



Confluence Chapter Newsletter

Volume No. 01 Issue No. 03 Date: August, 2007

From the desk of our Confluence Chapter President, Connie McCormack

Fellow Master Naturalists:

What an exciting time we are in right now especially as Master Naturalists. There are so many things to do, to learn, to see and then decide if we want to be a part of whatever that choice is.

For example: Race for the Rivers - should we just help by handing out T-shirts, be at our booth or hand out water bottles and just talk to people – or should we get into our kayaks or canoes and see if we can paddle that far. I personally haven't made up my mind yet which it will be – work or paddle. Should I choose work my first choice would be handing out T-shirts so I can talk to people.

Summer is speeding by and will be turning quickly into fall so let's get out there and do those summer things before they become fall things.

Enjoy!

Program Update

Boathouse Habitat project has been turned over to the Boathouse in a small ceremony on Wednesday, June 27th.



Master Naturalists turning over the Habitat

The Master Naturalists will oversee the continuum of maintenance for the Habitat and be available for any support, coordination and/or volunteering that it may need. If you're driving down South Main Street in St. Charles, take a quick detour east to Riverside Drive. You will feast your eyes on the newly completed Missouri Master Naturalists' drive-by rain garden project on the river front. It's part of the Lewis & Clark Boathouse and Nature Center - just to the north of it. Sandwiched between an asphalt parking lot, a cement driveway, and a rock and steel building, this 30X90 foot space was the dumping site for leftover building materials. The site also contained an aluminum flag pole, giant storms drains, electrical conduits, and sewage pipes, all under code of various city departments.

Beginning in March 2006, the Confluence Chapter crossed their fingers and rolled up their sleeves, in true "can-do" style, not really knowing the climate. And with soil that kept changing

from moist and wet, to cement-like and sandy, it was pretty much an experimental guessing game. However, over the next year and a half, in face of flash storms, drought, and recent river flooding, members turned an ugly duckling into a swan. In fact, the beautiful habitat has brought together 24 teachers, who in a 4-day conference learned to use the site as a curriculum for outdoor education and field trips!



Teachers' Conference at the Boathouse

Volunteer Opportunity Race for the Rivers by Joan Twillman

Want to be involved in a canoe and kayak race without ever getting wet? Want a volunteer opportunity that is fun, worthwhile, and will help publicize the Master Naturalist program? Greenway Network, a local nonprofit group, is hosting two river races and a festival and they need our help. If you are looking for a way to fill in the rest of your volunteer hours, this is your chance; grab a friend and sign up! There are three events, being held the weekend of August 25th and 26th; the purpose of each is to raise awareness of our wonderful water resources and to raise funds for clean water restoration, education, and recreation.

The Race for the Rivers starts in Washington, Mo and contestants will travel to Frontier Park on Saturday before setting out for the finish line at Columbia Bottoms on Sunday. The second 'get your feet wet' event is a Weldon Springs to Frontier Park canoe and kayak event on Saturday. Finally there will be a Festival in Frontier Park from noon until 6 p.m. on Saturday. Our organization has been offered the opportunity to set up a booth on native plants at this festival and Leslie Limberg will coordinate our efforts to publicize the Master Naturalist program as well as provide information on the advantages of "growing native."

You can join the fun by manning our booth or by helping to provide another service at the festival. People are needed to sell bottled water, help with the environmental art booth, and demonstrate the stream table, to name a few. If you live near Washington, Mo, you may want to help prepare for the start of the race there. Would you enjoy watching a river checkpoint for the paddlers or handing out t-shirts? Maybe the pull-out site at Frontier Park is where you want to spend your time. There is a job that is sure to interest you and you decide whether you want to work for two hours or two days. For a more complete list of



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the opportunities available or to sign up for a job of your choice, email Joan Twillman at rtwillman@sbcglobal.net or call Larry Ruff at 636-734-6330. Be sure to include your t-shirt size! Last, but possibly the most fun option - consider entering one of the races. More information and registration forms are available at <http://www.racefortherivers.org/>

Stream Team Project by Cindy Cross

I can't think of anything more peaceful than spending a day on the river. My husband and I have been camping and floating for over 30 years and enjoying every minute on Missouri's streams. I recently turned this love into another pleasant (and ecologically responsible) activity...I joined a Stream Team.

Like minded folks who treasure the gifts our planet has provided have been picking up trash, restoring Riparian Zones and monitoring the quality of the water in streams all over the state for over twenty years through the Stream Team Program. The Missouri Department of Conservation, Missouri Department of Natural Resources and the Conservation Federation of Missouri work together to sponsor the program and provide volunteer training through the Water Quality Monitoring workshops. Once you receive the training all it takes to form a stream team is desire to be a good steward and a local stream you want to protect or restore. As always volunteers are needed! Contact Information: 573.751.4115
streamteam@mail.conservation.state.mo.us
<http://www.mostreamteam.org>

The Great Invertebrates Compiled by Martin Eiblmaier

The annual Missouri Master Naturalists afternoon session on the great invertebrates was held at the Devil's Ice Box Cave parking lot in Rock Bridge Memorial State Park. It primarily focused on insects, but other creatures like spiders were included to contrast with the characteristics of the six-legged, winged arthropods. The session started with a short introduction on insects by session leader Celeste Mazzacano from the Boone's Lick chapter. Topics included the physical characteristics of insects, as well as their diversity and importance in more or less every ecosystem on planet Earth. The focus then shifted on common collecting and sampling methods for insects, both terrestrial and aquatic. In the last part of the session, the Master Naturalists were let loose on the surrounding woodlands with sweep nets and butterfly nets, and finally, the catch of the day was identified and discussed. Among the creatures captured were several butterflies and moths, a wolf spider, a dragonfly, a weevil, and several other beetles. The most interesting insects belonged to two orders that are not as common and well-known: we captured and identified a lacewing (order Neuroptera), and a scorpionfly (order Mecoptera).

Know the Dark Compiled by Martin Eiblmaier

The evening session of the annual Missouri Master Naturalists conference started at dusk at the Rock Bridge Memorial State Park Ranger Station and should lead participants into the

adjacent forest, while darkness would fall around them. We started at the picnic shelter, and state park ranger Kathryn DiFoxfire introduced several creatures who are active at night, including the great horned owl, and several bat species found in the park. The northern night sky was also discussed, and Master Naturalists learned how to read a small, portable star chart. When the night walk into the woods began, the program started to be highly interactive! Each participant was given a small box containing little items that make rattling noises, like pins or rice grains. There were two boxes of each kind, and everybody had to find the Master Naturalist holding the corresponding box by shaking it close to each other's ears. That was a very hard task, considering about twenty sources of sound that simultaneously echo through the twilight. The exercise was repeated with smells, and then it was dark enough to extensively test another sense: our vision. Activities included accommodation of the eye, and sparks produced by quartz crystals, among others. This program is highly suitable for kids of all ages, and a complete lesson plan was offered to any interested Master Naturalist.

Session on Life History and Habitat of Herptiles Compiled by Ann Earley

Eighteen Master Naturalist Conference attendees joined State Herpetologist Jeff Briggler for an all-day field trip to the 2,654-acre Danville Conservation Area. At this conservation area, you can see 20 different types of reptiles and amphibians in the spring, but this number dwindles to four or five as the summer heats up. Timber rattlesnakes are found on the southern part of the property. The glades provide habitat for species like striped scorpions, tarantulas, and black widow spiders. MDC often uses the term "wildlife watering area" to denote a fishless pond which can be used for amphibian breeding purposes. During the field trip, participants saw many different herptile and other wildlife species, which are noted in italics below.

The *Cricket Frog* has a triangle behind its head between the eyes and is the smallest frog in Missouri. This species may have various colors, with white bellies. Males have black throats during breeding season. This frog is active during both day and nighttime hours and in terms of habitat, likes mud banks with not a lot of vegetation. The peak breeding season is mid-May. In showing the group this frog, Jeff suggested that the best way to hold a frog is by its front leg. He also noted that the common "ribbett" frog call heard in movies is that of the Pacific tree frog found in California.

The *Green Frog* is the third largest frog in Missouri (following the bullfrog and the crayfish frog) and has a call that sounds like a banjo string being plucked. This frog has a fold that runs halfway down its back then stops, which differentiates it from the bullfrog, which has no ridge. *Spotted salamander eggs* were found by the group. These eggs hatch in 4-6 weeks. Gills are then reabsorbed, and the young leave the water and go into the forest in late July or August. Ninety percent of these creatures return to the same pond to breed. This salamander can live for 18-20 years. Fish will wipe out a population in 10-12 years. Less than one percent of the salamanders will survive to adulthood. About 90% will live

within 200 meters of their original pond. Spotted salamanders need habitat with some brush, such as small cedars or branches. Salamander larvae eat crickets, and the adults eat worms and crickets. Predators of spotted salamanders include birds, snakes, owls, raccoons, otters, mink, and wild turkey. There is variation in spotted salamanders found on the north and south sides of Interstate 70. The tiger and smallmouth salamanders are prairie species. Spotted, ringed, and marbled salamanders are often found together in similar habitats.

A female and male *Central Newt* were spotted. This is the only type of newt found in Missouri. Males have broad tail fins early in life. Newts are salamanders, with different life stages than other salamanders. The Central Newt will eat spotted salamanders. Like spring peepers, they lay eggs singly on the underside of leaves. Unlike salamanders, Central Newts have no gills.

The *Gray Tree Frog* was also seen. There are two types of this frog in Missouri, the Cope's and the Eastern. These frogs, along with Wood Frogs and the Western Chorus Frog, can freeze in winter temperatures then thaw themselves out. A pond may hold 8-12 different species of frogs, depending on the time of year.

The male *Fence Lizard* has wavy lines on its back. These lizards lay eggs under rocks and logs in late June or July. Unlike the fence lizards, skinks guard their eggs. The Five-Lined Skink young have blue tails. Collared Lizards may be found on glades south of the Missouri River.

The group found a female *Three-Toed Box Turtle* with yellow/brown eyes, unlike the red eyes of the male turtle. The Eastern Box Turtle, found east of the Mississippi River, sometimes has four toes. Turtles are often removed from their native habitats, and 50-60% of these will die. The biggest killers of turtles are cars and winter freezing. In winter conditions, turtles will dig 6-8 inches below the surface of the ground to keep warm. Their two hinges can totally close them up. In northern and northwest Missouri, the Ornate Box Turtle is found. Raccoons prey on eggs of turtles.

The *Prairie Ringneck Snake* is usually 8-10 inches long, has a ring around its neck, and a yellow belly with a red/orange tail. The Flathead snake is the smallest snake in Missouri. Racerunners (called Whiptails in the western U.S.) are abundant on Missouri glades without Collared Lizards.

The *Striped Scorpion* is the only scorpion species native to Missouri and is found on open glades. The *Tarantula* is also found on Missouri glades.

The *Slimy Salamander* is rare north of the Missouri River. It is found in moist areas and sometimes in caves and is the most advanced in the world. This salamander will guard its eggs for three months.

A striped *Ground Skink* was also found by the group before the field trip participants concluded their visit to Danville Conservation Area and returned to Columbia with a greater

appreciation of Missouri's wide variety of reptiles and amphibians.

Session on Beginning Bird Identification Compiled by Ann Earley

The session of the annual Missouri Master Naturalists conference on Beginning Bird Identification was presented by Jean Leonatti of Columbia Audubon Society. There are four clues that can be used to identify birds: field marks (physical appearance of the bird); bird song; habitat; and bird behavior (courtship, aggressiveness, how they fly, how they hold their wings). These clues can be used to "solve the mystery" of bird identification, eliminating suspects or choices in the identification process.

Regarding field marks, some birds share physical characteristics, like red feathers. Jean suggested first looking at the bird's beak, then going from the head back through the body. The beak will help you to narrow choices in the ID process—a warbler has a thin beak like pencil lead as it gleanes insects, while the woodpecker and robin have thicker bills. Marsh birds have "stabbing" bills, and ducks have straining bills. Cardinals have thicker short bills, as they are seed eaters. Other types of birds may eat meat. Feathers are another physical field mark. The bird's face is also important; it may have an eye ring or line through the eye, variation in throat or breast color or in wing shape and color. Also, check out the legs; look at the leg length, knee location on the leg, and foot coloration. Look at all the field marks you can before running to get the field guide, Jean suggested, in case you return to find the bird has flown off while you were away.

The size of the bird is important in identification. In field guides, the stated length in inches is typically an average, usually from a museum specimen. The robin (9-11 inches in length) can be used as a benchmark for size comparisons.

Jean pointed out that binoculars can individually be focused with the right barrel alone, and she suggested training your eyes to stay on the bird, then bringing up your binoculars without blinking. It is important to practice doing this. Use a clock concept to help in locating birds in trees (comparing the bird's location to the numbers on a clock face). Jean also discussed birding field guides. The Peterson guide is good for beginners; it has arrows pointing to important characteristics of the bird. The National Geographic guide is not divided by Eastern (usually includes Missouri) and Western regions. The Sibley guide was intended as a coffee table book, but the sketches show age progression of birds, contributing to the popularity of this book, which also has migration areas on maps. A smaller version of the Sibley guide is broken down by east and west regions.

After reviewing a series of photos of Missouri birds taken by retired MDC photographer Jim Rathert, Jean discussed bird plumage. The feathers that birds are born with are replaced over time, like our own hair and skin. Molting occurs once a year. You will see more feathers lying around in the fall, as most birds molt then. Feathers do get worn out and bleached out by the sun. Some birds have a partial molt in the spring, which leads to them going in to their "breeding plumage" in the spring. Some

species have male and female plumage variation. Certain birds take years to get their adult plumage (5 years for the bald eagle to get the white head and white tail, and 3-5 years for gulls to get their adult plumage). Summer plumage is also referred to as breeding or alternate plumage, while basic plumage is the winter or nonbreeding plumage. In Missouri, there are 406 species of birds. A bird characterized as extirpated means that it lives somewhere else but no longer in Missouri, probably mainly due to habitat loss.

Bird songs also aid in identifying and locating birds. There are three types of bird vocalizations:

Breeding or territory, which is a marking call usually done by the male in spring;

Chip or call notes, a one note call that is softer and smaller, more relaxed, a kind of backyard chatter or making contact that all is well;

Alarm call that predators are approaching, a louder and more agitated type of call.

The Missouri bird call tape or CD available through MDC is organized by habitat, and you can learn calls this way by studying the cadence and notes. There is also a book and CD available at bookstores entitled "Common Birds and Their Songs." Jean recommended the Peterson Field Guide CD called "Birding by Ear" which includes commentary. She was less positive about the Stokes Bird Songs CDs which include one call after another and are less of a teaching tool. Jean noted that today many people are using an I-pod system with bird calls in the field to call in birds; this is somewhat controversial, as it could be considered a type of harassment to the bird in the wild.

At the conclusion of Jean's presentation, the Master Naturalists in attendance were anxious to get out and practice what they had learned about bird identification.

Frogging by Ear by Mary Mierkowski



Several of your Fellow Master Naturalists recently participated in the 2007 North American Amphibian Monitoring Program (NAAMP). This United States Geological Survey (USGS) has been ongoing for many years and tracks the distribution of frogs and toads. The survey protocols were unified for the entire US in 2001 to ensure consistency across all states. Data collected is entered into the NAAMP database. Over many years, population trends of frogs and toads in a given route, region, state and country can be determined. Loss of habitat, fungal disease and global warming are currently contributing to the decline in populations of amphibians.

Frogs and toads are surveyed by their breeding calls. Of the 24 species of frogs and toads in Missouri, 21 can be distinguished by their breeding call. Each species has a specific breeding

period ranging from January to July. Conditions that stimulate toads and frogs to breed are temperatures above 45 degrees and plenty of rain. The males call to attract the females who lay their eggs in the water where they are fertilized.

The USGS protocols are very specific for monitoring toads and frogs. The observers drive a 10-stop route near wetland habitat starting 30 minutes after sundown. Type of species heard calling in a five minute period are documented along with data such as cloud-cover, moon light, wind speed and temperature. A rough estimate of quantity of animals is also recorded with a scale of 1-3 where 1 is single calls and 3 is continuous overlapping calls. There are 60 such routes in Missouri and 3 runs of each route are required each year, during designated time frames. Of course, consistency of observers year after year is important to the quality of the data.

Survey observers attend a short class to learn the breeding call for each species in their region and receive a CD of the calls. In the class, similar sounding species are grouped together such as Trillers/Buzzers, Snorers and Clackers/Chucklers. To help learn the calls, descriptions are used such as "jug-o-rum" for the American Bullfrog and "raspy preep like raking your fingers up a comb" for the Western Chorus Frog.

Learning the calls can be challenging but the website www.pwrc.usgs.gov/naamp features practice quizzes, sample calls and call descriptions to help. To be certified, the observers must take an on-line quiz and pass with a minimum score. The quiz can be, and usually is, repeated multiple times until passed. During the quiz there are several species calling at once, just like in the field.

Running the routes has been very educational for me. I now have firsthand knowledge of the importance of habitat loss to these creatures. As evidence, one of the stops on my route is now next to a new subdivision trailer. Of a comical note, I've heard donkeys, dogs, bugs, concerned human residents and had a close encounter with a skunk. I even ran into our Chapter president at a local Dairy Queen. It helps to recruit a driver for the first few runs to get used to the rural roads- it's very dark out there! Overall, "frogging by ear" has been a good experience and I highly recommend it as a valuable and important volunteer activity.

Purple Martins Project

St. Charles County Parks Department have purple martin houses at three park sites; Quail Ridge, Klondike and Hideaway Harbor. The Master Naturalists agreed to install the houses on the poles already available at the park and monitor the activity as well as remove the house for storage in October.

The monitoring of the purple martins is the real challenge because we can only observe the activity in the area. The design of the poles and house does not allow for 'peeking inside to see if there are eggs'.

Master Naturalists have observed the main activity of purple martins at the two houses located at Hideaway Harbor.



Purple Martins at Hideaway Harbor

There are several young females and young martins which are brown with a dusky breast and white belly. However, in contrast both Quail Ridge which has four houses and Klondike with one house very little activity has been observed. The data is being kept in a database for comparison for future years. Hopefully as time goes on the purple martins will find the houses at Quail Ridge and Klondike Parks. If you are visiting any of the parks – look for the purple martin house and let us know of your observation – email the information to: finklang@centurytel.net I will be happy to add it to our purple martin data base.

**The Conservation Princess' Diary
The Right to Bear Arm(adillo)s
By Lee Phillion**

I have noticed an increasing number of armadillos around here lately. It wasn't all that long ago that these critters first crossed the border into Texas from Mexico. In recent years, these illegal aliens have been moving northward – probably taking jobs from Missouri opossums.

Then again, lying dead beside the road isn't all that great of a job.

Armadillos are pretty interesting mammals. The Nine-banded armadillo (*Dasypus novemcinctus*) commonly seen in Missouri is about the size of my overweight terrier Max -- the one with issues.



Since armadillos lack hair, climate changes can be tough. In summer they are more active in the evening and at night, but in midwinter they become active during the warmest part of the day. They are burrowers and live in dens, but they don't hibernate. Long periods of freezing weather can eliminate armadillos from an area, and the duration of winter freeze may be determine how far north they can ultimately range.

Armadillos eat mostly insects and other invertebrates. And, although they *will* eat eggs, they often get fingered as destroyers of quail nests when other animals are really to blame.

With all that armor topside and genitalia on the ventral side, armadillos copulate with the female lying on her back. Females release just one ovum per year, but the fertilized egg divides to produce identical quadruplets.

After summer mating, implantation of the embryo in the uterine wall normally is delayed about 14 weeks. Gestation then takes four months. Some researchers think that the female can delay implantation of the fertilized egg for more than a year if conditions are not right to have babies. (*This probably refers to climate versus whether or not she is married or still in school.*)

There are a couple of reasons Missouri armadillos often turn up as road kill. First, they don't see well. Also, the nine banded armadillo doesn't "roll into a ball" when startled (like it's three-banded relative in South America does) because it has too many plates around the middle. Instead, the nine banded armadillo has an unfortunate habit of jumping in the air a couple of feet (fender height) when startled.

I haven't checked this out personally, but my Texas relatives say that properly cooked armadillo tastes like pork.

For more on armadillos see the Missouri Conservationist Online

<http://www.mdc.mo.gov/conmag/1997/03/30.htm>

??? Did you know ???

Little Known Facts about Dragonflies

- The earliest dragonflies appeared over 300 million years ago.
 - They are one of Nature's most efficient predators. They create an optical illusion for their prey by approaching in a way that projects itself as a stationary object (called 'motion camouflage') while speeding towards its victim.
 - Clocking up to 50 mph, the Green Darner, common to Missouri wetlands, is one of the biggest and fastest of dragonflies. Carnivorous eaters, they devour not only mosquitoes, but bees, butterflies, moths, and several other insects.
 - Dragonflies breathe through spiracles or small holes in their abdomen.
 - Green Darners, nicknamed Mosquito Hawks mate by latching onto each other to form a circle.
- Before depositing his sperm, the male dragonfly first removes the sperm of any previous mates. He then continues to hang onto her neck for much of the day and then follows her closely to ward off other males.

Upcoming Events

Aug 9 - Class on Prairie Reconstruction: Site Prep/Seed Collection www.shawnature.org

August 11 - Missouri River Relief St. Charles Cleanup
Friends of the Big Muddy We will send a team to this cleanup



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which has now been rescheduled after canceling it during the spring flooding along the Missouri River.

Upcoming Events Continued

[Contact us](#) for more information about any of these activities. Also, be sure to check out some of our [recent events](#)! We do maintain a Yahoo Group to e-mail information about our activities a week or two before they happen, so if you would like to get these messages, send an e-mail to: FriendsofBigMuddy-subscribe@yahoo.com.

August 25th and 26th The Race for the Rivers

For a complete list of the opportunities available or to sign up for a job of your choice, email Joan Twillman at rtwillman@sbcglobal.net or call Larry Ruff at 636-734-6330. Be sure to include your t-shirt size! Last, but possibly the most fun option - consider entering one of the races. More information and registration forms are available at <http://www.racefortherivers.org/>

Sept 6 - Class on - Prairie Reconstruction: Seeding and Maintenance www.shawnature.org

Contacts

What else would you like to see in our newsletter? Contact us with your thoughts and comments.

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