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Testimony on " **Modernizing the Business of Environmental Regulation and Protection**"
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Thank you Chairman Shimkus and members of the Subcommittee for the opportunity to speak today. My name is Matt Wasson and I am the Director of Programs at Appalachian Voices, a non-profit organization dedicated to protecting the land, air, water and people of the Southern and Central Appalachian region. Beginning with my doctoral research at Cornell University on the impacts of acid rain on birds, I have spent much of the last 20 years involved in research on the mining, processing and combustion of coal.

Appalachian Voices is a member of the Alliance for Appalachia, which is an alliance of 15 organizations working to end mountaintop removal coal mining and bring a just and sustainable future to Central Appalachia. These organizations share the belief that mountain people are experts of their own lives and that all people should have a seat at the table in determining the future of their communities.

Appalachian Voices supports the committee's goal of modernizing environmental regulation and protection and we believe that using technology and science to achieve better environmental outcomes at lower cost is a goal that our members and all Americans can get behind.

We caution, however, that an approach that focuses on streamlining environmental permitting at the expense of protecting human health and natural resources would not only risk failure of the very mandate that our regulatory agencies were created to fulfill, but would be economically short-sighted as well. For instance, a few weeks ago, researchers at the US Geologic Survey published a study that found a 50 percent decline in the number of fish species and a two-thirds decline in the total number of fish in streams below mountaintop removal mines in West Virginia's Guyandotte River drainage¹. This, combined with the fact that the sportfishing industry creates far more jobs than surface coal mining in all states where mountaintop removal occurs², demonstrates how allowing continued degradation of water quality in order to simplify permitting for coal companies is the very definition of "penny wise and pound foolish."

The starting place for any effort to modernize environmental regulation and protection should be ensuring better environmental outcomes. When a regulatory agency is using the best science, monitoring compliance, enforcing existing rules and providing an inclusive permitting process, then eliminating duplication and cutting red tape are the most important considerations.

Unfortunately, in the examples I will give today about states' failure to enforce regulations on mountaintop removal coal mining in Appalachia and disposal of coal combustion wastes in the Southeast, regulatory agencies are not at the point where the best science is being considered or the best practices for ensuring public participation are being followed. In other words, an effort to modernize the regulation of mountaintop removal mining and coal ash disposal should start with improving environmental outcomes in the permitting and public participation processes.

Appalachian Voices has long embraced interactive mapping technology as a tool to improve environmental protection and enforce rules that protect streams and communities from the impacts of mountaintop removal mining in Appalachia. In 2009, we were named a "Google Earth Hero" for our innovative use of Google Earth to shine a spotlight on the destruction caused by mountaintop removal and tell the stories of people fighting to save their homes and homeland from encroaching mines.

Below, I describe a number of ways that we have built on our initial work using Google technology. What all of the technological resources have in common is that they were developed specifically to address failures of state and federal regulatory agencies to adequately enforce laws that protect human health and natural resources from the impacts of coal mining in Appalachia or to provide sufficiently useful and accessible information to the public.

Example 1: The “Human Cost of Coal” tool

"The Human Cost of Coal" is a resource on iLoveMountains.org, a website designed and managed by Appalachian Voices on behalf of the Alliance for Appalachia. The tool compiles and presents through an interactive Google Maps interface a broad range of health and socioeconomic data from government sources and peer-reviewed studies, as well as a comprehensive GIS map of areas where mountaintop removal coal mining has occurred. The maps show the strong correlation between mountaintop removal coal mining and health and socioeconomic problems ranging from increased cancer rates and incidences of birth defects in newborns to reduced life expectancy and high poverty rates among residents of counties where mountaintop removal occurs.

The tool pulls from national data including poverty rates from the U.S. Census, mortality rates for a number of diseases from the Center for Disease Control and life expectancy, the Gallup-Healthways Well-Being Index and demographic data from the Institute for Health Metrics and Evaluation. The site also includes summaries for more than twenty peer-reviewed scientific studies that provide evidence that human health problems such as heart, respiratory and kidney diseases, cancer, low birth weight and serious birth defects are significantly higher in communities near mountaintop removal mine sites.

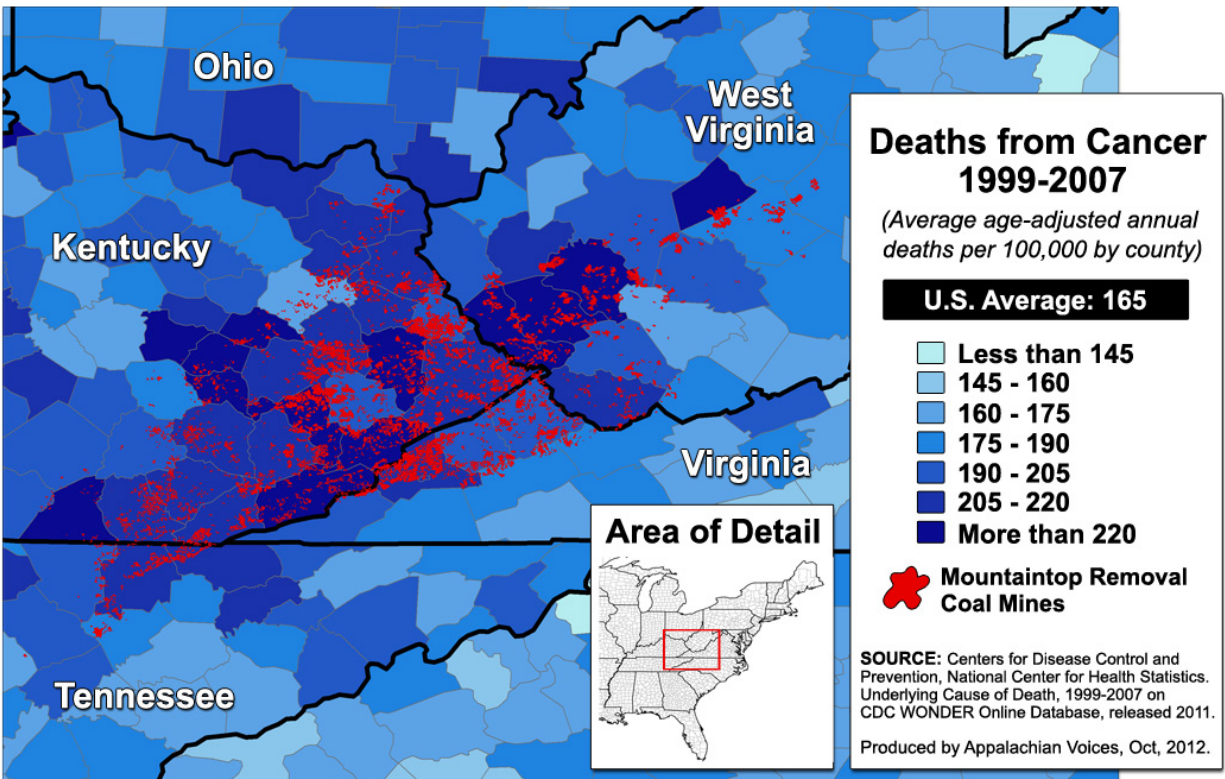
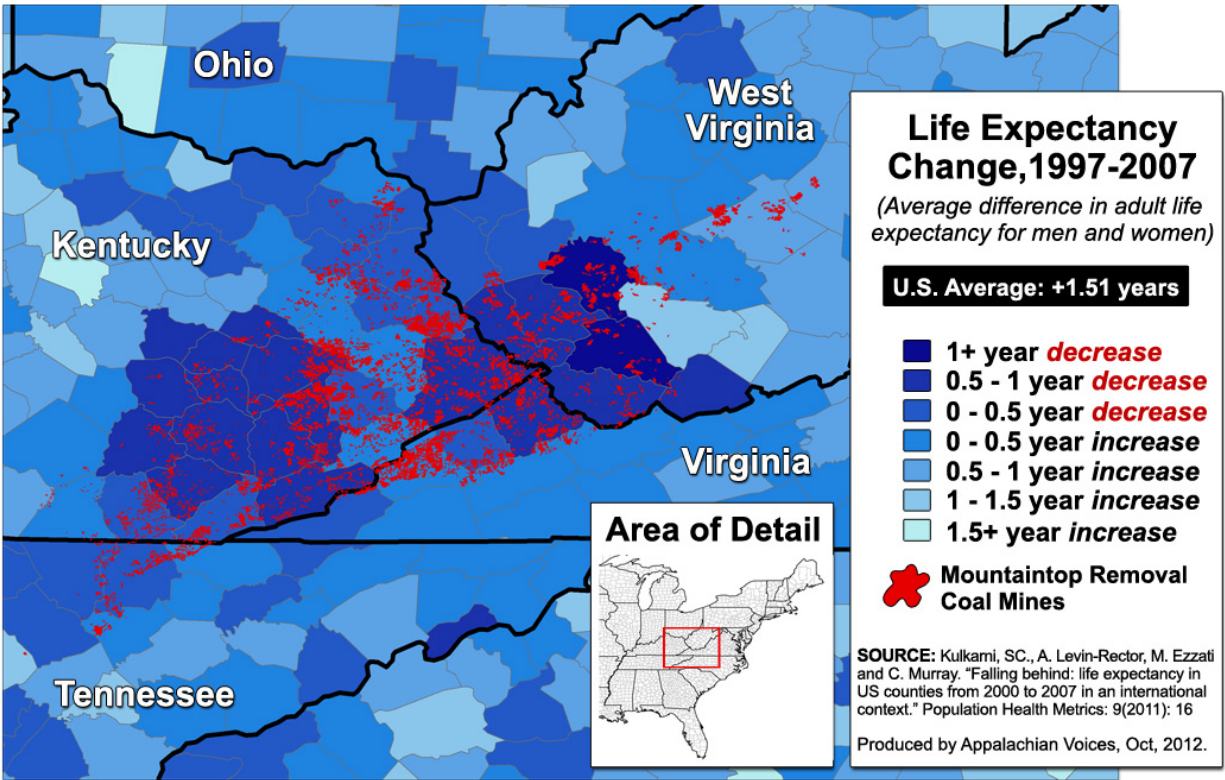
We created “Human Cost of Coal” page on iLoveMountains.org to call attention to the fact that a growing number of peer-reviewed scientific studies were published associating living near coal mines - and mountaintop removal mines in particular – with negative trends in human health and well-being in Central Appalachia³⁻²⁰. What is so notable about the science linking mountaintop removal to elevated death rates and poor health outcomes in nearby communities is not the strength of any individual study, but rather the enormous quantity of data from independent sources that all point toward dramatic increases in rates of disease and decreases in life expectancy and physical well-being.

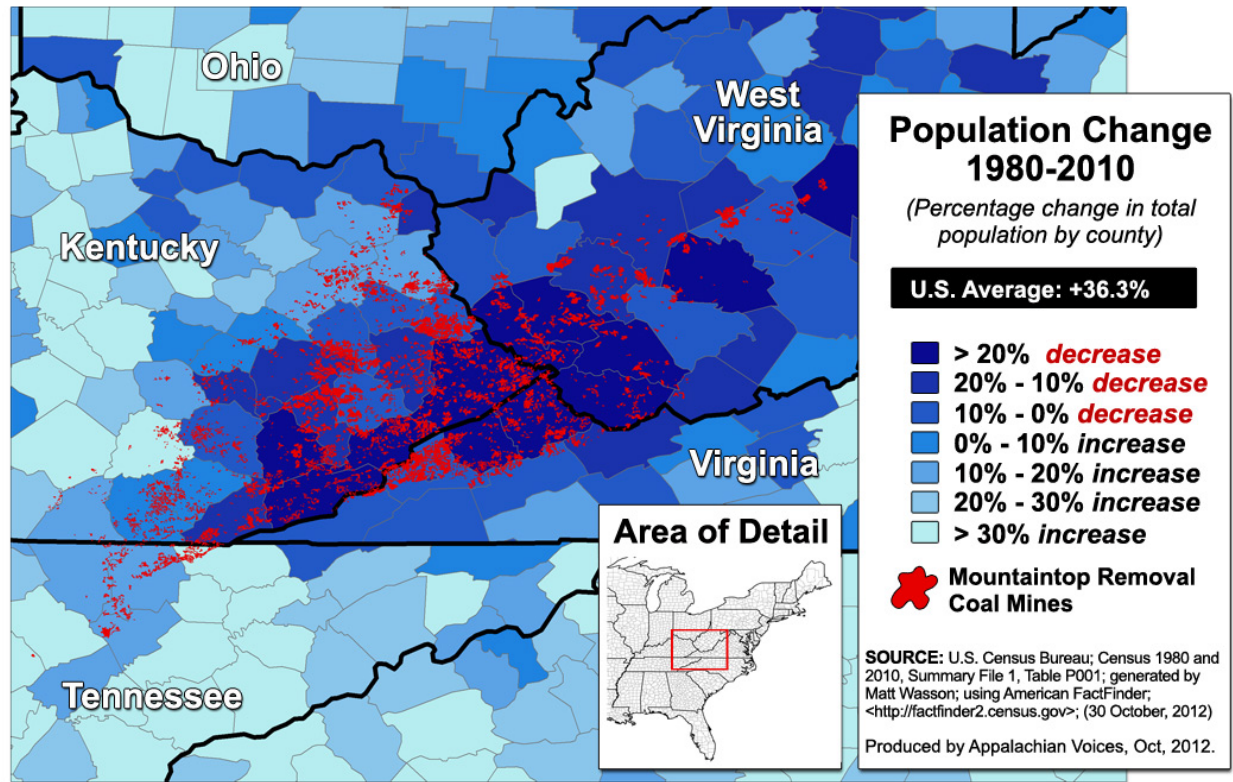
It was this abundance of evidence from independent sources that led the Kentucky Medical Association to pass a resolution in 2011 pledging to "educate the public and make publicly visible its support for national and state laws, rules and regulations that protect individual health and public health from the impact of the extraction, transportation, processing and combustion of coal.²¹" As reasons for adopting the policy, the KMA noted the following:

- *"A recent study found that the loss of stream integrity from valley fills associated with mountaintop removal (MTR) coal mining is related to increased cancer mortality;*
- *"A recent study found elevated birth defect rates in MTR areas of central Appalachia compared with other coal mining areas and non-mining areas;*
- *"MTR areas are also associated with the greatest reductions in health-related quality of life even when compared with counties with other forms of coal mining;*
- *"Considering the value of life lost, a 2009 study concluded that the human cost of the Appalachian coal mining economy outweighs its economic benefits."*

Despite this overwhelming amount of peer-reviewed scientific data, however, regulatory agencies in Appalachian states have so far refused to consider these new studies in assessing the impact that permitting new mountaintop removal mines could have on the health of nearby residents.

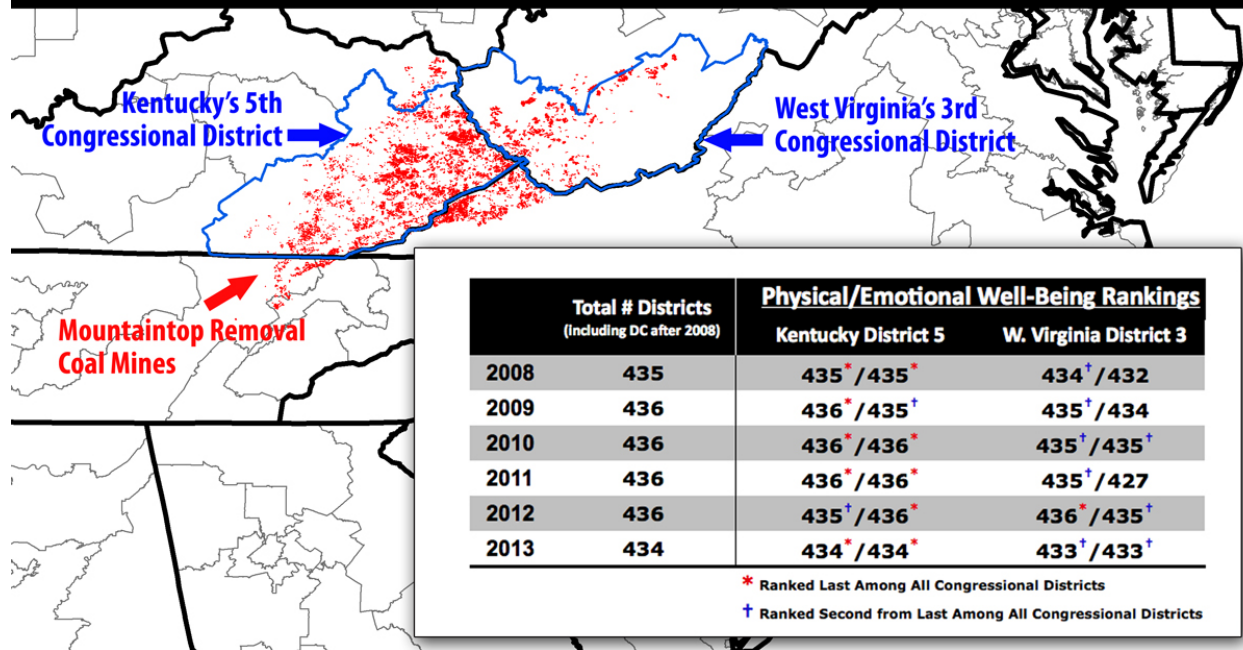
Appalachian Voices developed the Human Cost of Coal resource because we felt that by providing access to all of these data sources in one location, we could better demonstrate the breadth of poor health outcomes associated with mountaintop removal and enhance the ability of people living near proposed mountaintop removal sites to hold their state regulators accountable for considering the human health impacts of the practice. The three strikingly similar maps below are from entirely independent data sources available on the "Human Cost of Coal" page:





Similarly, polling data collected by the Gallup organization and compared across 435 Congressional Districts (plus the District of Columbia) in annual Gallup-Healthways "State of Well-Being" reports since 2008 reveal that residents of the two congressional districts where most mountaintop removal mining occurs consistently rank lowest in the nation for physical and emotional well-being²². For the past two years, these districts have also ranked lowest in the country in Gallup's overall well-being index, which combines six separate measures of well-being.

The Two Congressional Districts Where Nearly All Mountaintop Removal Occurs Have Consistently Ranked Near the Bottom of Gallup's Physical and Emotional Well-Being Rankings Since 2008



It remains to be seen, whether this resource or other efforts to call attention to the health and socioeconomic impacts of mountaintop removal will lead to a change in behavior by state regulatory agencies, but the “Human Cost of Coal” project represents the kind of resource we wish regulators would use to better inform their regulatory decisions.

Example 2: The Appalachian Community Enforcement (ACE) Project

The ACE Project is a project of the Alliance for Appalachia, its member organizations, and other local and regional groups. Like iLoveMountains.org, Appalachian Voices designed and continues to maintain the website. The goal of the ACE Project is to equip everyday people with the knowledge, instruments, and professional support to monitor local waterways and protect them by pursuing enforcement actions under the Clean Water Act.

The ACE project augments state government enforcement by developing a broad view of water contamination across the entire region. Citizen monitoring results are posted on this website, making them available for review by local people, as well as state and federal agencies. The data are used to advocate for the enforcement of existing laws, and to enact local, state and national policies to better protect Appalachian waterways.

Appalachian Voices and our allies were inspired to develop the project in 2010 when we discovered two significant barriers to our efforts to protect citizens and communities from water pollution and other impacts of mountaintop removal coal mining in Kentucky. After beginning a project to document Clean Water Act violations by coal companies we realized that the state routinely declined to take enforcement actions against coal companies who reported violations of permitted effluent limits in their discharge monitoring reports (DMRs). We uncovered thousands of exceedances by two of the state's largest mining companies for which the Kentucky Environment and Energy Cabinet had failed to issue violations.

Then, while compiling this dataset, we uncovered even more worrisome patterns. In dozens of instances, we found that companies had submitted fraudulent DMRs to state regulators, who in turn had never reviewed, much less detected them. To remedy this situation, Appalachian Voices, Kentuckians For The Commonwealth, Kentucky Riverkeeper, and Waterkeeper Alliance filed notices of intent to sue two coal mining companies on the grounds that they had exceeded pollution discharge limits in their permits, consistently failed to conduct the required monitoring

of their discharges and, in many cases, submitted false monitoring data to the state agencies charged with protecting the public.

An editorial in the Lexington Herald-Leader summed up the story in December, 2009:

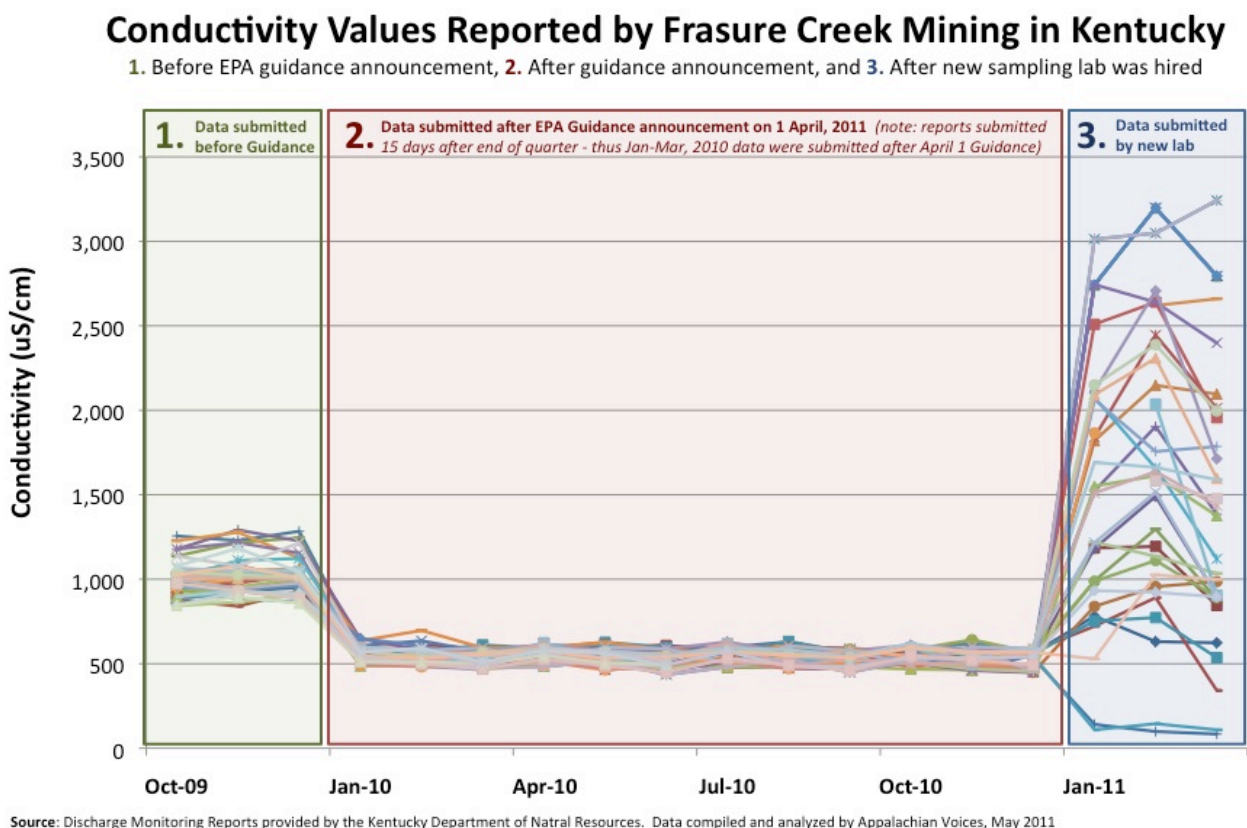
“The environmental groups uncovered a massive failure by the industry to file accurate water discharge monitoring reports. They filed an intent to sue which triggered the investigation by the state’s Energy and Environment Cabinet. Also revealed was the cabinet’s failure to oversee a credible water monitoring program by the coal industry.

“In some cases, state regulators allowed the companies to go for as long as three years without filing required quarterly water-monitoring reports. In other instances, the companies repeatedly filed the same highly detailed data, without even changing the dates. So complete was the lack of state oversight it’s impossible to say whether the mines were violating their water pollution permits or not.”

As a result of our lawsuit, the state ultimately imposed fines on these two coal companies for violations that ranged from "Failure to maintain required records" to "Degrading the waters of the Commonwealth."

However, the companies have never been held accountable (or seriously investigated) for a remarkably suspicious pattern of water monitoring results reported to the state. In brief, discharge monitoring reports submitted after the April 1, 2010 announcement by the EPA of a

new guidance on conductivity levels allowable in the discharge from coal mines (shaded red in the chart below) showed a remarkable drop from levels reported before the EPA announcement (shaded green). In fact, standard statistical tests showed that the chance that these trends could be explained by random transcription errors or natural variation was nearly one in a googol (that's a 1 with a 100 zeros after it). After our lawsuit led the state to require companies to use new labs to monitor their mine discharge, the reports from these new labs (shown in blue), revealed even more stunning changes from the previous measurements (see below):



To date, neither state nor federal regulators have taken action to hold these coal companies to account for these suspicious results, and the state of Kentucky went so far as to write them off as “transcription errors.” This experience makes clear why Appalachian Voices and our allies saw the need for an independent source of water quality monitoring through the ACE Project.

Example 3: SoutheastCoalAsh.org

Unlike previous examples, the SoutheastCoalAsh.org website is not managed by Appalachian Voices, but rather by our partners at the Southern Alliance for Clean Energy. Nevertheless, I bring it up as an example because, like the previous examples, it represents an innovative use of technology to inform and engage stakeholders around environmental regulations and fills in a gap left by under-resourced state regulatory agencies.

The site exists to inform residents of the Southeast about a silent danger to their waterways and public health: coal ash impoundments, or “lagoons.” As this committee knows well, coal ash is the waste left over after coal is burned to generate power and it contains high concentrations of toxic chemicals and heavy metals like lead, mercury, arsenic, chromium, and selenium, which are hazardous to human health and to wildlife.

The Southeast is home to 40% of the nation’s coal ash impoundments, with nearly 450 impoundments across the region containing 118 billion gallons of toxic waste. These impoundments, which often have no liners to prevent heavy metals from getting into drinking water, are typically located near major waterways, posing a threat to the water nearby residents rely on for drinking, fishing and recreation. Under current rules, these impoundments are subject to less stringent rules than everyday household garbage.

The Southern Alliance for Clean Energy, on behalf of a coalition of regional organizations that includes Appalachian Voices, created SoutheastCoalAsh.org when it became clear that it was nearly impossible for residents of most southeastern states to access information about coal ash

lagoons near their homes and track down the results of groundwater testing at the sites. This is a particular concern for residents of states like North Carolina, where more than half of households rely on wells for their drinking water and where all 14 of the sites with coal ash impoundments have been found to be leaking toxic chemicals and heavy metals into groundwater and/or nearby waterways.

The website is designed to make it easy for visitors to find maps of impoundments near their homes, determine their size, EPA hazard and condition ratings, and find recent groundwater test results at the facility.

As momentum to establish safe regulations on storage of and discharge from coal ash impoundments builds at the EPA and, in the case of North Carolina, state level, SoutheastCoalAsh.org has become an invaluable resource for citizens who want to engage in rulemaking, permitting and legislative processes. However, its maintenance relies on private foundation funding that may or may not be available a year from now. The site is an excellent example of the kind of resource that a “modernized” regulatory agency would provide to the public to facilitate their participation in environmental regulation and protection.

Limitations of Technology For Modernizing

While there is a clear role for technology in modernizing environmental regulation and protection, it is by no means a panacea, or even the most important tool available to regulatory agencies charged with protecting the environment. For instance, many homes in the rural mining communities of Central Appalachia do not have access to high-speed internet or mobile phone

service, so any initiatives to streamline public participation in environmental regulation that rely on these services will do nothing to engage those who have the most at stake in any rulemaking or permitting decision.

There are other particular considerations that agencies have a poor track record of taking into account when it comes to engaging people in communities where coal is mined. In particular, public hearings in these communities tend to be intimidating for people who are more concerned with protecting their homes and families' health than approving more mine permits. Coal companies have a unique ability to communicate messages and turn out large numbers of their employees (often on the clock) at public hearings and they have every incentive to use this ability to create an atmosphere of fear and intimidation for those who oppose their agenda.

Any effort to “modernize” environmental regulation in Appalachia should seek to address and work around this dynamic at public hearings in the region and seek to ensure that people whose health and well-being are most impacted by agency decision-making are heard. While resource intensive, an effort by state regulators to speak directly with people whose homes, streams and wells are threatened by new mine permits would be one way to accomplish this goal.

A second limitation of technological solutions to the problem of modernizing environmental regulation is that there is no replacement for “boots on the ground” when it comes to monitoring compliance with environmental rules. As I showed in previous examples, the modern – and perhaps historic – practice of some coal companies is to report false and potentially manipulated water quality reports to state agencies. If those agencies do not have the resources to actually

review these reports and conduct random independent testing to detect fraud then they simply are not contending with the modern realities of the industry they regulate, regardless of any technological approaches they use to increase efficiency or steps they take to streamline the permitting process.

The approach North Carolina has taken to reduce costs and create a more business friendly environment for polluting industries at the state's Department of Environment and Natural Resources (DENR) is a perfect demonstration of how not to "modernize" a regulatory agency. As my colleague Amy Adams wrote last December in an op-ed in the Raleigh News and Observer, shortly after leaving her job as a regional supervisor at DENR:

"The General Assembly's legislation reorganizing DENR results in deep cuts to staff and resources. The Division of Water Quality staff, for example, will likely be 24 percent smaller by March than it was in early 2011. "Do more with less" has become the mantra of upper management, but we in the ranks heard the message loud and clear: 'Do less. Period.'

"There are simply too few employees with too much territory to cover, and the repercussions are real.

"Staff are increasingly tasked with duties for which they have no previous experience, such as reviewing complex technical pollution-control permit applications.

Because state law requires DENR to issue permits within a tight deadline, staffers are under great pressure to essentially trust the industry's word that everything is in order."

The repercussions of these deep cuts to DENR became very real for many North Carolinians last February when Duke Energy spilled nearly 40,000 gallons of coal ash slurry into the Dan River. The agency's lackadaisical response to the disaster and focus on protecting Duke Energy from lawsuits at other coal ash disposal sites were widely panned by media, environmental watchdogs and elected leaders across the state.

A third limitation of technology for modernizing environmental regulation is that it does nothing to address the problem of "agency capture," whereby regulated industries develop a too-cozy relationship with regulators and wield disproportionate influence over their decision making.

The framers of the National Environmental Policy Act, which led to the formation of the EPA, were keenly aware of the potential for agency capture and recognized that state regulatory agencies are more vulnerable to this phenomenon than federal agencies as a result of the powerful political influence a large corporation or industry is able to wield over all levels of state government. Creating a regulatory model that is resistant and resilient to the problem of agency capture was one of the justifications for the formation of an EPA with broad regulatory powers and the model of "cooperative federalism" that underlies many key environmental laws.

I will close a quote from North Carolina Representative Pricey Harrison's testimony to this committee that she delivered in February of last year:

“The bottom line is that the federal role in protecting the environment is essential and irreplaceable for protecting the health of Americans and the quality of our environment. While federal attempts to establish minimum safety standards and ensure effective enforcement by state agencies can be inconvenient for specific industries at times, members of Congress would serve their constituents best by allowing agencies like the EPA to do their job and providing them the resources they need to do it effectively.”

Citations

1. Nathaniel P. Hitt and Douglas B. Chambers, 2014, "Temporal changes in taxonomic and functional diversity of fish assemblages downstream from mountaintop mining," *Freshwater Science*. Available at: <http://www.jstor.org/stable/10.1086/676997>
2. Matt Wasson, "One Fish, Two Fish... Dead Fish," published on the Huffington Post, 9 July, 2014: http://www.huffingtonpost.com/matt-wasson/one-fish-two-fish-dead-fi_b_5571270.html
3. Zullig, KJ. and M. Hendryx.(2011) "Health-Related Quality of Life Among Central Appalachian Residents in Mountaintop Mining Counties." *American Journal of Public Health* 101, 5 (2011): 848-53.
4. Hendryx, M. (2011) "Poverty and Mortality Disparities in Central Appalachia: Mountaintop Mining and Environmental Justice." *Journal of Health Disparities Research and Practice*: Vol 4 (3) pp 44-53.
5. Esch, L. and M. Hendryx. (2011) "Chronic Cardiovascular Disease Mortality in Mountaintop Mining Areas of Central Appalachian States." *Journal of Rural Health*.
6. Hendryx, M., L. Wolfe, J. Luo, and B. Webb. (2011) "Self-Reported Cancer Rates in Two Rural Areas of West Virginia with and without Mountaintop Coal Mining." *Journal of Community Health*.

7. Epstein, P., J. Buonocore, K. Eckerle, M. Hendryx, B. M. Stout III, R. Heinberg, R. W. Clapp, B. May, N. L. Reinhart, M. M. Ahern, S. K. Doshi, and L. Glustrom. (2011) "Full cost accounting for the life cycle of coal." *Annals of the New York Academy of Sciences* 1219: 73-98.
8. Hitt N, Hendryx M, Ecological integrity of streams related to human cancer mortality rates, *Eco health* 7, 91-104, 2010.
9. Ahern, M., M. Mullett, K. MacKay and C. Hamilton. (2010) "Residence in Coal-Mining Areas and Low Birth Weight Outcomes." *Maternal Child Health*, Jan 2010.
10. Hendryx, M., E. Fedorko, and A. Anesetti-Rotherme. (2010) "A Geographical Information System-Based Analysis of Cancer Mortality and Population Exposure to Coal Mining Activities in West Virginia." *Geospatial Health* 4(2), 2010
11. Zullig, K., and M. Hendryx. (2010) "A Comparative Analysis of Health-Related Quality of Life for Residents of U.S.Counties with and without Coal Mining." *Public Health Reports*, Volume 125
12. Hendryx, M. (2009) "Mortality from heart, respiratory, and kidney disease in coal mining areas of Appalachia." *International Archives of Occupational and Environmental Health*: 82: 243-49.
13. Hendryx, M. (2009) "Mortality in Appalachian Coal Mining Regions: The Value of Statistical Life Lost." *Public Health Reports*: 124: 541-50
14. West Virginians for Affordable Health Care. (2008) Early Deaths: West Virginians Have Some of the Shortest Life Expectancies in the United States.
15. Hendryx, M. (2008) "Relations Between Health Indicators and Residential Proximity to Coal Mining in West Virginia." *American Journal of Public Health*, 98: 669-71.
16. Hendryx, M., K. O'Donnell and K. Horn. (2008) "Lung cancer mortality is elevated in coal-mining areas of Appalachia" *Lung Cancer*: 62: 1-7.
17. Hendryx, M. (2008) "Mortality rates in Appalachian coal mining counties: 24 years behind the nation". *Environmental Justice*: 1, 1: 5-11.
18. Hendryx, M., M. Ahern, and T. Nurkiewicz. (2011) "Hospitalization Patterns Associated with Appalachian Coal Mining." *Journal of Toxicology and Environmental Health, Part A*, 70: 2064-70.
19. Palmer, M.S., E. S. Bernhardt, W. H. Schlesinger, K. N. Eshleman, E. Foufoula-Georgiou, M. S. Hendryx, A. D. Lemly, G. E. Likens, O. L. Loucks, M. E. Power, P. S. White, P. R. Wilcock. (2010) "Mountaintop Mining Consequences." *Science*, 327: 148-9.

20. Kulkarni, SC., A. Levin-Rector, M. Ezzati and C. Murray. "Falling behind: life expectancy in US counties from 2000 to 2007 in an international context." *Population Health Metrics*: 9(2011): 16.

21. Resolution of the Kentucky Medical Association published in the *KMA Communicator*, November, 2011.

22. "State of American Well-Being" reports for 2008-2013, published by Gallup-Healthways online at: <http://www.healthways.com/solution/default.aspx?id=1125>

23. "A wise slowdown in coal case" - an editorial published by the Lexington Herald-Leader on 23 December, 2010. Online at: <http://www.kentucky.com/2010/12/23/1577268/a-wise-slowdown-in-coal-case.html#more#ixzz1QaRf0uuw>