

# KENTUCKY FIELD NOTES

SPRING/SUMMER 2020





# What Truly Matters



As I write this in the late afternoon of March 13, we are in the midst of a World Health Organization declared pandemic as a novel coronavirus spreads around the world, sickening hundreds of thousands of people with COVID-19. Just in the last few days, the full import of the threat has become clear, with public schools closing, sporting events cancelled, and increasingly emphatic warnings from medical and public health professionals highlighting the need for drastic actions to curtail or at least slow the virus's transmission.

I am far more comfortable writing to you about nature and The Nature Conservancy's work than I am offering thoughts on a pandemic. I am certainly no expert on the latter. But as I sat down today to write this essay, I felt it was virtually impossible, not to mention insensitive, to ignore this surreal and difficult situation that we are all facing. I offer a few thoughts, knowing that my words are likely inadequate to fully capture the weight of the issue and perhaps out of date by the time you read them.

One lesson from the fight to contain the novel coronavirus is just how interconnected our planet truly is. While those multi-layered interconnections and the ubiquity of international travel make stopping the spread of COVID-19 more challenging, they are not new. Human societies have been linked across borders and among cultures for a long time. Additionally, while these interconnections exacerbate some vulnerabilities, our recognition of our shared fate on a single planet is ultimately fundamental to reducing the threats we face not only from pandemics, but also from climate change and the sweeping degradation of natural systems. In the end, we have one planet, and there are no "others." There is simply us.

Another opportunity we can grasp from a profound change in routines is to reaffirm the parts of our lives that truly matter. For me personally, those priorities are without question family, friends, community, good health, and the natural world. As we find ways to navigate this significant disruption in our lives, let us all find peace in the parts of our lives we most cherish. And when this current threat abates, let us all recommit ourselves to living so that we enhance our bonds with family and friends, show compassion in our communities, invest in our health and well-being, and help build the strength and resilience of the natural world.

By the time you are reading this essay, I sincerely hope that it seems less relevant or at least less pressing than when I wrote it. That would mean the worst of the crisis is behind us, and life is starting to return to its normal rhythms and routines. In any case, I hope you are healthy and safe and connected with those you love.

As always, but especially in these challenging and uncertain times, thank you for your commitment to The Nature Conservancy and our vital mission to conserve the lands and waters on which all life depends.

Most sincerely,

David Phemister, State Director

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# Building a team for PRESCRIBED

## FIRE IN KENTUCKY



The 2020 fire season brought together the largest coalition of fire professionals in more than 15 years for The Nature Conservancy's Kentucky chapter. The chapter employed seasonal firefighters from Montana, Oregon, Washington, Colorado, California, Indiana, and Arkansas to assist with prescribed burning. They worked collaboratively with colleagues from the U.S. Forest Service, the National Parks Service, the Kentucky Division of Forestry, and other partners to increase capacity for prescribed burning.

"Building these fire teams was a true interagency effort," says Chris Minor, director of land management and fire manager for the chapter. "All of the crews were working in unison to focus prescribed fire efforts on the Cumberland Plateau and the mountains in Kentucky and Tennessee."

Prescribed fire can improve forest composition, renew and maintain native prairies, enhance habitat for rare species, and lessen the risk of wildfire. In recent years, the Kentucky chapter and its partners have focused on controlled burns on publicly owned lands, where more opportunity exists to improve forest health and resiliency on a landscape scale. Plans for the 2020 season included prescribed burns on 14,000 acres within the Daniel Boone National Forest. Other priority areas in Kentucky included Cumberland Gap National Park, Mammoth Cave National Park, and the Big South Fork National River and Recreation Area. In Tennessee, priorities included the Great Smoky Mountains National Park and the Cherokee National Forest.

"One of my secondary program goals is to provide folks from all over the country with experience dealing with prescribed burning, a practice not used as often in the west," Minor says. "Many of the ten seasonal employees we hired on these crews have much more experience with wildland firefighting than they do with prescribed fire."

Kentucky's fire team worked together for nine weeks. However, due to COVID-19 the fire team was unable to complete its planned season. "Following suit with state and federal partners, and considering the safety and well-being of our staff, we made the decision to stand down with our fire operations and allow our seasonal employees an early return to their homes," Minor said. "We look forward to picking up where we left off next year."



## A New Kind of Fire

Marcel Getz was the burn crew manager for the Conservancy's prescribed fire team based in Corbin, Kentucky for the 2020 season. Getz, who is from Libby, Montana, works as an engine boss for the Montana Department of Natural Resources and Conservation for wildland firefighting during the summer fire season. He leads the "initial attack" phase of firefighting, serving as an incident commander. This is his second year participating in prescribed fire work in Kentucky.

"There are a lot of differences," Getz says. "It's still fire, but everything down here is planned. You have a prescription and you know exactly where that fire is going to be."

The fire crew consisted of personnel with at least three years of experience in firefighting. According to Getz, everyone adjusted well to the new experience. They acquired new skills that can be used not only for prescribed fire but for the summer wildfire season when they return home.

"The set up and pace are a little different," says Getz. "You can burn 1,700 acres and only need 20 people on it, whereas back home if we had 1,700 acres there would be more than 100 people working the fire. It's still complex, but you have the luxury of planning weeks in advance for these burns."





# The Science of SELECTING TREES FOR GREEN HEART

The tree-planting stage of the Green Heart Louisville project is underway, with hundreds of trees in the ground and thousands more scheduled for planting. This first-of-its-kind study into the potential human health benefits of urban greening is tracking the health of more than 700 participants, with half of them from the area that will receive trees. How do The Nature Conservancy and partners determine which trees to plant? The answer involves a heavy dose of science.

BOTH PAGES CLOCKWISE FROM TOP LEFT Volunteers participate in a community tree planting in the Green Heart project area; A Green Heart neighborhood resident receives a tree; Chris Chandler talks with tree recipient Tommy Hensley; Shovels ready for planting; Volunteers get a tree ready for planting; An installer transports a large tree for planting. All photos © Randy Olson



## Leaf Structure

One of the main purposes of greening the study area is to reduce air pollution. Dr. Jay Turner of Washington University in St. Louis is leading a team of researchers who measure air pollution in the Green Heart neighborhoods. According to his research, not all trees are created equally in their air pollution removal capacity.

“We thoroughly reviewed the literature to have that guide us in our thinking for Green Heart,” Turner says. “The hierarchy, according to current thinking, is that needle leaf goes at the top of the list, preferred over broad leaf, and evergreens are preferred over deciduous.”

Air flows around a needle leaf the way it flows around a cylinder, while air flows over a broad leaf as if it were a plate. This results in more airborne particles contacting the cylindrical needle leaf than the broad leaf for given leaf area, making the needle leaf capable of greater air filtration. This is one reason

evergreens are preferred over deciduous trees.

Another reason is that evergreens can filter air year-round, whereas deciduous trees lose their leaves for part of the year. Additionally, evergreen leaves extend lower to the ground than deciduous leaves, enabling air filtration at a low level.

The Green Heart Louisville project team is not only planting evergreens, however. Choosing the right species of deciduous tree comes with its own scientific study.

“If you want to compare broad leaf to broad leaf, there are three factors,” Turner says. “Whether it has a thin wax layer or a thick wax layer seems to be important. Secondly, leaves typically have hairs, and the higher density of hairs, the more effective it will be at removing particles. Lastly, the more ‘groovy’ the leaf surfaces are, the more likely they are to remove particles.”

All of these scientific factors go into the Green Heart team’s tree choices. Other factors include availability of certain trees, cost, neighborhood resident preferences, and the ecology of the area to be planted.

## Native and Non-Native Species

Keeping in mind that evergreens out-perform deciduous trees in air pollution removal, the Conservancy has chosen to plant a large number of evergreen conifers in the Green Heart Louisville study area. These species include juniper, pines, arborvitae, and spruce. There are not many varieties of evergreen conifers native to Kentucky, however, so non-native species may be chosen.

“We’re getting a question from some people—‘Why are you planting trees that The Nature Conservancy wouldn’t historically plant?’” says Chris Chandler, cities program director for the Kentucky chapter. “The answer lies in the unique needs of this study. This isn’t a biodiversity project. Rather, we’re focusing on removing as much pollution as possible to create healthy neighborhoods.”

Chandler notes that the project is working with horticultural experts to ensure that plant selection achieves the project goals while staying as close to native as possible. No invasive species will be planted, whether native or non-native. Even after the project plants all of its trees, evergreen conifers will still only make up one to two percent of the overall trees in the study area. And the Conservancy is also planting native deciduous trees such as scarlet oaks, Shumard oaks and catalpa.

“Canopy trees have other benefits,” Chandler says. “They can shade sidewalks, provide a lot of good habitat and food production for wildlife, and help alleviate the urban heat island effect.”

The Conservancy and its partners are also looking at the longevity of trees. By studying research and trends, the Green Heart Louisville team can identify species with diseases beginning to impact the urban environment. For example, native white pine trees are beginning to show visible signs of a tip blight known as Diplodia. Instead of using these trees, the project is planting loblolly pine, a species that is showing resistance to the blight.

“We’re not just interested in the next five years,” Chandler says. “We want to make sure these are durable, beautiful, and healthy trees in the landscape for many decades to come.”

# Mitigating Floods, PREPARING FOR DISASTERS

The year 2019 was the wettest year on record for Kentucky and the nation as a whole. Persistent rains left much of western Kentucky's farmlands under water for more than 200 days.

"Big chunks of western Kentucky, specifically our upper bottoms focus area, were underwater from October 2018 to August 2019," says Shelly Morris, director of floodplain strategies for the Kentucky chapter. "The big issue with this flood was the duration of it. Farm fields and the bottoms were flooded for nine months, which is just unheard of."

Farmers who experience flooding can recoup some of their losses with crop insurance. However, the repeated flooding that has occurred in recent years threatens farmers' livelihoods.

"Crop insurance is what kept people from totally losing every dollar," says Morris. "But at some point either your premiums start to go up or you lose what's called cropping history on your coverage. Repetitive claims drive up premiums and can eventually lead to a farmer not being able to get insurance."

The Nature Conservancy's work in western Kentucky focuses on taking these frequently flooded croplands out of production and restoring them to bottomland hardwood forest. Voluntary programs through the Natural Resources Conservation Service (NRCS) compensate farmers for the loss of their cropland, and a conservation easement is placed on the land.

This has become an attractive option for landowners with repeated crop losses. The resulting restoration helps mitigate flooding.

"A restored floodplain is going to help store those floodwaters," says Morris. "The floodplain can also take up excess nutrients and provide wildlife habitat."

A changing climate and the increase in severe weather associated with it plays a major role in these repeated floods. As the climate continues to change, the Conservancy is preparing its employees to learn how to mitigate natural disasters with a new program called the Disaster Recovery Academy. Morris began the academy in January, joined by the Kentucky chapter's external affairs director, Heather Majors.

"The Disaster Recovery Academy is an idea within the Conservancy that will help chapters increase pre-disaster mitigation and disaster recovery funding," Majors says. "The hope is that we will learn how to work better with communities to bring nature-based solutions to flooding and other challenges."

The academy will enable Conservancy employees to not only be poised to react when disasters occur and disaster funding becomes available, but also develop strategies aimed at proactive mitigation



before the disaster strikes. This will help the Conservancy work with partners more quickly to apply for aid and get it to farmers and others impacted by flooding.

"I think it's going to open our eyes to a lot of potential partnerships, programs, and funding that we've never thought of before," Morris says. "We will be connecting with our state hazard mitigation officer and FEMA, whom we have not engaged with previously."

Morris adds that the academy is encouraging a new holistic view of Kentucky that includes not only the western Kentucky project area but also places like eastern Kentucky, where repetitive flash flooding occurs.

"This will help us take a broader look at what's happening in the state," Morris says. "The final product will be a written plan of how we will react to and help mitigate disasters."

## Spotlight: Chris Minor

In 1999, Chris Minor responded to an ad posted on a cork board at Hocking Technical College in Ohio. The ad was for a nine-month land steward position with an organization he had never heard of in a state he had never visited. His Wildlife and Recreation Management major fit well with this entry-level position at The Nature Conservancy in Kentucky. Following a brief phone interview two weeks after graduation, he accepted the position and soon loaded up his Chevrolet Cavalier and headed west from his Virginia home through the Cumberland Gap to Lexington. The rest, as they say, is history.

“Most of those first nine months were spent pulling and bagging invasive species, working under a National Fish and Wildlife Foundation grant,” Minor says. “There would be occasional breaks to weed-whack and clear downed trees from hiking trails, along with addressing other stewardship needs.”

Twenty years later, Minor is the director of land management and fire manager for the Kentucky chapter. He is considered a leader in prescribed fire in Kentucky, with a team that assisted on more than 17,000 acres of controlled burns in 2019.

“I’ve literally grown up in the organization, having started my career only a few months after my 21st birthday,” Minor says. “I’ve gained an appreciation for the organization, the people, and our partners. I’ve particularly enjoyed working with and growing the fire management program.”



## Spotlight: Richard Rosen

“For a long time I’ve been really concerned about what’s happening to this planet,” says Richard Rosen, a long-time donor and supporter of The Nature Conservancy. “This planet is a jewel. As far as anyone knows, there’s nothing like it in the universe. Back in my childhood, the planet was in a lot better shape than it is today, and if you go back a few hundred years it was better still.”

Rosen found a way to live his values by supporting the Conservancy’s global work. Making a difference at the highest level allows Rosen to do his part for conservation.

“The whole planet needs protection,” says Rosen. “Areas of the planet that don’t have benefactors also need support. I want the money to go where it is needed most.”

After moving to Kentucky, Rosen learned that the Conservancy’s work in the Central Appalachians was also globally significant. Right here at

home, Rosen could make a difference by investing in the region.

“Kentucky fits into the Conservancy’s global priorities,” says Rosen. “The Appalachian mountains are critical as animal and plant migration paths. But if you have a checkerboard of protected land, broken up in small pieces, you lose the effectiveness of protection. We need to find a bridge to connect existing protected lands. The Kentucky chapter is working on that, and I feel like that is a good fit for my giving goals.”

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