

# Litzsinger Road Ecology Center

## COMMUNITY NEWSLETTER

www.litzsinger.org

December 2013

### in this issue

- 2 Students + Teachers + Community = Sustainable Schoolyards
- 3 Introducing Faye...
- 4 Glass House Quiz: What's the Buzz?
- 5 In the Calendar this Month
- 7 LREC Research: Jason West
- 8 Horticulture & Restoration Offerings for School Groups
- 9 LREC Reading Corner: *The Reason I Jump*
- 9 LREC Announcements
- 9 Local Events

Don't miss the...

### Volunteer Holiday Party

**WEDNESDAY, DECEMBER 11  
FROM 11AM TO 2PM**

At the Glass House located at  
9733 Litzsinger Road  
St. Louis, Missouri 63124

RSVP to Martha at  
[martha@lrec.net](mailto:martha@lrec.net) or  
314-540-4068.



## "Four Cs-on" Learning

by Bob Coulter

As we approach the winter holidays, all of us at Litzsinger Road Ecology Center hope that you have a restful vacation and a chance to recharge your teaching energies for the coming months. As you reflect on how your school year is going and plan for the coming months, I hope you'll consider the double entendre in my title.

First, the four seasons: LREC is a great place to explore in the winter. If you weren't already thinking of a winter component to your field study, talk with Eddie, Leslie, or me. I'm sure we can develop a productive exploration that will advance your curriculum goals. As an added bonus, our schedule is usually less jammed in January and February, which will give you more flexibility for dates.

Also, I recently read *A Guide to the Four Cs*, a short and quite readable National Education Association report simplifying so-called "21st Century Skills." Instead of an extended laundry list, the report suggests focusing on four Cs:

- Critical Thinking
- Communication
- Collaboration
- Creativity and Innovation

How does each of these show up in your curriculum? In your field studies? If you're interested in reading the report, you can find it at <http://www.nea.org/tools/52217.htm>. (We'll also have a link to it on our blog: <http://www.litzsinger.org/blog>.)

Happy Holidays! 🍀

# Students + Teachers + Community = Sustainable Schoolyards

by Eddie Jones

## From our October 2009 newsletter:

*What was once a tangle of honeysuckle and locust trees in a drainage ditch behind Our Lady of Providence School (OLP) in St. Louis County has been transformed, with the assistance of the Missouri Department of Conservation (MDC), into a woodland rain garden dubbed the Outdoor Experience. Last year, first graders, with assistance of MDC and LREC, seeded and transplanted prairie plants at the edge of the woodland to initiate Our Little Prairie, which burst into bloom this summer with a dazzling display of color.*

## From our February 2010 newsletter:

*Although you might think there's not much going on in the Outdoor Experience right now, in fact there is! The plants and animals that inhabit our native habitat are surviving and are showing us how they survive the winter. Just as we adapt by a) wearing our winter clothes and/or b) flying south for the winter (wishful thinking perhaps!) so too do our flora and fauna in the Outdoor Experience.*

*Now is a wonderful time to observe this stage of the life cycle of plants and animals. A short walk in the Outdoor Experience will provide a plethora of viewing and learning opportunities. Plus, a little fresh air and walking about clears the mind! Be sure to grab a paper and pencil so you can capture these observations! (written by Lynn Holler, school parent)*

## December 2013 Update:

Changes have been afoot at this South County school. What was formerly Our Lady of Providence is now one of three campuses of Holy Cross Academy, and the family that spearheaded the development of the Outdoor Experience has moved on. But the habitats are still there! As are the amazing first and second grade teachers who continue to investigate the woodland and prairie with their students.

To better manage the space, there was a recent meeting attended by the two teachers, school principal, and two school parents. This team brainstormed strategies for keeping the habitats inviting places for the teachers, students and broader community. In the end, they chose to yield to expert advice: they asked the first and second grade students for their thoughts regarding the habitats. The students promptly showed the adults the most impressive and valuable features of the Outdoor Experience and Our Little Prairie: the massive shrubs that concealed small outdoor hiding places; the steep hill that dares you to climb up; the trees and plants that harbor bird's nests and cocoons; the materials necessary to build makeshift shelters and fairy houses.

While the parents and school staff will definitely do their part, it is a certainty that the students will have a hand in any tasks that are given to them to maintain this level of quality in their school's back yard: a place for working, learning and appreciating the natural world. 🌿



A teacher and her students explore the Outdoor Experience. Photo by Eddie Jones.





Faye and Frank Roth. Photo by Mary Voges.

## Introducing Faye (and Her Wonderful Husband, Frank)

by Mary Voges

This is a good news/bad news story. Let's start with the bad news; after 14 years volunteering at Litzsinger Road Ecology Center, Faye Roth is going to retire. This, of course, is one of those "oh no" moments. After all, we have come to depend upon Faye as one of our preeminent volunteers.

So what's the good news? Well, Faye and Frank will be heading west next fall to a new home in Oregon. There they will be much closer to their three children; Sandy, who owns a native plant nursery in Cove, Oregon, Emily, Senior Planner for the Portland Park System, and Jeff, a wood carver and substitute teacher in Hawaii. They will also be able to visit their two grandchildren,

Owen and David and their two great-grandchildren, Lea and Kyla.

Married 63 years, Faye and Frank first met working at a summer camp in the Ozarks. They went on to attend Washington University where Faye majored in Business and Frank majored in Industrial Design. After graduation, Faye worked at the now defunct Stix, Baer & Fuller department store chain. (Okay, this is so Faye: she was once reprimanded for wearing an orange dress instead of the required black while working in the crystal and fine dinnerware department. Now we know why Faye always looks so happy in orange!)

Back then, as Faye tells it, she was told by management that "We

don't promote married women," and as soon as she was pregnant, she had to leave. So, she went on to raise her children, and Frank worked in his photographic design business. After the kids grew up, Faye got a teaching degree and became a substitute teacher in the Pattonville School District.

This is where we come in. After Faye retired from teaching, she heard from a friend about LREC. She came onboard as an Education Volunteer, logging over 3,000 hours, teaching students of all ages, learning along with all of us and participating in both education and horticulture endeavors. Always with a smile and a sparkle in her eyes, Faye makes every student feel special as she does everyone she meets. Faye is one of the most dependable and engaging volunteers we have had the privilege to work with. Faye received the Missouri Botanical Garden's Extra Service Hours Award in 2005.

Frank too has proved to be a boon for LREC. He has been our calendar photographer for the past four years, visiting to take beautiful pictures of the site and working with staff to create our annual gift.

Frank and Faye, I know we have some time before you go westward, but we want you to know how much we love and admire you. Thank you so much for 14 years of giving yourself to all us. 🌸

# Glass House Quiz: What's the Buzz?

by Deanna English and Danelle Haake

This summer and fall at LREC, we discovered many ground nests; these nests sometimes held a community of disturbed and not-so-happy flying insects with stingers. Most of us were confused about what to exactly call them and would interchange the names wasps, yellowjackets, and hornets. Then we would find ourselves asking each other for clarification, and would most often end up shrugging.

As the summer faded we were left with the question of what exactly these buzzing insects were. And what is the difference between wasps, hornets, and yellowjackets, anyway? After preparing this quiz, we feel much more informed and we hope you will too once you've tried the quiz.

- 1. Let's start out with the obvious question: what is the difference between yellowjackets, hornets, and wasps?**
  - a) They are all in different families of insects.
  - b) Yellowjackets and hornets are two types of wasps.
  - c) Yellowjackets are a type of hornet; wasps are in a different family.
  - d) None of the above.
- 2. So what was nesting in the ground around LREC?**
  - a) The eastern yellowjacket (*Vespula maculifrons*) or the southern yellowjacket (*Vespula squamosa*).
  - b) The German yellowjacket (*Vespula germanica*).
  - c) The baldfaced hornet (*Dolichovespula maculata*), which is technically a yellowjacket.
  - d) The European or giant hornet (*Vespa crabro*).
- 3. What is one very major difference between yellowjackets and hornets?**
  - a) Yellowjackets sting but hornets do not.
  - b) Yellowjackets eat insects (proteins) *and* sugars (fruits, nectar, and soda), and hornets only eat other insects.
  - c) Yellowjackets live in social groups, and hornets are solitary.
  - d) Yellowjacket colonies overwinter much like honey bees.



1) Southern yellowjacket (*Vespula squamosa*);  
photo by Sam Droege,  
USGS Bee Inventory and Monitoring Lab.  
2) Eastern yellowjacket (*Vespula maculifrons*);  
photo by Johnny N. Dell, bugwood.org.  
3) Baldfaced hornet (*Dolichovespula maculata*);  
photo by David Cappaert,  
Michigan State University, bugwood.org.  
4) European hornet (*Vespa crabro*);  
photo by Ken Thomas.

See Quiz, page 5



From **Quiz**, page 4

4. **Both hornets and yellowjackets build their nests from the same material. What is it?**
  - a) Leaves from trees.
  - b) Insect parts.
  - c) Scavenged bird nest material.
  - d) Chewed wood pulp.
  
5. **Which of these species builds those lovely, round, football-sized paper nests we see sometimes high in the trees?**
  - a) The eastern yellowjacket (*Vespula maculifrons*) or the southern yellowjacket (*Vespula squamosa*).
  - b) The German yellowjacket (*Vespula germanica*).
  - c) The baldfaced hornet (*Dolichovespula maculata*).
  - d) The European or giant hornet (*Vespa crabro*).
  
6. **The European or giant hornet lives in southern Missouri, mostly south of Highway 44. Besides being the largest of the hornets and yellowjackets, what is another unique characteristic of this hornet?**
  - a) They build nests in old bird nests.
  - b) They migrate further south in the winter to survive.
  - c) The queen is actually smaller than the workers.
  - d) They are attracted to lights at night.
  
7. **Which of the following might you find nesting in your home's walls or attic?**
  - a) The baldfaced hornet (*Dolichovespula maculata*) and common yellowjacket (*Vespula vulgaris*).
  - b) The eastern yellowjacket (*Vespula maculifrons*) and southern yellowjacket (*Vespula squamosa*).
  - c) The German yellowjacket (*Vespula germanica*) and the European hornet (*Vespa crabro*).
  - d) The European hornet (*Vespa crabro*) and the baldfaced hornet (*Dolichovespula maculata*).

## In the Calendar This Month...

### December

1. Burning in the pasture prairie
2. Winterberry holly berries (*Ilex verticillata*)
3. Cleaning up after the burn in the north prairie
4. North American millipede (*Narceus americanus*)

See full-size images on our blog:  
<http://www.litzsinger.org/blog/>.



See **Quiz**, page 6

From **Quiz**, page 5

Answers:

1. **b) Yellowjackets and hornets are two types of wasps.**
2. **a) The eastern yellowjacket (*Vespula maculifrons*) or the southern yellowjacket (*Vespula squamosa*).** These two build their nests underground or in hollow trees. According to Mike Arduser, a biologist with Missouri Department of Conservation, “it was a bumper crop year for native yellowjackets in the greater St. Louis area. We had way more calls about them than usual. A critical time in the ‘life’ of a yellowjacket colony is the queen phase, i.e., establishment of the nest and raising of the first brood of workers (this is usually April–May in our area). Long periods of wet or cold weather can wreak havoc on these young colonies—but apparently this year everything went well!”
3. **b) Yellowjackets eat insects (proteins) and sugars (fruits, nectar, and soda), and hornets only eat other insects.** Yellowjackets catch insects in the early summer to feed larvae, but late in the summer and early fall their food preference switches to sugars. At this time they can become dangerous pests as they scavenge around people near garbage cans and picnic tables. Hornets are very rarely aggressive unless their nest is disturbed and are highly beneficial since they kill many caterpillars and flies.
4. **d) Chewed wood pulp.**
5. **c) The baldfaced hornet (*Dolichovespula maculata*).** The baldfaced hornet builds those beautiful paper nests that can often be quite large. They can hold colonies that can reach around 400 workers. They are not normally aggressive unless they feel their nest is threatened. Last year we spent a whole season with a hornets’ nest hanging in the sycamore outside our office door and never noticed any hornets around the office.
6. **d) They are attracted to lights at night.** The European hornet is one of the few wasps that are attracted to light. They are typically harmless and usually will not sting unless their nest is threatened. In case you were curious about the size, they are about 1” long; yellowjackets and baldfaced hornets are about ½” long.
7. **c) The German yellowjacket (*Vespula germanica*) and the European hornet (*Vespa crabro*).** Both of these wasps are sometimes found nesting in building walls and attic spaces. ✎

Sources

<http://mdc.mo.gov/discover-nature/field-guide/yellowjackets>

<http://www.wvu.edu/~exten/infores/pubs/pest/hpm7002.pdf>



Baldfaced hornet (*Dolichovespula maculata*) nest.  
Photo by Joseph Berger, bugwood.org.



# LREC Research: Jason West

by Danelle Haake

In previous issues, we featured the work of REU student Hannah Carpenter, graduate intern Maisie Rinne, and summer intern Anna Chott. Our second summer intern in 2013 was Jason West, a student with a background that was not a traditional fit with the work we do here: he has a Bachelor's degree in Engineering and a Master's in Material Science. However, Jason also had been volunteering regularly, and had expressed strong interest in returning to school for an environmental degree.

The goal of Jason's research project was to determine if the prairies at Litzsinger Road Ecology Center serve as a carbon sink—a place where carbon dioxide (CO<sub>2</sub>) from the air is gradually incorporated by plants into the soil where it is then stored. This is important to consider as discussions continue on climate change and on ways to reduce the amount of greenhouse gases like CO<sub>2</sub> in the atmosphere.

To find out if our prairies store this extra carbon, Jason needed to determine how much carbon is found in the plant material in the prairies, both in the standing plant material that we see and in the roots. This involved clipping the plants aboveground and

digging up cores of soil. Several staff and volunteers spent time helping Jason dig out the soil cores and remove the roots. He then dried the plants in the oven and weighed what was left. This gave us a good estimate of how much carbon was being converted from CO<sub>2</sub> gas to solid plant material.

Jason also measured the soil respiration—the amount of CO<sub>2</sub> that comes out of the soil as bacteria and other critters eat the carbon-based foods in the soil. Subtracting the amount of CO<sub>2</sub> that is released by bacteria from the amount that plants consume lets us know if our prairies are a carbon sink. Because of Jason's work, now we know that we have a great prairie sink! Based on his calculations, our prairies store over 80 metric tons of CO<sub>2</sub> per year. This is roughly the amount of CO<sub>2</sub> emissions from



Jason with some soil samples. Photo by Charles Wilson.

powering four average homes for a year.

We were all thrilled to have Jason with us this summer. Besides having a great enthusiasm for the day-to-day intern duties, he took on a daunting project and excelled at it. He has been a great asset to LREC as a volunteer, intern, and (most recently) funded researcher. We are glad that he found us and we look forward to seeing what future endeavors he will tackle. Whatever he does next, we can be sure he will give it his all and accomplish great things! ✨



## Horticulture & Restoration Offerings for School Groups

by Deanna English

Maintaining the property at LREC is a full time job, and many of the things that happen here throughout the year can be an opportunity for school groups. We welcome the opportunity to have students help us while they learn about what it takes to manage an urban natural area.

If you are a teacher planning to visit LREC in December, here's a list of experiences that might be available at the time of your visit. If any of these fit into your lesson plan, please contact us and we can arrange for you and your students to get involved.

**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.

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

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

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

**Prepare seed (stratify/scarify)**—Help prepare seed in order to mimic winter so the seeds go through their natural cycle and break dormancy.

**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. 🌿

From **Reading Corner**, page 9

Along with questions and answers, Naoki writes vivid vignettes, allowing us to look inside new windows, viewing his optimism and sometimes, despair.

I urge everyone to take an hour and read this book. There has been much controversy regarding whether or not *The Reason I Jump* was truly written by a thirteen-year-old with autism. Were passages and meanings lost in the many translations from the alphabet grid to computer to teacher to publishers in England? After reading, please take a look at the many reviews posted online. Quite a few question the book's authenticity, a few are written by adults with autism, but the majority thank the author for the hope of understanding and softening the lines we have drawn regarding these children and adults.

As one reviewer noted, "I think for a parent who has a kid with autism, this book is a godsend. When the days are filled with the reality that is autism, it's probably quite lovely to read a book from your child's point of view—a hopeful love note if you will. "I'm in here Mom—I really am!" 🌿

**WINTER**  
by Martha M. Schermann

Wandering  
In  
Nature  
Transcends  
Ecological  
Rhetoric



## LREC READING CORNER

by Mary Voges

### ***The Reason I Jump: The Inner Voice of a Thirteen-Year-Old Boy with Autism***

BY NAOKI HIGASHIDA

The staff and volunteers at LREC have the privilege of working alongside young adults with autism through our partnership with Southview School in Crestwood. Southview educates students ages 5 to 21 years with a range of disabilities.

Walking around with these students, I wonder about some of their actions, as I am sure they wonder about some of mine. If they ask me, I freely tell them why I am doing something, or how I feel as I do it. *The Reason I Jump* is written by a thirteen year old with autism and offers explanations as to the hows and whys of his world.

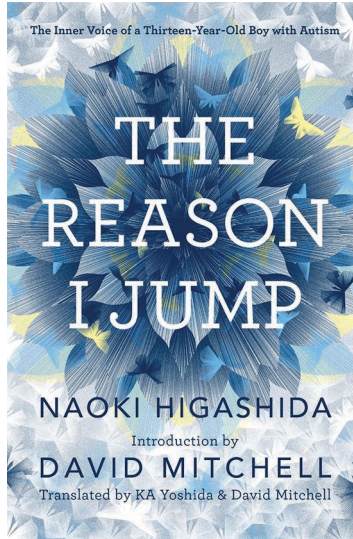
Naoki Higashida was able to compose his thoughts on paper by using an alphabet grid with the aid of his teacher, pointing to letters and then transcribed by a helper.

Okay, now to the personal connection to this book. I feel very lucky to have a relationship with our Southview partners, but until now have not felt that I could understand how a child with autism communicates aspects of their daily lives or the emotions involved. *The Reason I Jump* opened my eyes to facets of the world of autism, a world with so many feelings, perceptions, and responses.

Each page in this short (150 pages) book starts with a question, such as Q42 "Why do you memorize train timetables and calendars?" "Because it's fun!" And then Naoki continues to explain.

Or, Q5 "Why do you do things you shouldn't even when you've been told a million times not to?" Naoki's reply is heart wrenching, ending the page with "But please, whatever you do, don't give up on us. We need your help."

Naoki responds to each question with such emotion and personal attachment that many a page is dog-eared so I can return to it for my own well-being. Q45 is my favorite; "Why do you enjoy going out for walks so much?" Naoki's answer moves you to see nature in a different way and supports all students' participation at LREC.



See **Reading Corner**, page 8

## LREC Announcements

December 4

### **Water Quality Monitoring**

12:30pm, meet at the Glass House. We will finish around 3:30pm. Questions? Contact Danelle Haake at [danelle@litzsinger.org](mailto:danelle@litzsinger.org) or 314-961-4410.

December 11

### **Volunteer Holiday Party**

11am to 2pm, at the Glass House. RSVP to Martha at [martha@lrec.net](mailto:martha@lrec.net) or 314-540-4068 to let her know how many will be coming so we can know how much food to order.

January 15

### **Sustainable Schoolyards Winter Meeting**

9am to 3pm, at LREC. Open to all Sustainable Schoolyards teachers. Contact Eddie at [eddie@lrec.net](mailto:eddie@lrec.net) for more information.

## Local Events

December 31

### **New Year's Eve Walk**

6:30 to 8pm. At Columbia Bottom Conservation Area. Learn about animal adaptations to cold and dark during this quiet stroll and spend some time at the Confluence of the Mississippi and Missouri Rivers. Ages 10 and up. Reservations begin December 15. Call 314-877-6014 for more information.

