# Litzsinger Road Ecology Center

## COMMUNITY NEWSLETTER

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March 2012

### in this issue



*Volunteer Educator Sarah Berglund and visiting students study nature up close at Litzsinger Road Ecology Center. Read more about the importance of familiarity with local flora and fauna on page 2. Photo by Eddie Jones.*

# Hills and Valleys

*by Bob Coulter*

Evolutionary biologist David Sloan Wilson has been leading the Neighborhood Project in his hometown of Binghamton, New York for the past several years. A major focus for the work is to use principles of evolution to guide community change, or as he calls it, "using evolution to improve my city, one block at a time." One part of his research has been to survey high school students about a range of pro-social attitudes (helping others, telling the truth even when it's not easy, and the like). As you might expect, these vary by neighborhood and are associated with other neighborhood characteristics such as people's willingness to help others and to decorate their yards for holidays.

What I found intriguing was how his data shows that when a student moves within the city (thus giving Wilson data from two points in time), kids quickly take on the attitudes of that new area—for better or worse. What does that mean for us? All of the community improvements you are taking on through your projects, and all the messages you give daily about kids having a role to play in building up the community permeate the culture, building what Wilson calls "hills" of civic capacity compared to the "valleys" of low interest and apathy. Thank you for giving kids the message that they can make a difference. We all benefit from your efforts.

# Are They Waiting for Us?

*by Eddie Jones*

> *That an average citizen can recognize one thousand brand names and logos but fewer than ten local plants is not a good sign."*
>
> —Paul Hawken, author of *The Ecology of Commerce*

Back in the day, biologists recognized living things. They knew what organisms looked like, how they behaved, and where they lived. Not so much today. Now cutting-edge biology busies itself with studying organisms on the molecular and cellular level—organisms that the biologists may know little about as a whole. As one scientist has put it: "How can you do a study of forests without knowing the trees?"

*Volunteer Educator Denise Perry and students investigate LREC plants. Photo by Eddie Jones.*

About a decade ago, Professor Stewart Evans of Newcastle University asked school children, ages 7–16, to identify common birds in their neighborhood. They did not do so well. According to Evans, "Paradoxically, we seem to be producing a public that is environmentally illiterate at a time when environmental issues, like global warming and conserving the earth's biodiversity, figure high on the regional, national, and international agenda. It is unrealistic to expect people to care for the local environment if they are unaware of the organisms that live in it." [1]

We are fairly confident—from our personal experience and observations—that children are intrinsically attracted to the natural world, and that encounters with the natural world prompt wonder and astonishment in them. However, many children (most?) are profoundly unfamiliar with the world of nature around them.

Kids are more likely to readily identify endangered species from far off places such as polar bears, pandas, and tigers than the common creatures that live in their own area. Exotic species are exciting and charismatic. But, local species have one great benefit the exotic ones lack—they are *local*. We can observe and study them for ourselves.

As I read a recent article on the current status of taxonomy (the science of identifying, describing, and naming living things), the question I used as the title of this article came to mind. Are the children waiting for us, the adults

See **Taxonomy**, page 3

> *Children haven't changed. The sense of wonder is no different in the modern child…When I take my students out onto a mud flat—icky, smelly, sticky mud—and they dig in the mud I just watch their faces and their sense of discovery [as they find] these beautiful creatures that are living here.*
>
> *"The world has so much to teach us and it's not through 50 other media in between. It's being out there to touch it yourself."* [2]
>
> —Verena Tunnicliffe, University of Victoria

# Glass House Quiz: Insects in Winter

*by Danelle Haake and Deanna English*

Believe it or not, this is a great time of year to observe insects…well, evidence of insects. When the leaves are gone and the distraction of plant blooms are missing, the insect world often becomes more evident. What do these little critters do in the winter, and what signs can we find that they are still around?

1. **What are some strategies insects use to survive winter?**
   a) Migrate to a warmer climate.
   b) Enter dormancy and use antifreeze to keep from freezing.
   c) Live communally and stay active.
   d) Both a and b.
   e) All of the above.

2. **Insects use galls to help protect their young over the winter. Which type of plant hosts more types of gall makers than any other?**
   a) Goldenrod.
   b) Oak trees.
   c) Maple trees.
   d) Prairie grasses.

See **Quiz**, page 4

From **Taxonomy**, page 2

in their lives, to introduce them to their natural surroundings? And are we, the adults, equipped to do that? How would you do at identifying the birds that live in our neighborhood? Or the plants and trees you pass? Our young people are waiting for us to go outside and do some taxonomy.

[1] Newcastle University. "Future of the environment at risk from 'armchair biologists', experts warn" [Press release]. February 14, 2005. Retrieved February 29, 2012 from http://www.ncl.ac.uk/press.office/press.release/item/1113470307.

[2] Spears, Tom. "Taxing Times for Taxonomy." *The Ottawa Citizen*. January 21, 2012. Retrieved February 29, 2012 from http://www.ottawacitizen.com/technology/Taxing+times+taxonomy/6030154/story.html.

**SHAMROCK**
*by Martha M. Schermann*

**S**tudents
**H**aving
**A**wesome
**M**emories
**R**egarding
**O**utdoor
**C**urricular
**K**nowledge

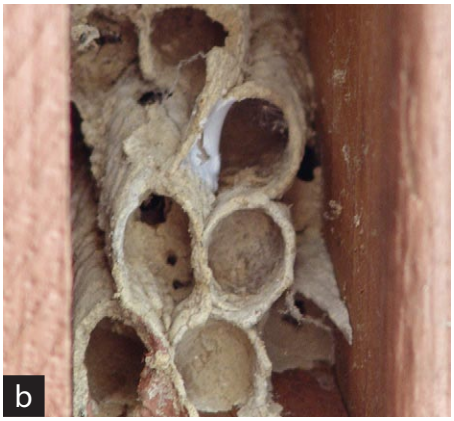
*Eleven white-tailed deer graze in the recently-burned north prairie. Photo taken February 17 by Danelle Haake.*

From **Quiz**, page 3

Match the insect listed below to the image that shows the evidence of its overwintering strategy.

3. Ants
4. Bark beetles
5. Praying mantis
6. Mud dauber
7. Hornet
8. Small flies
9. Polyphemus moth
10. Paper wasp
11. Wasp


a


b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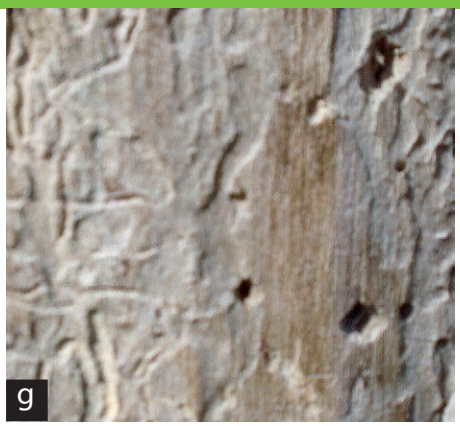
e


f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i

See **Quiz**, page 5

From **Quiz**, page 4

Answers:

1. **e) All of the above.** Insects use several strategies to survive. They migrate horizontally (away from here like monarchs), vertically (into the ground), or selectively (under bark). They go dormant as eggs, larvae, and pupae, or they may be found in mud, in galls, and in the ground. Some develop an antifreeze to keep themselves from freezing. They live communally (honey bees, ants, and termites), and many stay active.
2. **b) Oak trees.** Around 1500 North American galls have been discovered so far. Of those, 800 have been found on oaks.
3. **f) Ants.** Ants are one of the few social insects, which includes honey bees and termites. Ants hibernate in clusters either underground or if they are carpenter ants, deep in a dead tree.
4. **g) Bark beetle tunnels.** Bark beetles overwinter as larvae, pupae, or adults under the surface of tree bark. Bark beetles have many predators, especially woodpeckers who feed on them in the winter.
5. **i) Praying mantis case.** This foamy-looking case holds hundreds of eggs developing into young praying mantises that will hatch in the spring.
6. **b) Mud dauber nest.** The female mud dauber builds the nests, stuffs them full of paralyzed insects, lays eggs, and seals the tubes. The young larvae feed on the paralyzed insects over the winter.
7. **e) Hornet nest.** This hornet's nest was home last year. Now the queen is spending the winter underground. In the spring, she will emerge to start a new nest and lay more eggs. She will feed and raise them until they can take over these tasks, and she can focus on egg-laying.
8. **a) Small flies/stem gall.** A small female fly (*Eurosta solidagini*) lays her eggs in the stems of goldenrod in May or June. When an egg hatches, the larva burrows into the stem prompting the plant to form a gall around it. The larva overwinters in the gall.
9. **h) Polyphemus moth cocoon.** The cocoons are usually made from a leaf of a food plant wrapped in an outer layer of silk. If the female moth lays her eggs later in the summer or fall the larva will overwinter in the cocoon.
10. **d) Paper wasp.** Male and females mate in the fall. They both go into hibernation, but only the female (queen) survives the winter and, on a warm spring day, emerges to find a suitable home to build her nest and start a new colony.
11. **c) Wasp/oak gall.** Most oak galls are formed by a family of gallwasps called Cynipidae. The galls can be seen on both leaves and stems. Eggs are laid in the plant, the plant forms a gall around the eggs, and, after hatching, the gallwasp larva draw nourishment from the gall. Other creatures may join the larva in the gall: living commensally with or parasitically on the larva. Galls are fun to cut open—you never know what you will find inside.

*All photos by Deanna English and Danelle Haake.*

*Resources:*

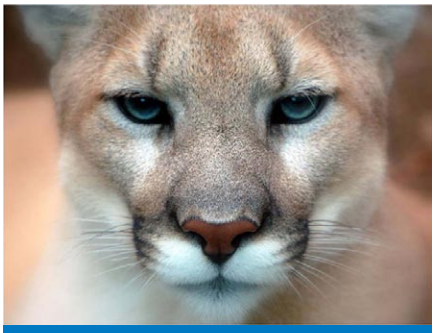
Halfpenny, James. Ozanne, Roy. *Winter: An Ecological Handbook*. Boulder: Johnson Books, 1989.

Heitzman, Richard. *Butterflies and Moths of Missouri*. Jefferson City: Missouri Department of Conservation.

Stokes, Donald. *Nature in Winter*. New York: Little Brown and Company, 1976.

# Carnivore Lectures

***Featuring James Halfpenny, Ph.D., Carnivore Ecologist, Animal Tracker, Educator, and Author***



*Cougar* (Puma concolor)*. Photo courtesy Missouri Department of Conservation.*

Free lectures with book signings; registration not required. More info at http://academyofsciencestl.org/events or call 314-516-7250.

**Cougars in Missouri!**
*Friday, March 23, 2012; 7–8:30pm; at Powder Valley Nature Center, Kirkwood, MO*
Secretive and elusive, cougars stir our imagination, curiosity, and fear. Dr. James Halfpenny covers cougar ecology, lifestyle, and past encounters with humans. Learn more about these amazing cats and how they have taken up residence in many states from which they were extirpated, including the "Show Me State."

**Yellowstone Wolves: Restoration, Science, Management, and the Future**
*Monday, March 26, 2012; 7–8:30pm; at Belleville East High School, Belleville, IL*
Wolf management has changed over the years, and the recent delisting has brought new challenges. Information about wolf behavior, ecological relationships, and management alternatives, as well as Dr. Halfpenny's personal encounters, provide an intimate look at these fascinating creatures.

**Bears of North America**
*Tuesday, March 27, 2012; 7:30–9pm; at the Saint Louis Zoo, St. Louis, MO*
Polar, grizzly, and black bears have made the headlines this past year as human encounters increased. Marvel at their diversity and size, learn about their lifestyles, behavior, and ecology, and contemplate the future of our ursine friends.

**Cougar Ecology, Behavior & Verification: In-depth 2-Day Workshop**
*March 24–25, 2012; 8:30pm–4:30pm at Powder Valley Nature Center, Kirkwood, MO*
*Featuring Dr. James Halfpenny & Jeff Beringer, MDC Mountain Lion Response Team*

Topics include:

- Population, biology, behavior, ecology
- Cougar/human interactions
- Cougar pet trade
- Locating tracks and signs on the trail
- Collecting quality evidence
- Identifying footprints/verifying presence
- Determining sex and size of animals
- Reading gaits; tracking stories

Cost: $125 plus $12.50 for course workbook; lunch on your own.
REGISTRATION REQUIRED: register at http://ce.umsl.edu/catalog (in the catalog search box enter keyword: *cougar*). For more information call 314-516-7250.

## LREC Announcements

*March 26*
**Stream Invertebrate Sampling**
12:30pm, meet at the barn. Questions? Email Danelle Haake at danelle@litzsinger.org or call her at 314-961-4410.

*March 29*
**Monthly Water Quality Sampling**
12:30pm, meet at the glass house. Questions? Email Danelle Haake at danelle@litzsinger.org or call her at 314-961-4410.

*March 30*
**Volunteer Enrichment: Mushroom Foray**
12–3pm, meet at the barn. Brown bag lunch from 12–12:30pm. We'll get tips on how to collect mushrooms and discuss what we might find. Learn how to do a spore print for identification purposes. RSVP to Martha at martha@litzsinger.org or 314-540-4068.

## Local Events

*March 25*
**Ladue Found: Ladue's Rural-to-Regal Transformation**
2pm at Missouri History Museum. Celebrate the city of Ladue's 75th anniversary with Charlene Bry, author of *Ladue Found*. This lecture and book signing is free and open to the public. Learn more at http://www.mohistory.org/node/6867.

*March 31*
**No Child Left Inside Conference**
9am–4pm at UMSL. Experience best practices, learn about current research, connect with local resources, and much more. Download a flyer at http://www.litzsinger.org/2012_No_Child.pdf.