A stylized illustration of a tree with a dark brown trunk and branches. The foliage is represented by large, overlapping shapes in shades of yellow, orange, and red, suggesting autumn. The background is a solid light green color.

Nearly
60 percent
of Pennsylvania is
forested.
That equates to
roughly
17 million
acres.



Trees

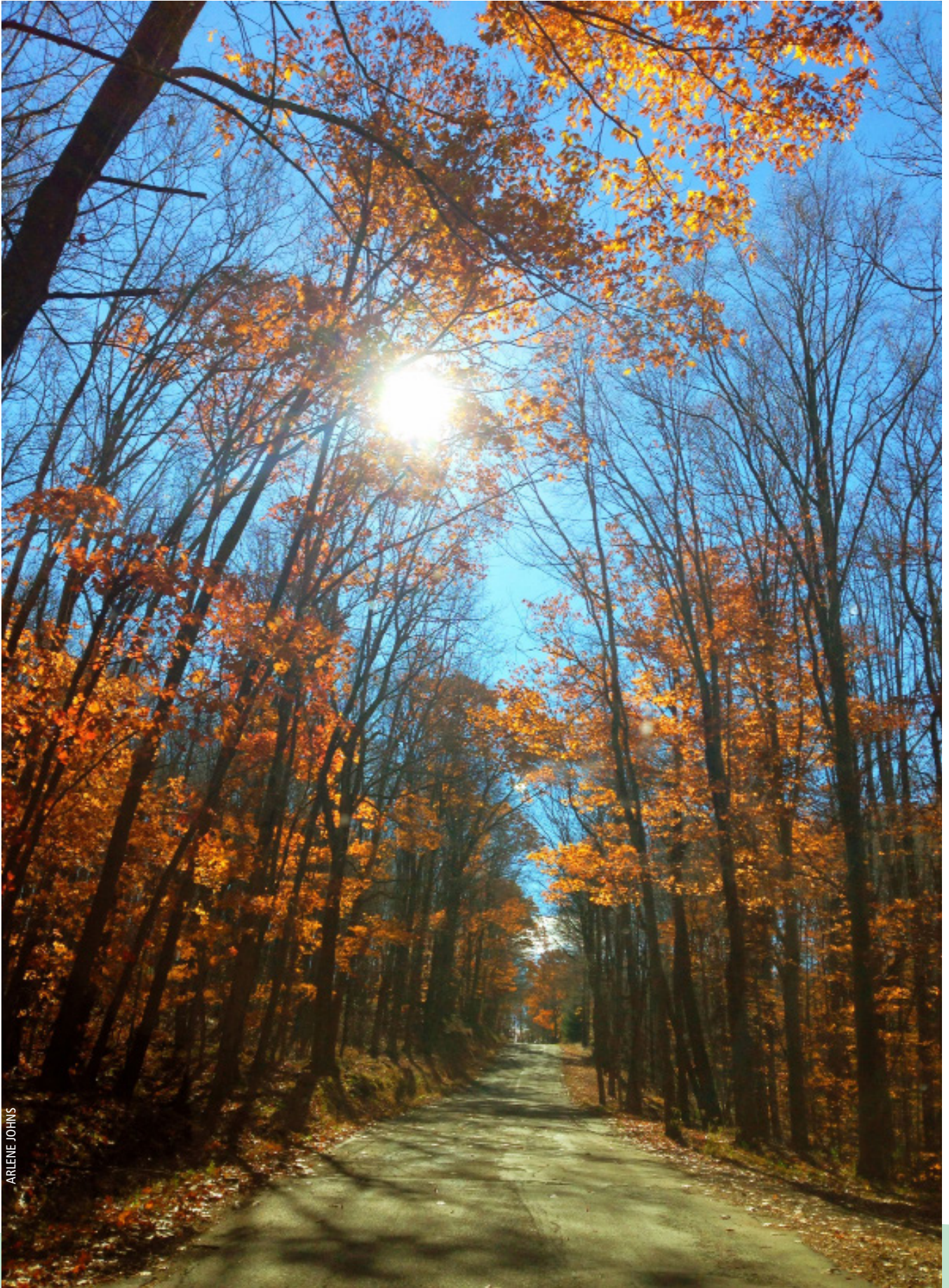
do more than
decorate our
landscape

They can keep us
safe and
healthy

By Jessica Aiello,
Pennsylvania Parks
and Forests Foundation

Approximately 62% of Cambria County – or 274,291 acres – is covered by forests, according to the Penn State School of Forestry. This is great news for all, as trees and forests provide myriad benefits, from flood reduction to cleaning the air and water, to reducing stress levels and heart attack risks. Trees do all that and so much more. This article looks at some of those benefits and share ideas on how you can be a champion for trees in the Johnstown region.





ARLENE JOHNS



The role of forests in flood reduction

As any resident of Johnstown knows, flooding has marked the Conemaugh River valley.

While the 1889 “Great Flood” disaster is the best-known example, other life-taking and damage-causing floods have occurred before and since (1936 and 1977 being the most significant).

In fact, “Flooding occurred in Johnstown in seven of the eight years leading up to 1889,” Richard Burkert, president and CEO of the Johnstown Area Heritage Association, says.

No one single element can be blamed as the cause of these floods, but a couple items are of particular significance, Burkert says.

The high-walled cliffs of the river gorge steered initial industrial development and transportation infrastructure into the river’s flat floodplain, and businesses such as the Cambria



Volunteers plant trees in downtown Johnstown



Iron Works actually made the river’s channel narrower by half, by dumping slag into the Conemaugh to create land on which to build.

This, combined with heavy rains, left little room for the water to escape downstream, thus overwhelming the city.

Burkert adds that the clear-cutting of forests, particularly on steep slopes, was a common practice in the region in the 1880s, leading to erosion and runoff that also could impact streams and rivers such as the Conemaugh.

Even today, urbanization of the hillsides above Johnstown continues to increase, according to Len Lichvar, district manager of the Somerset Conservation District.

“Impervious surfaces (solid ones like roads and roofs) are more prevalent now than ever before,” he says. “This increases the speed and flow from rainstorms, so that when another potential major flooding rainstorm event hits the region, the water will hit Johnstown harder and faster than it has in the past because there is a lack of a natural buffer (forested or otherwise) to absorb and minimize the runoff.”

Experts say trees are amazing at reducing the frequency and severity of floods.

According to the Pennsylvania Department of Conservation and Natural Resources (DCNR), trees protect against flooding

by absorbing rainwater with their roots, slowing runoff with their leaves (up to a 60% reduction), and transpiring water, thus drying the soil more quickly.

In fact, according to the U.S. Forest Service, a healthy 100-foot-tall deciduous tree's 200,000 leaves can take up 11,000 gallons of water from the soil and release it into the air as oxygen and water vapor in just one growing season!

"Trees are like big straws, sucking water up from the ground and adding it back into the atmosphere," Greg Czarnecki, director of Applied Climate Science for DCNR, says. "They are great at reducing flood impacts, especially in cities with lot of impervious surfaces."

This flood mitigation will be even more important in the future, as climate change is making it rain more frequently and more abundantly. Czarnecki says there has been a 70% increase in heavy rain events in Pennsylvania in recent years, which is defined as storms that would typically occur just 1% of the time.

"One thing that is absolutely certain is that forests and forested acreage are critical when it comes to water quality and flood control," Daniel Snyder, assistant manager for Gallitzin State Forest, says. "Nothing else really matters."

"Forests allow water to infiltrate and recharge our groundwater supplies, prevent erosion and filter pollutants. Water resources are critical, and forests are the protection for those resources."

The Pennsylvania Parks and Forests Foundation (PPFF) has a statewide planting initiative to restore trees damaged in Pennsylvania's state parks and forests.

"Trees play a critical role in not only flood reduction, but in cleaning the air, inspiring art and improving human health," Marci Mowery, president of PPFF, says.

Forests are good for our health

Research from the state Department of Health shows that two out of three Pennsylvania adults (6.2 million people) and



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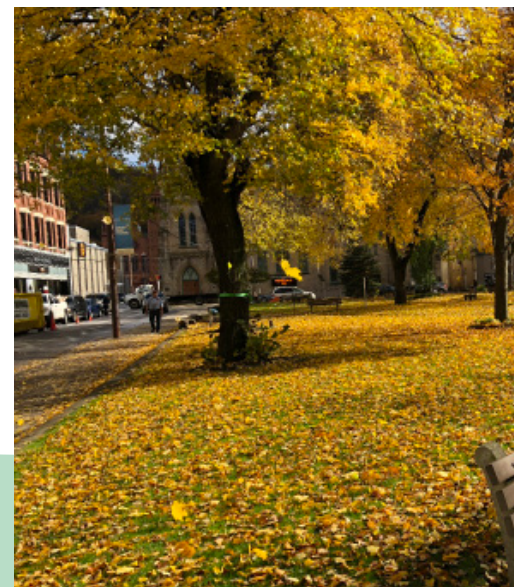
one out of three children (500,000 kids) are overweight or obese.

When someone has excess weight, their risk of developing a chronic illness such as diabetes, heart disease and high blood pressure is magnified.

Reducing the average body mass index (BMI) in Pennsylvania by just 5% could mean \$8 billion savings in health care costs in the next 10 years and \$24 billion in the next 20 years, according to the 2019 "F as in Fat" report.

One way to help people get and stay healthy is by convincing them to spend time outdoors.

"Being outside and using outdoor rec-



reaction as a form of physical activity can lead to a lot of great physical benefits,” Dr. Michael Suk, chief physician officer for Geisinger System Services, says. “It could help control your heart rate or decrease your blood pressure. It can help your respiratory system by enhancing your breathing. And overall, it can help you lose weight.”

It is not just our physical health that improves through time spent in forests and other greenspaces; our mental and emotional health gets a boost as well.

Physical activity outdoors has been shown to improve self-esteem and reduce tension, anger and depression.

Stress hormones fall after spending time in nature, too, which is good for both our mental and physical health.

“Our parks and forests really promote mental health in the way that they allow the brain to relax,” Suk says. “Being in or near a park or forest can elevate your mood and elevate your outlook.”

The benefits of being outdoors, enjoying a hike or bike ride through the forest, are long-lasting as well.

“The magic pill to aging well is staying active,” Dr. Elizabeth Katrancha, BSN nurs-

ing program coordinator at the University of Pittsburgh at Johnstown, says.

A registered nurse herself, she has seen how patients in the ER respond better to treatment and recover more quickly if they were healthier prior to their accident.

“Staying active in the outdoors is essential,” she says. “I grew up hunting and fishing. Being outdoors is where I want to be. It allows you to relax and take a deep breath.”

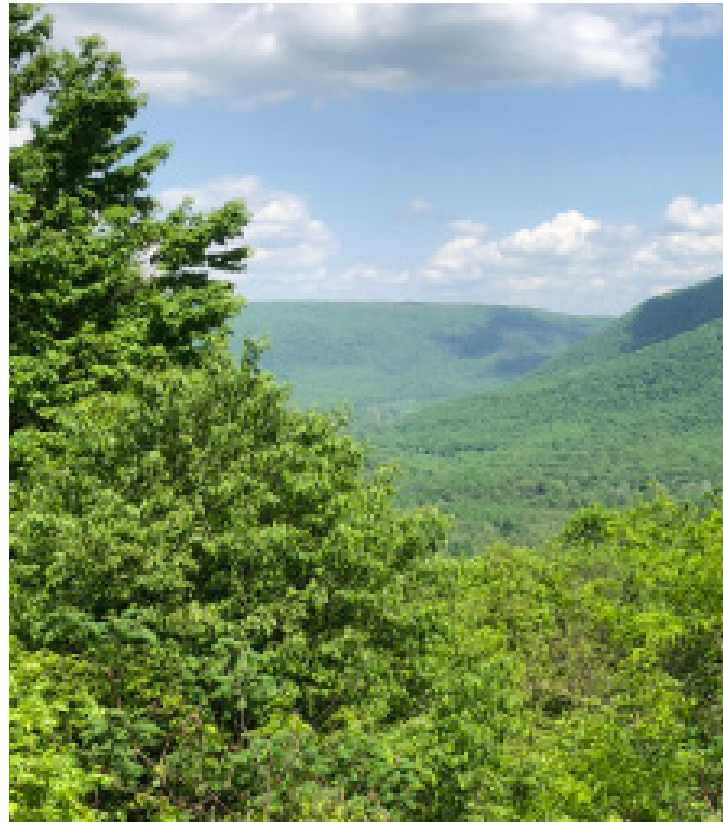
There are plenty of opportunities for healthy outdoor recreation in the Johnstown area, she adds. The Staple Bend Tunnel Trail is her favorite, but there are many other hiking and biking trails throughout the region, including Laurel Ridge and Blue Knob state parks and Gallitzin State Forest.

Johnstown resident Georgetta Frederick agrees.



*Above: Greg Czarnecki
Right: Marci Mowery (right) and friend on a local trail*





“Johnstown is an awesome place for lots of amazing outdoor activities. Hiking and backpacking, biking, rock-climbing, kayaking and more are all right here.”

She should know. At age 29, Georgetta weighed more than 200 pounds and got winded walking up stairs.

Having two young daughters made her realize she needed to change her lifestyle to be able to see them grow up.

In 2017, she began hiking trails in Gallitzin State Forest, starting with five miles and eventually graduating to more than 70 miles in one trip.

Today, at 40, Frederick is in the best shape of her life – mentally, physically and emotionally – thanks to her time spent outdoors.

“There is such peace and calmness in the forest,” she says. “Hiking and backpacking have helped me understand the importance of life. Also, I’ve met lots of fantastic people. The outdoor community is the best.”

Current state of trees in the Johnstown region

Cambria County’s significant tree canopy is thanks to the efforts of many individuals and organizations working together to plant urban trees, restore streamside buffers and manage forests in a sustainable manner.



Top and bottom: Volunteers plant trees throughout the area for the Community Foundation for the Alleghenies

One example is the Western Pennsylvania Conservancy (WPC).

A few years ago, it began a partnership with the City of Johnstown and its Public Works Department to establish a comprehensive community forestry program that included a street and park tree inventory, volunteer tree-planting days, Tree



Tender training courses in cooperation with Penn State Extension and community outreach to educate businesses, property owners and residents about the many benefits of trees.

The WPC analysis shows that Johnstown's public trees return more than \$200,000 in benefits to the community each year.

"Through the inventory, we counted quite a lot of urban street trees," Brian Crooks, a forester with WPC, says. "Being a Johnstown native, I have seen the changes ... people are now tubing and fishing in the local waterways like Stonycreek River, which was unheard of when I was a kid. It's thanks in large part to tree canopy improvement work to date in the Laurel Highlands, as well as better land use policies."

WPC also is working to enhance the forested stream side (riparian) buffers across western Pennsylvania, including in Cambria County.

Over the past eight years, it has worked with landowners to install 9.5 acres of forested buffers in the county, which included more than 1,900 native trees and shrubs.

Alysha Trexler, watershed project manager for WPC, has been installing the buffers since the mid-2000s and educating farmers and other landowners about the role trees and other vegetation along streams and rivers play in keeping our waterways clean.

"A stream can be any size and still need trees along it," she says. "Even ones you can step over, or those that disappear and reappear throughout the year. Forested buffers of any size can stabilize the stream bank and shade the water, helping to regulate water temperatures."

WPC, DCNR and PPFF aren't the only ones working on forested buffers and volunteer tree-planting efforts.

The Somerset Conservation District recently secured funding for a project on a tributary to the Quemahoning Reservoir, which supplies industrial and potable water to businesses and water authorities throughout the Johnstown area.



*Top: Dr. Katrancha
Bottom: Len Lichvar*

The project will involve planting nearly 1,000 trees on private land this spring to help minimize soil erosion and create public water quality benefits.

The Paint Creek Regional Watershed Association is planning to work with volunteers to plant 1,400 trees on several acres of previously mined land in the Paint Creek watershed, which is a sub-watershed of the Stonycreek River (just upstream from Johnstown) that still suffers significantly from acid mine drainage (AMD) impacts.

How you can help?



Trees do so much for us – from cleaning our water and air, to lowering our stress levels, to beautifying our landscapes.

Is there something we can do for them?

If you can dig a hole, why not plant a tree?

“Planting trees is the best thing you can do for the climate and for water quality,” Greg Czarnecki, director of Applied Climate Science for DCNR, says.

If you are looking to plant trees on your property, DCNR’s Climate Adaptation and Mitigation Plan includes a list of which trees that will fare better in Pennsylvania under a changing climate.

For the Johnstown region, these include black gum, black and chinkapin oaks, black walnut, persimmon, and boxelder.

Making sure the trees you plant are appropriate for the soil, shade level, and plant hardiness zone (now and 50 years from now) in your location is key for long-term survival, DCNR says. Download a copy of the report at <https://www.dcnr.pa.gov/Conservation/ClimateChange/pages/default.aspx>.

If you are planting trees along a stream on your property, Alysha Trexler, watershed project manager for WPC, suggests that the buffer be twice the width of the active stream channel whenever possible. She also wants everyone to be aware of what their neighbors might be doing to improve water quality and say “Thanks.”

“Buffers aren’t the manicured lawns that homeowners are used to,” Trexler

says. “But they serve an important purpose.”

The more we can recognize and appreciate forested buffers, the better off our water quality and health will be.

For those who want to help plant trees on land other than their own, PPFF is one good place to start. On its website you can search for Friends Group volunteer tree planting events at a state park or

“Planting trees is the best thing you can do for the climate and for water quality,”

state forest near you.

If you are looking for other hands-on ways to help, Len Lichvar, district manager of the Somerset Conservation District, suggests joining one of the local watershed organizations such as the Paint Creek Regional Watershed Association, Stonycreek-Conemaugh River Improvement Project (SCRIP), or Mountain Laurel Chapter of Trout Unlimited.

He also encourages local elected officials and community leaders to push for better urban and rural planning

aimed at minimizing natural resource degradation and finding innovating eco-friendly ways to foster and advance development.

Another great way to burn excess calories is by volunteering in a state park or forest.

Many of Pennsylvania’s parks and forests have friends groups or other volunteer opportunities, enabling individuals to spend time in the outdoors. Corporate volunteer opportunities also are available.

Visit the Pennsylvania Parks and Forests Foundation’s website to find a group near your or to inquire about volunteer opportunities.

PPFF also developed a video series showcasing the many physical mental, and emotional health benefits of being outdoors, especially in areas with lots of trees. On its YouTube site are back-to-basics videos on how to plant trees and much more.

“We developed these videos for a few reasons,” Marci Mowery, president of PPFF, says.

“One is to give the public even more reasons to get outdoors. It’s good for their health.

“Another reason is to educate people on the importance of forests and other greenspaces so they will help raise awareness at the legislative level that funding for outdoor recreation is critical – it can cut healthcare costs and help their constituents live longer!”

Whatever you do – from hiking in the woods to planting a woodlot of your own – you will be doing wonders for you and the environment.

Now that is a win-win!

The VALUE of TREES

