



*River Bend Nature Center inspires curiosity, respect, and care for nature.*



**IN THIS ISSUE**

Wood Waste: Problem to Solution	1
Note from the Director	2
Naturalist Notebook: Lichens	3
Spring Program Guide	5-7

# WOOD WASTE: PROBLEM TO SOLUTION

**Brittany Smith, Director of Environmental Stewardship**

River Bend sits within Minnesota’s Big Woods, an ecosystem once dominated by red oak, sugar maple, and American elm. Today, much of that landscape has been converted to agriculture or shaped by expanding development. What remains of the original forest is limited and fragmented, and those remaining areas face ongoing pressure from invasive species.

Buckthorn is one of the most persistent challenges. It forms dense thickets that crowd out native plants, limit light to the forest floor, and change how these woods regenerate over time. In areas where buckthorn becomes established, native seedlings struggle to compete, and long-term forest composition begins to shift away from the species that once defined this region.

This work is especially important at River Bend. The site supports one of the region’s rarest native plants—the federally endangered dwarf trout lily—found

only in a small number of counties in southeastern Minnesota. Its survival depends on maintaining intact forest conditions, including light availability, soil stability, and competition from other plant species. Managing buckthorn is not simply about clearing brush; it is directly tied to protecting species that exist in very few places.

Since its founding, River Bend has made buckthorn removal a core part of its stewardship work. For many years, the approach was straightforward: cut the material, pile it, and burn it during the winter when snow cover made burning safer and easier to control. When conditions cooperated, this was an efficient and widely used method.

Those conditions have changed. Open burning releases greenhouse gases, and winters have trended warmer, with less consistent snow cover. Without reliable snow, burning



## NOTE FROM THE DIRECTOR

Happy Spring!  
I hope this slightly redesigned newsletter finds you well as we're shedding our winter cocoons and preparing for a welcoming season at River Bend.

I wanted to take a moment to take you through some of the newsletter format you'll see in the pages ahead. We've received a lot of feedback from folks like you on how to make our newsletter more relevant and accessible. We know it's not perfect but we did our best to incorporate your voice into our revised design.

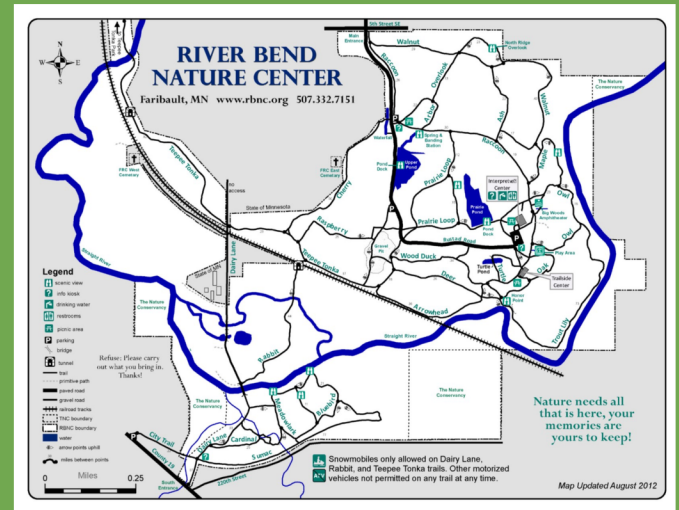
First- you'll notice that we've condensed some content in order to expand on a featured story each issue around a conservation topic that members have expressed curiosity about. This has allowed us to do a slightly deeper dive on a quarterly topic while also allowing us to increase our type/font size - answering the request we've received from a lot of readers to make the newsletter a bit easier to read.

Second- We've really improved our upcoming program section on pages 5-7 to make it easier to learn about what's happening at River Bend. We've expanded information of some of our signature events each quarter and have provided some additional clarity in the program section including how to register, better program descriptions, and adding url and qr code shortcuts to get you to our registration page faster. For example- there are quite a few service days coming up around Earth and Arbor days in this issue- I hope you'll use the new program guide to sign up and join us!

It's our hope you'll enjoy this slightly revised format to our newsletter. As always- I'm looking forward to seeing you outside!

~ Brad Bourn / [Bourn@rbnc.org](mailto:Bourn@rbnc.org)

Thank you  
to these organizations for helping us  
inspire curiosity, respect and care for nature.



Scan this QR code  
and download our  
interactive trail  
map on the  
Avenza app.

Trail hours: 6 am - 10 pm daily  
Interpretive Center Hours  
Mondays 8 am - 7 pm  
Tues-Friday 8 am - 4 pm  
Saturdays 10 am - 2 pm

# NATURALIST NOTEBOOK

Matt Johnson

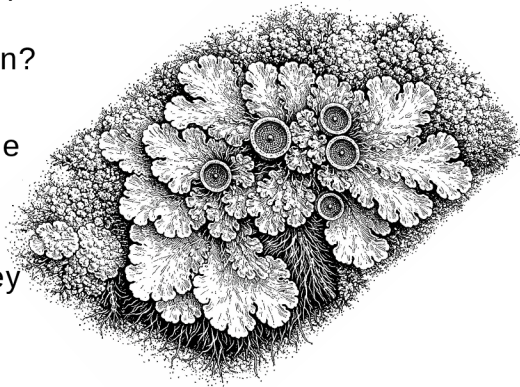
Each issue, RBNC Master Naturalists share observations and explanations on nature topics you'll find all around and outside River Bend. If you'd like to submit a question or suggestion on a future topic email [RBNCINFO@RBNC.org](mailto:RBNCINFO@RBNC.org)

## LICHENS HIDING IN PLAIN SIGHT

As spring rains bring much of nature back to life, we often turn our attention to plants. It's hard not to notice how much life they bring to our landscape. However, it's not just plants that decorate our forests. By taking a closer look, you might realize that something you thought was just moss, may actually be a different living thing altogether. Lichens, one of the more overlooked parts of nature, are full of fascinating surprises. A truly unique combination of qualities, makes lichens easy to appreciate.

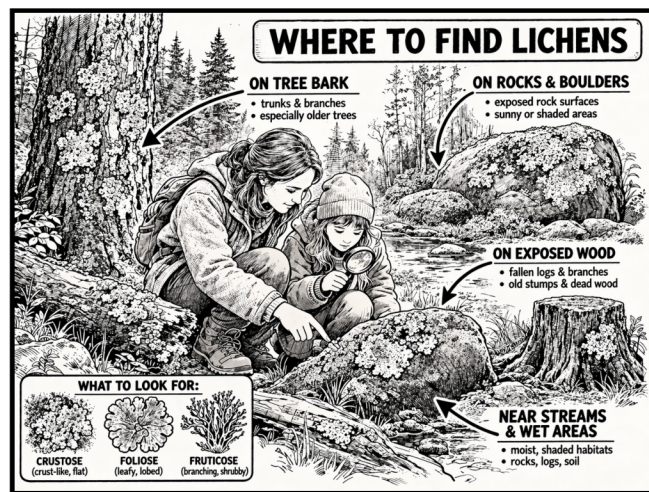
So what is a lichen?

A lichen is essentially multiple single organisms living together symbiotically. They are made up of a combination of algae or cyanobacteria and a fungus, with the potential for other components as well. The algae or cyanobacteria allows the lichen to photosynthesize, while the fungi provides physical structure. Because the fungal component defines the physical shape, lichens are taxonomically classified by their fungi. The complex relationship between these components is still in many ways a mystery, however we have learned that lichens can be thought of as a small vibrant ecosystem. There is also great diversity among lichens, with around 20,000 documented. They can look quite different from one another, appearing as crust-like, leaf-like, or branched. Given their obscure nature, it is believed that many more species may still be undiscovered.



A quick walk through the forest proves that lichens are not hard to find when one is looking for them.

They are often seen growing on trees and rocks, but will essentially grow on most any surface outside.



Lichens are most often found in areas that are at least partially shaded, as direct sunlight can be drying

*Lichens cont pg 4*

## Volunteers Needed

### Volunteer Naturalist

Assist in teaching our nature classes and supporting our staff on school field trips. Programs typically run Monday-Friday 8:00-2:30 pm. Individual program length is 1 1/2 - 2 hours.

### Maple Syrup Fun Run Volunteers

Help out by volunteering with the pancake breakfast (prep, serving & clean-up), water stations, course marshal, prepping the course, taking the course signs down, bag check, parking attendants or event photographer.

### Biochar Kiln Operator

Manage a kiln to make sure biochar is properly created.

### Nature Center Ambassadors

Volunteer at the front desk to greet visitors, answer questions and help with the gift shop.

### Administrative Help

Help with our mailing correspondences bi-monthly.

### Garage Sale Fundraiser Help

Volunteers will help manage and sell items.

Visit [www.rbnc.org/volunteer](http://www.rbnc.org/volunteer) to learn more and sign up!

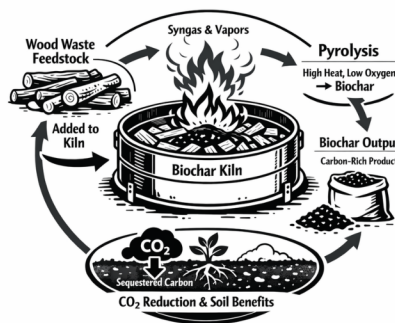
# WOOD WASTE

*continued from pg 1*

becomes more difficult to manage safely, and the window for doing that work continues to shrink. As a result, piles of cut material are more likely to remain on the landscape.

Over time, those piles begin to create their own set of problems. Brush accumulates in dense layers, covering the forest floor and limiting the regrowth of native vegetation. In some cases, these piles persist for years, slowing restoration work, detracting from visitor experiences, and making it more difficult to access areas for continued management. What began as a necessary step in controlling invasive species can, if left unaddressed, become a barrier to long-term restoration goals.

One of the more immediate challenges with unmanaged wood waste is how quickly it begins to change conditions on the ground. Large brush piles can trap moisture, limit sunlight, and physically block emerging vegetation. In some cases, these piles create localized areas where native plants simply cannot reestablish. Even where decomposition begins, the process can take years, especially with larger material, leaving restoration areas in a holding pattern.



Biochar program made possible by a grant from:



events, seasonal crews, and ongoing maintenance, and the volume accumulates quickly. Without a clear path for processing that material, even effective restoration work begins to create backlog. This becomes even more apparent when layered with ash removal. As Emerald Ash Borer progresses, ash trees often decline over several seasons before dying, creating a staggered but



*RBNC Team member Dan H. starting a biochar kiln.*

continuous addition of material. This is not a one-time surge of wood waste but an ongoing input that requires a sustained response.

At the same time, a much larger issue has been unfolding across Minnesota. Emerald Ash Borer (EAB), an invasive insect that kills ash trees, has spread widely across the state. According to the U.S. Forest Service, ash makes up roughly eight percent of Minnesota's forest tree population, representing an estimated 1.2 billion trees statewide. As those trees decline and die, the volume of woody material increases dramatically—not just at River Bend, but across the region.

This shift changes the scale of the challenge. Buckthorn removal alone produces a steady stream of material, but when combined with large numbers of dead and dying ash trees, the question becomes more complex: how to manage that volume of wood waste in a way that does not create additional environmental harm.

*Recent removed buckthorn coupled with ash removal creates an unsightly backlog of piles that slow conservation work.*



River Bend explored a range of options. Leaving material in place was not viable in areas where restoration is ongoing. Chipping can be useful in some contexts but requires equipment, access, and ongoing management. Hauling material off site is costly and often impractical at the scale required. Each option addressed part of the problem, but none fully resolved it.

In this context, the shift to **biochar** is less about adopting a new technology and more about resolving a bottleneck. It provides a way to keep material moving through the system rather than allowing it to accumulate on site. Turning that idea into a working program was made possible through support from the Minnesota Pollution Control Agency's Wood Waste Utilization Grant.

**Biochar is produced by heating organic material**—such as buckthorn or ash wood—in a low-oxygen environment. *Wood waste cont pg 9*

# Spring Featured Programs

*Programs in this guide are accurate at the time of publication and are subject to change. To register for a program and for an up to date listing of River Bend Nature Center Programs visit [www.rbnc.org/events](http://www.rbnc.org/events) or call (507) 332-7151*



Scan to Register



## Earth & Arbor Days Event

*Come out to River Bend on April 25th in honor of 2026 Earth and Arbor Days to help care for our natural resources. We'll have stewardship activities across the nature center and we'll be planting over 300 trees!*

**Date and Time: April 25, 10:00 - 12:00 pm**

**Cost: Free**



Scan to Register



## Maple Syrup Fun Run

*Join us for our annual Maple Syrup Fun Run and pancake breakfast. There are routes for all ages and abilities from a 1 mile family walk/run all the way to a 50k run! The Fun Run is also the first day our award winning maple syrup is available for sale to the public.*

**Date and Time: May 2<sup>nd</sup>, 6:00-3:00 pm**

**Cost: Varies by Distance**

Sponsored by:



Scan to Register



## RBNC Summer Day Camps

*Multiple two-day, immersive, outdoor nature play camps at River Bend and day long "Adventure Is Out There" field trips are available for kids entering K-9<sup>th</sup> grade in the fall of 2026.*

**Dates and Times: Mondays-Thursdays in**

**June & July, 9:00-4:00 pm**

**Cost: Day Camps \$35 member / \$60 non-member**

**Field Trip Camps: \$60 member / \$85 non-member**

# SPRING PROGRAM GUIDE



Scan this qr code for a complete calendar of events.

## Early childhood and youth education programs:

### Little Sprouts!

Early childhood activities led by River Bend educational staff for youth from birth to age 5 and their caregivers. Each session has a planned activities around a different topic. Dress for the weather, as most of the class will be outside.

**Little Sprouts sessions are from 9:30am - 11:00am or 10:00 - 11:30 am**

April 6th	Baby Animals	May 18th	What's in the Water?
April 18th	Batty About Bats	May 30th	What's in the Water?
April 20th	Batty About Bats		

Cost: Members: \$5 per child Non Members: \$10 per child (Caregivers are free)  
Pre-registration is REQUIRED

### Storytime with a Naturalist

Join River Bend Nature Center Naturalist for a fun and interactive story time at the interpretive center before heading out to explore River Bend on your own (or taking a nap).

**All Storytime with a Naturalist sessions are from 11:00am - 12:00pm**

April 4th	April Showers Bring May Flowers	June 6th	What's in the Water?
-----------	---------------------------------	----------	----------------------

Cost: Free (donations encouraged)  
Pre-Registration is STRONGLY ENCOURAGED

### Homeschool Series

River Bend Naturalists provide nature based STEAM activities designed to meet Minnesota Science Education standards. Activities are open to ages 5-11 learners and are ideal for homeschool students.

**All Homeschool sessions are from 1:00pm - 3:00pm**

April 6th	Intro to Spring Flowers	May 4th	Intro to Signs of Spring
April 20th	Dwarf Trout Lily	May 11th	Pond Dipping/Frog Call ID

Cost: Members: \$5 per child Non Members: \$10 per child (Caregivers are free)  
Pre-Registration is REQUIRED

### Second Chance Sign Up for Summer Camp!

Life gets busy. Who remembered to sign up your kid for summer camp all the way back in January!? Well, we're mostly filled up now but we do have a few slots open for the following summer camps.

**Each summer camp is from 9:00am to 4:00pm (drop of and pick up 30 min before and after)**

June 15th	Archery & Atlatls 3-5 <sup>th</sup> Grade	July 8th	Campfire Cooking 3-5 <sup>th</sup> Grade
June 22nd	Dinosaurs K-2 <sup>nd</sup> Grade	July 27th	Explorers K-2 <sup>nd</sup> Grade
June 24th	The Buzz on Pollinators K-2 <sup>nd</sup> Gr	July 29th	Animal Camp K-2 <sup>nd</sup> Grade

Cost: Members: \$35 per child Non Members: \$60 per child  
Pre-Registration is REQUIRED

*Programs in this guide are accurate at the time of publication and are subject to change.  
To register for a program and for an up to date listing of River Bend Nature Center  
Programs visit [www.rbnc.org/events](http://www.rbnc.org/events) or call (507) 332-7151*

## Family fun programs:

### Stewardship Saturdays

*Roll up your sleeves, get your hands dirty and help us take care of River Bend's Natural Resources. Activities are generally family and age friendly. Each session has opportunities for light duty to strenuous work to get your blood flowing. Your work on Stewardship Saturdays is greatly appreciated.*

**All Stewardship Saturday sessions are from 10:00 am - 12:00pm**

<b>Invasive Species Removal</b>	<b>May 9th</b>	<b>Invasive Species Removal</b>
<b>Earth and Arbor Day Tree Planting</b>	<b>June 13th</b>	<b>Southside Trail Maintenance</b>

Cost: FREE

Pre-registration is STRONGLY ENCOURAGED

### Yard Sale Fundraiser & Electronic Recycling Event

*Come get everything you didn't know you needed at our yard sale fundraiser and drop off your old electronics for appropriate recycling. **We're also happy to take your donations of gently used yard sale items.** We will be accepting specific item donations earlier that week on Monday and Tuesday from 9am-3pm, all items must be in good usable condition. Keep items out of the landfill by donating your unwanted, cleaned items such as clothes, toys, and kitchen appliances.*

**Visit [www.rbnc.org/yardsale](http://www.rbnc.org/yardsale) for more info and donation guidelines.**

**Friday, June 5 9:00 am - 4:30pm & Saturday, June 6 10:30 - 3:00 pm**

### Brown Bag Lunch & Learn Series

*Pack your lunch and come to River Bend for a lunch hour presentation from some of the region's leading conservationists, outdoor recreation leaders, and environmentalists.*

**All Lunch and Learn sessions are from 12:00 pm - 2:00pm**

**Pollinators and Prairies in SW MN: Lisa Gelvin-Innvaer, Nongame Wildlife Specialist**  
**Recycling in Rice County: How to Reduce Your Waste, Fern Schiffer, MN GreenCorps**

Cost: Members: \$5 Non Members: \$10

Pre-registration is STRONGLY ENCOURAGED

### Birdwatching & Bagels

*Join aspiring and veteran birders for a morning of free bagels, conversation and birdwatching both inside the nature center at our "Windows on the Wild" observation area and easy strolls near the building. Birders can enter observations and track activity on River Bend's new ebird kiosk.*

**All Bagels and Birdwatching sessions are from 10:00 pm - 11:30 am**

<b>Windows on the Wild</b>	<b>June 6th</b>	<b>Windows on the Wild</b>
----------------------------	-----------------	----------------------------

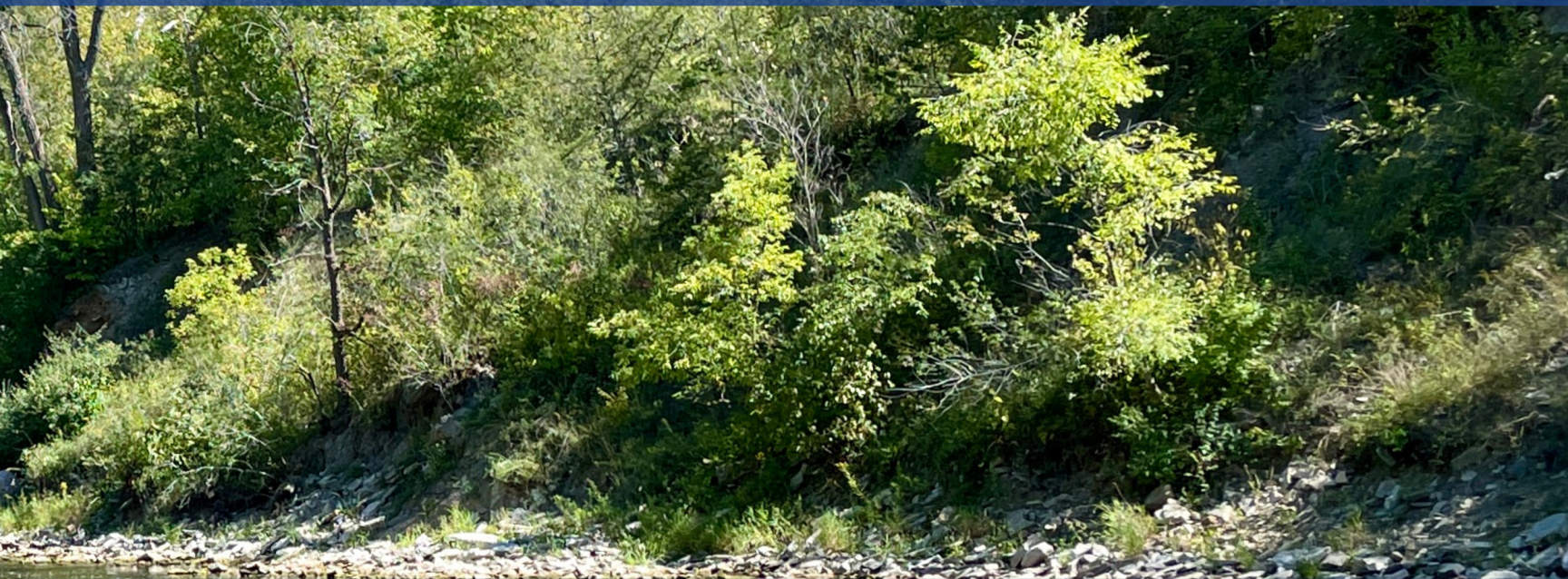
Cost: FREE

Pre-registration is STRONGLY ENCOURAGED

**We're doing big things and facing big challenges. That's why we need your help. Please help us raise \$35,000 during our Spring Fundraising Campaign by May 31st.**

**Your contribution this spring is vital to us funding important conservation work that cannot wait and maintaining low & no cost environmental education and recreation programs for youth and families.**

**We wouldn't ask if it wasn't important.**



**Give online at**

**[www.rbnc.org/donate-here](http://www.rbnc.org/donate-here)**

**or**

**Simply return the enclosed envelope**

**You can also scan the QR code with your phone to rush to our donation page.**



**Gifts of securities and retirement disbursements:**

Consider making a qualified charitable distribution from your retirement account and gifting stocks or securities directly to River Bend Nature Center. Visit [www.rbnc.org/estate-strategic-gifts](http://www.rbnc.org/estate-strategic-gifts) or email [bourn@rbnc.org](mailto:bourn@rbnc.org) to discuss.

**ANONYMOUS DONOR PLEDGES A \$5,000 CHALLENGE GRANT!**

**Thank you to the anonymous River Bend Board member who has pledged to match the first \$5,000 raised in our Spring Fundraising Drive! With your generosity, we're sure we'll be able to unlock this donor's full challenge grant!**

## WOOD WASTE

*Continued from pg 4*

This process, known as pyrolysis, uses heat to break down the material without allowing it to fully combust. Instead of turning into ash, the wood is transformed into a stable, carbon-rich material that can be incorporated back into the soil.

Although biochar has gained attention in recent years, the concept is not new. Similar practices date back thousands of years to the Amazon Basin, where Indigenous communities created fertile soils known as *terra preta* by incorporating charcoal into the ground. These soils remain productive centuries later, demonstrating the long-term stability of carbon in this form.

What makes biochar effective is its structure. It is highly porous, with a large internal surface area that allows it to hold water and nutrients within the soil. Rather than leaching away during rainfall, those resources remain available to plants over longer periods. This is particularly important in sandy or disturbed soils where water and nutrients can move quickly beyond the reach of plant roots.

Biochar also changes how carbon moves through the environment. When wood decomposes naturally or is burned, much of its carbon is released back into the atmosphere as carbon dioxide. Through pyrolysis, a portion of that carbon is converted into

***Pyrolysis- a thermochemical decomposition of organic material heated to high temperatures.***

a more stable form that resists decomposition. Once incorporated into soil, it can remain there for decades or longer.

Beyond physical and chemical properties, biochar plays an important role in soil biology. Its pore structure provides protected spaces for microorganisms that drive nutrient cycling and support plant growth. Among the most important of these are mycorrhizal fungi—microscopic fungi that form symbiotic relationships with plant roots and extend their ability to access water and nutrients.

The benefits of biochar are closely tied to how it is produced. Traditional wood burning relies on



combustion, where fuel, oxygen, and heat combine to rapidly break down material. This process releases carbon dioxide, particulate matter, and other byproducts, and leaves behind ash with relatively limited value.

Pyrolysis, by contrast, occurs in a low-oxygen environment. Because oxygen is limited, the material does not fully burn. Instead, it thermally decomposes, producing biochar along with gases and vapors. In many systems, these gases are consumed by a flame at the top of the burn, which reduces smoke while maintaining the conditions needed for char formation below.

At River Bend, this process takes place using Oregon-style kilns graciously constructed by River Bend Volunteer John Slettadah. Kilns are open-top, metal ring kilns designed to manage airflow and limit oxygen at the base of the burn. These systems allow material to be added continuously while maintaining a layer of flame at the surface, helping to sustain the conditions needed for pyrolysis.

Production begins with material already removed from the landscape, including buckthorn cleared by volunteers and ash trees affected by EAB. Once the material has dried, it is loaded into the kiln in stages. As the fire is established, the upper layer burns while the material beneath begins to char.

Working with kilns introduces a different set of considerations. Material size, moisture content, and species all influence how a burn behaves. Smaller, drier material tends to char more consistently, while larger or wetter pieces require more careful management. Preparing material ahead of time becomes part of the

***Wood waste cont pg 10***

## Lichens cont from pg 4

and damaging. However, they're able to adapt to a wide range of habitats. They are found on every continent on Earth, even Antarctica! There have even been studies that show that lichens can survive in space!



*Sunburst lichen variety - University of Minnesota*

Given how prevalent they are, it is somewhat surprising to learn that they are very slow growing, with many only growing a few millimeters per year. This slow growth is offset by the fact that many lichens can live for an incredibly long time. Certain species, often found in particularly harsh conditions, have been known to reach thousands of years old. Most lichens are able to spread through vegetative reproduction, often through dust propagules or by simply breaking off, although other methods also occur.



*Nitrogen rich lichen colony - University of Minnesota*

This ensures that lichens will continue to be found wherever ideal conditions exist.

Even though it may be easy to walk past a lichen without even realizing it, there is a lot to find interesting about them. Few species can be considered to be as complex and mysterious. They are also incredibly fun to look at! Notice the different shapes, structures and colors that lichens exhibit. They can be especially beautiful when observed through a close-up lens, which allows for the small details to be observed.



**River Bend**  
NATURE CENTER

### Staff

Brad Bourn, Executive Director

### Associate Directors

Brittany Smith, Environmental Stewardship

Molly Dulka, Programs & Engagement

Quanda Arch, Outdoor Diversity Initiatives

Katy Anderegg, Administration

### Program Coordinators

Matt Johnson

Morgan Heier

Randy McMeekin

Kate Ford

### Board of Directors

Sarah Hammer, President

Greg Simons, Vice-President

Karen Zeller, Treasurer

Abby Malmanger, Secretary

Mandy Barnes, City Council Liaison

Jessica Kinser - City Administrator

Sara Caron, Courtney Cavallier

Tom DeMatteo, Cory Jensen

Nort Johnson, Ibrahim Khalif

Alex Lopez, Patrick Schaefer

[WWW.RBNC.ORG](http://WWW.RBNC.ORG) (507) 332-7151

**Thank you to these organizations  
for helping us  
inspire curiosity, respect and care for nature.**



RELIANCE BANK



FARIBAULT RENTAL EQUIPMENT, INC.  
FARIBO SNO-GO CLUB  
GLENN'S SERVICE & TOWING  
MARATHON TECH COMPANY  
MILL TOWN CYCLES  
PAMELA REZAC REAL ESTATE  
QUALITY APPLIANCE  
TOM'S LOCK & KEY  
FARIBAULT FLYERS BIKE & SKI CLUB  
FARIBAULT AREA RETIRED EDUCATORS  
MERCURY MINNESOTA  
SCHRODER CONCESSIONS  
SERTOMA CLUB OF FARIBAULT  
ANDERKA CONSTRUCTION  
COMMUNITY CO-OP OIL ASSOCIATION  
DONAHUE'S GREENHOUSE

## WOOD WASTE

*Continued from pg 9*

overall workflow.

There is also a rhythm to the process. Once a kiln is started, it requires steady attention. Material is added in layers, and each addition must be timed so it contributes to the burn without overwhelming it. Managing airflow and timing is essential to maintaining the conditions needed for pyrolysis.

Weather plays a role as well. Wind can introduce additional oxygen, affecting burn behavior, while humidity influences how readily material ignites and sustains heat. These variables require adjustment throughout the process.

When the process is complete and visible flames begin to diminish, the remaining material is quenched with water to stop the reaction. The resulting biochar is then mixed with compost or other nutrient-rich material before being applied to restoration areas. When applied to soil, biochar does not act as a quick input. Its effects are gradual. Over time, soils



*Stewardship coordinator Randy McMeekin collects biochar from a recent winter burn to be used in Spring tree plantings.*

amended with biochar tend to show improved structure, better water retention, and more consistent growing conditions.

At River Bend, this is most visible in areas where canopy loss from EAB has altered growing conditions. Biochar helps stabilize those conditions, supporting plant establishment and long-term growth.

What began as a practical challenge—managing brush piles and dead trees—has developed into a more integrated approach to stewardship. By turning wood waste into a resource, River Bend is connecting invasive species management, forest restoration, and soil health into a single, practical system that supports long-term ecological resilience.



## Thank you, John!



**River Bend extends a heartfelt thanks to volunteer, John Slettedahl, for fabricating 6 biochar kilns - saving River Bend thousands of dollars. Thank you!**

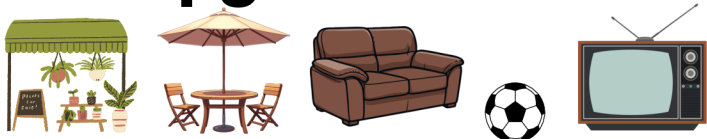
Visit [www.rbnc.org/volunteer](http://www.rbnc.org/volunteer) to sign up to be a volunteer biochar kiln operator.

## River Bend Nature Center Yard Sale Fundraiser & Free Electronic Recycling Event

 **Friday, June 5**  
**9:00-4:30 pm** 

**Saturday, June 6**  
**10:30-3:00 pm**

**See pg 7 for details**





Faribault, MN  
**MAPLE SYRUP FUN RUN**  
*Pancake Breakfast*  
Register at  
[rbnc.org/fun-run](http://rbnc.org/fun-run)



**River Bend**  
NATURE CENTER

1000 Rustad Rd - PO Box 186  
Faribault, MN 55021

Trail Hours: 6 am - 10 pm  
Interpretive Center Hours: Mon 8 am - 7pm  
Tues-Fri 8 am - 4 pm  
Saturdays 10 am - 2 pm

NONPROFIT ORG.  
US POSTAGE PAID  
FARIBAULT, MN  
PERMIT # 35

# Spring 2026 Newsletter

April, May, June

**River Bend**  
NATURE CENTER



- Inside this issue:
- Featured article: *Wood Waste: Problem to Solution*
- Earth and Arbor Day Events
- Upcoming Programs
- and more...

Earth & Arbor  
Days  
Volunteer  
Opportunities  
Page 5

