Litzsinger Road Ecology Center

COMMUNITY NEWSLETTER

www.litzsinger.org

October 2015

in this issue

This month we're all about seeds! Inside this issue, learn about seed lesson plans, upcoming enrichment opportunities, and take a seed dispersal quiz. Photo by Eddie Jones.

Living Between the "Is" and the "Ought"

by Bob Coulter

Philosopher Susan Neiman describes a successful adulthood as being able to accept the world as it is, and being committed to work toward what it ought to be. Narrowing the focus a bit, it seems like a pretty good job description for teachers these days: To accept and work in a professional environment that is often rife with absurd curriculum and testing requirements (the "is") and maintaining an optimism that motivates you toward creating rich learning environments for your students (the environment they "ought" to have). As you know all too well, we live in a culture that pays lip service to supporting teachers while enacting policies that demean teachers' professionalism.

Your efforts to resist this model are heroic, and appreciated. Every day, you set kids up to grow toward their own healthy and productive adulthood. As they design and implement ecological projects, your students become more fully involved in their community—seeing the world as it is, and working toward making it a more ecologically and socially healthy place to be. It's good work to be doing, and we're glad to be your partners.

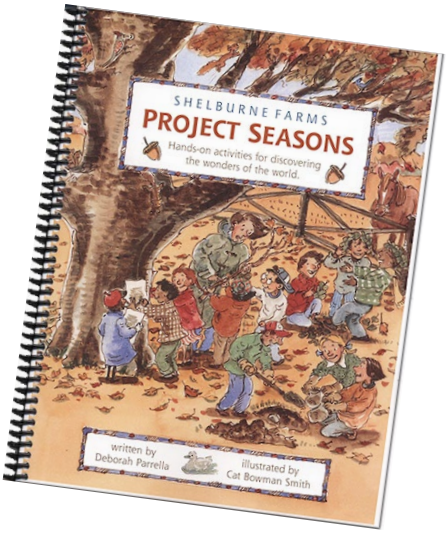
Activity Spotlight—Seeds

by Leslie Memula

One of my favorite things about this time of year is witnessing the many different seeds that nature provides. Whether exploring a woodland, prairie, creek, or schoolyard, kids are sure to notice seeds of different sizes and shapes. It is also fun to think about how seeds can get from one place to another since we all know that plants do not move on their own.

"Adapt a Seed," an activity from the Shelburne Farms *Project Seasons* book, explores seed dispersal mechanisms, or how seeds can move from one place to another. Students work together to invent their very own seed that is carried by the wind, hitchhikes a ride on an animal, is eaten by an animal and then deposited elsewhere, or even one that might be launched by an "explosion!"

A great follow up to this activity comes in the form of a second activity from the same book. "A Year in the Life of a Seed" takes kids on a seed safari. Going out into their own schoolyard, students can use an egg carton as a seed collection container to store the different seeds they find. Also of help is an old sock to wear over a shoe or hand to aid in the collection of those pesky hitchhikers. Once students have collected their seeds, they can share their discoveries. They can sort their seeds into groups: by size or shape or even by how the seeds are dispersed. This activity culminates in an imaginative exercise (led by the teacher) in which students pretend to be a seed and get to act out a plant's life cycle through the changing seasons.



We own a copy of the *Project Seasons* book here at LREC, and you are welcome to borrow it. The book can also be purchased via Shelburne Farms or Amazon.

TEACHER ENRICHMENT OPPORTUNITY

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.

The October session is scheduled for **Tuesday, October 13**, from **4:00–5:30 p.m.** at **Our Lady of Providence School**. The sample activities for this month's get-together are "A Year in the Life of a Seed" and "Adapt a Seed"—lessons discussed in Leslie's article at left. After learning a bit about the school we will introduce the lesson and head outside to explore their schoolyard habitats and practice the lesson.

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

Our Lady of Providence School is a campus of Holy Cross Academy: *http://www.holycross-stl.org/*

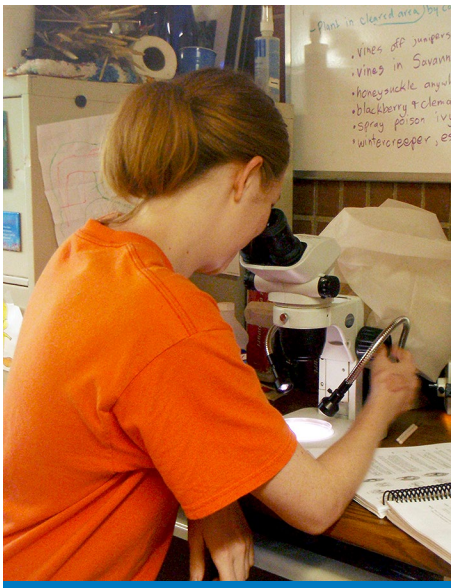
Directions: *https://goo.gl/maps/K833odqkvGz*

LREC Research: Jennifer Thompson

By Danelle Haake

Many people have a fear of spiders. Summer intern Jennifer Thompson is not one of those people. Jennifer likes spiders; I mean, she REALLY likes spiders. I happened upon a black widow in my yard at home and brought it in for her to see…I got a big hug for that!

During her internship, Jennifer took her fondness of spiders and the time she had for research and turned it into "An Exploration of Arachnid Diversity at the Litzsinger Road Ecology Center." She explored many parts of the LREC site looking for spiders: woodlands, prairies, buildings, and even the creek. When she found a species she didn't know, she would capture and identify it using a dictionary-thick guide called *Spiders of North America*.



Jennifer Thompson checking out her latest find under the microscope. Photo by Danelle Haake.

One of the many spiders Jennifer Thompson observed. Photo by Danelle Haake.

Across the site, Jennifer identified spiders in 35 genera (she was able to identify 28 to species). The vast majority of different species were found in the woods. Many were also found in and around the buildings of LREC. Only four were found in the prairie and three along the creek.

Next time you are here, take a few extra moments to enjoy the diversity of our spiders and their often intricate webs. As Jennifer reminded us, spiders are not to be feared, but to be appreciated as an integral and interesting part of the ecosystem.

WELCOME, JAMELA

We would like to welcome our newest Restoration Assistant, Jamela Thompson, to the LREC staff! She comes to us with various experiences in restoration, mainly in invasive plant management.

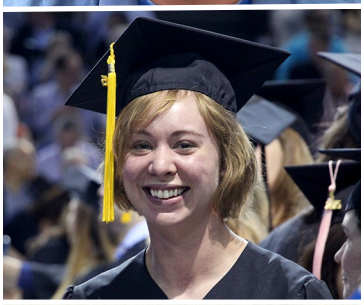
Jamela grew up in Sugar Grove, Illinois. She attended Western Illinois University where she received a B.S. in Biology. After graduating she was a field ecologist for an environmental consulting firm and a field technician on a traveling invasive plant management crew in the southeast coast region. Jamela is new to the St. Louis area and excited to learn more about the native ecosystems of Missouri and the midwest.

In her first weeks at LREC she is already busy working on restoration and research projects and looking forward to the fall seed collection and propagation. One of her most anticipated activities is the winter burn, and we look forward to her help in the planning and implementation of this yearly event.

When not busy at work at LREC, Jamela enjoys exploring the hiking and camping opportunities in the St. Louis region along with, cooking, wild edible foraging, and traveling. All of us welcome Jamela to our staff and look forward to working with her.

Where Are They Now?

By Mary Voges



Top to bottom: John Lawler, Anna Marie Chott, Sarah Black

Every summer, Litzsinger Road Ecology Center hires two college interns to work in horticulture to learn about Missouri native ecology and gain practical experience in the field of restoration. They are also assigned to present a research project of their choosing to staff and volunteers at the end of their ten week internship. Over the years, we've had the honor of working alongside some of the brightest college students imaginable: inquisitive and self-motivated. Here is what some of them are doing now:

JOHN LAWLER (2004)—After working for the Department of Conservation and a brief stint teaching high school science, I was hired on at the Missouri Botanical Garden as the K–8th School Programs Instructor. I develop and present field trip and after-school programming to area students.

ANNA MARIE CHOTT (2013)—I graduated from Drake University with a B.S. in Environmental Science, a B.A. in Environmental Policy, and a certificate in Spanish. I'm currently working in the native plants section at Greenscape Gardens and Gifts, and on September 22, I will leave for 27 months of service with the Peace Corps in Paraguay. The first three months will consist of agriculture and language training in Asunción. I am almost fluent in Spanish, but I will need to learn the indigenous language, Guarani. From what I hear, most Paraguayans speak a combination of those two languages. For the remaining two years of my service, I will live in a rural village and assist with projects in agriculture. I have not yet received detailed information about the projects I will be working on. I will most likely live with a host family the entire time, and I look forward to learning more about the languages and culture of Paraguay.

SARAH BLACK (2014)—I was a horticulture intern in the summer of 2014 at Litzsinger Road Ecology Center, and an employee of the Missouri Botanical Garden. As an intern, I not only did independent research of my own choosing that was eventually published online as well as presented to the community and peers, but was also given an opportunity to learn so much more. I was taught skills of restoration management—especially of tallgrass prairie—such as plant and arthropod identification skills, invasive plant removal, animal tracking, soil conservation, and wetland delineation. My managers at LREC also spent much time introducing me to professionals in ecology, so I could learn about careers and have contacts during my job search after my college graduation. As a Missouri Botanical Garden employee I was invited to many conferences where the best in their field gathered, so I could learn about current research, news, and events in this field. Being at one such event, actually got me an interview at prominent research laboratory.

Although working for LREC and the Garden well qualified me for any techician job I could want, it also opened many doors for me to continue on to graduate school. Ultimately, my love for tallgrass prairie and the research I did at LREC won out, and I found a position as a research/teaching assistant at Southern Illinois University as I work on my Master's thesis on restoration of tallgrass prairie.

Glass House Quiz: Seed Dispersal

by Danelle Haake and Deanna Lawlor

Most of the plants at LREC have finished flowering, and are now spreading their seeds, a process called seed dispersal.

Ecologically speaking, it's beneficial for a parent plant to send its seed a good distance away. This allows the new seedlings to grow without competition from the parent plant, and increases the chances that the new generation of plants will pollinate other members of the species, thus increasing the genetic diversity of the population as a whole.

Some of the most common dispersal mechanisms are described below.

Learn more at these sites:

- *https://www.youtube.com/watch?v=xY4JFOSuqvY*
- *http://www.mbgnet.net/bioplants/seed.html*

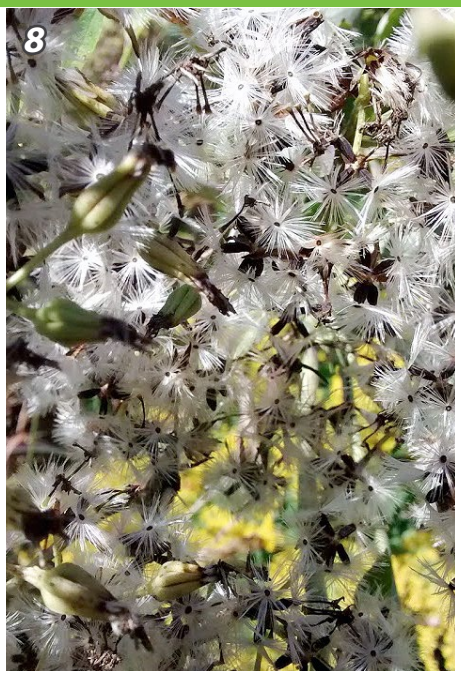
Common Seed Dispersal Methods

- **Rainfall**: rain knocks seeds away from the parent plant
- **Floating**: water carries seeds downstream
- **Wind**: blows the seeds
- **Explosion**: plants "launch" seeds
- **Burying**: animals collect and bury seeds
- **Hitchhiking**: seeds attach to the fur and skin of animals
- **Scat**: animals eat seeds and leave them behind in scat

Shown below and on the next page are photos of seeds found at LREC. Can you decide the most common way the seeds of each of these plants are dispersed? *Note: seeds are sometimes dispersed in more than one way.*

See **Quiz**, page 6

From **Quiz**, page 5



HALLOWEEN

by Martha M. Schermann

Having
A
Long
Look
Outdoors
Will
Enlighten
Encourage
Naturally

See **Quiz**, page 7

From **Quiz**, page 6

Answers:

1. **Swamp agrimony (*Agrimonia parviflora*): hitchhiker.** These seeds can cling to fur, feathers, and clothing.
2. **Pokeweed (*Phytolacca americana*): scat.** Birds love to eat the berries and deposit them all over, including on our cars, patios, and houses.
3. **Purple rocket (*Iodanthus pinnatifidus*): explosion.** Walking through a patch of purple rocket in the late summer is a walk amongst a spray of seeds as your leg brushes the pods causing an explosion sending seeds in every direction.
4. **Cardinal flower (*Lobelia cardinalis*): rainfall.** You can often see the cardinal flower growing along our beautiful Ozark streams in the summer. Each flower develops into a pod with hundreds of tiny seeds, which can be knocked off and float away during a rainstorm.
5. **Bur oak (*Quercus macrocarpa*): burying.** Chipmunks and squirrels spend a lot of time in the fall storing food for the winter. Many of the acorns they store don't get eaten in the winter and can sprout in the spring, far from the parent tree.
6. **Pawpaw (*Asimina triloba*): scat.** The pawpaw fruit is eaten by squirrels, opossums, raccoons, and some birds and is deposited away from the parent tree in its own fertilizer packet. Humans love to eat pawpaws too, but usually not the seed.
7. **Stickseed (*Hackelia virginiana*): hitchhiker.** The name says it all!
8. **Pale indian plantain (*Arnoglossum atriplicifolium*): wind.** Like dandelion seed, indian plantain comes with its own tuft of fluff to carry the seed away in the wind.
9. **Blue flag iris (*Iris virginica*): floating.** The disc shape makes it easy for the seeds to float away.
10. **American bellflower (*Campanulastrum americanum*): rainfall.** Bellflower is an annual or biennial that likes to grow in shady wet areas where rainfall, and also wind, can shake and disperse the seed.

Note: all quiz photos are by Danelle Haake except numbers 8 and 9 which are by Deanna English.

LREC Announcements

October 12
Volunteer Enrichment: Seed Hunt
1 to 3pm, meet in the cabin. We will search for seeds in the woods and prairies, bring a sample back to the cabin and investigate seed structure. 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.

October 13
Teacher Enrichment: Seeds
4 to 5:30pm at Our Lady of Providence School. Learn more on page 2.

Local Events

October 10
Missouri Environmental Education & Green Schools Conference
At the College School, St. Louis. Attend a day of presentations on water education, outdoor classrooms, and diversity. Learn more at http://www.meea.org.

October 10
ARCHS' STEAM Institute
7:30 a.m. to 3:15 p.m. at Harris-Stowe State University. Earn up to 6.5 clock hours at sessions focusing on science, technology, engineering, art, and math. Fee is $45. Learn more/register at http://www.stlarchs.org/60-about/368-2015-steam-institute.html.

November 10
Discover Nature for Science Fairs!
6:30 to 8pm at Powder Valley Conservation Center. For teachers and families mentoring students in science fair projects about nature and the outdoors. Call 314-301-1500 for more information/register.