Litzsinger Road Ecology Center

Community Newsletter

9711 Litzsinger Road • Ladue, MO 63124 • Phone (314)442-6717 • www.litzsinger.org

Finding a Place for the Holidays

By Bob Coulter

As we move into the holiday season and enjoy time with family and friends, place becomes much more important to all of us. As we gather for meals at home or travel to see relatives and re-live holiday rituals, we are reminded that in many ways who we are depends on where we place ourselves.

In keeping with our emphasis on place-based education, I want to thank you on behalf of the staff for what you do to make LREC a special place. Volunteers who give of their time so freely for the educational and horticulture programs, and teachers who go the extra mile to create great field experiences for their kids are our heroes. We applaud your efforts in making the world a bit better. As the poet Mary Oliver wrote, "Tell me, what is it you plan to do with your one wild and precious life?" You answer this question so clearly and convincingly with your commitment to making LREC an asset for the community.

A community-building, place-based holiday challenge I have imposed on myself the past few years is to do "chain-free holiday giving." It's not an easy task, since it requires pushing past the easy options like Borders gift certificates and mall shopping. The benefit, of course, is a much healthier, diverse economy for the St. Louis region. Local businesses keep the money in town longer than if it is shipped to corporate headquarters. Quite often, you can find more interesting things to give as well, filled with local color. I encourage you join me and give it a try!

Finally, one more place to be: We look forward to seeing everyone at the glass house at 11:00 a.m. on Monday, December 11 for our annual holiday party.

Inside this issue:

Upcoming LREC Events:

LREC Stream Team
December 7, 9–11am. Monitor water chemistry. Call Jennifer at (314) 961-4410 if you plan to attend.

Volunteer Holiday Party
December 11, 11am–2pm. At the glass house. RSVP to Martha at (314) 442-6717

Ecology School (Volunteer Enrichment)
December 14, 1–3pm. At the glass house. Topic: Missouri woodlands. **Note date correction!**

Upcoming Opportunities:

December at the Garden
Visit the Missouri Botanical Garden this December to see Tower Grove House decked out for a Victorian Christmas, the holiday plant and train show, the holiday wreath exhibition, and the Chihuly glass exhibit plus these events:

Dec. 10, "Chanukah: A Festival of Lights"

Dec. 16 & 17, "Carols in the Garden"

Dec. 27, "Kwanzaa: Festival of the First Fruits"

School Spotlight: Spoede Elementary School, Ladue School District

Horticulture, Habitats, and Hands-on Learning

By Eddie Jones

The first thing you notice as you approach the entrance to Spoede School is the exquisite landscaping along the front of the building, including plants displaying a diversity of color, texture, and fragrance. The botanical theme continues as you walk around the building and behold a multitude of raised garden beds with plants that address a variety of themes, both visual and culinary. Upon continued exploration, you may find a courtyard that has been transformed into a wetland habitat and, at the far end of the campus, a wooded area that is being restored to a native plant habitat. Who, you may ask, does the intensive gardening required to develop and maintain these rich botanical areas? Why the students, of course…with a little help from parents, staff, and community.

Spoede School initiated garden education a few years ago as a participant in Missouri Botanical Garden's Youth Gardening Program. At that time, an extensive school garden was installed, that continues to be cultivated and harvested by students who benefit from its aesthetics, food production, cultural, and ecological lessons. Of the five schools originally in the gardening program, only Spoede and Hudson (Webster Groves School District), both LREC school partners, continue to use their gardens as a vibrant part of the life of their school.

Spoede first grader cleaning seeds.

School Facts:

Location: 425 N. Spoede Road, Creve Coeur, Missouri

Grade Levels: K–5

Number of Students: 419

Participating Grade Levels: K, 1, 2, 3

Number of Participating Classrooms: 17

Students Receiving Free/Reduced Lunch: 10%

Website: http://www.ladue.k12.mo.us/spoede

Spoede is the only Ladue School District school within the city limits of Creve Coeur. The city sits astride the Ladue and Parkway district boundaries. Ladue's enrollment of 3300 students; attending four elementary schools, a middle school and a high school; makes it one of the smaller school districts in St. Louis County.

Spoede School students began investigating Litzsinger Road Ecology Center in the fall of 2005. It all began when school parent, Sharon Gabel Buchanan, newly trained LREC Volunteer Educator, urged her son's third grade teacher to apply for

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Tigers in Lone Elk? LREC Can Help

By Jon Lawrence, Volunteer

Tigers in Lone Elk park? Is this the latest species migration due to global warming? Thankfully no, but I've heard this question, or variations of it a number of times as a ranger while preparing to give school groups a wildlife program in Lone Elk park. Coming from a young grade-schooler it is simply an occasion for a smile and discussion of what animals live where. Hearing that question from an older junior high student (while looking genuinely apprehensive), gives me a real twinge of concern. And it gets me to thinking.

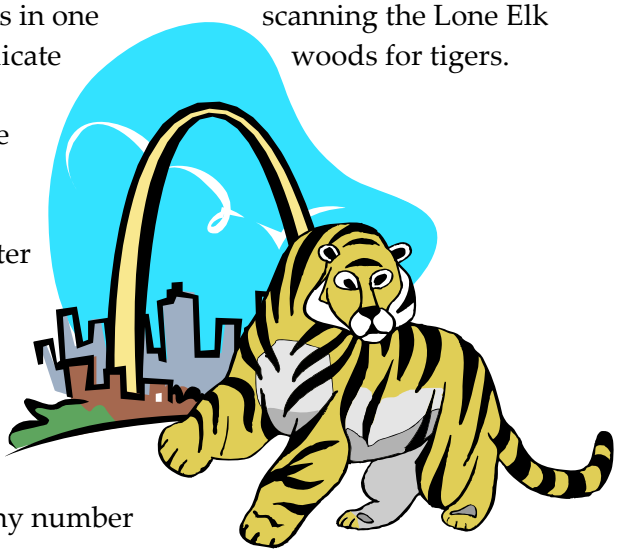
Some of the school districts, as we all know, have a distressingly high percentage of students graduating from high school with minimal reading, math, and comprehension skills. Schools are being asked to do more and more, including some of the actual parenting in some cases. Little wonder then that environmental education sometimes takes a backseat to the three R's.

I think this is where organizations like the Missouri Botanical Garden can really help. Supplemental environmental education programs are available from a number of other sources as well, such as the Missouri Department of Conservation (MDC), Missouri Department of Natural Resources, the Saint Louis Zoo, the Science Center and of course my favorite, the St. Louis County Park Rangers.

In a time when school budgets are tight, LREC has the somewhat unique feature of being able to offer grants to pay for classes to have multiple visits. How many students does LREC reach in a year? 2007 is projected to have a total of almost 7000 student visits. How does that compare with the total number of St. Louis city and county students in grades K through 12? A quick bit of online checking with the U.S. Census Bureau showed approximately 250,000 kids aged five through eighteen in the city and county. Allowing for the same students visiting LREC multiple times in one year, this would indicate that LREC may be reaching somewhere around one to two percent of the students in the greater St. Louis area.

I believe that is a very significant number for a couple of reasons. First of all, giving any number of students a better understanding of how the natural world works is a worthy goal. And I think there are some real multiplier effects, not the least of which is the teacher who participates in the field trip to LREC. He or she will undoubtedly teach some of the ecological concepts to other students who did not come to the LREC program. And I like to believe that some of the students will pass some of their newfound knowledge along to other kids, as in "No, Bobby, tigers don't live in North America, they live in India and China. You should have been with us at Litzsinger last week." Anyway, you get the idea.

So, LREC volunteer educators and staff should feel great about what they are doing. Maybe someday we won't have older kids nervously scanning the Lone Elk woods for tigers.



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student field studies at LREC. Sharon also happens to coordinate the school gardening activities at Spoede School. With her support, and that of the K–3 teachers, we now have about 250 Spoede students assisting with native plant propagation and learning about local plant communities. And this is happening both at LREC and the schoolyard at Spoede. The woodland restoration began prior to Spoede's partnership with LREC. The initial task was to remove a dense population of bush honeysuckle. Since then, LREC staff has advised the Spoede community in selection of native woodland plants, development of water features along a natural drainage, and preparation for a strip of prairie habitat adjacent to the woodland. LREC also contributed a lighted growing stand to start seeds and seedlings inside the school building for transfer to outdoor gardens and habitats.

As a result, the students, faculty and families of the Spoede School community are becoming familiar with and developing a sense of responsibility for their local environment. They are leading the way in the Ladue School District as well as in the LREC school partnership community as a model of place-based education.

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Bark Beetle Galleries
Photo by Colleen Crank

Powderpost beetles spend months or years as larvae inside wood, eating tiny holes through the wood and leaving behind powdery frass (insect scat). Bark beetles bore into bark or wood in the larval and adult part of their life cycles. They create a gallery network of tunnels just under the bark of weakened, dead or dying trees. These tunnels allow the entrance of fungi, which further decompose the tree. Ambrosia beetles do even more than just allow entrance of fungi through their burrows, they culture and eat the fungi in their gallery tunnels! Female ambrosia beetles take the fungus with them to a new tree when they emerge as adults to create a new burrow. In contrast, carpenter bees and carpenter ants are borers, simply boring holes into wood to make nests, not actually eating the wood. Carpenter bees look like large bumblebees, but with shinier black abdomens that have no yellow stripes; they are solitary.

I'm still learning about other organisms that eat, bore into, and decompose wood. Let me know if you find out who's eating the lignin!

References:

Jurgensen, M.F. 2001. Carbon substrates lecture. http://forest.mtu.edu/classes/fw5350/carbon_substrates/index.html

Sisson, J.M. 2005. Wood destroying arthropods other than termites. http://www.utoronto.ca/forest/termite/pest1.htm

http://www.wikipedia.com

Hooray for the New Volunteer Educators!

By Heather Wells-Sweeney

You'll be seeing more orange around here. Thirteen enthusiastic volunteers have just completed ten weeks of intensive training. For volunteers and staff, that means fewer question marks on our calendar. Teachers, you'll be seeing some fresh new faces.

For the training, we followed suggestions from several of you veterans to include more content, but we also wanted to provide ample opportunity for observing school groups and various teaching styles. We sincerely thank all of our veteran volunteers for allowing the trainees to shadow and work with you. You have helped to increase the quality of their training.

Our new trainees bring diverse backgrounds and experiences. For example, we are joined by folks from the health care sector, Girl Scouts of America, and the restaurant business. Several folks have taught in some capacity, such as tutoring or teaching middle school chemistry. Each volunteer shares a love for the outdoors and a desire to teach.

Our thirteen new trainees are a wonderful addition to the LREC community. Please join us in welcoming them.

New Volunteer Educators

Diane DuBois
Elmer McNulty
Gary Giessow
Jan Stark
Jenna Smyth
John Berkery
Leslie Lihou
Lorrie Crossett
Lynn Reyner
Margo Dursham
Nancy Barry
Peggy Hallas
Ray Potter

LREC Volunteer Holiday Party

New volunteers and veterans, please join us for our annual holiday party.

Date: December 11, 2006

Time: 11:00 a.m. – 2:00 p.m.

Place: LREC—Glass House

RSVP to Martha at (314) 442-6717 if you plan to attend.

Who's Been Eating the Lignin?

by Malinda W. Slagle

December. Many of you may be thinking of holiday shopping, decorations, and get-togethers. Ecologists are thinking about controlled burns. Actually we think about burning from November–March. Fire is an important part of the natural cycle of Missouri ecosystems. Plants and animals native to Missouri are adapted to fire. They survive fires underground as roots or in burrows or above ground with thick bark or by running or flying away. For thousands of years, Native Americans started fires to improve grazing for game animals, herd game, and to protect their villages.

Now, we ecologists try to continue this natural process safely, by making lines clear of fuel that the fire will not cross. We move brush piles and mow firebreaks, check weather conditions, move leaves where we want them and away from where we don't want them. Moving medium sized branches from within 50 feet of the edge of my planned burn areas has occupied much of my time the past two weeks. I needed to make sure the medium sized branches were cleared out so that they wouldn't smolder after the controlled burn and catch fire. While moving somewhere around 20 truckloads of branches, I noticed that some of these branches were falling apart, decomposing before my very eyes! It made me wonder: who's been eating the lignin?

Starting a Controlled Burn at LREC

Wood is primarily made up of two organic compounds: cellulose and lignin. Organic, in this case, just means any chemical compound made up of carbon and hydrogen. Cellulose is the most common compound in wood, but it is very hard to break down, and can only be digested by organisms that make the enzyme cellulase.

Fungi are the most common and important decomposers of wood. White-rot fungi break down all the cellulose first, then shift to the lignin, which is even harder to decompose because it has an even more complex chemical structure. Brown-rot fungi break down all the cellulose, but leave behind the lignin, making the wood appear brown. Actinobacteria (filamentous bacteria once thought to be related to fungi) and a few other kinds of bacteria are also important decomposers of wood.

Isopod
Photo by Colleen Crank

Many arthropods also eat or bore into wood, including millipedes, isopods (pillbugs or sowbugs), termites, wood wasps, carpenter bees, carpenter ants, and many species of beetles. Termites are social insects living in large colonies that have a symbiotic relationship with bacteria or in some cases a flagellate (one-celled organism with a nucleus and a whip-like tail or flagella) that lives in their gut and is able to produce cellulase so that they can digest cellulose.

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