

# Litzsinger Road Ecology Center

## COMMUNITY NEWSLETTER

www.litzsinger.org

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*Members of Lewis and Clark's Corps of Discovery (also known as fourth graders from Saul Mirowitz Jewish Community School) explore a fallen tree at LREC. Learn more about their expedition on page 4. Photo by Eddie Jones.*

November 2014

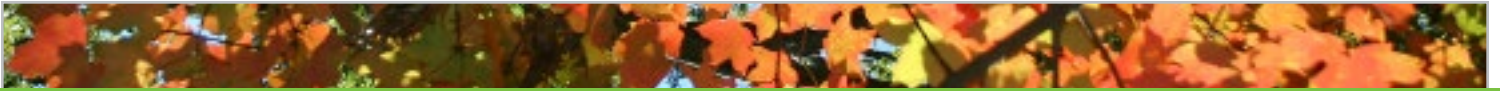
## Just Like in Minecraft

*by Bob Coulter*

One of our core missions is to help kids connect with nature. It's no secret that kids today have less unstructured time outdoors than most of us did when we were young. So, it's worthy and important work. The value in it was brought home to me yet again recently when I was out with some second graders exploring weathering and erosion in the creek bed. We had investigated sand and rocks, and taken a close-up look at where previous flooding had peeled away layers of soil to expose tree roots. And then it got weird.

Since it had been a while since the last rain, we got further along in the creek bed than we usually do, and came upon a large, light brown area before us. So, a few shrieks of "eww... mud!" ensued. Rather than tell the kids anything, I had them test it out. A few tentative toe pushes confirmed that what they found was pretty hard. So, I interjected, "You've probably heard of bedrock?" To which one of the kids responded "Yeah... Just like in Minecraft!" It's a wonderful figure-ground reversal when nature appears to imitate video games. And our work continues. ✍





*The Explorers leave their umbrellas outside while they're inside the dry cabin. Photo by Leslie Memula.*

## The Explorers

*by Lindsey Wheaton and Pam Daniel,  
Educators at UMSL's University Child Development Center*

Children sit at their windows as it rains. They imagine running outside and jumping in puddles and soaking themselves to the bone. What do they hear? “Don’t go outside, it’s raining!” and “You’ll get wet!” We teach children to explore their natural environment and respect everything around them; nature is the homes of millions of plants, insects, and many other animals. If parents don’t want their children outside when it rains, why would animals be out in the rain, and how do they stay dry? If they are out, what kinds of things would like being out in the rain. This is a whole realm of learning that children

very rarely get to explore.

On October 10th, 2014, the Explorer Room at UMSL’s University Child Development Center got to explore Litzsinger Road Ecology Center in all its raining glory. The morning had crispness to the air as the rain came down steadily, and parents, students, teachers, and volunteers started to arrive. Teachers and volunteers were all surprised and excited to see that all but one student, including one student that does not attend school on Fridays, was in attendance. We all met at the cabin and were introduced to Leslie and our

wonderful volunteers Martha, Scott, Cynthia, and Jay. As we broke into groups, everyone was buzzing with excitement. Each group went their separate way and explored the North and South Prairies, Pasture Prairie, Deer Creek, the Woodland Forest and the bug boards throughout the area. We found pill bugs, ants, spiders, moths, worms, and slugs. We watched as they scurried around as the bug boards were lifted and even got to touch a few of these creatures. Our volunteers explained that the creatures were seeking shelter under the boards and some were even above ground so they would not drown. As we journeyed on, the children showed no signs of frustration because of the rain. Only joy at being able to stomp and jump through puddles throughout the area. As everyone returned to the cabin for snack, they were excitedly talking about



*Rain doesn't keep the snails away.  
Photo by Pam Daniel.*

See **UCDC Explorers**, page 3

From **UCDC Explorers**, page 2

everything they were able to see and the fun that they had, despite the rain.

As a classroom, we strive to bring the natural environment into our students everyday experiences by whatever means are provided. We go on nature walks around the University of Missouri St. Louis South Campus during the different seasons, we tend our vegetable garden and natural wild flower garden provided by LREC.

We also bring nature safely into our classroom by bringing bugs in for short periods of time, and we recently raised six butterflies, four of those from eggs. As a classroom we have discovered different countries because of migration patterns, the fascinating metamorphosis from egg to butterfly and the responsibility of taking care of a living creature. We are limited to what types of weather we can explore based on licensing regulations and weather appropriate gear and tools.



*Exploration continues inside the classroom with insect observation. Photo by Pam Daniel.*

Our partnership with Litzsinger Road Ecology Center has provided us with the opportunity to give our students an opportunity to explore a real natural environment full of creatures we would not see around our school. It also provides us with the opportunity to explore nature, regardless of weather conditions. Since we were allowed and welcomed by the wonderful Litzsinger staff and volunteers to explore and enjoy the area like very few get to, our students got to experience what it is like to be like the creatures we see. How did they hide? Under bug boards. Were there animals out in the rain? Yes. They moved to seek shelter and to avoid the dangers of their environments underground. Experiencing Litzsinger in the rain was an experience that will lead to further exploration of our next season. What happens to the animals when that rain turns to snow? 🌧️



*The Explorers have plenty to investigate in their own schoolyard. Photos by Leslie Memula.*

# Lewis and Clark Visit LREC

by Eddie Jones

Distinguished guests were recently observed at Litzsinger Road Ecology Center. A team of explorers, apparently members of Lewis and Clark's Corps of Discovery Expedition, arrived via a large land-based conveyance and proceeded to investigate the habitats at LREC. Here are descriptions, in the words of one of the "governors," of their investigations:

## Experience One: Plant Collection and Description

Lewis and Clark were sent out to map new land, but also new plants and other discoveries. At LREC, we focused on plants. Explorers collected a sample plant that interested them and shared it with their governor. Then they headed indoors with a specimen

of their plant. The plant was drawn in detail, and every observation of the plant was recorded. Lastly, the plant was identified by use of a field guide, and additional notes were added to the plant report.

## Experience Two: Measuring the Height of a Tree

We measured a tree's height using a Native American technique. This relies on trigonometry (and suppleness!). If you view a treetop at a 45 degree angle then the height of the tree is equivalent to the distance that you are from that tree. We walked away from the tree but at regular intervals bent forward to look through our legs back to the tree. We stopped when we are at a point where we could just see the top of the tree and measured, by foot-lengths, the

distance along the ground from the tree. This was roughly equal to the tree's height.

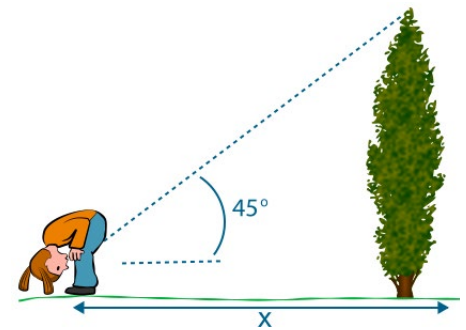


Image from "Rainforests and Mathematics," Primary Magazine, November 2010.

## Experience Three: Boat Building and Sailing

To navigate the Deer Creek waterway, we built rafts using rope and natural objects. We then sailed our boats in the creek and recorded how far and how fast our boats sailed.

The explorers later explained that they are fourth graders at Saul Mirowitz Jewish Community School, and that their "governors" are their teachers.

A subsequent inquiry as to which school subject was being addressed by these experiences, revealed that the answer was, "All of them." ✎



Explorers examine and record their plant samples (and a woolly caterpillar!). Photo by Eddie Jones.

# Student Project Highlights: Saul Mirowitz Jewish Community School

by Deanna English

During visits to Litzsinger Road Ecology Center, many school groups engage in activities that allow them to practice gardening skills they can later use back at their own schoolyard. One of these opportunities is available in the LREC demonstration gardens. Currently we are doing our fall planting in the most recently developed plots.

Almost every part of the demonstration gardens has been built, developed, and maintained by visiting students and teachers. These schoolyard-sized garden plots have been developed to help students and teachers see the progression of a native plant

garden, and provide a model for their own schoolyard.

One of our *Sustainable Schoolyard* graduates, Lizzie Berkowitz, teaches second grade at Saul Mirowitz Jewish Community School. Lizzie has been working with her students in their own schoolyard to develop different garden spaces, many of which have native plants. This fall her second grade students came to visit LREC, and, along with picking up some plants to add to their space, they helped plant a section of one of our demonstration gardens.

While there, we talked about the importance of native plants, how

to prepare a garden bed, and how to properly plant native plants. Making this part of their visit helped prepare the students to plant back at school. In addition, they had the satisfaction and pride of giving something back to LREC.

A thank you to Lizzie and her awesome students for the work they did in the demonstration garden this fall.

In addition to the demonstration gardens, we offer other service learning oriented projects here; learn more about them on the next page. We welcome opportunities to engage your students in learning and working to develop and maintain LREC. 🌿



Second graders help plant one of the demonstration gardens. Photo by Eddie Jones.

## NOVEMBER

by Martha M. Schermann

New  
Opportunities  
Visiting  
Ecosystems  
Make  
Basic  
Encounters  
Real



## HORTICULTURE & RESTORATION OFFERINGS FOR SCHOOL GROUPS

by Deanna English

November is here and we have been busy playing in the creeks around LREC testing for macroinvertebrates. Macroinvertebrates are organisms without a spine that can be seen with the naked eye. Some examples of macroinvertebrates include worms, crayfish, snails, insects, and insect larva or nymphs.

### NOVEMBER HIGHLIGHTED OPPORTUNITY:

#### Macroinvertebrate Monitoring

For many years now we have been collecting monthly chemical monitoring data for Missouri Stream team at seven local area sites to help determine the health of our urban streams. We have also been collecting data on macroinvertebrates here at LREC for as many years. This year we are doing things a bit differently and are testing for macroinvertebrates at the other six sites too. If you are interested in participating in water monitoring, both chemical and macro, we are happy to give you the opportunity to learn about and engage in this testing during your school visit in November. Come prepared to get your feet wet and discover the things that live in our urban streams and how they can help us determine the health of our streams. You can also choose to do the chemical monitoring, which includes testing for dissolved oxygen, pH, nitrates, and chloride.

## Glass House Quiz: Staff Favorites

by Deanna English and  
Danelle Haake

There is something very special about the privilege of working at LREC. We are a small and diverse staff sharing this space with volunteers, teachers, students, researchers, interns, neighbors, and the local flora and fauna. As the season is changing and we are spending more time inside, which often creates moments of storytelling, we decided that it would be nice to share some of our personal favorite things about LREC. We hope you have fun and are possibly inspired to meet or discover some of our favorites.

1. With which living thing(s) does Bob share his office?
  - a) a mouse who has built a house under the bookcase
  - b) two dwarf hamsters
  - c) a black snake that likes the warm computer monitor
  - d) Charlotte, who has a web in the corner of the window

### ONGOING NOVEMBER RESTORATION OPPORTUNITIES:

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

**Stream monitoring**—Stream monitoring kits are available and include dissolved oxygen, conductivity, pH, temperature (air and water), nitrates, turbidity, and chloride.

**Stream macroinvertebrate monitoring**—Tools are available to catch, identify and count the numbers and types of macro invertebrates to determine stream health.

**Roots and plant structure demonstration**—This activity introduces students to the purpose and function of roots and plant structures.

**Invasive plant removal**—We welcome opportunities to educate as students help us remove invasive plant species from the site.

**Collect seed**—Learn to identify one or two plants and go out and help us collect some seed.

**Clean seed**—Learn about different seed sizes and dispersement strategies. Clean and prepare for planting in the greenhouse or for sowing outside.

**Create seed mixes** (Middle School and High School)—Students can learn about selecting site-specific species, use a formula to determine the amount of seed needed for an area and help us weigh each species of plant seed and create a custom seed mix. ✂

See **Quiz**, page 7

From **Quiz**, page 6

2. **Mary's favorite thing at LREC is the fringe tree (*Chionanthus virginicus*), which you can see up in the savannah. It's a very nice small landscape tree for those looking for an attractive native. What color are its flowers?**
  - a) pink
  - b) yellow
  - c) white
  - d) purple
  
3. **In a place filled with flowers of all colors, shapes, and sizes, it is hard to pick a favorite. Danelle's favorite prairie flower is the closed gentian (*Gentiana andrewsii*). The blue-violet flowers on this plant bloom in October, but they stay closed. How are they pollinated?**
  - a) they self-pollinate
  - b) ants
  - c) bumble bees
  - d) small native bees
  
4. **We would have bet money that Leslie's favorite thing here at LREC was a turtle, but she tricked us when she decided to pick her favorite seed, which is from the wingstem (*Verbesina alternifolia*) plant. She thinks the seeds look like little butterflies. Why is the plant called wingstem?**
  - a) the stem has fleshy edges
  - b) when the wind blows the stems spin like helicopters
  - c) the plant is a favorite nectar plant for butterflies
  - d) we have no idea
  
5. **This animal was considered for our national bird. We see them regularly around here, and they are something that Jennifer (our webmaster who lives in Minnesota) remembers when she thinks about LREC.**
  - a) vulture
  - b) mockingbird
  - c) turkey
  - d) yellow-bellied sapsucker



The fringe tree's fertilized female flowers give way to olive-like drupes that are a food source for wildlife. Photo by Karan A. Rawlins, University of Georgia, [Bugwood.org](http://Bugwood.org).



Closed gentian (*Gentiana andrewsii*). Photo by Danelle Haake.



Seedhead of wingstem (*Verbesina alternifolia*). Photo by David G. Smith (<http://www.delawarewildflowers.org>).

See **Quiz**, page 8

From **Quiz**, page 7

6. Sometimes things happen at LREC that feel devastating at the time, but later—as is often the case in nature if you are patient—you begin to see the benefits of the cycle of life. Eddie has been closely observing the changes of one of these events and has noticed the richness it has brought to the people and some creatures here at LREC. Everyone who spends much time here sees this thing. What is it?

- a) the deer carcass
- b) the fallen cottonwood tree near the cabin
- c) the eroding stream bank
- d) the burned prairie

7. Deanna, like all of us, has many favorite things at LREC. However, her absolutely favorite thing only happens during a small window of time in the spring, but she looks forward to it all year. You have to really pay attention to enjoy this natural event, which makes it even more special. Which is it?

- a) tiny, just emerging oak leaves
- b) morel mushrooms
- c) bluebells blooming
- d) the birth of fawns

8. Susan had a hard time choosing but finally decided on the skink (family Scincidae). The answer to question 6, Eddie's favorite thing, has attracted some skinks who have made this place their home. If you're lucky sometimes you can catch a glimpse. What is a defensive mechanism that skinks have that is different from other lizards?

- a) they have a toxin in their skin that tastes bitter to predators
- b) If something grabs their tail the skink can break it off to escape
- c) They can change color to match their surroundings.
- d) They are faster than any of their predators.



Skink. Photo by David G. Smith (<http://www.delawarewildflowers.org>).



Mandy's chosen tree provides excellent color in autumn and has different leaf shapes. Photo from MBG's PlantFinder.

9. Mandy picked a tree for her favorite. Here's a few hints: it has three different leaf shapes, it has lovely fall color, and it has a history with root beer. Which is it?

- a) red oak
- b) sugar maple
- c) sassafras
- d) ginkgo

10. A few of Martha's favorites here at LREC include walks in the morning or late afternoons and the wonderful volunteers she works with, but there is one thing that she says is her absolute favorite. This gives us a warm and fuzzy feeling and is a big reason why we all like working here so much. What is Martha's favorite thing?

- a) our neighbors
- b) the summer interns
- c) students and teachers
- d) co-workers

See **Quiz**, page 9



From **Quiz**, page 8

Answers:

1. **b) two dwarf hamsters.** If you stick your head into Bob's office you are sure to notice the colorful hamster cage on a small table. Drop in and say hi to the little ones and Bob sometime.
2. **c) white.**
3. **c) bumble bees.**
4. **a) the stem has fleshy edges.**
5. **c) turkey.**
6. **b) the fallen cottonwood tree near the cabin.** The fallen cottonwood has become a climbing gym/herp habitat! While all of the answers create opportunities to observe changes in the natural world and how the changes support and disturb different species of plants and animals, Eddie has really enjoyed watching the changes of the giant cottonwood that we lost in a spring micro burst a few years ago.
7. **a) tiny, just emerging oak leaves.**
8. **b) if something grabs their tail the skink can break it off to escape.** Skinks can break off their tails when they are grabbed by a predator. The tail will regenerate but is usually dull gray-brown.
9. **c) sassafras.** While all the other trees are lovely and have some of the listed characteristics, the sassafras (*Sassafras albidum*) has all three. We have several on site for everyone to enjoy.
10. **d) co-workers.** Martha's favorite thing is her co-workers, but we all truly appreciate all of the other people listed! 🍀



UGA5141055  
White flowers of the fringe tree. Photo by the Dow Gardens Archive, Dow Gardens, [Bugwood.org](http://Bugwood.org).



The fleshy stem of the wingstem.  
Photo by Danelle Haake.



Wild turkey (*Meleagris gallopavo*) outside the Glass House. Photo by Danelle Haake.

# LREC Research: Brittany Bratt

by Danelle Haake

Last month, I wrote about the work of summer intern Sarah Black. This month, I will focus on our other summer intern, Brittany Bratt.

Summer intern Brittany Bratt brought her camera along on our weekly phenology walks (see inset) to take pictures of the flowers. It was one of the techniques she used to learn plant names. As she considered the options for her own project, Brittany asked if it would be helpful if she integrated her photographs into the program we use for data collection. Although, we found that we could not easily integrate the photos into the software, Brittany was able to generate a web-browser file that allows us to view the images she took of 165 plants. This will be very helpful for verifying plant identifications during our field work.

**PHENOLOGY** is the “scientific study of cyclical biological events, such as flowering, breeding, and migration, in relation to climatic conditions.” (American Heritage Science Dictionary, 2002)

LREC restoration staff began weekly phenology walks in March 2014. On these walks, we identify all the blooming plants we find along 13 paths through prairie, woods, rain garden, and savannah and along habitat edges.

Brittany also added information to LREC’s Master Plant List. We now have information on plant traits like leaf arrangement (alternate, opposite, or whorled), flower color, and number of petals for each species. This information will be very valuable as we continue to rediscover plants that are on our list but have not been seen for several years. We are also working on how we can incorporate her data into the work the educators do.



Sarah Black (left) and Brittany Bratt (right) take a break from the heat. Photo by Danelle Haake.

At the end of the internship, Brittany’s presentation to the staff and volunteers was particularly well-received. Brittany now interns at Shaw Nature Reserve. We are so pleased that Brittany spent her summer with us and are excited that others at the Garden have recognized her abilities as well! ✨

## LREC Announcements

November 12

### Volunteer Enrichment: Fall Walkabout

2:30 to 4pm. Meet at the Cabin. RSVP to Martha at 314-540-4068 or [martha@lrec.net](mailto:martha@lrec.net).

Save the Date: December 8

### Volunteer Holiday Party

11 am to 2pm, at the Glass House. RSVP to Martha at 314-540-4068 or [martha@lrec.net](mailto:martha@lrec.net).

## Local Events

November 12

### Urban Vitality & Ecology: Nature as an Economic Developer

5:30 to 7:30pm at MBG’s Monsanto Center (4500 Shaw Ave.). Practitioners share insights from local projects. Free. Registration required: <http://www.academyofsciencestl.org/>.

November 15

### Owl Prowl

6:30 to 8pm at August A. Busch Memorial Conservation Area. Learn about Missouri’s nocturnal birds of prey and listen for owls in the night. All ages. Call 636-441-4554.

November 19

### Bumblebees, Birds & Genius Flies: How Animals Learn to Make Choices

7:30 to 9pm at the Saint Louis Zoo. Learn how animals track changes in their environment. More at <http://www.academyofsciencestl.org/>.

December 2

### Backyard Folklore: The History & Use of Native Missouri Wildflowers

11 am to noon at OASIS at the Center of Clayton. Discover native uses for plants. \$10. Registration required: <http://www.academyofsciencestl.org/>.