



## Confluence and Great Rivers Chapters Newsletter

Volume No. 02 Issue No. 03 Date: August, 2008

### Missouri Master Naturalists Confluence Chapter President



Jerry Lindhorst

The Confluence Chapter has a new President, Jerry Lindhorst. He is working hard to make our chapter productive in accordance with our mission; along with making sure we have lots of fun while doing our projects. Our thanks to Scott Barnes for doing a wonderful job and wishing him the best.

### Butterfly Walk with NABA By Anita Merrigan

The North America Butterfly Association (NABA) outings are great fun and extremely educational. I always enjoyed butterflies and photographed them whenever the opportunity presented itself, but did not know very much about them. I could identify a monarch and tiger swallowtail and that was about the extent of my knowledge. All that changed after the NABA outing on June 14 at Marais Temp Clair Conservation Area piqued my interest in the subject.

I did not know what to expect on a Butterfly Walk, but with camera, binoculars and lunch in tow I proceeded with the group of three NABA members from the parking lot into the open fields of the Marais Temp Clair. I soon learned that butterflies like warm, sunny weather, and that is not the kind of morning we were having. However, the sun soon made an appearance, and shortly thereafter, so did the butterflies.

Scott Marshall was the group leader. He rattled off the names of the butterflies like a pro as we came upon them in the fields, and then would further identify them as male or female. His incredible breadth of knowledge was bolstered by the butterfly field guide he consulted whenever there was any doubt about the butterfly markings. The group paid particular attention to muddy areas, gazing at them closely for any butterfly that was standing still.

All three NABA members had the remarkable ability to pick out butterflies in the landscape quickly. Before long it seemed that butterflies of every kind were appearing everywhere, and the NABA members were busy identifying them, as I would hear, "Oh, there's a buckeye...is that a Clouded Sulphur on the right?" One of the members counted and recorded every butterfly seen.

The primary goal of the June 14 Butterfly Walk was to find the Gray Copper. It had not been seen in the St. Charles county area since the flood of 1993. According to Marshall, the Gray Copper is "casual" to the area, which is a classification that is rarer than rare.

Not long into the Walk we were rewarded with a sighting of the Gray Copper! It was a small butterfly, and was at a stand-still in a thicket of poison ivy. All four Walkers got to have a long and intimate look at the butterfly, and I managed to get some photographs. My photographs appeared in the July, 2008 issue of the *Flutterby News*.

Apparently the flood of 1993 destroyed the habitat of the Gray Copper, so it is possible that it was again destroyed by the flooding that occurred shortly after our June 14 Walk. Hopefully it will not take another 15 years for the Gray Copper to return.

After everyone got a good look and photographs of the Gray Copper, we proceeded on to discover 14 other types of butterflies, a variety of birds and some interesting dragonflies. It was a fantastic Walk with a friendly and inviting group. Don't be shy to join in as NABA frequently needs groups of volunteers to man Butterfly Counts in addition to Walks.

For more information about NABA and its mission, visit the St. Louis Chapter website at <http://www.naba.org/chapters/nabas/stlouis.htm>

### Master Naturalists Support LaBarque Creek Snail Survey By Sandy Laurie

A little bit of heaven! That's a good definition of LaBarque Creek Watershed. On May 19, seven Master Naturalists (and Interns) met with Bob Coffing to hike through this incredibly beautiful area! Bob brought out his topo map and gave us an interesting overview of the area including the history, property owners, importance of the watershed, and some information about the flora and fauna. As the website (<http://labarque.org>) states, "The LaBarque Creek Watershed, with its moist sandstone drainages, sandstone glades and woodlands, provides a most unusual habitat for many plants."



Our hike, on this cloudy day, took us across dramatic sandstone geology. As we descended into the lush canyon many of the group enjoyed calling out the different plants they spotted. The vibrant green of the plants and trees were a lovely backdrop to wildflowers that were springing out. The peaceful stream, which supports 44 species of fish, flowed gently by us. A highlight of the hike was the breathtaking waterfall, surrounded by the moist environment with ferns and algae. The rock formations were splendid. A special treat was the Copperhead Snake basking near the rocks. Although we took a good look from a distance, the snake seemed undisturbed by our presence in his home.



A fine misty rain dusted us before we returned to our cars. Everyone had a wonderful time. A special "thank you" goes to Bob for sharing this treasure with us. I hope you will be able to enjoy this treasure sometime, perhaps through volunteering your time to one of their projects, such as the snail survey!

### **Stream Team Activity** *By Cliff Parmer*

On June 28 newly created Stream Team 3612, composed of members of the Confluence Chapter, met to count bugs in Femme Osage Creek. Bug counting, more formally known as a macroinvertebrate survey, is a way of establishing a rough measure of water quality and it's a great way to meet the critters that live in our streams. The survey involves collecting the critters in a net and identifying them. By collecting and identifying the critters, we are able to establish the types and diversity of life in the stream which is an indicator of water quality since different macroinvertebrate families require different levels of water quality. Although Femme Osage Creek is a rather slow-moving stream, the water quality indicated by our survey is on the borderline between "Good" and "Fair."

An inquiry following the Introduction to Water Quality Monitoring class in early April revealed that there was no active monitoring of the stream, although it had been monitored in the past. We were able to identify the previous monitoring sites and gain access to two of the three original locations. Hopefully this will provide some continuity for the data at these two sites over a longer period.



We were fortunate to have a good day for our activity and lots of willing hands. Sarah and Larry Berglund, Jerry Lindhorst, Leslie Limberg, Ann Finklang and Cliff Parmer were on hand. Of the group, the Berlunds, Leslie and Cliff had previously completed the Introduction to Water Quality Monitoring workshop.

Since Sarah, Larry, Jerry and Cliff are fly fishers, there was lots of discussion about the bugs and their lifecycles, and we were fortunate to have a mayfly hatch and mating dance occurring to illustrate the mayfly cycle. Our next



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outing will be in the fall and all are welcome to participate. Who knows what wonders will unfold.

### ***Capsicum annuum* 'Black Pearl'** by Chris Nigelski Submitted by Linda Kalicak



A new addition to The Plants of Merit program for 2008 is an ornamental pepper called 'Black Pearl'. *Capsicum annuum* 'Black Pearl' is grown as an annual here in St. Louis and thrives in our heat and humidity. The foliage is a glossy black, and its fruit also starts out black, but then matures to a cherry red. The fruits are edible but very hot! The best black foliage color occurs in full sun. This plant grows vigorously in an upright bushy mound up to 18" tall.

'Black Pearl' is an excellent selection for beds, borders and mixed containers.

An All America Selections Winner (AAS). For more information about The Plants of Merit program, be sure to visit: [www.plantsofmerit.org](http://www.plantsofmerit.org) Plants of outstanding quality and dependable performance for the lower Midwest.

**Common Name:** ornamental pepper  
**Zone:** 4 to 10  
**Plant Type:** Annual  
**Family:** Solanaceae

**Height:** 1 to 1.5 feet  
**Spread:** 0.75 to 1 foot  
**Bloom Time:** Flowers not showy  
**Bloom Color:** Purple  
**Sun:** Full sun  
**Water:** Medium

### **2008 Environmental Legislative Achievements** By Jerry Lindhorst

While Missouri Master Naturalists (MN) are prohibited from participating in or lobbying for or against local or state political environmental issues, as voters it is important that we keep ourselves aware of the actions of our state legislators.

Overall, one could say that environmental interests enjoyed a fairly successful legislative session in 2008 either in the passage of positive environmental concerns or defeat of negative ones. Due to newsletter space considerations, the following are only a few of the environmental issues considered by the legislature:

**Green Energy Legislation** - More than a dozen bills were filed that amended laws on everything from environmental regulations and energy efficiency to conservation procedures.

The provision of the Green Energy legislation that was passed includes the following highlights:

- The Governor's proposal establishes an annual one-week "Show Me Green Sales Tax Holiday." Beginning in 2009, Energy Star appliances will be exempt from state sales tax from April 19 through April 26. A provision was included to allow political subdivisions to opt in at their discretion.
- Language from Sen. Joan Bray's **Senate Bill 1263** requires the Department of Natural Resources to establish minimum energy efficiency standards for state buildings, based on the 2006 International Energy Conservation Code. State buildings must meet the new standards on or after July 1, 2009.
- Sen. Bray's language from **Senate Bill 1261** requires representatives from the departments of Labor and Industrial Relations, Elementary and Secondary Education, Agriculture, Economic Development, and Natural Resources to collaborate and find ways to secure grants established under the federal Energy Independence and Security Act of 2007.
- Sen. Brad Lager's language from **Senate Bill 1161** allows low-interest loans through the Linked Deposit Loan Program to be used for eligible alternative energy operations that produce and sell fuel or power from



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alternative energy sources. Alternative energy sources include solar, hydroelectric, wind, and qualified biomass.

**Electronic Waste** - Rep. Shannon Cooper and Sen. Dan Clemens were successful in inserting language to encourage recycling of outdated electronic appliances, such as computers. It calls for producers and distributors of computers and other electronic equipment to establish and maintain recycling programs so consumers have a way to recycle these products.

**Utility Legislation** - Senator Delbert Scott's legislation would have allowed electric and gas corporations to recover expenses for approved energy efficiency investments, and would have allowed the Public Service Commission to authorize such expenditures. As such, the bill would have encouraged utility companies to invest in energy efficiency measures.

Although the fundamental idea behind the bill was one which drew support from many environmentalists, there were significant concerns about the language of the bill. In the end, opposition from a variety of groups (primarily large companies that use large quantities of electricity) caused the legislation to die in committee.

**Audit Privilege** - Once again, Rep. Walt Bivins introduced Audit Privilege legislation allowing companies to self-report pollution spills and other environmental "incidents." In return, information about the incident would be kept secret, and the company would receive limited immunity from prosecution for the spill. He was not able to get the bill out of committee.

**Sand and Gravel Mining** - Rep. Tom Loehner once again introduced sand and gravel legislation, which would loosen already weak regulations regarding the removal of gravel from Missouri's streams. As with Audit Privilege, the bill this year reflected significant input from environmental groups. The bill did not reach the floor for debate.

### CAFOs

There's good and bad news concerning legislation involving CAFOs (Confined Animal Feeding Operations, also known as "factory farms").

### Good News:

In past years, this issue has been a major headache for environmental lobbyists and legislators. Factory farms have major waste disposal problems: a medium-sized CAFO can generate as much waste as a small city, but the waste-disposal process essentially comes down to spreading the waste on neighboring farm fields.

Previous years have seen significant efforts by the corporate agriculture lobby to weaken laws that are already too weak. These efforts have been beaten back

in the past by a strong coalition of environmentalists, small farmers, and residents of rural communities.

### Bad News:

Unfortunately, anti-CAFO legislation still does not get much of a hearing in the legislature. Rep. Jeff Harris introduced several bills regarding construction permits for concentrated animal feeding operations. One such bill would prohibit construction of factory farms within a three-mile buffer zone surrounding state parks. MVC has supported Harris' bills; however, no action was taken on them this year.

### State Parks

This is the first year in a long time that the state has had funding for capital improvements. **House Bill 2016** and **House Bill 2023** included funding for State Parks and the Department of Conservation.

For State Parks, \$6,195,000 was appropriated for land acquisitions and for renovation, construction and improvements at State Parks, and for maintenance of historic properties. For Conservation, \$36 million was appropriated for stream access acquisition and development; lake site acquisition and development; and land acquisition for upland wildlife, state forests, wetlands, and natural areas. In HB 2023, there was another \$10 million appropriated from the Conservation Commission Fund for major improvements and repairs to buildings, roads, hatcheries, and other departmental structures, as well as for soil conservation activities and erosion control on department land.

### Confluence and Great River Chapter members at the 2008 Missouri Naturalist Conference



2008 MO Master Naturalist State Conference

### Karst

Presented by Eric Hertzler of Nixa, Missouri



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Compiled by Ann Earley

### 2008 MO Master Naturalist State Conference

#### Weather

Presented by Drew Albert, Senior Meteorologist  
with the National Weather Service in Springfield,  
Missouri

Compiled by Ann Earley

There are about 6,000 caves in Missouri but only about 15 people who map them. Springs, sinkholes, open joints, and caves are all karst features. Karst is a landscape type developed in and on soluble bedrock (found in about 60% of Missouri with underlying limestone or dolomite) where groundwater passed through and dissolved out openings. Karst is generally found south of I-70 in Missouri. Dolomite leaves behind chert or flint. Dolomite is limestone with a certain percentage of manganese. The walls and ceilings of local caves are made up of fossils, mainly crinoid stems.

In Greene County there are about 300-350 caves, the fourth most in the state, many shallow and wet. At the Watershed Center, Sanders Spring is a recharge area that contributes water to the spring; these areas are typically large and move sediment. There must be 1/5 of an inch of width for water movement to occur underground. Sinkholes, another type of karst feature, can form suddenly with an underground collapse. Water coming out of a sinkhole is clear because underground there is no sunlight, meaning it is a low energy habitat and less lives in the water below ground, making the water clear. Bats, which are found in some caves, use barometric pressure to tell them when to cease hibernating, and when the weather is clear versus rainy. In Missouri, many caves are only about 100 feet long. Tumbling Creek Cave, site of one of the conference field trips, has about 30,000 gray bats and is the most biodiverse cave west of the Mississippi River. The grotto salamander is at the top of the food chain there; the endangered cave snail is also found there. The bristly cave crayfish lives 50-150 years and is white in color; the Ozark cavefish is federally endangered and is also found in this part of Missouri. Cave dwellers like the grotto salamander and cave bats have a very low metabolic rate and can live a long time, 30 years or longer.

The open joint is a slit-like opening in the ground and is another karst feature viewed during the session at Watershed. A cave is defined as a natural opening in bedrock where a human can enter for a distance, and is also a place where artificial light is needed. In Tennessee, which has 8,000 caves, a cave must be fifty feet in length.

Sterile Cave at Watershed is about seventy feet long and was mapped in 1970. A cave map shows where a cave goes and what is there, and is the first step in cave management. Several examples of cave maps were shared with the group. The circles on the maps indicate the ceiling heights. After viewing the cave maps and learning more about caves, springs, sinkholes, and open joints, the group gained a much greater appreciation for local karst features.

The National Weather Service is part of the National Oceanic and Atmospheric Administration that is in turn part of the federal Department of Commerce. In terms of cities with the most weather variety, Springfield ranks first, and Columbia ranks fifth. The central U.S. has the greatest variety of weather, as all weather masses or fronts meet in the central U.S., leading to clashes of air masses. The Midwest experienced the Dust Bowl in the 1930s, drought in the 1950s, periodic droughts in the 1980s, and the 1993 floods. There has been much change in weather from 2003-08. Ice storms in January 2007 and also during the winter of 2007-08 caused lots of tree damage. There were many tornadoes during May 2003, a major freeze in April 2007, and lots of flooding in March 2008. The economic impact of the weather is important. Missouri is on the western edge of the humid temperate region and has four distinct seasons. The most rain in Missouri occurs in the Bootheel in southeastern Missouri.

Missouri has various climate regimes: prairie in the northern half, the Ozarks in the southwest, and the Mississippi lowlands in the southeast. Weather can greatly affect the natural environment; influences on habitat and plant growth patterns include tornadoes, squall lines, hail, ice storms/heavy snow or sleet, drought, flooding, excessive heat, late spring freezes, low humidity, and windy conditions. Climate change has an impact on longer-term weather patterns. There is some question as to whether "Tornado Alley" is shifting east. A tornado can affect one point in Missouri once in every 5,000 years, on average. The peak severe weather time here is April-May, then again in November-December for tornadoes. May-June has the most wind events (squall lines). August-September is a quieter time when the jet stream is more to the north, so the weather is in more of a lull here. The average tornado path is 800 feet wide and five miles long, with a maximum of one mile wide and 200 miles long. An average tornado could affect 480 acres. An average tornado year in Missouri could affect 15,000 acres, assuming an average of 30 tornadoes/year. A tornado may take out older and weaker trees and open the tree canopy, allowing new vegetation growth; it may

also cause loss of life or nesting habitat for some creatures but can also create new habitat. A tornado may cause high fuel loads, leading to potential wildfire problems.



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Squall lines of thunderstorms are common in spring and can contain a “bow echo” that can indicate wind damage at the surface. Thunderstorms or high wind blowdowns can create small forest woodland gap patches that may disturb 1% of the landscape per year. The Fujita or “F” scale has been replaced by the “EF” scale; both have categories of 0-5. Category one events are unusual, even in Missouri. In Missouri, squall lines often produce more damage than tornadoes.

Severe ice storms normally occur every 20-25 years in Missouri, but there have been three in southern Missouri in just the last two years. Warmer air over colder air causes freezing rain. Tree damage from ice storms can create more sun exposure for understory growth, as well as increased fuel load for wildfires. Cavity nesting birds and mammals can be affected by ice storms; great horned owls may use old red-tailed hawk nests, for example. Weakened trees may invite more insects and create new habitats, producing a patchy mosaic of habitat types resulting from the storm damage. Woodpeckers, chickadees, and nuthatches may benefit from this, and owls and hawks may find better perches or nesting sites where trees broke off. No forest is perfect. More cover on the forest floor may create habitat for reptiles, amphibians, small mammals, bats and birds (the latter two may benefit from more loose bark). Hail can also have an impact on the natural world; in October 1983, hail killed sixteen prairie chickens at Niawathe Prairie. The largest hailstone recorded was seven inches in diameter.

Flooding, lightning, drought, and heat can contribute to plant and tree mortality. Lightning-caused fires are rare in Missouri. By compacting leaf litter, snow creates wet, mat-like conditions, contributing to fire suppression. In Missouri, Warsaw has experienced the most temperature extremes: -40 in 1905, and 118 degrees in July 1954. The troposphere is where “weather” occurs. Weather balloon data give the Weather Service information on temperature, dewpoint, and winds aloft; balloons are launched at 5 a.m. and 5 p.m. daily. Birds take advantage of weather changes for their migrations, waiting until a strong cold front passes and northerly winds are blowing, for instance. Hibernation and torpor are other ways animals deal with the weather.

At the end of the session, the group went outside to see a demonstration of how actual weather instruments are used to collect official weather data, and came away with a greater understanding of the impact weather has on the natural world.

### ?? Did you know ??

About Chiggers:

1. Chiggers are not true insects; they're immature mites. As larvae, they attach by inserting tiny mouthparts into the skin, usually at the hair follicle.
2. They don't burrow under the skin or suck blood. They eat skin cells by dissolving them with digestive enzymes.
3. Chiggers are cousins of ticks and are found worldwide. Most evolved to feed on reptiles and birds. The SE Asian variety evolved to feed on mammals, and can thus transmit disease to humans.
4. On a warm day it takes only 15 minutes for a chigger to get from your shoe to your waistline. Suggestions are to regularly rub your skin when on a walk outdoors, given they are fragile and brush off easily.
5. The National Chigger Collection in Hawaii displays 25,000 specimens of 1800 species of chiggers.

### Mark your Calendars for these Upcoming Events

**August 12 Tuesday** Confluence Chapter meeting  
Busch Wildlife Conservation Area  
Guest Speaker - Jim Hull, Director DNR Dept Solid Waste Management 7 – 8 pm

**August 15 - 16 - Friday/Saturday**  
Missouri Bird Conservation Initiative Annual Conference [www.mobci.org](http://www.mobci.org)

**August 21 – Thursday** 1-4 PM  
Shaw Nature Reserve Prairie Plant School  
Prairie & Savanna Reconstruction:  
Site Prep & Seed Collection  
\$12./ \$8. members 636-451-3512 reservations

**August 21 – Thursday** 6-8:30 pm  
Wildflower Identification & Ecology with James Trager Shaw Nature Reserve  
\$18./\$15. members 636-451-3512 reservations

**August 23 – 9 am - 3 pm** Volunteers still needed for the Race for the Rivers MMN Booth in St. Charles' Frontier Park Contact Leslie 636-398-8809



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**September 5<sup>th</sup> Friday** from 4-8 p.m. Shaw Nature Reserve will be hosting an "Open Garden" event, in the Whitmire Wildflower Garden. The event will include garden walks, native plant sales, and two presentations on gardening with native plants. Reserve to RSVP... 636-451-3512 ext. 6075 \$5 admission (\$3 for members)

**September 20 – Saturday** 10am – 4pm  
Prairie Day Shaw Nature Reserve  
cosponsored by MDC  
Music, crafts, bison burgers, exhibits  
[www.shawnature.org](http://www.shawnature.org)

**September 27 - 28 - Sat & Sun**  
Green Homes and Renewable Energy Festival  
Grandel Square in St. Louis  
Sponsored by the Mo Coalition for the  
Environment & Earthways Center  
[www.moenviron.org](http://www.moenviron.org)

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