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# The Appalachian Voice

June / July 2009

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# The APPALACHIAN VOICE



A publication of

## APPALACHIAN VOICES

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Appalachian Voices brings people together to solve the environmental problems having the greatest impact on the central and southern Appalachian Mountains. Our mission is to empower people to defend our region's rich natural and cultural heritage by providing them with tools and strategies for successful grassroots campaigns. Appalachian Voices sponsors the Upper Watauga Riverkeeper® and is also a Member of the Waterkeeper® Alliance.

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## INSIDE THIS ISSUE

Buffalo Mountain Wind Farm,  
Photo by Chris Morris

# Appalachian Wind

## Science literacy and renewable energy

**M**any Americans are struggling to understand the science and economics behind renewable energy.

A surprising number believe wind power isn't much use because it is intermittent, or that solar energy is too expensive because it is scattered. They believe renewable energy may be decades away.

In fact, the technology is ready whenever the political courage can be mustered.

When Jules Verne wrote science fiction about a trip to the moon 150 years ago, he envisioned Americans as the people most capable of making such a journey. "The Yankees are engineers ... by right of birth," he said, and he was right. The American passion for science and technology changed the world, and eventually, sent rockets to the moon.

It's the same optimism and passion that needs to be kindled for environmental science and renewable energy technology today.

Parents, teachers, friends, mentors and others need to set the example and get out the word – Americans are going to have to sharpen their pencils and put on their thinking caps to meet the challenges of this century.

Failure – as a famous NASA engineer once said – is not an option.

-- Bill Kovarik, Editor



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### Cover photo:

The sun shines bright on TVA's 18-turbine Buffalo Mountain Wind Farm in Tennessee. Photo courtesy of Tennessee Valley Authority

# PADDLING APPALACHIA

Eight that  
are Great

With tumbling rivers and cool mountain lakes, Appalachia is a paddler's paradise. We offer a list of eight great destinations.

*Story by Tim W. Jackson*



*The Appalachian region is home to numerous whitewater paddling opportunities for intermediate and expert level kayaking. Photo by Carl Galie*

Whitewater enthusiasts from across the country come to Appalachia's rivers for their aquatic adrenaline rushes. Sportsmen often drift in canoes or open kayaks for fishing excursions. A long weekend of canoe camping on a river trip is a perfect getaway for many outdoors aficionados. Or perhaps a tranquil kayak jaunt around the lake is just what you need to refresh your batteries.

With so many great places to paddle, it's tough to narrow down any list of top spots, but below we offer a list of perfect paddling places in Appalachia. Just narrowing the list is tough enough, so truly ranking them seemed impossible. Our list is not in any particular order. If you don't see your favorite paddling destination on the list, let us know. We'd love to hear about your favorite places to paddle in Appalachia.

## Gauley River

West Virginia

Home of the Gauley Festival, this river is one of the preeminent whitewater rivers in the country. The Upper Gauley offers Class V paddling and should only be accessed by experts. The Lower Gauley is slightly tamer, but its Class III and IV waters can still create quite the adrenaline rush.

The Gauley Festival began in 1983 and has become a showcase for American Whitewater, which is a national non-profit organization with a mission "to conserve and restore America's whitewater resources and to enhance opportunities to enjoy them safely." The dates for this year's festival are Sept. 18-20.

## New River

North Carolina-Virginia-West Virginia

The beautiful New, ironically, is quite old. Many geologists consider the New to be one of the oldest rivers in the world. Forming in Ashe County, N.C., it runs north through southwest Virginia and to West Virginia where it eventually merges with the Gauley and becomes the Kanawha River.

The New offers many sections to paddle and lots of outfitters can help you plan a trip all along the river's span. Most of the river is fairly placid, with just a few Class II and III rapids in Virginia, but the best-known part of the river to paddlers is in the area of the New River Gorge in West Virginia where you can sometimes find Class IV+ rapids.

## Nolichucky River

North Carolina and Tennessee

The Nolichucky flows through a beautiful and deep mountain gorge in eastern Tennessee and western North Carolina. It offers a variety of paddling from Class I rapids around the Nolichucky Gorge Campground to the Class IV rapid called Quarter Mile. Playboaters will enjoy some time in Jaws and Maggie's Rock.

## Ocoee River

Tennessee

The Ocoee has long been a renowned river for Southeastern paddlers, but the waterway gained worldwide notoriety as host of whitewater events in the 1996 Atlanta Olympics. The Class III and IV rapids that attract many paddlers begin just west of Ducktown, Tenn. The primary put-in is the Ocoee Whitewater Center, which is a federally operated put-in used by commercial companies and individuals.

The Middle Ocoee offers continuous action with mostly Class III rapids, and, if the water is high, some Class IV runs.

Occasional Class II rapids along the way provide a chance to catch your breath.

## Youghiogheny River

Maryland-Pennsylvania-West Virginia

Commonly known as the Yough, this is a tributary of the Monongahela River. Various sections of the Yough offer an array of paddling options, but probably the most noted section of the river flows through Chiopyle State Park in Pennsylvania.

*Continued on next page*

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## Paddling Appalachia

Continued from previous page

The Lower Yough begins after the Ohiopyle Falls and flows downstream to the Bruner Run take-out. Numerous Class III and IV rapids offer thrills generally to be run only by experienced paddlers. Beginning and intermediate paddlers can enjoy the Middle Yough, which starts at the Ramcat put-in near Confluence, and ends near the town of Ohiopyle. This section generally consists of Class I and II waters.

### Chattahoochee River

Georgia

North Georgia's Chattahoochee River has long been a play place for Atlanta-area paddlers. Typical paddling runs are from Buford Dam at the lower end of Lake Lanier down to either Settles Bridge or Abbotts Bridge, but you can also run the river closer to Atlanta. If you don't have your own gear, several outfitters in the area will be happy to assist you.

Typically, the Chattahoochee is a Class I or II waterway and is traversed by

whitewater kayakers and rafters as well as canoeists. Occasionally upon dam releases or after heavy rains the river can offer a few more thrills and spills, but it's typically a good float even for beginners.

### Lake Guntersville

Alabama

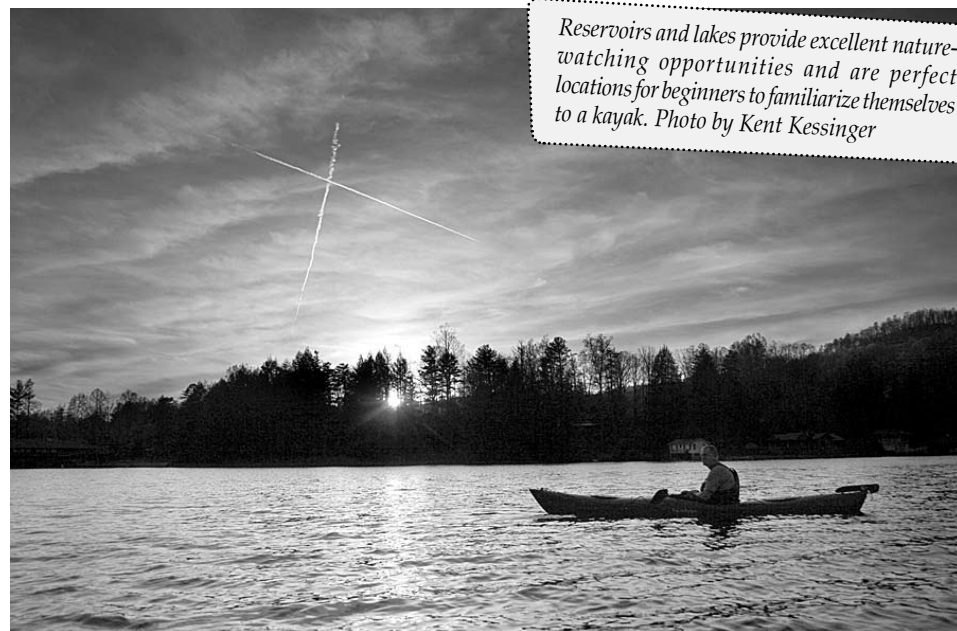
Tucked away in northeast Alabama, Lake Guntersville is a great recreational lake. The primary access point is Lake Guntersville State Park, which offers cabins, chalets, hotel rooms and camping facilities in addition to boat launching areas.

As is the case with most lakes of this nature, traffic from motorboats can be annoying, especially on holiday weekends, but during off times the 69,000-acre reservoir can be quite scenic and tranquil. Those who enjoy fishing from a canoe or kayak will enjoy a day — or more — on Lake Guntersville.

### Allegheny Reservoir

Pennsylvania and New York

In the northern end of Appalachia lies a body of water that is fantastic for canoeists and kayakers. The Allegheny



Reservoirs and lakes provide excellent nature-watching opportunities and are perfect locations for beginners to familiarize themselves to a kayak. Photo by Kent Kessinger

Reservoir spans the border between Pennsylvania and New York. In Pennsylvania, the reservoir is surrounded by the Allegheny National Forest. In New York it's surrounded by Allegheny State Park and the Allegheny Indian Reservation of the Seneca Nation. With lots of put-ins and spots to camp, the Allegheny Reservoir is perfect

for someone who might want to spend a long weekend — or even a week — paddling and experiencing the outdoors.

.....  
Tim W. Jackson is former Editor of Canoe & Kayak magazine and is currently the editor of [newrivervoices.com](http://newrivervoices.com).

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# Hiking the Highlands

Joe Tennis is the author of "Beach to Bluegrass: Places to Brake on Virginia's Longest Road" (Overmountain Press).



## Rail-trail leads along Piney River near Virginia's Blue Ridge

Story by Joe Tennis

Easing along the Piney River, the Virginia Blue Ridge Railway Trail chugs along a historical path, crisscrossing the Amherst-Nelson county line. This easy to moderate rail trail, at five miles in length, was once the path of the Virginia Blue Ridge Railway.

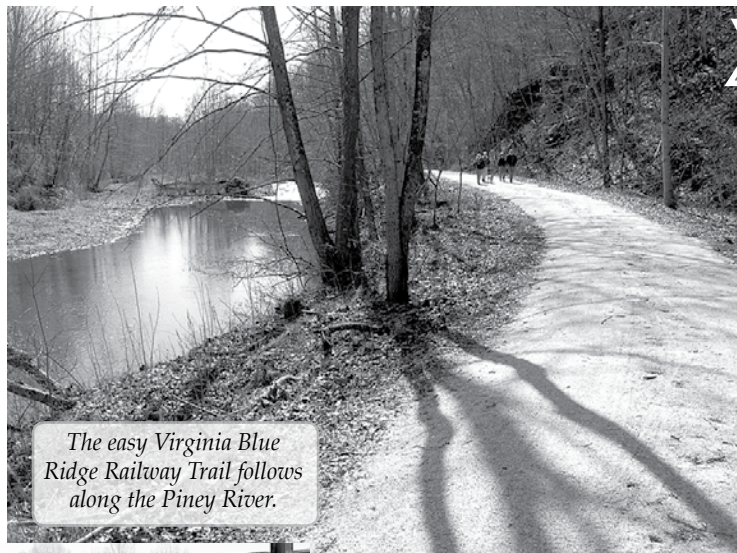
Trains stopped rolling in 1981, and that's when Popie Martin and her husband, Steve, feared the worst. They had heard the old rail line might be bought by various kinds of clubs. The Martins became especially interested, considering a big chunk of this line rolled within eyesight of their home. "So we bought the right-of-way," Popie said, "because it was right across our farm."

That was the mid-1980s. Over the next few years, the couple learned of other successful rail-to-trail projects in Virginia, most notably the New River Trail State Park, linking Pulaski to Galax and Fries in southwest Virginia. They figured they could do the same with this old line.

"It's just such a logical thing to have these old railroad beds and turn them into trails," Popie said, smiling. "And this is such a beautiful, easy trail for families. People come every single day and walk every day."

Dating back to 1915, the Virginia Blue Ridge Railway was used to haul chestnut logs from the Blue Ridge, about the time blight had settled on the fabled tree. Both steam and diesel engines pushed cars on this railway, which claimed to be "The Nation's Longest Operating Short Line," passing places called Roses Mill and Woodson. In 1997, long after the trains stopped running, a volunteer group formed to turn the rail into a trail.

Supported by both Amherst and Nelson counties, this project has received more than \$1 million in funding from Transportation Enhancement Act grants from the Virginia Department of Transportation. Another \$100,000 has come from the Virginia Department of Conservation and Recreation, while more help has poured in from the fundraising



*The easy Virginia Blue Ridge Railway Trail follows along the Piney River.*



and in-kind volunteer work of the Virginia Blue Ridge Railway Foundation.

Along the way, the Martins won BikeWalk Virginia's "Community Champion" award in 2005, given for their foresight in buying the railroad right-of-way, do-

minating it to the Virginia Blue Ridge Railway Foundation and then continuing work to make this a trail for everyone.

Originating at the old depot at Piney River, this trail lays easy along the often-flat waters of the river. It is particularly well-groomed, with a smooth surface of white stone dust, suited for strolling, horseback riding or mountain biking. Along the trail, benches are scattered every few hundred yards.

Eventually, Popie said, the old Piney River Depot at the trailhead could be turned into a museum, showcasing both art and history.

There's a good chance you'll spy wildlife, like white-tailed deer, great blue heron and red-tailed hawks, hanging out along the path. You can also wet a fishing line where the trail edges close enough to the Piney River to provide public access.

After two miles, the trail reaches reach the old settlement of Roses Mill, another stop with a parking area. From here, the trail continues for about three miles through open fields along the river.

For now, the trail makes a dead end on the farm of the couple that saved the path, but plans call for continuing the trek to even-

### VIRGINIA BLUE RIDGE RAILWAY TRAIL

**HIKING LENGTH:** About five miles (one-way)

**WHERE TO START:** The main trailhead at the Piney River Depot is off Route 151. From US-29, between Amherst and Lovingston, follow VA-151 north (towards Clifford) for seven miles to the depot, on the right. From here, the trail goes about two miles to another parking area at Roses Mill (or about five miles to its current dead-end on the Martin Farm).

**PARKING:** No fee required.

**DURATION:** Half-day stroll (10-mile roundtrip) or two hours (roundtrip) by bike

**INFO:** Nelson County Parks & Rec, (800) 282-8223

tually reach the Tye River on an already-rebuilt trestle. Continuing to push forward and complete all seven miles of this rail trail is also a possibility for this trail, said Emily Harper, the Director of Recreation for Nelson County.

In recent years, several old bridges have

been rebuilt, and Harper hopes to have a new section open by Fall 2009. She's especially anxious to show the public the big bridge overlooking the confluence of the Piney and Tye rivers. Popie, meanwhile, sounded ever hopeful, saying, "We're really ready to roll on that last little bit."

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# Volunteers Put New Trail On The Map

Story and photo by Sarah Vig

The Mountains to Sea Trail is halfway home.

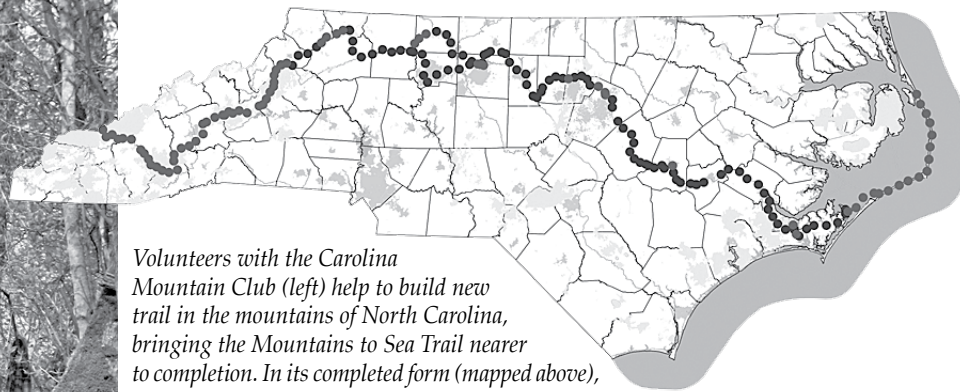
With over 500 of its 1000 miles completed, the ambitious project is well on its way to spanning the entire length of the state of North Carolina.

The Mountains to the Sea Trail (called the MST) owes its start, and continued to existence, to volunteers.

Perhaps it is because it is so ambitious that it took 20 years for the trail to go from proposal to possibility. But its allure, and the hard work of hundreds of volunteers across the state are keeping the dream alive and bringing the project steadily closer to completion.

According to Kate Dixon, Executive Director of Friends of the Mountain to Sea Trail (FMST), the idea of the MST was first proposed by Howard Lee in 1977 at a trails conference. At that time, Lee served as the secretary of the North Carolina Department of Natural Resources. 20 years later, trail expert Alan DeHart, "essentially got tired of waiting," says Dixon. She says DeHart sat down with a map and figured out how to use existing trail systems in the state, back roads and bike paths to complete the statewide trek. DeHart founded FMST and he and a friend became the trail's first thruhikers.

Since the inaugural hike, enthusiasm and support for the trail has only grown. "There is a romance to the idea of walking across the state," Dixon says of the endur-



Volunteers with the Carolina Mountain Club (left) help to build new trail in the mountains of North Carolina, bringing the Mountains to Sea Trail nearer to completion. In its completed form (mapped above), the trail will span 1000 miles across the state.

ing place the MST holds in the hearts of North Carolina hikers. "It represents for a lot of people what they most love about North Carolina."

Currently the trail has more than 500 miles of completed footpath and a nearly equal length of temporary trail connectors. The goal, however, is to move the trail entirely off the roads, and volunteer task forces across the state are helping it to move closer to that goal.

## Breaking Ground

In 2008, the Mountains to Sea trail had around 500 volunteer trail builders and

maintainers. Many of these volunteers came from hiking clubs across the state including the Carolina Mountain Club (CMC), the Saura Town Trails Association and the Carteret County Wildlife Club.

CMC has three crews that go out each Monday, Wednesday and Friday, plus a bi-weekly Saturday crew. By virtue of their size (usually between 10 and 15 people come out on any given Friday), it is the Friday crew that most frequently builds new trail, say

Piet Demhorst, who has headed the crew with another experienced trail builder, Skip, for nine years.

Trail building is multi-step process. After the trail is "blazed" by a team of experienced volunteers, the route is approved by the federal or state officials as well as a biologist and an archaeologist to ensure that no ecologically fragile or archaeologically important sites are being compromised. When the route is approved, a small team of people with the required certifications uses chainsaws to remove the large obstacles in the trail-to-be. A second team uses a hoist to pull the stumps out of the ground, often with the help of a two-sided tool called a polaski, which looks like an axe on one side and a pickaxe on the other. A third and final team takes up the rear, using hazel hoes and loppers to cut the trail into the ground and remove roots and smaller trees and plants.

The act of trail building with its chainsaws, ripping stumps out of the earth, and cutting into the hillside can at times seem almost violent. However, Dixon and Demhorst both emphasize that a well-built and consciously placed trail protects the land. "We want people to be able to enjoy public land," Dixon explains, "trails are

the best way to do that."

Alan, part of the hoisting crew, has been going out with the Friday trail crew for more than six years. "My wife and I strongly believe in volunteer work," he explains to me. "I'm giving a gift. This is going to last forever."

## Coming Together

Dixon indicates that the trail is "getting close to completion in the mountains," meaning that from the trail's starting point at Clingmans Dome in the Great Smokies to Stone Mountain State Park in Roaring Gap, N.C., one will soon be able to hike without ever touching the road. In addition, there are two task forces building large sections of trail in other areas: one between Blowing Rock and Wilkesboro, the other between the Triad and the Triangle. These segments are expected to be finished within the next 5 years.

These three areas have been easiest to complete because of the availability of state and federal land. In other areas, such as between Raleigh and New Bern on the coastal plain, or between Stone Mountain and the Triad, public land is much harder to come by. FMST is working with land trusts to encourage donations of easements, and with the state to encourage the purchase of key tracts of land. Recently, the state of North Carolina followed the group's urgings and purchased \$8.5 million in land for the project in Beaufort, Alamance, Orange and Johnson counties.

As the trail is under ongoing construction, the FMST encourages hikers who are planning trips to contact them for updated trail information. "Things like camping haven't been worked out yet," Dixon says. FMST also sends out an e-mail to its listserv every six weeks or so with updates on the newest developments. Interested individuals can sign up for the listserv at the group's website, [ncmst.org](http://ncmst.org).



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# A Backyard Vegetable Garden

## The Ultimate Shovel-Ready Project



Story by Kathleen McFadden

Talk about a shovel-ready project! Federal legislators may not have had home gardens in mind when they crafted the American Recovery and Reinvestment Act to provide funding for ready-to-go infrastructure projects, but First Lady Michelle Obama certainly did. Less than a month after the President signed the legislation, the First Lady was out on the White House lawn in her tennis shoes, helping to break ground for an organic vegetable garden and making Roger Doiron a very happy man.



about genetically altered crops and a back-to-basics mindset have all contributed to a resurgence of interest in home-grown food. The victory gardens of the 1940s have been reborn in the recession gardens of the 2000s.

The founder of Kitchen Gardeners International, Doiron launched the EatTheView.org campaign during the presidential campaign between Barack Obama and John McCain to urge whoever was elected president to lead by example and plant a garden at the White House. More than 100,000 people signed Doiron's White House Victory Garden petition, and the Obamas responded.

Even before the full impact of the recession hit American families, food gardening was on the rise. According to the National Gardening Association, 2008 saw a 10 percent increase in vegetable gardening compared to 2007, and gardeners spent \$2.5 billion that year to purchase seeds, plants, fertilizer, tools and other gardening items.

Michelle Obama's foray into edible landscaping is not the first time a First Lady has set such an example. In 1943, Eleanor Roosevelt planted a victory garden at the White House to inspire Americans to do the same. They responded. At the peak of the victory garden movement, nearly 20 million gardening Americans produced an estimated 40 percent of the nation's fresh fruits and vegetables.

In 2009, an estimated 7 million more households will swell the gardening ranks—a 19 percent increase and nearly double the 10 percent growth from 2007 to 2008. As a result, seed companies are reporting double-digit increases in sales this year over last and are even selling out of some popular varieties.

Although we live in a very different America today, the devastating impact of the recession on family budgets, rapidly growing environmental concerns, increasing worry

Doubtlessly, much of this spike in interest is economic. According to the U.S. Department of Labor, grocery store food prices rose 6.6 percent in 2008, the largest annual



According to the National Gardening Association estimates, a well-maintained food garden yields about a \$500 return. Some folks are keeping small gardens just to save money on growing food bills, and an expanding number of people are growing larger gardens to sell the surplus, while others simply enjoy easier access to homegrown organic produce. Photos by Kent Kessinger.

market seed suppliers.

"Gardens inspire the kind of optimism the American public is craving right now," said George Ball, chair and CEO of the 133-year-old W. Atlee Burpee & Co. seed company. "Children growing up during this renaissance in vegetable gardening will learn valuable lessons about nutrition, nature, self-sufficiency and respecting the earth by gardening alongside their parents. The state of the economy has certainly played a role in the increased interest in edible gardening, but folks are not going to let their vegetable plots go fallow when the economy heads north,"

Ball continued. "People have an innate desire to take control of our own destinies, and vegetable gardening allows us to do this."

Dr. Marion Simon agrees that the interest in home vegetable gardening isn't just about the potential savings on the family food bill. Simon, the state specialist for small farms and part-time farmers at Kentucky State University, said one of the top reasons people are turning to home food production

*Continued on next page*

increase in nearly 30 years. This year, with many family breadwinners out of work and struggling, the idea of offsetting the total on the grocery store receipt with some outside work and a few seed packets has been an attractive proposition—and a financially solid one. According to National Gardening Association estimates, a well-maintained food garden yields about a \$500 return, taking into account a typical gardener's investment and the market price of produce.

But it's not all about money. Just ask the head of one of the country's largest home-

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## Head to the Roof with Project EMMA

Growing on a roof in downtown Asheville, N.C. are beans, cucumbers, tomatoes, salad mix, radishes, lavender, rosemary, lemon balm, basil and other plants.

The result of a partnership between the Appalachian Sustainable Agriculture Project and the Council on Aging of Buncombe County, Project EMMA (for Eat better, Move More, Age well) is located on top of the Battery Park Apartments building.

Blue Cross Blue Shield of NC Foundation supplied the grant for the multipartner program. ASAP's role is to help increase access to local food for residents of two downtown apartment buildings and for clients of the Council on Aging's Senior Meal Program. The YWCA provides exercise opportunities for seniors.

Weekly activities at the roof garden include tea and pesto making, and walking trips to downtown tailgate markets provide an opportunity for seniors to get out for exercise while feasting on local produce. Nutrition talks and simple cooking demonstrations also make eating more fruits and vegetables easy and delicious.



## A Backyard Vegetable Garden

*Continued from previous page*

is their personal health. Many people have told her, she said, that their doctors have recommended home gardens as a good way to help control diabetes and to tackle weight problems.

Simon's department holds sustainable agriculture workshops on the third Thursday of every month for people who want to grow small "truck gardens" that will feed their families and even yield some surplus to sell. The popular program attracts about 1,200 people each year, and its popularity is growing. "A lot of people are looking at gardens that haven't looked at them before to save money on their food," Simon said.

But several other motivators besides

personal health and economics are attracting everyone from high school students to young married couples to farmers in their 70s to the monthly workshops. Among those motivators, Simon



said, are the growing interests in eating locally grown foods, in using organic methods and in protecting wells and groundwater from contamination.

Home gardens can produce a significant community effect, Simon explained. She knows of neighbors who sell their extra harvest to neighbors, a factory worker who sells fresh produce to his co-workers and a number of growers who sell their surplus on the side of the road—all growing the local market movement, distributing healthy food and making a little extra money at the same time.

But the best thing about an organic home garden? Kentucky farmer Dana Lear smiled and said, "You can just pick a snack, wipe it off on your shirttail and eat it."



## West Virginia Puts Its Money Where the Food Is

Three farmers' markets in West Virginia—one of them brand-new—will receive up to \$50,000 in matching funds this year from the state Department of Agriculture to develop year-round farmers' markets, giving growers large and small additional space and seasons to sell their products.

One of the projects will expand the established Community Growers Market from a seasonal market to a year-round market. The market is operated by Heart and Hand House that works with senior citizens and limited-income residents to encourage consumption of healthy local foods.

Since the mid-1990s, the number of farmers' markets in West Virginia has more than tripled. In 2008, more than 110 farmers' markets and farm stands were located throughout the state.

Shoppers at these markets and the growers that supply them know, just as songwriter Guy Clark does, about the two things that money can't buy: "true love and homegrown tomatoes."

## Tennessee Promotes Home-Grown

The Tennessee Department of Agriculture is encouraging the state's residents to plant edible landscaping.

"Vegetable plants have pretty blossoms just like ornamental plants, but they can earn their living. Give them a

home in your gardens and they'll repay you with beauty, plus the freshest, most ripe and flavorful food you can get," said Rob Beets, the department's horticulture and produce marketing specialist.

And Beets is also encouraging backyard gardeners to buy their vegetable plants from Tennessee growers: "You'll know the plants haven't been stressed from too much travel, and that the varieties you choose will grow well here. Plus, if you buy directly from the grower, you can get the absolutely vital information you need to keep plants alive and producing as long as possible."

"Growing your own food gives you a healthy, interesting activity in your own backyard," Beets continued. "You'll know exactly how your food was grown and always have it at its peak flavor. Home vegetable gardening is also encouraged as a stress management method, a plus that's especially useful, nowadays."



## Celebrate Food Independence Day!

Roger Doiron, the founder of Kitchen Gardeners International and the mastermind behind the EatTheView.org campaign, has come up with another idea: Food Independence Day on July 4.

Doiron's challenge is for each of us to declare our food independence by sourcing the ingredients for our holiday meals as locally, sustainably and deliciously as possible and to ask our nation's governors to do the same.

His petition is posted at [www.food-independenceday.org](http://www.food-independenceday.org) and on Facebook, and he's encouraging people to spread the word by grabbing one of his buttons or his



flash widget for their blog, social network, website or newsletter.

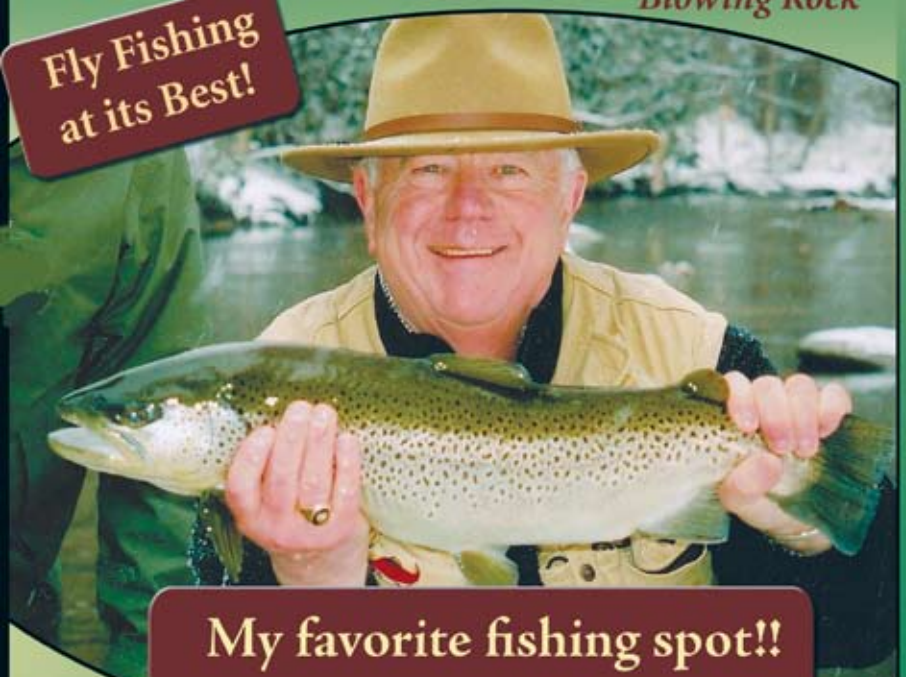
The petition urges the first families of the 50 U.S. states and territories to "Whet our appetites by publishing your planned menu in advance of the holiday. Share your recipes and the names of the local farmers, fisherfolk, and food producers whose ingredients you'll be using. Make it into a friendly competition with the other first families to see who can serve the meal that inspires the most while traveling the least."

We're thinking the Southern governors have a good chance of winning this competition! Let's make sure they participate.

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# Across Appalachia

Environmental News From Around The Region

## Hundreds Protest Duke's Cliffside Power Plant Expansion

Story by Sarah Vig

Thoreau wrote near the end of his life, "if I repent of anything it is likely to be my good behavior."

At 76, Bruce King, a retiree and military veteran – like Thoreau – was beginning to regret his good behavior.

It was the first formal protest of his life, but on the morning of April 19, King joined more than 200 others who answered the Stop Cliffside Coalition's "Call to Conscience" in Charlotte, N.C.

The Stop Cliffside Coalition is comprised of 10 environmental and citizen advocacy groups partnering in opposition to the 800-megawatt expansion of Duke Energy's Cliffside Power Plant in Rutherford County, 50 miles west of Charlotte. The plant's expansion represents a \$2.3 billion dollar invest-

ment in coal-fired electricity generation, and it is anticipated that much of the coal used at the plant would come from mountaintop removal mining operations in neighboring Appalachian states. This, in addition to growing concerns about carbon emissions and climate change, air quality and coal combustion waste, has led many North Carolinians to oppose the plant.

The Coalition's Call declared that "we cannot be silent as Duke poisons our air, destroys the Appalachian Mountains, and fans the flames of climate change for the sake of profit," and King was not the only one participating who did not fit the typical image of an environmental activist.

Of the hundreds of people gathered for the protest, many were elderly, clergy and regular citizens dressed in their Sunday best.

The peaceful protest, which took place



Hundreds of concerned citizens from North Carolina and from surrounding Appalachian states impacted by mountaintop removal marched in protest of Duke's Cliffside plant expansion on April 20, 2009. Photo by Jamie Goodman.

sions crossed the line spray-painted on the cement sidewalk to illegally trespass on Duke's private property. As the rest of the marchers watched, the 44 accepted arrest, one-by-one.

It now stands as the largest arrest total for civil disobedience on climate change in history.

Though King was not one of those arrested, he did feel that this, his first protest in the name of climate change and clean air, would not be his last.

"If I had known this was what protesting was like, I would have done it sooner," King said.

shortly before Earth Day, traveled through downtown Charlotte, stopping at Governor Purdue's office and finally reaching the Duke Corporate Headquarters.

As the group crossed the street to stand in front of Duke Headquarters, their rallying cries faded. 44 individuals of all ages and profes-

## EPA Assumes Oversight of TVA Coal Fly Ash Disaster

Story by Chris Martin

On Monday, May 11, the Environmental Protection Agency (EPA) announced that it would oversee the cleanup of coal fly ash in Roane County, Tenn., after last December's dam failure at the Kingston Fossil Plant flooded the Emory River with 1.1 billion gallons of wet ash. The EPA opened a month-long period for public comment on changes to the clean-up proposal, which closed on June 11.

The Obama administration's new head of the EPA, Lisa P. Jackson, called the spill "one of the largest and most serious environmental releases in our history" and promised that the EPA would bring its full resources to bear to protect "downriver communities." Prior to the EPA decision, the Tennessee Valley Authority's (TVA) clean-up process had been monitored by the Tennessee Department of Environment and Conservation.

TVA's current plan of dredging the fly ash from the banks of the river had come under criticism from many regional scientists, including Dr. Gregory Button of the University of Tennessee. Dr. Button has called on TVA to exercise greater caution and seek out further input from environmental experts before going through with its dredging plan.

EPA found authority for oversight of the

spill under the Comprehensive Environmental Response, Compensation and Liability Act, also known as the "superfund" law. Under the terms of a new agreement signed by EPA and TVA, EPA will approve or deny all decisions on the future of the Kingston Fossil Plant's spill cleanup.

United Mountain Defense volunteer Matt Landon expressed criticism of the new proposal and of the EPA's ability to improve on TVA's mistakes. "Until we see the results of their new plan, we're skeptical," Landon said. He attributed the EPA's decision to the steady

stream of documentation and complaints provided by affected residents. To date, EPA has not interfered with a court order won by TVA prohibiting Landon from conducting air and water monitoring requested by Roane County residents.

The EPA proposal allots \$50,000 for an "eligible community group" to hire a technical advisor to review all the documents. The Roane County government's Long-Term Planning Committee has issued a request for the funds; the grassroots Tennessee Coal Ash Survivors Network has also expressed interest.

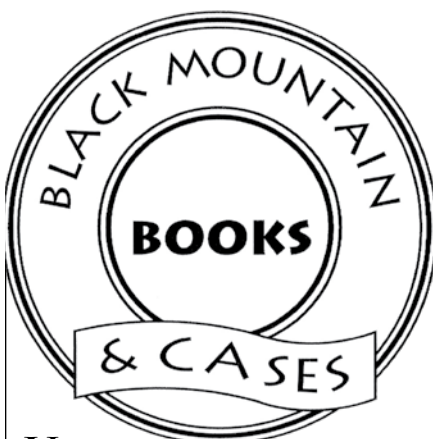
## Coal Slurry Contamination Case Delayed for 2nd Time

Perhaps the third court date will be the charm for the coal slurry contamination case against Massey Energy in southern West Virginia.

The suit, which has more than 500 plaintiffs, brings charges of wrongful death, personal injury and property damage among others against the company and its subsidiary Rawl Sales & Processing. The group is suing over alleged contamination of residential wells with toxic heavy metals and other chemicals from the injection and leakage of coal slurry from nearby underground mine sites into the area's groundwater supply. The

trial, originally scheduled for February and then May, was rescheduled once again due to the disastrous floods that rocked West Virginia May 9. The new trial date is expected to be sometime in October of this year.

Meanwhile, the West Virginia State Legislature imposed a moratorium on new coal slurry injections. A study by the state Dept. of Environmental Protection said that "operators did not conclusively demonstrate that, when slurry is injected into abandoned underground mines, it remains contained and the surrounding hydrologic regime is not adversely affected."



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# Across Appalachia

## Some Permits Suspended But Mountaintop Removal Fight Goes On

The ongoing controversy over mountaintop removal mining see-sawed this spring, as the Obama administration stopped seven high-impact mining permits but then proceeded forward with 42 others. Perhaps 150 more are waiting in the wings, according to an EPA spokesman.

One of the projects halted was an expanded mountaintop removal mining operation at the Ison Rock Ridge mine in Wise County.

The mine owners had proposed expanding Ison Rock Ridge by 1,300 acres, but the permit was suspended because of concerns about impacts on the Powell River and, according to the Corps of Engineers, because proper state permits were not secured.

The mine would have destroyed three miles of streams and filled nine valleys with more than 11 million cubic yards of rock and dirt. Environmental impacts were not accounted for in the Ison Rock permit applications, the Corps of Engineers said.

"It's great to see that all our work is paying off," said Pete Ramey, retired coal miner and president of the group Southern Appalachian Mountain Stewards (SAMS). "We've spent so much time and energy as a community on Ison Rock Ridge over the last two years, building this struggle and getting our neighbors involved. This really and truly is a great victory for the people and streams of Southwest Virginia."

Six other projects were suspended in mid-May by the Environmental Protection Agency, which is reviewing Corps of Engineers permits.

An announcement that EPA was starting the review process in March triggered some optimism that all mountaintop removal mining permits would end, but political concerns about employment in the region led EPA to approve 42 of 48 permits under active consideration.

The external controversy was mirrored inside the Obama administration. At one meeting, two cabinet secretaries

got into a dispute, pounding their fists on the table in disagreement, according to one news report.

Just how many of the overall 200 or so permits will be approved is an open question. "Of the ones reviewed so far, roughly 90% have been permitted," said Rep. Tom Perriello (D-Va) in a congressional hearing. Perriello asked whether that would be the percentage for the remaining permits.

"We're not shooting for a specific percentage," said EPA assistant secretary Mike Shapiro. "We're really shooting to identify those that are seriously problematic and to try and address them."

Activists believe the main hope for stopping mountaintop removal mining continues to be through Congressional action.

"The bottom line is that we have got to pass the Clean Water Protection Act and the Appalachia Restoration Act," said J.W. Randolph, legislative associate for Appalachian Voices.

## Coal Sludge Protests Rock West Virginia

Two women in hazmat suits and respirators were arrested in May after floated a 60 foot banner in the Brushy Fork impoundment "lake" which contains 8 billion gallons of coal sludge.

The banner read: "No More Toxic Sludge."

Ironically, the two were charged with trespassing and littering the 8 billion gallon sludge reservoir. Other mountaintop removal mining and sludge related protests in May included 70 people at Massey Coal's Marfork mining complex near Whiteville, WV.

One focus of the protests involved the potential of sludge dams to break, killing hundreds of people downstream. At one point, hundreds of shoes, representing the lives that would be lost, were lined up below a sludge dam.

"We live in a free country, and you can go up and down the street swinging your arms as a free person. But if somebody comes along, and you hit that person in the nose, your freedom ends where that person's nose begins," said former West Virginia Congressman Ken Hechler.

"So I say to you here, the freedom of Massey is a clear and present danger to everyone that lives below Brushy Fork. Their freedom ends because they have put thousands of people at risk."

Massey will be blasting close to the Brushy Fork impoundment, which sits atop a network of abandoned deep mine shafts and tunnels. This, along with the rainy spring, has led to questions about what the government is doing to survey the safety of sludge dams.

### Sludge study questions raised

Appalachian Voices has filed several Freedom of Information Act requests to learn more about how the federal government is studying the sludge dams.

Until recently, only a handful of randomly selected dams were studied for technical compliance issues, according to the federal Office of Surface Mine and Reclamation Enforcement. A recently completed study focused on the safety of 15 high-risk sludge dams and their potential for breakthrough into nearby mines.

The study, will be the first to combine elements of dam volume and down-

stream populations in a risk assessment, according to OSMRE officials. Although the engineering work is complete, release of the study is being held up so that it can be reviewed, OSMRE said.

"Given the current state of emergency and severe flooding in West Virginia, we believe that this information has a direct bearing on vital issues of public safety," Appalachian Voices said in a letter to OSMRE.

## GET INVOLVED

Environmental Events in the Region

### Mountain Aid Festival June 19 & 20

The 1st Annual Mountain Aid concert to fight against mountaintop removal coal mining and promote clean energy will take place June 19-20, 2009 at Shakori Hills Farm in Chatham County, NC. Proceeds will benefit Pennies of Promise, a grassroots campaign to construct a new building for Marsh Fork Elementary School in West Virginia.

Grammy-winning singer and songwriter and West Virginia native Kathy Mattea will emcee and headline Mountain Aid. Other performers include Ben Sollee, Donna the Buffalo, the Sim Redmond Band, and local hip-hop favorite The Beast.

Tickets are \$30 at the gate. On-site camping, food and craft vendors will be available. For more details, visit [www.mtnaid.com](http://www.mtnaid.com) and [www.shakorihills.org](http://www.shakorihills.org).

### CRC Hosts Raptor Release Party July 2

Carolina Raptor Center, based in Huntersville, NC, will be hosting a Raptor Release Party where a rehabilitated bird will be set free into the wild. The event will celebrate the center's 25th year, and will take place the afternoon of Thursday, July 2, in the High Country region of North Carolina (exact time and location to be determined). CRC is dedicated to the conservation of birds of prey through education, research, and the rehabilitation of injured and orphaned raptors.

Bring your family and friends and come to experience this one-of-a-kind event! Wine and hors d'oeuvres will be available; admission is free, but donations are welcome. For more information, contact Heather Bofill at 704-875-6521 x 214 or [hbofill@carolinaraptorcenter.org](mailto:hbofill@carolinaraptorcenter.org) or visit their website at [www.carolinaraptorcenter.org](http://www.carolinaraptorcenter.org).

### The Firefly Gathering, July 9-12

Come learn something new and get in touch with your wild side! The 2nd annual Firefly Gathering July 9-12 features over 50 primitive skills and homesteading classes including bow making, permaculture, blacksmithing, wild food walks, and homebrewing. An exciting kids program and evening entertainment will also be available. Camping is available on site, only 8 miles from Asheville, NC. All pricing is sliding scale. For info visit [fireflygathering.org](http://fireflygathering.org) or call (828)230-0960.

*To be included in our listing of environmental events for the Appalachian areas of VA, WV, NC, TN and KY, please email [voice@appvoices.org](mailto:voice@appvoices.org). Keep in mind that our publication is bi-monthly. Deadline for the next issue will be Monday, July 20, 2009 at 5pm.*

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# Mountaintop Removal Activist Receives Goldman Environmental Prize

Maria Gunnoe's family connections to her land in Boone County, W. Va, stretch back to Cherokee ancestors who hid from forced removal by the government in the 1830s. Her Cherokee grandfather purchased land there in the 1950s; she herself was born and raised there, learning how to hunt, fish and gather plants in the surrounding forest.

Since 2000, when a 1200-acre mountaintop removal mine site began operating on the ridge above her home, Gunnoe has watched that land she is so deeply connected to be ravaged. Floods began to hit her property with increasing frequency, eventually destroying her ancestral home and contaminating her family's well with mine waste in 2003.

Gunnoe has since become a staunch advocate in her community, working with Ohio Valley Environmental Coalition on the need for safety regulations for coal slurry and an end to mountaintop removal mining. Her leadership at the grassroots level on this issue led to her selection as the winner of the 2009 Goldman Environmental Prize for North America. The award, given to a grassroots environmental hero on each of six continents every year, was created by Robert Goldman and his wife Rhoda in 1990.

Gunnoe answered questions from Appalachian Voices and other media about the prize and the issues she works on in a May 13 interview sponsored by Orion Grassroots.

## Where did you first hear about the Goldman Prize and how has it affected you?

The first I heard about [the Goldman Prize] is of course when the mountaintop removal and flooding and sludge injection and all of the above moved into the

hollow behind my homeplace. I was seriously and adversely impacted by mountaintop removal flooding in 2003; it literally washed away acres of my land. Through trying to find somebody that cared, I met Judy Bonds ... shortly after [she] had been awarded the Goldman Award. Judy helped to educate me on local issues and we've worked together ever since.

The Goldman Award has definitely changed my life ... It puts a huge demand on your time but it also sheds a huge light on the issue and right now is a crucial time to shine the light on the issue of mountaintop removal coal mining. I feel like the current administration is the most hope that we've had in a long time. I feel like the fact that the Goldman family chose me as the 2009 Goldman winner really sheds the light on the issue at a very crucial time.

## Have there been any hopeful signs from the EPA recently?

[EPA's contradictory statements on changes to the review process for permits] created not only confusion, it's also created just a mass extraction here, the coal industry's speeding up if anything. Unfortunately, with the coal industry while their laws--the laws that supposedly guide them-- [...] are being reviewed, they're allowed to move forward.

In Lindytown-- that's in Boone County near a town called Twilight--the houses in this town are being torn down, and that's because of the fact in order to get to the coal they're having to swing the arm of the dragline over the top of this community.

So the coal company came in and forcibly bought people out-- and I say forcibly because they made the quality of life there



*A tireless fighter for Appalachia's environment, Maria Gunnoe was awarded the 2009 Goldman Prize for "fighting against environmentally-devastating mountaintop removal mining and valley fill operations." Her advocacy with the Ohio Valley Environmental Coalition has led to stricter regulations for the industry, but she endures constant threats and harrasment from neighbors who work in the mines. Photo by Jamie Goodman*

so horrible that people literally had to leave in order to protect their health.

Now what it's doing on the ground, it's extremely and permanently affecting residents and communities here. There's literally communities that are disappearing into nonexistence. What [the EPA is] investigating or what they're looking at is on paper. If you come into these communities and you see for yourself what is going on, just the human side of you tells you that this is wrong. I mean what's going on on paper is one thing but what's going on on the ground... (sigh)

[...] It is a human rights issue [...] My family ended up here through the removal of the Cherokee from the southern valued lands, and when they were forcibly removed from that land, they followed the rivers [...]

and hid in these hills and hollows. Are we at a point in this society where we're willing to continue forced removal of people for extractive industries? It's not only here in West Virginia. It's bad here in the Appalachian region, but the extractive industries, they're undermining everything in one way or another for one process or another. Somewhere we've got to get 'em in check. The impacts are most present here, but really we're selling off our children's future for luxury, and it's insane.

## What can we hope for from the Obama administration?

In order to fight this fight you have to be hopeful. You have to move forward knowing that what you're doing number one is the right thing, and you have to know that there will be an end to it. [...] My common sense way of looking at it tells me "Okay, when is enough enough?" I mean, it's a process that has got to stop, it's

just a matter of how many mountains will be sacrificed before we get it stopped? We will stop it because myself and Judy and so many people and really around the world are literally doing everything they can to stop this process. Unfortunately, very few of them are in Washington, D.C.

## Do you have any words of wisdom for us moving forward?

I think our youth is very much a part of our future, and I think it belongs more to them than us [...] Educating the youth is critical because they need to [...] recognize their consumption and connect it to what's going on. Beginning this will start in the college and in the schools, as children are growing up.

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# Flooding Takes Its Toll In West Virginia

Coalfields' lack of ground cover worsens flood

Story by Penny Loeb

Tina England knows why flood waters rose seven feet on the road up Big Huff Creek: recent logging and new roads to gas wells at the top of the mountain.

"Coming off a big mountain like this, there's nothing to hold it (the dirt from the roads) back," England said. "All these little hollows feed down to Huff Creek. It was like a dam let loose."

Flooding led state officials to declare a state of emergency in parts of West Virginia in early May.

This was the 19th flood in 11 years to hit Mingo County and surrounding areas of southern West Virginia's coalfields, and the worst since four terrible consecutive years, beginning July 8, 2001.

This year's storms smashed mobile homes, tore away nearly 500 private bridges across creeks to homes, and covered miles of yards in more than a foot of mud along Huff, Gibert and Pigeon creeks.

After the 2001 flood, filmmaker Bob Gates and I spent months investigating land disturbances above the flooded areas. At nearly four dozen severely flooded areas, we found old and new mining, slag piles, logging or gas-well roads, all documented at [www.wvcoalfield.com](http://www.wvcoalfield.com). Though neither Bob nor I could spend as much time examining the recent floods, we were curious whether land disturbances were involved this time, and whether control measures, passed after the 2001 floods, had helped reduce damages.

Everywhere we went, residents pointed out land disturbances, which we then examined. Timbering above Big Huff creek is not a pretty site. Loggers had used newly built gas-well roads as access to a half dozen logging areas. Few of best management practices required by the Division of Forestry appeared to have been used. The dirt roads had not been reseeded. Rather than recommended gentle slopes and curves, roads were steep and straight, funneling water straight down the mountain.

Along Route 52 near Varney, only a few gravestones at the Marcum Cemetery still stand in a sea of rocks and dried mud that spilled out of the mountain and blocked the road for nearly a day. I hiked about 2,000 feet to the top of the hollow, climbing over huge trees and boulders tumbled into the tiny stream. At the top, I could see a new gas-well road cut around the hill, supported by a tiny valley fill, which appeared to have partly collapsed into the stream. A violation was issued for the erosion.



This house, near Varney, W. Va., was heavily impacted by the fast-moving floodwaters that hit southern Mingo County communities suddenly in May. Private bridges, roads and homes were affected throughout the area. Photo by Sarah Vig

On Big Lick Fork, south of Baisden, Bonnie Mounts believes an old gas-well road caused the slide that just missed her house, but plowed into the one next door, making it uninhabitable. A neighbor who had ridden an ATV up the road said drainage had been rerouted about five years ago, and the hill had been sliding ever since.

Massey Energy has mountaintop mines along about five miles of Gilbert Creek. Mounts' daughter believes her damage, on Pickering Creek, came from runoff from Massey's Frasure Creek mine, which had begun work in her area. Across from Mounts' own home, a narrow gully turned into a roaring river for two days after the storm. Her son-in-law, who had worked for Frasure Creek, said the runoff came from the mine. A new valley fill can be seen behind the Baisden firehouse. Mounts said it washed out in a previous storm, and again on May 9. No violations were issued there, but a Massey mine was cited for flood damage in Rawl.

Homeowners have been disappointed by the response from the Federal Emergency Management Agency. Though 2,800 people have applied for help in southern West Virginia, and FEMA has examined 2,200 buildings, people are reporting FEMA sometimes offers only \$5,000 for severe damage. In earlier floods, many victims were never fully compensated. The best hope may lie with lawyers who have been approaching flood victims—though court

cases could take several years.

State officials who deal with floods attribute much of the damage to the storm falling on ground saturated by nearly a week of lighter rain. "You don't have run off until infiltration capacity is at the maximum," said Jim Pierce, who headed DEP's 2001 flood study. May 9's peak rainfall of 3.95 inches in Pineville was less than the 5.32 inches at Mullens in 2001. Gilbert and Huff Creek were in a band of 2.75 inches.

Nonetheless, Pierce believes better runoff controls are needed for logging and gas-well roads. In 2003, DEP did win passage of strong storm water controls for mining, including revised valley fill design. For the most part, Pierce said, they work, though there were a few places where storm water over-

whelmed design controls. However, none of the recommendations on logging passed the legislature. The Division of Forestry doesn't have enough inspectors to monitor all active logging, Pierce said, let alone check reclamation. Gas-well roads can funnel high water to the wrong places, he said, and rock fills under roads can liquefy in storms.

After the 2001 flood, a task force recommended a number of measures to control damage from flooding. In addition, a 2000 federal law requires all states and counties to make, and regularly update, hazard mitigation plans. Though flooding is listed as the number one hazard in Mingo, no mitigation projects had been placed in these flooded areas, said Jimmy Gianato, director of the West Virginia Division of Homeland Security and Emergency Management, who was emergency director in Kimball in McDowell County when it was hit hard in 2001 and 2002. Since much of the flooded area isn't in federally mapped flood plains, Gianato said, construction limitations don't apply. One quandary will be how to require better-designed private bridges, he said.

State mitigation officials also plan to work with the U.S. Army Corps of Engineers on computer models for ways to prevent future damage.

Another option is moving people out of flood-prone areas. The Mingo County Redevelopment Authority expects to have affordable housing built within two years on mountaintop removal sites on Horsepen Mountain, near the King Coal Highway and Twisted Gun golf course. Bonnie Mounts, who runs the restaurant at the golf course, said she'd love to move to housing on high ground.

Penny Loeb is a journalist and the author of *Moving Mountains: How One Woman and Her Community Won Justice from Big Coal*.



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# Appalachian Wind

## An Old Source of Energy Sparks A New Controversy

Windmills were once common in the US and Europe, used for grinding grain, pumping water and sawing timber. One of the first large transitional wind experiments took place in Boone in the late 1970s (See Whooshies, p. 16). Long a symbol of “quixotic” ambitions, today they are making a solid comeback, raising new economic hopes -- and environmental concerns -- in Appalachia and across the country. The promise of wind electricity is that of low-carbon footprint energy, but the concern involves birds and bats. Although far more birds and bats die from other causes, the concern is real, and new regulations and guidelines are an important step (See Scientists Search, p. 18). Other concerns include viewsheds and zoning (See Tazewell, p. 19). Projects now under way will provide experience to guide the long term future for wind in Appalachia.

### The Basics of Wind Generated Electricity

#### A single 1.6 megawatt wind turbine\* will save:

- Ten acres of Appalachia from mountaintop removal mining;
- 80 million gallons of water;
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- Pollution from 10,000 tons of ash and slag;
- Pollution from seven pounds of mercury and four pounds of lead
- 17 tons of fine particles causing respiratory disease
- 1.25 million tons of carbon dioxide contributing to climate change

*Using conservative 20 year lifespan and 40% efficiency; note that larger turbines being introduced will increase the savings. Figures extrapolated from "The side effects of a coal plant" by the Union of Concern Scientists and from Life Cycle Analysis by Vestas Wind Systems. Ten acres of land assumes 4 acres of direct substitution and another 6 acres for associated valley fill and other irreversible disturbances. Sources: www.ucsusa.org/clean\_energy/coalwind/brief\_coal.html; www.infra.kth.se/fms/utbildning/lca/projects%202006/Group%2007%20(Wind%20turbine).pdf*

#### What a wind turbine costs

In an analysis of the Coal River Mountain wind farm proposal, Appalachian Voices in Summer 2008 concluded that electricity from wind would cost only 9.4 cents per kilowatt hour, compared to 12.6 cents per kilowatt hour for coal, given simply the investment, maintenance, capacity and fuel costs for both. Subsidies for wind power, and additional costs for pollution control and carbon capture, would simply increase the disparity. Wind energy, today, is cheaper than new coal fired electrical generation.

#### Wind turbine energy payback

The energy consumption for manufacturing wind power plant components, transportation to a site, and installation, dismantling and scrapping of an onshore turbine is about 3.4 million kWh. In contrast, the annual power production, at about a 40% efficiency, is about 5.9 million kilowatt hours, resulting in a payback within 210 days.

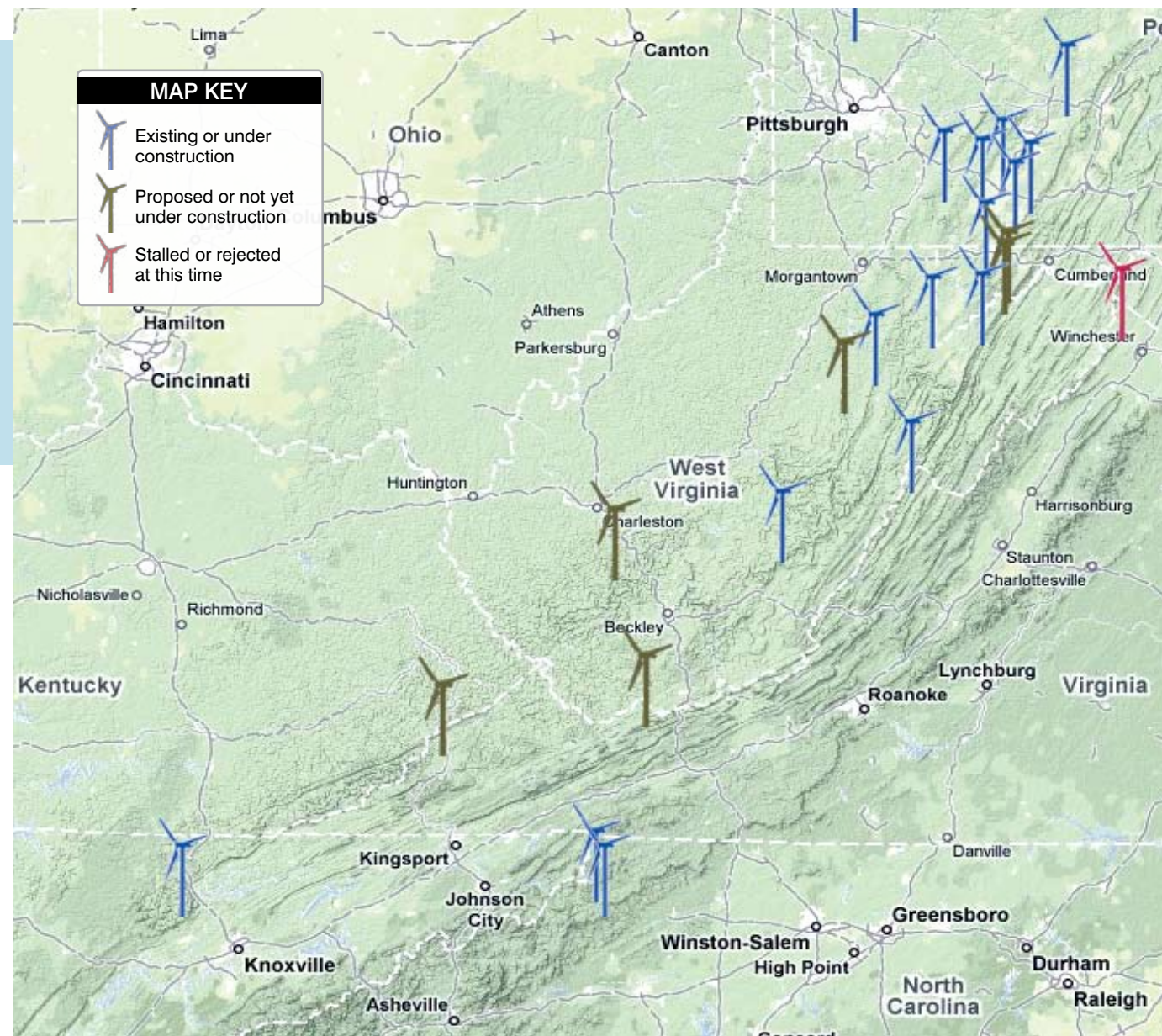
*Total installed U.S. wind capacity at the end of 2008 was 25,170 MW, or enough to serve the equivalent of over 7 million average U.S. households (17 million people).*

(Source: American Wind Energy Association)

#### Wind turbine carbon footprint compared with other energy sources \*\*

- Coal = 960 grams of CO2 equivalent per kWh
- Gas = 443
- Nuclear = 66 \*
- Solar photovoltaic = 32
- Wind energy = 10

*\*\* Median of estimates according to Sovacool, B. Energy Policy 36, 2950-2963 (2008). See: www.nature.com/climate/2008/0810/full/climate.2008.99.html*



### Wind Farms In Southern Appalachia

#### VIRGINIA

**Mountaineer, Tucker Co.**  
**Installed** in 2002 -- 44 NEG Micon units, 66 MW  
 Developer Atlantic Renewable Energy, owner FPL Energy

**Highland New Wind, Highland Co.**  
**Approved** 2007, -- 20 units, 40 MW  
 Detailed monitoring and mitigation program required by state of VA  
 Not yet under construction  
 Developer: Highland New Wind Development

**Tazewell County, East River Mountain**  
**Proposed** -- 30 units, 60 megawatts  
 Developers: British Petroleum and Dominion

#### Wise County

**Proposed** -- Unknown number of units  
 Developers: British Petroleum and Dominion

#### Great North Mtn

(near Harpers Ferry)  
**Rejected** -- 131 units, 215 MW  
 Developer: FreedomWorks LLC

#### WEST VIRGINIA

**Mount Storm, Grant Co.**  
**Installed** 2006 -- 82 Gamesa units, 164 MW; **Installed** 2008 -- 50 Gamesa units, 100 MW  
 Owner: Shell Wind and Dominion Energy

#### AES Lauren Mountain, Barbour Co.

**Approved** -- 65 units, 130 MW  
 Developer Laurel Mountain

#### Beech Ridge, Greenbriar Co.

**Under construction** -- 119 units, 186 MW  
 Developer Invenergy

#### Pinnacle, Mineral Co.

**Proposed** -- 23 wind units, 55 MW  
 Cost: \$120 million  
 Developer US Wind Force

#### Coal River Mountain, Boone County

**Proposed** - 164 units, 328 MW  
 Developer -- Coal River Wind

#### TENNESSEE

#### Buffalo Mountain, Anderson Co.

**Installed** in 2000 -- 3 Vesta units, 1.98 MW -- TVA; **Installed** in 2004 -- 15 Vesta units, 27 megawatts  
 Developed for Tennessee Valley Authority, owner Invenergy



Crystal Simmons, project manager for ASU's wind turbine installation, holds a turbine model at approximately the location where the windmill will peek over the trees. Photo by Jamie Goodman

## Wind energy on the horizon for Boone, NC residents

*Project's leaders hope to educate students and community*

Story by Sarah Vig

The neighbors are happy, the permits are signed, the money is down, and the foundation is curing. Everything is in order, and by mid-June, Appalachian State University will be home to the largest wind turbine in North Carolina. The turbine, a NorthWind 100, will be erected in mid-June behind the Broyhill Inn and Conference Center on ASU's campus. The turbine is a project of ASU's Renewable Energy Initiative with additional funding from New River Light and Power and the ASU Class of 2009.

The Renewable Energy Initiative plans and implements renewable energy projects on ASU's campus through funding from a five dollar student fee instituted by ASU students in 2005. The group has supported biofueled busses in Boone and photovoltaic installations, but this will be their first wind turbine.

The group made concerted efforts to go about their planning in a manner that would include the community as well as being as scientifically accurate as possible. Learning from the resistance other wind projects have been met with in Western North Carolina, the group made sure to get the project's neighbor—in this case the Broyhill Inn—on board before going through the permitting process.

The area adjacent to the Broyhill Inn was a somewhat obvious choice to host the turbine, because it is simply the best wind site on university-owned land. The site has high class 2/ low class 3 wind,

*Continued on next page*

# APPALACHIAN WIND: Good Things Come in Small Packages

Story by Sarah Vig

Though the image of large industrial-scale wind turbines has become common, seen on PowerShift T-shirts and sprouting out of cornfields in Iowa and mountains in Tennessee alike, not every wind turbine towers on the skyline.

Wind turbines are made in a number of smaller sizes, more suitable for residential application and adaptable to different average wind speeds. This allows home or property owners to invest in and generate their own power.

“Small wind” is generally regarded as any turbine less than 100 kilowatts, but turbines as small as 40 watts can provide enough electricity to pump water.

At the small wind research and development site on Beech Mountain near Banner Elk, N.C., a small number (usually between three and five) of these smaller turbines are running simultaneously. Here, small wind turbine manufacturers can donate models to be tested by Appalachian State University students, faculty and staff for reliability and performance.

Depending on their size and site, the turbines can either be grid-tied or used as battery chargers.

A grid-tied system is eligible for subsidies from green power purchasing programs, such as Tennes-

*This 10 kilowatt Bergey turbine, erected by a family in Haywood County, NC, generates approximately 14,000 kilowatt hours per year—more than enough electricity to power the family’s home. Excess electricity is then sold back to the grid. Total cost for the system was approximately \$40,000. Photo courtesy of NC Green Power*

see Valley Authority’s Green Power Switch Program or NC Green Power. These programs offer a three to four cent premium payment per kilowatt hour above the standard rate for green power generators.

Battery charging turbines can be useful for remote locations or entirely off-grid systems, which typically use a combination of renewable energy technologies and energy efficiency to first reduce and then meet energy demands. Battery-charging systems can also be useful for very low-demand sites such as boats.

Smaller wind turbines allow individuals to take green power generation into their own hands, deciding what size and type of turbine suits their needs and best takes advantage of their wind resource.

According to a representative from the Small Wind Initiative, small wind turbines can work on any site with at least Class 2 wind resources (average wind speeds of five mph at 10 meters up and over six mph at 50 meters up).



## Wind Energy for Boone

*Continued from previous page*

meaning at 50 meters up the wind blows at an average of 6 miles per hour. These wind speeds are right at the threshold rate for the turbine to produce power.

“Getting your neighbors on board is extremely important,” explains project manager Crystal Simmons. Though she said Broyhill Inn manager Doug Uzelac came in with some reservations, after hearing REI’s proposal and seeing their research—which included studies on noise, migratory bird and bat patterns, ecologically sensitive lands and flicker effects—he agreed to be on board.

After Uzelac’s approval, the group got the necessary zoning permits and approvals from the university, found a local contractor to do all the onsite work, and held a community forum in early March to present information and hear any concerns. The forum turned up only positive remarks

*Local contractors lay the foundation for a new wind turbine on Appalachian State University’s campus in Boone, N.C. The foundation had to cure one month before the turbine can be erected. Installation is scheduled to start right after press time. Photo courtesy of Crystal Simmons*

from students, alumni, administration, community members, and even Boone’s mayor. Simmons said the response was so positive she was “kind of shocked,” expecting to have had some skeptics in the audience.

Admittedly, the project did not have to face some of the obstacles faced by many other wind projects. REI had the benefit of a supportive landowner, a single



neighbor, a site that raised no viewshed issues or objections from the 1983 Ridge Law, which prohibits structures that rise above 500 feet from the adjacent valley floor and—though it provides an exemption for “windmills”—has been used by opponents to argue against wind power on peaks, and a mission that goes beyond economic payback.

“REI’s mission is two-fold,” Simmons

explains, “to offset the university’s use of fossil fuels and to serve as outreach and education to students.”

Though class 2 wind is not as ideal as class 4 or 5, the wind turbine will do some to offset the university’s fossil fuel use, providing almost 14,000 kilowatts of electricity in each year of its 20-25 year lifespan. Even selling the power back to the grid at 10 cents per kilowatt hour, the turbine will never pay back the \$520,000 cost of the project in simple financial terms. According to Simmons, the costs averted by generated green power are more than just a few cents per kilowatt hour. “When you determine the costs of [wind] power, you don’t have to factor in the price for the children who have asthma, etc.,” she says.

Beyond kilowatt hours, the REI and the university hope that the presence of a turbine on campus will show students and community members what wind power today looks like. “Wind in our region has to overcome perception,” Simmons says, “as we see projects actually happen we’ll see perception adjusted. People will say ‘It’s not so bad, and, it’s actually good,’ or ‘Hey, this is not that big old thing on Howard’s Knob.’”

# APPALACHIAN WIND: Remembering the Whooshies of '79

## Appalachia's first industrial scale windmill attracted praise, condemnation and cranks

Story by Bill Kovarik

They said that Boone, NC's wind turbine didn't work, that it was too loud, and that, like some kind of gigantic drunk, it attracted wierdos.

Well, two out of three.

Appalachia's first wind power project, built in 1979, did work – sort of. The \$30 million twin bladed NASA turbine did generate two megawatts into the local grid for a while.

When it was dedicated on July 11, 1979, it was hailed as one of the experimental energy technologies that would “break the OPEC stranglehold.”

But it was outdated when it was built, and within a year, its operations would be curtailed on weekends because of an “annoying, swishing noise” that affected people and TV reception.

By 1983, it was shut down and sold for about \$50,000 – the value of its scrap metal, and called a “failed experiment.”

Historian Natasha Thompson rejected that conclusion in a 2003 paper. “Despite the problems that plagued the project... the Mod-1 project did not deserve its reputation as a complete failure,” Thompson said. “The machine provided scientists with important information on the feasibility of using wind turbines to generate electricity.”

### The times they were a'changin'

Boone's MOD-1 windmill was one of a series of experiments into wind power that were a reaction to the two OPEC oil price shocks of the 1970s.

Originally designed by NASA at the height of the space program using high-tech contractors, four “Mod-O” wind turbines of increasing size were built in Ohio and New Mexico. The Boone MOD-1 windmill was to be the first of an industrial line of turbines.

The MOD-1 design was based on a German design. It had two blades facing downwind and a cross-braced tower which created a large wind ‘shadow’ – a problem that had been noticed on a MOD-0 model but not corrected. Another problem was that the MOD-1's blades were made from steel, not the fiberglass composite first envisioned.

A third problem, according to wind historian Darrell M. Dodge, was that in borrowing the German design, NASA engineers did not notice that a flexible hub was used between the top of the tower and the generator housing called the nacelle. The combination of the three problems created enormous stresses on the machine.

“NASA engineers were astounded by the huge dynamic loads (generated) whenever a blade entered the dead space behind the tower,” Dodge said.

The initial response was to downsize the generator from 2 megawatts to 1.5, which allowed a slowing of the turbine speed from 35 rpm to 23 rpm. The downsizing eliminated most of the noise complaints.



And so, NASA engineers who thought they understood aerodynamics found they had their hands full trying to understand the dynamics of wind machines. The attempt to design a wind machine from the top down had proven far more difficult than expected.

### Wooshies take the stage

Marie Freeman, a photographer at Appalachian State University, remembers the times on Howard's Knob fondly.

“The views from the Knob were fantastic at the time so it became a sort of lover's lane,” Freeman said. “We would hike up the mountain, stare in amazement at the gigantic windmill, then watch the sunset on the town of Boone.”

Freeman and Boone native Tony Hagler nearly made a faux-documentary about the adoration that the windmill created. It was to be entitled “Whither the Whooshies?”

“Sadly, in those pre-video days, the costs (of a film) proved beyond my fund-raising abilities,” Freeman said.

But one notable event, Freeman said, was the reaction when Appalachian State University students heard about the arrival of a TV camera crew on the Knob.

“The townies / students moved quickly, donning bed-sheets and beads, picking up drums and whatnot, and then racing up the mountain so that when the film crew arrived at the top of the Knob, they found a bunch of freaks sitting around chanting prayers.”

“When the TV people asked them who they were and what they were doing, the locals gave them the straight-

NASA's MOD-1 experimental windmill was dedicated on Howard's Knob, in Boone, NC, July 11, 1979. It represented the alternative response to the energy crisis and was one of the first major experiments in commercial scale wind power in the US. It was dismantled in 1983, although it could have been repaired for a fraction of its original cost, partly because of noise and partly because design questions had been answered. A new generation of wind turbines would face upwind, use closed towers and employ a better-balanced sets of three blades instead of two. Photo by NASA, courtesy of The Mountain Times

faced answer that they were “Whooshies,” and that they worshipped the great windmill god “Nay-zuh” (the windmill had “NASA” written on it) because it “brought energy from the heavens down to the peoples of Earth.”

“With the TV cameras rolling, these Boonenites proceeded to act the perfect fool.” Apparently the TV crew fell for the tale.

### The take-down

The immediate reason for dismantling MOD-1 was the failure of 22 bolts in the drive shaft. With repair costs approaching \$500,000, the Dept. of Energy decided it would cut its losses and take the windmill down.

But the shift in the nation's political mood was an even more important factor. With the election of Ronald Reagan, budgets for renewable energy research were slashed and even the solar collectors were taken off the roof of the White House.

The windmill came down in 1983, much to the chagrin of the Whooshies, who lost the object of their worship, but who are still remembered in the bars and blogs of Boone, NC.

A second and third line of MOD turbines followed, and all were dismantled after a few years of operation. The government's wind research program, by the 1987, had crested \$427 million at a time when commercial wind farms were already under development in California and Europe.

The MOD program was one of the most spectacular research failures in history, wrote Paul Gipe in the 1995 book, *Wind Energy Comes of Age*. Research in Germany and the US was channeled through large corporations and approached on a theoretical basis, with almost no guidance from practical experience.

In contrast, Danish windmills, which now dominate the world wind energy industry, were developed from small, reliable crafts techniques that were gradually scaled up, Gipe said.

Historian Matthias Heymann reached a similar conclusion, calling the top-down research program an example of “technological hubris” in a 1998 article in *Technology and Culture*.

In the end, the Howard's Knob wind project not only helped the country learn about wind power, but also taught a valuable lesson about the need to integrate ground-up technical know-how with top-down theory.



# APPALACHIAN WIND: Scientists Search for Conservation Strategies

Story by Bill Kovarik

Increasing numbers of windmills will pose threats to bats and migratory birds, scientists have warned in recent years, unless conservation strategies are put into place.

Many states, including Virginia, are beginning to include stringent monitoring and mitigation plans in the wind energy permitting process, and a set of federal guidelines from the US Fish and Wildlife Service is under development.

In a 2006 study of windmills and bird conservation, the National Academy of Sciences pointed out that millions of birds are killed each year by cars, airplanes, tall buildings, power lines and cell towers. Similar studies by the National Wind Coordinating Collaborative found that cats, buildings, hunters, vehicles and cell towers killed over 1 billion birds in the U.S. every year.

In 2007, the Audubon Society said that it "strongly supports

properly-sited wind power as a clean alternative energy source that reduces the threat of global warming." In a statement, the society said that wind power facilities "should be planned, sited and operated to minimize negative impacts on bird and wildlife populations."

Perhaps the worst example of wind farms affecting bird populations comes from California, where over 5,000 wind turbines in the Altamont pass have killed over 26,000 birds in the past 20 years, according to the Audubon Society. Strategies

to reduce bird deaths have been worked out in court, but (as Dawn Stover notes in this issue) the road to compromise has been rocky.

Offshore wind farms may be among the safest kinds of developments for birds. In a study published in March 2009, Peter Rothery and colleagues observed offshore wind farms near Blyth, England for 26 months before turbine construction, seven months during construction, and 32 months after construction. No collision deaths were observed over 352 hours. "Most seabirds flew below the height of the rotor blades," Rothery said.

Wintering farmland birds in Europe are also not affected by wind farms, according to an article in the Journal of Applied Ecology by CL Deveraux, who said, "This should be welcome news for nature conservationists, wind energy companies and policy-makers."

Bat populations that congregate



Townsend's big-eared bat. Photo by Bureau of Land Management

on ridgelines are a particular problem for Appalachia. One 2005 study found that during a six-week study period, 398 bats were killed at the Mountaineer wind farm in West Virginia and 262 bat fatalities were observed at the Meyersdale, Pa. wind facility. The study found that the deaths were not clustered around specific turbines, but rather tended to occur on specific days and in early evening, when food and other conditions brought large numbers of bats near the turbines. Researchers also found that bats were sometimes attracted to wind turbines.

This has led to recent research into using high frequency sounds to make turbines less attractive to bats (by ultrasound) and use of radar to decrease speed or shut down wind turbines during periods of high bat activity.

## For more information

**Bat Conservation International**  
www.batcon.org

**Audubon Society**  
www.audubon.org/campaign/windPowerQA.html

**National Wind Coordinating Collaborative**  
www.nationalwind.org

**US Fish & Wildlife Service wind energy guidelines**  
www.fws.gov/habitatconservation/wind.html

**Opposing some wind development**  
www.vawind.org

**Promoting some wind development**  
www.awea.org

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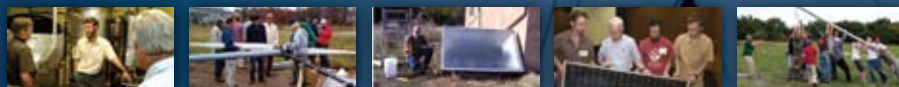
August 26 - PV and the National Electric Code with John Wiles

September 12 - Small Wind with Brent Summerville

September 26 - 27 - Solar Thermal with Chuck Marken

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# APPALACHIAN WIND: The winding road to Tazewell

Story by Bill Kovarik

The two-lane road to Tazewell, Va. fades to gray like a pair of blue jeans in an old photo. It winds past small but prosperous homes, along pastures rimmed with split rail fences, and through some of the most beautiful mountains in Appalachia.

Once it simply connected this quiet town to the nearby coalfields and the outside world.

Today, the road to Tazewell leads to a crossroads of a contentious energy and environmental debate.

Earlier this year, Richmond, Va.-based Dominion Power and British Petroleum (BP) announced the purchase of 2,500 acres of mountain and proposed the Bluestone Wind Project—a 60 megawatt, 30 windmill development along the ridgeline of nearby East River Mountain, a ridgeline that runs south of Bluefield and Tazewell, Va.

Dominion is one of the nation's largest electrical utilities, running hundreds of nuclear, coal, and gas generating facilities. BP is one of the world's largest oil companies. The two energy giants have partnered on several other wind facilities in other states, but the Tazewell project is the first in Virginia.

In a series of public hearings this winter and spring, Tazewell residents have expressed support, outrage and every possible position in between.

Some, like Alex Payne, believe that wind power can create jobs for the region. "Everybody says they'd like to see more economic development so their sons and daughters don't have to leave the county," he said. "We need to start with green energy."

Others, like Mark Tyson, believe wind power itself is an outright scam. "The only thing green about wind energy is the money that's coming from the government to build these wind farms," he said.

Other opponents like Ann M. Robin-

**"Everybody says they'd like to see more economic development ... We need to start with green energy."**

— Alex Payne

**"We feel our mountains are beautiful and should be protected."**

— Frazier Miller

son, have a more nuanced position. "I am not against wind energy -- I just don't see how this project will benefit anyone but BP [or] Dominion," she said. Since they have made no promises to stop coal use, she believes the project "will not stop or even reduce one single ounce of CO2 or prevent mountaintop removal."

The wind project is one of two planned by BP and Dominion for Virginia. The other will be located in Wise County.

One Wise County resident saw the wind project in a different light. "Over 20 percent [of Wise County] has been strip mined," said Henry Oppenheimer. "We live in ground zero for coal production in the U.S. Our county is sick, our streams are dead and our people are suffering. Our water supply is being poisoned every day. We desperately need renewable energy to replace coal production because it is destroying our way of life... Wind is the most environmentally friendly option we have today."

At the heart of the political process for BP and Dominion is the question of how a county will regulate zoning rules, especially property line setbacks. Although Tazewell doesn't have a zoning ordinance, it is considering a safety ordinance that would ensure windmills were set back three times their height from a property line or residence.

Property lines typically run along ridgelines, where there are no buildings or people

living, so the very large setbacks from property lines are not necessarily safety oriented. The effect of requiring a 1,200 foot setback from a property line, without the possibility of permission from the landlord, would be to make the wind farm impossible, BP wind developer Jim Madden said.

In a planning commission hearing in May, many people in the audience seemed to believe that wind turbines require more energy than they produce. When Madden insisted that wind turbines were net energy positive, several dozen people in the crowd groaned, saying "that's not true."

In the same planning commission hearing, Madden was asked about wind power subsidies. "Every source of energy receives a federal subsidy--wind energy

is not an exception," Madden said. "It receives two cents per kilowatt hour for 10 years. But, the subsidies received by wind energy and all renewable energy industries are miniscule compared to the subsidies that are provided for other energy sources."

The reaction from the crowd was loud moaning and shouts of "you're wrong" and "that's not true." In response, the chairman pounded the gavel and shouted: "Please be quiet in the audience."

"Many of us believe that the only real future for us economically is the tourist industry," said Tazewell resident Teresa Paine. "When I first heard about this project I was heartsick. It's not just a matter of losing the value in my property that I have poured so much of my time and financial resources into. I also love East River Mountain in a way that I can only describe to you as spiritual."

"Wind power is being forced on the American people without regard to the negative fallout of wind turbines," said Bluefield resident Frazier Miller. "We feel our mountains are beautiful and should be protected."

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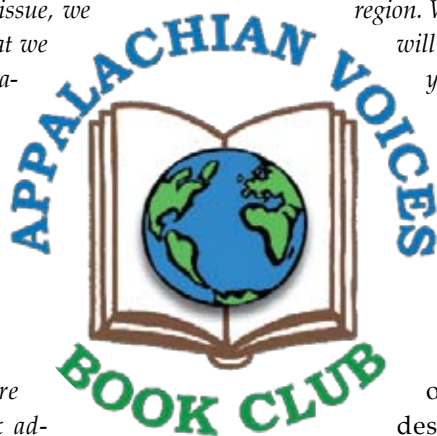
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# SOMETHING'S RISING: Appalachians Against Mountaintop Removal

*Editor's Note: In this issue, we would like to introduce what we hope will become a regular feature in this publication, the Appalachian Voice Book Club. Every issue, we will select a book, provide you with a short review and questions to guide your reading and discussion, and point you to resources where you can learn more about the topics the book addresses. Throughout the course of this feature, we hope to cover all genres of literature and read authors from across the Appalachian*



*region. We also hope this feature will encourage you to start your own book clubs that explore environmental issues and the literary treasures of the region. Enjoy!*

-----

Authors Silas House and Jason Howard, both natives of Eastern Kentucky, describe themselves as "children of [the] war [against mountaintop removal] and children of Appalachia." Their past and their passions

inform them as they explore a tragedy through its victims in their collaborative endeavor, *Something's Rising*, an intensely personal and frequently moving series of narratives of fellow Appalachians. The book is part oral history, part ecological education with elements of both the literary and the scholarly.

Each chapter profiles an Appalachian engaged in the fight against mountaintop removal mining. House and Howard attempt to provide the most complete sense of each unique individual by giving the reader a sort of "character study" at the be-

ginning of each chapter, an intricately assembled mix of personal history, snippets of interview and small details of personality. These sections allow the reader to have a fuller sense of the person before reading their unfiltered words, and to experience the tenderness and kinship the authors

feel with each individual they have chosen to profile, whether they are famous musicians like Jean Ritchie or Kathy Mattea or old friends like Anne Shelby and Jessie Lynne Keltner, sisters who perform in a band, Public Outcry, with the two authors.

-----

*Review by Sarah Vig*



## Reading Questions

**1** Many of the narratives mention the role unions have played in supporting mountaintop removal mining. It seems that some of this anger, especially from former miners or mining families like Shoupe and Bonds, stems from the fact that the unions have historically been the only tool to fight the coal companies in the region. How do you interpret their sense of betrayal? What do you see as the union's role in the continuation of this mining practice?

Do you think that role could change?

**2** Many of the people profiled in this book mention their deep connection to place. How do you see place being connected to culture and memory? In what ways do you see the mountaintop removal mining to be affecting these individuals' sense of these things? Do you believe people have a right to have those things respected?

**3** There are conflicting notions of what kind of movement needs to occur in order to change the direction of stripmining in Appalachia: On page 60, Denise Giardina says that in order for change to occur, "Mountaintop removal needs everybody against it. Change is not going to come from this region, even." Nathan Hall, however, feels differently. He says on page 215, "As long as it's a movement that's based on outsiders, then it will always be weak." Why do you think these different perspectives originate? Where or who do you think needs to join the movement to make it effective? After reading this book do you feel differently than you did previously?

take that and not try to make myself feel better by blaming somebody. I don't think I'm going to do any good that way" (129). Bonds however, seems to be more of the philosophy that the coal companies need to be taken to task for the injustices she feels they have inflicted upon her people. Which view do you align more with? Do you think there needs to be a single approach to any movement? Do you think either approach detracts from their cause?

**4** Similarly, there are very different approaches to confronting problems presented perhaps most clearly by Kathy Mattea and Judy Bonds. Mattea says, "For me, when I get angry about it, or I get really sad about it, I have to

**5** House and Howard chose to profile a number of individuals who spread awareness through artistic expression (Ritchie, Mattea, Giardina, Shelby and Keltner). In many ways the book itself also uses artistic expression to contribute to the cause. What role do you think arts and literature play in social awareness? In activism? After reading this book, do you feel that it has accomplished its purpose?

## Online Resources

### On YouTube

- ▶ Video of Jean Ritchie singing "Black Waters" to images of mountaintop removal: [www.youtube.com/watch?v=kFVdp1KJiqM](http://www.youtube.com/watch?v=kFVdp1KJiqM)
- ▶ Video of Kathy Mattea singing "Black Lung" from her album "Coal": [www.youtube.com/watch?v=3RVVSCR2I8](http://www.youtube.com/watch?v=3RVVSCR2I8)
- ▶ Winchester Sun coverage of I Love Mountains Day 2009 in Frankfurt, Ky. a rally sponsored by Kentuckians For The Commonwealth in support of the Stream Saver Bill: [www.youtube.com/watch?v=i8ZJoWXHay4&feature=related](http://www.youtube.com/watch?v=i8ZJoWXHay4&feature=related)

- 🌐 **Coal Tattoo (blogs.wvgazette.com/coalattoo):** The coal-focused blog of Charleston Gazette Reporter, Ken Ward Jr. Amazingly comprehensive, with up to date news and analysis on mountaintop removal, sludge and slurry, and other coal issues
- 🌐 **Jeff Biggers on Huffington Post (huffingtonpost.com/jeff-biggers):** Jeff Biggers, who wrote "United States of Appalachia," regularly blogs on mountaintop removal news and the people fighting it

### Further Reading

- 📖 United Mine Workers Association President Cecil Rogers' Official Statement on UMWA's position on including surface mine workers in UMWA: [www.umwa.org/index.php?q=news/cecil-roberts-letter-umwa-surface-mining-members](http://www.umwa.org/index.php?q=news/cecil-roberts-letter-umwa-surface-mining-members)

### Websites and Blogs

- 🌐 **I Love Mountains (ilovemountains.org):** A comprehensive resource for mountaintop removal information including interactive maps, news, and information about current legislation

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# Coal Country: Film about Mountaintop Removal Mining to be Screened July 11 in West Virginia

Story by Linda Coutant

Whenever you turn on your lights or air conditioning, filmmaker Mari-Lynn Evans wants you to consider who pays the price for that electricity.

"The people of Appalachia will be hard to forget after people see their faces and hear their stories," says Evans, a native of West Virginia whose documentary "Coal Country" will be released this fall by Sierra Club Productions.

A free screening of Evans' film – which examines the impact of mountaintop removal coal mining on Appalachia's citizens and economy – will be held in Charleston, W.Va., July 11 at 7 p.m. in the South Charleston Museum's *La Belle*

Theatre. The public is invited.

Evans and director Phylis Geller spent three years working on "Coal Country." They began the project after Evans saw the environmental and human impact of mountaintop removal coal mining in her home state and other parts of Appalachia while interviewing residents for "The Appalachians," a three-hour series she released with the Sierra Club in 2005.

"It changed my life," she said of her visit to mountaintop removal mining-damaged areas. "I came back home to Ohio and couldn't stop thinking about it. I decided to make a film about mountaintop removal in the larger perspective of the coal industry and its role in U.S. energy con-

sumption. It's important for people to see this film and see what's happening as a result of mountaintop removal."

Evans and Geller visited the homes of people directly affected by the mining process, who tell of health problems, dirty water choking their wells and streams, and the loss of the area's natural beauty. They also talked to miners and coal company officials, who are concerned about jobs and the economy and believe they are acting responsibly in bringing power to the American people.

"Coal Country" also explores the region's options for future economic devel-

## WHEN TO WATCH

Premiere of  
"Coal Country"  
July 11, 7 p.m.

La Belle Theatre, South  
Charleston Museum  
Charleston, W.Va.



opment, including wind and solar power, which could simultaneously diversify the region's economy and preserve the natural resources for future generations.

Learn more about the film at [www.sierraclub.org/scp/coalcountry](http://www.sierraclub.org/scp/coalcountry)

## Coal River featured in two upcoming cinema releases

The community of Coal River, West Virginia, which has been the center of a battle between residents wanting to save Coal River Mountain and a coal company planning to destroy it, is now at the center of two upcoming films.

### On Coal River

"On Coal River," directed by Francine Cavanaugh and Adams Wood, is a documentary

shot over a four-year period that follows the transformation of four remarkable individuals as they uncover the toxic effects of America's increased demand for cheap coal and begin to fight for the survival of their way of life, and the lives of future generations. At the center of their concern are their children whose school building is located below a mountain valley dam holding 2.8 billion gallons of coal sludge. Produced by Jullian Elizabeth

O'Connor, the film is currently in soft release and slated for full release sometime this summer. Visit [www.oncoalriver.com](http://www.oncoalriver.com) for updates.

### Coal River

Michael Shnayerson's non-fiction book "Coal River," which focuses on a legal battle between environmentalists and the coal industry in West Virginia, is being made into a film by United Artists. Peter Horton has been hired to write and direct the

film adaptation. Horton, an actor-turned-filmmaker, is executive producer and director of NBC's "The Philanthropist" and executive producer of the CW's "Body Politic." Paul Haggis, who won an Academy Award for Best Motion Picture for "Crash" in 2006, is the film's producer. *Publishers Weekly* calls Shnayerson's first person reporting an "incriminating indictment" of the coal industry. "Coal River" was published in 2008 by Farrar, Straus and Giroux.

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AN APPALACHIAN SUMMER FESTIVAL



Mike Keefe THE DENVER POST 9-6-08 www.caglecartoons.com

June, 8 2009 -- Oil tycoon T. Boone Pickens met Southern governors at a conference in Biloxi, Mississippi to discuss the future of energy.

# Editorial

## Making Realistic Choices

Proposals for new wind energy projects are generating controversy in Appalachia.

Opponents of wind projects, such as the ones in Tazewell or Highland counties of Virginia, or Barbour and Randolph counties of West Virginia, are worried about biodiversity, about safety, about property values and about views of the mountains.

This is perfectly understandable. The legitimate concerns of wind power opponents cannot be dismissed, nor will they be. The monitoring and mitigation plans being developed by scientists working with the US Fish and Wildlife Service, along with emerging state regulations, are keys to appropriate wind power development.

We understand the concern, but what's hard to fathom is the extent to which wind power opponents feel that they live apart from the rest of the world. They argue for the mountains they love as if they can either take wind power or leave things as they are.

We believe that is not the realistic choice. It is vital to consider the impact of larger events and forces, and to recognize that things are simply not going to stay as they are. The climate is rapidly changing and the mountains and watersheds of Appalachia are being sacrificed at an alarming rate.

We have to conclude that the realistic choice is between renewable energy, leading to an Appalachia worth living in, and the current unsustainable path, leaving an arid, flattened, poisoned wasteland in its wake.

True, renewable energy sources like wind power aren't perfect, but so far, they are the best answers we have.

In the end, if we choose a livable, sustainable Appalachia for tomorrow, we cannot complacently choose business as usual today.

*vation projects. Also, it's worth noting that most people opposed to mountaintop removal mining do not come from outside the region. In fact, public opinion polls show that a large majority of residents oppose mountaintop removal coal mining and prefer to save the region's environment.*

## Siting is critical for wind projects

My whole life, I have been surrounded by the beauty and protection of the mountains. I too Love Mountains!

The proposed wind energy project in Tazewell County will not stop or even reduce one single ounce of CO2 or prevent Mountaintop Removal. I am not against Wind Energy, I just don't see how this project will benefit anyone but BP/Dominion.

*Continued on next page*

## Letters to the editor

Appalachian Voice welcomes letters to the editor and comments on our website. Letters are subject to editing due to space limitations (letters can be read in full on our website). The views expressed in these letters, and in personal editor responses, are the opinions of the authors and are not necessarily the views of the organization Appalachian Voices. Write to editor@appvoices.org.

### Jobs depend on mountaintop removal

To the Editor,

I am writing in regard to an e-mail that was forwarded to me by a mountaintop removal opponent. My husband mines coal by mountaintop removal, and is right now laid off.

My husband and I were born and raised in the great state of West Virginia. We believe it is one of the most beautiful places to live. My husband is an avid outdoorsman and loves to hunt and fish. However, lately we are being forced to consider moving.

The thing I find most intriguing is that the majority of the people who are here protesting mountaintop removal were not raised here in the hills of West Virginia, but Montana and various other states.

I agree whole-heartedly that we need renewable energy sources such as wind, solar, and nuclear power, but those things are well into the future, and our family is suffering now. It takes approximately ten years to construct a nuclear plant and for it to come online! How long before wind and solar sources are in place and begin to be used? Aren't you also fighting a battle against all those who are opposed to the

wind turbines? And around and around we go. This feud is never-ending. It also takes at least a two-year technical engineering degree to work in the fields of wind, solar and nuclear powers. We are on the verge of losing everything that we have worked so hard for now, and for what? So that someone can say that they have a victory. Well congratulations! I hope it's worth it to you.

Why West Virginia and why now? Our economy is bad enough, but West Virginia had dodged the bullet the nation had taken, due to the coal economy. Doesn't the way that coal is mined in China bother you? They are a third-world country and are not held to the strict guidelines that the United States are. I wonder what the carbon footprint is there? Is that not a battle you want to fight because you would rather be reliant on a foreign source for energy? Our oil comes mainly from foreign sources, so why not coal? Apparently President Obama is more concerned with making friends than making jobs. President Bush wasn't an enemy of the environment, he just understood that making rash, overnight decisions would cost people jobs. He didn't cower down just because a few people thought it was wrong.

Al Gore is the voice of the environmen-

talists, but what a hypocrite! He wastes more energy and does more harm to the environment by heating his pool and flying around in his private jets. My mom taught me a few life lessons that may be of great value to you also such as, if it isn't broke...don't fix it. Mind your own business. Sweep around your back door before you sweep around mine. Don't throw a brick at a glass house. Are you getting my point? Maybe you could reconsider your fight. How about the war on AIDS in Africa, helping disabled veterans, finding a cure for cancer or working in a soup kitchen (you may even see me and my family in line). Maybe you could move back home. Your family misses you, but we won't.

Sincerely,  
Scott and Heather Underwood

Editor's note: *We sympathize with anyone unemployed. Recent mine layoffs have been due to low demand and competition from western coal, and even mining executives don't see that trend changing, no matter what new environmental regulations are eventually put in place. There is hope. Skilled people will soon be needed to rebuild the nation with jobs like pouring footers on windmill sites or contracting energy conser-*

# Wind Power: A View from the West

By Dawn Stover

Climate change is the greatest environmental challenge of our time, and virtually everyone agrees that renewable energy must be part of the solution. Unfortunately, the scramble to implement “green” technologies—primarily wind power—is rapidly transforming landscapes across the United States. And in the rush to erect turbines, wildlife impacts are too often overlooked or underestimated.

Many Eastern environmentalists seem to believe that wind power is just fine for the “empty” expanses of the American West but not appropriate for forested Appalachian ridges. The inconvenient truth about wind power, however, is that turbines take a heavy toll on wildlife here in the West too. And not just at California’s Altamont Pass, which wind industry representatives often point to as a “unique” site because turbines there have killed so many golden eagles and other birds.

In 2007 the National Wind Coordinating Committee—which includes representatives from the wind industry, government agencies and environmental groups—estimated that wind turbines would kill 900,000 to 1.8 million birds annually by 2030. Those numbers are already out of date because the wind industry is growing much faster than predicted, thanks in part



*Smaller wind turbine blades turn just at cruising height for the raptors of Altamont Pass, a flat, sloping terrain with strong steady winds located east of San Francisco Bay. The open lattice towers also invite nesting. An estimated 1,700 to 4,700 birds are killed every year, or around one bird for every one or two windmills per year. Wind proponents say taller towers will help solve the problem, but others say the jury is still out. Photo by Bill Kovarik*

to tax incentives and state mandates for the development of renewable energy. The industry’s cheerleaders are environmental groups eager to be “for” something, and well-meaning utility customers willing to pay more for green power.

The U.S. Department of Energy claims that wind power could meet 20 percent of our nation’s electricity needs by 2030. However, doing so would require a three-fold increase in the already-rapid rate of installations. University of Cambridge physicist David MacKay recently calculated that even if Americans were able to reduce our energy demands by half, we would still need to cover an area the size of California with wind turbines just to get a third of our power from wind.

Large wind projects are sprawling industrial developments. A single project can have as many as 500 turbines connected by a network of heavy-duty access roads and power lines. The 400-foot-tall machines, with blade tips spinning at speeds that can exceed 200 mph, are not your father’s windmills.

The jury is still out on whether modern turbines kill fewer birds and bats than older, smaller models. The main lesson learned from studies of wildlife mortality at existing wind projects is that location is everything. If wind turbines are responsibly sited—set back from ridgelines, for example—their impacts can be kept to a minimum. Unfortunately, wildlife concerns do not currently play a major role in siting decisions, which are typically left up to local officials with little expertise. The result is that wind projects are being installed where transmission lines are readily accessible and where prevailing wind conditions show the highest probability for economic profit, with little regard to considerations such as migration routes and cumulative habitat impacts.

Pre-construction surveys can help identify the areas that are best suited for wind development. However, wind developers hire the consultants for these studies, and post-construction monitoring often shows that the wildlife impacts are more severe than “anticipated.” The first wind project constructed in my county

killed at least eight times as many raptors as predicted in its first year of operation, and twice as many bats.

I live in the Pacific Northwest, where hydropower once held the same promise that wind power does today: clean, renewable energy without all those dirty, heat-trapping air pollutants. Unfortunately, hydropower has had unintended and unanticipated consequences, decimating salmon runs on the Columbia River and its tributaries. But that hasn’t stopped energy companies from turning the hills above the river into the latest sacrifice zone, with larks and kestrels now going the way of the coho and chinook.

I support the responsible development of wind power, but I also believe that wind turbines kill more than birds and bats. They kill the ethic of conservation. They hold out the false promise of boundless growth and risk-free technology. They suggest that there is a silver bullet that will enable us to reverse climate change without changing our lifestyles.

We’ve all seen those pretty pictures of white blades spinning in blue skies, but how many of us have taken a hard look at a decapitated hawk or a bat with an exploded lung? That is the price of growth. Before we carve deeper into the wild, it’s time to consider the consequences—and whether it might be better to address our energy problems through conservation, improved efficiency, population control, and a simpler way of life.

*Dawn Stover lives in Klickitat County, Washington, a hotspot for wind development. She has served on technical advisory committees for three wind projects, and has been an appellant in several cases involving wind project siting.*

## Letters to the editor

*Continued from previous page*

They have made no promises or pledges to stop their coal usage. It is only adding a dismal amount of power to the grid. There are much less destructive sites for Wind Farms than on the Mountains of Appalachia.

Proper siting of Wind Farms is critical. In the Midwest where you have vast amounts of land that are sparsely populated and have the best winds. These areas may be more suitable. From what I have read, off shore sites may be well suited too. I am uncertain about the ecological effects of this. To destroy the integrity of the Appalachian mountains is a crime. Just as you fight to

stop mountaintop removal mining, we too want to protect our area from what we consider a destructive environmental disaster. This will not bring one clean cost efficient kilowatt of electricity to Tazewell County. The power generated will go back into the grid for resale to other larger communities. We are once again raped of one of our most beautiful resources our area has to offer - the mountains. Virginia would do better to begin a serious conservation effort if it really wants to make a difference.

Please rethink your position and help us with our fight. Check out [wvhighlands.org](http://wvhighlands.org) and [www.vawind.org](http://www.vawind.org)

Ann Robinson, Tazewell County



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# Inside Appalachian Voices

## Appalachian Voices Welcomes New Executive Director, Willa Mays

Appalachian Voices is pleased to announce the appointment of Willa Coffey Mays as our new executive director.

Mays brings 20 years of experience working with non-profit organizations, ten of those with groups focused on the environment, working in marketing, fundraising, leadership, and program development.

"To have an executive director with the breadth of experience and knowledge such as Willa Mays has is nothing short of a blessing for Appalachian Voices," said the organization's Campaign Director Lenny Kohm.

Mays' work with non-profit groups has taken her to North Carolina, Virginia, Montana, Idaho and Wyoming, and she has been involved with organizations as diverse as the Blue Ridge Parkway Foundation and the Greater Yellowstone Coalition.

"Appalachian Voices has a great reputation and it is an honor to be ED," Mays said. "More than that, it is a pleasure to lead

a group of talented and totally dedicated individuals who are working for something outside themselves."

Mays graduated from college with a BA in Psychology, and earned a dual Masters degrees in Business and Healthcare Administration at Pfeiffer University in Charlotte, NC.

Her first foray into environmental work took place at the beginning of her career, with High Point NC's Keep America Beautiful campaign. During her year with the organization, she developed the city's first newspaper-recycling program and a "keep your butts off the street" campaign to address the problems of cigarette littering.

After ten years working in a non-profit health care organization, where she honed fundraising, development, and leadership skills, Mays moved to Bozeman, Montana, to work for the Greater Yellowstone Coalition, an environmental advocacy organization that works to promote and preserve the ecosystem of the Yellowstone region.



Mays led fundraising, marketing, communications, and membership efforts for the coalition, successfully designing and managing a \$3 million "green" headquarters capital campaign and increasing the organization's membership from 8,500 to 13,000 in just three years.

She also headed the initial fundraising and community organizing efforts for the Snake River Wild and Scenic Campaign, a project that culminated in the river receiving conservation protection when President Barack Obama added 387 miles of the Snake River to the Wild and Scenic Rivers System this past March.

Mays was deeply influenced by theologian and ecologist Thomas Berry, and visited with him in Greensboro in 2004. "He was a saint with a deep environmental ethic," Mays said. "At that time he was deeply engrossed in a paper he was writing about animal rights. There are those people who think about the big picture...who are idealistic and seek a higher path."

In 2005, Mays returned to North Carolina to serve as Assistant Director of the Catawba College Center for the Environment (CCCE) in Salisbury, NC. While at Catawba, she tripled the division's mem-

bership and income in just two years, and created the EcoXplorers Club for parents and children. She also organized and led regional conferences addressing air quality, recycling, and leadership challenges, and developed the highly successful Environmental Studies Alumni Association.

In 2007, Mays accepted a position as Director of Development at the Blue Ridge Parkway Foundation, a job which was more in line with the conservation and advocacy work she had done with Greater Yellowstone Coalition. At the Foundation, Mays worked with the National Park Service, partners, donors, and foundations to generate the annual \$1.2 million budget, providing vital funding for Blue Ridge Parkway projects and programs that would otherwise go unfunded.

"We were really fortunate to hire Willa," said Matt Wasson, Director of Programs at Appalachian Voices. "She's the right person at the right time to take Appalachian Voices to the next stage. Under Willa's leadership, I think we'll have a greater focus not just on stopping the bad things that are happening, but on getting out into communities and making good things happen, like developing green jobs and renewable energy."

Mays' primary motivation is simple, she says. "I really care, and I've always been mystified when others don't seem to care. Fine people who live in the coalfields and have worked hard all their lives are losing their homes and quality of life for the greed of a few people who do not even live in the area they are obliterating...and the headlines are about what a celebrity did or didn't wear...its amazing. When is it enough to grab the attention of the world? When others make it an issue... and that is exactly what we are doing at Appalachian Voices."

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# Inside Appalachian Voices

## Team Beltway Weighs In: Clean Water Protection Act Reaches 151 Cosponsors

By J.W. Randolph

The federal Clean Water Protection Act (HR 1310) has reached 151 cosponsors in just under 4 months of cosponsor recruitment, Appalachian Voices 'Team Beltway' is pleased to announce. During the last Congress, it took 21 months to reach the same goal.

This shows that our grassroots work across the country to educate the public about mountaintop removal mining has had a positive impact on our efforts in Congress.

We are working diligently with our champions to set up hearings for the CWPA in the House and for the companion bill, the Appalachia Restoration Act (S 696), in the Senate. In the House, the CWPA will go to the Subcommittee on Water Resources and the Environment, and then on to the full Committee on Transportation and Infrastructure. Appalachian Voices has played a crucial role in garnering the support of 15 bipartisan members of the Subcom-

mittee, and 25 bipartisan members of the full T&I Committee. In the Senate, S 696 will go to the Subcommittee on Water and Wildlife, and then the full Committee on the Environment and Public Works (EPW). Appalachian Voices has garnered 6 bipartisan cosponsors in the Senate, including 5 members of the full EPW Committee.

Also this month, "Team Beltway" is excited to announce the arrival of our very talented intern team of Stanback Legislative Fellow Bethany Hill from Duke University and Sarah Hostyk of Appalachian State to Washington DC. In their first few days in the District, the team has already picked up a cosponsor of the Clean Water Protection Act (HR 1310) in Congresswoman Jackie Speier (CA-12), and have begun leading their own meetings with key members of both the House and Senate. Their presence is critical in allowing us to increase our capacity to reach out to more Members of Congress than we ever have before.

## Appalachian Voices' Attorney Puts Duke CEO Jim Rogers in The Hot Seat

While several dozen people were outside Duke Energy headquarters protesting CEO Jim Rogers' decision to construct new coal-fired power plants in North Carolina and Indiana, Scott Gollwitzer, Appalachian Voices' In-house Counsel, was inside asking questions at the annual shareholders' meeting.

When it was his turn, Gollwitzer briefly described the devastating social and environmental impacts of mountaintop removal coal mining for those present. According to Gollwitzer, approximately 50 percent of Duke's coal is extracted by mountaintop removal process because it is allegedly less expensive than other Central Appalachian coal.

Then Gollwitzer mused, "I think everyone in this room would agree that just because something is legal, say slavery, doesn't make it moral. I ask you then—and this is a yes or no question—just because mountaintop removal is legal, is it moral to burn it to maximize profits when alternative sources of central Appalachian coal are available at comparable prices?"

Rogers answered that "Duke will be looking to move away from mountaintop

removal coal mining as its existing coal purchasing contracts expire." He also expects "increased regulation of mountaintop removal from Washington, D.C."

"So it's neither moral or immoral?" pressed Gollwitzer. "It was a yes or no question."

"For us it's a little bit of a balancing act, but I think you're on the right side of this issue," replied Rogers. "It's not sustainable."

"Jim Rogers has all but admitted that burning mountaintop removal coal is immoral. This is a huge step in ending the destruction of the people, communities and ecosystems of central Appalachia," said Gollwitzer after the meeting. "Honestly, I was flummoxed by his candor because Duke has been working to scuttle state legislation that would prohibit the purchase of mountaintop removal coal."

The legislation Gollwitzer refers to, the Appalachian Mountains Preservation Act, would prohibit North Carolina's investor-owned utilities from renewing their contracts for mountaintop removal-mined coal.

## Virginia AV Office Opposing Surry's Behemoth Coal Power Plant

By Mike McCoy

AV's Virginia office is focused on preventing a behemoth of a coal plant from being permitted and built in the small town of Dendron, Virginia in the Hampton Roads area. Nine Virginia electric cooperatives are partnering in a 1500 megawatt coal plant that will have massive environmental impacts. The Old Dominion Electric Cooperative (ODEC) has started the permitting process, and before ODEC can move any further they must secure approval for the project from the "Local Governing Body" which in this case is the Dendron Town Council.

ODEC is trying hard to convince the Council as well as the town that this will provide jobs and not affect anyone's health, but of course, a quick search of an EPA website debunks those claims. Appalachian Voices, along with the Wise Energy Coalition are spearheading educational and organizing efforts in the area.



Appalachian Voices is working with a new group, "The Coalition to Keep Surry Clean," to reach out and grow the opposition. We hope to convince the Town Council that the coal plant is not the way to go.

In addition to gathering signatures and educating neighbors, we have purchased a few

hundred "No Coal Plant" signs, pictured, to add visibility to our movement. Within a week 250 signs were placed in people's yards, with 30 on Main Street. And how is this affecting the Town Council? The outlook is good.

Also, the Virginia office is welcoming a talented new intern, Jackie Pontious, who comes to us from Virginia Tech with a degree in Environmental Policy and Planning. She is doing research for possible legislation that would provide economic diversification in the coalfields as well as already providing critically needed help for our grassroots efforts across the Commonwealth.

## Former Appalachian Voices Director Mary-Anne Hitt Recognized by Alma Mater

Mary Anne Hitt, who served as Appalachian Voices' Executive Director from spring 2004 until November, 2008, recently received the University of Tennessee's Notable Woman award.

The award, given every year since 1995 by the University of Tennessee Commission for Women, honors "a woman whose accomplishments bring distinction to the university." Margaret Crawford, who serves as chair of the commission, says they were drawn to Hitt because she "exemplified a person who was committed to the type of work that she was doing as an undergraduate."

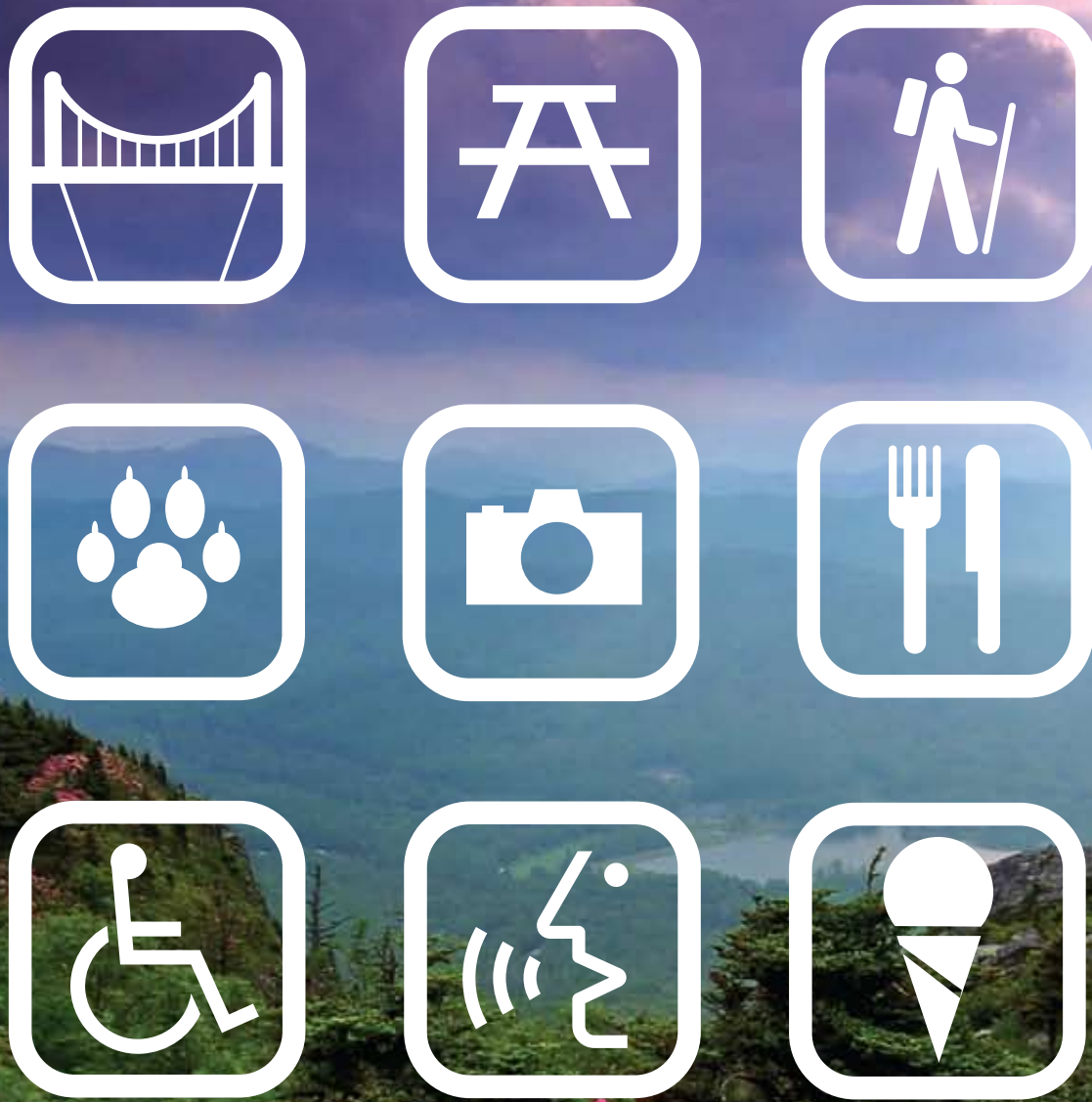
Hitt's thesis for UT's College Scholars program, entitled "The Greening of the Big Orange," examined campus policies concerning recycling, energy use and waste disposal, and has since become the



framework for the campus' sustainability agenda. She also founded the campus' first environmental group, SPEAK, or Students Promoting Environmental Action in Knoxville. The group continues to make an impact on the campus today.

Since graduating from UT in 1997, Hitt has worked tirelessly to end mountaintop removal in Appalachia. While at Appalachian Voices she spearheaded the partnership with Google Earth Outreach to use satellite images and the Google Earth tool to show the devastating effects of mountaintop removal mining in Appalachia. She now serves as the deputy director of the National Coal Campaign for the Sierra Club.





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# Naturalists Notebook

## The Modest Mayapple

Story by Alison Singer

What first caught my eye was the tightly wound green bundle atop the stem. They looked like closed umbrellas. "What are those?" I asked, pointing. "It's Jack-in-the-Pulpit," my friend told me, and I let the name slide over my tongue. I pictured a preacher clasping his hands in front of his congregation, his head bowed. "It's bloodroot," my father contradicted, and I imagined piercing the thick stem with a needle and watching red liquid ooze out of it.

What I'd seen, and was so enthralled with, was neither Jack-in-the-Pulpit, nor bloodroot, but *Podophyllum peltatum*, commonly known as the mayapple. Within a matter of days, the leaves had unfurled, spanning several inches, looking even more umbrella-like. They took over the ground, preventing me from seeing anything beneath their foliage. My favorite part of the mayapple is the flower peeping out from beneath the leaves, hidden from above, different from the typical flowering plants whose color bursts forth atop their stems.

Mayapples are different. Each May, all over the eastern United States and Canada, their flowers bloom. The plants are either one or two-leaved, and only the two-leaved plants produce flowers. If you look beneath the unfurled leaves, a delicate bloom emerges from the crotched stem (*Peltatum* is Latin for "shield-like," an apt term for the broad leaves that shield the flowers from view). The petals are milky white and about two inches across with a yellow center, making the blossom look

something like an egg.

While the flower blooms in May, the fruit which gives the plant its common name, does not appear until later in the summer. The "apple" is a yellowish fruit one to two inches long, and is the only part of the plant that is not poisonous (ed. note: unripe fruit are toxic like the rest of the plant, ripe fruit are described as soft, yellowish and have a cloyingly sweet smell). Though I have never tried one, the apple is described as tasting anywhere from completely tasteless to lemony.

Though the plant is poisonous, and classified by the FDA as "unsafe," there are many purported medicinal uses, most of which I fortunately have no need for. Native American tribes used to gather and dry the rhizome (the underground stem which can grow up to six feet in length), grinding it into a powder. They brewed the powder like a tea, and drank it as a laxative and cure for intestinal worms. In modern medicine, extracts from the plant are used to treat genital warts and skin cancer.

While not one to blithely disregard cancer treatments, my fascination with the mayapple stems primarily from its physically dramatic entrance. The initial sight: an aerodynamic structure, like a missile aimed towards the sky. Then the leaf, or leaves, slowly unwinds from the stem and fans out, arching over the ground. Were I tiny, I would happily grab the nearest mayapple leaf to cover myself with in a



Large leaves of the mayapple shelter a single white blossom, which later yields the plant's fruit. Photo by Rick Mark

long rhizomes, mayapples tend to grow in clusters, and they can be seen throughout the region, blanketing forest floors.

The flower that bows its head beneath the great leaves reminds me of a supplicant, which in turn reminds me of my own relationship with nature. While most flowers struggle to attract pollinators with their bright colors open to the sky, the bashful mayapple seems to hide. In the same way, I am hidden as I walk beneath the canopy of trees. I find peace and solitude in the woods, away from "pollinators," from people wanting my attention, needing me for something.

In the mayapple's unusual flower, I have found a metaphor for myself. And more than just a metaphor. A reminder of how I want to approach the mayapple's forested world – humble, shy, non-intrusive. Nothing more than a supplicant bowing my head as I search for peace beneath the dappled greenery.

sudden rain squall. Not being Lilliputian, and thankfully not suffering from skin cancer or warts, the only use mayapple has for me is its beauty and uniqueness, which luckily is enough.

When I returned to the first spot I had found them, I was amazed to see how the small, bundled plant had grown into a giant (relatively – the stems average 15 to 20 inches tall, and the leaves span 10 to 15 inches) umbrella. Because of their

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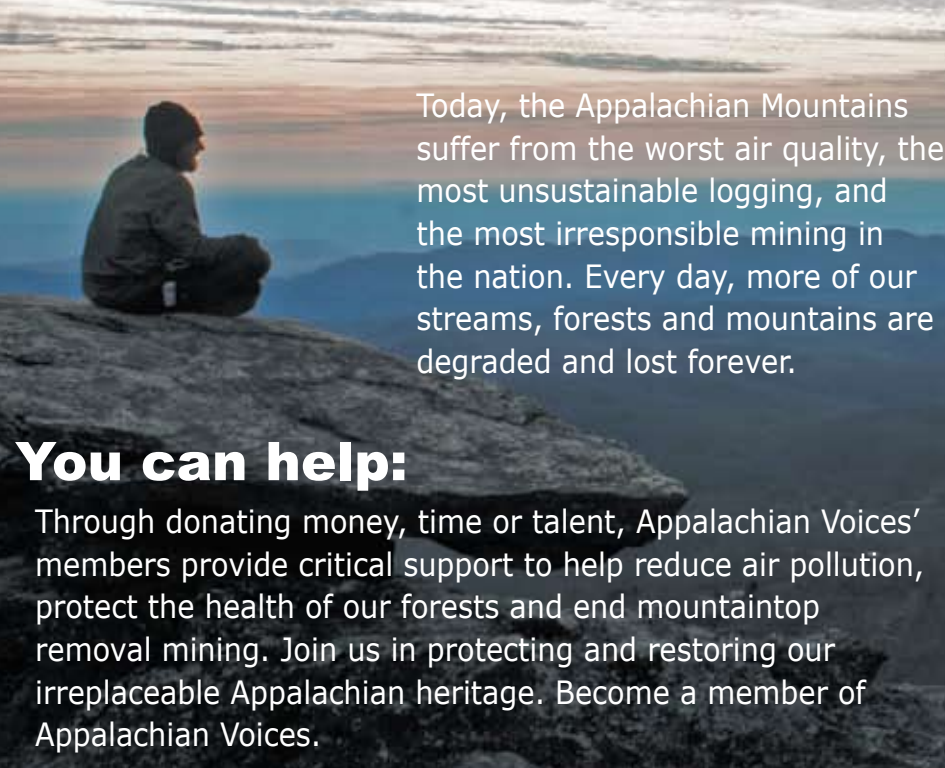
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Crystal Simmons, project manager for a wind turbine slated to rise over the campus of Appalachian State University in Boone, NC in mid-June, peers down the bolt assembly which will provide a foundation for the turbine. The bolt assembly, which is approximately seven feet in diameter, descends over 20 feet underground. The NorthWind 100, standing 153 feet tall with a 68 foot blade span, will be the largest wind-powered generator in North Carolina, and the state's first commercial scale turbine. *Photo courtesy of Crystal Simmons*

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