

Litzsinger Road Ecology Center

COMMUNITY NEWSLETTER

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in this issue

- 2 Where is Your Outdoor Classroom?
- 3 LREC Teacher Partners Speak Locally
- 4 Glass House Quiz: Cleaning House
- 7 LREC Announcements
- 7 Local Events

Covenant Christian School students sow native plant seeds in their new schoolyard prairie. Learn more about outdoor classrooms and winter activities on page 2. Photo by Eddie Jones.

Garden Politics

by Bob Coulter

Over the past couple of weekends, I've been listening to audio books while raking leaves. Coincidentally, as the Federal debt reduction panel was reaching its inevitable impasse I was enjoying *Founding Gardeners* by Andrea Wulf. In this book, she describes how founders such as Franklin, Washington, and Jefferson embedded plant-based thinking in much of their work. Whether it was Benjamin Franklin advocating for agriculture to make us self-sufficient in response to the Stamp Act, or George Washington trying to build up Mount Vernon as a preserve of American species (instead of European imports), botanical thinking seems to have been a subtext in much of our early history.

Perhaps most interesting in the current context is speculation of how a tour in 1787 of the intricate garden at the Pennsylvania State House may have shaped our national history. It seems that the garden was deliberately designed to create the microclimates needed to enable each species to survive away from its native habitat. The next day, several holdout states changed their votes, enabling the Constitution (and thus our form of government) to be created. Perhaps we all need to spend more time in the garden, woods, and prairie absorbing their lessons of interdependence. ✎



Where is Your Outdoor Classroom?

by Eddie Jones

A recent article in the *St. Louis Post-Dispatch* highlighted the activities of students from the Maplewood Richmond Heights Middle School on a visit to Forest Park. The reporter, Jessica Bock, caught them collecting native plant seeds in collaboration with Forest Park Forever. The seeds will be sown in other areas of the park to enhance the natural communities. The title of the article is “Outdoor Classroom: Forest Park;” hence, the title of this article.

A teacher partnership with Litzsinger Road Ecology Center is



Students sow native plant seeds at LREC.
Photo by Eddie Jones.

intended to support the effective use of an outdoor classroom.

What is an outdoor classroom? It is outside (!) and it is a place to learn. Being a place to learn requires that there be learners present; which means that it must be accessible to learners, and the teacher must take the initiative to make educational use of the outdoor classroom.

What does an outdoor classroom look like? It looks like a

- corner of the schoolyard with neatly manicured lawn grass
- shady spot under a tree
- covered pavilion with tables or benches
- garden (vegetable, annual, perennial, native)
- “wild space”; you know...lots of weeds and stuff
- nearby public park or vacant lot
- neighborhood
- Map your schoolyard/outdoor classroom
- Compare tree characteristics (height, circumference, spread, bark, buds)
- Establish and observe bird feeders
- Search for animal tracks/droppings/shelters and other signs of animal life
- Locate/identify winter wildlife food sources
- Identify winter aesthetic qualities (form/color/pattern)

However, it is not a classroom until there are students present, engaged in learning activities...at all times of the year...winter, too.

What can you do with an outdoor classroom in the winter? You can:



A student records the air temperature.
Photo by Eddie Jones.

So where is your outdoor classroom? If you know, go out with your students this week. If you don't know, your students may help you locate it. 🌿



LREC Teacher Partners Speak Locally

by Leslie Memula

The 4th Annual Green Schools Event held on November 2, 2011 at Harris Stowe State University, was a free workshop geared toward school educators, school administrators, and the general public. The event included eight breakout sessions featuring local schools' green initiatives. Litzsinger Road Ecology Center teacher partners were well represented at the event, presenting in three different tracks.

Wyland Elementary School teachers **Karen Worland** and **Jean Schober** presented in the Student Initiatives track. Their session, *Wyland Knocks Out Waste!*, outlined a 2008 service project developed by their fourth grade gifted and talented students. The students were bothered by the amount of food being thrown away in the cafeteria. They began

educating the rest of the school community about this problem—the end result being a 30% reduction in waste! With the support of the Ritenour School District, the students took it a step further. Compost bins were built with the help of Eagle Scouts, and there is now a school-wide composting program at Wyland.

Edgar Road Elementary School teacher **Betsy Guthrey** presented in the Sustainability Natives track. Her session, *Big Changes in a Small Area: Developing Sustainability*, focused on connecting the Webster Groves School District's curriculum with the outdoor learning her students engaged in at school. A small greenhouse and some raised beds for vegetable gardening were built, and a deck complete with stools and tables for student use was constructed. Students sow

seeds and plant seedlings. They plan to have compost bins up and running soon. Betsy and her students have transformed their enclosed courtyard into a student-friendly outdoor learning space.

Maplewood Richmond Heights Middle School teachers **Scott McClintock** and **Bill Henske** were part of a panel that presented in the School Culture track. Their session, *Beyond Recycling: Sustainability in Schools 2.0*, highlighted their growth as an expeditionary school. They touched upon the four cornerstones of MRHMS (stewardship, citizenship, scholarship, and leadership) and the concept of 'school as expedition,' where learning takes place in the context of the real world. Student groups participate in planting and harvesting their vegetable garden, known as the Maplesed Garden. They are also perfecting their beekeeping skills and making candles and lip balm. Beginning next year, they hope to engage in aquaculture, enabling students to become tilapia farmers.

The staff and volunteers at LREC appreciate the efforts of all of our teacher partners and we encourage you to share the happenings at your school! 🌱

School Websites

Wyland Elementary School

<http://www.ritenour.k12.mo.us/wyland/>

Edgar Road Elementary School

<http://www.webster.k12.mo.us/education/school/school.php?sectiondetailid=61>

Betsy's Outdoor Learning page

<http://www.webster.k12.mo.us/education/components/docmgr/default.php?sectiondetailid=54434&>

Maplewood Richmond Heights Middle School

<http://www.mrhdsd.org/middle-school/home>

Glass House Quiz: Cleaning House

by Danelle Haake and Deanna English

From time to time, every household has a day or two when they go through the closets and drawers to discard or pass along the items they no longer need. Often it's called 'spring cleaning,' but many people get the cleaning bug this time of the year, too, as they prepare for the holidays. At these times we are sometimes amazed at what we find. Often these finds open gateways to questions we hadn't thought to ask before.

Here at LREC, we began to wonder what we would find if we opened and explored the freezers and refrigerators on site. The Glass House's refrigerators and freezers and the freezer in the Barn were explored, and one in particular was a goldmine for weirdness. In the quiz we introduce you to some of our interesting finds...Happy Holidays!!



Seeds in the refrigerator in the Glass House kitchen. Photo by Danelle Haake.

- 1. The Glass House seed refrigerator is jammed with seed along with two half eaten jars of jam and an expired bottle of Ranch dressing. Why would we load a whole refrigerator up with seeds?**
 - a) They taste great toasted and added to our salads.
 - b) To force them into dormancy so they will sprout next spring.
 - c) To keep them from spoiling.
 - d) They need to be kept safe from mice.
- 2. The Glass House kitchen includes a harvest gold refrigerator dating back to at least 1975. Inside are seeds to be sown in the greenhouse in late winter. For the seeds to grow, their dormancy must be broken. What methods are used to help the seed break dormancy?**
 - a) Dry stratification (storing the seed in plastic bags in the fridge).
 - b) Moist-stratification (the seed is placed in damp sand inside a plastic bag in the fridge).
 - c) Scarification (the seeds are rubbed between sandpaper, have hot water poured over them or are soaked in an acid solution, then put in a plastic bag and placed in the fridge).
 - d) All of the above.
- 3. When we first opened the freezer in the Barn we were amazed at how neat and clean the freezer was with little containers in tidy rows. When we looked inside the containers, what did we find?**
 - a) A morgue-like scene reminiscent of a horror movie.
 - b) A collection of old and forgotten lunches.
 - c) Batteries neatly arranged in containers by type (AA, AAA, C...).
 - d) Ben and Jerry's ice cream cleverly disguised in plain containers.
- 4. During our investigations we found two moles, three shrews, and one vole. Are these all rodents?**
 - a) Yes, they are all rodents.
 - b) No, the vole is the only rodent.
 - c) No, the vole is not a rodent.
 - d) No, none of them is a rodent.

See **Quiz**, page 5

From **Quiz**, page 4

5. What is the difference between moles and voles?

- a) Moles are carnivores and voles are primarily herbivores.
- b) Moles have big front feet for digging while voles have small, mouse-like, front feet.
- c) Moles are solitary and voles are more social.
- d) All of the above.

6. An eastern bluebird found in a freezer is an example of a species that had a large population decline in Missouri during the 1960s and 70s. What was a major cause of the sharp reduction in the eastern bluebird population here and in other states?

- a) Loss of nesting sites due to the reduction of dead wood left in woodlands.
- b) The introduction of non-native birds such as starlings and house sparrows created competition for nesting sites.
- c) Hunting for the feathers that are used in women's hats.
- d) Both a and b.

7. Not too long ago we had an item that traveled back and forth from one refrigerator/freezer to the other. It has now traveled to another cold storage area, but will be back with us soon. What is it?

- a) A juvenile red-shouldered hawk that crashed into the glass house window and died.
- b) A bag of peas that is used for staff injuries.
- c) A box of glow necklaces that we all share for special events.
- d) An ice cream trophy awarded to staff on their birthday month.

Bonus Question:

What other goodies may be found in the Glass House freezer?

- a) Frozen dinners dating back to 2003.
- b) Bags of ice.
- c) Ice cube trays of frozen herbs.
- d) Both b and c.
- e) All of the above.



*Seed refrigerator in the Glass House.
Photo by Danelle Haake.*

See **Quiz**, page 6

From **Quiz**, page 5

Answers:

1. b) Force them into dormancy.

While protecting the seeds from hungry mice is a side benefit, the reason we keep seeds in the fridge is to **simulate winter** since most seeds need to go through the cooling process of winter in order to germinate. We use these seeds in seed mixes to increase plant diversity here at LREC and also to help schools that are developing their own native gardens. During the winter, the schools will receive the seeds and mix them with sawdust to help with more even distribution when the students sow them. The students will scatter the seed over a prepared area, preferably in the snow to help keep the seed in place with a ready source of moisture.

2. d) All of the above. Seeds are dispersed in a variety of ways, including wind, water, and animals (either through attachment to fur or by being eaten). To successfully break seed dormancy we must learn how the seed is naturally dispersed and do our best to imitate that. Some seeds need to be damp for long periods of time to break down the seed coat. Some must be placed in a more acidic condition to mimic the condi-

tions of an animal's stomach to break the seed coat. Others are fine just staying dry and cool.

- 3. a) A morgue-like scene.** In those nice little containers in the Barn freezer we found the following animals: two moles, three shrews, a vole, an eastern bluebird, a ring-necked snake, a juvenile black rat snake, a frog, and more. These frozen critters are shown to school groups that are interested in birds, small mammals, or amphibians and reptiles when they visit.
- 4. b) The vole is the only rodent.** Unlike rodents, shrews and moles are insectivores—their primary food source is insects.
- 5. d) All of the above.** Moles primarily feed on earthworms, grubs, and beetles. They cultivate and aerate the soil, and often eat undesirable grubs and



Freezer in the Barn.
Photo by Danelle Haake.

insects. Voles prefer grasses, bulbs and tubers. Voles are also social, and may be found in large numbers.

- 6. d) Loss of nesting sites and introduction of non-native birds.** One of the greatest contribution to the recovery of the bluebird populations has been the human effort to build and install bluebird boxes for nesting. You can see many

See **Quiz**, page 7



The mole (left) and shrew (right) are both insectivores. Photo by Danelle Haake.

From **Quiz**, page 6

bluebird boxes around LREC, which are often used by European tree sparrows, an introduced species limited to the St. Louis region.

7. **a) The hawk.** At the moment the hawk is at the taxidermist being preserved for display at the center. For a few months while we awaited permission from the Missouri Department of Conservation to take the hawk to a taxidermist, we would take the hawk out of the freezer in the Glass House to use it to show visiting students and teachers at the education end. When it arrives back at Litzsinger you will be able to see it in the cabin.

Bonus

d) Bags of ice and ice cube trays of herbs. In addition to the bags of ice and the frozen basil from Deanna's garden, there is also frozen lemonade, several ice packs, water bottles, and a box of chocolate chip cookies. But rest assured, by the time you read this, the cookies will be gone!

Reference:

Schwartz, C.W. & Schwartz, E.R. (2001). *The Wild Mammals of Missouri*. Columbia: University of Missouri Press. ❧

LREC Announcements

December 29

Monthly Water Quality Sampling

12:30pm, meet at the Glass House.

Questions? Contact Danelle Haake at 314-961-4410 or danelle@litzsinger.org.

Local Events

December and January

Green Teacher Webinars

Attend free webinars; topics include outdoor teaching mistakes and using nature journals. Learn more and register at <http://www.greenteacher.com/webinars>.

December 1–31

Snow in the Tropics

9am–4pm, Tuesday–Sunday (except Christmas Day) at the Sophia M. Sachs Butterfly House. Escape winter in the tropical conservatory surrounded by Paper Kite butterflies. Learn more at <http://www.butterflyhouse.org>.

December 6

River des Peres Watershed Coalition Annual Meeting

5:30pm cocktails; 6pm program at Schlafly Bottleworks in Maplewood. Key speaker: Karla Wilson of the Deer Creek Watershed Improvement Project.

December 14

Screening and Panel Discussion

2:30pm at Missouri History Museum. Watch *American Teacher: The Documentary* then participate in a panel discussion with local educators. More information and registration at <http://www.mohistory.org/node/6668>.

December 17

Regal Eagles

1–2:30pm at Columbia Bottom Conservation Area. All ages. Learn about bald eagles: adaptations, decline and recovery, and best places to see them. Call 314-877-6014 for reservations.

WHAT IS A VOLUNTEER?

by Martha M. Schermann

Vibrant
Outstanding
Loving
Understanding
Nurturing
Teacher
Energetic
Educator
Resourceful

