

Litzsinger Road Ecology Center

Community Newsletter

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

New Beginnings

By Bob Coulter

As fall settles into the landscape, nature is going into a quieter phase awaiting new beginnings in the spring. Here at the Litzsinger Road Ecology Center, we are getting a head start on that process as we roll out a couple of new initiatives. The time we had to spend recovering from the flood delayed us just a bit, but now that we're mostly dry and cleaned up we're looking forward to getting started.

First, we will be paying particular attention to the service-learning opportunities that you and your students have that build from your work with us. Part of our commitment to place-based education is to ensure that students have opportunities to apply what they are learning to make a difference in their community. This might be in the school yard, a neighborhood park, or some other place that is significant for the kids. Look for your staff contact to be discussing with you in the next couple of weeks how your kids plan to use what they are learning, and how we can support you. One of the focuses for our ongoing research on place-based education will be a series of case studies of how service-learning and place-based education support each other. Thanks in advance for your help with that effort.

Another new project will be starting in the spring. We're pleased to announce that the Center has received a second National Science Foundation grant to continue our work with selected after-school and summer programs. As with our current LIONS (Local Investigations of Natural Science) program, the focus is on engaging kids with the local community as we help them develop math, science, and technology skills. In the new CSI (Community Science Investigators) grant, we'll be continuing our partnership with the Massachusetts Institute of Technology to use handheld computer games, computer mapping software, and service-learning projects to help teens develop a sense of stewardship for their community.

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Upcoming LREC Events:

New Education Volunteer Training

Mondays, through November 10, 9am–3pm. Veteran volunteers welcome.

Upcoming Opportunities:

Native Plant School

Native Trees in Winter: Planting, ID, and Maintenance. November 13, 1–4pm. At Shaw Nature Reserve's Whitmire Wildflower Garden. \$12 (\$8 for Garden Members). Reserve your place by calling (636)451-3512.

Light Bulb Sale

November 14 & 15, 10am–3pm. At Missouri Botanical Garden's Ridgway Center. Purchase EarthMate™ brand 60-watt equivalent, mini-spiral, compact fluorescent (CFL) light bulbs for just \$2 each. The bulbs feature 75% less mercury than conventional CFL bulbs. Proceeds benefit EarthWays Center public education programming.



Science Café: "Sustainability: Finding Your Way Forward"

November 20, 6:30–9pm. At Monarch Restaurant, 7401 Manchester Rd. Free. Hosted by Glenda Abney, manager of the Missouri Botanical Garden's EarthWays Center. Presented by the Saint Louis Science Center and the Missouri Botanical Garden. For more information: (314) 289-4424 or www.slsc.org.

The Flood of 2008

By Mary Voges

As most of you reading this know, on Sunday, September 14th, the residual effects of Hurricane Ike were felt at LREC with the likes not seen since 1957. During the flood of 1957, the levee near the Rock Hill Quarry broke and the quarry completely filled!!

Back to 2008...Deer Creek was inundated with runoff from a five inch rainfall event that crested and dropped within approximately 45 minutes. During those 45 minutes, the house at 9701 (Bob's home) started flooding the garage, and quickly filled to eight feet, at the same time filling the staircase, breezeway and living areas with 24-26 inches of storm water.

Bob, with very little time to spare, crated his three cats, Patrick, Peach, and Steve, and moved some valuables to higher elevations. He quickly took the cats to the loft area over the garage where he called 911 for assistance and watched the water climb the loft steps to within three feet of entering the second story. It must have seemed like an eternity as he looked out the window and saw boats floating by carrying his neighbors to safety.

From his vantage point Bob could see the spread of the flood; through the Pasture Prairie, into

and nearly one-third up the walls of the cabin, office, computer room, and greenhouse.


Not until later that day were the effects of the flooding fully realized. Surveying the grounds, we saw that the boardwalk leading from the cabin deck was knocked off its piers and cracked in quite a few places. Instead of replacing the boardwalk, it was decided to close off the deck and plant shrubs and trees where the boardwalk was. We are looking forward to observing how wildlife reacts to this change in habitat.

To all of our amazement, the water extended two-thirds of the way up into both the North and South Prairies, evident by the silt buildup on the plants. By the floodwaters spreading throughout the prairies and being absorbed by the massive root systems of the native plants, the force of the flood was slowed down which aided in lessening the damage downstream.

After taking stock of the damage, LREC staff immediately began the process of returning the center to normalcy as quickly as possible. And what a team of workers came out to help!!! Volunteers showed up and worked side by side with contractors and staff, moving items to storage, filling a dumpster with damaged and non-

recyclable items, and cleaning, cleaning, cleaning!!

By the end of the first week, ECO-ACT was back at the center and LREC classes were up and running at the upper end of the property thanks to all the volunteers who changed their schedules and worked with, and around us, to continue the class visits! Students were amazed and inquisitive regarding the flood; what happened, how had the animals survived, are the plants ok? And heard most often, "Wow!!" This is truly 'Place-Based Education'.

As far as the fate of our director, Bob has temporarily located to an apartment with his cats. Although he has lost a large percentage of his belongings, he continues to amaze all of us with his sense of humor and determination to continue the mission of LREC. 



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Finally, on a personal note, I'd like to thank everyone for the kind thoughts and words since the flood. I'm settled in a nice apartment with new furniture, and the cats and I are doing quite well. If they could, they would bring you a mouse in your honor. ☞



Clockwise from top: view of driveway from loft above garage at 9701 Litzsinger Road; the flood waters pushed the boardwalk off its piers; the boardwalk sustained damage; a dumpster was brought in to remove damaged non-recyclable items; view of flooded side yard from loft.

Introduction to Restoration at LREC

By Malinda Slagle

This is a document that was distributed to beginning volunteers to give them a general idea of restoration on site. Interest was expressed in having it more generally available, so here it is!

The **North and South Prairies** (by the Glass House) were planted in 1989. The prairies were plowed, a cover crop was planted, that was burned and then the seed was sown. Locally collected forb (flower) seed was sown and Kansas grass seed was sown. This area was formerly in corn and wheat, then allowed to go fallow for a number of years before planting prairie. The **Pasture Prairie** (by the Barn) was planted beginning in 1999. The area was plowed and locally collected seed was sown. This area is continuing to be added to by student seed sowing and plantings as recently as this year. The area was formerly a horse pasture.

The **woodland** has had some plantings throughout the center's history, but not too much other restoration until 2002, when bush honeysuckle was removed by volunteers from the North Woods. Bush honeysuckle removal has continued in other locations and Euonymus spraying was begun on a larger scale in 2006 to begin to clear new areas for restoration. Most of the woodland was logged at one point.

The **creek** has been straightened, and the banks have been hardened upstream and downstream of the site. This, along with the high levels of storm water and flash floods caused by increased development and impervious surfaces in the watershed, have increased erosion along the creek. We have been planting tree seedlings and plants along the creek since 2004 to help hold the banks and have been removing invasives to plant more native plants.



Top: Native plants bloom in the North Prairie. Bottom: High levels of storm water aggravate erosion of the creek channel.

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MANAGEMENT

Burns are conducted in prairie and woodland areas on a rotational basis. No area gets burned two years in a row, and all areas are never burned at once. This allows for recolonization of animals that are lost during the burn. Burns are a natural process that have shaped ecosystems in Missouri for thousands of years. Humans, particularly Native Americans, have intentionally set fires here, and thunderstorms sometimes ignite areas. In 2008 we plan to burn the North Prairie and the South Woods, weather and fuel depending. Kids are able to observe burns and burned areas to understand the ecology.

Mowing is conducted in the prairie to encourage germination and growth of seed. It mimics the disturbance caused by grazing. Seed grows better if it gets more light, so we mow to keep light levels high, particularly in early stages of a planting (i.e. the extension across from the mulch pile). Kids should not walk over mowed areas that are not paths.

Invasive species management is a major part (~50%) of onsite management. Invasive plant species are non-native species that take over habitat from native plant species. They are different than weeds in that weeds are any plant that isn't wanted in a particular place. Dandelions, for instance, are a weed in a yard but are not invasive. We **spray** invasive plants that are widespread and low to the ground with low-toxicity herbicide. We **pull** invasive plants when there are not very many of them, or they are growing entangled in desirable species. We **cut and paint** stumps of invasive trees, shrubs, and vines growing up trees with herbicide. Burning and mowing also are used to manage invasives. Kids primarily aid with pulling plants.

Plant propagation includes seed collection, seed cleaning, seed stratification, seed sowing, transplanting seedlings to larger pots, and planting plants on the property. We propagate plants for existing areas on site, new areas on site, schools, and volunteers. (Please ask about this next spring! We always have lots extra we are glad to give away to help you start a native plant garden.) Kids participate in all aspects of plant propagation.

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Top: Controlled burns are a part of LREC site management. Bottom: Learning opportunities abound in plant propagation.

RESEARCH

Plant monitoring has been conducted every year since 2000 (except this year, since I was on leave). We monitor the prairies and the woodland on a rotating basis. We have tall rebar in the prairie that marks our monitoring points and short rebar in the woods. Each monitoring point has a number and letter associated with it depending on its location in space. Letters increase west to east and numbers increase south to north. Rebar are set up so each is 15 m to the north, 15 m to the east, etc. from the next rebar. Each of these points has a permanent metal square or quadrat in the ground next to it. It is 0.25 m² in area. For plant monitoring, we inventory all plant species within this quadrat and also assign a cover class to each plant species for the amount of area of the quadrat it covers.

We have found over 200 species of plants in the prairie and over 100 species of plants in the woodland so far. Read the whole report on our web site (go to www.litzsinger.org, click on research, then choose site inventories). Volunteers, high school volunteers, and staff have been involved in this project in the past.

Pollinator monitoring has been conducted every year since 2005 (except this year). I have been

catching bees and butterflies in the prairie and woods. I have found 105 species of bees and 26 species of butterflies. I have been doing this research by myself primarily, with some volunteer help with data processing. However, I am hoping to get students involved with bee monitoring and get volunteers involved in butterfly monitoring. We have had two student programs conduct bee monitoring so far using bowls with soapy water to catch bees.

Bird monitoring was conducted throughout the spring and summer of 2008. Colleen Crank, a volunteer with us, sets up mist nets, monitors nest boxes, and does point counts of birds. Talk to her to get involved. She has found many species so far. In a 2001 survey done by John and Nancy Solodar about 100 species of birds were recorded. See the list on the web site in the research tab under site inventories.

Creek monitoring has been conducted since 2005. Jennifer Brown has been mapping the creek's banks, measuring chemical and biological parameters, and taking photos of the creek. Volunteers are involved in measuring water chemistry on the last Thursday of the month. Volunteers are also involved in monitoring the



Above: These Carpenter bees (Xylocopa virginica) are only one of 105 species of bee found at LREC. Photo by Colleen Crank.

living community of the stream twice a year. Kids have also been involved in creek mapping, and chemical and biological monitoring.

Other research is being conducted on site by outside researchers and sometimes by staff or interns. We have research grants available for outside researchers. Currently we have researchers studying insects, birds, and invasive plants. You may see them, their flags, or their apparatus from time to time. Look, ask questions, but don't touch. ☞