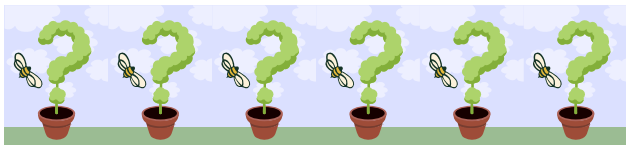




JANUARY MEETING

The Boone's Lick Chapter of Missouri Master Naturalists will meet at 6:30 p.m. on Thursday, January 11 at the Boone County Extension Center. Jeff Briggler, Missouri Department of Conservation herpetologist, will give a two hour advanced training program on hellbenders, salamanders, and other assorted amphibians. Jeff will discuss amphibian biodiversity in Missouri as well as basic identification, natural history, and management practices. This is the first time the chapter has offered advanced training during a regular monthly meeting and is part of the Advanced Training Committee's plan to build hours into regular meeting times and help members achieve certification. There will NOT be a business meeting in January. Jeff will provide a wealth of information—don't miss this great opportunity!



PRESIDENTIAL PONDERINGS

Suzanne Wright

My grandmother fed me a love of nature along with her unparalleled fried chicken and home grown tomatoes. Because of her teachings, I knew that the oriole would nest in the big elm off her back door, while the cardinals would choose the old-fashioned rose bush on the board fence to protect their home. In the spring when we planted the garden at her place we would always allow an extra seed for the worm and one for the bird as part of the ritual. She was a farm girl and knew her lessons from first hand knowledge required for the survival of her family. But she also possessed an insatiable desire to learn that kept her reading and

learning every day of her life. I consider it my great fortune to have benefited from her tutelage.

I think that most of us had a mentor, whether family or friend, who guided us into a broader vision of how the natural world works. Or perhaps it was just being allowed to spend time outdoors that created an appreciation for our surroundings. Whatever the reason, we chose to sign up for the Missouri Master Naturalist course to add to our base of knowledge and volunteer some of our time for the overall good. That sounds really noble, when really I just wanted to learn more stuff about more stuff.

If this is my presidential pondering, then what I should be pondering is why I'm president of the Boone's Lick Chapter of Missouri Master Naturalists. Always quick to nominate and faster to demur if my name was even hinted at, I've been very skillful at avoiding a position of authority in any organization...to date. The plan was to keep on as before, benefiting from the zeal of others (and you thought I was a nice person).

So here I am, saddled with the yoke of responsibility and doing my best to not botch it up, at least not irreparably, within the time span of one year. I am already wondering if I've overstepped my bounds by taking on hosting of state conference next spring. Thinking back, I'm not sure there was a unanimous show of hands for approval of this venture. If you aren't too keen on the idea, just remember there won't be a long car ride home afterward on Sunday afternoon (and you thought there wasn't an up side).

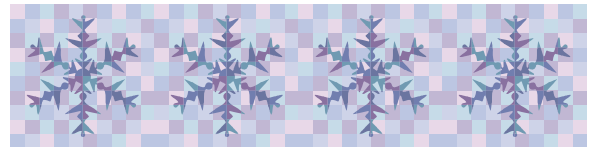
At the December meeting there was a request for more field trips rather than programs for our monthly meetings. There was also the suggestion of weekend outings to other nature areas in the state. I was glad to hear the suggestions and I hope there will be more in the future. This is not my show to run. I want all of you to get out of this organization what you took the class for in the first place.

I am glad we have a steady core consistently attending the meetings but I am concerned that we have lost the interest of others. I know some took the class and decided it wasn't what they envisioned, and that is to be expected. But I can't help but feel that somewhere we missed the boat when it comes to making sure that most of the members are getting out of this program what they were looking for when they started.

The volunteer opportunities cover a broad range of interests, but I'm sure we can find more. We have already started to make advanced training hours easier to accrue by including some in our regular monthly meetings (please note two hours advanced training upcoming on Jan . 11th.) We could try giving out candy as an incentive to log volunteer hours in every month, if that would help. The long and the short of this is that I suffer from long-term abandonment issues and if you people start dropping off like flies I may never recover. So give us a little feedback so we can make this more interesting and fun for all of us.

I know I'm having a real good time, but then I've gotten to do things I never would have done outside of this program. I now know how to sex a turtle, assist in a controlled burn, jess a raptor and hold him on my arm, sample a stream to identify the invertebrates, and eradicate bush honeysuckle (more or less). And I've gotten to do this with a diverse group of people with a common interest in the environment. I've also found out that weeding/or planting a bed of natives with a bunch of people can sometimes be more fun than weeding my own perennial garden by myself.

As Kurt Vonnegut Jr. said, "We're all in this together". It has taken me a long time to accept this widely known bit of information, that together we might accomplish what alone we might not manage. And that to me is the true value of this program. I suppose that's why I'm your president for the next year. I will do my very best work at all times and try not to hurt anyone's feelings. I will try to remember all that my Grandmother taught me. And the most important nature lesson of all is, if you roll around in the grass on a summer's evening you will probably get chiggers.



MEETING MINUTES

The evening kicked off with a fabulous potluck and silent auction. Many thanks to everyone who contributed the great range of auction items! Don Day gave his annual "cast of thousands" slide show, highlighting activities of chapter members throughout the year, with the occasional bit of zesty commentary as only Don can do. The business portion of the evening focused on electing new officers and committee chairs. Our officers for 2007 are:
President: Suzanne Wright
Vice-President: David Silvey
Secretary: Buffe Balling
Treasurer: Janine Gordon

Standing committees for 2007 are chaired by...
Advanced Training: Mary Jane Wheeling
Communications: Celeste Mazzacano
Project Approval: Jack Dillard
Program Planning: Vanessa Melton

State Advisory Committee Regional Representatives: Troy Gordon & Cheryl Hardy

Thanks to all outgoing officers and chairs for a job well done! If you would like to serve on a standing committee, please contact Suzanne Wright at suzwright@centurytel.net .

The 2nd Annual Missouri Master Naturalist Conference will be hosted by the Boone's Lick

chapter in Columbia on May 18-20. The Conference Committee chair is Sally Swanson, who regaled the group with a veritable smorgasbord of opportunities to volunteer. Contact Sally at sal@socket.net for more information, or if you want to chair or work on the following sub-committees:

Welcome Party: no chair

Meal Arrangements: Vanessa Melton, chair

Displays & Trade Show: Rebecca Allen, chair

Corporate Sponsors & “free stuff”: no chair

Check-in/check-out: Celeste Mazzacano, chair

Transportation to venues: no chair

The evening ended with a grueling test of the assemblage’s knowledge of Christmas trivia, courtesy of a quiz provided by Mary Jane Wheeling. Suzanne Wright showed her presidential prowess & left everyone in the dust with her mastery of merrymaking minutiae.



NEW USES FOR NATIVE GRASSES

Will Biofuels Derived from Native Grasslands Reduce Fossil Fuel Dependence?

submitted by Cheryl Hardy

If you are like most Master Naturalists, you have more than a casual interest in preserving the environment. If you are like some (present company included), you are obsessively geeky when it comes to environmental science. If you enjoy reading *Science*, then you are in for a treat with the December 8th issue. True environmental geeks might want to brace themselves before reading “Carbon-Negative Biofuels from Low-Input High-Diversity Grassland Biomass” by Tilman *et al.* The graphs alone deserve rapt attention, and you may want a box of Kleenex for the tears of joy you are likely to spurt by the end of the article. For those of you who prefer the annotated version (sans graphs), here it is:

Monoculture crops such as corn or soybeans have been suggested as alternative fuel

sources because they release less carbon dioxide when burned than fossil fuels. However, if this approach is widely adopted we may find that rich cropland for biofuel is competing with land for food. Furthermore, cropland requires considerable use of pesticides, irrigation, and fertilizers which place additional burdens on the environment.

Tilman *et al.* (2006) proposed an alternative to a monoculture approach: using high-diversity mixtures of native grassland plants grown on poor agricultural land as a source for biofuels. Their research, conducted over a decade, evaluated 152 plots of agriculturally degraded land containing five levels of biodiversity (1, 2, 4, 8, or 16 native grassland perennials) for bioenergy production and carbon sequestration. Plots were not fertilized or treated with herbicides, and only irrigated during establishment (low-input).

They found that the low-input high-diversity biomass (16 perennials) produced 51% more usable energy per hectare on biodegraded soil than corn grain ethanol did from desirable soils (multiply that number by at least two if fertile land had been used for growing perennials). Furthermore, although monoculture plots demonstrated no net sequestration of atmospheric carbon dioxide (i.e., didn’t hurt, but didn’t help reduce CO₂ in the air), the high-diversity biomass significantly sequestered CO₂ (i.e., helped reduce atmospheric CO₂ for a Carbon-negative outcome).

If replicated and widely adopted, the implications for the future are staggering. Tilman *et al.* estimated that even without considering CO₂ sequestration, global adoption of this approach would eliminate 15% of current global CO₂ emissions! If you are not yet sufficiently astounded by this source of biofuel, then consider the benefits:

- Using agriculturally degraded land.
- Native grasslands could be developed as an alternative to cropland for biofuels (saving rich cropland for food crops).
- Biodiversity would be supported on grasslands to maximize biomass for biofuel.

- Healthier ecosystems are consistently associated with biodiversity.
- Improved wildlife habitats.
- Fertilizer, pesticides, and irrigation would be unnecessary with hardy native plants.
- Water quality of ground and surface water would be improved.
- Water would be conserved, the air would be cleaner, and the soil would be more fertile.
- Increased recreational possibilities.
- More grasslands for Master Naturalists to plant (OK, I was just checking to see if you were still reading).



RECOMMENDED READING

“**A Naturalist in Florida**”, edited by Marjorie Harris Carr, Yale University Press, 1994. ISBN # 0-300-06854-9 (paper).

submitted by David Silvey

Do you like a book that takes you on a trip and makes you feel you are actually there? Do you keep a nature journal? Would you like your journal to take your future readers there? If so, then check out Archie Carr’s “A Naturalist in Florida”. It reflects the writing of a naturalist/journalist in a way good Master Naturalists and nature journalists will appreciate.

Archie Carr brings zoology, biology, science, history, folk knowledge and a slight dabble of realistic cynicism together in a way that takes you on a trip through Florida as it was from ~1930 - 1970. His writing style, along with reference maps and photographs, guide you to places long destroyed by the progress of man. From a Daphne Alabama “Jubilee” south to Homosassa Springs, to the Suwannee River to the Everglades, Mr. Carr takes you on a delightful journey most could only hope to take in person.

Carr, an instructor in Ecology and Biology at the University of Florida, had a keen eye for the relationships of wilderness and wildlife, the

confluence of nature, flora, fauna and unfortunately, man. Through his writings you can take an incredible journey but you can also pick up tidbits of style and thought processes that will make your journal entries come alive for future generations.

We may not have “Oyster Shell Skies” or the local dialect found deep in the heart of the Apalachicola River headwaters, but we do have a diverse and incredible state, full of its’ own magic and mysteries waiting to be found, interpreted and recorded for future Missourians.

So turn the pages of Archie Carr’s “A Naturalist in Florida” and take the trip. Your mind, imagination, journal skills and Naturalist skills will thank you.

NOTEWORTHY NATURAL HISTORY

December 7, 2006 marked the first confirmed sighting of a mountain lion in Missouri since a road-killed cougar was seen in Calloway County in 2003. The mountain lion was captured on film by an automatic trail camera placed by a bow hunter who uses his camera to track deer and had no idea that a cat was in the area. MDC Resource Scientist Dave Hamilton, who heads Missouri’s Mountain Lion Response Team, verified that evidence at the scene confirmed authenticity of the photo, which shows what appears to be a healthy mountain lion strolling past. The cat has dark spots on the insides of its front legs, indicating it is less than 2 years old. This is consistent with the current hypothesis that mountain lions seen in Missouri are typically young males who migrate from western states looking to establish territories of their own. There is no evidence of an established breeding population in the state, however.

“In every walk with nature one receives far more than he seeks.”
John Muir



CONSERVATION
CORNER

Ozark hellbender (*Cryptobranchus alleganiensis bishopi*)

submitted by Celeste Mazzacano

The Ozark hellbender, Missouri's largest salamander, is one of 16 amphibian species of conservation concern in the MDC January 2007 checklist. Hellbenders are harmless, slow moving creatures that amble along the bottoms of cool, clear, fast-moving streams looking for crayfish (their favorite food), aquatic insects, and small fish. Larval hellbenders breathe through external gills; adults have lungs that are mainly used for buoyancy, as the animals absorb dissolved oxygen from the water through their skin. Their laid-back lifestyle pays off in longevity, as hellbenders can live from 30-35 years under normal stream conditions.

The Ozark hellbender is restricted to the Ozark Plateau of south-central Missouri and northern Arkansas. Streams in the Black-White River drainage system have historically been ideal hellbender habitat; the cool clear riffles provide a current fast enough to oxygenate the water sufficiently, and rocky substrate for the animals to hide under. Unfortunately, pollution, damming, siltation, and degradation of these streams have reduced Ozark hellbender populations dramatically, with numbers down by as much as 80% since the 1970's.

The Missouri Department of Conservation, U.S. Fish & Wildlife Service, St. Louis Zoo, and researchers around the state are teaming up to bring the Ozark hellbender back from the brink. These organizations are working to increase public and political awareness of the problem, perform more research on water quality and reproductive disruption among Ozark hellbenders, and investigate breeding hellbenders for re-introduction into restored habitat. You can help by reporting Missouri hellbender sightings, or illegal collection or gigning of hellbenders to Jeff Briggler, MDC

herpetologist (jeff.briggler@mdc.mo.gov); by keeping pollutants out of the watershed (including your own personally produced pollutants while out on a float trip!); by monitoring and cleaning up Missouri's streams with a local StreamTeam; and by spreading the word about the endangered Ozark hellbender.

LEARN MORE ...

...about environmentally friendly lawn care! Show-Me Yards is sponsoring "Green Lawns/Blue Waters: Have both...the smart way". The workshop will be held across 3 Wednesday sessions on Feb. 7, 14, and 21, from 6:30 – 9 pm at the ARC. Topics include native plants, rain gardens, pest control, and ways to keep your soil healthy. For more information or to register contact Mona Menezes at mmenezes@gocolumbiano.com, or call 573-874-7616.

ANNOUNCING A NEW ALLIANCE
OF LOCAL NATURAL RESOURCE
VOLUNTEER GROUPS!

Many groups dedicated to environmental stewardship and education in the Columbia area find their efforts frustrated by lack of time, resources, or volunteers. In an attempt to maximize resources, exchange ideas, and build partnerships, Jan Weaver (MU Environmental Studies, Friends of Rock Bridge) and Celeste Mazzacano are launching 2nd Fridays, an opportunity for individuals from these groups to get together over breakfast and discuss cooperative projects & shared resources, and exchange ideas and techniques for volunteer recruitment, retention and motivation, public outreach, and more. Meetings will be held the 2nd Friday of each month at 7:30 am at Uprise Bakery (816 E. Broadway); the first meeting will take place on January 12th. Individuals from Master Naturalists, Friends of Rock Bridge, Audubon Society, Sierra Club, Missouri River Relief, Native Plant Society, Hinkson Restoration Project, Greenbelt Land Trust, Friends of Big Muddy, and other related organizations are invited to attend. For more information, contact Celeste Mazzacano at 573-239-4267.



GET TO KNOW YOUR CHAPTER PARTNERS AND APPROVED SERVICE GROUPS

Confused about who our chapter partners are? Not sure if a local organization is approved for volunteer service projects? Look no further!

Statewide program coordinators:

University of Missouri Extension

(<http://muextension.missouri.edu>)

Missouri Department of Conservation

(www.mdc.mo.gov)

Volunteer service with these partners is approved, such as 4-H, StreamTeam, and projects at MDC conservation areas.

Boone's Lick chapter partners:

Partners are involved in chapter coordination and training, and are approved for volunteer service projects.

Big Muddy National Fish & Wildlife Refuge

(www.fws.gov/midwest/BigMuddy)

Rock Bridge Memorial State Park

(www.mostateparks.com/rockbridge.htm)

Friends of Rock Bridge State Park

(<http://rockbridge.missouri.org/>)

Friends of Big Muddy

(www.friendsofbigmuddy.org)

Hinkson Creek Watershed Restoration Project

(www.helpthehinkson.org)

Approved volunteer service groups:

Chapter members work with these groups in ongoing service opportunities that have been approved by the Project Approval Committee.

WildOnes! Mid-MO chapter

(<http://wildones.missouri.org/>)

MU Raptor Rehabilitation Project

(www.raptorrehab.missouri.edu/index.html)

City of Columbia TreeKeepers

(www.gocolumbiamo.com/Volunteer/Opportunities/treekeepers.php)

Columbia Audubon Society (<http://columbia-audubon.missouri.org/>)

Greenbelt Land Trust

(<http://greenbelt.missouri.org/index.html>)

If you want to develop a new project with a group that has not yet been approved, it's easy--just download a Project Approval form at <http://extension.missouri.edu/masternaturalist/columbia/Projectapproval.htm>, fill in the details and submit it to Jack Dillard, Project Approval Committee chair (3js1948@sbcglobal.net).

The committee will review the project and notify you once it has been approved, or if they have further questions. Once approval is granted it is approved for everyone, so only one form per project is needed.

JANUARY VOLUNTEER OPPORTUNITIES

No new activities are listed for January, but we do have a coming attraction...

Audubon's 10th Annual Great Backyard Bird Count

February 16-19, 2007. We will be covering Conservation Areas again this year as well as your own back yard. Suzanne Wright will provide more details; if you can't wait, contact her at suzwright@centurytel.net. Project is approved.

Ongoing Opportunities

Fire Line Installation at Grand Bluffs Conservation Area

Flexible hours until completed

Sponsored by the Missouri Department of Conservation. Volunteers needed to run a leaf blower for at least six hours to install fire line in forested landscape. Work will be physically demanding as it will be on uneven terrain with a 20-pound backpack blower. Contact Josh Stevens at Josh.Stevens@mdc.mo.gov or 573-592-1412. Project is approved.

MU Raptor Rehabilitation Project Ongoing

Care for a sick or injured raptor; feed and provide activities to captive wild animals; create and deliver presentations on these feathered wonders. Contact Erin West at eewd76@mizzou.edu to schedule training. Project is approved.

**Fireline Installation at Grand Bluffs
Conservation Area**

Flexible hours until completed.

Sponsored by Missouri Department of Conservation. Volunteers will be asked to run a leaf blower for at least 6 hours to install fireline in forested landscape. Work is physically demanding, on uneven terrain with a ~ 20 lb. backpack blower. Contact Josh Stevens at Josh.Stevens@mdc.mo.gov or 573-592-1412. Project is approved.

**Prescribed Burns at Rock Bridge Memorial
State Park**

**Weekdays between 8 a.m. and 3:30 p.m.
(call for specific dates)**

Volunteers will assist in prescribed burns in restored native grassland or woodland units in the park. Exact dates determined by weather, wind direction, and staff and volunteer availability. Contact Kathryn DiFoxfire at rock.bridge.memorial.state.park@dnr.mo.gov or Roxie Campbell at 573-449-7402 or roxie.campbell@dnr.mo.gov. Project is approved.

**Prairie Fork CA Field Trip Naturalists
Ongoing**

Sponsored by Missouri Department of Conservation, University of Missouri and the Prairie Fork Trust. Prairie Fork CA needs naturalists to staff environmental education stations during field trips for school students. Most programs take place Monday - Friday from ~ 9 am to 2 pm. Contact Benedict Nagy at (573)254-3262, or benedict62@yahoo.com. Project is approved.

**Prairie Fork CA Program Development
Ongoing**

Sponsored by Missouri Department of Conservation, University of Missouri and Prairie Fork Trust. Prairie Fork CA needs naturalists to help develop exciting and innovative outdoor environmental education programs. Programs MUST be designed to help teachers meet goals described in Missouri state and national educational standards. Current emphasis is on elementary students, particularly 4th graders. Contact Benedict Nagy at (573)254-3262, or benedict62@yahoo.com.

Project is approved.

**Friends of Rock Bridge Memorial State Park
Explore Rock Bridge**

3rd Saturday of each month

Sponsored by Friends of Rock Bridge Memorial State Park. Volunteers needed to assist with hikes each month and to help select topics and speakers for future programs. This program provides the public with opportunities to explore park resources and participate in occasional service projects. Contact Meredith Donaldson at 573-815-9255 or Mjdonlsm@aol.com. Project is approved.

Landowner Contacts Database

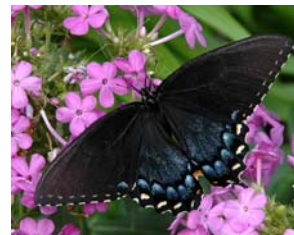
Flexible hours until completed.

Sponsored by the Missouri Department of Conservation. Location: Fulton. The volunteer will log landowner contact folders by location. Files date back to the 1940s and recording assistance provided on specific properties in the past will provide an account of historical management that will allow MDC to better assess the needs for the property. Contact Josh Stevens at Josh.Stevens@mdc.mo.gov or 573-592-1412. Project is approved.

Friends of Big Muddy Activities

Ongoing dates throughout the year.

Most opportunities are on the units of the Big Muddy National Fish and Wildlife Refuge. Sponsored by Friends of Big Muddy. Check <http://www.friendsofbigmuddy.org> for current opportunities or sign up for list serve announcements of activities by e-mailing FriendsofBigMuddy-subscribe@yahoogroups.com. Contact Troy Gordon at friends@friendsofbigmuddy.org or call 573-424-9051. Projects are approved.



2007 OFFICERS

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 suzwright@centurytel.net

Vice-President David Silvey
 silveyd@missouri.edu

Secretary Buffe Balling
 motherscaretaker6@yahoo.com

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State Advisory Committee Representatives:
 Troy Gordon, Cheryl Hardy

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Project Approval Jack Dillard
 3js1948@sbcglobal.net

State Conference Sally Swanson
 sal@socket.net

Advanced Training Mary Jane Wheeling
 wheelmj@centurytel.net

Chapter Co-advisors:

Don Day, University of Missouri Extension, daydr@missouri.edu

Ginny Wallace, Missouri Department of Conservation, Ginny.Wallace@mdc.mo.gov

NEXT MEETING

**Thursday, January 11, 6:30 - 8:30 p.m.
at the Boone County Extension Center**

Advanced training in herpetology by Jeff Briggler, MDC herpetologist.

Note: There will be no business meeting in January.



*To promote awareness and citizen
stewardship of natural resources
through science-based education and
community service*