“As long as autumn lasts, I shall not have hands, canvas, and colors enough to paint the beautiful things I see.”

— Vincent van Gogh
Good News from the Institute

I wouldn’t be surprised if no one realized this was the title of my August newsletter article. It’s not that I’m not creative and couldn’t have thought of another title. It just hit me, after some good dedicated work with our staff on developing plans for the reopening of our Visitor Center, this needs to be emphasized—we have good news!

Our goal is that shortly after you receive this newsletter, the Institute’s Visitor Center will be open to the public once again. We believe we have a solid plan in place, based on valuable information from the Center for Disease Control (CDC), the Barry Eaton District Health Department, and various other organizations and governmental entities, that will keep our staff and visitors safe from the spread of the coronavirus. We are planning a “soft” opening shared mainly with our members to help us test our plan and work out any procedural details necessary.

As you’ll read in this newsletter, we are also planning our first in-person outdoor event this month, our first since the coronavirus hit. Rest assured, we’ll make sure it is conducted safely. In the meantime, we’ll continue to evaluate our inside operations and to watch what happens this fall with the spread of COVID-19. We still think that we may not be able to offer in-person, indoor programs safely until next year, but that is a moving target, and one we are thoughtfully considering.

There is not only good news from the Institute, but exciting news! Chef Dan and our kitchen staff have come up with a new reason for you to visit the Institute right away—our Pierce Pickups. Yes, I came up with the name; you know I’m creative! These take-home meals are a way to bring a piece of the Institute home and a way to take some burden off the head chef at your house. This new offering was released at the end of August, and I can personally attest to the tastiness and convenience of it—my order was the sweet potato lasagna. What a great way to support Pierce Cedar Creek Institute and a great reason to stop by and say hello!

Of course, I’m penning this article in early August, and at this point, we are in the thick of our online A Latesummer Night’s Green fundraising effort. I am so touched and grateful for the support we’ve already received: approximately 60 donations, over 600 raffle tickets sold, and counting. I can’t wait to find out who will be camping, picnicking, and fishing with us. I can’t wait to learn the names of our box turtles and who will be visiting me for a tour of the Jones’ house and what book is chosen from the library!

It’s nice to know there is still good news coming from the Institute, and not surprisingly, you are a big part of that! Thanks for sticking with us and your commitment to inspiring the appreciation and stewardship of our environment.
Underground Networks of Mushrooms

Many outdoor enthusiasts enjoy mushroom hunting, whether to photograph the impressive array of shapes and colors fungi come in or for the thrill of finding those delightful edible species. But fungi are much more than the mushrooms seen above the ground. The mushroom is just the fruiting body of the greater organism that exists underground; this subterranean portion is a multicellular network of threads that can cover vast distances. The largest known single organism on the planet is a four square mile fungus called the honey fungus (Armillaria ostoyae) found within the soil of the Oregon Blue Mountains and estimated to be over 8,000 years old. ¹

Scientists estimate there are over 3.8 million species of fungi, with only 120,000 species currently described by scientists. ² A fun fact is that Michigan used to have the largest known fungus until the one in Oregon was discovered. It was another species of honey fungus located in Crystal Falls in the Upper Peninsula. In fact, it was so famous U-Haul included it in their SuperGraphics campaign, which celebrates interesting places and facts about the United States and Canada on its trucks.

The underground network of threads of fungi is called mycelium; individual threads are called mycelia. Since fungi cannot photosynthesize to make their own food like plants can, the mycelia colonize roots of trees and herbaceous plants and provide nitrogen, phosphorous, and water extracted from the soil to the plants in exchange for carbohydrates. Around 80-90% of terrestrial plants have this symbiotic relationship with fungi. The networks of mycelium, called mycorrhizal networks, connect separate plants through their roots, a phenomena that has been deemed the “wood wide web”.³ Much like the internet, this network can send information—even objects—from place to place within the network connections. Even plants of different species can provide and accept transfers of carbon, nitrogen, and phosphorus. Researchers have found that some trees in the shade of others will receive carbon from their more sun-exposed neighbors, allowing the younger trees to survive when they otherwise might not.⁴

As well as water and nutrients, information may also travel on the mycorrhizal networks. Research has shown that a plant infected by disease or pests and has a chemical response may be eavesdropped on by other plants connected to the same mycorrhizal network.⁵ Intercepting this information allows neighboring plants to change their own chemical structure and fortify against attack. Interestingly, this may mean forests aren’t necessarily made up of separate organisms, but perhaps a more cohesive unit facilitated by fungal connections underground. A study looking at competition between overstory trees and seedlings found that where strong mycorrhizal networks existed in well-established forests, seedlings with the same mycorrhizal networks survived much better because nutrients were shared even across different species.⁶

Mycelium also has a role in the carbon cycle, the progression of carbon through the air, water, and soil as things grow, die, and are then decomposed. The microbes in the soil responsible for decomposition need nitrogen to do so. Plants also need this nitrogen to grow. The more robust the relationship with the mycorrhizal network, the more nitrogen the plants can get from the soil and the less available for soil microbes. With more nitrogen to plants than microbes, decomposition is slowed, and the carbon that would be released to the atmosphere from the soil is bound up.⁷ Given that excess carbon in the atmosphere negatively affects global climate change, more mycorrhizal networks and more forests could capture carbon and slow climate change.

The scientific community still has many questions about fungi, and new information on how different species interact with their community is being discovered all the time. One of the great aspects about this scientific inquiry and research is that amateur naturalists are contributing information that academics and other scientists incorporate into their research. It may be one of the only fields in science where this equity still exists. Since it is still possible to find new species anywhere in the world, next time you go out mushroom hunting grab a field guide, your camera, and a notebook because you never know what you might unearth!

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Michigan’s Goldenrods: Worth Their Weight in Gold

As the days get shorter, goldenrods burst into bloom and give us a firework display reminiscent of longer, warmer days. Over 100 species of native North American goldenrods flower in fields, forests, and fens. Topped with plumes of densely-crowded, tiny flowers, goldenrods have long been given a bad rap as the cause of autumn allergies. In truth, they are just the victim of bad timing, flowering at the same time as the real culprit: ragweed. While not as conspicuous as goldenrods, ragweed’s small, green or white flowers spew vast amounts of light pollen into the air. Goldenrod pollen, in contrast, is heavy and sticky, helping it cling to insect pollinators such as bees, wasps, and butterflies.

Overall, goldenrods are beneficial to many other species. They are important hosts to insect predators such as praying mantids and lacewings; birds feed on their insect visitors and seeds; and during wintertime, they provide shelter in their dried stalks to goldenrod gall flies. They also benefit humans, as indicated by their Genus name Solidago, meaning “to make whole” in Latin. Historically, goldenrod was applied to the skin to heal wounds and prevent infections, and native peoples chewed on its leaves to relieve sore throats and toothaches. Furthermore, Thomas Edison discovered another useful product from its leaves—rubber—and created a cultivation practice to produce taller plants with greater yields for his friend, Henry Ford, to use for the tires of his Model T. That particular goldenrod plant was later named Solidago edisoniana. With many other goldenrod species to enjoy and discover this fall, join us in our Virtual BioBlitz on September 10 to learn more about the “gold mines” found in our native goldenrods; see page 6 for more information.

Steeby Land Management Fellows: A Summer to Remember

With modified schedules and many safety protocols in place, the Institute was able to provide a wealth of learning about land management to the Steeby Land Management Fellows: Zach Whitacre, a master’s student from Western Michigan University studying microbial communities that help prairie plants get established and thrive in restoration prairies, and Micah Meindertsma, an undergraduate from Calvin University who has spent two summers working on invasive plant removal at the Calvin Ecosystem Preserve.

While Zach and Micah both had experience working outdoors, they both needed hands-on practice with land management techniques. Over the summer they gained a number of skills: native and non-native plant ID, native seed collection and cleaning, greenhouse propagation techniques, planting techniques for restoration sites, chainsaw use and maintenance, trail and grounds maintenance, invasive plant removal and herbicide use, and tractor use with brush hog attachment for mowing prairies. They even learned an overview of prairie enhancement techniques highlighted by participating in a growing-season prescribed burn. One of their favorite activities was helping with wildlife monitoring including using trail cameras and setting duck traps for fall duck banding. Along with these great resumé-building experiences, they were also introduced to aquatic sampling for macroinvertebrates and electrofishing through the Cedar Creek Watershed Planning Project.

Regarding all they learned over the summer, Stewardship Coordinator Ricki Oldenkamp reflected, “While it has been great seeing them learn all these new skills, it is most rewarding to see what they have retained and can share as they have learned to lead other students in volunteer workdays on stewardship projects.” While this experience taught them a lot, one important thing Zach and Micah learned is that they want to continue their careers in this field. This insight confirms the importance of this fellowship opportunity provided by Jack and Sue Steeby: not only does it give students hands-on experiences, it creates an environment through which information gained at the Institute will be shared through an ever-growing community of land managers and stewards as years roll on.
Supporting the Mission

Runners and Walkers, We’re Going Virtual!

Fall is in the air, and you know what that means. It’s almost time for the 3rd annual Over the Creek and Through the Woods Trail Run! This year’s event will be a bit different than in years past, though. This year’s event is virtual!

Participating is easy. Just choose your distance—5K, 10K, or 15K—and complete your race any time at any location from October 3 – 18.

$30 for adults, includes shirt
$15 for kids (ages 6 - 18), includes shirt
Free for kids 5 and under, does not include shirt

Register online at itsyourrace.com through October 17.

Extra t-shirts are available for purchase. Any registrations or t-shirt orders received after September 25 are not guaranteed of receiving a t-shirt and participation medal by October 3. Please contact Development Director Cathy Hart-Jansma at hartjansmac@cedarcreekinstitute.org or (269)721-4131 with any questions.

Thank you to our sponsors!

A Place to Meet and Volunteer

Be Resilient Like a Tree in the Wind
By Carol Hendershot,
Co-Founder of GrandRapids Center for Mindfulness

In nature, we define resilience as the ability to bend without breaking. In human beings, it is the amount of flexibility and adaptability we can call upon in any given situation. It is the ability to weather adversity, encounter difficulty, and bounce back from struggles. Resilience allows us to trust that change and loss won’t destroy us and that whatever we are dealing with, we can handle it. It gives us the confidence and psychological strength to cope with stress, hardship, and loss.

We all want to be happy, but life doesn’t always cooperate. As much as we would like to, we can’t insulate ourselves from misfortune. The paradox is that how well we do in life depends not on the number or severity of our hardships, but on how we meet those difficulties.

So, how do we meet the inevitable challenges of being human without breaking? And why do some people seem more resilient than others?

What we know is that it is not the result of one specific gene, one psychological trait, or one social system. Wherever we fall on the resilience spectrum, the good news is that we can strengthen our resilience by being mindfully aware of our bodies, thoughts, and emotions. Mindful awareness is at the root of our ability to return to our original shape, no matter how strong the wind.

Through practice, we can bolster emotional flexibility, optimism, connection to our bodies, and sense of purpose to become the courageous, resilient person we were meant to be.

If you are interested in learning more about building resilience through mindfulness, attend the Virtual Mindfulness Workshop on October 3; see page 6 for more information.
Calendar of Events

To keep our participants safe, most of the programs offered this month are available via Zoom or Facebook Live.

Please register for all programs online at CedarCreekInstitute.org

If you are interested in learning more about Zoom, there are some tutorials on our website.

September Storywalk Book:
The Apple Pie Tree by Zoe Hall
Follow the progress of an apple tree through the seasons from a bare tree in the winter to apple picking in the autumn. Learn what makes this fruit a staple of the fall and an American favorite!

Virtual BioBlitz:
The Golden Rules of Goldenrods
Thursday, September 10 4 – 5 pm
From showy to stiff to swamp, goldenrod blooms blanket the landscape in the fall. Learn the differences between different species, their identifying characteristics, and their importance to insects, animals, and humans. Participants will learn about these plants in a Zoom presentation and then given the tools to go outside and try to identify and record their plant observations through smartphone apps and online reporting.
FREE (donations accepted)

Virtual Stroll with Nature: Sly as a Fox
Saturday, September 12 10 – 11 am
Foxes are thought to be clever, tricky, and even sly. Join us in celebrating National Fox Day and discover if foxes truly live up to their reputation through stories, hands-on activities, and suggestions for short “strolls” on trails or through your neighborhood. This program will be live-streamed through Zoom and Facebook Live, so you will have an opportunity to interact with and ask questions of Community Program Manager Ellen Holste. This program is open to all ages but is geared towards families with preschool through elementary-aged students.
FREE (donations accepted)

Virtual Lunch and Learn:
Working to Bring Back Wild Rice
Friday, September 18 Noon – 1 pm
Manoomin, also known as wild rice, is an important cultural food source for Anishinaabek peoples across the Great Lakes as well as for many wildlife species. After centuries of habitat degradation, it now survives as just a shadow of its former abundance. Join Institute stewardship staff, researchers, and the Gun Lake Tribe of the Match-E-Be-Nash-She-Wish Band of Pottawatomi as they discuss current Manoomin restoration efforts in southwest Michigan, the results of on-going projects, and their impacts on the management of this important resource.
Members FREE; Non-Members $5

Science Storytime: Stash! Snore! Soar! Survive!
Friday, September 25 10:30 – 11:15 am
Listen to stories, sing songs, and engage in play and hands-on activities while learning about different ways animals prepare for cold weather in this storytime hosted by the Hastings Public Library and Pierce Cedar Creek Institute. Although open to all ages, this storytime is recommended for toddlers through elementary-aged students.
FREE (donations accepted)

Candlelight Trails: Under the Harvest Moon
Saturday, September 26 7:30 – 9:30 pm
Enjoy a quiet and relaxing evening on candlelit trails while taking in the colors, smells, and sounds of fall. Bring a blanket to spread out on the lawn and observe the brilliance of the night sky away from the bright city lights and tall buildings. This is a self-guided activity, but Institute staff will be present to answer questions.
Participants must select one of the following start times when registering: 7:30, 7:50, 8:10, and 8:30. Space is limited to 50 participants per time slot. Pre-registration is required.
Members FREE; Non-Members $5

Nurturing Nature Knowledge Series: A Summary of the 2020 Biological Field Station Projects
September 25: Natural Resource Internships
October 2: Art and Writing Projects
October 9: Research Projects
12 – 1 pm
Learn about the exciting work that happened this past summer at the Institute’s Biological Field Station. Researchers and fellows will discuss the research questions they explored and their results, the art they created, and the stewardship work they learned and accomplished both on and near Pierce Cedar Creek Institute’s property.
FREE (donations accepted)

Virtual Mindfulness Workshop:
Resilience—How to Bend without Breaking
Saturday, October 3 10 am – 1 pm
Join Carol Hendershot to learn the skills and develop the resources to not just survive but to thrive. Begin your journey to strengthen the skills of building positive habits in the areas of mindful movement, emotional flexibility, learned optimism, and meaning and purpose to build a happier more resilient life. Participants will receive a recording of the workshop. Space is limited to 25 participants. Please register by September 19.
Members $45  I  Non-Members $55

creativecommons.org