



# Pennsylvania Accomplishments 2019

**ON THE COVER** Tröegs Independent Brewing and The Nature Conservancy have been working together to raise awareness about the need to protect the Kittatinny Ridge, an important 185-mile superhighway for birds and other animals that runs from the Mason-Dixon line through the Delaware River Water Gap. Tröegs and TNC sponsored the creation of a mural in downtown Harrisburg that depicts bird species that migrate along the Kittatinny Ridge.

In honor of this partnership, Tröegs also created a limited-edition beer called Trail Day to increase awareness about the Kittatinny Ridge. Trail Day was sold this fall in Pennsylvania and nine other states.

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**“Our brewery is a mere 10 miles from the ridge—we want generations to come to be able to enjoy the clean water and forests like we do.”**

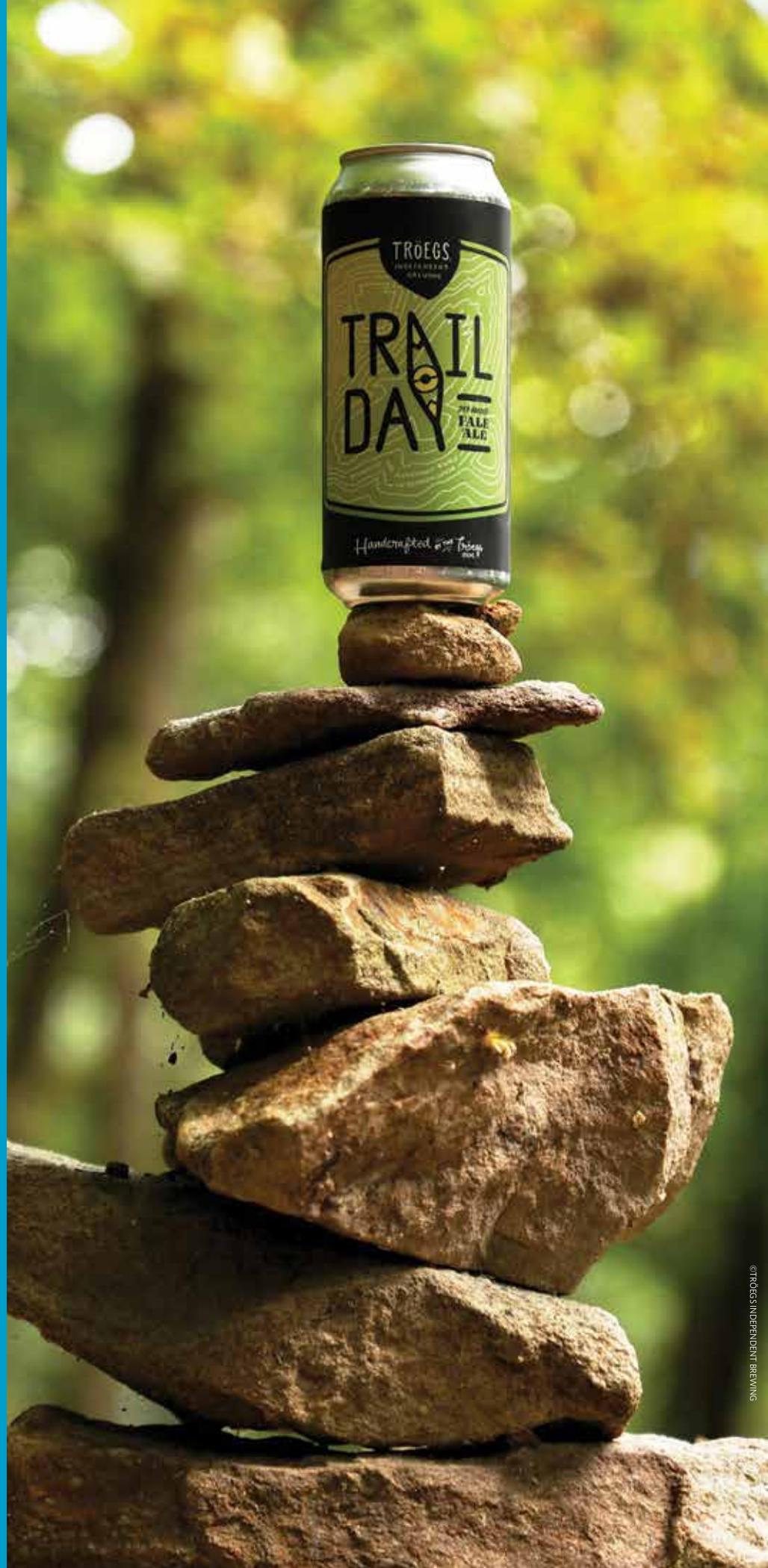
**—JOHN TROGNER**  
*Tröegs Independent Brewing*

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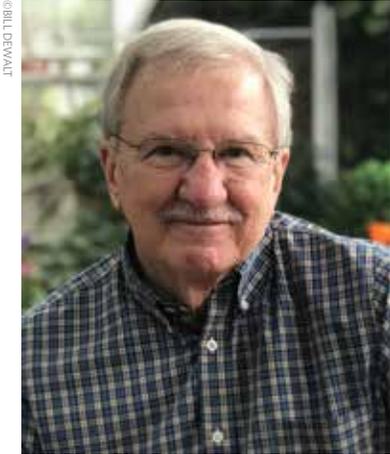
John Trogner, one of the founders of Tröegs Independent Brewing Company



©TRÖEGS INDEPENDENT BREWING

# From the Desk of Bill DeWalt

*Board Chair of The Nature Conservancy in Pennsylvania*



©BILL DEWALT

**The Nature Conservancy's Pennsylvania staff wakes up every day thinking about protecting nature in the Keystone State. They maintain trails, manage forests, host events at our 13 preserves, work with farmers, and promote nature-friendly policies around the Commonwealth.**

Our staff here in Pennsylvania are part of a global conservation organization with operations that extend into 72 countries, including a professional network that

includes more than 400 scientists. This arrangement fuels continual learning and collaboration and informs our on-the-ground decisions.

In many of these places where we work, TNC takes the lead in pursuing a specific conservation outcome. Elsewhere, we play a supporting role. Everywhere, we put nature to work at solving some of the greatest environmental challenges of our time in pursuit of conserving the lands and waters on which all life depends.

Take climate change, which is happening at a more rapid pace than nature can handle. The Conservancy is taking this on front and center with its Working Woodlands program—created and piloted here in Pennsylvania before TNC rolled it out in four other states. We're engaging private landowners in managing healthy and productive forests capable of reducing carbon in the atmosphere, and supporting local landowners who receive carbon credits for managing their forests.

This year, TNC also supported Pennsylvania's inclusion in the bi-partisan U.S. Climate Alliance. As the top natural gas, coal and electricity producer in the Alliance, Pennsylvania's participation represents a solid first step in keeping our state on track when it comes to reducing emissions and shifting to lower-carbon methods of powering homes, vehicles and businesses.

It has been a busy year—one filled with challenges and hope for what we aim to accomplish. Thank you for your support in everything we do, especially in our efforts to seek common ground and solutions that will support the wildlife and people that make this great state "home."

Sincerely,



**BILL DEWALT**

*Board Chair, The Nature Conservancy in Pennsylvania*

TNC Pennsylvania encompasses

**13**  
preserves

Total number of acres of land TNC has protected in Pennsylvania:

**98,885**

Number of acres of land TNC is responsible for managing in Pennsylvania

**70,724**



# Appalachian Forests

**APPALACHIAN FORESTS SUPPORT** one of the highest concentrations of biodiversity in North America. They also capture and store millions of tons of carbon annually, safeguard our drinking water, and provide an estimated 1.8 billion tons of oxygen every year. Forests are the lungs of our land. These forests also play an important economic role as well—as places for recreation and production of forest products.

From the Allegheny Mountains to the Delaware Water Gap, Appalachian forests cross Pennsylvania in a broad, arching belt of green—a vital link in an almost unbroken expanse of forest extending from Alabama to the Canadian Maritimes. As the pace and impact of climate change intensifies, protecting our Appalachian forests becomes more important than ever.

In 2019, TNC and partners in the Kittatinny Ridge Land Protection Partnership protected over 3,400 acres of critical habitat along the Kittatinny Ridge. With this recent progress we are nearly a quarter of the way towards our ambitious goal to protect 100,000 acres along the ridge by 2050. The Kittatinny Ridge is a globally important bird migration pathway and has been identified by The Nature Conservancy as a climate adaptation corridor of continental significance because of the critical role it serves connecting the southern and northern Appalachians.

This year, TNC protected 175 acres of important wildlife habitat in Cherry Valley, in the Upper Delaware River watershed. This land acquisition continued our long-term efforts with partners to protect Cherry Creek, an important trout stream and habitat for threatened bog turtles, which are found in wetlands along the creek. This land purchase also protected part of Hartman Cave, an important area for four protected species of bats. The properties were transferred to the U.S. Fish and Wildlife Service for inclusion in the Cherry Valley National Wildlife Refuge.

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**As the pace and impact of climate change intensifies, protecting our Appalachian forests becomes more important than ever.**

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## Showcasing New Tools and Conservation Approaches on TNC's Nature Preserves

From the Stateline Serpentine Barrens in southern Lancaster County, to Cove Mountain on the Kittatinny Ridge and farther north to our nature preserve in Elk County, we are working with partners and local communities to safeguard places in Pennsylvania that are key to:

- Harbor native wildlife
- Feature land management best practices
- Store and filtering water
- Support healthy and productive farms and forests
- Host recreational opportunities

Our nature preserves serve as demonstration sites for employing cutting-edge science, tools and approaches that represent natural solutions to building Pennsylvania's resilience in the face of a rapidly changing climate. Thanks to your support, we have made significant progress in safeguarding these places this year.

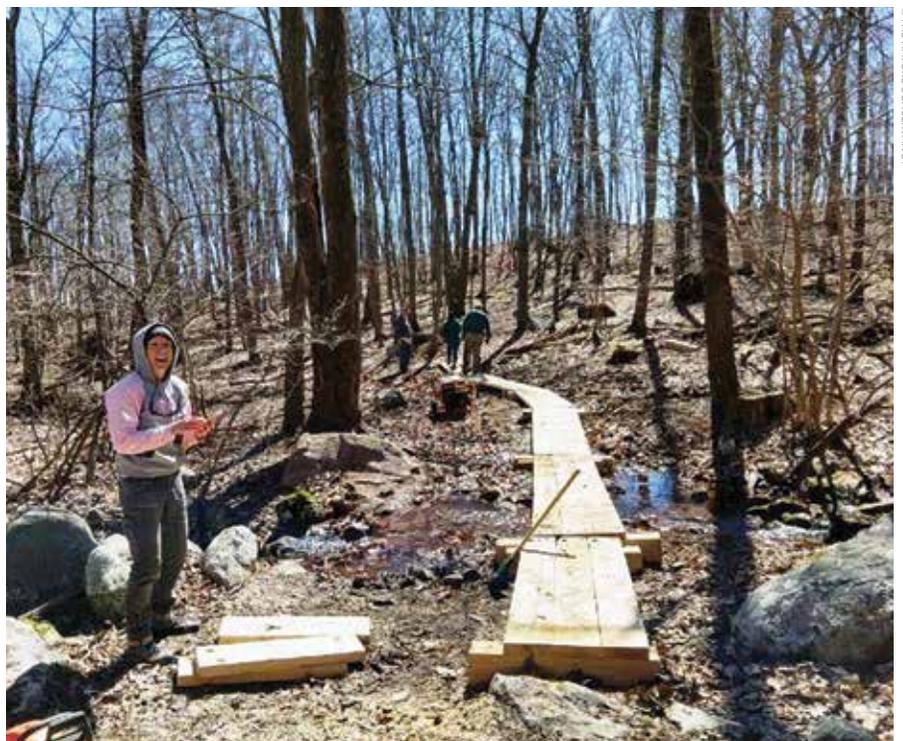


**PUBLIC ACCESS** We worked with Pennsylvania Game Commission biologists to identify opportunities to improve access and/or restore wildlife habitat at 12 TNC nature preserves and on six partner properties. At Hauser Nature Center, staff and volunteers created a new gravel parking area.



**PRESCRIBED BURNS** We marked a 10-year partnership with the Pennsylvania Game Commission with a successful spring prescribed burning season. TNC and partners burned 3,080 acres and planned future burns on more than 28,000 acres. We also led prescribed burning, for the first time, on 12 acres of historic pollinator and meadow habitat at our Hauser Nature Center in Long Pond, and here in this photo, at the Tannersville Cranberry Bog Preserve.

**INVASIVE SPECIES** Removed invasive species like mile-a-minute and ailanthus at the Cove Mountain Preserve and created additional trails to complete the hiking loop at the preserve.



# 45,000

acres enrolled in  
8 Working Woodlands projects

# 12

of 14 Working Woodlands  
projects are generating  
carbon credits and revenues

## Working Woodlands

The principle behind Working Woodlands is simple. The Nature Conservancy works with landowners to protect and improve the condition of their forests, while generating revenue for the landowner from the sale of carbon credits and sustainably harvested timber. Healthy working forests provide better habitat for wildlife, store more carbon, and are more resilient to changing climatic conditions. In return, participating landowners receive:

- A detailed assessment of the forests, wildlife and carbon on their property
- A customized 10-year forest management plan
- Certification by the Forest Stewardship Council® FSC C008922 which allows the sale of forest products under the FSC-certified label
- Access to carbon markets

The Conservancy has eight active Working Woodlands projects in Pennsylvania totaling over 45,000 acres, located on privately owned forestlands, municipal water providers, and at TNC's 3,000-acre West Branch Forest. In addition to Pennsylvania, Working Woodlands projects are now in New York, Tennessee, Maryland and Alabama.



# Pennsylvania Rivers

## NEVERSINK AND DELAWARE RIVERS

### Connecting and Restoring Key River Floodplain Habitat

**NATURE CONSERVANCY STAFF IN PENNSYLVANIA AND NEW YORK** restored an important floodplain forest at TNC's Neversink River Preserve. The project focused on removing a 350-foot long, 5-foot-high berm between the river and its floodplain.

The Neversink River used to spread out over a mile-wide floodplain before agriculture practices in the late 1800s gradually replaced this important ecological system. Clearing the former mosaic of forest and wetlands for crops pushed large quantities of dirt towards the river, forming berms that prevent water from following its natural course into the surrounding landscape.

"In its natural state, a river's floodplain stores floodwaters, and filters pollution," says Su Fanok, TNC's director of freshwater conservation in Pennsylvania. "Floodplain forests also host rare plants and wildlife." Fanok adds that abandoned pools in the floodplain attract breeding reptiles and amphibians, while dead tree cavities welcome bats. Wood ducks, great blue herons and bald eagles also visit and nest in river floodplains.

Actions in the Neversink have a direct effect on places downstream, including the Delaware River, which drains more than 14,000 square miles and serves as a source of drinking water for 15 million people before flowing into the Delaware Bay.

"We are using technology to identify areas along these rivers that would benefit from reconnection and restoration," adds Fanok. "In these places, we are removing barriers in order to put nature to work, to reestablish healthy forests and give water permission to spread out, slow down and replenish local aquifers. Projects like this provide the ability to lower the height and force of the river's flow, naturally."



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**ALLEGHENY RIVER** TNC worked with the Pittsburgh District of the U.S. Army Corps of Engineers to define river flows that support fish and mussel habitat downstream. The partners, together with the Western Pennsylvania Conservancy, used sonar to create a bathymetric map—to reveal effects of the Allegheny River’s flow on approximately eight miles of underwater habitat located downstream of Kinzua Dam (right). Additional test releases are scheduled to take place during 2020.

**MILL DAMS** Once ubiquitous across Pennsylvania, mill dams have left behind a legacy of impacts. In response, TNC worked with partners to evaluate the impacts of historic mill dams and the potential for restoring impacted streams in Pennsylvania’s state parks. This is the first step in identifying priority streams to protect and restore throughout the state.

Roller Mill in Lancaster County before dam removal (below).



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©DR. DOROTHY MERRITT, FRANKLIN AND MARSHALL COLLEGE





**TOM'S RUN RESTORATION** Tom's Run, in Cumberland County, offers high quality habitat for trout and other fish. TNC and partners restored a segment of the main stream channel and a nearby wetland.



# Agriculture

## Building Partnerships Around 4R Nutrient Management Principles

**A GRANT FROM THE YORK COUNTY COMMUNITY FOUNDATION** is fueling efforts to build partnerships that support agriculture and water quality. Employing the 4R Nutrient Stewardship framework, farmers learn about matching nutrient applications to crop needs to prevent excess nutrients from leaving fields and reaching surrounding waterways.

"We look forward to working in York County to advance the 4R framework. It makes economic and environmental sense," says Katie Turner, TNC's agriculture program manager in Pennsylvania.

The Conservancy is already working with Bob Buser, the patriarch of a 5th generation family farm that boasts a deep history in York County and hosted an event to showcase the 4Rs.

"It's a great life," says Bob, who, together with his children, oversees the farm's corn, soybeans, wheat, hay, hog and cow operations. "We've been entrusted with this land, and we're doing our best to take care of it."

According to Buser, cultivating crops is similar to cultivating the next generation—you need the right nutrients (or advice), applied in the right amount, right when and where they're needed. He adds, "Knowing what nutrients the plant needs and putting them there is key. If you add nutrients that a plant doesn't need or spread liquid nitrogen with no ground cover, you're just throwing nutrients and money away."

Employing the 4Rs fortifies Buser's knowledge and experience with new science and technology focused on applying nutrients with unprecedented

precision. Working in this way results in a healthier landscape, especially soils, that benefits wildlife, water quality and crop production.

"These farmers have a deep knowledge of local lands and waters, like no one else," says Turner. "The 4Rs builds on that in order to achieve the delicate balance required to benefit our farmers and nature."

Pennsylvania's Chesapeake Bay Watershed Implementation Plan calls for reducing an additional 1 million pounds of nitrogen flowing into the Susquehanna River through 4R nutrient management practices by 2025. The Conservancy is partnering with seven agribusinesses through the PA4R Alliance to promote the implementation of nutrient management and soil health practices to help achieve this ambitious goal.

**PROVIDE FOOD AND WATER  
SUSTAINABLY** Bob Buser on his  
farm in York County.





# Climate/Energy

## CLIMATE CONCERNS

Pennsylvania ranks

**4<sup>th</sup>**

in the nation in  
carbon dioxide emissions

## Working Toward Climate and Clean Energy Leadership in Pennsylvania

Climate Change is front and center in the national discussion. Pennsylvania ranks fourth in the nation in carbon dioxide emissions. Through innovation and smart policies, we can reduce its carbon footprint, while creating new opportunities for economic growth. This includes everything from market-based mechanisms like putting a price on carbon, accelerating the transition to clean energy, strengthening our commitment to energy efficiency, and implementing nature-based solutions that allow us to harness nature's power to protect our future.



The Conservancy, Moore Energy LLC and Maximuck's Farm hosted Congressman Brian Fitzpatrick on a tour of a Bucks County solar facility.

**FOUNDATION FOR CLIMATE ACTION**

In 2019, we continued our work to boost Pennsylvania's climate and clean energy leadership. We strengthened our foundation by building and reinforcing relationships with policy makers in Harrisburg and in Washington, and with traditional and non-traditional partners throughout Pennsylvania. Our opportunity to act decisively received a boost in 2019 when Pennsylvania became the 24th state to join the U.S. Climate Alliance, a union of state governments committed to upholding the goals of the Paris Climate Accord. The Nature Conservancy serves as a partner to the alliance, helping participating states take advantage of opportunities around natural climate solutions.

**In 2019, Pennsylvania became the 24th state to join the U.S. Climate Alliance**

**EXPANDING THE CONVERSATION**

The Conservancy and the Pennsylvania Conservative Energy Forum hosted a telephone town hall event that dialed out to 20,000 Pennsylvanians to expand the conversation about renewable energy's role in supporting the military and national security. The featured speaker was retired Marine General Richard Zilmer, a Pennsylvania resident and national spokesperson for national security issues.

We increased the audience of Advancing Clean Energy PA, our clean-energy campaign on Facebook, ([www.advancingcleanenergypa.org](http://www.advancingcleanenergypa.org)), engaging more than 4,200 Pennsylvanians from all backgrounds and perspectives in a discussion on how Pennsylvania can become a clean energy leader.

**“Talking to Pennsylvanians about climate change and clean energy needs to take place on a local level. We’ve had success taking local stories and bringing the message to people where they live.”**

**—EVAN ENDRES**  
*Climate and Energy Policy Manager*



# Build Healthy Cities

## PHILADELPHIA SEES GREEN

### Putting Nature to Work in Cities Adds Beauty While Reducing Reduce Flooding and Pollution

**THE NATURE CONSERVANCY IS COLLABORATING WITH THE PHILADELPHIA WATER DEPARTMENT** on its groundbreaking Green City, Clean Waters initiative to create 10,000 “green” acres that, together, establish a natural infrastructure capable of absorbing, filtering and slowing flood and storm waters inundating urban areas with increasing regularity. Philadelphia’s outdated sewer system, like many cities, becomes easily overwhelmed during heavy rain events. The resulting stormwater carries pollution into local streams and rivers.

In 2019, TNC began construction on 15 green infrastructure projects, totaling 5 greened acres, clustered in the Belmont and Holmesburg sections of Philadelphia. The projects are expected to treat almost seven million gallons of stormwater runoff each year. The

infrastructure—made up of trees, rain gardens, pervious pavement, green roofs, stormwater planters and other green elements—can also replenish local aquifers, support wildlife and beautify neighborhoods in an otherwise built urban environment. TNC is also developing a mapping tool to identify and prioritize where the greatest benefits from green infrastructure projects can be realized in surrounding neighborhoods in the future.

“We want to demonstrate how more nature can benefit local communities, especially when they are clustered by the dozens across city blocks,” says Julie Ulrich, TNC’s director of urban conservation in Pennsylvania. “We also want to enhance the city in ways that provide all residents with equitable access to nature’s benefits.”

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**Philadelphia is the first major city in the U.S. to prioritize nature-based solutions for stormwater management. The Conservancy’s work here serves as a model to work with local government, private landowners, urban neighborhoods and other partners to explore ways of using nature to transform cities into healthier, more diverse and resilient places.**

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**GREEN INFRASTRUCTURE**

TNC project manager Carlos Claussell led a workshop with community members to collaborate on planning, designing, and implementing green infrastructure projects in Philadelphia's Belmont neighborhood in partnership with Friends Rehabilitation Program, a Quaker values-based affordable housing and social service provider.



**LEARNING EXCHANGE** Thanks to a grant from TNC's Global Diversity, Equity and Inclusion program, members of TNC's urban conservation program in Pennsylvania traveled to San Juan, Puerto Rico as part of a learning exchange. The team met with representatives from Corporación del Proyecto ENLACE del Caño Martín Peña (ENLACE) to share knowledge about stormwater management practices, participatory decision-making, environmental justice and how to make cities more resilient in the face of a changing climate.

ture's playground. **volunteer** Lend your hands at events around the co  
our backyard. **Give** Give back to nature—on your own or through your wo



# Connect People and Nature

## PENNSYLVANIA VOLUNTEERS

### Engaging People to Benefit Nature in Pennsylvania

Pursuing The Nature Conservancy's ambitious mission to conserve the lands and waters on which all life depends would not be possible without help from an army of dedicated and passionate volunteers. This year, 272 volunteers contributed 4,821 hours at nature-themed events and workdays in Pennsylvania. This included building bridges over a stream at the Cove Mountain Preserve, repairing the Tannersville Cranberry Bog Preserve boardwalk, cleaning up trash at the Bristol Marsh Preserve in honor of Earth Day, and much more. To everyone who set aside time to volunteer in ways that benefit Pennsylvania nature, thank you!



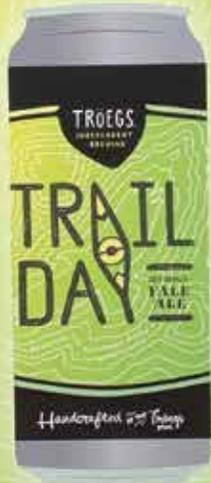
Volunteer Jason Peters built a bee house near the pollinator gardens at our Long Pond Preserve.






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**HELP PROTECT PENNSYLVANIA'S  
KITTATINNY RIDGE**



Handcrafted in Tröegs



<b>ALC./VOL.</b> 5.5%	<b>HOPS:</b> CITRA, LOTUS, EL DORADO
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**BENEFITS:**

-  CLEAN WATER
-  RICH FORESTS
-  MIGRATORY WILDLIFE
-  RECREATIONAL TRAILS

When you buy a Trail Day, you're teaming up with Tröegs Independent Brewing and the Pennsylvania Chapter of The Nature Conservancy to preserve important land along the Kittatinny Ridge. The 185-mile ridge is an unbroken chain of forested Appalachian mountains that provides clean water, rich forests, recreational trails and safe passage for migratory wildlife.  
 Learn more about the Tröegs Trail Day Fund: [troegs.com/trailday](http://troegs.com/trailday)

TNC staff member Mari-Beth Delucia and Tröegs Independent Brewing's Andy DeBrunner at the Harrisburg Mural Festival.

## Volunteer Spotlight: Rodney Stark

Rodney Stark discovered The Nature Conservancy more than 30 years ago while working as a forester with the Philadelphia Electric Company (PECO). PECO was partnering with TNC on conserving natural areas on company property. He became impressed with TNC's strategic, science-based and collaborative approach to conserving nature. Now retired and residing in the Poconos, Rodney finds himself reunited with TNC as an active volunteer at Hauser Nature Center where he helps with the gardening and public events and assists at other nature preserves with habitat improvements.

**“Volunteering with TNC during retirement is a new iteration of a lifelong passion. I just enjoy being out and making a difference for nature.”**

—RODNEY STARK, *Volunteer*



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Rose Meixell-Neith's assistance with monitoring TNC-owned properties and conservation easements has greatly increased the efficiency of this annual task. (Even snakes won't deter her from completing this important job!)

## Why TNC?

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Growing up in Alabama, Bob Kirkpatrick fondly remembers the time he spent as a child, playing on a family member's farm, exploring nature. It was a place he could quickly lose himself in the natural world. Later in his life, as an Episcopal clergyman, working in congregations in Georgia, Kentucky and Florida, he sought out nature—when problems

needed to be solved, when he needed to clear his head, when a parishioner presented him with a challenging situation. The Eastern Shore of Maryland on the Chesapeake Bay, a lake in the Berkshires, the Arizona desert, a poppy bloom in a California field, all are places where nature has left a lasting mark on his memory. Moving to different states for his job, he has often thought about the meaning of home. For Kirkpatrick, nature has always been synonymous with home. A long-time supporter of The Nature Conservancy, he says he is grateful for TNC's approach to science-based protection of the places he cares about most.

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**"Encouraging people to give to TNC is engaging a level of consciousness about the ecological state of the world. And that is so important."**

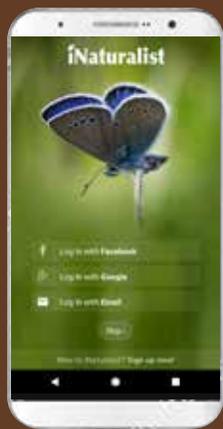
**—BOB KIRKPATRICK**

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PRIVATE PARKING  
VEHICLES WILL BE TOWED  
AT OWNER'S EXPENSE  
DAILY 8 AM - 5 PM  
TUESDAY



The Nature Conservancy is using iNaturalist in Pennsylvania, an app for citizen scientists to share data with each other. These data can help guide conservation and management priorities.

Visiting a TNC preserve? You don't have to be an expert to help us identify natural features of our preserves. Collect photos and information about plants, insects and birds you encounter. Your information helps us with early detection of invasive species by geolocating the places where you see them.



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[www.nature.org/Pennsylvania](http://www.nature.org/Pennsylvania)