

Litzsinger Road Ecology Center

Community Newsletter

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The Power of Place

By Bob Coulter

As you know, place-based education is a strategic focus of the programs at LREC. Through our work at the center and our support for your work back at school, we hope to engage kids with the local community, both to learn and to make a difference. What you may not know is that LREC is part of PEEC, a national collaborative promoting place-based education as an alternative to the current national fetish for a standardized “everywhere but really nowhere” approach to learning.

I’m very pleased to let you know that PEEC (the Place-based Education Evaluation Collaborative) has just published *The Benefits of Place-based Education*, a six-page overview of the value of engaging kids in their local community. It includes vignettes of schools that are making a difference, quotes from teachers, and research data. Among the students highlighted are the River Kids from New City School here in St. Louis, who are working on an ongoing river conservation project.

Throughout, the focus of the brochure is on showing how place-based education can energize your curriculum and your professional practice and still provide a positive learning experience for your students. Look for a print copy along with your application for 2008–2009 field study, which we’ll be mailing to you in the next couple of weeks, or download an electronic copy from the web site (www.litzsinger.org/peecweb.pdf). We hope it inspires you to build on your successes to make an even stronger program next year. ☞

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Upcoming LREC Events:

Garlic Mustard Work Day

April 4, 9am–noon. Meet at Glass House.

LREC Stream Team:

Macroinvertebrate Monitoring

April 10, 9am–noon. Meet at the barn.

LREC Stream Team:

Water Chemistry

April 24, 9am–2pm. Meet at the barn. Lunch will be provided.

Please contact Malinda Slagle at malinda@litzsinger.org or (314)961-4410 if you plan to participate in any of these events.

Upcoming Opportunities:

Native Plant School:

Shade Gardening

April 10, 1–4pm. Whitmire Wildflower Garden at Shaw Nature Reserve. \$12 (\$8 for Garden Members). Reserve your place by calling (636) 451-3512.

Bush Honeysuckle Removal Class

April 23, 7pm at City of Olivette Community Center, presented by Malinda Slagle. Contact Malinda at malinda@litzsinger.org or (314)961-4410 for more details.

Where Do All of These Students Come From?

By Eddie Jones

All you teachers get to visit Litzsinger Road Ecology Center (LREC) two or three times a year. The Volunteer Educators are at the center several days per month. Full-time staff get to be here every school day! And with a very few exceptions, we share those days with students and their teachers. A typical day at the ecology center begins about 8:30 in preparation for the arrival of a morning class, with that class departing by mid-day only to be followed by a second class that spends a couple of afternoon hours investigating local ecology at LREC.

This is what it looked like on a recent school day. With the weather service forecasting a sunny day in the sixties, there was the hope of springtime in the air. Eighteen eager seventh graders, from Wyvetter Young Middle School in East St. Louis,



Seventh graders from Wyvetter Young Middle School examine plants in the woodlands.
Photo by Eddie Jones

emerged from the bus at 9:15, ready for a day of outdoor investigations. Their teacher, Tami Yonke, has prepared them well for studying watershed dynamics, following up on their initial visit in December and some related activities in their classroom. The students are also preparing to study food webs by taking an inventory of producers, consumers, and decomposers in the native habitats of LREC. After several hours of field study, under the guidance of enthusiastic Volunteer Educators, the students departed with damp shoes and a renewed understanding of local ecology.

Eleven public school districts have students who engage in outdoor investigations at LREC. The level of participation varies from one classroom in a district to the entire student population of two schools (Maplewood-Richmond Heights Early Childhood Center and the M-RH Middle School). Spoede School (Ladue) has the greatest number of LREC classes from one school (20). With about 800 students enrolled in four schools, Brentwood is the smallest district with a participating school. St. Louis Public Schools



Volunteer Educator Faye Roth and a Wyvetter Young seventh grader discuss bark.
Photo by Eddie Jones

is the largest, with almost 38,000 students attending 86 schools. Teachers from eight independent schools and three Catholic schools also bring their students to LREC.

At 1.3 miles, two schools tie for the shortest trip to LREC: Hudson Elementary (Webster Groves) and McGrath Elementary (Brentwood). The prize for the most miles on the bus (30) goes to Whiteside Middle School of Belleville, Illinois. Duchesne Elementary (Ferguson-Florissant) is the only LREC school located north of Interstate 70. There is no school outside the I-270/255 loop except Whiteside. The southern-most school is the appropriately named Southview

See **Students**, page 3

Students, from page 2

School (Special School District). The youngest students doing field studies at LREC are the three-year-old preschoolers. The oldest are eighth graders.

Each participating classroom adds to the richness of the community here at Litzsinger Road Ecology Center. We look forward to a continued growth in our mutual work of becoming a more environmentally literate, and sensitive, society. ☞

Summer '08 Teacher Training at LREC

All four workshops run 9am–4pm and are held at LREC. Applications and registration forms can be downloaded from the professional development section of our web site: www.litzsinger.org/profdev.html. Additional professional development opportunities are available at the Missouri Botanical Garden: www.mobot.org/education/workshops.asp.

Sustainable Schoolyards

For Teachers Grades K–12
June 16–20, 2008

Turn a portion of your schoolyard into an outdoor classroom by engaging your students in the planning, development, and management of a native plant habitat. This workshop is based on the Earth Partnership for Schools program developed at the University of Wisconsin—Madison Arboretum, where a number of teachers have successfully restored native plant habitats on their school grounds. The workshop is open to teams of at least two teachers from a school. For more information, contact Eddie Jones at eddie@litzsinger.org.

Introduction to St. Louis Ecology

For Teachers Grades K–12
July 21–25, 2008

Learn more about the ecology of the St. Louis region by investigating the prairie, woodland, and stream habitats at Litzsinger Road Ecology Center, located right in the middle of St. Louis. Participants will increase their understanding of local ecosystems, relate them to basic ecological concepts and gain experience in outdoor environmental investigation. For more information, contact Eddie Jones at eddie@litzsinger.org.

The following two courses, part of the **Mapping the Environment** series, involve geographic information systems software. In each workshop, significant time is dedicated to developing your own curriculum project to implement in your classroom.

There is no registration fee for either workshop. Participants are responsible for their own travel and lodging costs. Optional graduate credit is available at an additional fee.

For more information, contact Bob Coulter at bob@litzsinger.org.

Mapping Your Community

For Teachers Grades 4–12
June 23–27, 2008

Meet your curriculum goals while engaging your students in studies of their local community. Participants will develop a curriculum module to take back to school that uses a place-based approach to education and integrates use of geographic information system (GIS) software and other resources to support student inquiry. A school site license for the GIS software is provided to all participants.

Mapping Environmental Issues

For Teachers Grades 4–12
June 30–July 2, 2008

For teachers with some experience using a geographic information system (GIS), this advanced workshop covers how to identify local data sources and process the data for use in an environmental investigation. Participants will take home their data and an outline for a project. This workshop assumes comfort with basic computer skills, including navigating folders and downloading and unzipping files.

Hop Into Spring!

By Malinda Slagle

With all of the spring rains we've had (including over five inches in two days!) it's hard not to be thinking about water. April showers bring May flowers, but what do March showers bring? April frogs! Looking for frogs in spring is always fun.

Some of the best places to look are shallow ponds and puddles that are not always wet (also called "ephemeral ponds"). Fish eat tadpoles and frog eggs, so anywhere fish are, frogs are likely not going to be. Going out with a flashlight at night to a pond is usually the best way to see frogs because the males will be calling for their mates.

About 23 species or kinds of frogs and toads live in Missouri. All have moist skin and lay their eggs in water or moist places on land. They hatch into tadpoles, which have gills and eat algae. Adult frogs and toads are carnivores.

How do you tell a frog and a toad apart? Toads have drier skin than frogs, don't have a lot of webbing on their back feet, and have big kidney-shaped glands behind their eyes. They have a wart-y appearance because they are covered in glands that produce secretions that are toxic to predators, but toads don't actually cause warts.



Above: *Bufo americanus*. Photo by Colleen Crank.

Here at LREC, the most common frog or toad you might find is the American toad (*Bufo americanus*). American toads are usually two to four inches long, have two kidney shaped glands behind their eyes and vary from a mottled gray or brown to reddish brown in color. They eat earthworms and insects. They are nocturnal and burrow under rocks or under dead leaves during the day. They can be seen at the pond by the Glass House or in pooled water in the creek from spring to fall. Their main breeding season is April, so listen for the loud trilling call of the males. In June look for the half inch long toadlets by the pond. They are so small and numerous it looks like the ground is hopping!

You might be lucky enough to find a gray treefrog (*Hyla*

See **Frogs/Toads**, page 5

Below: Dorsal and ventral views of *Hyla chrysoscelis*. Photos by Jenna Tune.



Frogs/Toads, from page 4

chrysoscelis or *H. versicolor*) at LREC. Gray treefrogs are 1¼ to 2 inches long, and may be green, gray, brown, or dark brown. They have large dark blotches on their backs, a large white spot under their eye, and white bellies. They breed from April to June and live in trees along streams, in hollow trees, and on leaves. They have sticky toe pads that help them be able to climb. I once saw a gray treefrog hiding in the leaves of a cup plant! They eat insects, spiders, and other invertebrates. They are generally only successful in fishless ponds.

You might also hear or see a bullfrog (*Rana catesbeiana*) at the LREC. They can be from 3½ to 6 inches long and spend all of their time near permanent aquatic habitats. You would only find them at the LREC by the creek. They are mottled green to olive to brown and have a large flat eardrum behind their eye. They eat a variety of insects, fish, amphibians, birds, mammals, crayfish, and spiders. Since they are big, they will eat anything they can catch. They will breed from May to July. Their call is a deep “ger-a-a-rum” that is heard for long distances sometimes even during the day. Bullfrogs are considered food and are hunted in Missouri. Some people think their legs are tasty!

If you want to attract frogs and toads to your yard, you can construct a small pond. To prevent mosquitoes from living in your pond, either install a water circulator or put in mosquito dunks (bacteria pellets specific for mosquitoes available at most hardware stores). Don't add fish. In addition to eating mosquitoes, they'll eat your frog eggs! Make sure that the pond has some plants around it for protection and that the sides are not too steep. Flexible liners or clay liners should be used rather than concrete or fiberglass as they provide better habitat for frogs. 🐸

Reference:

Johnson, T.R. *The Amphibians and Reptiles of Missouri*. 1997. Missouri Department of Conservation, Jefferson City, MO.

Arbor Day Giveaway

April 4

The Kemper Center for Home Gardening at Missouri Botanical Garden will give away Shumard oak, bald cypress, and blackgum tree saplings on a first-come, first-served basis. One per visitor. Master gardeners will answer questions and give advice on planting trees in the spring. 9 a.m. to 5 p.m. or while supplies last. Included with admission or membership.



Top: Shumard oak; Bottom: Autumn foliage of blackgum

Photos © 2002 Steven J. Baskauf

<http://bioimages.vanderbilt.edu/>

Where Is All That Water Going...and What Can I Do About It?

An Introduction to Rain Gardening

By Mary Voges

If you have ever heard of rain gardens, you might be thinking of huge retention areas or engineered wetlands.

Did you know that every home, condo or apartment complex has the ability to have their own rain garden, no matter how small or how hilly the landscape?

Why create a rain garden? Did you know that up to 70% of pollution in rivers, aquifers, lakes, and coastal areas is carried there by storm-water runoff from rooftops, roads, driveways, sidewalks, and mowed lawns? These existing impervious surfaces, as well as the influx of mega-subdivisions moving out into the country have taken the place of soil and plants that readily absorbs rainwater,

resulting in increased stormwater volume and intensifying water pollution, stream-bank erosion and flooding.

A rain garden is a natural solution to a man-made problem. Storm water naturally flows downhill into streams, river-banks, and low-lying wetlands. The roots of grasses, perennial plants, shrubs, and trees capture rainwater, aerate soil and help water percolate into the ground, reducing erosion and flooding. Rain gardens are miniature natural wetlands, slowing water flow by utilizing plants, rocks, shallow swales, and depressions in the soil to hold water temporarily rather than letting it quickly escape.

Aside from conserving precious water supplies and helping protect the water quality of downstream lakes and rivers, a rain garden provides beauty, natural diversity, and necessary food and shelter for many birds, butterflies and beneficial insects, such as dragonflies, which eat mosquitoes! And what about those mosquitoes? Truth is, mosquitoes need at least a week of standing water to complete their life cycle. Unless your rain garden is designed to hold water, the dense roots of native plants will absorb water, preventing the formation of puddles.

See **Rain Gardens**, page 7



Photo by Brian Ash

Rain Gardens, from page 6

Now, you ask, how do I get started? Do you have a gutter? A downspout? A channel or gully alongside your drive or near your home? Lucky you!!! With a little observation, a little labor and your natural imagination, you can create a beautiful native rain garden!

Rain gardens can be as simple as diverting the downspout runoff into a depression you dig and shape or allowing the flow of water onto an existing natural low area in your lawn. You may need to direct runoff from your house to the rain garden by contouring the soil or lawn area. Place your rain garden a minimum of ten feet from your home or building. Soil type will determine how deep a depression or holding basin is necessary as well as the types of native plants that will thrive. Sandy or loamy soils are more porous and drain better than less porous clay soils. If you have clay soil, you may need to consider a larger, deeper rain garden to compensate for the poor drainage.

More intricate installations of rain gardens as well as methods of calculating the size and shape of the garden by determining impervious surface size (roof, driveways, sidewalks and mowed lawn areas) can be found in *Chapter Two—Rain Gardening and Storm-water*

Management: A Landscaping Guide for Missouri, available at Shaw Nature Reserve and through the Missouri Department of Conservation's Grow Native! Program. It is also available for viewing at www.shawnature.org under Native Landscaping.

Once you have planned your rain garden and sloped the runoff into your lawn or a yard basin, plants can be added. Plant types will depend upon soil and sun/shade. A partial list of native rain garden plants is on page eight of this newsletter (more information about these plants can be found by clicking on the Native Plant Info guide at www.grownative.org). To find out where to purchase these

plants, go to the Buyer's Guide at this same site. ☞

Resources:

Chapter Two—Rain Gardening and Storm-water Management: A Landscaping Guide for Missouri. Available through Shaw Nature Reserve.

Native Plant Rain Gardens: A Grow Native! Guide for Homeowners, Teachers and Landscape Designers. Available through the Missouri Department of Conservation.

Tips for a beautiful, rewarding rain garden:

- Try not to spread or spray lawn fertilizer too close to the rain garden. Fertilizers will stimulate weeds and create competition for the native plants.
- In the winter leave the vegetation in your rain garden to catch snowflakes and frost and provide interest as a beautifully textured winter landscape.
- Come spring, mow and remove dead vegetation to stimulate new growth.
- To attract birds, place a birdhouse nearby.
- Add a comfortable bench nearby to you can enjoy watching the birds and butterflies. Place rocks or garden ornaments in and around your rain garden. Be creative!
- Enjoy...Enjoy...Enjoy!

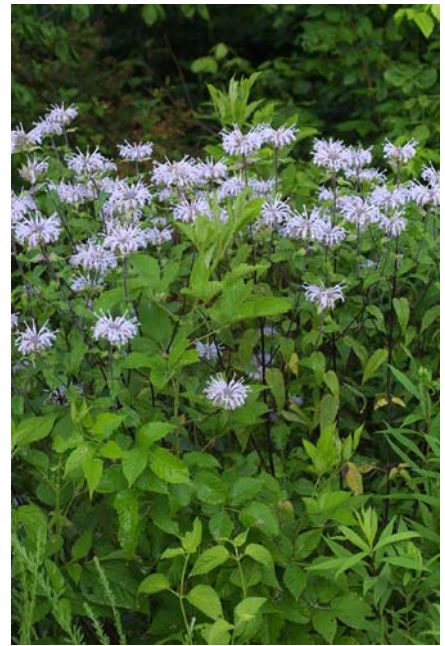
Native Rain Garden Plants

Grasses, Sedges, and Rushes

<i>Carex cristatella</i>	Crested sedge
<i>Carex frankii</i>	Frank's sedge
<i>Carex muskingumensis</i>	Palm sedge
<i>Carex squarrosa</i>	Squarrose sedge
<i>Juncus effuses</i>	Common rush
<i>Scirpus atrovirens</i>	Dark-green rush
<i>Chasmanthium latifolium</i>	Northern creek oats
<i>Panicum virgatum</i>	Switch grass

Forbs

<i>Amsonia illustris</i>	Shining bluestar
<i>Asclepias incarnata</i>	Swamp milkweed
<i>Aster novae-angliae</i>	New England aster (renamed <i>Symphiotrichum novae-anglia</i>)
<i>Boltonia asteroides</i>	False aster
<i>Chelone glabra</i> or <i>obliqua</i>	Turtlehead (white or rose)
<i>Eupatorium coelestinum</i>	Mist flower/Wild ageratum
<i>Eupatorium fistulosum</i>	Joe Pye weed
<i>Filipendula rubra</i>	Queen of the prairie
<i>Hibiscus lasiocarpus</i> or <i>laevis</i>	Rose mallow
<i>Iris brevicaulis</i>	Short-stemmed iris
<i>Iris virginica</i>	Southern blue flag
<i>Lobelia cardinalis</i>	Cardinal flower
<i>Lobelia siphilitica</i>	Blue lobelia
<i>Monarda fistulosa</i>	Wild bergamot
<i>Penstemon digitalis</i>	Foxglove beardtongue
<i>Phlox maculata</i>	Meadow phlox
<i>Physostegia virginiana</i>	False dragonhead
<i>Rudbeckia subtomentosa</i>	Sweet coneflower
<i>Saururus cernuus</i>	Lizard's tail
<i>Senecio aureus</i>	Golden ragwort
<i>Veronicastrum virginicum</i>	Culver's root
<i>Zizia aurea</i>	Golden Alexander



Near right: *Chelone glabra*
Photo © 2004 Steven J. Baskauf

Far right top: *Monarda fistulosa*
Photo © 2003 Steven J. Baskauf

Far right middle:
Symphiotrichum novae-anglia
Photo © 2002 Steven J. Baskauf

Far right bottom:
Chasmanthium latifolium
Photo © 2004 Steven J. Baskauf

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