



Litzsinger Road Ecology Center

COMMUNITY NEWSLETTER

www.litzsinger.org

September 2015

in this issue

- 2 This Summer at LREC
- 4 Activity Spotlight—
Sweeping Discoveries
- 4 New Teacher Enrichment
Opportunities
- 5 LREC Research: Brandon
Schack
- 6 Glass House Quiz: the
Secret Weapons of Insects
and Arachnids
- 8 LREC Announcements &
Local Events

Three Firm Foundation Tutoring students observe a water snake. Learn about other activities that took place this summer at LREC on page 2. Photo by Eddie Jones.

Reinstallation of Vanished Knowledge

by Bob Coulter

One of my summer vices has been reading the *44 Scotland Street* series by Alexander McCall Smith. The series is a pastiche of lives connected by people who lived in a particular building in Edinburgh. My favorite character is Bertie, a six year old boy with a mother who defines over-parenting, as Bertie has only gender-neutral clothes, a pink room, and lessons in Italian and the saxophone. In the fourth book in the series (*The World According to Bertie*), Bertie is starting a new school term, where “Much had been forgotten, and the rest of the morning was devoted to the reinstallation of vanished knowledge.”

I’m sure you have felt the same way in these opening weeks, as skills need tuning up, and school procedures need reminders. It’s all part of life in school. This makes your efforts to create authentic outdoor learning experiences so important, as they build lasting knowledge, skills, and

understanding. When it’s meaningful, we absorb and remember much more of what we have learned. Leslie, Eddie, and I enjoyed talking with you over the summer about your plans, and are looking forward to working with you to bring these plans to fruition. 🌿





This Summer at LREC

by *Eddie Jones*

TEACHERS

Twenty-seven new teachers from 13 schools attended three sessions of the introductory *Effective Outdoor Learning* workshop. Teachers attended five workshops this summer at Litzsinger Road ecology Center. Five returning teachers spent two days with us developing and refining outdoor units of study. Six teachers attended a workshop where they created computer models of ecological systems. We also had our first-ever Teacher/Volunteer Educator enrichment sessions in June and July.

PROGRAMS

We hosted several children and youth summer programs including:

- [Washington University's Alberti Program](#)
- [Webster Groves School District Summer Academy](#)
- [Firm Foundation Tutoring Program](#)
- [Youth Exploring Science \(YES\) Program](#)
- [Webster-Rock Hill Ministries](#)



YES teens discussing their Litzsinger observations. Photo by Eddie Jones.

TEEN INTERNSHIP

At last year's YES program, one of the participants, Aleah Brooks, expressed an interest in continuing a connection with LREC. She did just that; completing a seven week internship in which she assisted with summer programs, participated in restoration activities, and completed a research project. We wish her the best as she completes her high school career this school year.

SCHOOLYARDS

LREC staff visited several schoolyards this summer to make management and teaching recommendations, including Our Lady of Providence School, Chesterfield Elementary (Rockwood), Hudson Elementary (Webster Groves), The Freedom School, McGrath Elementary (Brentwood), Stix Early Childhood Center (SLPS), Kol Rinah Preschool, and Clark Elementary (Webster Groves).

See **Summer**, page 3

From **Summer**, page 2

VOLUNTEER EDUCATORS

A June Volunteer Educator (VE) feedback meeting generated these goals:

LREC staff will:

- Keep the online program calendar updated.
- Email lesson plans 2–3 days in advance.
- Review the lesson and site conditions 30 minutes before students arrive.
- Debrief after each session.
- Send periodic emails to VEs highlighting upcoming service opportunities.
- Provide information and opportunities related to our teacher partners.
- Recruit new VEs throughout the year.
- Provide regularly scheduled enrichments that focus on local ecology and working with children of various ages.

Volunteer Educators will:

- Participate weekly throughout the school year.
- Schedule LREC sessions more than one week in advance.
- Be on the lookout for new VEs.
- Shadow another VE periodically.
- Assist in the selection and development of teaching and field study tools/resources.

Oh...and the Cabin roof got a little crazy... 🌿



Volunteer Educators investigate insects on prairie plants. Photo by Eddie Jones.

Since January, when we implemented ongoing Volunteer Educator enrollment, we have welcomed 14 new VEs, including two college students:

- Elizabeth Anderson
- Harriet Blickenstaff
- Celia Bouchard
- Nancy Dunlop
- Lee Erickson
- Layla Funke
- Karen Graf
- Ruth Grega
- Cynthia Huesman
- Linda Kram
- Phyllis Noelken
- Terry Pirrong
- Julie Schneider
- Linda Tonnies



The Cabin roof overrun with fireweed, probably due to the wet summer. Photo by Eddie Jones.

Activity Spotlight— Sweeping Discoveries

by Leslie Memula

The beginning of the school year is a great time to get your students outside to take advantage of the many different plants still in bloom. As you explore the flowers your students are sure to notice the abundant insect activity. These mysterious creatures play a vital role in the ecosystem not only as pollinators and decomposers, but also as food sources for other animals.



Daddy longlegs. Photo by Eddie Jones.

Sweeping Discoveries, a lesson from the Earth Partnerships for Schools (EPS) curriculum, allows you to investigate the insect diversity within your own schoolyard. Students use sweep nets to collect insects from a chosen area. While the lesson focuses on comparing the “edge” and “interior” prairie habitats, it can be modified to be usable in many different settings. Imagine sampling a more manicured space on your school grounds (maybe one that is taken care of by the “adult” garden club) and then comparing what you find with an area where you have some native Missouri plants. You could also sweep in your vegetable garden and see what insects you find there!

The lesson plan, including a student field sheet and tally page can be downloaded at <http://tiny.cc/lrec-eps-9-10>.

The Earth Partnerships for Schools curriculum can be found on our website (<http://www.lizsinger.org>) under “Education” then “Resources.”

Sweeping Discoveries Field Sheet					Sweep # _____
Dragonflies & Damselflies	Butterflies & Moths	True Bugs	Wasps, Bees, Ants	Beetles	
Grasshoppers & Crickets	Flies	Leafhoppers	Spiders (not insects)	Other	

Sweeping Discoveries - Tally Page										
Record total # of insects in each category per team. Add the totals and record below.	Dragonflies & Damselflies	Butterflies & Moths	True Bugs	Wasps, Bees, Ants	Beetles	Grasshoppers & Crickets	Flies	Leafhoppers	Spiders (not insects)	Other
	Team # 1									
Team # 2										
Team # 3										
Team # 4										
Team # 5										
TOTAL:										

NEW! TEACHER ENRICHMENT OPPORTUNITIES

LREC staff will be offering monthly Teacher Enrichment opportunities throughout the school year. These sessions will be on a variety of topics designed to support our teacher partners in furthering outdoor place-based education at their schools. All current LREC teacher partners are invited to attend. These sessions are a great way to spend time with like-minded individuals, learn from others, and build camaraderie!

The first session is scheduled for **Wednesday, September 16, from 4:00–5:30 p.m.** at Hudson Elementary School. The focus on this month’s opportunity is **“Getting Your Kids Outside.”** After learning a bit about the school we will head outside to explore their schoolyard habitats.

RSVP to your LREC staff contact so we can plan accordingly.

Hudson Elementary is part of the Webster Groves School District: <http://hudson.webster.k12.mo.us/pages/hudson>.

View a map and directions at: <http://mapq.st/1NAHiID>.



LREC Research: Brandon Schack

By Danelle Haake

Every summer, we are fortunate to have two restoration interns, and every summer we are grateful for the hard work and excellent research projects these interns contribute. I'm pleased to share with you the results of the research completed by Brandon Schack. (You'll have to wait until next month to hear about our second intern!)

Brandon studied the "Parasitic Preference of Dodder Plants." For those of you who are not familiar with dodder, it is not green, it has no leaves, and mature plants have no roots...but it is still a plant. It is a parasitic vine that attaches to other plants with little suckers called "haustoria;" it gains all of the moisture and nutrients it needs from this host. It has little



Brandon Schack setting up an experiment. Photo by Danelle Haake.

chlorophyll, so rather than being green like most plants, dodder is a light orange color. When there is enough dodder in one place, it almost looks like someone threw a bowl of spaghetti on the plants.

Two questions formed the core of Brandon's project:

- Can a cut piece of dodder attach to a host as easily as a piece still attached to other hosts?
- Which plants will dodder attach to?

To answer these questions, Brandon tied cuttings of dodder as well as intact (uncut) tips of dodder plants to four different species of prairie plants (butterfly milkweed, mist flower, prairie aster, and rattlesnake master). After five days, he measured the length of dodder that had coiled around the host plant and counted the number of haustoria that had formed in the coils.

Brandon found that both cut and uncut dodder would readily attach to all four species of prairie plants that he tested. He found that the uncut dodder tended to have more haustoria than cut pieces, suggesting that the cut dodder



Dodder overtaking plants in the prairie. Photo by Danelle Haake.

did not have enough resources or energy to form additional connections to the new host plant. He also found that the dodder tended to have longer coils around rattlesnake master when compared to the prairie aster.

Here at LREC, we have lots of dodder along the outer edges of the South Prairie, so next time you are here, be sure to keep an eye out to see this unique and wonderful plant. ✨



Glass House Quiz: the Secret Weapons of Insects and Arachnids

by Deanna English and Danelle Haake

This summer we shared our space with an intern, Jennifer Thompson, who was super interested in spiders and was always looking closely at her surroundings. Going anywhere with Jennifer was a halting adventure as she took time in search of her next spider discovery.

Her enthusiasm was infectious and we found ourselves looking more closely at the smaller world that surrounds us everyday. This generated many questions about spiders and insects we observe at LREC. One area of interest was how insects and arachnids protect themselves from predators. Since the GH Quiz is an excellent time for us to learn something new ourselves, we decided to work on answering some of our small critter questions to share with you. Later, be sure to take some time while you're out to take a closer look at these small creatures.

1. **Look closely at the photo at right. You may have noticed this foamy looking substance on some of the prairie plants. What insect creates this?**

- a) spittlebug
- b) bagworm
- c) tent caterpillar
- d) jumping spider

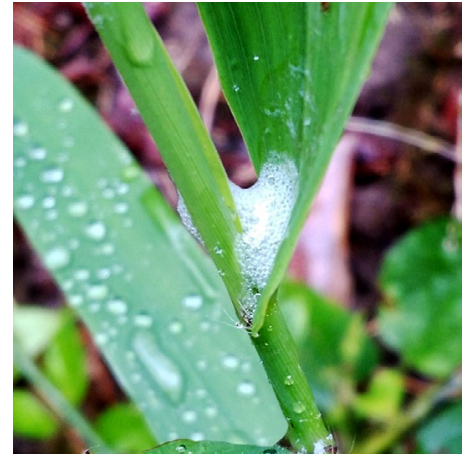
2. **Almost everyone who enjoys exploring the outdoors is familiar with the daddy**

longlegs. How do daddy longlegs defend themselves?

- a) when you grab a daddy longlegs by the leg it can detach and continue to wiggle in your hand as she/he runs away
- b) they have glands on their bodies that secrete a odorous fluid when attacked
- c) they use their long legs like stilts to raise themselves up above the potential attacker such as an ant
- d) all of the above

3. **Green lacewings emit a stench—which smells like mammalian feces—as a defense. However, this odor doesn't help lacewings that find themselves trapped in spider webs. What strategy do they have for escaping a spider's web?**

- a) they flap their lacy wings like crazy and break away
- b) they use their mouthparts to sever the web threads holding their legs and antennae
- c) when held by the wings only they become still and lets gravity slowly pull them off the web
- d) both b and c



Question 1: What created this foam?
Photo by Leslie Memula.

See **Quiz**, page 7



From **Quiz**, page 6

4. At right are pictures of two species of insect that you can find here at LREC and that have a symbiotic relationship with ants and not such a good relationship with ladybugs. What are they?

- a) fleas
- b) aphids
- c) white fly larva
- d) both b and c



5. Almost everyone loves a ladybug. Ladybugs are not actually true bugs but beetles, so “lady beetle” is a more accurate common name. These insects are most vulnerable during the larval stage. What is the most common form of defense for lady beetle larva?

- a) camouflage
- b) “biting” with the abdomen
- c) their color deters other animals from eating them
- d) falling to the ground when feeling threatened



Question 4: What species are these two?
Photos by Deanna English.

6. If you have a vegetable garden then you are probably familiar with the white cabbage moth. This moth is a native of Eurasia and North Africa and has spread all over North America. It has been very successful in part because of effective defense mechanisms. What are those defenses?

- a) larvae have the ability to sting; adults can acrobatically fly to avoid capture
- b) larvae are camouflaged; adults have the ability to detect birds and hide
- c) larvae have hairs with an oily fluid; adults are unpalatable to birds
- d) larvae and adults both use camouflage

IN MEMORIAM Peter Fischer

Over the summer, Peter Fischer, head of the Litzsinger Road Ecology Foundation, passed away. We will miss his humor, wisdom, and insight, and want to express our appreciation for his generous support of our work over the years. 🙏

BACK TO SCHOOL by Martha M. Schermann

Being
Around
Children
Knowing
They
Often
See
Changes
However
Obvious
Often
Learn



See **Quiz**, page 8

From **Quiz**, page 7

Answers:

- 1. a) spittlebug.** The the spittlebug nymph secretes a non-toxic fluid that is mixed with air to form the “spittle.” It is said that the froth helps to shield the nymphs from desiccation but may also act as a deterrent to spiders and ants.
- 2. d) all of the above.**
- 3. d) both b and c.** Another interesting survival strategy is to lay their eggs on stalks that elevate them off the ground or leaf and therefore protect the egg somewhat from predators. They also love to eat aphids, which makes lacewings particularly beloved by gardeners.
- 4. b) aphids.** Note: the top photo on page 7 shows milkweed aphids; the bottom one shows woolly aphids.
- 5. b) “biting” with the abdomen.** Lady beetle larvae have four deep clefts in the abdomen, which are open when the larva is at rest. If the larva is touched it will flex its body and therefore close the clefts. If the predator is unlucky then they get a sharp bite from the hinging shut of the clefts.
- 6. c) larvae have hairs with an oily fluid; adults are unpalatable to birds.** Another reason for the white cabbage moth’s success is at least in part because its food supply is plentiful: favorite plants include cabbage, Brussels sprouts, and cauliflower.



Lady beetle larva.
Photo by Martha Schermann.

Sources:

Eisner, Thomas, et al. *Secret Weapons: Defenses of Insects, Spiders, Scorpions, and other Many-Legged Creatures*. Cambridge: The Belknap Press, 2005. Print. ♪

LREC Announcements

September 10

Volunteer Enrichment: Developmentally Appropriate Practice with Young Children

1 to 3pm, meet in the cabin.
Pam Hotze of Kirkwood United Methodist Preschool presents. If you'd like, bring your sack lunch and join us on the deck at 12:30pm. RSVP to Martha at 314-540-4068 or martha@lrec.net.

September 16

Teacher Enrichment: Getting Your Kids Outside

4 to 5:30pm at Hudson Elementary School. Learn more on page 4.

Local Events

September 11

Fall Wildflower Sale

4 to 7:30pm at Shaw Nature Reserve. Admission is \$5. Learn more at <http://www.shawnature.org/>.

September 18 & 19

Academy of Science–St. Louis BioBlitz

At Shaw Nature Reserve. Join scientists and naturalists to explore the Reserve. Free, pre-registration required. Learn more at <http://www.academyofsciencestl.org/events> or call 314-533-8291.

October 10

Missouri Environmental Education & Green Schools Conference

At the College School, St. Louis. Attend day of presentations on water education, outdoor classrooms, and diversity. Learn more at <http://www.meea.org>.