WINTER 2024-25 VOL. 28 / NO. 4

Brown Family Environmental Center FIELD NOTES



Photo: Eric Albrecht

Evergreens and Conifers: Science and Lore

BY JADA SWEARINGEN '24, BFEC POST-BACCALAUREATE FELLOW AND NOELLE JORDAN, DIRECTOR OF THE BFEC AND KENYON FARM

As daylight wanes and temperatures begin to plummet with the onset of winter, a remarkable transformation takes place. The fiery colors of leaves that once painted local hillsides fall away to reveal bare, yet beautifully intricate tree branches. Many of the trees you see in Knox County and throughout the eastern U.S. are deciduous, meaning they drop their leaves every year. Maples, oaks, sycamores and ash are a few common deciduous trees you may know.

But tucked into the forests, you will see splotches of dark green — the evergreen foliage of pines, firs and spruces, among others. These trees tell a different story. Unlike deciduous trees, evergreen trees do not shed all their needles (which are modified leaves) at the same time. Instead, these trees shed some of their needles slowly throughout the year, immediately replacing the old with the new. Narrow needles are a great adaptation for these trees. They have a smaller surface area compared to the broad leaves of deciduous trees. This smaller surface area prevents freezing and, along with the waxy coating, reduces water loss. The name of the game for surviving winter in northern latitudes is water conservation.

Continued inside

In This Issue

PAGE 2 – Eastern Screech Owls
PAGE 3 – A Hike After A Rain
PAGE 4 – Where are they Now?
PAGE 6 – Antarctica

2 FIELD NOTES

Evergreen trees are part of a larger group of trees called conifers, which means they are cone-bearing. Some conifers are evergreen, while others like cypress trees, redwoods and larches drop all their needles in the fall. That's right — these trees are deciduous conifers. Here in Ohio, we are at the northern edge of the range for bald cypress, so we get to see these trees in action.

Cones are advantageous to these trees for several reasons. The cones protect the seeds from harsh weather conditions and herbivory from a variety of animals. Cones remain tightly closed around the developing seeds until environmental conditions are best for seed dispersal and germination.

Let's shift gears a bit and talk about the symbolism and lore of evergreen conifers. Evergreens have been at the heart of winter symbolism on many continents through the centuries. They represent vitality, good fortune, prosperity, protection and the promise of life's continuity during the darkest days of winter.

Centuries ago in the British Isles, farmers hoped to transfer the vital life force of evergreen trees to their barns and stables by sweeping these areas with brooms wound from pine twigs. And for good measure, they would pin evergreen boughs above their doors. Around the winter solstice, pine branches or logs (yule logs) were decorated and brought into the house as a promise that spring would come again. The idea of the Christmas tree started in the Middle Ages in Germany and Scandinavia. Instead of boughs or logs, people brought the entire evergreen tree into their home to serve as a reminder of hope.

The bald cypress has some fascinating lore surrounding it from Greece, Native Americans and the Celtic Isles. In Greek mythology, this tree represents the immortality of Cyparissus, a handsome youth from the island of Keos who died from grief after accidentally killing his beloved pet stag. Upon mourning the loss of his stag, he begged the Gods to take his life, so Apollo transformed him into a Cypress tree. The Greeks also linked bald cypress trees to the realm of the dead and often planted the trees near cemeteries. In Native American folklore, the bald cypress is often associated with longevity, endurance and mourning, with its wood being used to make canoes, coffins and drums. Native Americans would sometimes also use the tall, knee-like structures (knobby growths that spring up from the roots) on bald cypress trees to make beehives. And in Celtic folklore, the bald cypress tree represents freedom and the ability to leave behind our attachments and burdens.

This winter, if you're in Ohio and want to surround yourself with coniferous evergreens, wander up to BFEC's Pine Plantation. There, you can explore the wonders (and amazing aroma) of the many eastern white pine trees. It is here where we often hear the joyous shouts and laughter of kids young and old as they gather pine cones and build forts. Perhaps you will find your inner child and laugh with delight as well, or perhaps you will hear whispers from the past and be reminded that spring will come again.

Eastern Screech Owls: The Little Owl

BY SHANE MCGUIRE, BFEC LAND MANAGER/NATURALIST

According to local lore, the Kokosing River is named after an Algonquin word meaning River of Little Owls. When I started working at the BFEC, I quickly came to associate the Kokosing with the eastern screech owl, which is Ohio's most common owl species.

Eastern screech owls are a small owl, standing roughly six to eight inches tall



and weighing only four to seven ounces. They have two types of color phases, gray and reddish brown. Regardless of the color phase, their feathers have dots and stripes for camouflage. Compared to their body, they have big heads and look as if they have no neck. Their small ear tufts are raised, which is why many people mistake them for baby great horned owls. Inhabiting the entire eastern part of the United States, they are present in Ohio year-round and, like other bird species, are easier to spot in the winter.

Generally favoring wooded areas with an open understory, screech owls are very adaptable and can be found just about anywhere as long as trees are present. They have been spotted in urban areas, orchards, parks, meadows and marshes.

Eastern screech owls are carnivores and feed off a wide variety of small animals such as mice, insects, worms, tadpoles, frogs and other birds. They have even been known to catch bats out of the air. When food is abundant, they will catch extra food and store it in tree cavities for a few days. One eastern screech owl can catch up to 1,000 mice per year, making them a great asset for small mammal control.

These small owls usually mate for life. Breeding season starts in February, when they start looking for a nest site. After they find a suitable spot (they prefer tree cavities), the female will lay two to eight eggs, usually in March or April. She will remain with the nest until the eggs hatch. During this time, the male will provide all of her food. After the young fledge the nest, they depend on their parents for another eight to ten weeks in order to survive. Once the young develop hunting skills, they slowly go out on their own.

Eastern screech owl populations are stable, and conservationists are currently not concerned about them, although deforestation and urbanization could potentially threaten their population in the future. If you'd like to support screech owl populations, maintaining some trees with an open understory would be helpful. If you have dead trees, allow them to stand as long as possible to allow woodpeckers and other critters to create holes. Nest boxes are also an option for screech owls. To build your own box, check out the National Audubon Society website. They have step-by-step instructions and tips for box placement. If you're not that adventurous, you can buy nest boxes from a variety of places.

The World Underfoot: A Hike After A Rain

BY EMMA COFFMAN '22, BFEC POST-BACCALAUREATE FELLOW (2022-23)

I like to think of my hikes as scavenger hunts, adventures and explorations that call for binoculars and a magnifying glass. As I make my way down a squishy trail, wet with rain, mud and fallen leaves, I am surrounded by thousands of organisms, celebrating in their own ways the sudden burst of water from the sky -awelcome occurrence after a long summer drought. These living things are in the trees, on the leaves, and even underground, and they are small and still compared to deer, birds and squirrels.

In truth, there are so many micro- to macroscopic organisms soaking up the moisture on the forest floor at any given moment that I could never possibly identify them all (even by common names!), but let me at least introduce you to some you might see, and give you a few clues to help solve their mysteries.

You may be familiar with fungus in the form of mushrooms, charismatic little structures that cling to rotting logs or sprout out from the ground. Some, like the prized morel, are edible, but others are toxic and, tragically, can be extremely difficult to identify. (This is why you should always forage with an expert!) Mushrooms are actually just one part of the entire organism, and their job is to disperse spores, tiny cells that will grow into a new individual fungus. Most of the fungus itself, however, actually lies far beneath its mushrooms, interwoven into the soil as vast networks of thin mycelium that stabilize the fungus and allow them to absorb nutrients from the world. These vast webs of fungus can form dense "mycorrhizal networks," forming symbiotic relationships with tree roots, moving nutrients, water and resources across the forest floor, sustaining even the giant trees.

A smaller structure that you may encounter on a hike is moss. Moss is a non-vascular plant, and therefore is (usually) green, a sign that it contains chlorophyll, the substance that turns sunlight into food for the plants. Unlike most plants, moss has no true roots to soak up water from underground, and instead it relies on moist habitats, even thriving on the sides of rocks given the right microclimate. They usually appear "fluffy" and are soft to the touch, with tiny structures that are leaf-like. Sometimes they form carpets on the forest floor or around the base of a tree. Interestingly, they also reproduce via spores — but, instead of mushrooms, they grow tiny stalks called sporophytes to disperse them. If what you've discovered, however, is not-so-soft, not-so-squishy, not-so-

mushroomy OR leafy-like, you may have encountered a lichen. Lichens are confusing to look at, usually with a bluish or greenish color that makes them suspiciously plantlike. And this makes sense, considering lichens are composed of two different organisms in a special symbiotic (mutually-beneficial) relationship — a fungus and an algae. This gives lichens a unique combination of plantlike and funguslike traits that make them unique, but they also rely on moisture and water to thrive. That doesn't mean lichens aren't resilient, though. In periods of extensive drought (even worse than this year), they are able to go dormant, thriving in conditions as harsh as those found in Antarctica. In fact, lichens were once attached to the outside of the International Space Station for 18 months. They survived the trip!

So, lichens have been to space. And if that doesn't make you feel like an adventurer on your next hike, I don't know what will. Make sure you bring a magnifying glass, or you just might miss your chance to meet the small, humble, mind-blowing organisms that we so often stroll right past.







On the Forest Floor Mushrooms, mosses and lichens will greet the forest visitor after a rain.

Where Are They Now?

BY NOELLE JORDAN, DIRECTOR OF THE BFEC AND KENYON FARM

In our last newsletter edition, I provided an update on the BFEC's first two post-baccalaureate fellows, Maddie Morgan and Mia Fox. This quarter, I'm providing updates on the next two: Luke Hester (2020-2021) and Ava Rose Beech (2021-2022).

The post-baccalaureate fellowship position was created in 2018 with a generous donation from the Brown family. It is designed to hire a Kenvon graduate for a 12-month appointment. from June through May of the following year. During those 12 months, the PBF focuses on programming and event planning but also spends a healthy dollop of time on the property working with our land manager and gardener.

LUKE HESTER '20, 2020-21

We were able to hire Luke Hester during the height of the pandemic. After settling in, Luke had lots of ideas about how to incorporate art into nature education. He designed virtual art and nature programs for elementary schools. We all benefitted from his creative genius and great sense of humor. Here's is the latest update from Luke:

I am now in a Ph.D. program! I completed a master's of art in spring 2023 and was then accepted into the Ph.D. program as well. So I am now in my second year of doctoral work. The program is set up so that I am now in my final year of coursework, then next year I have a year-long internship at the Cleveland Museum of Art while reading for my exams. Then comes the dissertation phase.

I recently presented a research paper at the Byzantine Studies Conference in NYC this past October, which was really exciting. My time at the BFEC has certainly stoked my interest in what has been called "ecocritical" art history. I'm about to submit an abstract for another conference in Oxford on the topic of Byzantium and Its Environment. Also, I must say that wildlife identification skills cultivated at the BFEC translate perfectly into art historical

connoisseurship and close-looking. And people in my program are perhaps well-worn of my constant identifying trees.

The past two summers I've also worked part-time doing park maintenance for the Cleveland Metroparks. I couldn't stay away (from green spaces)! It's been great to be outside and recuperate after long academic years inside. It also made me very grateful for how little litter there was at the BFEC. Most of the

job required me to pick up trash at the park — every day.

This past June, Rebekah and I were married! We had our wedding in South Africa with some of my family and a couple of close friends who were able to make the journey. Rebekah also completed her M.A. at Case Western and is now doing a Cleveland Foundation Public Service Fellowship.

AVA ROSE BEECH '21, 2021-22

Ava Rose was able to bring BFEC gracefully out of the pandemic era and helped us to redefine our new normal. Her smile and enthusiasm were contagious. Ava Rose not only did a stellar job in her role as post-baccalaureate fellow, but she simultaneously worked with biology faculty on campus doing soil research and co-writing a scientific paper. As a result of her hard work and dedication, she was accepted into the ecology Ph.D. program at University of California-Davis. Here's what she had to say:

I am currently in the third year of my Ph.D. program in ecology at University of California, Davis. I work in the UC Rangelands Laboratory under the mentorship of Dr. Leslie Roche. My research aims to understand how various restoration and management practices in grazed grasslands (rangelands) impact soil microbial ecology and how changes in soil microbial ecology (specifically functional diversity and microbial community structure) impact soil resilience to drought stress.

Last year, I received a grant through a USDA-funded program called Western Sustainable Agriculture Research and Education (SARE). With funding from this grant, I have spent the past year working on a project that examines how compost and seeding applications impacts soil microbial traits on several ranches in the Sierra Nevada foothills. I sampled soils at these ranches and am using enzyme activity and phospholipid fatty acid analysis to try and understand how these practices might change aspects of microbial activity and community composition. I'll then be

looking at this data in relation to above ground plant composition and a variety of other metrics to gauge how these practices may create soils that are more resilient to drought in California.

In the past two years, I also received two fellowships from California's Native Grassland Association, an Earth Scholar fellowship through the UC-Davis Institute of the Environment, and a fellowship for vegetation manage-

ment and invasive species management through UC Agriculture and Natural Resources. In the next few years, I'll be collaborating with another graduate student to look at plant-soil-feedbacks in grassland communities as part of a drought manipulation experiment, and looking at how climate-smart ranching practices (like prescribed burning in grasslands, targeted livestock grazing, and various soil amendments) impact soil ecology and carbon cycling.

Outside of research, I love spending time camping with friends, trail running in the foothills near Davis, looking out for cool soil profiles along roadsides, going for walks in the Davis arboretum, swimming in any body of water I can find, and biking around campus!



Donors and Volunteers

Kenyon provides financial support to the BFEC, but the center has been able to grow largely through the generosity of our donors and volunteers. We are indebted to the following individuals, groups and businesses for recent donations of time, materials and funding. If you would like to make a gift or volunteer for a project, please call the BFEC at 740-427-5050.

BENEFACTORS

Margo de Camp and David Marietta Peter Geoffrey Glassman Cornelia and Robert Hallinan James Hofferberth and Marita King Doug and Dianne Mack W.G. and E.R. Mather Fund Minigowin Fund **Richard Mulligan** David and Kim Newell Margaret Newell Peter Newell Michelle Seitz and Craig Zummer Clifford L. Slayman Alex and Karen Valchuk Leslie Sude and Paul Wang

PATRONS

Geoffrey and Lori Brown Eric and Kami Diehl Daniel Epstein and Sarah Longaker Hannah and Lenny Golub Dumont Jones and Joan Muellerleile, in loving memory of King III and all their dogs Jill and Drew Kerkhoff Joseph and Kimberlee Klesner Robert and Michelle Kozel Evelyn Newell Martha Newell James C. and Miriam Niederman Georgianna Roberts, in honor of John Timmons Roberts '85 Howard and Judy Sacks

Ian and Charlotte Watson

FRIENDS

Allan Bazzoli M.D. Phillip Bentz Erin McGinley Ellingwood James Garman Noelle Jordan Diane Markham Lane Jennifer McMahon M. Katrina and James Walker, in memory of Joe Booker

FAMILY DONORS

K. Elizabeth Atkinson Nick Bergman Jay and Sonia Corrigan Laura Paul Jennifer Seely Michael Sweazev

INDIVIDUAL DONORS

John Hammond Madeleine Morgan Anne Marie Orr Jodi Pursel Helen Umphryes

IN-KIND DONATIONS

Bird houses: Margo de Camp and David Marietta Historical bird books from the Brown Family collection: Evelyn Newell

VOLUNTEERS

This past quarter, our dedicated volunteers removed invasive species, helped care for our gardens, monitored our bluebird trail, led elementary field trips, worked at our Fall Harvest Festival and so much more. Collectively, they volunteered over 200 hours. WOW! Thank you so much! (Unless otherwise indicated, our volunteers are Kenvon College students.)

Mira Allen Zach Aranson-Paxton Havden Ashworth Josh Bergman Christiane Betfarhed Maisie Brigham Owen Brown Delfina Buonocore Damon Chezek-Peters Sam Connors

Clare Cowen Owen Edelson Luiza Elling Jason Fakler Jim Featherstone, community member Logan Furlonge Erin Gallagher Audrey Gibson Olivia Griffin-Erickson Penelope Griffioen Tommy Hillmer Olivia Hiner Olivia Ide Anna Kalnite Madis Kennedy Amelai Kovach Anne Legatta Bridget Lomax Heidi Madhu Ainsley McConnell Chelsea Menke, community member AJ Molina **Clementine Muir** Derek Nolan Bonnie Nygard Roisin O'Bryne Paige Porter Madeline Regnier Isa Rolan Jay Santana Alina Secrest Elle Sommer Kendall Sommers **Basil Strickland** Vivian Suh Ian Switzer Rachel Tomasko Yaell Urrunaga Vincent Vispo Ada Wigfield Rachel Zarkowsky

Upcoming Programs and Events



ANTARCTICA SERIES

The BFEC is working in partnership with Professor Ruth Heindel and The Gund to support two oncampus exhibits. We hope you will be able to view these exhibits and join us at the BFEC for several supporting programs.

ANTARCTICA SERIES

Science Exhibit

Dust: Jumpstarting Life on Earth's Coldest, Driest Continent

NOVEMBER 2024 THROUGH JANUARY 2025 On view at the Bulmash Exhibition Hall in Kenyon's Chalmers Library

In this exhibit, follow Assistant Professor of Environmental Studies Ruth Heindel and her research team on their journey to understand dust's influence on when and where microbial life occurs in Antarctica. Along with their collaborators from Boise State and Ohio State universities, Heindel's lab group studies tiny dust particles that land on glaciers and snowbanks in the McMurdo Dry Valleys of Antarctica. Dust interacts with snow and ice to release nutrients. Nutrients jumpstart life and feed microorganisms in this extreme environment. This traveling exhibit showcases the work of the research team from the field to the lab. *Exhibit designed by Haylen Scott (Ohio State), produced by Jason Cervenec (Ohio State), and curated by Ruth Heindel, Anna Bergstrom (Boise State), William Bryant '25, and Jordan Schisler '25.*

ANTARCTICA SERIE

Displays and Interactives in the Resource Center

DECEMBER 2024 THROUGH FEBRUARY 2025

Stop by the BFEC Resource Center and learn about penguins and Antarctic food chains. What creatures live on this dry and cold continent? See if you can find the creatures (and scientists) in our special snowflakes on display in both classrooms.

ANTARCTICA SERIES

Exploring Antarctica SATURDAY, DECEMBER 14, 2 P.M.

As a Grosvenor Teacher Fellow with National Geographic and Lindblad Expeditions, Sandy Reed recently traveled to the Falkland Islands, South Georgia Island and Antarctica. She will be sharing stories of the wildlife she encountered through her photos and videos and also talk briefly about the Imperial Trans-Antarctica Expedition, led by Sir Ernest Shackleton, more than 100 years ago. She will also touch briefly on how climate change is affecting Antarctica and how that is, in turn, affecting us all. This program is casual and relaxed, fun for everyone from young children to grandparents. *Meet at the BFEC Resource Center*.

Christmas Bird Count

SUNDAY, DECEMBER 15, ALL DAY

As part of the National Audubon Society's annual Christmas Bird Count, the BFEC is organizing volunteers who are willing to count birds at their own feeders. For more information, contact Noelle Jordan at jordan2@kenyon.edu.

ANTARCTICA SERIES

Something Blue JANUARY 2025

On view at The Gund This exhibit explores how ice is represented in modern and contemporary art. The conversation between "Something Blue" and "Dust" encourages connections between scientific and artistic communication. "Something Blue" is curated by Daisy

Desrosiers, director and chief curator at The Gund.

ANTARCTICA SERIES

Dust: Jump Starting Life on Earth's Coldest, Driest Continent

SATURDAY, JANUARY 25, 2 P.M.

How can tiny dust particles melt glaciers and support life? How can that life shape a complex ecosystem? What's it like to do science on a remote and frozen continent? Join us as Assistant Professor of Environmental Studies Ruth Heindel and students William Bryant '25 and Jordan Schisler '25 share their journey to understand dust's influence on glaciers in Antarctica. After this presentation, you might view dust in a new light. *Meet at the BFEC Resource Center*.

Himalayan Bowls and Chanting

SATURDAY, FEBRUARY 1, 10:30 A.M.

Allan Bazzoli M.D. will offer the sounds of 18 Himalayan singing bowls combined with harmonic chants from different cultures to immerse you in a very relaxing, transcendent experience of vibration and sound. Bazzoli will chant a blend of Native American sounds, the OM chant (the universal chant), the Dragon chant and the Snow Mountain chant. Cost: \$20 adults. \$10 students. Reserve your spot: schutte1@kenyon.edu. *Meet at the BFEC Resource Center.*

Family Nature Quest: An Eye Toward the Night Sky

SATURDAY, FEBRUARY 1, 6:30 P.M.

Have you ever looked up at night and wondered about all those constellations up there? Join us at the BFEC to explore winter constellations and learn the fascinating stories that have been told about them. We will create constellation viewers, design your own constellation and make up the origin story for your constellation. *Meet in the BFEC Resource Center*.

Family Nature Quest: Snow, Ice and Everything Nice

SATURDAY, FEBRUARY 8, 10:30 A.M.

Water has fascinating properties. In this hands-on and exploratory program, we will discuss water as a solid, liquid and gas. We will focus on water as a solid as we discover how snow can keep us warm. We will also delve into the beauty of snowflakes. *Meet in the BFEC Resource Center*.

Family Nature Quest: Playful Paws

SATURDAY, FEBRUARY 15, 10:30 A.M.

Every animal has a unique track with features that help them hunt for food, evade predators, or defend themselves. We will look at the tracks of many different Ohio animals to discover these features while creating paw print art. *Meet in the BFEC Resource Center.*

Guided Hike: Pine Plantation and Fern Trail *Part of the BFEC's 30th Anniversary Series* SATURDAY, FEBRUARY 15, 2 P.M.

Join BFEC Director Noelle Jordan for a guided hike of two of the oldest trails at the BFEC. We'll stay warm on these moderate trails (some hills) and we'll discuss how the landscape in this area has evolved since the early 1990s. Come celebrate 30 years of change at the BFEC. *Meet in the BFEC Resource Center*.

Family Nature Quest: Animal Stories SATURDAY, FEBRUARY 22, 10:30 A.M.

During this program, we will use stories to explore the three strategies animals use to survive winter. We will talk about the benefits and challenges of each, and then we will each write our own animal story. *Meet in the BFEC Resource Center*.

Guided Hike: Observatory Trail and Bishop's Backbone Part of the BFEC's 30th Anniversary Series SATURDAY, MARCH 29, 2 P.M.

Join BFEC Land Manager Shane McGuire, for a guided hike of two more trails. During this hike (some hills), we will wander through some of the BFEC's oldest forested areas, and Shane will shed some light on how these areas have changed in the past 30 years. Come celebrate 30 years of change at the BFEC. *Meet in the Franklin Miller Observatory parking lot.*

> Enjoy the serenity of the BFEC trail system this winter, or join us for guided hikes in celebration of our 30th anniversary, on February 15 and March 29.

oto: Dannie Lane '2:

Brown Family Environmental Center Kenvon



BROWN FAMILY ENVIRONMENTAL CENTER | 9781 LAYMON ROAD | GAMBIER, OH 43022-9623

kenyon.edu/bfec | 740-427-5050

OUR MISSION

The Brown Family Environmental Center exists to support the academic goals of Kenyon College, to provide opportunities for education and research, to engage Central Ohioans of all ages with nature, and to conserve the natural diversity of the Kokosing River valley.

OUR STAFF

Jada Swearingen '24, Post-Baccalaureate Fellow Terri Hieronimus, Gardener Bonnie Schutte, Administrative Assistant Shane McGuire, Land Manager Naturalist Noelle Jordan, Director

Celebrating 30 Years of Growth

YOUR CONTRIBUTION WILL HELP US KEEP GROWING OVER THE NEXT 30 YEARS AND BEYOND.

There are many reasons to give, including the satisfaction of knowing you're a part of critical environmental education and conservation programs. Receive preferred access to workshops, a hard copy of our newsletters and a discount on bird seed. **Use the form below to send your contribution today**.

				Membership level.		
NAME (FIRST, MIDDLE, LAST)				□ Student \$20	🗆 Individual \$35	□ Family \$50
				□Friend \$100	□Patron \$250	Benefactor \$1000+
ADDRESS			Amount enclosed:			
				\Box My check, payable to Kenyon College, is enclosed		
СІТҮ	STATE	ZIP/POSTAL CODE	COUNTRY	Please bill my Visa or Mastercard Card number		
PHONE	EMAIL ADDRESS			— Exp. date CVV		

Your donation is tax deductible as allowed by law. Kenyon College is a 501(c)(3) nonprofit organization.

Mail to: BFEC, P.O. Box 508, Gambier, Ohio 43022

Manuals and the Laurals