’s program. We are in for another round as EPA decides whether or not to approve these changes (See the box on the facing page).

Note: Don Garvin, lobbyist extraordinaire, retired, contributed to this story.

Tampering with the Clean Water Act: a Little History

The change to the way aluminum concentrations are measured—and thus how much aluminum goes into streams—described in the adjoining story has been proposed before. Over the objections of several environmental groups and many citizens, the change had been recommended in late 2013 by a legislative committee for passage. There was no reason to think the full Legislature would not approve it during its 2014 session.

Then came the Freedom Industries spill.

After intense lobbying by the West Virginia Environmental Council and many others, the Legislature declined to make the proposed change to the aluminum standards. They were ashamed to go weakening water quality standards with everybody in an uproar over such a recent demonstration of the importance of clean water. While the spill did threaten or imperil 300,000 people, it did have the effect of gaining a year's reprieve for aquatic life throughout the state.

Unfortunately, shame has a short shelf life. By 2015 the Legislature had forgotten the discomfort it felt in 2014 and passed the "Coal Jobs and Safety Act" with its weakening of the aluminum standards.

Bong! Time for the Next Round

Groups Contact EPA About West Virginia's Changes to Its Clean Water Act

The West Virginia Highlands Conservancy has joined with several other groups in a letter to the United States Environmental Protection Agency about West Virginia's weakening of its Clean Water Act. (See story on facing page). In the letter, the groups informed the EPA of the West Virginia Legislature's weakening of the Clean Water Act by eliminating the requirement that companies meet water quality standards. They asked that EPA decline to approve this change.

Stay tuned.

It's just a survey

Forest Service to Dominion: Come on Down

The Forest Supervisor for the George Washington National Forest had decided to authorize Atlantic Coast Pipeline (Dominion Resources) to do surveys along a 12.6 mile stretch within the George Washington National Forest. These surveys would be conducted in preparation for possible construction of its proposed natural gas pipeline that would cross the George Washington National Forest in Highlands and Augusta counties, Virginia.

The survey will be conducted on foot using hand tools within a 2,000 foot corridor. There would be some brush removal involving cutting of brush or limbs two inches diameter or less.

The decision, and the Decision Memo announcing it, reflect a fundamental difference of opinion on how to think about the application for authorization to do a survey. Many of the commenters, including the West Virginia Highlands Conservancy, see the survey as the beginning of a major undertaking. If the survey is the first step in a major undertaking, the survey should be treated as significant.

The Forest Service, on the other hand, sees this as just a survey. To it, the survey is a crew walking in, snipping a few bushes, looking around a bit, taking a few notes. No big deal.

Given these assumptions, the Forest Service's response to specific objections is predictable. Commenters had suggested that the survey was not designed to gather enough information to prepare a real environmental assessment. The Forest Service said, in effect, it's just a survey. If we need more information later, we will gather it or ask Dominion for it.

Commenters had also suggested that the Forest Service should consider alternatives to a pipeline across the Forest. The Forest Service responded that if Dominion decided to apply for a construction permit it could decide then whether there were alternatives. This is just a survey.

Commenters had suggested that this survey was a part of the much larger potential disturbance—the construction of the pipeline itself. As such, a decision on the survey request should be subject to extensive environmental analysis. The Forest Service responded that if Dominion ever applies for a construction permit then it will do a more extensive environmental analysis then.

In short, the Forest Service does not see this as the first step on the road to a monumental undertaking—the construction of a huge pipeline. It's just a survey.



State Announces Review of Studies Linking Mountaintop Removal Mining to Illness

By Ken Ward Jr.

The Tomblin administration said Tuesday that it would initiate an evaluation of the growing body of studies that have found residents living near mountaintop removal coal-mining operations face increases risks of serious illnesses and premature death.

Bureau for Public Health Commissioner Dr. Rahul Gupta said that his agency would work with the state Department of Environmental Protection to examine the issue and to seek help from various federal scientific and regulatory agencies to review existing research on the subject.

“The analysis is something that is needed going forward,” Gupta said in an interview. “The bottom line here is to let science speak for itself. It’s time that we attempt to do that.”

The state’s plans to review the issue was revealed less than a week after DEP Secretary Randy Huffman told *The Charleston Gazette* that the studies linking mountaintop removal to health problems like cancer and birth defects deserved a “closer look” from state and federal officials. Word of the state’s plans also comes just a day after citizen groups concerned about mining’s health impacts protested outside the DEP’s office.

Gupta said that his plan would “engage surrounding states” such as Kentucky and Virginia to “evaluate the scientific research being conducted by academia, non-profit groups, and others with an emphasis on peer-reviewed research to better understand the issues.”

Also, Gupta said, his agency would work with the DEP to ask “federal partners” — such as the U.S. Environmental Protection Agency, the Centers for Disease Control, and National Institutes of Health, and the federal Office of Surface Mining — to “seek relevant subject matter expertise allowing for the exploration of a federal-state, multi-agency partnership to conduct analysis of the existing research in the field.”

Gupta said he hopes to make contact with other states and with federal agencies in the next few weeks, but had no firm timeline for completing a review of the science.

“We’re planning to move on this relatively quickly,” Gupta said. “We need to find out is there a contribution, and what

is that contribution and to what human diseases, and that’s when policy decisions have to be made.”

Chris Stadelman, communications director for Gov. Earl Ray Tomblin, said the governor is aware of the effort being made by Huffman and Gupta and “looks forward to hearing from them as that process moves forward.”

Over the past few years, former West Virginia University researcher Michael Hendryx and other scientists have published more than two dozen peer-reviewed journal articles that examined the relationship between large-scale strip-mining operations in West Virginia and the health of residents who live near these mines.

The work has linked health and coal-mining data to show, among other things, that residents living near mountaintop removal mines face a greater risk of cancer, birth defects and premature death. Continuing research has tried to examine actual pollution levels near mining sites and in mining communities, to provide more answers about the potential impacts. The U.S. Geological Survey, though, has pulled funding for work its scientists were doing on mountaintop removal’s health effects.

Even as the studies have continued, though, state elected officials and other leaders had for several years tried to dismiss or ignore the findings. Coal companies put together a \$15 million research project, based at Virginia Tech, aimed at least partly at countering the health studies.

Coal industry lawyers have fought to keep the studies out of court cases over mining permits, and they are continuing an effort to investigate Hendryx’s work through a public-records lawsuit against WVU.

In an email message on Tuesday, Hendryx, who now works at Indiana University, said he welcomes “an independent review of this topic.”

Bill Raney, president of the West Virginia Coal Association, said he had not heard about Gupta’s plan, but questioned the need for the state review of the mining-health research, which industry officials don’t believe is accurate.

Bo Webb, a coalfield activist pushing for federal legislation to block new mountaintop removal permits unless

a federal study declares the practice safe, said Tuesday he was pleased with Gupta’s announcement. But, Webb said he remains concerned a government review of the sort Gupta outlined could be used by coal industry supporters to delay action to end mountaintop removal.

“I just hate to see any more research,” Webb said. “We don’t need any more research. We have enough.”

Gupta said Tuesday that as part of his plan, his agency is already working to integrate existing DEP water and air quality data into a computer system that tracks public health trends around West Virginia.

While Gupta said that this would “significantly enhance our ability to analyze data,” Huffman acknowledged that existing DEP air quality data for localized impacts in small communities near mountaintop removal mining is not very extensive, and may not cover the ultrafine pollution particles from strip-mine blasting.

Gupta said that he wants to, among other things, examine how clearly research on mining and health impacts has been able to account for other potential causes of such illnesses. He also said that he was concerned that the research to date had not included actual measurements of pollutants in mining communities, but then acknowledged he had not yet read more recent peer-reviewed research that did include such data.

In one recent paper, Hendryx explained that the “precautionary principle” in environmental science argues that “prudent steps are required when there is evidence of environmental and corresponding public health problems, even if all causal links are not understood.”

Asked about the precautionary principle, Gupta said, “When studies start to show links, which means associations, not causations, I think it is important for us to pay attention,” Gupta said. “You do not need 100 percent. Not once have I mentioned to you that you need 100 percent causation, because that would be a fallacy itself. What you need is clear and convincing evidence.”

Note: This article originally appeared in *The Charleston Gazette*.

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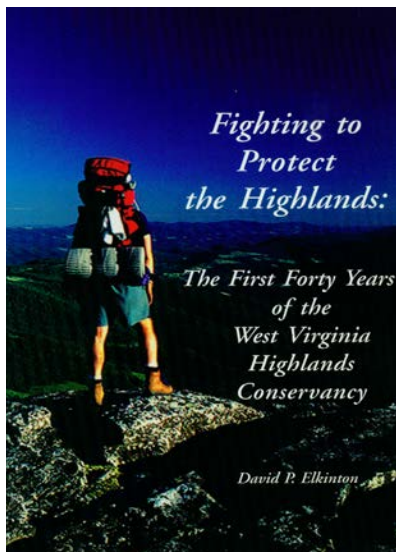
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West Virginia Highlands Conservancy
Working to Keep West Virginia Wild and Wonderful

GREAT HISTORY BOOK NOW AVAILABLE

For the first time, a comprehensive history of West Virginia's most influential activist environmental organization. Author Dave Elkinton, the Conservancy's third president, and a twenty-year board member, not only traces the major issues that have occupied the Conservancy's energy, but profiles more than twenty of its volunteer leaders.



Learn about how the Conservancy stopped road building in Otter Creek, how a Corps of Engineers wetland permit denial saved Canaan Valley, and why Judge Haden restricted mountaintop removal mining. Also read Sayre Rodman's account of the first running of the Gauley, how college students helped save the Cranberry Wilderness, and why the highlands are under threat as never before.

With a foreword by former congressman Ken Hechler, the book's chapters follow the battle for wilderness preservation, efforts to stop many proposed dams and protect free-flowing rivers, the 25-year struggle to save the Canaan Valley, how the Corridor H highway was successfully re-routed around key environmental landmarks, and concluding with the current controversy over wind farm development. One-third of the text tells the story of the Conservancy's never-ending fight to control the abuses of coal mining, especially mountaintop removal mining. The final chapter examines what makes this small, volunteer-driven organization so successful.

From the cover by photographer Jonathan Jessup to the 48-page index, this book will appeal both to Conservancy members and friends and to anyone interested in the story of how West Virginia's mountains have been protected against the forces of over-development, mismanagement by government, and even greed.

518 pages, 6x9, color cover, published by Pocahontas Press To order your copy for \$14.95, plus \$3.00 shipping, visit the Conservancy's website, wvhighlands.org, where payment is accepted by credit card and PayPal. Or write: WVHC, PO Box 306, Charleston, WV 25321. Proceeds support the Conservancy's ongoing environmental projects.

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Book Premium With Membership

Although *Fighting to Protect the Highlands, the First 40 Years of the West Virginia Highlands Conservancy* normally sells for \$14.95 plus \$3.00 postage. We are offering it as a premium to new members. New members receive it free with membership.

Existing members may have one for \$10.00. Anyone who adds \$10 to the membership dues listed on the How to Join membership or on the renewal form will receive the history book. Just note on the membership form that you wish to take advantage of this offer.

Straws in the Wind?

Although the Legislature has now gone home, on the way out the door it left us with a hint of what may be in store for next year. Both the House and the Senate have passed a Joint Concurrent Resolution requesting that the Joint Committee on Government and Finance study the leasing of oil and gas mineral rights on State lands. The lands to be studied are those "including but not limited to the Division of Highways, the Division of Natural Resources, the Division of Corrections, the institutions of higher education, and the state militia and others."

The justification for the study is that there is money to be made drilling on public lands and West Virginia could sure use it.

Occasionally a study resolution is meaningless, a consolation prize given to some Senator or Delegate for an idea that had some support but not nearly enough to become law. More often, it is an indication that there is substantial support for an idea and that the Legislature is seriously thinking about doing it.

March Madness

By Cindy Rank

March is a season of watchful anticipation -- be it for the coming of Easter, or daffodils, or spring break, or basketball.

Some folks are glued to the TV and carefully watch their bracket scores go up and down with every game, every win – or loss.

Others watch with trepidation as the snow melt and heavy rains of late February and early March flood underground mine void effectively sealed against normal pressure but fragile when pushed too far, subject to unanticipated blowout .

Those whose memories extend as far as 1994 remember the T&T mining blowout in Preston County that caused great amounts of pollution to flow into the already stressed Cheat River.

This March of 2015 it happened at T&T again and at Hughes Creek of the Kanawha River in Kanawha County ... and at Lynch Run of the Little Kanawha in Gilmer County and from hillsides in Upshur County along Rt 20 north of Buckhannon and just south of Hodgesville.

January may be hard for the underground miner with the buildup of dangerously explosive methane gas. March often brings a dangerous buildup of water and increase of hydrostatic pressure again mine seals and thin outcrops. As Amanda Pitzer with Friends of the Cheat said in a recent email “March is a tough month”.

Hidden quietly deep in the bowels of WV mined out coal seams are more time bombs – some smaller and/or less prone to the drama of T&T, some just waiting for their day to make the headlines....

Will it be the ever expanding Mettiki? ... Will it be the “Fairmont Pool”, or more from the “Mon Pool” in northern WV and southwestern PA ? Will WV DEP trust Murray Energy to take over from Consolidation the financial responsibility for the extensive underground plumbing in that area and the multi-million dollar treatment operation constructed near Mannington, WV after the Dunkard Creek devastation of 2009? ...So many questions lurk in the unseen world...

“Out of sight, out of mind” may be a reassuring mantra as an immediate short term comfort as we flush away unwanted detritus. However, we’re seeing more and more that there are limits to what the oceans, earth and skies can absorb before regurgitating all to smother us in our own waste.

VOICE AVAILABLE ELECTRONICALLY

The Highlands Voice is now available for electronic delivery. You may, of course, continue to receive the paper copy. Unless you request otherwise, you will continue to receive it in paper form. If, however, you would prefer to receive it electronically instead of the paper copy please contact Beth Little at blittle@citynet.net. With electronic delivery, you will receive a link to a pdf of the Voice several days before the paper copy would have arrived. The electronic Voice is in color rather than in black and white as the paper version is.

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The Future for the Mon and the GW?



This photo shows a construction corridor for a 12-inch pipeline on the eastern face of Peters Mountain in the Jefferson National Forest in Giles County, Virginia. A chemical plant and the New River are in the background. The photo, taken in 2014, is included in a case-study report on pipeline construction practices and the failure of regulatory programs to prevent environmental damage. It comes to us from the Dominion Pipeline Monitoring Coalition

The Dominion Pipeline Monitoring Coalition has launched a new website, www.pipelineupdate.org, with content related to the Atlantic Coast Pipeline and environmental issues.

Great Backyard Bird Count

Every February since 1998 the Cornell Lab of Ornithology sponsors the Great Backyard Bird Count. It is an online citizen-science project to collect data on wild birds. Since it began, more than 100,000 people have joined in the count each February to create an annual snapshot of the distribution and abundance of birds.

This year participants from more than 100 countries submitted a record 147,265 bird checklists and broke the previous count record for the number of species identified. The 5,090 species reported represents nearly half the possible bird species in the world. The four-day count was held February 13-16, the 18th year for the event which is a joint project of the Cornell Lab of Ornithology and the National Audubon Society with partner Bird Studies Canada. The information gathered by tens of thousands of volunteers helps track the health of bird populations at a scale made possible by using the eBird online checklist program.

To participate, you just have to register online and then go birding for at least 15 minutes on one of the days of the count. You make a list of the birds you see and submit your list on line. For more information on how to participate go to <http://gbbc.birdcount.org/>.

Once the Count is over, the organizers publish results on line. They are organized by country, state, and county. You can find out what species were spotted in any county where there was a participant. To see the county by county listings, go to <http://ebird.org/ebird/gbbc/places>.

Listed as a participant for Putnam County, West Virginia, was our own Cindy Ellis. Were birding a competitive sport (which it isn't) her list would have put her at the top of the leader board for Putnam County.

Canaan Valley Institute's Building: the Denouement

The March, 2015, issue of *The Highlands Voice* posed this question: Canaan Valley Institute's Building – What Happens Next? Now we know the answer. The building will be turned over to the National Youth Science Foundation. It plans to use the \$18 million campus to house a science, technology, engineering and math (STEM) education center. The Canaan Valley Institute will also continue to maintain its offices there.

The National Oceanic and Atmospheric Administration (NOAA) had provided funding to build the building. Because of this, when the Canaan Valley Institute could no longer maintain it the decision on what to do with it fell to NOAA. It had originally considered transferring the building to the Canaan Valley Wildlife Refuge but in the end decided that the National Youth Science Foundation was the better option.



Mountain Top Mining in Appalachia, Understanding Stakeholders and Change in Environmental Conflict. By Susan F. Hirsch and E. Franklin Dukes (Ohio University Press, 2015)

Reviewed by Beth Little

The book was funded in part by the School for Conflict Analysis and Resolution at George Washington University, and the stated intent of the book is “not to favor any particular perspective but to present those divergent perspectives in ways that help the reader understand what is at stake for different people and why they act as they do.” In an attempt to be neutral, they refer to the process as ‘mountain top mining’ (MTM) instead of ‘mountain top removal’.

It is about as thorough an account of the issue as imaginable. It includes a brief history of coal mining, from the speculators buying up mineral rights in the early 1800’s to the recent protests, demonstrations and lawsuits. Many names of players will be familiar - Judy Bonds, Don Blankenship, Larry Gibson, Maria Gunnoe, James Hansen, Ted Hapney, Ken Hechler, Joe Lovett, Paul Nyden, Bill Raney, Lorelei Scarbro, Jack Spadaro, Dennis Sparks, Ken Ward and Bo Webb (I left out celebrities and politicians). Active organizations from the Sierra Club and OVEC to the United Mine Workers and the Chamber of Commerce; along with agencies and legislative acts at federal and state levels are chronicled. (Somehow they missed WVHC).

The identification of stakeholders is especially comprehensive. Within categories of those with potential for gain or loss, degree of interest, or extent of influence, those identified are: residents of the coalfields (both for and against MTM); miners; contractors and workers employed in the industry; regulators; owners, managers, boards of directors and shareholders of mining companies as well as industries that use coal to produce

electricity (Dominion Virginia Power, consolidated Edison, Allegheny Energy Supply and Duke Energy); all the way out to people who receive their power from coal fired power plants and people who depend on water that comes from coalfield watersheds. Even those concerned about protecting the environment, limiting fossil fuel use, developing green energy, and curtailing climate change are mentioned.

In an assessment of the conflict by the Keystone Center, commissioned by the EPA, that focused on the Coal River valley three “iconic stories” of the conflict are listed:

The industry narrative: Mountaintop mining is essential to the nation’s energy strategy, should remain established in federal policy, and causes manageable environmental impacts.

The environmental advocate narrative: Mountain top mining is an environmentally disastrous, often unlawful practice destroying the natural and cultural landscape of the mid-Appalachian highlands.

The on-the-ground perspective: Coal mining, for better and for worse, has always been and seemingly always will be part of our lives. (This is the fatalistic complacency syndrome that plagues WV).

The Keystone assessment was to determine whether collaborative processes could be developed among stakeholders to resolve any of the key issues, but despite identifying a couple of collaborative processes, the authors “laid out multiple reasons that collaboration might never take place, including the strong value commitments of stakeholders, especially

environmentalists, and *the industry’s disincentive to collaborate.*” (italics mine)

So the book does very well in the conflict analysis, but falls short when it gets to conflict resolution.

It culminates in describing a project, the Clinch River Valley initiative (CRVI) in Tennessee, that succeeded in bringing together those who want to end the process of MTM because it is destroying their community and those who rely on it to support themselves and their families. The community projects that were initiated were things like local food systems, green building and low income housing, downtown revitalization, and artisan networks; worthy projects that did bring people together, but nothing that resolves the basic conflict over MTM. And there was no mention of contributions to the projects in either time or money by those who benefit from MTM profits.

The one category of stakeholder that has never been at the table but has, if anything, sought to exacerbate the conflict, is the industry leaders, the ones who have the most money and the most power to affect change. The book mentions violence without any specific instances or names, but it makes clear that it was the pro-MTM people who perpetrated the threats of violence (violence against people, not what mining protagonists might call violence to property or profits by direct action).

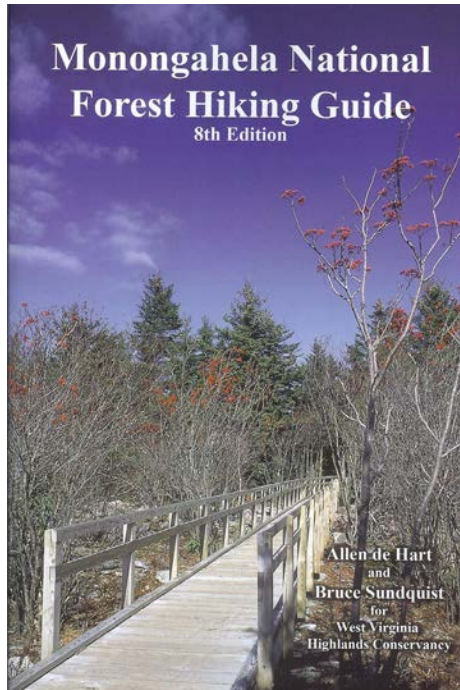
In summation, the book is a good read for someone seeking to understand the conflict, but finding a resolution is still out of sight.

Send Us a Post Card, Drop Us a Line, Stating Point Of View

Please email any poems, letters, commentaries, etc. to the VOICE editor at johnmcferrin@aol.com or by real, honest to goodness, mentioned in the United States Constitution mail to WV Highlands Conservancy, PO Box 306, Charleston, WV 25321.

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By Allen de Hart and Bruce Sundquist

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Under The Highlands Part III - West Virginia's Mineral Resources

By Jim Van Gundy

Depending upon how you view it, West Virginia has been either blessed or cursed by tremendous mineral wealth, most of which is concentrated in the energy sector. The coal industry has long ruled both the state's economy and its politics. Certainly no other industry comes remotely close to the economic, social, and environmental impact that the coal industry has had upon West Virginia and upon West Virginians. In the past few years the natural gas industry, riding the crest of the Marcellus shale wave, has begun to at least partially eclipse the coal industry in economic, and perhaps political importance.

While coal and gas are the leading mineral products of the Mountain State, they are not the only ones. Other mineral commodities such as crude oil, limestone, sand and gravel, salt, and clay are both historically and currently important. Often overlooked as an important mineral resource is groundwater, which is depended upon by a large number of both urban and rural West Virginia residents for their water supply. It has also recently been discovered that West Virginia has the highest potential for geothermal energy development in the eastern United States. Whether or not this will be part of the State's energy and economic future remains to be seen.

The remainder of this article will be a brief accounting of West Virginia's major mineral resources with some consideration of their future development within the state.

Coal

Coal is of course a major industry in West Virginia, currently employing about 30,000 people directly with an annual payroll of about 2 billion dollars. West Virginia possesses 62 mineable seams of coal distributed across 43 of the State's 55 counties. One of these, the Pittsburgh coal seam, was once said to be the single most economically valuable mineral deposit in the world. This was because of its thickness, (commonly 6-8 feet), its medium ash and sulfur content, and its superior coking properties. Perhaps 65% of the Pittsburgh seam remains un-mined in West Virginia, although much of that remaining coal lies at depths of up to 1,500 feet below the surface of Monongalia, Marion, Wetzel, and Harrison Counties. Because of these depths, it ultimately may not be recoverable.

All of the State's mineable coals are located in the Pennsylvanian age rocks of the Allegheny Plateau. Since these rocks have all been eroded away to the east of the Allegheny Front, there is no coal to be mined in our eastern counties.

The WV coal mine database lists just under 24,000 mines that have operated in the state since coal production records began to be kept in 1883. In 2013, the last year for which production figures are available, West Virginia produced almost 116 million tons of coal from 219 mines. About 40 % of this was from 33 mines in the northern coalfield while the remaining 60% was from the southern field. The State's coal production peaked at 174 million tons in 1947 and has been fluctuating since then although generally downward in recent years. Still, West Virginia remains the second most productive coal producer in the United States, exceeded only by Wyoming. No other state produces more of its coal from underground mines than does West Virginia and no other state exports more coal internationally.

Underground mining predominates in the northern coalfields while surface mining is more common in the southern part of the state.

Much of the State's coal production goes to produce electricity and in fact 97% of West Virginia's electrical generating capacity resides in coal-fired plants.

Crude Oil

Although most people do not think of West Virginia as an oil-producing state it was once the leading producer of crude oil in the United States. In 1900 it boasted an annual production figure of 16 million barrels (a barrel of oil is 42 gallons). By contrast, the 2012 West Virginia production of crude oil was about 2.6 million barrels with estimated recoverable reserves at 23 million barrels. Most of West Virginia's oil production takes place in the western counties with Doddridge, Harrison, Richie, and Wetzel being the major producers. Although twenty-five other counties have significant oil production, twenty-one counties produce little or none. The West Virginia Geologic and Economic Survey database shows that in 2012 there were 10,640 operating oil wells in the state. Seven counties, all of them along the eastern border of the state, have no gas or oil wells.

Natural gas

The West Virginia Geologic and Economic Survey database shows that in 2012 there were 55,404 producing gas wells in the state and that West Virginia production of natural gas was about 540 billion cubic feet in 2012. The major producing counties for gas are Marion, Marshall, Monongalia, Wetzel, Harrison and Doddridge. With the exception of the 7 eastern counties referred to above, there is at least some natural gas production in all of the rest of the state's counties.

West Virginia's natural gas production has quadrupled in the past 10 years. Production increased 37% between 2011 and 2012 alone, bringing it to Number 9 among the 10 top natural gas producing states. Pennsylvania's natural gas production increased by 72% over the same period, moving it from 7th to 3rd in the natural gas production ranking. Among the top ten producing states, Pennsylvania and West Virginia have by far seen the sharpest increases in production over the past few years. Almost all of these increases are due to the exploitation of the Devonian age Marcellus shale by horizontal drilling and hydraulic fracturing (fracking). In West Virginia, the Marcellus shale averages about 200 feet in thickness. As of 2011, West Virginia's proven reserves totaled more than 6 trillion cubic feet of natural gas.

Although natural gas largely consists of methane, so-called "wet" natural gas contains significant quantities of heavier hydrocarbons such as ethane, propane, and butane, which readily condense as liquids. These hydrocarbons are separately recoverable and marketable and thus increase the value of the natural gas that contains them. In southwestern Pennsylvania and northwestern West Virginia, the Marcellus gas is wet gas, particularly in Washington and Greene Counties in Pennsylvania and Tyler, Richie, and Doddridge Counties in West Virginia.

Coal Bed Methane

Natural gas (methane) recovered from coal seams now accounts for a bit over 7% of the natural gas produced in the United

(Go to p. 13 to read more)

More About West Virginia's Minerals (Continued from p. 12)

States. It's a largely unconventional and untapped fuel resource in the central Appalachian states, but stands to increase in importance in the future due to the apparent size of the resource - about 100 trillion cubic feet of gas are thought to be economically recoverable with existing technology. This is enough gas to meet the natural gas needs of the entire United States for about 5 years at present rates of use.

Gas Storage Fields

West Virginia currently has about 30 active gas storage fields. These are natural gas fields that are no longer productive and represent so-called "depleted reservoirs". These are geologic reservoirs into which gas is pumped from pipelines under high pressure during periods of low gas demand, i.e. during the summer, and then withdrawn during periods of high demand, i.e. winter. This is a way to more efficiently use existing pipeline capacity to get gas from producer to consumer during periods of high demand. When there is unused pipeline capacity, gas is moved from production areas to storage areas nearer to the regions where it is consumed and then stored there until needed. Over the last decade, WV storage capacity has been nearly constant at about 258 billion cubic feet.

Geothermal Resources

A few years back, Southern Methodist University conducted a study to determine the potential for geothermal power in the eastern United States. To the surprise of nearly everyone, it was revealed that north-central West Virginia had the highest geothermal potential in the eastern US with a pronounced thermal maximum underlying Barbour, Preston, Randolph, Taylor, Tucker, Upshur, and northern Pocahontas counties. Temperatures there are above 250 degrees Celsius at a depth of 7.5 km (25,000 ft.) It is calculated that if only 2% of this resource were tapped using enhanced geothermal systems (EGS) technology, it would generate more electrical power than is currently produced in the state. It is presumed that a West Virginia geothermal field would represent a so-called "hot dry rock" geothermal resource in which water or another fluid would need to be pumped into deep-drilled wells. WVU currently has a \$1.2 million grant from the US Department of Energy to assess enhanced geothermal systems. Geothermal systems have a much lower carbon footprint than any fossil fuel system.

Limestone

Limestone production in West Virginia averages between 10 and 17 million tons per year with perhaps half of this figure being produced by large quarries in Berkeley and Jefferson counties. With the exception of one small quarry in Ritchie County, all of the state's limestone production is from quarries or deep mines located in the eastern counties. Major limestone deposits occur only in the Allegheny Mountain and Valley and Ridge portions of the state. While most of the limestone mined in West Virginia is used for aggregate, it is a commodity with many other uses including use as agricultural lime, for portland cement manufacture, as coal mine rock dust, for flue gas desulfurization in large coal-burning facilities, in glass manufacture, and for acid neutralization in a number of industrial settings, including the coal industry.

Most of the West Virginia's limestone production comes from about 30 large open-pit quarries although it is also deep-mined at four places in the state. In the northern Allegheny Mountain portion of the state, the Greenbrier limestone outcrops are often on fairly

steep hill slopes, and so quarries in this part of the state often have to deal with significant thicknesses of overburden and so produce more waste rock than do quarries in the Ordovician and Cambrian limestones of the eastern panhandle.

Sand and Gravel

Sand and gravel production in the state averages between 1.5 and 2.5 million tons per year, much of that coming from materials dredged from the Ohio River or mined from floodplain deposits along that river. These deposits represent materials carried southward by the continental glaciers of the Pleistocene Epoch and then washed into the Ohio River as the glaciers retreated. The dredging of the river for sand and gravel is currently declining due to diminishing deposits, but also for concern for protecting fish habitat and endangered mussels. There are also sandstone quarries in Tucker and Grant Counties and elsewhere on the Appalachian Plateau region that are currently mining and crushing sandstone to produce sand and gravel for the construction industry.

For many years the Devonian age Oriskany sandstone was extensively quarried for glass manufacture near Berkeley Springs in Morgan County. This is an exceptionally pure quartz sandstone at this site running 98% silica or better. The Pennsylvania Glass Sand Corporation still mines about 1.5 million tons of glass sand per year at this site and is the world's largest melting sand producer. There are also other high-silica sandstones scattered around the state, some of which, along with the abundant natural gas supplies, made West Virginia an early glass manufacturing center.

Salt and Brine

West Virginia ranks 10th in production among the 16 states that produce salt. Annual production is estimated at 600,000 to about one million tons per year, all of this from a single facility in Marshall County near New Martinsville. The salt is "solution mined" here by drilling wells into the Silurian age salt beds 5,000 to 9,000 feet beneath the surface. Water is then pumped into the well to dissolve the salt and the resultant brine is then pumped to the surface where it is used to make Chlorine and Chlorine products.

Salt manufacture in the Kanawha River valley was actually West Virginia's first chemical industry. Salt springs were discovered along the Kanawha near Charleston before the American Revolution and first wood and later coal was burned to fire the evaporation kettles. In a way, the mining of coal to fuel the salt furnaces was also the start of West Virginia's coal industry. The yield of the natural salt springs was limited and so the salt producers started to drill wells to increase the brine supply. Some of these wells produced gas and oil as well as brines and although the hydrocarbons were a nuisance at first, their economic value was at length realized and thus began the oil and gas industry in West Virginia. The drilling techniques and equipment developed by the salt drillers served as the basis for the early oil and gas drilling.

In time the Kanawha Valley salt industry matured into a fledgling chemical industry based upon salt-based chemicals and then into a more diversified chemical industry based upon oil and petrochemicals. In a very real sense, West Virginia's Chemical Valley exists because of the natural salt springs along the Kanawha River.

(More on the next page)

Some Musings on the Material World

By Charlie Feldhake

Living an interesting life and being environmentally responsible are complicated goals to balance, both for food and entertainment. Marketing people work overtime at getting us to want “stuff” that we don’t need and without which we could lead quite satisfying lives. If we support preserving our ecosystem, our neighborhood, and our own yard we have to transcend much of the marketing industry’s propaganda nonsense. However, many useful traditions of rural American families that built this nation are dying due to technology-induced confusion.

I cringe every time I watch a science program on PBS and see it was funded partly by a Koch brother, an infamous climate change denier and public education and social support system saboteur. What is the motivation of ultra-rich to undermine the lives of the poor? Maybe they think the best way to save the planet is to starve the poor, and the best way to promote America’s economy is to make the poor so poor that they can’t go to the giant mart stores and buy Chinese goods. But, why promote science and ignorance at the same time?

If you want to reverse global warming by attacking America’s dominate status as a consumer of resources, making it poor is a logical step. The problem is poor people tend to have more children than financially secure people so unless we revert to “survival of the fittest” and let most poor children die, that strategy doesn’t make much sense. It also is very destabilizing for social coherence which also subjects other life forms on this planet to collateral damage.

When I go to the grocery store I like to observe what others are purchasing. I regularly buy sacks of potatoes, onions, dried beans and other lentils, but seldom see them in other people’s carts. Our local store only has about a two foot section with bags of wheat flour and cornmeal when years ago it was over ten feet. Most people, even those using food stamps with limited income, waste money on highly packaged, pre-prepared meals. Electronic media entertainment has replaced wholesome cooking as the most worthwhile way to spend time.

Some years ago I attended a conference in Utah on how agriculture can use water more efficiently. On the way home I sat next to an older gentleman wearing a nice suit and we began discussing the environment. I mentioned that one of the biggest problems was all the excess packaging that is used to sell products these days. He became very angry, pointed a finger in my face, and said that to reduce packaging is to reduce the gross national product. I have no idea what his line of work was but we finished the flight in silence. It is sad when people think the economy depends on producing waste.

The kitchen is the heart of the home. How we feed our family is crucial to how our society evolves. Do we want to turn that responsibility over to corporate values? Traditions are atrophying and, as in *The Fiddler on the Roof*, we don’t always know how much to bend and where to take a stand. We need to support those exceptional people that can fight the big fights, but we also all need to cling to local community and family sanity.

Geology of West Virginia (Continued from previous page)

Dimension Stone

Although it is not a very important industry today, dimension stone, usually sandstone cut into rectangular shapes of various dimensions, was once widely used for constructing buildings, walls, sidewalks, and streets in urban areas. Many of our historic public buildings such as churches, courthouses, and schools are built of cut sandstone that was quarried and cut locally. Because of their widespread occurrence in the state, the Pennsylvanian age sandstones such as the Pottsville sandstone was frequently used. This rock was not only readily available locally but was also easily cut into regular rectangular shapes.

Clay and Shale

There are currently three companies in West Virginia that together produce about 300,000 tons of clay and shale per year. These all use the Ordovician age Martinsburg shale as the mined resource. Essentially all of this product is used in the manufacture of brick or cement. Clay was once a far more important industry in West Virginia and in similar fashion to the early glass industry, a thriving pottery industry became established here because of the abundance of high quality clay in the Ohio and Monongahela River valleys and the abundance of cheap natural gas to fire the kilns.

Groundwater

Last but certainly not least, groundwater should be mentioned as a critically important mineral resource. Currently about 42% of West Virginians depend upon groundwater for their primary domestic water supply. Of the 409 community water systems in the state, 172 of them use a groundwater source. Most of these are using wells, but a few use springs. According to a recent US Geological Survey study, the majority of West Virginia groundwater sources meet primary drinking-water criteria without treatment, so it can be said that groundwater quality in the state is generally, but not always, quite good. It should be stressed that it is not advisable to drink untreated water from any source, regardless of the USGS endorsement. Of the 548 non-community water systems in the state, 525 of them use groundwater from either wells or springs as a source.

I suppose the reason that groundwater is often not considered to be an economically important resource is that no large corporation has yet figured-out how to charge you for it. There are a number of them which have of course found ways to badly foul it in some places, but that’s the subject of another article.

Landowners Sue to Stop Survey

Six landowners—two in Monroe County and four in Summers County—have sued Mountain Valley, LLC seeking to prevent it from conducting surveys on their land without their permission. The proposed surveys would be in preparation for a proposed Mountain Valley Pipeline. If ever built, the pipeline would run about 300 miles from northwestern West Virginia to southern Virginia.

Mountain Valley had previously sent letters to landowners along the proposed route, claiming that it had the right to survey on the land of people along the route whether or not it had their permission. It claimed this right pursuant to a West Virginia statute which, according to Mountain Valley, gives pipeline companies the right of eminent domain. The letters also promised legal action if the landowners did not voluntarily comply with the request to survey.

Instead of waiting for the promised legal action, these landowners filed their own legal action.

Eminent domain is a venerable right of governments to take private land for public use. It has existed in some form for centuries. It is recognized in the United States Constitution which gives the federal government the right to take private property for public use so long as it pays just compensation. The right has been widely used to acquire land for roads, parks, and other public uses. The preservation of the site of the Battle of Gettysburg came about because the federal government used its right of eminent domain to acquire the land.

The question in this case is how far that right extends. Mountain Valley says that a West Virginia statute gives it the right of eminent domain and that, because of this, it can come on land to survey, etc.

The landowners, on the other hand, say that eminent domain is a right that belongs to governments, not private companies. They say that it is to be used for public purposes, not to assist in a private project. The proposed line would carry gas from northwestern West Virginia to southern Virginia but it would not deliver gas to anyone in West Virginia. In that case, the landowners contend, it would not serve the public purpose that is required to exercise a right of eminent domain.

The Statutes We Are Arguing Over

WV Code 54-1-1 Bodies which may exercise power of eminent domain

The United States of America, the state of West Virginia, and every corporate body politic heretofore or hereafter created by the constitution or statutes of the state, and every corporation heretofore or hereafter organized under the laws of, or authorized to transact business in, the state, for any purpose of internal improvement for which private property may be taken or damaged for public use as authorized in section two of this article, shall have the right of eminent domain, and may exercise the same to the extent and in the manner provided in this chapter, and subject to the restrictions and limitations provided by law.

WV Code 54-1-2 Public uses for which private property may be taken or damaged (a) The public uses for which private property may be taken or damaged are as follows:

(3) For constructing, maintaining and operating pipelines, plants, systems and storage facilities for manufacturing gas and for transporting petroleum oil, natural gas, manufactured gas, and all mixtures and combinations thereof, by means of pipes, pressure stations or otherwise . . .

WV Code 54-1-3 Entry on lands

Any incorporated company or body politic, invested with the power of eminent domain under this chapter, by its officers, servants and agents may enter upon lands for the purpose of examining the same, surveying and laying out the lands, ways and easements which it desires to appropriate, provided no injury be done to the owner or possessor of the land; but no company or body politic, under the authority of this section, shall throw open fences or inclosures on any land, or construct its works through or upon the same, or in anywise injure the property of the owner or possessor, without his consent, until it shall have obtained the right so to do in the manner provided in this chapter.

Our Readers Write

Dear Highlands Conservancy,

I should have joined decades ago and apologize for not doing so. I was at the first Earth Day gathering in D.C. in 1970, but have been more in the sustainable use camp than preservationist. The discouraging backward rush by WV's politicians to strip away any environmental progress makes me feel that sensible BMPs will never outweigh human greed, so I sent you my dues, and in my new membership packet you included a flyer about the Dominion 42" pipeline.

The law allowing private resource companies to take land by eminent domain is deplorable, but that's another tale. In your flyer you have a paragraph about Landowner Rights. I've been working as a surveyor for the past twenty years, attentive to WV trespass laws, and have attached the relevant parts of the WV Code.

It is better we have accurate knowledge, whether we agree with the law or wish it was not so. Of course I think *boundary* surveyors should be able to "trespass", we cannot ascertain a property boundary without looking along the adjoining properties, a tract exists in law and in space with respect to the surrounding lands, so we must search for overlaps and corner evidence. *Pipeline companies* should be a different matter! But the law gives them the right. Alas, see 54-1-3 below.

Thanks for reading,
Meryl Hall

HIGHLANDS CONSERVANCY BOUTIQUE



- ▶ The baby shirts are certified organic cotton and are offered in one infant and several toddler sizes and an infant onesie. Slogan is “I ♥ Mountains Save One for Me!” Onesie [18 mo.]---\$17, Infant tee [18 mo.]---\$15, Toddler tee, 2T,3T,4T, 5/6---\$18
 - ▶ Soft pima cotton adult polo shirts are a handsome earthtone light brown and feature the spruce tree logo. Sizes S-XXL [Shirts run large for stated size.] \$18.50
 - ▶ Order now from the website!
- Or, by mail [WV residents add 6 % sales tax] make check payable to West Virginia Highlands Conservancy and send to West Virginia Highlands Conservancy, Online Store, PO Box 306, Charleston, WV 25321-0306

T- SHIRTS

White, heavy cotton T-shirts with the **I ♥ Mountains** slogan on the front. The lettering is blue and the heart is red. “West Virginia Highlands Conservancy” in smaller blue letters is included below the slogan. Short sleeve in sizes: S, M, L, XL, and XXL. Long sleeve in sizes S, M, L, and XL. **Short sleeve** model is \$15 by mail; **long sleeve** is \$18. West Virginia residents add 6% sales tax. Send sizes wanted and check payable to West Virginia Highlands Conservancy ATTEN: Online Store, WVHC, P.O. Box 306, Charleston, WV 25321-0306.



HATS FOR SALE

We have West Virginia Highlands Conservancy baseball style caps for sale as well as I ♥ Mountains caps.

The WVHC cap is beige with green woven into the twill and the pre-curved visor is light green. The front of the cap has West Virginia Highlands Conservancy logo and the words West Virginia Highlands Conservancy on the front and I (heart) Mountains on the back. It is soft twill, unstructured, low profile, sewn eyelets, cloth strap with tri-glide buckle closure.

The I ♥ Mountains The colors are stone, black and red.. The front of the cap has ♥ MOUNTAINS. The heart is red. The red and black hats are soft twill, unstructured, low profile, sewn eyelets, cloth strap with tri-glide buckle closure. The stone has a stiff front crown with a velcro strap on the back. All hats have West Virginia Highlands Conservancy printed on the back. Cost is \$15 by mail. West Virginia residents add 6% tax. Make check payable to West Virginia Highlands Conservancy and send to West Virginia Highlands Conservancy, Atten: Online Store, P.O. Box 306, Charleston, WV 25321-0306