

Litzsinger Road Ecology Center

COMMUNITY NEWSLETTER

www.litzsinger.org

April 2014

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Once again, LREC volunteers were a big help managing the fire during our latest burn. Photo by Danelle Haake. See more photos on page 9.

Renewing Partnerships

by Bob Coulter

As we move toward spring and the end of the school year, it's time to think about renewing our partnership. It's an honor to work with you and your kids as you take on successively more challenging work each year. If continuing your professional journey with us is in your plans for next year, we look forward to talking with you about renewing our partnership for the 2014–15 school year.

Sometime in April, your lead staff person (Eddie, Leslie, or me) will be in touch to initiate the renewal process. As part of that, we'll be asking you to assess your current work based on a set of parameters including the curriculum connections you are establishing, the habitat you are developing on your school grounds, and the community partnerships you are building.

We know each of you is in a different place on these dimensions of practice. There is no minimum threshold required—all we are looking for in renewing a proposal is a commitment on your part to continuing growth. As part of the renewal application, you'll identify a particular aspect or two of outdoor learning you'll be working on improving next year. Wherever you are, there is always something you can add to your practice, and things we can learn from you to better help other teachers.

We look forward to talking soon. 🌿



Effective Outdoor Learning at CCS and CCS

by Eddie Jones

The initials are the same. There are more than a few similarities. But they do have their differences. Central Christian School and Covenant Christian School have some things in common: Each is an independent school associated with a Presbyterian church. And each school has teachers that partner with Litzsinger Road Ecology Center.

These partnerships have demonstrated both the feasibility and value of outdoor place-based education. In keeping with this learning model, both schools partner with the broader church community, integrate their curriculum around faith-based themes that relate to the local environment, and have schoolyards that are being reconceptualized as habitats: curriculum integration, schoolyard habitats, and community partnerships.

John Roberts, Head of School at Covenant, has been slowly implementing a vision of a school that spills out onto the 8.3 acres of the schoolyard and church grounds. This has required significant community involvement which has always included substantial participation of the students and teachers. In addition to the church



Students at Covenant Christian School sow seeds in the winter. Photo by Eddie Jones.

community, John has partnered with Baker Creek Heirloom Seeds, Forest ReLeaf, Missouri Department of Conservation, and (of course!) Litzsinger Road Ecology Center. Those partnerships are resulting in an educationally rich schoolyard and teachers that are being equipped to effectively make use of it.

Schoolyard elements include Miss Annie's Farm (raised bed vegetable garden), Pelican Prairie, Woodland, Native Plant Garden, and a Windmill. The students and teachers use the elements in ways that support their learning themes. There are only a few basic rules for use of the schoolyard.

According to John Roberts, rule #1 is "Nobody dies." John, along with two of the classroom teachers, attended the 2009 *Sustainable Schoolyards* workshop. Covenant has also hired a schoolyard support teacher with expanded hours for next year.

Located in the heart of Clayton, Central Christian School is surrounded by office buildings and private homes. The church parking structure doubles as school playground. The schoolyard green space is less than 0.1 acre. That small space is amplified by the vision and tenacity of the school

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From **CCS**, page 2

science teacher, Deb Barham. We met Deb back in 2006 when she participated in a curriculum writing workshop at LREC. Upon joining Central a couple of years ago, Deb saw her opportunity to incorporate outdoor learning into the school science curriculum. She took the *Sustainable Schoolyards* workshop last year (2013) and her current students have assessed the schoolyard, planned a habitat development, removed non-native plants and planted native plants supplied by Litzsinger Road Ecology Center.

But Deb is not resting on her accomplishments. She already has plans to enhance the current habitat and have students redevelop a narrow strip of soil on the south side of their building into a prairie habitat. She is making good use of LREC as a resource. In her words, "Like a bad penny, I keep coming back." We should have more such bad pennies!

John and Deb have been regular attendees of our *Sustainable Schoolyards* enrichment sessions, held monthly after school at one of our partnering schools. If you have a chance, visit CCS (either one) and see first-hand what effective outdoor learning looks like. 🌱



Students at Central Christian School remove non-native plants from their schoolyard. Photo by Eddie Jones.

WHAT I LOVE ABOUT OUR LITZSINGER VOLUNTEERS

By Martha M. Schermann

Let me count the ways...

- Spirit
- Fun-loving
- Knowledgeable
- Flexible
- Problem-solving
- Willing to help others with problems
- A smile to lift your spirits
- A hug when needed
- They look great in orange
- Good cooks
- Plant knowledge
- Varied backgrounds
- But most important, they are all family... 🌱

APRIL

by Martha M. Schermann

Affording
Plants
Room
Is
Logical



Covenant Christian School
2145 New Ballas Road, 63131
<http://ccs-stl.org/>
150 students (preK-6)
Classes partnering with LREC: 4

Central Christian School
700 S Hanley Road, 63105
<http://www.ccsstl.com>
290 students (preK-6)
Classes partnering with LREC: 4

LREC Celebrates Two of Our Volunteers

by Mary Voges

On Monday, May 12, Carole Dean and Cindy Leuder will be receiving the *Special Achievement Award* at the Missouri Botanical Garden's Volunteer Appreciation Evening. The *Special Achievement Award* criteria states, "...the volunteer who has performed critically needed research or completed a special project for your department."

Over the past few years, the Litzsinger Road Ecology Center has had the privilege of working with Southview School, part of the St. Louis Special School District. Southview teaches students ages 5 to 21 years with a range of disabilities and challenges. Their mission is to "assist students to become independent, responsible, productive citizens and to reach each student's personal potential."

From the beginning, LREC staff participated at Southview, assisting the wonderful teachers in seeding and transplanting, gardening and getting to know a certain group of students with autism, ages 16–21. It was brought to our attention that the students love to be outside and go on field trips, but that prospect had been met, at times,

with little enthusiasm—and sometimes outright refusal—from businesses and public spaces because these students have limited abilities to communicate and can be raucous and overly enthusiastic.

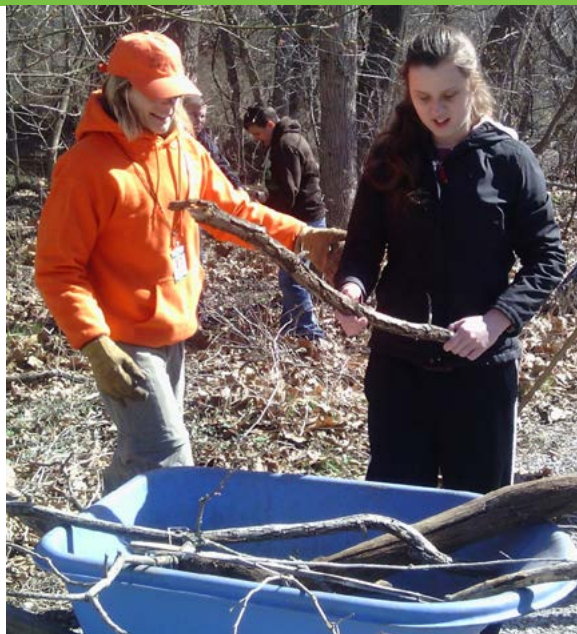
The idea behind bringing the students to LREC was not only to get them outside, but also to introduce them to projects and skills that would develop their potential. Here is where Cindy and Carole came onboard.

From the first visit, Cindy and Carole made Tuesdays their time to spend with Nick, Luke, Charlie, Jay, and the others, to walk the site, introducing the students to nature and performing tasks such as filling birdfeeders, cleaning up the grounds after a storm, mulching, and planting. These tasks may seem minor to most, but Cindy and Carole have worked to develop the students' trust, so that every Tuesday is an opportunity

for skill development, personal growth, and pride.

Carole and Cindy have brought a consistency to this group of students that is quite evident as the students jump off the bus and go to

See **Volunteers**, page 5



Cindy Leuder (top) and Carole Dean (bottom) work with Southview students and teachers on the grounds of LREC. Photos by Eddie Jones.



From **Volunteers**, page 4

their side, some able to greet them by name, smiling, knowing this is where they are welcome. Both volunteers have worked alongside the Southview teachers, asking questions, giving their viewpoints, and discussing topics related to the students. Carole and Cindy have taken it upon themselves to learn, through literature and social media, the intricacies of children and young adults with autism. When they come on Tuesdays to volunteer, they come prepared

with ideas and new information for all of us.

Because of their dedication to these special young adults, and because Cindy and Carole have not only worked onsite at Litzsinger Road Ecology Center, but have also participated at Southview School, new doors have opened. Two graduates of Southview were given jobs, one at a woodworking shop and the other assisting with landscape work at the school.

It is not easy to put on paper the impact Carole and Cindy have had, not only on Southview students and staff, but also on everyone at LREC. Their smiles and enthusiasm are contagious; their encouragement and outlook are so positive. We at LREC are so proud to work alongside you and all of us celebrate this much-deserved award. Thank you Cindy and Carole, you definitely are Special. 🌸

Horticulture & Restoration Offerings for School Groups

by *Deanna English*

Spring is here—you can tell from the happenings around LREC. Many school groups have helped with last minute seed sowing and transplanting the hundreds of seedlings that have sprouted this winter and are ready for new homes in larger pots.

The buds are swelling on the trees and shrubs and some are even beginning to burst, which means one of my most highly anticipated thing is beginning, the birth of baby leaves. Anyone who has spent any amount of time with me in the spring knows that I get giddy with excitement when I see those itty-bitty leaves emerging. They are absolutely adorable miniatures of what they will become very quickly.

Please when you come out slow down long enough to hunt for baby leaves and other plants emerging and blooming. Following is a list of activities that you can help us with during your April visit. Hope to see you soon.

Stream cleanup—Cleanups available when the stream is at a safe level.

Stream monitoring—Use a kit to test dissolved oxygen, conductivity, pH, temperature (air and water), nitrates, turbidity, and chloride.

Macroinvertebrate monitoring—This is an opportunity to count the numbers and types of macroinvertebrates found in Deer Creek to help determine stream health.

Invasive plant removal—Learn about invasive species and help us remove invasive plants from the site.

Roots and plant structure demonstration—Students are introduced to the purpose and function of roots and plant structures.

Greenhouse transplanting—We can always use help to transplant some of those little seedlings.

Plant seedlings—Depending on how we warm up this month we will be planting seedlings in the woodland and prairie.

Tree monitoring—High school and middle school students can work on developing tree identification skills, and learn techniques used to inventory a large area of trees.

Plant monitoring—Students can learn how the plant monitoring grid is set up at LREC and practice their own monitoring skills. 🌸



Glass House Quiz: Tiny Flora World

by Deanna English and Danelle Haake

Recently, Deanna was watching *Avatar* for the umpteenth time with her husband. She spent this viewing watching and wondering where the ideas for the flora and fauna of the planet Pandora came from. Some scenes reminded her of sea life transferred to a terrestrial environment. Other times, creatures seemed to be created from combined characteristics of earthly prehistoric animals. There were plenty of bioluminescent plants and creatures, but most fascinating were what seemed to be tiny things from our world that had been magnified. At times in the movie, it felt like the Na'vi people had shrunk to fit the landscape; seed-like things as big as their heads floated by and mossy vegetation towered over the Na'vi.

It makes sense that our imagination is drawn from what we already know, but sometimes it seems that we all forget just how incredibly amazing and beautiful the planet we call home really is. We think it's worthwhile to spend some time being silent and looking closely to discover (or rediscover) the wonder that is barely visible, but can be seen all around. Hopefully this month's quiz will inspire you to get out with your magnifying glass or hand lens, or to just look closely at what's going on around you. Maybe you'll find a little bit of Pandora in your own backyard.

You probably have some familiarity with moss and lichen, but have you ever gotten down and looked closely at these amazing fairy wonderlands? We encourage you to take a close look. While you're there, here are some things to think about.

1. Lichen is a symbiotic relationship between which two organisms?

- a) Fungus and bacteria
- b) Algae and fungus
- c) Bacteria and mitochondria
- d) Algae and moss



Lichens come in many shapes and colors. Here are just a few (from top to bottom): elegant sunburst lichen (*Xanthoria elegans*); dog lichen (*Peltigera canina*); powdered sunshine lichen (*Vulpicida pinastri*); and reindeer lichen (*Cladonia subtenuis*). Reindeer lichen photo by David Stephens, Bugwood.org. All other photos by Rob Routledge, Sault College, Bugwood.org.

See **Quiz**, page 7



From **Quiz**, page 6

2. What is one important way the symbiotic relationship in lichen help this composite organism?

- a) It helps defend the organism by making it toxic
- b) The relationship allows it to survive air pollution
- c) One partner provides energy from photosynthesis and the other helps to retain moisture and collect minerals
- d) One partner acts as an anchor and the other as the feeder

3. How does moss get nutrients and water?

- a) Through its leaves
- b) From the soil
- c) From the air and soil
- d) From the roots of other nearby plants

4. What are those things waving about on top of the moss?

- a) Flowers
- b) Seed capsules
- c) Modified leaves
- d) Spore capsules



Just what ARE those things on the moss, anyway? Photo by By Lordgrunt (Own work) [CC-BY-3.0 (<http://creativecommons.org/licenses/by/3.0/>)], via Wikimedia Commons.

There are lots of things happening in the trees and shrubs in the early spring that are worth taking the time to observe.

5. You probably are noticing some trees in bloom like flowering dogwood, redbud, and magnolia but do all trees have flowers?

- a) Yes, they all have flowers
- b) Only deciduous trees have flowers
- c) Very few trees have flowers
- d) Those aren't really flowers on those trees, but modified leaves.

6. Where is a good place to look for the tiniest flowers?

- a) Hazelnut shrubs
- b) Maple trees
- c) Buttonbushes
- d) All of the above

See **Quiz**, page 8



From **Quiz**, page 7

Answers:

1. **b) Algae and fungus.** Lichen is a composite organism that consists of a fungus and either green algae or cyanobacteria (an ancient type of bacteria formerly called blue-green algae). Sometimes a fungus will partner with both.
2. **c) One partner provides energy from photosynthesis and the other helps to retain moisture and collect minerals.** The algae is photosynthetic while the fungus protects the algae by retaining more moisture. The fungus also covers more surface area and can therefore capture more minerals. Lichens often gain most of their nutrients from rainwater and dust.
3. **a) Through its leaves.** Moss does not have a root system and gathers water and nutrients through their leaves and by photosynthesis.
4. **d) Spore capsules.** Mosses do not have flowers or seeds. They depend on wind to disperse the spores once the spore capsule opens.
5. **b) Only deciduous trees have flowers.** Only deciduous trees have flowers, but many are inconspicuous. You can see most of them though, if you pay attention and look closely. (In contrast, conifers evolved before flowers, and while cones are flower-like structures, technically they are not flowers. Conifers also are gymnosperms, which means “naked seed.” The seeds do not have a seed coat to protect them, and are held in the cones instead of in a fruit or nut.) Take some time to look for the tiny flowers on some of the trees this spring.
6. **d) All of the above.** You need to look for the hazelnut and maple flowers early in the spring. The buttonbush you’ll have to wait for, but don’t be deceived by the “button.” Look closely and see that each button holds a couple hundred individual flowers.

There are many more tiny worlds to discover. Go out and explore and let us know what you find! 🌿



American hazelnut (*Corylus Americana*) flowers.
Top: male flowers in catkins. Photo by Les Mehrhoff, 2008-2010 / www.discoverlife.org.
Bottom: female flower along stem. Photo by David G. Smith / delawarewildflowers.org.



Flowers on a sugar maple (*Acer sacharum*). Photo by Paul Wray, Iowa State University, Bugwood.org.



Close-up of bees feeding on a buttonbush blossom (*Cephalanthus occidentalis*). Photo by Bob Peterson [CC-BY-SA-2.0 (<http://creativecommons.org/licenses/by-sa/2.0>)], via Wikimedia Commons.

LREC READING CORNER

by Deanna English

Mossy

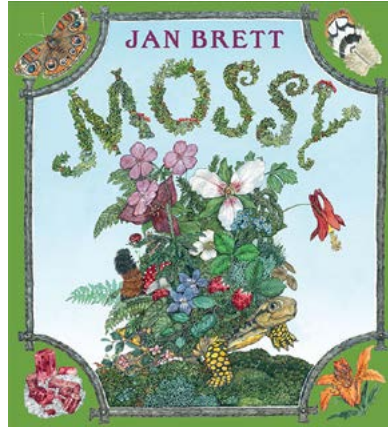
WRITTEN AND ILLUSTRATED BY JAN BRETT

AUDIENCE: AGES 3 TO 5

I'm always attracted to Jan Brett's beautiful illustrations, and this book was no exception. The story is cute and engaging and opens up the opportunity to discuss whether we should leave the creatures we find outdoors in their environment or bring them back to the school or home.

In the story, Mossy is a box turtle with a beautiful garden growing on her back. She has just met her new friend Scoot the box turtle. Mossy is discovered by Tory, a young girl, and is quickly captured by Tory's aunt Dr. Carolina who wants her for her museum exhibit. Tory realizes that Mossy isn't happy in her surroundings. Tory's concern for Mossy leads to a delightful and satisfying ending that allows Mossy to return to her home and to her friend Scoot.

As usual, I look for stories that include plants and animals local to our place here in St. Louis. Most children will be familiar with box turtles and may have even taken one home with them. It should be a story that they can connect with and maybe even think about when they run across a turtle in their own backyard. 🐢



LREC Announcements

April 8

Macroinvertebrate Monitoring

Noon to 2:30pm, meet at barn.
(If you need boots come to Glass House at 11:30am.) RSVP to danelle@litzsinger.org.

April 9

Macroinvertebrate Monitoring

1 to 3:30pm, meet at barn. (If you need boots come to Glass House at 12:30pm.) RSVP to danelle@litzsinger.org.

April 18

Volunteer Enrichment: Soil Science Made Easy

1 to 3pm, at the Glass House, with speaker Ross Braun. (Or come at 12:30pm with a sack lunch.) RSVP to Martha at martha@lrec.net or 314-540-4068.

April 23

Water Chemistry Monitoring

1 to 4pm, meet at the Glass House.
RSVP to danelle@litzsinger.org.

Local Events

April 16

Lecture: The Grand Saga of the Monarch Butterfly

7:30pm, at the Missouri Botanical Garden. Dr. Lincoln Brower will speak about his experiences in the field and lab, and describe conservation issues. Free but RSVP to hintonpa@umsf.edu. For more information call 314-516-6203.

Throughout the month of April

Edgar Denison Series

The city of Kirkwood presents a month of lectures, nature walks, exhibits, and more to celebrate the life of the author of *Missouri Wildflowers*. Learn more at <http://www.downtownkirkwood.com>.

Prescribed Burn: March 28, North Prairie

Photos by Danelle Haake

