

Litzsinger Road Ecology Center

Community Newsletter

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The Unseen Ecology Center

By Bob Coulter

The Garden Gate Shop offers an *Unseen Garden* book that highlights the research work undertaken at the Garden and at field sites around the world. While we are hardly operating at that scale, I'd like to take the opportunity to highlight just a few of the many things happening behind the scenes at LREC that you may have missed:

Research: Our prairie and creek areas have been the subject of intense observation and data collection, resulting in presentations at regional conferences and enhanced collaboration with colleagues in the St. Louis region and beyond. We are also helping to develop future ecologists by devoting a significant portion of our summer internships to mentoring student research projects. On the educational research front, I will be presenting results of our first program evaluation at an international conference in Chicago this month.

Curriculum writing: Jennifer Brown has been working tirelessly in developing a curriculum that builds students' awareness of watersheds by studying their school yards. This work grows out of a new partnership she developed with the Metropolitan Sewer District. Teachers will be working at LREC this summer trying out this exciting new program. Registration information will be available soon. We have also been working with partners from around the country on a new web site (www.promiseofplace.org) and brochure promoting place based education. The web site is running; look for the brochure soon.

All of this reflects positively on the climate you have helped to create. As volunteers leading student programs and maintaining the site, or as teachers working in partnership with us to engage students in their community, you're helping to make Litzsinger a dynamic place. At our best, we do well locally and generate ideas and resources that have value for others. We couldn't be successful at this without your dedication and commitment.

Thank you for all you do.

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Upcoming LREC Events:

LREC Stream Team:

Invertebrate Monitoring

April 5, 9am–12pm. Please contact Jennifer Brown at (314)961-4410 if you plan to participate.

Garlic Mustard Pull

April 6, 9am–12pm. Meet at glass house. Coffee and snacks in the morning, pizza for lunch. Call Malinda if you're interested at (314) 961-4410.

Ecology School (Volunteer Enrichment)

New Date!

April 26, 1–3pm. Glass house.
Topic: Restoration.

Upcoming Opportunities:

Native Plant School

Birdscaping with Native Plants: April 12, 1–4pm. Spring Flowering Trees and Shrubs: April 26, 1–4pm. Whitmire Wildflower Garden at Shaw Nature Reserve. Sessions includes hands-on tours and demonstrations. \$12 each (\$8 for Garden Members). Reserve your place by calling (636)451-3512.

Bush Honeysuckle Removal Workshop

April 28, 9:30–11:00am with practicum until 3pm. City of Olivette Community Center. Call Craig Mannion at (314)575-4658 to register.

New City River Kids: On the Move and Making Waves!

By Jennifer Brown

For several years, LREC staff have been developing partnerships with teams of teachers from multiple grade-levels at New City School in St. Louis. These teachers have been building strong connections in their curriculum between classroom activities and LREC field studies. Some of these teachers have taken things a step further by empowering students to apply knowledge learned and use it to make a difference in the community.

River Kids, an after-school program made up of 4th–6th graders at New City School, is making it a point to become better educated, educate others, and take action on issues relating to rivers and their conservation. Carrying out this mission involves meeting on a regular basis to hear guest speakers, participating in stream clean-ups and riparian/floodplain revegetation projects, and taking part in educational activities aimed at helping spread the word about river and water conservation related issues.

At the St. Louis Earth Day Festival in Forest Park, River Kids act as a voice for river conservation at their annual education booth. Last year at this event, I had the privilege

of working along-side River Kids using the stream table. This year students plan to once again use this interactive model to help demonstrate what they have learned about streams and rivers over the course of their studies and impart their know-ledge onto others through student-led demonstrations with the stream table. Integrating projects like these into curricula and extensions such as this after-school program are powerful ways for students to make connections between the classroom and “the real world.” Preparing students to teach about topics they have been studying also helps to deepen their own understanding.

In addition to their Earth Day activities, River Kids are also planning a benefit dinner at the City Museum to help raise funds for the River des Peres Watershed Coalition (RDPWC), a local volunteer organization working to improve the quality of our waterways and raise awareness about issues affecting St. Louis’s streams and rivers. At the benefit dinner, they plan to have all sorts of activities including games, raffles, music, and dancing for all ages. All of the proceeds raised at this event will be given directly to the RDPWC (see page 5 for additional benefit details).

Witnessing the students’ level of investment and dedication in River Kids’ activities is inspiring. Students have not only done a tremendous job of being advocates for rivers, but they play a role in nearly all aspects of the group’s operations including helping to keep track of the group’s budgetary items and serving on various planning committees. This environment that these teachers have provided for student learning and creative expression is impressive and sets the stage for truly molding “citizens making a difference” — one of the fourth grade’s themes for learning.

Please come out and show your support for these remarkable LREC students at the Earth Day Festival and fundraiser events. They have a lot to teach us and if we were lucky they might even sing us a river-song!



News From the Greenhouse

By Mary Voges

IT'S ALIVE!!!! Columbine and Hibiscus. Mints and Lobelias. Many of the prairie and woodland plants you see every year at LREC are currently in their infancy in the greenhouse. From the tall, dark, grass-like leaves of *Tradescantia ohioensis* (spiderwort), to the many tiny, round leaves of *Lobelia siphilitica* (Great Blue Lobelia), shapes, colors, and growth patterns are present and ever-changing in the humid and funky-smelling greenhouse.

Most of the seeds collected at LREC, Shaw Nature Reserve and elsewhere were stratified (prepared in a moist, cool environment) in November

and December and sat dormant in our refrigerator for 60–90 days. Then it was time to sow the seed, and with the help of students from many schools, we have sown approximately 60 different species of native forbs, sedges, grasses, and shrubs.

Students from Avery, Spoede, New City, Rohan Woods, and St. Michael's got down and dirty with the help of our wonderful volunteer educators. While viewing seeds with a microscope and magnifying glasses, descriptions of the seeds varied from "it looks like a bug" to "it looks like mouse poop." The mixture of white sand and seed was spread over

half-flats filled with a non-soil germination mix, then covered with a light coat of vermiculite, watered and put on a heat pad to germinate.

VOILA! Anywhere from four days to three weeks later, the cotyledon or baby leaves emerged. These are the primary leaves of the embryo contained in the seed and seldom look like the leaves of the adult plant. Many of the 'first leaves' of plants look alike; rounded and opposite. But, when you view the next set of leaves, the 'true leaves', you will see the characteristic color and shape we see in the field. You will observe the ferny leaves of the native yarrow (*Achillea millefolium*) as well as the stalkless leaves of blazing star (*Liatrix pycnostachya*). This is a perfect opportunity to view these plants in their seedling stages. Some of the smallest seedlings will grow to be some of the tallest plants.

Take this opportunity to test yourself on seedling identification. We have an excellent reference, the *Central Region Seedling ID Guide for Native Prairie Plants* available in the barn. This small guide is a



LREC Greenhouse
Photo by Sean Fears

See **Greenhouse**, page 5

Eaters of the Dead Sighted at LREC

By Eddie Jones

Turn over any old rotting log at Litzsinger Road Ecology Center and be prepared to hear oohs and aahs from students of any age. You might even get a shriek or two depending upon what you find! Chances are you will find some multi-legged creatures, a no-legged creature or two, and blotches or strands of various colors. Decomposers? Well...yes and no.

Just what are decomposers? They are living things that obtain food by absorbing energy and nutrient-rich substances from the remains of other living things. They literally digest their food externally. This distinguishes them from consumers, living things that eat other living things, and producers, that obtain their energy primarily from sunlight.

Decomposers can be either bacteria or fungi, which presents a challenge in field investigations. Bacteria have microscopic bodies and fungi are primarily long skinny threads, called hyphae, which are barely visible in soil or decaying material. We generally see the more visible fruiting bodies of fungi, mushrooms and other similar structures, as they emerge from the soil or the bark of a dead tree. Occasionally, the underside of a rotting log will reveal threadlike fungal hyphae. We can, however, observe the handiwork of these decomposers in the crumbling wood of an old log and the unappreciated odors that emanate from animal carcasses.

There are, of course, animals that eat the remains of living things. These animals are called scavengers, a special type of consumer. Vultures and raccoons are two familiar scavengers. Detritivores are a group of scavengers that eat detritus: the remains of plants and animals that are in the process of decomposition. Common detritivores at LREC include millipedes, snails, slugs, sow bugs, and roly-polies. By mechanically and chemically digesting their food, detritivores speed up the work of decomposers.

Decomposers and scavengers, including detritivores, are essential components of all food webs. Nutrients that decomposers do not absorb are incorporated into the surrounding soil and water as inorganic nutrients (nitrates, phosphates, other minerals) that are readily absorbed by plants. In this way, decomposers recycle chemicals in ecosystems. For more information about plant nutrients, check out the Kids World web site at <http://www.agr.state.nc.us/cyber/kidswrld/plant/nutrient.htm>.



Photo top: Centipede
Photo by Colleen Crank

Photo middle: Mushrooms
Photo by Eddie Jones

Photo bottom: Isopod
Photo by Colleen Crank

terrific tool for seeing if I labeled the plants correctly.

We are now transplanting many of the seedlings into larger containers to space them out and allow more fibrous root growth. You will see many different container sizes, from yellow containers and 6-

cell flats to larger 4" pots. Some will have to be moved once again as the roots develop and sneak out of the bottom of the pots. As soon as the weather permits, the plants will be moved outside to become acclimated to spring in St. Louis. Soon afterward, they will be planted by students in

our prairies, woodlands, stream banks, and even sent to participating schoolyard projects.

So, please stop by the greenhouse and see the magic of native plant growth up close.

April Blooms with Events!

CELEBRATE EARTH DAY

Earth Day at the Garden

April 21. Learn what you can do for the planet from Earth Share of Missouri. Greenhouse tours 10am, noon, and 2pm. Bluegrass music by The Flying Mules 1–3pm. Included with admission or membership.

St. Louis Earth Day Festival

April 22, 11am–6pm. Muny Grounds at Forest Park. Enjoy educational exhibits, Eco-art, food, entertainment, a farmer's market, green-living vendors, an Earth Day Bazaar, and more. Information at <http://www.stlouisearthday.org/>.



LECTURES

Birdscaping with Native Plants

April 12, 6pm reception, 7pm lecture. Shaw Nature Reserve. Featuring Mariette Nowak, author of *Birdscaping in the Midwest, a Guide to Gardening with Native Plants to Attract Birds*. \$5 (\$3 MBG members) at the door. Call for reservations at (636)451-3512 x6075.

2007 John Dwyer Lecture in Biology

April 26, 4pm. Shoenberg Auditorium, Ridgway Center, Missouri Botanical Garden. "Learning From Our Ancestors About the Future of Life on Earth" by Dr. Will McClatchey of the Department of Botany, University of Hawaii at Manoa. Free and open to the public.

OTHER EVENTS

Arbor Day Tree Giveaway

April 6, 9am–5pm or while supplies last. Kemper Center for Home Gardening, Missouri Botanical Garden. Receive a redbud (*Cercis canadensis*), Shumard oak (*Quercus shumardii*), or flowering dogwood (*Cornus florida*) tree sapling. One per visitor. Master gardeners will answer questions and give advice on planting trees in the spring. Included with admission or membership.

New City River Kids Benefit Dinner

April 27, 5–10pm. The City Museum. To support the River des Peres Watershed Coalition. See LREC staff for a flyer or call Ben Griffiths, River Kids Coordinator, at (314)361-6411 to purchase tickets.

Garlic Mustard Threatens Wildflowers and Morels

By Malinda Slagle

April may mean spring wildflower watching and morel hunting for many, but sadly, for many areas in the midwest it means garlic mustard pulling. Garlic mustard (*Alliaria petiolata*) is from Europe, introduced as a culinary herb. It has become an invasive species in shady areas, spreading rapidly by seed. Garlic mustard shades and crowds out native wildflowers. Some land managers in Illinois have found that in areas where garlic mustard is thick, their morel populations have been drastically reduced.

Garlic mustard is a biennial, meaning it lives only two years. It grows as a small rosette of round, toothed, wrinkled leaves 1–6" tall during its first year, starting growth in early April and staying green throughout the winter. You can always identify garlic mustard by crushing the leaves of the suspected plant. If they smell like garlic, it's garlic mustard! In the second year, a stalk 10–30" tall grows out of the rosette in April or May and the leaves become more heart-shaped. The stalk forms small white flowers with four white petals and forms long thin seed pods 1–2.5" long soon after flowering. A single plant can produce thousands of seeds. Garlic mustard only reproduces by

seed and its seed can sprout for seven years. Its seed is spread in people's boots, in their pants cuffs, on car and mountain bike tires, on deer, and by water. If working with garlic mustard, make sure your pants and shoes are clean afterwards to avoid spreading seed!

So, what's the best way to get rid of it? First year plants can be pulled anytime, but their roots can be difficult to pull intact without a tool such a weeder/digger. Second year plants are easier to pull along with their roots, but once the flower stalk formation has begun, pulled plants should be dried and separated from their root system (which continues to feed the flowers even after they've been pulled) to prevent flowering. Flowering and seeding plants must be bagged in heavy-duty trash bags to prevent seed spread. These trash bags must go in the garbage, not yard waste. Municipal compost will not get hot enough to kill garlic mustard seeds and then they will be spread much more. Burning can also be an effective way to kill first-year garlic mustard. Spraying first year garlic mustard with 1–2% Round-up® is also effective.

Unfortunately, we do have a population of garlic mustard here at LREC. We use a



Garlic Mustard
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combination of all of these three methods here at LREC to kill garlic mustard. The one I like the best is getting kids and volunteers to pull it! We will be having a garlic mustard pull for any interested volunteers on Friday, April 6 from 9am–12pm; meet at the glass house.

George Meyer, secretary of the Wisconsin Department of Natural Resources, says "The potential losses that are being caused by this plant are preventable and reversible—but only if we act now to get the information out to landowners, land managers, and park visitors. We need everyone's cooperation to prevent this plant from moving into currently uninfested woodland and to contain it where it has already spread."

Resources

Czarapata, E. J. 2005. *Invasive Plants of the Upper Midwest: An Illustrated Guide to their Identification and Control*. The University of Wisconsin Press: Madison, WI.