

The Appalachian VOICE

FREE

June / July 2013

Resourceful and Resilient

Traditional and emerging
mountain farmers adapt to a
shifting agricultural landscape

ALSO INSIDE: The Mighty World of Moss • Interview with Anthony Flaccavento • Gardening Tips from the Experts

EDITOR JAMIE GOODMAN
MANAGING EDITOR..... MOLLY MOORE
ASSOCIATE EDITOR..... MATT GRIMLEY
CONTRIBUTING EDITOR..... BRIAN SEWELL
DISTRIBUTION MANAGER..... MAEVE GOULD
SENIOR EDITORIAL ASSISTANT DAVIS WAX
EDITORIAL ASSISTANT..... ALIX JOHN
EDITORIAL ASSISTANT..... CHELSEY FISHER
GRAPHIC DESIGN ASSISTANT..... CLARISSA GOTSCH

DISTRIBUTION VOLUNTEERS: Alison Auciello, Karen Austin, Debbie Bahr, Heather Baker, Bob Belton, Jere Bidwell, Blue Smoke Coffee, Maria Bolton-Joubert, Charlie Bowles, Cindy Bowles, Lynn Brammer, Jane Branham, Steve Brooks, Carmen Cantrell, Sarah Smith Caskey, Charlie Chakales, Kim and Shay Clanton, Chris Clark, Patty Clemens, Sister Beth Davies, Detta Davis, Deborah Deatherage, Lowell Dodge, Finley Dula, Nels Erickson, Lauren Essick, Emma Ford, Rick Foster, Charles Garratt, Dave Gilliam, Scott Goebel, Lisa Goodpaster, Bruce Gould, Michael Grantz, Gary Greer, Tim Guilfoile, Susan Hazlewood, Sandy Heim, Cary and Karen Huffman, Tim Huntley, Pamela Johnston, Devin Jones, Mary K., Amelia Kirby, Rose Koontz, Frances Lamberts, Justin Laughlin, Carissa Lenfert, Susan Lewis, Loy Lilley, Debra Locher, Joy Lourie, Gail Marney, Mast General Store, Kathy McClory, Kim Greene McClure, Jay McCoy, Rich McDonough, Mike McKinney, Ed and Pam McNally, Steve Moeller, Dave and Donna Muhly, Dennis Murphy, Catherine Murray, Don O'Dell, Dave Patrick, Bronwyn Reece, Martin Richards, Carol Rollman, Kristin Rouse, Debbie Samuels, Steve Scarborough, Gerry and Joe Scardo, Craig Schenker, Kathy Selvage, Brian Shults, Brenda Sigmon, Jennifer Stertzer, Mike Wade, Nora Walbourn, Bill Wasserman, Jim Webb, Dean Whitworth, Amy Wickham, Graham Williams, Barbara Williamson, Diana Withen, Johnny Yousef, Gabrielle Zeiger, Ray Zimmerman

About the Cover

Holly Whitesides and Andy Bryant recently celebrated the first anniversary of purchasing their own farm, called *Against the Grain*. The couple shares their 20



acres in Zionville, N.C., with a few pigs, a small flock of chickens, and a herd of goats. They cultivate a range of organic vegetables, plus sorghum molasses and corn for cornmeal. The farm's most recent venture is growing heirloom vegetables for the regional seed market.

While neither come from agricultural families, both were drawn to farming through a mutual interest in sustainable food — Bryant from his days as a chef and Whitesides via an internship on a large, family-run organic farm. Once the couple started farming together, it took several years of renting and an off-farm income before they could overcome the hurdles to farmland access in Appalachia and buy land. Turn to page 8 to read about the challenges and adaptations of today's regional farmers.

Jessica Kennedy, former editorial assistant with Appalachian Voices and recent graduate of the University of North Carolina School of Journalism, snapped this and other photos of *Against the Grain* last year while working on a visual documentary project on farming life in Watauga County, N.C. View Kennedy's full project at flickr.com/farmingwatauga.

A Note from our Executive Director

Dear friends,

I was outraged to learn in May that a handful of U.S. senators were again trying to shred the laws that protect Appalachia's waters — outraged, but not surprised. These were mostly the same folks who have lambasted the Environmental Protection Agency at every turn, accusing it of waging a so-called "war on coal" for simply fulfilling its mandate to protect America's natural resources.

One proposal would have stripped the EPA's authority to veto valley fill permits for mountaintop removal mines. Another would have gutted the Clean Water Act by giving states the final say on water quality standards.

Appalachian Voices and many others mounted an immediate citizen backlash to these dangerous bills, which fortunately were defeated.

But it reminds us that many of our "representatives" on Capitol Hill don't always represent our best interests, and, in fact, lately have acted against them. We need to look out for ourselves to ensure our families and communities can survive and thrive.

It is in this spirit that Appalachian Voices is proud to join with SkyTruth, a technology innovator in environmental advocacy, in launching a new tool for residents to stand up for clean streams and drinking water in their communities. The Appalachian Water Watch Alert System enables people to report incidents of possible water pollution, such as spills, fish kills and discolored water, and share the information on an interactive website (AppalachianWaterWatch.org), or by calling a toll-free number (1-855-7WATERS). And they can do it anonymously if they prefer.



The Alert System will help build a big picture of trouble spots in our region, giving citizens, regulators, activists, and companies the hard data to address them. I encourage you to check out the website and tell your family, friends and neighbors.

For our waters,

Tom

Tom Cormons, Executive Director

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Farming Frontier

As farming conditions shift, Appalachia's growers prove to be a resilient breed.

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Regulars

Printed on 100% recycled newsprint, cover 40% recycled paper, all soy-based inks

Thank you to all the readers who participated in our readership survey (Feb./March 2013). We're glad to hear your thoughts, and always welcome comments and Letters to the Editor at voice@appvoices.org.

Elissa Brown, a middle school science and spanish teacher at Two Rivers Community School and co-founder of the Cows on A Bike artisanal ice cream company, won our prize drawing. She chose a lightweight camping hammock donated by Hennessy Hammocks. As a teacher, Brown is always looking for local angles to broader scientific themes. She shared the Dollars and Sense of Energy Savings issue of *The Appalachian Voice* (Apr./May 2013) with her 7th-grade classroom this spring, during a unit she taught on climate change and energy conservation.



Across Appalachia

Environmental News From Around the Region

6,000 Acres of Blue Ridge Preserved

By Chelsey Fisher

Nearly 6,000 acres of land in the Appalachian region were purchased or donated for conservation purposes in the same month Environment North Carolina released 10 reasons why the state General Assembly should restore conservation funds in the state.

In Transylvania County, the new Headwaters State Forest, developed through a deal with former North Carolina congressman Charles Taylor's family, will ultimately encompass 8,000 acres of land. So far, only 2,100 acres have been officially purchased by the Carolina Mountain Land Conservancy due to a

lack of funds, but the organization is currently fundraising and applying for grants to complete the full purchase, says Kieran Roe, executive director of CMLC.

Roe expects it will take another four years to purchase all 8,000 acres, at which time the land will be given to the North Carolina Forest Service.

"The bottom line is there is a lot of benefit to the citizens of the state, so we're trying to protect something very special," Roe says.

Across the state border in Tallassee, Tenn., another 4,000 acres of land has been added to an existing 6,000 acres for the Cherokee National Forest and the

Great Smoky Mountains National Park. Alcoa Inc., which owns four hydroelectric dams in the area, agreed to transfer the original 6,000 acres of land to The Nature Conservancy in 2004 to regain federal energy licensing. Alcoa sold the new 4,000 acres to Brookfield Renewable Energy in fall 2012, and The Nature Conservancy acquired the land in early May, says Alex Wyss, conservation director of the organization's Tennessee division.

The Nature Conservancy will transfer the land for public use in two years, but hopes to improve the area until then.

"We want to, while we own the acres, leave them better than we found them,

especially in terms of public access and the use of the properties," Wyss says.

The Nature Conservancy plans to enhance trails and develop interpretive signage to enhance the public's understanding of the history, wildlife and vegetation of the surrounding land.

"This area is often used by tourists, but currently there is very little interpretation of what they're looking at," Wyss says.

The complete 10,000-acre conservation project is also known as "Bridging the Smokies." More than twenty rare, threatened and endangered species are known to live on the tract, including the bald eagle, the Junaluska salamander and the bristle fern.

AmeriCorps Cuts Coal Country VISTA Positions

Due to federal budget cuts caused by the sequestration, 20 full-time service positions in Central Appalachia were cut, says April Trent, team director for the Appalachian Coal Country Team, a branch of the Office of Surface Mining's AmeriCorps VISTA program.

The VISTA program is a part of AmeriCorps service network and promotes aid in rural and poverty-stricken areas throughout the country. There are 8,000 VISTA volunteers currently serving 1,100 different projects in the United States, according to nationalservice.gov. Before the cuts began, there were

more than 30 positions at the Appalachian Coal Country Team, a group that works in coal mining communities in seven central Appalachian states to promote environmental quality and economic development. Currently there are ten positions, but the team could possibly be cut to three in the fall. All cuts will be final, unless funding is restored.

The changes, Trent says, have "really impacted our ability to keep momentum going in rural communities where a VISTA person contributes substantially to small organizations and really means a lot to those communities."

In 2012, the OSM VISTAs generated \$889,111 in cash and grants for the communities they serve and more than \$300,000 in in-kind donations. Among the cuts' many impacts, 568 acid mine drainage sites will go unmonitored and 23 community garden projects will lose their coordinators, says Trent.

AmeriCorps also has two other branches in the Appalachian region. Project Conserve works with land conservation, water quality issues, energy conservation and local food and farmland in western North Carolina. Project Power is a program that serves students in Buncombe County, N.C.

Volunteers Needed for Breeding Bird Survey Along Tennessee River

Southern Appalachian Raptor Research and partners are currently conducting a bird breeding survey through August and are looking for volunteers.

SARR will use the Monitoring Avian Productivity and Survivorship protocol to conduct the study, and it will be held at the Land Trust for the Little Tennessee preserve. The study started May 18 and will take eight samples total.

Volunteers are needed for every aspect of the survey, and no experience is required. Children are welcomed with adult supervision.

For more information, call 828-524-2711.

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First National Monument in West Virginia Proposed

By Chelsey Fisher

The Birthplace of Rivers is an area in the Monongahela National Forest of West Virginia known for its preserved wildlife and ecological features. It includes some of West Virginia's tallest waterfalls and cleanest waterways, and is considered one of the largest expanses of wild forest in the eastern part of the country. And now, it may also become a national monument.

The citizen-initiated project called Birthplace of Rivers National Monument is currently in the concept development stage, but has support from environmental, outdoor sports and religious organizations as well as businesses in the state, says Michael Costello, the executive director of the West Virginia Wilderness Coalition.

"Right now, we're working through a collaboration process of what we want



Fly fishing on the Cranberry River, one of the premier trout streams that would be protected by the new monument. Photo courtesy of Philip Smith

be the first national monument in West Virginia.

"Although the designation is made at a federal level, it is very important that we develop a collaborative proposal on a local and statewide level, so West Virginians can define what the monument looks like, making sure the management of the area fits the landscape's place-specific needs and allows continued access for our important outdoor traditions," Costello wrote in an email.

The new monument would protect

six rivers and pay homage to West Virginia's diverse wildlife, scenic views, local recreation and the culture of the area.

The goal is to turn the monument into a backcountry area. This is similar to a wilderness area in terms of preservation, Costello says, but more activities for the public, such as mountain biking, are allowed.

The organizations involved are funding the project and hope to have a finalized proposal ready soon, but have not set a timeline for completion.

"It's much more important to us to develop a consensus-based, viable proposal than it is to accomplish the designation by a specific deadline," Costello says.

Citizens interested in working with the initiative can volunteer at birthplaceofrivers.org.

it to look like," Costello says.

Once built, the monument will have to be approved by a presidential proclamation or Congress to become official. If approved, Birthplace of Rivers would

Kentucky's "State of the Air" Shows Improvement

The American Lung Association released its "State of the Air" report this spring, showing positive trends in air pollution for numerous counties in Kentucky. Among the counties that received "A" grades in the eastern part of the state were Bell, Perry, Pike and Pulaski. Data was not available for all counties.

"The air across Kentucky is certainly cleaner than when we started [the report] 14 years ago," Ellen Kershaw, Kentucky ALA advocacy director, noted in a press release. "But the work is not done, and we must set stronger health standards for pollutants and cleanup sources of pollution to protect the health of our citizens."

'Ag-gag' bills Considered in Tenn., N.C.

North Carolina became the 11th state this year to consider a form of an "ag-gag" bill, which limits the spread of information about agricultural practices through laws about employee practices.

Called the "Commerce Protection Act," the North Carolina bill was proposed by Senators Brent Jackson, Wesley Meredith and Jim Davis on April 2 and would make private investigations at all places of employment illegal. The bill would also allow prosecution of undercover investigators who exaggerate on their job applications and would also make any

photography at a place of employment illegal. Animal activists, in particular, often use private investigations and photography to expose animal cruelty.

"The public has a right to know where their food is coming from," Matt Dominguez, policy manager for animal protection at the Humane Society of the United States, said to Public News Service.

There are currently five states that have a form of an "ag-gag" bill. Tennessee Governor Bill Haslam vetoed similar state legislation this spring.

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Hiking the Highlands

Hitting the Trail with Kids at Hungry Mother

Story and photos by Paige Campbell

Becoming a parent is no reason to turn in your hiking boots. Children are naturals on the trail, in fact, and as long as you adjust your expectations, there are plenty of trails that are completely doable for hikers of all sizes, and very much worth doing.

A favorite is the Molly's Knob Trail at Hungry Mother State Park in Smyth County, Va. This 1.7-mile turnaround is challenging enough for kids to feel like they've earned the big payoff at the top, but short enough that even with frequent breaks for little legs, the



The first segment of the trail takes you on a steady climb along the edge of the forested hillside above Hungry Mother Lake. When you swing left



Writer Paige Campbell frequents Molly's Knob with her two children, Lea, 6, and Susanna, 4. At left, Susanna gives the trail blaze a high-five.

excursion can fit into a comfortable half-day. The path is consistently wide enough to hold a child's hand and walk side-by-side, and though it's not paved, a sturdy jogging stroller can handle it too, with just a few narrow spots and rocky patches.

deeper into the woods, you near the .4 mile mark where Molly's Knob Trail intersects with the Ridge Trail, a short but steep trail that branches off to the right and connects to a trail encircling the lake.

At this junction, a wooden deck makes a good pit stop and also gives the first glimpse of the round, wooded knob itself. If your kids are very small or new to hiking, you've still reached a destination and a nice photo op, so there's no shame in calling it a day at this point.

From the deck, Molly's Knob Trail begins the next slow-but-steady ascent, flanked on both sides by poplars, red oaks and mountain laurel. After another half mile, you'll be able to peek through the leaves to your right for a preview of the lush valley you'll see from the top.

At 1.3 miles, take Molly's Vista Trail when it branches left off the main trail, and follow the purple blazes up the homestretch. It gets a little steeper here; quick switchbacks have you covering a lot of altitude. But with less than a half-mile to go, even the weariest little hikers can be cheered on (or piggybacked) the rest of the way.

The summit view extends far and

MOLLY'S KNOB TRAIL

LENGTH: 3.4 total (1.7-mile turnaround).
DIFFICULTY: Moderate, with a few more difficult stretches.
DIRECTIONS: Take the main park road to Lake Drive and turn right. Stay on Lake Drive until it bends sharply to the left, up the hill and away from the lake. Parking is on the left, trailhead is on the right.
CONTACT INFO: Hungry Mother State Park, (276) 781-7400, dcr.virginia.gov/state_parks.
PARKING FEES: Weekdays, \$2; Weekends and Holidays, \$3

wide in all directions, with layers of mountaintops stretching back to the horizon. There's space for little ones to poke around, and no steep drop-off to worry about. It's a knob, not a cliff, so parents can relax while kids explore nearby.

Remind children that while it's tempting to dash back down the trail, injuries are more likely on the descent. Take your time and stay together as you make your way back to the park, where a playground, swimming area, restaurant and snack bar provide plenty of options for the rest of your day. And hey, those amenities might also prove a nice incentive for reluctant hikers. There's nothing wrong with coaxing your kids along with the promise of an ice cream sandwich at the bottom.

Tips for Hiking with Kids

- Hiking is a great way to tap into children's instinctive curiosity, as long as you're prepared to slow your pace and stop to explore whatever catches their attention.
- Let kids carry their own small packs. Having their own water bottle, snack and camera gets them engaged.
- Prepare everyone for the fact that there are no bathrooms on the trail. You can bring baby wipes and pack a baggie for the used ones.
- Even some preschoolers can be carried comfortably in a soft-structured baby carrier. The ease of getting a child in and out of these carriers allows them to walk when they're up for it and quickly climb aboard when they need a lift.
- Snacks are essential, not just for nourishment but also for a good reason to stop and recharge. Look for landmarks — say, the big fallen log around the next bend — and promise a snack break there. You can make good progress if you split your hike into manageable segments on a scale children can understand.
- Carry kid-friendly first-aid supplies and a change of clothes. Keeping everyone physically comfortable is key to an enjoyable outing.

Naturalist's Notebook

The Mysterious World of MOSS

Story and photos by Molly Moore

As part of the first plant family to colonize Earth, the soft beds of mosses that now grace mountain streams and woodlands may have shaped our planet's history.

Primitive mosses, similar to the hundreds of moss species found in Appalachia, might have triggered two cool periods around 455 million years ago, according to a recent study. Published earlier this year in *Nature Geoscience*, the study suggests that early mosses clinging to prehistoric rocks sped up the weathering of certain minerals from those rocks. The release of these minerals accelerated the pace of carbon sequestration, leading to cooler temperatures that paved the way for further plant and animal evolution.

Even in outer space, mosses are remarkable. A NASA experiment took moss aboard a space shuttle to study its response to the near-absence of gravity. All other plants grew haphazardly, but moss filaments formed a spiral, showing that mosses respond differently to gravity. The lead researcher theorized that spirals are the default growth pattern for moss, but that gravity masks that design on Earth.

To entrepreneur Annie "Mossin' Annie" Martin, this is further evidence that mosses have extraordinary, borderline magical, characteristics. Martin runs Mountain Moss Enterprises, a small business in Pisgah Forest, N.C., where she rescues mosses from places such as construction sites and grows, sells and installs live mosses for gardens, terrariums and green roofs. Her sunny front yard is a moss demonstration garden, a constantly evolving, textured landscape of greens, yellows and browns, dappled with bursts of orange and pink spores. When she talks about the plant family known as bryophytes, she gets so excited that she jumps up and down in her heeled leather boots.

Bryophytes are a group of plants composed of mosses, liverworts and hornworts. Though the three can look deceptively similar, on close exami-

nation moss plants have pointed leaves, liverworts have rounded leaves, and hornworts feature horn-like structures.

Algae and bryophytes are the only non-vascular plant families. All other plants are vascular, meaning that they have roots and leaves with an outer coating. Raindrops roll off the leaves and soak through the earth, where the plant uses its roots and stems to suck up water and nutrients.

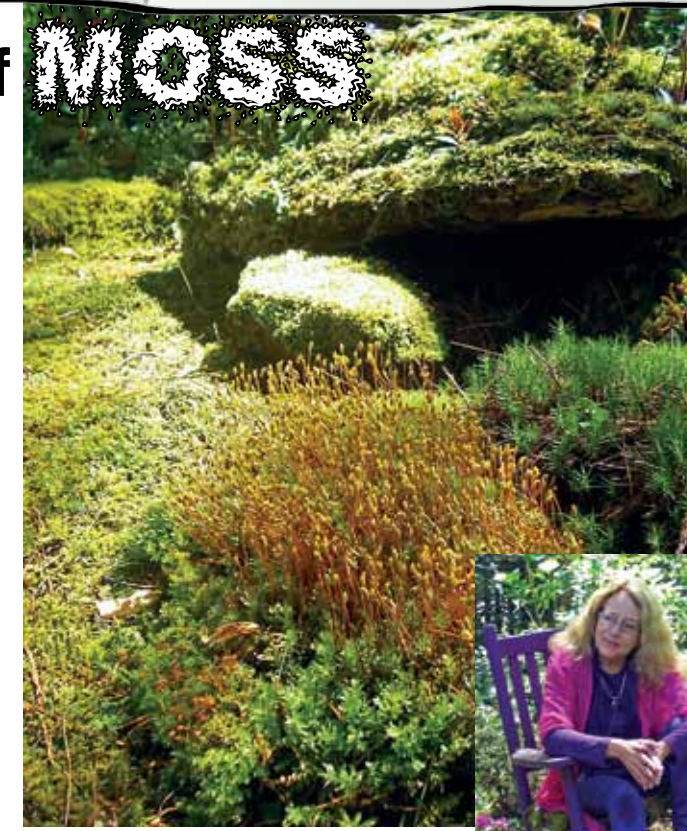
Mosses and their cousins have no need for roots. Tendrils called rhizoids fasten the plants to surfaces, and permeable leaves allow water and dust particles to feed the plant directly. Though these permeable leaves might seem to suggest vulnerability, mosses are hardy enough to tolerate toxins such as heavy metals, says Martin. She's harvested mosses from chemical-drenched land beneath power lines, and the worst damage she's seen is black coloring that is quickly outpaced by new green growth. Although many mosses thrive in deep shade, a variety of species will also flourish in sites with direct sun — places like Martin's front lawn.

The only ingredient these primitive life forms absolutely require is water.

"When you look at mosses you are looking at not just thousands but millions of plants in an expanse or even in a colony," she says. "They're very social, they like to live together. Why? Because it helps keep them moist!"

Mosses reproduce in several ways. The most simple is fragmentation. Sections that break off of one plant can generate wholly new plants, so people with both moss and grass in their yard will spread the moss by mowing over it.

Female and male moss plants also produce eggs and sperm — the sperm swim through water, and when the egg is



One of the many species of moss in Annie Martin's yard, *plagiommium-ciliare*, displays its yellow sporophytes. Martin, right, is a self-educated moss entrepreneur driven by her love of bryophytes.



cups overflow with rainwater some of the sperm spill out.

Although some species seem to go through their sporophytic phase at regular seasonal intervals, many species and colonies display no clear patterns. Some turn white for a spell, others become black or gold. This can be a sign of distress, but it can also be part of a healthy lifecycle.

It's possible to create a conventional-style lawn with moss, Martin says, though she prefers the more elaborate look of a garden. Moss landscapes have a dramatically lower environmental impact than grass lawns since they require no pesticides, herbicides or mowing. And because moss rhizoids grasp the ground so firmly and mosses hold moisture, these

fertilized a new plant called a sporophyte appears. These sporophytes go through several life stages, often forming elegant, brightly colored structures with capsules containing one million spores. When the spores are ready, they burst outward at up to 65 miles per hour in a tornado-like vortex ring.

Some bryophytes share a bizarre form of reproduction involving male plants with small cups. The plants generate sperm in these cups, and when the

primal plants slow erosion. A natural antifreeze chemical and dehydration reflexes mean that mosses don't just tolerate the cold, they can grow and reproduce in sub-freezing temperatures. To an avid gardener like Martin, that's a huge advantage.

"You don't have to give up on gardening in October!" she gleefully exclaims. "All of a sudden, it's year-round."

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Today's Farming Frontier

Resilient Growers Adapt to Contemporary Challenges

By Molly Moore

A summer drive along nearly any Appalachian road reveals scenes of agrarian beauty – cows grazing in the morning mist, hills striped with rows of Christmas trees, and a mix of colorful and weathered barns.

Twenty years ago, the drive would have toured fields and sloping farms dominated by tobacco. Since then, many of the region's iconic tobacco barns have emptied due to the demise of a federal program and dramatic shifts in the market that favor large growers.

In the late 1990s, as reports warned of tobacco's imminent decline, some forward-thinking farmers and community leaders organized a response rooted in vegetable and meat production. The resulting success story of local foods, in Appalachia and around the nation, has garnered rightful attention and praise. Farmers markets foster pride in regional agriculture and have provided an economic refuge for some growers. For others, new crops and customers offer a way to weather the changing economy.

Sweet Alternatives

In eastern Kentucky, like much of Appalachia, nearly all farmers grew Burley tobacco, says Tim Coolong, University of Kentucky cooperative extension vegetable specialist. Today, however, the vast majority of the state's tobacco harvest comes from large operations in western Kentucky. In the mountains, much of the land formerly designated for tobacco is now either grazing land for beef cattle or used for hay.

Of those who still grow crops, Coolong says, most farm about half a dozen vegetables and sell them directly to consumers through farmers markets and restaurants. In search of a more



A row of sweet potatoes, planted end-to-end, is covered in several inches of dirt. The nutritious vegetables can be grown with tobacco farming equipment, helping ease the transition to new Appalachian crops. Photo courtesy Tim Coolong and University of Kentucky Cooperative Extension

large-scale crop, Coolong received a grant in 2009 to study whether sweet potatoes could fill tobacco's void.

In eastern Kentucky, growing sweet potatoes is relatively simple — the crop requires little to no irrigation or pesticides, and no nitrogen. These hardy vegetables store well, and the same transplanting equipment used for tobacco can also be used for the tubers. Sweet potatoes are also good candidates for organic growers, Coolong says, as long as the farm isn't prone to wireworms.

The study found that former tobacco fields grow sweet potatoes well, particularly the copper-colored Beauregard variety, but there isn't enough market demand or storage facilities for large-scale harvests. Currently, Coolong is aware of about 25 sweet potato growers in the area, most of whom incorporate them as part of a diverse vegetable system instead of as a primary crop.

George Sorg hauls a Christmas tree at a farm near Gallatin, Tenn., that is no longer operating. Photo by CJ Sorg



While some tobacco farmers have turned to pasture or livestock, those who are still growing crops are eager to try alternatives. A national producer of hummus, a Middle-Eastern dip made from chickpeas, is expanding its Richmond, Va., processing plant and is encouraging Virginia farmers to try growing the bean. Interested farmers have called Coolong about the legume's viability in Kentucky's mountains — he says the question is worth studying, though he thinks farms closer to the processing facility will fare better.

Nontraditional products, such as hanging baskets of mums, are also

profitable for some, while high-quality bottomland can support grain, though investments and access to equipment such as corn combines can be a barrier. Federal funding to help farmers purchase hoop houses and other structures that extend the growing season has proven beneficial, with tomatoes and lettuces that thrive in these arrangements selling well on the emerging farm-to-school market.

Tree Travails

Former tobacco growers aren't the only Appalachian farmers experimenting with new crops. Adding pumpkins to Christmas tree farms is helping some growers weather a recent downturn in the tree industry.

Jeff Owen, a Christmas tree specialist with North Carolina State University's cooperative extension, says that over the past several years some growers saw tree prices drop by more than 70 percent, compared to a decade ago.

"If you take a long view

Continued on next page

Farming Frontier

Continued from previous page

of the Christmas tree industry, there's about a seven-year cycle of ups and downs based on the average time it takes to grow a tree," Owen says. "The slowness of it being a perennial crop that takes a minimum of six years to grow means you're always off-sync in your planting."

According to Owen, the plummet in prices was due to a surplus of trees combined with the rising influence of chain stores that manipulate the market by offering farmers lower prices. Growers began scaling back tree plantings in 2005, he says, so the market might correct itself eventually.

In the meantime, growers are boosting their bottom lines by reaching customers outside of the big stores, and some of those with suitable land are having luck with other crops — primarily pumpkins, but also potatoes, vegetables and hops sold to craft breweries.

Diversifying has worked well for farmers like Sue Bostic of Newport, Va., who runs Joe's Trees, a 100,000-tree farm named for her father. Bostic is phasing out of the wholesale market and instead reaches some customers through mail-order and the majority through a choose-and-cut operation that entices visitors with hayrides, a kids' mining sluice and a play area. Bostic has expanded the operation to include wreaths, garlands, pumpkins and gourds.

Growing a Market

Although Todd Howard farms four small mountain lots and is lauded for co-founding eastern Kentucky's successful Floyd County Farmers Market, he didn't set out to be a farmer. Howard had a desk job in the coal and natural gas industries, but around 2006 began to feel unsatisfied.

Over the next several years, what started as a backyard garden grew to nearly an acre. When the company Howard worked for closed in 2010, he spontaneously planted 25 rows of sweet corn, each about 300-feet long. "I just assumed it would sell itself, that with some magical sign people would go get it on their way to the big box store," he says. The Howards canned more than they had ever dreamed of, he says, and still had excess.

That summer, he learned that the City of Prestonsburg was organizing a meeting for those interested in starting a farmers market; Howard was the only one that showed up for the first meeting, but later that season the market began with three growers and soon gained a loyal following. Vendors increased in 2011, but a poor location and severe drought made for a rough season. Howard considered abandoning the effort, but after meeting other farmers at an agriculture conference he returned inspired.

Community support for the market



Demanding Wineries

Sales of Virginia wine reached an all-time high in 2012, and wineries are outpacing grape production. The increase is mostly due to established producers expanding their operations, not new independent farmers, says Turtle Zwaldo of Pollak Vineyards in Greenwood, Va. Grapes grow well on former tobacco fields, but it's difficult for small farmers to switch, Zwaldo says. Grapes require specialized equipment and infrastructure, and it takes vines several years to produce at full capacity. Photo courtesy of Pollak Vineyards

soared in 2012 — benefactors included a local radio station, a sign company, and a Christian non-profit that formed Appalachian Roots, a citizens coalition that provides fundraising and coordinating assistance for the market. By the end of the season, vendors had more than doubled sales from the previous two years.

This year Howard is excited to see new products added to the market. One first-time vendor will sell bread loaves, and another will offer organic pet treats. On his own farm, Howard is ramping up production of high-demand greens such as kale, and says local growers are shifting their emphasis from corn, beans and tomatoes to less traditional crops.

"Last year it just blew me away that people were so interested in eggplants," he says. A favorite vegetable in the Howard home, he brought them to market on a whim one day, and a line unexpectedly formed at his stand.

The farmers market exposes consumers to locally grown foods and plays an important role in establishing demand,

says Howard, but relatively few growers are able to make a living from that source alone. For Appalachian agriculture to have a stronger impact in rural economies, he says, local food needs to meet people where they usually shop and eat — at grocery stores, schools and institutions such as state parks and hospitals.

Howard hopes stronger ties between growers and mainstream food suppliers will lead to more full-time farmers, boosting local economies. He also suggests that interested customers tell institutions that they want Appalachian-grown options. "Just opening your mouth and asking for change is probably the most effective way to get local food into some of these systems," he says.

In This Issue

The following feature stories explore how transitions in agriculture are affecting farmers and farmland, how consumers are connecting to healthy foods, and how past pesticides are impacting Appalachia's land and water today.

Adapting Farms to Face the Climate Challenge

By Brian Sewell

Around the world, farmers are arguably the first to feel the impacts of climate change, and of all the systems put at risk, food may be the most fragile. Some of the largest grain and livestock producing states are still recovering from last year's drought-stricken season. And forecasts for this summer are calling for frequent storms, erratic precipitation patterns and expanding drought.

While Appalachia has not seen severe weather of the same magnitude or frequency as America's heartland, the region is similarly vulnerable to price volatility of food staples, threats to forest ecosystems, and severe rain shortages and surpluses that cause dry

spells and flooding.

Two reports released by the U.S. Department of Agriculture in February address the long list of pressures climate change will put on the food and forest systems that are central to Appalachia's agricultural economies. Short-term impacts will be caused by invasive species and insects, leading to a higher cost for pest control. The wildfires so prevalent in the Great Plains and grasslands last year will also increase. By mid-century, the area of the United States susceptible to wildfires is expected to double.

While the Southeast and areas with higher elevation are not expected to warm as quickly as other parts of the country,

even slightly higher temperatures can shift growing seasons and stress crops, and potentially drier summers in parts of the Southeast could lead to water shortages and irrigation woes.

To improve the agricultural sector's resilience, state climate offices and groups such as the Southeast Climate Consortium are conducting research and educating farmers on climate variability and predictions for long-term temperature trends.

According to the USDA, farms must adapt while states and the federal government work to mitigate the factors putting agriculture at risk. Growing a diversity of crops, having advanced irrigation technology, fertile

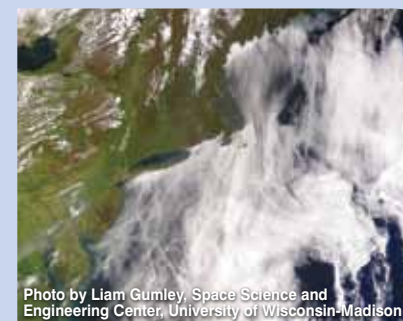


Photo by Liam Gumley, Space Science and Engineering Center, University of Wisconsin-Madison

soil, clean water, and the knowledge and financial security required to respond will help current and future farmers meet the climate challenge.

While it may take longer for the most crippling effects of climate change to reach many parts of Appalachia, being unprepared will come at an increasingly high price.



Toxic Legacy

Yesterday's Pesticides, Today's Problem

By Davis Wax

Since the dawn of agriculture, pests have been the bane of growers across the globe. Early evidence shows sulfur was used against molds more than 2,000 years ago in China. But it wasn't until the rise of more concentrated and commercialized products such as DDT in the past century that pesticide use, and its resulting contamination, have exploded.

In her landmark book, *Silent Spring*, scientist Rachel Carson envisioned a disconcerting future where pesticides would irrevocably alter entire ecosystems. Appalachians are seeing this change firsthand, where the legacy of regional pesticide use is endangering the health of nearby soil and water, and upsetting the very agricultural potential it was designed to protect.

Dieldrin in Dana

For 26 years Paula Janes and her family have lived in the same house in Dana, N.C., using the same well to draw water for drinking and household chores. Nothing indicated that their well water was riddled with one of the 12 most persistent pollutants, a pesticide called dieldrin.

In January of this year, Janes unexpectedly received a letter from the N.C. Department of Environment and Natural Resources telling her that the

family's well water was not recommended for any residential use. High levels exceeding the state standard for dieldrin — a pesticide derived from aldrin and used in the mid-20th century — had been discovered through water testing for a property transaction.

"It just hits you in the head, and you have this reaction of 'What do you do?'" says Janes, describing how she and her family felt after realizing they could have been drinking contaminated water for years. They immediately let their garden go barren due to fears of toxic soil. Eventually they were told it was safe to shower, but for no longer than five minutes at a time. Drinking the water was still out of the question.

The Janes family discovered that dieldrin was first used in the 1950s by cotton growers as an alternative to the more dangerous chlordane and DDT. By 1970, it was banned by the U.S. Department of Agriculture for all uses except for culling termites. In 1989, both aldrin and dieldrin were fully banned by the U.S. Environmental Protection Agency.

Now, decades after it was discontinued, the ultimate source of the dieldrin in the town of Dana is murky. Though 24 wells in the community have tested above the state standard for the chemical, there's little understanding of how it got there and in such high amounts.

Workers spray lead arsenate at Bonhom Bros. Orchard in Chilhowie, Va., circa 1950. Though the pesticide faded from popular use in the 1940s, many growers continued to use lead arsenate up until 1988, when it was banned. Traces from century-old applications still remain in the ground today. Photo courtesy of Norfolk and Western Historical Photograph Collection, Norfolk Southern Archives, Norfolk, Va.

In nearby Hendersonville, Seirisse Baker, an AmeriCorps water quality administrator for the environmental nonprofit ECO, explains the troubles in Dana.

"It can be very frustrating for residents who want to know how long ago and why this kind of thing happened," she says. The subdivision may have been the site of former pesticide use, or contaminated soil may have been carried by water from elsewhere, ending up in the wells. In reality, Baker says, residents may never know all the details of how the chemical ended up in their wells.

ECO, along with the nearby city of Hendersonville, has helped affected Dana residents obtain bottled water, and an uncontaminated well tap at Dana Baptist Church has been opened to the public. "Everyone's confidence in the local water has been broken a bit," says Baker. The best bet is most likely a city water line from Hendersonville five miles away, as it has become apparent that the dieldrin in Dana is here to stay.

A Persistent Past

Appalachia is no stranger to the legacy of pesticides, as Michael J. Weaver, professor of entomology at Virginia Tech, can attest. He is currently studying the work of William Bradford Alwood, Virginia's first entomologist and an early tester for lead arsenate.

First prepared in 1892, lead arsenate was used to protect apple orchards against the gypsy moth. In the early 20th century, stories from Europe of lead arsenate sickness caused concerns about using the chemical, as did a physical residue people began noticing on their fruit. Alwood attempted to wash the apples in elaborate acid baths, but to little avail. In the harvest season, the residue would often remain on the fruit.

Though lead arsenate use faded out in the 1940s with the advent of alternatives such as DDT, today there are

Continued on next page

Toxic Legacy

Continued from previous page

hundreds of thousands of pounds of lead arsenate detectable in the areas where it was applied. Some Virginia and North Carolina orchards along the Blue Ridge Parkway still have lead arsenate in the soil, as well as other pesticides that were applied decades ago.

In 2000, Barber Orchard near Waynesville, N.C., was discovered to be another example of the region's pesticide history.

In this case, irrigation pipes were used historically to bring toxins such as lead arsenate, DDT and dieldrin up to the orchard for spray applications with water. Over time, the pipes rusted, and the intended treatment spilled freely into local soil and groundwater. After a nearby well tested positive for contaminants and a larger investigation ensued, Barber Orchard was quickly labeled a superfund site by the EPA and a plan to remove over 100 acres of topsoil was put into motion. Today, over 50 percent of the cleanup is complete.

Another incident in 2010 in Shady Valley, Tenn., involved a misapplication of the pesticide fumigant known as metam sodium. According to the state's Department of Agriculture, the situation developed after local resident Donna Reed filed a complaint over how a nearby pesticide application was



Dana, N.C., community members receive an update on well testing from the State Division of Water Quality on April 9, 2013. Photo courtesy of ECO.

conducted. She had experienced eye-burning, and eventually all 71 of the fish she raised in outdoor ponds, colorful koi and shubunkins, died.

Upon investigation, it was revealed that a subcontractor for B&W, a large arugula grower, experienced an irrigation line breakage that caused an excess amount of metam sodium to be released. The chemical is believed to mostly dissipate after an application, but other residents of the area also reported burnings of the eyes, sinuses and mouth, as well as respiratory problems that they claim haven't gone away.

B&W and its subcontractor were fined for the leakage, and the Shady Valley incident is considered closed, even though locals are reportedly still dealing with health ramifications.

Leaving Legacy Behind

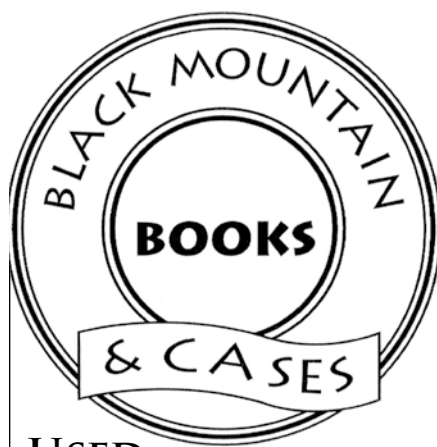
Pesticide disposal, something the Virginia Department of Agriculture has seen great success with over the past 20 years, is one way to limit the reservoir of toxins in the ground. Since its inception, the department's service to farmers, pest-control firms, golf courses and homeowners has safely disposed of more than one million pounds of unwanted or discontinued pesticides.

The department's director of commu-

nications, Elaine Lidholm, remembers the first rounds of disposal in the 1990s, when pesticides were sold in big paper bags and when the disposal unit once found a 50-gallon drum of DDT on a farm. The program continues to offer collection and safe incineration of pesticides throughout the state, helping to prevent the possibility of these chemicals entering local soil.

Alternative methods for dealing with pests are also on the rise. Rotating pastures can be beneficial for keeping pests from continually bothering livestock, and biological pest control relies on natural predation and parasitism in other organisms, proving effective for certain crops.

How pesticide use is controlled may now be the best solution to its resulting legacy. Integrated pest management systems, which seek to develop safe and economical pesticide techniques for individual crops, and the proper disposal of unused or outdated pesticides are crucial pieces of this approach. By keeping an eye on regional use, Appalachians can protect their farms, orchards, and communities from becoming additional chapters in the story of legacy pesticides.



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Bee Deaths Linked to Pesticides

More than 30 percent of managed bee colonies in the United States perished this past winter, and beekeepers are looking for answers. While parasites, viruses and malnutrition can be factors in entire hives dying, evidence is building that pesticides are one of the major culprits.

Danny Jaynes, president of the N.C. State Beekeepers Association, says one insecticide, Bayer's Sevin Dust, is known to cause bee death in the region. "Bees do not distinguish between the dust and pollen," he says, and thus can unknowingly feed the poison to larvae. According to Jaynes, if Sevin Dust were used in a liquid form and at night when honey bees are not foraging, the insects would be protected, but few growers apply it in this manner.

A class of pesticides called neonicotinoids are also on beekeepers' radars. These chemicals are dangerous to bees because, like

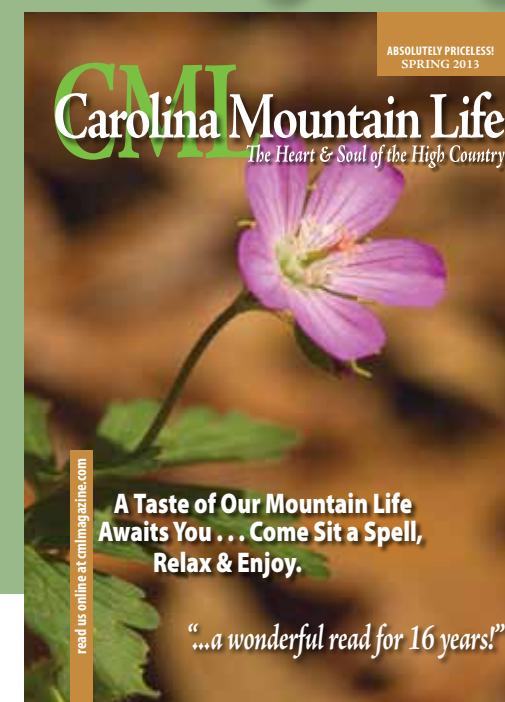


Sevin Dust, they often won't kill the bees outright, but contaminate foragers who then return to and infect a hive. Bee associations across the country banded together to sue the U.S. Environmental Protection Agency in March, calling for neonicotinoids to be banned.

Christmas tree farms could be another contributor to bee deaths in the region. Farmers often plant clover around their conifers to restore nitrogen to the soil, and since insecticides are used on the trees and the clover, pollen-collectors can easily be contaminated.

Beekeeping has become a tradition in Appalachia. Apiaries don't need flat land and regional bees produce colorful honeys from blackberry and others tree blooms. With the current trend of bee deaths, however, keepers are worried about the future of mountain honey.

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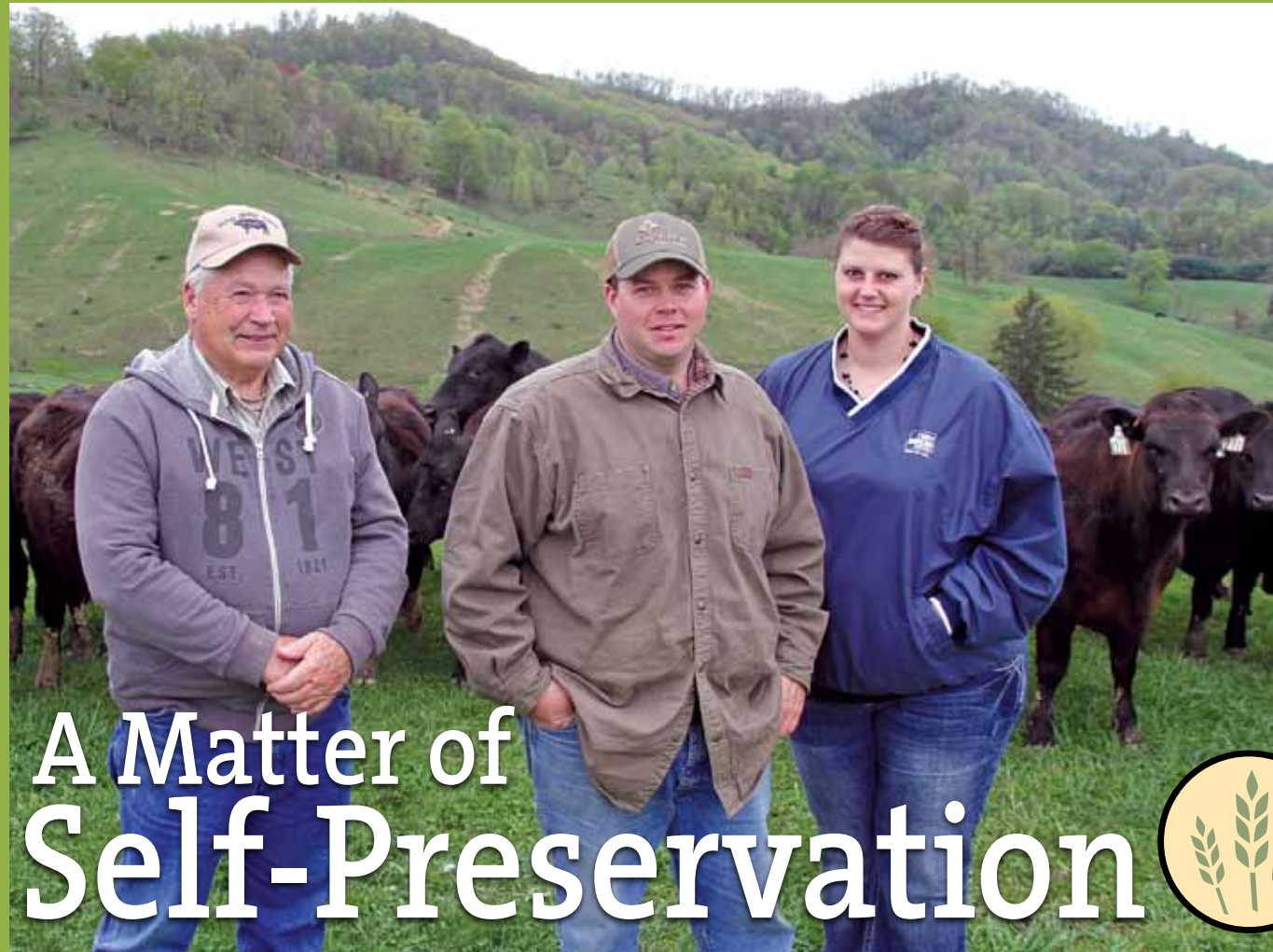


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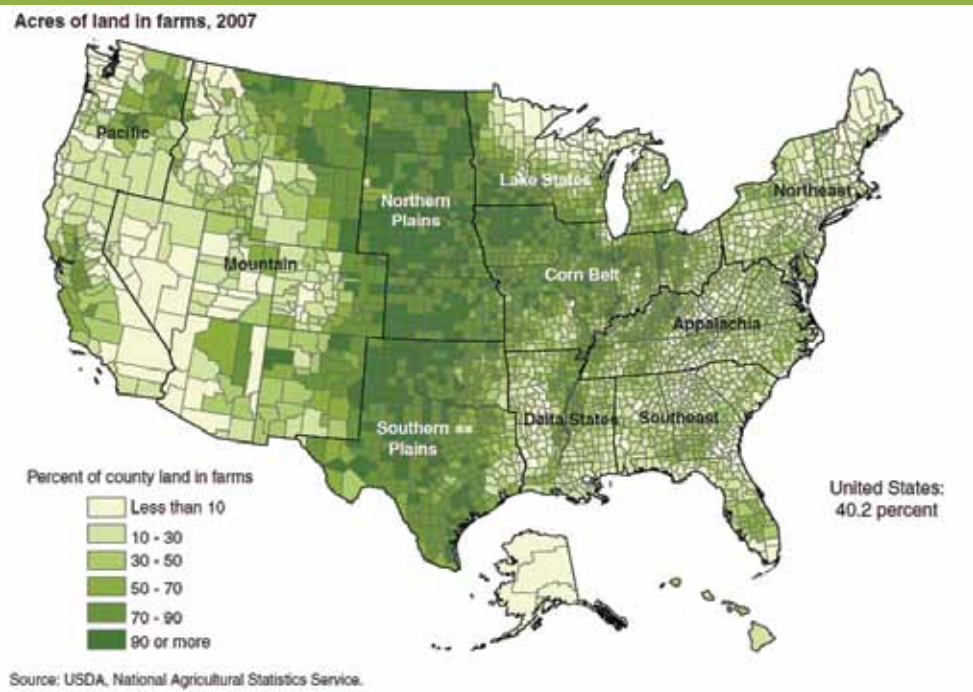
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A Matter of Self-Preservation



"Going through these transitions, there's a lot of things you look at, and the main part of it is to preserve [the farm]," says C.W. Pratt, at left, currently in the process of transferring his farm to his son Jason and daughter-in-law Paige. Above, a map from a U.S. Department of Agriculture's 2012 "Trends in U.S. Farmland and Ownership" report shows that farmland in Appalachia typically comprises a smaller percentage of total land than in other parts of the country. The report adds that farmland sales are "often forced due to death or retirement rather than a result of affordability levels."

Appalachia is no different from the rest of the nation in that land remains a commodity bound to economic, legal and technical mechanisms.

That's why Branan thinks that older landowners, while actively transitioning their land and estate to family members, should consider selling 20-acre tracts to new farmers. It would, at the very least, shake loose opportunities for the incoming generations who often must wait for the chain of inheritance of family land to reach its final link.

"Land flows," says Branan. "It's the currency of history."

As state chair of the Virginia Young Farmers association, Nate Aker knows the challenges for those looking for land.

"You've really got to network, you've really got to make a lot of contacts, because you might partner up with three or four different people before you find the right one to transition through to possibly have a lease-purchase agreement on their farm."

The rise from nothing can be done. Aker tells

about the couple from Kentucky who last year won the National Young Farmer and Rancher Achievement Award from the American Farm Bureau Federation. The family had no history in farming, and the man decided in high school to start cultivating on the school's plot. He developed such a passion for it that he put out an ad in the paper to lease his own land.

"Now the guy's farming 6,000 acres and he's 33 years old," says Aker. "That's a big jump."

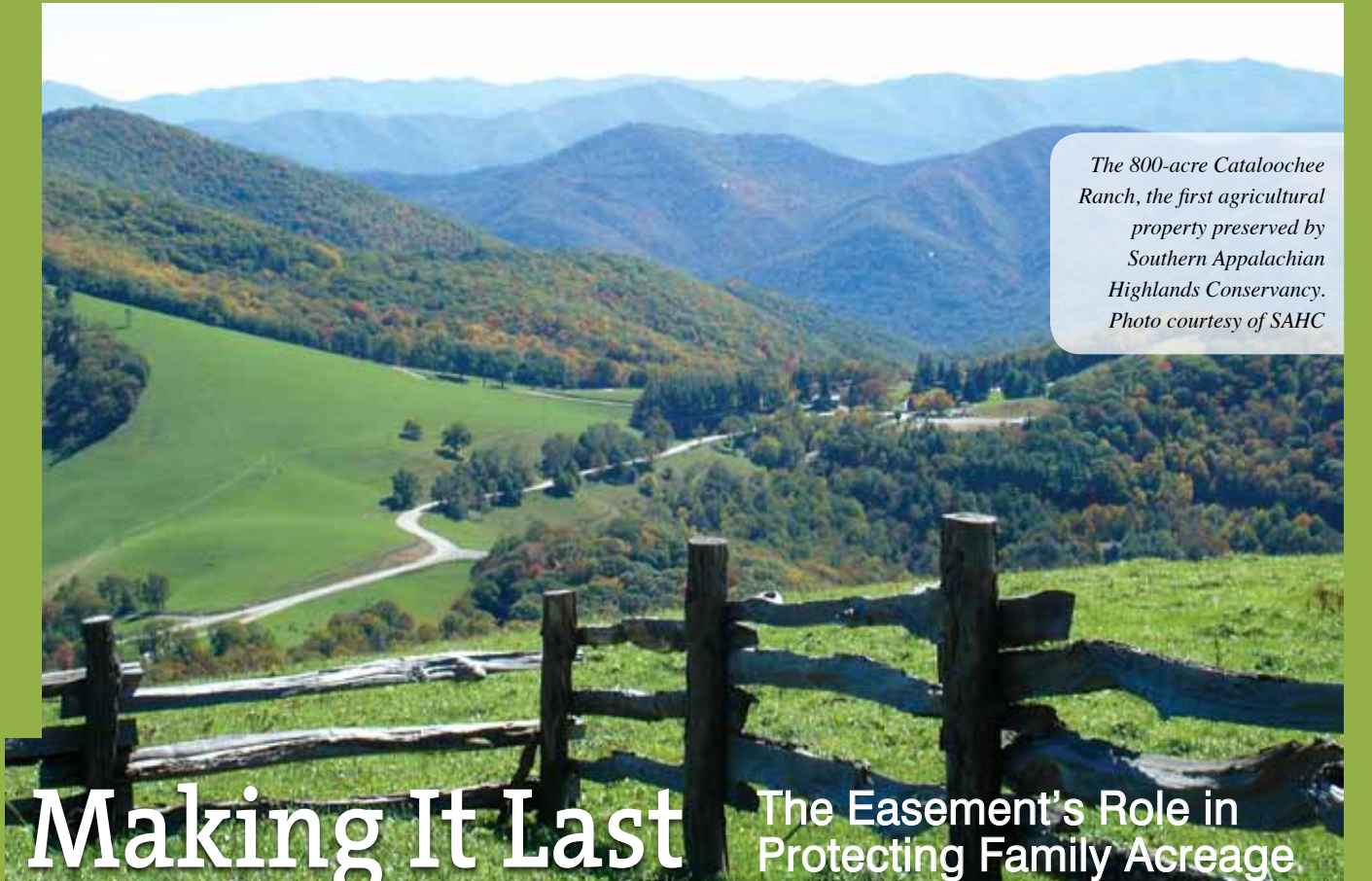
There are lots of good stories out there, but it's just the bad ones, borne by rumors and press, that get told, he says.

"Farmers are probably the last people who are going to brag and boast about what they've done."

But even for those who've created the inroads, land ownership remains a problem. Kevin Toomey and his wife Christina are thus far unable to move past leasing farmland. The couple has worked for the past several years in Candler, N.C., on two plots of one and two-and-a-half acres, growing a diversity of vegetables.

Through Ten Mile Farm, the Toomey's use farmers markets and community supported agriculture to sell directly to

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The 800-acre Cataloochee Ranch, the first agricultural property preserved by Southern Appalachian Highlands Conservancy. Photo courtesy of SAHC

Making It Last The Easement's Role in Protecting Family Acreage

By Matt Grimley

Once covered by corn, cattle and tobacco, the land surrounding Philip Fortune's fifth-generation family farm near Asheville, N.C., was subdivided into roadways and developments. Unable to continue operating without difficulty, he purchased 180 acres in nearby Greene County, Tenn.

Determined not to let his land succumb to the same development pressures, Fortune decided to place his farm under an agricultural conservation easement. With help from the non-profit organization the Land Trust for Tennessee, his rich farmland and the waters of Little Chucky Creek should be preserved forever.

From 1982 to 2007, 23 million acres of farmland in the United States, an area the size of Indiana, was lost to development. To fight that pressure and to preserve their land's agricultural value, landowners like Philip Fortune have increasingly turned to easements.

These legal agreements can take many shapes and sizes, but the basics are this: the landowner promises to keep the land in agricultural use in

perpetuity, and in return, a land trust organization will enforce the agreement by monitoring the property for uses permitted in the contract.

Under easement, the landowner maintains ownership of the property, living and farming on it. However, landowners cannot develop or subdivide the land for any other use than agriculture. Now off-limits to developers, the farm retains its agricultural value, and the difference between that and its former developable value becomes the price of the farmland conservation easement.

The easement is then either sold or donated to a land trust. If the farmers sell the easement to a conservation group, they receive a sum that is typically used to pay back bills or further invest in the land. If the easement is donated, the farmer enjoys federal, state and local tax benefits such as a lowered estate tax, tax deductions or credits.

Not all farms will fit into a land trust or state agency's criteria for conservation. For example, William Hamilton, farmland program director for the Southern Appalachian High-

lands Conservancy, says that his land trust places emphasis on prime soils in western North Carolina and East Tennessee. "Only two percent of the landmass of Appalachia consists of prime soils," he says. "They're a finite resource and to eat local vegetables and grains, we need those soils."

Regardless, landowners should always approach an organization if they're interested in preserving their land. Different land trusts and state or federal agencies specialize in different ways of preserving property, and most organizations are focused on the same goal of forming agricultural districts of unfragmented, productive farmland.

Brent Bailey, executive director of the West Virginia Land Trust, says the idea of a farm's future is most often considered by older generations who may have had another off-farm job or are retired, and are trying to figure out what to do with their land.

"As the landowner thinks about his or her legacy, many things pop up, such as setting off more property [for future structures] or letting the woods grow higher, [or] wanting to reserve

Continued on page 14

New Farmers and the Hard Path To Land

By Matt Grimley

The Pratt family in Atkins, Va., like many, both own and rent land on their 1200-acre cattle farm. Besides small plantings of corn and other crops, Echo Ridge Farm is an angus cow operation, selling off its breeding cattle through seasonal and regional auctions.

C.W. Pratt, though born into a farming family, got his start renting acreage in the '60s, eventually buying his own land from his father. Now with white hair, C.W. has slowly transitioned the equipment and cattle to son Jason and his wife Paige.

The process of transition has taken two years so far and is not yet complete. For the sake of financing, avoiding costly taxes and easing the land's management, Jason says that they want to be careful. The Pratts have heard too many stories about farms — which can be equal parts family and business to their owners and operators — facing disaster through lack of an estate plan.

"It's awful hard for people to give up that security," says C.W., who continues to run the farm with his son. "That's what they've worked their whole lifetime for. That's what protects them."

"It's not an easy process," says Jason about the transition. "Nobody wants to talk about dying."

Nor does anyone know what will happen as the nation's farmers, currently averaging nearly 60 years of age, pass the land to the next generation. In 1982, beginning farms and ranches accounted for 38 percent of the nation's two million family

Holly Evans plants young sprouts at Swan Creek Farm in Hamptonville, N.C. Swan Creek was one of more than a dozen farms that Evans and her boyfriend Randy Buck worked at last year though the World Wide Opportunities for Organic Farmers program. Currently, the couple interns at Spring Creek Farm in Elk Valley, Tenn. Photo by Randy Buck



Self-Preservation

Continued from page 13

customers. They have the customer base now to expand operations, but the land prices are the only problem. Near the expanding metropolis of Asheville, Kevin Toomey says, development prospects have made the land unsalable to those outside a farming family or without a parent's paycheck.

The couple has talked with farm creditors, looked at loans and saved up capital, but it's still not enough. A short time ago, they put a bid on a property, hoping for the opportunity to pitch a lower agricultural price to the land's 20-year operator. They were upshot by someone who bid \$17,500 an acre, twice as much as Toomey and his wife, to not continue the farm, but to instead build a house on it.

"It's a stiff market for agriculture," says Toomey, who is thinking about looking outside the region for land. "It's not a stiff market if you have money."

Money remains a concern for all young farmers, for whom the process is paradoxical: experience is needed to set foot on the land, but land is needed to gain experience.

Via internships, apprenticeships and work-share agreements, many people have found their way into farming. But it all comes down to building relationships with farmers, according to Holly Evans, a beginning farmer herself.

Evans and her boyfriend,

Making It Last

Continued from page 13

the right to sell off part of this property," Bailey says. "It's rare that the final easement document simply reflects the first conversation with the landowner."

In total, it's both a financial and an emotional decision for the landowner. "It's [a] pretty visionary, pretty amazing thing for a landowner to do," says Bailey. "Subsequent generations will look at this protected property, and they will marvel that someone was willing to say [that] this land will stay in its current,

Randy Buck, have worked on organic farms for the past couple of years through the World Wide Opportunities on Organic Farms program. They worked in states from Mississippi to Vermont on operations featuring everything from hazelnuts and mushrooms to an agrarian lifestyle in 1700s America. Through their few-week stay last year at Spring Creek Farm in Elk Valley, Tenn., they earned season-long internships this year at the farm with stipends and room-and-board.

Spring Creek has given the pair a wealth of knowledge, showing them how to skin rabbits, prune trees, and plan out community supported agriculture shipments and planting schedules. "Adam and Shelby [the owners] really value our opinions and ask us what we think if they're trying something out," says Evans.

They hope to own and farm land in the future, but they know it will be a task. "I have no idea how we're going to pay for it," says Evans. She says that they'll save up money in the meantime and probably

work off-farm jobs, like many others, in the quest for acreage and full-time agricultural careers.

While this calling depends on the long-term business plan, some have realized that an operator can have a successful farm without owning land, says Kevin Schmidt, coordinator for the Virginia Office of Farmland Preservation and its Farm Link program

"Some folks will tell you the days of farmers needing to own the land they farm is outdated," he says. "The idea of leasing land is what a lot of people are suggesting when you're talking about [up to] 20 thousand an acre for land that is good, but maybe not great land."

Virginia's Farm Link, which has run in earnest since 2007, offers an online database for landowners and potential operators as well as a series of farm transition workshops. Though Farm Link programs are found in many states, Virginia is currently the only southeastern state to feature one.

Virginia's Farm Link is still working to accumulate success stories. Right now, the program has a ten-to-one ratio of farm seekers to landowners, and Schmidt is focusing on gathering the two sides in a room together via workshops and trainings. From there, he'll work to pair up in person those who have land available and those who want it.

The Farm Link model has inspired others. With funding from North Carolina State University and guidance from a coalition of nonprofits and county extension services, a part-time position is opening for a farmland access service in western North Carolina. The service would connect young people with landowners, and hopefully, by facilitating an online and in-person process towards apprenticeships and leases, the first steps on the soil could lead to more intergenerational land transactions.

"We have so many young people interested in farming [right now]," says Jeanine Davis, associate professor with North Carolina State University's horticulture department. "We're going to lose them if they can't find a way to make a living at it."

Back in southwest Virginia, on top of a sloping green pasture, C.W. holds out his hand to one of the cattle that has lined up to sniff his truck for feed. With Paige and Jason expecting their first child in August, the Pratts are once again facing a big change, another opportunity for joy that they'll undoubtedly embrace.

interested in donating their farm to the land trust as a charitable gift and receiving tax benefits in return. The land trust will then put an easement on the land and put out a request for proposals from new and traditional farmers who want to buy the farm at its lower agricultural value.

Hamilton says he doesn't expect people to beat down their door and give them farms, but he's excited for the prospects of the project. "We're not going to fix it all," he says, "but we're going to put [in] some good people ... that will add a lot of value to these communities."

Agritourism Grows in Appalachia

By Brian Sewell

Think of it as an extended growing season, where the opportunities arising from a region's agricultural wisdom and the influx of tourists and conscious consumers are ripe for the picking. By marketing experience and education, not just products, Appalachian farms of every kind are going beyond the friendly transactions at the farmers market to take advantage of all that agritourism has to offer.

Abundant examples of agritourism — broadly, any recreational or educational activity that attracts visitors to farms — can be found throughout Appalachia. In fact, it's one of the region's largest draws. Here, families frequent pick-your-own berry farms, apple orchards abound and kids clutch the perfect pumpkin on a hayride to nowhere.

In Virginia alone, income from agritourism and farm-related recreation grew an average of 37 percent each year between 2002 and 2007, according to the U.S. Department of Agriculture. And the success story of agritourism in Virginia's Shenandoah Valley, where it generates an estimated \$35 million a year thanks to a high concentration of farms catering to residents of the commonwealth and beyond, is a case study in taking what Appalachia does best and making it better.

Nearby Charlottesville, Va., has been recognized



Appalachian farmers are developing new ways to connect people to the farm, including tours that provide guests with opportunities to get up close to farm animals like bison. Photo by Jillian Randel

as a top spot for agritourism with its bustling downtown City Market and century-old Carter Mountain Orchard, where rolling hills are covered with resplendent apple and peach trees — a picker's delight.

Western North Carolina, well-known for its wineries, bed and breakfasts and popular stops along the Blue Ridge Parkway, is especially aware of possibilities. The results of a 2011 agritourism survey by North Carolina State University reveal the variety of activities, from yoga practiced in pastures to cor-

porate trainings with rooster wake-up calls, taking place at farms in the state's mountainous counties.

Word-of-mouth remains a powerful marketing tool for full-time farmers too busy to conduct consistent outreach. But more than half of the respondents to the N.C. State survey identified promotion and marketing as a challenge to getting their agritourism operation off the ground.

Fortunately, county extension offices and chambers of commerce are keeping regional agritourism opportunities in the public consciousness and on tourist's to-do lists. Collaborations between tourism departments and nonprofits such as the Appalachian Quilt Trail connect multiple destinations and provide a new way to explore the region. And groups such as the Appalachian Sustainable Agriculture Project, which publishes an annual local food guide covering 60 counties in the Southern Appalachians, act as invaluable intermediaries between farms and consumers.

In late 2012, understanding the importance of networking the agricultural attractions in the region, the Appalachian Regional Commission announced plans to release a guide in spring 2014 to showcase Appalachia's food heritage and agritourism offerings, including everything from farm-to-table restaurants to food-related events and festivals.

Finding agritourism opportunities has never been easier. So pick a place and experience all Appalachia has to offer.

Four Ways to Preserve the Farm

By Matt Grimley

Between economic, legal, regional and personal circumstances, no two farmers will make the same decisions about how to keep their farms productive into the future. Noted here are just a few paths to preserving the farming tradition. If you're looking for more information, start at your local cooperative extension office.

Fostering land conservation, farm profitability and stewardship: Scores of programs at the state and national levels exist to assist the productivity and well-being of farms. For example, federally, the Environmental Quality Incentives Program pays up to 50 percent of the cost for farmers to implement sustainable practices and

structures on farmland; and in southwest North Carolina, the nonprofit Mill Spring Agricultural Center provides trainings and a networking hub for Polk County farmers.

Looking into estate planning: Armed with attorneys and accountants, many farmers decide how to pass on the farm to family members and others through avenues including trusts, wills and gifts. The process of estate planning is long and complicated, but necessary to preserve a family's ownership and legacy.

Leasing to younger farmers and other tenure options: Many times, if a farm becomes too large to manage or if extra income is needed, a farmer can be found to rent a section of the land. The agreements between

a landowner and farmer can take many forms: short- and long-term leases, lease-to-own purchase agreements, and partnerships. Along with different types of internships, these arrangements can sometimes lead to more permanent positions for the beginning farmer and better ensure a farm's future.

Joining or forming voluntary agricultural districts: Voluntary agricultural district programs allow farmers to form areas where commercial agriculture is encouraged and protected. It varies between localities, but typically a farmer receives community benefits in return for restricting development on the land for a 10-year period, such as protection from nuisance suits from non-agricultural neighbors.

undeveloped state."

High Hopes for Low Prices

Bailey says one of the barriers for those interested in farming is land prices that have been driven up by nearby development. Under a farmland conservation easement, though, the land can remain at a lower agricultural value and present an opening for landless farmers looking to buy.

That's where William Hamilton wants to get involved. Facilitating the sale of affordable land already under easement isn't new, he says, pointing out that northeastern states such as Vermont have been doing it for years. It's just that this facilitation isn't happening that much, if at all, in central and southern Appalachia.

Southern Appalachian Highlands Conservancy seeks landowners that are

Addressing Food Insecurity

Finding New Ways To Feed Families

Story by David Brewer

The welcome arrival of spring and summer in Appalachia represents that magical time of year when, instead of bundling up for a trip to the grocery store, we toss on a pair of sandals and head to the farmers markets to peruse the colorful and delicious bounty of locally grown fruits, vegetables and meats.

For some residents of our region, however, access to healthy local food is not as easy. Food insecurity, broadly defined as limited access to nutritious foods, affects roughly 15 percent of Americans, according to a 2011 U.S. Department of Agriculture report. Across Appalachia, the proximity to farmers markets and grocery stores, percentage of homes relying on federal food assistance, and general income levels vary greatly.

According to a 2011 study by the Virginia consulting group, SCALE, Inc., that compared similar foods in six states, most farmers markets in Appalachia and the Southeast are highly competitive with supermarkets for supplying basic commodities. Regional farmers markets are also increasingly accepting food stamps. But USDA data shows that swathes of



This harvest is what Rick Cavey, a Virginia farmer and local food activist, calls a "gator salad" — a collection of fresh vegetables in the back of his John Deere Gator. Photo by Rick Cavey

the region still lack access to local foods, and many face tough choices at mealtime about how to healthfully feed and nourish their families.

Throughout the mountains, there are bright spots where individuals and organizations are eliminating barriers to locally raised food and livestock. With a little bit of luck and a lot of hard work, the nurturing and expansion of these and similar programs could provide communities with a variety of fresh, affordable sustenance for years to come.

Grayson LandCare Southwest Virginia

According to its website, Grayson LandCare is a "locally organized group of farmers, landowners and residents concerned about economic and environmental problems."

That's putting it mildly.

Founded by Jerry Moles in 2005, Grayson LandCare and its members encourage responsible land care practices and address food insecurity issues in Grayson County, Va., and the surrounding mountain counties in Virginia and North Carolina.

"Grayson LandCare is based

Students line up for local foods provided by Kentucky's Farm-to-School program. Photo courtesy University of Kentucky

on the idea of working from the grassroots up, hoping to monetize farming," says Moles. "It has to be driven by the farmers."

Members of Grayson LandCare, with the help of Heifer International and the Central Appalachian Network, have been a driving force behind developing a master plan for the Appalachian Regional Food Hub, a project that seeks to connect local food growers and buyers. Members have also been behind the establishment and operation of farmers markets in Sparta, N.C., and Independence, Va.

Additionally, Grayson LandCare is involved in programs such as Orchards of Hope, which works in conjunction with Heifer International and Blue Ridge Women in Agriculture's Seeds of Change Appalachia initiative to plant fruit trees. The trees are placed in community gardens and near schools, making them widely accessible and emphasizing community wellness.

Moles and others have spent considerable time identifying the various obstacles facing their region's farmers, including the pressing need for a local abattoir, or slaughterhouse, for more cost-effective processing of the area's steady flow of livestock. Grayson LandCare Vice President Rick Cavey maintains that area livestock farmers could command up to three times the current price if such a facility were established.

Working feverishly to spread the gospel of local food production, Cavey has helped add 12 local producers in Grayson, Ashe and Alleghany counties to the regional New River Organic Growers roster of farms. He is a lynchpin of the Appalachian Regional Food Hub, and has helped organize winter workshops for farmers while also seeking outside funding from groups like the Central Appalachian Network and Heifer International to further the group's mission.

"Food security is an issue, and if we can grow our own supply, we won't be so dependent on energy prices and commodity prices," Cavey says. "I just think that growing food is a great way to make a living, and I'm trying to show people that they can. If I can turn 12 people to grow food and another 20 people to eat that food, I'm pretty happy."

For more information on Grayson LandCare, click to graysonlandcare.org.

One Acre Cafe Johnson City, Tenn.

With their opening date slated for September of this year, One Acre Cafe in Johnson City, Tenn., is another example of a community-based solution to hunger. The problem first came to the attention of the non-profit restaurant's Executive Director Jan Orchard during her tenure as a school teacher.

"I used to teach first and second grade and I noticed that the students were really hungry," Orchard says. "I became more aware of the problem of hunger and food insecurity not only in northeast Tennessee, but throughout the country."

The One Acre Cafe plans to operate on the "Eat what you want; Pay what you can" ethos, a model that is spreading across the nation.

"[These] cafes are somewhat unique in that they have to appeal to a wide range of individuals," she says. "They have to appeal to business people, as well as a person who has fallen through the cracks and perhaps lost their job. We're also hoping to promote a dialogue between the different kinds of patrons that will be helpful."

"What we're really doing is going back to our roots, which is the

Continued on next page

Heirloom Plants Preserve Tradition and Heritage

By *Alix John*

Woody Malot loves talking about heirloom seeds and seed saving. He gives out heirloom seeds to his friends and students, offers advice on how to grow them and emphasizes their stories and heritage. He is currently the head of the science department at Rabun Gap-Nacoochee School and owner of Barker's Creek Grist Mill in northern Georgia.

"We've been saving seeds ever since I was a little kid," Malot says. "My grandfather did it, my father did it."

According to the Seeds Savers Exchange glossary, an heirloom is "any garden variety that has been passed down within a family or group, similar to pieces of heirloom jewelry or furniture." Seed saving is the act of preserving reproductive material from these vegetables, herbs, grains or flowers from year to year, using their offspring each season. This is the traditional way to garden.

Keith Nicholson is a seed saving advocate

who hosts regular workshops in western North Carolina, showing avid gardeners how to create their own heirloom gardens.

"The easiest way to start is by going to a local farmer's market and picking up some heirloom tomatoes," he says.

Nicholson says the genetically modified crops do have some advantages, like predictable and reliable offspring, but they often require chemicals that eliminate beneficial organisms living on the plant and in the soil around it. Heirlooms plants, while they sometimes produce irregular offspring, coexist with natural organisms and become a part of the local ecosystem and the area's history.

Dr. Rosann Kent, director of Appalachian Studies at the University of North Georgia, says seed saving is a way for Appalachia to preserve its unique culture.

"One of the challenges facing southern Appalachia is that local residents often are marginalized as their communities are gentrified and mountains developed," Kent says.

Keeping up such a long-standing tradition can be tough. Malot says he gives away seeds to encourage the use of heirloom plants, but is often rejected due to lack of interest. In some communities, however, gardeners are excited about traditional seeds. Companies such as Southern Exposure Seed Exchange in Mineral, Va., and Sow True Seeds, in Asheville, N.C., sell heirloom seeds and host regular seed swapping events. There, heirloom lovers can trade different varieties.

Dr. Kent and her students recently conducted a study, mapping out seed savers in Lumpkin County, Ga. One of the participants was resident Carol Meeks.

"What you always did was [with] your neighbors or your family ... you just went and got [seeds], whatever they had," she says. "It's still a lot that way today."

To many seed savers, preserving seeds is about much more than sustainable gardening. "It means passing on to the younger generation both the genetic materials, as well as the



Tomatoes are one of the most popular heirloom plants for gardeners to grow. Photo courtesy of Sow True Seeds

stories that go with it," says Malot. Appalachia has a strong culture of self-reliance and tradition, and seed saving is one way to keep both of those alive.

For more information, visit the nonprofit Seed Savers Exchange at seedsavers.org.

Food Insecurity

Continued from previous page

community coming together to help one another," she adds. "As my son Bryan says, these are folks that have found themselves on the other side of plenty."

Thanks to the landlords, the cafe will occupy a 5,000-square foot space rent-free for the first year. And with a volunteer architect, volunteer interior designer and ample supply of donated materials, the restaurant is a shining example of community support.

"People are rallying to make this a place," says Orchard. "We're just the facilitators for the community to come together and bring the power to create this cafe. If the community is behind it, it will be something unbelievable. And we all sense that is something that's going to happen. I think it's that willingness we're all feeling."

One Acre Cafe is not the first operation of its kind in the region. The F.A.R.M. Cafe in Boone, N.C., exchanges meals for an hour of work for diners who are unable to pay. In Asheville, N.C., Rosetta's Kitchen offers a donation-based plate and planning is underway for a sliding-scale restaurant called Sauté.

One Acre Cafe will be located at 603 W. Walnut Street, Johnson City, Tenn.

Farm-To-Schools Kentucky

For most people who grew up eating school lunches, it is unlikely that those trips through the buffet line are their most mouth-watering memories. Meals consisted primarily of processed foods coming out of large tin cans, not fresh from the garden. For students in Kentucky, however, lunchtime is now a lot tastier and healthier with the burgeoning Farm-To-School program, which is helping students access local food on an everyday basis.

Introduced nationally in 2010 and adopted shortly thereafter in Kentucky, the program helps to connect local food to school menus. Tina Garland, Farm-to-School program coordinator for the Kentucky Department of Agriculture, is spearheading the state's efforts to give school lunches a healthy boost from right down the road.

"From what we have seen, it's not more expensive to buy local," Garland says, noting that getting individual food service directors on board has been key to the spread of the program. "You have to be very creative because not one farm-to-school program is exactly alike. What works for one school won't necessarily work for the others."

According to Garland, the program benefits all involved. Food service directors can receive rebates through the Kentucky Proud program, which refunds a portion of the money spent on in-state growers back to the purchasing school. Kids are also responding positively to the program's efforts, favoring foods from their home state.

"[The program] is continuing to grow," Garland says. "Our goal is to have it in every county in Kentucky, but it's solely dependent on food service directors. They make the decision whether or not to participate. But it is growing."

Learn more at farmtoschool.org/ky.

Road Map for the Food Economy West Virginia

Last spring, students and staff at Tucker County High School in West Virginia finished building a greenhouse at an elevation of 3,500 feet, one of the East

Coast's highest. And in Martinsburg, the Veterans Affairs Medical Center kitchen purchases local foods with the savings from a kitchen waste reduction program.

Across the Mountain State, farm-to-school projects are proving that West Virginia, a state that suffers from a 12 percent diabetes rate, is also fertile ground for change. Federal officials with the Appalachian Regional Commission and the USDA have lauded the state for its Road Map for the Food Economy, a plan to boost access to healthy foods while strengthening the agricultural economy.

The map was developed in 2012 by the West Virginia Food and Farm Coalition, a project of the West Virginia Community Development Hub; organizers refer to the program as a "food charter" that offers both a positive vision and a way to measure progress.

Learn more at: wvhub.org/wvffc.

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As we prepared this agriculture-themed issue of *The Appalachian Voice*, we couldn't help but think of how to improve our own green thumbs. We took the following questions to Ruth Gonzalez and Meredith McKissick at the Organic Growers School, a nonprofit that promotes sustainability through educational opportunities in Southern Appalachia.



Garden Advice from the Experts!



Photos by Jessica Kennedy

1. Is there a way to keep the band of deer away from my small beds without building an enormous fence? How?

Although enormous fences are the most reliable protection, Havahart DeerOff and Plantskydd Deer Rabbit Vole Repellent are two natural and organic options you can try. Active ingredients vary by product, but can include garlic, capsaicin hot pepper and putrescent whole egg solids; they work by assaulting the deer's senses of taste and scent.

2. How can I stop slugs, blight or aphids without pesticides? What are the best homemade options?

Safer Soap will control aphids, and beer traps and/or Sluggo (iron phosphate) work for slugs. For blight, use compost tea along with rotating spray treatments of Serenade and copper sulfate fungicides.

Here is the OGS executive director's favorite recipe for homemade garlic soap spray, which is effective against many insect pests including cabbage loopers (adults and caterpillars), aphids, squash bugs, tarnished plant bugs, slugs, hornworms, leafhoppers, whiteflies, squash bugs and earwigs.

- 25 cloves unpeeled garlic or 2 cups minced, tender garlic scapes, or 3 tablespoons garlic powder
- 2 teaspoons mineral oil
- 2 teaspoons liquid castile soap
- 2 cups warm water

Press garlic or crush it in a small food processor. Place the crushed garlic and juice in a glass or jar with the mineral oil, stir just a little, and let stand 24 hours (though longer is okay). After the wait, in a separate bowl combine the garlic oil mixture, castile soap and water. Mix well, then strain into a mason jar. Store in the fridge for up to three weeks. To use, dilute 1-2 table-

spoons concentrate into 2 cups of water. Spray your plants thoroughly. The garlic odor will not ruin your plants or make them taste garlicky, so spray well!

3. How do you know when compost is ready for the garden?

The compost should smell sweet, look rich and dark, and ideally should have heated up enough to kill weed seeds and pathogens. Optimally, the pile should be at least three feet long in all directions to get it to heat up. Read more on composting at: bit.ly/18AbO1C

4. What are the best plants to grow with your kids in a "starter garden?"

Planting seeds that come up quickly is always a good bet with children. Beans and peas are very big, easy-to-handle seeds that sprout rather dramatically. Sunflower seeds, squash, and cucumbers fall into that category, too.

Kids will graze on things in the garden that they would not touch at the dinner table — try parsley or lettuce. Unsprayed edible flowers also add a touch of magic to your garden harvest. Some mildly flavored common ones would be pansies, violas, impatiens and calendula. Learn more at: bit.ly/11EA67Z

5. How can I tell if a particular vegetable I want to grow in my garden has been genetically modified?

Certified organic growers are not allowed to use genetically modified seeds or transplants. If you buy organic seed and organic transplants, your vegetables should be GMO-free. Learn more at: bit.ly/18Cf9X9

For monthly gardening advice from Organic Growers School, sign up for their e-newsletter at organicgrowersschool.org and email your agriculture questions to enews@organicgrowersschool.org

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Appalachia's Political Landscape



Running On Reality

A Conversation with Anthony Flaccavento

For more than 20 years, Anthony Flaccavento has worked to build bridges between small-scale organic growers like himself and farmers markets, grocery stores and public schools. He founded Appalachian Sustainable Development in 1995, a nonprofit that became a regional leader in economic development.

Last year, Flaccavento won the Democratic primary in southwestern Virginia's 9th congressional district, campaigning on his experience in community development. He lost the general election to Republican incumbent Morgan Griffith, and now runs Abingdon Organics, a farm, and SCALE, Inc., a consulting group that supports local economies. This interview is excerpted from a conversation at the Appalachian Voices office in Boone, N.C.

What were your goals when you decided to run for Congress?

When I entered, I really had two rules, neither of which was winning. One was to improve the substance of the debate by starting to talk about meaningful things, including the bottom-up economy. I thought I could change the debate a little bit, I thought I could introduce some more

thoughtfulness and more honesty. My second goal was to galvanize progressive-thinking people, mostly the Democratic persuasion but of all stripes: independents and even some moderate Republicans. So I thought there was a way for me to do that ... by being honest about the issues and putting forward this vision that made sense to people.

thoughtfulness and more honesty.

My second goal was to galvanize progressive-thinking people, mostly the Democratic persuasion but of all stripes: independents and even some moderate Republicans. So I thought there was a way for me to do that ... by being honest about the issues and putting forward this vision that made sense to people.

About halfway through the campaign, after winning the Democratic nomination, I started thinking, "Maybe I should try to win."

During the campaign you described yourself as "pro-coal miner" rather than "pro-coal." Did that approach help or hinder your message?

I think it did [help]. I won the [United Mine Workers of America] over with great enthusiasm after a lot of initial skepticism ... I would say, "I'm a farmer, I don't like government regulation any



Appalachian politicians have a substantial influence on our nation's energy and environmental policy. Do you think they can embrace alternatives and help build the bottom-up economy?

The power and influence of a small group of Appalachian legislators who are in states that control a tiny part of our energy portfolio is similar to farm state senators who are on the agriculture committees. In both cases, it's a group of elected officials who've somehow concluded that the only thing you can do is fight for what you've got, because there's no alternative.

What I've been saying for my whole career in Appalachia and certainly during my campaign is, "There are alternatives." There are alternatives in energy policy and there are alternatives in agricultural policy.

What's been lacking among the leaders in our region, in the House and the Senate as well as at the state level, is a willingness to speak honestly about the coal industry and along with that a lack of any sense of alternatives.

Continued on page 21

Bills on the Hill

A LOOK AT ENVIRONMENTAL HAPPENINGS IN CONGRESS

THE GOOD

Mine and Workplace Safety and Health Act (S. 805 / H.R. 1373): Introduced for the fourth time by Sen. Jay Rockefeller (D-W.Va.) since 29 miners were killed in the 2010 Upper Big Branch disaster, the Coal Mine Safety Act addresses a long list of safety concerns by strengthening whistleblower protections and increasing criminal penalties for safety violations. Referred to the Committee on Health, Education, Labor, and Pensions

Energy Savings and Industrial Competitiveness Act (S. 761 / H.R. 1616): Rep. David McKinley (R-W.Va.) introduced this measure to promote economic stimulation through energy efficiency technology. The bill includes provisions such as workforce training, the creation of Supply Star to make supply chains more efficient, and requirements for the federal government — the largest user of energy — to adopt energy efficiency strategies. Currently in the House

Committee on Energy and Commerce.

Rural Energy Savings Program: Housed in sections 6202 and 6407 of the 2013 Farm Bill (S. 10), this program aims to stimulate rural economic growth by expanding energy efficiency and would allow individual electric cooperatives or state-based groups of co-ops to seek U.S. Department of Agriculture funding for local energy efficiency programs. Identical legislation passed the Senate in the 112th Congress.

THE BAD

EPA Fair Play Act (S. 830): Introduced by Sen. Joe Manchin (D-W.Va.), this bill would eliminate the U.S. Environmental Protection Agency's ability under the Clean Water Act to stop permits for valley fills associated with mountaintop removal coal mines. Rep. David McKinley (R-W.Va.) has introduced similar legislation in the House. Currently in the Senate Committee on Environment and Public Works.

THE FARM BILL: Roughly every five years Congress passes a set of agriculture, conservation, forestry and energy legislation known as the Farm Bill. The 2013 versions of the bill passed by both House and Senate agriculture committees in May would end \$5 billion in annual direct subsidies to farmers, and increase crop insurance programs by \$9 billion. Changes are also in store for the federal food assistance program, with the House version cutting \$20 billion and the Senate bill eliminating \$4.1 billion from the program. Both bills also include provisions to protect the sale of genetically modified seeds, regardless of whether the U.S. Department of Agriculture finds that they are unsafe for human consumption. A section of the Senate version would boost energy efficiency in rural areas (see below), and fund biofuels research and development. Both versions of the 2013 bill are scheduled for full votes in June.

Coal Jobs Protection Act (S. 861 and H.R. 1829): Sen. Mitch McConnell (R-Ky.) and Rep. Shelley Moore Capito (R-W.Va.) introduced companion bills that would curtail the EPA's oversight of mountaintop removal waste disposal as written under the Clean Water Act. The legislation limit the agency's authority over the disposal of mining waste into Appalachian streams to only 60 days after the mining company requests a permit. Referred to the

Committee on Environment and Public Works.

Clean Water Cooperative Federalism Act (H.R. 1948): Re-introduced by Rep. John Mica (R-Fla.), this bill, also known as the "Dirty Water Act," would remove the EPA's authority to ensure that states effectively implement water quality standards, and eliminate the agency's ability to improve those standards when the states fail to protect clean water. Referred to the Subcommittee on Water Resources and Environment.



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New Rules Stoke Fear of Fracking on Public Lands

By Brian Sewell

When the U.S. Department of the Interior released updated draft rules to regulate hydraulic fracturing on public and Indian lands, environmental advocates responded much as they did when the initial draft was released in 2012 — with disappointment.

In the days following the Interior's announcement, federal officials and Secretary Sally Jewell were criticized for ignoring suggestions to improve the rule's ability to protect air, water and public health. Environmental groups claim the rules remain riddled with loopholes and may even be weaker than the original draft. Natural Resources Defense Council president Frances Beineke told *The Washington Post* that the new draft is a "blueprint for business-as-usual industrialization of our landscapes."

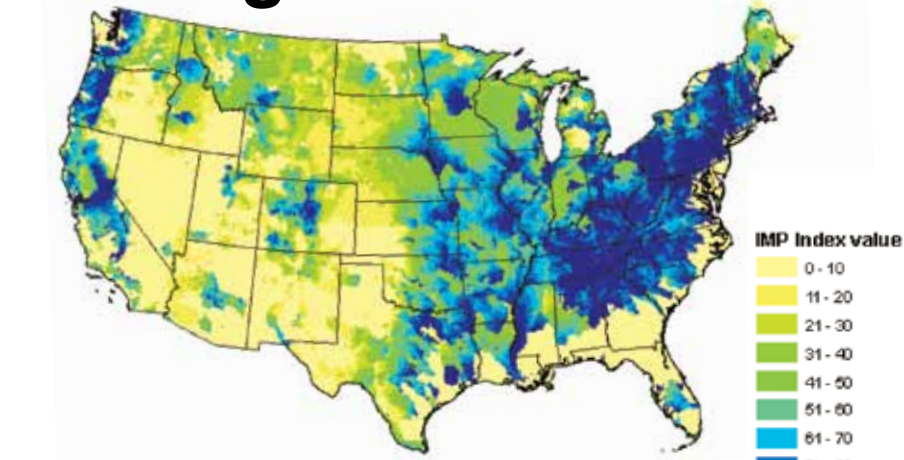
The proposed regulations do not require companies drilling on public land to disclose chemicals used in the process, disregarding the frequent complaint that allowing companies to keep "trade secrets" may pose an unknown risk to communities near drilling sites. Instead, companies would be allowed to wait after drilling to disclose chemicals using

FracFocus.org, a privately run website used to satisfy disclosure requirements in certain states.

Testifying before the U.S. House of Representatives Committee on Natural Resources, the founder and president of the digital mapping non-profit SkyTruth addressed this shortcoming. Since "no mechanism for effective public disclosure currently exists," John Amos told committee members, a user-friendly, government-operated website should be developed to encourage the public to use and share data without restrictions.

In addition to Bureau of Land Management property in the western United States, the rules would apply to drilling in national forests in the East. In Appalachia, opponents of fracking are fearful of what that could mean for George Washington National Forest, which contains the headwaters of the Potomac and James rivers and the source of drinking water for four million people, including Washington, D.C., and northern Virginia.

According to a handout released by the Southern Environmental Law Center, 10 local governments surrounding the George Washington National Forest and two major metropolitan water suppliers



Plans to expand fracking in Virginia and East Tennessee could pose a threat to some of the Southeast's most significant watersheds. In this map created by the U.S. Forest Service's Forest to Faucets project, areas most important for surface drinking water are identified by higher blue values. Map from fs.fed.us

in the area have submitted comments stating that fracking in the forest is not worth the risk. The Forest Service is expected to announce whether it will allow fracking in the national forest sometime in June.

Fracking is already taking place along the Cumberland Plateau in East Tennessee, and in March the University of Tennessee received approval to drill in the Cumberland Forest. University researchers plan to use the site study fracking's environmental impact while also generating revenue to finance addi-

tional research. A report released by the National Parks Conservation Association in April identifies East Tennessee's Big South Fork National River and Obed Wild and Scenic River as significantly threatened by the practice.

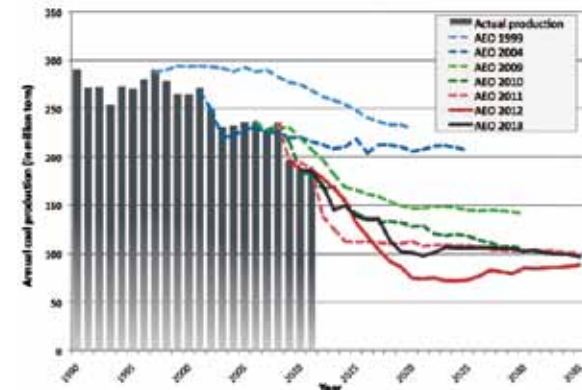
According to the Interior Dept., approximately 90 percent of drilling on federal lands uses hydraulic fracturing, but current regulations have not been updated in more than 30 years and were not written to address modern drilling technologies.

Report Tracks Appalachian Coal's Continuing Decline

By Brian Sewell

A report released in May by the West Virginia-based consulting firm Downstream Strategies underscores the need for investment in Central Appalachian counties hardest hit by a decline in coal production and demand. By looking at market and regulatory factors, plus trends in the U.S. and abroad, the report offers a comprehensive examination of the challenges the region faces.

Since its peak in 1997, Central Appalachian coal production has declined faster than annual projections by the U.S. Energy Information Admin-



Since peaking in the '90s, Appalachian coal's decline has significantly outpaced projections by U.S. Energy Information Administration's Annual Energy Outlook.

istration. According to the report, production has fallen by 55 percent in Tennessee, 44 percent in eastern Kentucky, 37 percent in Virginia, and 29 percent

in southern West Virginia. In 2011, regionwide production was only 185 million tons — just 17 percent of total production nationwide.

The report points out that coal-fired power plants in the eastern United States remain the most important purchasers of Central Appalachian coal, but demand by the electricity sector has dropped precipitously since 2006, contributing to economic turmoil where the coal is mined. The imminent retirement of coal-fired power plants in the region will continue to impact mining employment and severance tax revenues. According to the report, thirty of the 137 power plants that purchased coal from

mines in Central Appalachia are scheduled for retirement by 2016.

Counties in eastern Kentucky, where severance tax revenues are in a long-term decline steeper than other states, are most vulnerable to the retirements. Eastern Kentucky mines accounted for approximately 60 percent of all Central Appalachian coal shipped to retiring plants in 2011.

Partially because of this dependency, three counties in Kentucky — Knott, Letcher and Pike — are classified as being highly vulnerable to the factors examined in the report. Wise County, Va., is also classified as highly vulnerable, and ten counties in Virginia, West Virginia, Kentucky and Tennessee are rated as moderately vulnerable.

Read the report at downstreamstrategies.com.

Court Rulings Favor Clean Water

By Brian Sewell

Two consecutive court rulings in April affirmed the U.S. Environmental Protection Agency's authority to veto mountaintop removal valley fill permits and called for increased scrutiny of the practice's environmental impacts during the permitting process.

On April 22, the 6th U.S. Court of Appeals revoked the U.S. Army Corps of Engineers' use of Nationwide Permit 21, invalidating the streamlined permitting process that has contributed to the expansion of mountaintop removal coal mining in Appalachia since 1992. In its ruling,

the three-judge panel called the Corps' actions "arbitrary and capricious" and found that it did not follow Clean Water Act and National Environmental Policy Act regulations. According to the Corps, approximately 70 permits granted under NWP 21 qualify for a five-year extension before becoming unlawful.

The day after the NWP 21 decision, the U.S. Court of Appeals for the District of Columbia ruled in favor of the EPA's veto of multiple valley fill permits at Arch Coal's Spruce Mine in

Logan County, W.Va., one of the largest mountaintop removal mines in history.

In the ruling, Judge Karen Henderson concluded that the section of Clean

Water Act under question clearly followed Congress's "intent to confer on EPA a broad veto power" that extends beyond simply reviewing permits. Environmental groups called the ruling a major victory over the coal industry's

attempts to prevent the EPA from protecting Appalachian communities from the harm caused by mountaintop removal.

Legislation has been introduced in both the U.S. House and Senate to restrict the EPA's veto authority and overturn past vetoes by the agency, including that of the Spruce Mine permits.

Permit to Mine Ison Rock Revoked

In the latest chapter of a six-year battle between A&G Coal Corporation and the citizens of Wise County, Va., the Virginia Department of Mines, Minerals and Energy denied a 1,200-acre mountaintop removal coal mining permit on Ison Rock Ridge, which would have buried 14,000 feet of streams. The department revoked the permit because of previous violations by the company, unpaid fines and the amount of time lapsed since A&G originally received the permit. A&G formally appealed the decision, but as of press time the DMME had not responded to the appeal.

NC Pushes Duke Energy to Remedy Coal Ash Pollution

The North Carolina Department of Environment and Natural Resources has added Duke Energy's Riverbend power plant to an existing lawsuit targeting coal ash pollution in the state. The suit alleges that coal ash ponds at the Riverbend facility have "unpermitted seepage" impacting Mountain Island Lake near Charlotte. The state claims that contamination from the coal ash ponds poses "a serious danger to the health, safety and welfare of the people of North Carolina and serious harm to the water resources of the state," and is seeking an injunction to force Duke to remedy any possible contamination. Duke Energy claims it is in compliance with permits and that the seepage does not negatively impact water quality.

Bill to Repeal Renewables Standard Fails to Gain Support

After being blocked in the state House of Representatives, a bill to repeal North Carolina's renewable energy portfolio standard was passed by the Senate Finance Committee, but remains unlikely to pass a full vote during the current ses-

sion. The bill's original sponsor, Rep. Mike Hager, plans to address the future of the state's renewable mandate during Gov. Pat McCrory's Blue Ribbon Study Commission, which will host a series of sessions for administration officials and legislators to discuss the renewable energy standard with energy experts. Originally enacted in 2007, North Carolina is the only state in the Southeast that mandates utilities meet a certain percentage of demand with renewables.

Groups Sue to Protect Endangered Fish from Mountaintop Removal

A coalition of environmental groups including the Defenders of Wildlife and the Sierra Club are suing the U.S. Fish and Wildlife Service, which they claim unlawfully approved two surface mining permits in East Tennessee. The groups claim that outdated research was used to evaluate permits and did not consider the effects of mining pollution on two protected species of fish. Citing the Endangered Species Act, the lawsuit seeks to overturn the mining permits until further review and asks for an injunction to prevent coal companies from dumping mining waste into waterways that harbor the rare fish.

Anthony Flaccavento

Continued from page 19

Where do you see things heading, and how do we get there?

The core idea is that of creating a bottom-up economy ... We know trickle-down economics has not worked. We know that it has concentrated wealth at unparalleled levels. We know that it has denuded communities by taking capital out so that independent businesses are disfavored compared to franchises, Wal-Marts and mega-chains ... What we don't know is, if we have the right public policy, could it be transformative in places like Appalachia? I think it could ...

We know coal is in decline just like we knew tobacco was in decline. The response of coopera-

tive extensions and universities at that time was "nothing can replace tobacco." It was incredible that the intellectual and the technical entities that were supposed to be helping farmers just couldn't see past tobacco's decline in the same way that people are stuck on coal.

What has happened in food and farming over the last decade and a half is a shift ... from a lot of despair and doubt about there being any alternatives to replace those things, we've shown that integrated, diverse approaches can work. I think we take that same approach to the economy as a whole.

Read the complete interview at apvoicess.org/thethevoice

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Standing with Rep. Frank Pallone (in gray), lead sponsor of the CWPA

Appalachian WaterWatch: Protecting Your Water with Vigilance and Community Involvement

Our Appalachian Water Watch team is busier than ever watching over our water resources in Appalachia. From arming citizens with the know-how to monitor their own water to challenging bad deals between coal companies and state agencies, the Water Watch program is working each day to protect the rivers, streams and drinking water sources in the region.

Challenging A Backroom Deal

Appalachian Voices' Appalachian Water Watch team and partner organizations are challenging a backroom settlement between Frasure Creek Mining and Kentucky's Energy and Environment Cabinet in state court. The deal between the coal company and the state agency essentially lets Frasure Creek off the hook for thousands of water quality violations over the past two years, while doing little to ensure that the company fixes its polluting of area waterways and submitting of false water monitoring data.



Ace Project Reinvisioned

Appalachian Voices and The Alliance for Appalachia are expanding our joint efforts to hold big coal companies accountable for polluting Appalachian waterways. The launch of a new website, Ace-Project.org, will provide area citizens with a more efficient way to monitor and report pollution in the region. The website includes information about water quality indicators, details on training for citizens interested in becoming monitors, and a special mapping system to input and track water quality concerns in the West Virginia, Virginia, Kentucky and Tennessee region. To learn more or become involved, visit ace-project.org.

violations. Follow the legal proceedings at appvoices.org/waterwatch.

New Water Pollution Alert System

Our Appalachian Water Watch team is working with nonprofit environmental monitoring group Sky-Truth to launch a new water pollution alert system and toll-free hotline that will allow local people in coal-impacted communities to quickly and easily report pollution spills. Reports are then made public via the website, and site users can

sign up for email and text message notifications of spills in their area. The goal of the system is to ensure that water pollution is reported to appropriate agencies, responsible companies are held accountable, and impacted citizens are made aware of the incidents. To find out more, visit appalachianwaterwatch.org, email erin@appalachianwaterwatch.org or call 1-855-7WATERS.

Clean Water Protection Act Introduced in Congress

Early in May, Appalachian Voices worked with The Alliance for Appalachia to bring more than 60 citizens from around the country to the 8th Annual Week in Washington in Washington, D.C. We spoke to federal agencies and representatives to inform them about the horrors of mountaintop removal coal mining, and to urge them to support the Clean Water Protection Act (H.R. 1837). H.R. 1837 was introduced in May by a bi-partisan team of congressional members, and the legislation would sharply reduce mountaintop removal coal mining by making it illegal to dump mining waste into valleys and streams. Originally starting Congress's 113th session with 45 cosponsors, the legislation has since gained 11 new cosponsors. Visit ilovemountains.org to take action now by telling your representative to support this important legislation.

Encouraging Communities to Speak Up for Clean Water

This spring, the Red, White and Water team reached out to communities in Asheville, Belmont and Belows Creek that live near the coal-fired power plants, talking to people about speaking out against water pollution from coal ash and discharges of toxic chemicals. With two more full-time interns coming on for the summer, the team looks forward to taking more action with involved citizens. If you or anybody you know lives near a coal-fired power plant in the aforementioned communities in North Carolina and is interested in speaking out, contact Sandra Diaz at sandra@appvoices.org for more information.

Tennessee Tuesdays

Are you a resident of the great Volunteer state, or do you live apart but frequently visit in your daydreams? Stay connected through our new weekly Tennessee Tuesdays blog posts, courtesy of Tennessee Director JW Randolph. We'll touch on topics like mountaintop removal coal mining in the Appalachian region of the

state, legislation in the state government, and report how Tennessee's federal legislators vote on environmental issues. Visit appvoices.org/frontporchblog/ every Tuesday!

Grateful for Their Service

Throughout the 2012-13 school year, Appalachian Voices has been fortunate to work with a slew of talented interns who gifted us with their energy and skills. Courtney

Cooper and Ethan Strickland maintained the citizen water monitoring database and compiled pollution data for Appalachian Water Watch. On the communications front, Matt Abele shared his multimedia talents, Jil Lee provided graphics and web support, and Davis Wax contributed to our blog and The Appalachian Voice. In Washington, D.C., Becca Stern helped organize Week in Washington participants and Melanie Foley continues to assist with policy analysis, advocacy in Congress and writing for our blog.

With our Red, White and Water team, Hallie Carde played an integral role in clean water outreach, Ian Watkins researched water issues in North Carolina and kickstarted the canvassing campaign, and Katie Griffith assisted with all of the above. Erin Hostetler boosted our outreach and phonebanking with the help of enthusiastic volunteers, and Tabitha Lunsford served for over a year, contributing to every aspect of the program.

We're thankful for their great work, and wish all of our spring and fall interns the best in their future pursuits!



282-262-1500 | erin@appvoices.org

Interested in water quality in the coal-bearing regions of Central Appalachia?

BECOME A CITIZEN WATER TESTER

with the Appalachian Water Watch Program

Virginia Teacher and Landowner Faces Energy Extraction

By Davis Wax

In the southwestern reaches of Virginia, landowner and teacher Gail Marney resides on a intergenerational family farm. Her great-great grandfather moved here in the early 1800s and served in the Civil War. Her great uncle, Elihu J. Sutherland, who served as a judge and whose books are primary sources for many current scholars, also called this place home.



MEMBER SPOTLIGHT
Gail Marney

Gail's son now resides on a section of the farm and he, too, has a son living there. Gail figures her grandson is the seventh generation of her family to occupy their 300 acres.

This place in Dickenson County, however, is the sight of a huge extraction industry, one keen on drilling all of the natural gas beneath Gail's and her neighbors' land.

"Since moving here, it's been a constant battle with the gas well companies," says Gail. According to Gail, subcontractors for Equitable Gas frequently trespass on private land while surveying well sites. Property is often rendered inaccessible by pipelines placed above ground and water trucks and massive equipment needed for the gas drilling process tear up local roads not designed to support them.

The problem, says Gail, is that while she and her family may be the landowners, the gas companies own the mineral rights, something Gail's great-grandfather and many others in Dickenson County sold to buyers around the turn of the 20th century. Neither the buyer nor seller really knew what the contract meant long-term, she says, and most were happy, for instance, to let companies haul rocks off their land.

Nearly one hundred years later, Dickenson County's water quality is in danger. The family spring used for at least a century has vanished, and Gail believes it was sunk by the gas well drilling. She and her family now haul water from a source farther away while they wait on grants to receive city water.

The community is working on signing petitions to bring clean water up to higher elevations. "Having clean water for clothes, dishes, and showers will bring relief to a lot of people," she says.

Not having to rely on bottled drinking water will be another convenience.

Through all of this, Gail remains very attached to Appalachia and to her home. One of the ways she found to stay involved with protecting the region was becoming a distributor of *The Appalachian Voice* in Dickenson County, something she has done for almost nine years. Gail is also involved in the Appalachian Studies Conference at Virginia Tech, the place she finished up her master's thesis on the daughters of Mother Jones in 2007.

Gail feels that her county's situation is a gateway to furthering environmental education. When she previously taught government at Haysi High School in Dickenson County, Gail would try to incorporate environmental issues into her lessons — everything from soil erosion due to gas drilling to the effect of everyday littering. She would even drive students out to look at some of the coal strip mining going on, which is another extraction factor in the area. Seeing firsthand the effects on people living by strip jobs is eye opening, she says, even for those who live only a few miles away.

Today, Gail teaches advanced placement courses online and continues to live with her family on the farm in Dickenson County.

Appalachian Voices is committed to protecting the land, air and water of the central and southern Appalachian region. 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.

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Just before planting season, the Appalachian region unexpectedly lost one of its true agricultural pioneers. Charles Church was born in 1946 and raised in the rural hollers and old-school farming style of Sugar Grove, N.C. Following the tobacco crash of the late 1990s, Church became one of the first farmers in the region to embrace the budding organic movement, starting with broccoli and ultimately expanding to dozens of other crops, simultaneously convincing other traditional farmers to do the same. He helped found New River Organic Growers, offered his farmland for demonstrations and educational programs, and was never too busy to answer questions from young and up-and-coming farmers. He was 67. Photo by Jessica Kennedy

GET INVOLVED environmental & cultural events in the region

Surface Mining and Coal's Lifecycle

June 10, 6 – 9 p.m. Coalfield Environmental Health Project is providing a series of community forums in Fayette County to address the impact of coal mining on human health, water quality and community. SALS Community Center at Beards Fork, W.Va. Event is free. Contact Andrew Munn at 304-924-1506 or email at anromu@gmail.com

Henderson Music Festival

June 15. Rosanne Cash and John Leventhal headline the 19th annual Wayne C. Henderson Music Festival. \$15/person. Children under 12 are free. \$3/parking. Grayson Highlands State Park, Wilson, Va.

Georgia Mountains Farm Tour

June 15-16: The Soque River Watershed Association offers a tour of as many as 16 farms throughout the North Georgia mountains and even into South Carolina and North Carolina. Food provided by local chefs. \$35 for weekend pass. Visit: chattahoochee.org

Rhododendron Festival

June 15-16, 10 a.m.-5 p.m. The 66th annual Roan Mountain Rhododendron Festival will include live music and vendors. Donations accepted for admission, parking or other events. Roan Mountain, Tenn.

Save the French Broad Float

June 15-23. A guided tour of the French Broad Paddle Trail. \$600 for all nine days, \$375 for Wed. - Sat., \$325 for Thurs. - Sat., \$175 for Sat. and Sun. Includes most meals. Call 828-258-8737.

Hike Crawford Knob

June 19, 9 a.m.: Join Josh Palumbo as he leads you around the wilds of Crawford Knob. Hike rating: moderate to difficult. Bring plenty of water and food. \$8 members of Wintergreen Nature Foundation, \$10 nonmembers. Wintergreen, Va. Contact: 434-325-8169.

Foundations In A Day

June 20, 8:30 a.m.-5 p.m. By the end of the day, you will have an action plan to move your business forward. Fee: \$135, including all materials and lunch. Space is limited/pre-registration is required. Hayesville, N.C. Contact Ashley: 828-253-2834 x27, ashley@mountainbizworks.org. Also held June 24 in Lake Lure and June 29 in Burnsville.

Grow Appalachia's Potluck

June 21, 6 p.m.: You're invited to a Local Foods Potluck at Laurel House at 6 p.m. Bledsoe, Ky. Visit: pinemountainsettlementschool.com

Run for Freedom

June 21-23. The 17th annual event will be held for Leonard Peltier and all prisoners of conscience. Starts: Dayton, Ohio and ends in Covington, Ky. Registration required. Free, but donations are appreciated. Visit: www.footprintsforpeace.org.

Beech Creek Bog Hike

June 22, 9 a.m.-12 p.m.: Hosted by Blue Ridge Conservancy, join a local naturalist and BRC staff for a carefully guided tour of this special ecosystem. The group will meet at Fred's General Mercantile. Limited space. Free. Visit: blueridgeconservancy.org. Beech Mountain, N.C.

June Jamboree

June 22, 7:30 a.m.-6 p.m.: Join Southern Appalachian Highlands Conservancy for an array of choices for hikes on the Roan Massif. Each hike will have its own departure location and time. Following your hike, enjoy a cold beverage while sharing stories at Roan Mountain State Park, Tenn. Registration needed. Free. Visit: appalachian.org.

Camping Can-Do

June 22, 1-3 p.m. Use this Great American Backyard Campout day to become a big helper on your family's next camping trip. Ages 6-12, younger with adult helper. \$10 members, \$12 nonmembers. Wintergreen, Va. Contact : 434-325-8169.

Singing on the Mountain

June 23, 8:30 a.m.-3 p.m.: Join numerous Southern Gospel groups in the 89th annual Singing on the Mountain gospel convention. Bring your own lawn chairs and picnics. U.S. Highway 221, one mile from Blue Ridge Parkway. Free. Visit: grandfather.com.

Watauga Riverfest

June 29, 11 a.m.-3 p.m.: Festival will be loaded with strategies for reducing your impact and learning about the area's natural resources. There will be demonstrations, hands-on activities and environmental information. Valle Crucis Community Park, N.C. Visit: wataugariverpartners.org/riverfest.

Wellness and Water II

June 29 -30, registration at 8 a.m., events 9 a.m.: Speakers discuss the future of drinking water. \$40, including some meals. Buckhannon, W. Va. Contact: Julie Archer, Julie@wvsoro.org or 304-346-5891.

Whippoorwill Festival

July 11-14: This four-day festival will include more than 75 workshops about earth-friendly and sustainable living skills. \$80/person before June 16, \$100/person after. Berea, Ky. Visit: whippoorwillfest.com.

RibbonWalk Hike/Service Day

July 13, 9 a.m.-12 p.m.: Join the Sierra Club to help restore, protect and enhance the RibbonWalk Nature Preserve. Wear old work clothes, gloves, bring water/snack and be prepared to have some fun! Visit: charlottesierraclub.org.

Bikes Not Bombs

July 26-Aug. 6. A bike ride sponsored by Footprints for Peace that will protest the nuclear weapons build-up by the Obama administration and mountaintop removal coal mining in Appalachia. Ride starts in Ohio and ends in Tennessee. Visit footprintsforpeace.org

65th Annual Virginia Highlands Festival

Aug. 2-11: Come to a festival to showcase Appalachian arts and crafts. A great opportunity to enjoy scenery in the Abingdon and southwest Virginia areas. Visit: vahighlandsfestival.org

High Country Farm Tour

Aug. 3-4. Tour local, sustainable farms and learn about foods, wine, beer and other treats grown in the N.C. High Country. Host: Blue Ridge Women in Agriculture. In advance: \$25/car. During: \$30/car. \$10/car for farms. Visit: farmtour.brwia.org.