



Mississippi Master Naturalist Program Newsletter

Volume 2, Issue 2

Summer, 2009

Editor's Corner

I hope that everyone is enjoying their summer. Hopefully the precipitation will begin to start falling again, so that our lawns and gardens do not continue to undergo water stress. This has created the need to irrigate our yards either by dragging hoses or using sprinklers. People tend to forget all too often after the spring rains that water conservation is still a very important issue. Always remember to plant native plants, water early in the morning or late in the evening to prevent evaporation, and practice conservation inside your home as well. Our next Master Naturalist meeting will be conducted at the Mississippi Sand Hill Crane National Wildlife Refuge on July 16. Doug Hunt, Refuge Ranger will make a presentation and take us on a tour of the new visitor's center and nature trail. We will also be certifying the 2008 Mississippi Master Naturalists that completed 40 hours of volunteer training and 8 hours of advanced training. Please send your advanced training and volunteer hours to cboyd@ext.msstate.edu at the end every quarter (August 31, 2009).

We welcome relevant contributions, photos, announcements or other material relating to the mission of the Mississippi Master Naturalist Program that will be published in the Fall, 2009 newsletter. Please send information to Chris Boyd cboyd@ext.msstate.edu by September 15, 2009.

Upcoming Events

Advanced Training Opportunities

Mississippi Master Naturalist meeting at the Mississippi Sandhill Crane National Wildlife Refuge, July 16, at 9:00 a.m.

MUSHROOM WALK at the Crosby Arboretum on Saturday, August 29, 10:00 to 11:30 a.m.

Volunteer Opportunities

Mississippi Amphibian Monitoring Program. Contact Kathy Shelton at krshelton64@gmail.com or 601-528-5707.

Community Collaborative Rain, Hail, and Snow Network, for more information go to the following website:
<http://www.cocorahs.org/>.

Phytoplankton Monitoring Network, for more information go to the following website:
<http://www.chbr.noaa.gov/PMN/>

2009 Mississippi Master Naturalist Program Class Conducted at the Coastal Research and Extension Center by Chris Boyd

The Mississippi Master Naturalist Program training was conducted through the Mississippi State University Extension Service at the Coastal Research and Extension Center from April 16 through 4 June and coordinated by Dr. Chris Boyd. Chris Boyd is an Assistant Extension Professor of Environmental Ecology for Mississippi State University. There were 17 participants including resource managers, communication specialists, nurses, artists, county employees, and retired teachers, bankers, dentists, and insurance agents. The main purpose of the program is to develop an organization of knowledgeable volunteers to provide education, outreach, and service devoted to the beneficial management of natural resources and natural areas within their communities for the State of Mississippi. The program is under the guidance and supervision of Mississippi State University Extension Service, county directors, faculty, and staff. To become a Certified Mississippi Master Naturalist, the trainee must complete the

minimum of 40 hours of combined field and classroom instruction, obtain a minimum of 8 contact hours of approved advanced training, and complete a minimum of 40 hours of approved volunteer service.

The presentations and field trips were conducted at various locations throughout the Mississippi Gulf Coast. The first day of class, the participants convened at the Mississippi State University Coastal Research and Extension Center. Dr. Chris Boyd, presented lectures on natural history and ecology, Dr. Gary Bachman, a Mississippi State University Horticulture Extension Professor, gave a presentation on plant science, and Dan Longino, USDA, Natural Resources Conservation Service Field Technician gave a presentation on the fundamentals of soil science. Dan taught the class about the benefits of protecting our soil resources along with providing specific examples of local soils and their uses and limitations.

The first field trip was conducted at Judd Brooks Longleaf Pine Plantation where the property owner discussed land ethics and management. Mr. Brooks owns and manages 3,500 acres of longleaf, slash, and loblolly pines in Northern Hancock County. Leslie Burger, a Mississippi State University Extension Associate, made a presentation on wildlife management. She discussed the importance of habitat management and the history of wildlife management. Dr. Glenn Hughes, a Mississippi State University Forest Extension Professor, made a presentation on forest management and ecology. He discussed the importance of understanding the landowners expectations of the uses of his land before recommending a particular type of forest product to produce, based on time of harvest and amount of acres to be put into production.

The next field trip was conducted at the University of Southern Mississippi Gulf Coast Research Laboratory in Ocean Springs. Dr. Shelia Brown, Director of the Marine Education Center, discussed the marine ecosystem of Mississippi and took the participants on a pontoon boat ride to Deer Island. On the marine field trip, the students learned about the geology of the barrier islands, terrestrial and aquatic flora and fauna, archeology, and viewed the Deer Island restoration project. Michael Carley, Marine Education Coordinator, took the participants sampling in a few different habitats in the Mississippi Sound. The students learned how to identify the local flora and fauna by taking samples using dip nets, yabby samplers, and seine nets. Many species were observed such as: anchovy, mullet, croaker, grass shrimp, brown shrimp, blue crab, fiddler crabs, periwinkles, *spartina alterniflora*, black needle rush, and *spartina patens*.

On the third field trip, the students went to Ward Bayou Wildlife Preserve in Vancleave. Blake Layton, Mississippi State University Entomology Professor, discussed insect ecology. He discussed the importance of entomology, insect morphology, and presented pictures of typical and rare species of insects found in Mississippi. Lynn McCoy, Ward Bayou Wildlife Manager, discussed the many different types of research that are being conducted by various agencies at the preserve, along with highlighting the many uses of the wildlife management area such as: fishing, hunting, kayaking, hiking and bird watching. Dr. Chris Boyd presented information on water quality and quantity issues of Mississippi and the world. Stephanie Pendleton, Mississippi State University Jackson County Extension Associate, and Chris Boyd conducted a water quality and benthic sampling lab. The participants used aquatic nets to collect benthic invertebrates and collected water quality samples to determine stream health. Research has determined that certain benthic invertebrates tend to be abundant based on particular water quality conditions.

The next field trip was conducted at the Mississippi State University Crosby Arboretum in Picayune. Terry Johnson, Superintendent of building and grounds and certified burn manager, conducted a class on the fire management plan for the Crosby Arboretum. A small control burn was conducted to demonstrate the importance of following a fire management plan and to discuss the different types of fuels that are on the ground. Patricia Drackett, Senior Curator, gave a presentation on the importance of native plants and discussed the history of the Arboretum. Robin Veerkamp, Volunteer Coordinator, presented the fundamentals of nature sketching.



The final field trip was conducted by Dr. Mark Woodry, Mississippi State University Ornithology Research Coordinator at Moses Pier. The class was given a lecture on the biology and conservation of birds and then taken to Moses Pier in Gulfport to learn how to identify birds at the beach.

On the final day of class, Margaret Howell, Mississippi State University Hancock County Extension 4-H agent, did a presentation on how to collect and press plants. She discussed how to press plants to help you identify and remember the particular plants within the different regions and habitats you visit over time. The class made group presentations on various subjects such as: plant and soil science, Mississippi Sound restoration project, potential trail projects, Mississippi Amphibian Monitoring Program, Mississippi Alabama Sea Grant overview, wetlands permitting, edible plant research, and population ecology.

Thanks are extended to all the presenters who worked so hard to make this year's program successful. The class was viewed as an overall success based on the evaluations, personal conversations, and emails received from the participants. Some of the participants have already started on some of their volunteer projects such as: enrolling into the Mississippi Amphibian Monitoring Program, helping out at nature camps, conducting a nature trail renovation, along with other types of nature resource management projects.

Mississippi State University Extension Service will plan to conduct training next year at the Coastal Research and Extension Center. For more information, call Dr. Chris Boyd at (228) 546-1025 or cboyd@ext.msstate.edu.

Mississippi Gulf Coast Ozone Action Group Forms

Under the Clean Air Act, the United States Environmental Protection Agency (EPA) establishes primary air quality standards to protect public health, and secondary standards to protect public welfare that includes protecting ecosystems, plants and animals. Currently, Mississippi is designated as attaining all these standards. The ozone monitors in Hancock, Harrison, and Jackson Counties were always very close to the 2004 ozone standard of 84 ppb. In March 2008, EPA tightened the ozone standard from 84 parts per billion to 75 parts per billion.

Developing a plan to meet this standard is the focus of the Mississippi Gulf Coast Ozone Action Group. EPA is going to make the ozone standard nonattainment designations in March of 2010. Any area designated as nonattainment of the standard faces potential economic development constraints including limits to industrial growth and transportation improvement constraints such as restrictions on highway expansion and development.

MDEQ sends out forecasts of days when ozone is expected to exceed the standard. There are bans on all open burning on the Mississippi Gulf Coast on days when ozone levels are predicted to exceed the EPA standard which are called ozone action days.

The action group, initially formed by MDEQ, cities, county agencies, industries, government agencies, and public interest groups, is a stakeholder-led effort that meets on the second Thursday of each month. The group was formed to help the citizens, businesses, and industries of the Mississippi Gulf Coast become aware of the issue and how they can be part of the solution. The group is open to anyone who wants to attend. The group is developing outreach materials and planning promotional events to encourage ozone reduction steps. These include carpooling, vehicle idle reduction, and postponing vehicle refueling and lawn maintenance until after 6 p.m. The Ozone Action Group is also trying to develop more efficient ways to notify residents and businesses on ozone action days. The Mississippi Gulf Coast Ozone Action Group and MDEQ are resolved to protect air quality and maintain healthy growth on Mississippi Gulf Coast.

The Mississippi Gulf Coast Ozone Action Group is actively recruiting new members. For more information on the Mississippi Gulf Coast Ozone Group, please contact Jerry Beasley of the Mississippi Department of Environmental Quality at (601) 961-5134.

The Frogs of Mississippi Presentation Conducted at Mississippi State University Coastal Research and Extension Center

Biologist Kathy Shelton, state coordinator of the Mississippi Amphibian Monitoring Program, made a presentation on April 2nd at the Mississippi State University Coastal Research and Extension Center. Fourteen participants, including Master Naturalists, researchers, teachers, and natural resource professionals, were in attendance. Ms. Shelton discussed the life cycle of frogs, frog calls, habitats, and the 30 species of frogs that live in Mississippi. She discussed that there are 20 species of frogs in South Mississippi; with the Gopher Frog, River Frog, Ornate Chorus Frog, and the Coastal Plain Toad being either rare or endangered. The biggest problem affecting frogs and other amphibians is loss of habitat. Frogs are thought to be indicator species because they must live within habitats located at or near the water. Whenever water quality problems occur, frog populations are greatly affected. Kathy also presented the frog calls of many of the frogs of Mississippi. Frog calls can either be rain, alarm, release, or distress calls. We also learned about the Mississippi Amphibian Monitoring Volunteer Program. There are more than 70 routes located across Mississippi. Currently there is a need for more volunteers in the southern part of the state. For more information contact Kathy Shelton at krshelton64@gmail.com. Below is a list of references:

Frogs and Toads of the Southeast by Mike Dorcas and Whit Gibbons. University of Georgia Press. I got this from Amazon.com but have seen it at local bookstores.

Peterson Field Guides, Reptiles and Amphibians Eastern/Central North America by Roger Conant and Joseph T. Collins. Just about any bookstore will have these.

The Calls of Frogs and Toads by Lang Elliot. Includes CD. I think you can get this on Amazon also or you can google it and order it directly from NatureSound Studio.

The Frogs and Toads of North Carolina by Michael Dorcas, Steven Price, Jeffrey Beane, Sarah Owen. Field Guide and CD. Order from NC PARC website at <http://www.ncparc.org/casp/casp.htm>

Calls of the Wild: Vocalizations of Georgia's Frogs by John B. Jenson and Walter W. Knapp. Georgia DNR. <http://www.georgiawildlife.org/documentdetail.aspx?docid=313&pageid=1&category=conservation>

Never Pass Up a Good Sale

by Ann Renyolds, East Texas Chapter Master Naturalist Program

The following is a true story – only the names have been changed to protect the innocent. I swear it is true on my mother's grave (although my mother is still alive and kicking). The moral to the story is be careful what you buy, where you buy it and check it when you get home.

Sissy, my sister in Oklahoma, called yesterday to tell me this story. She had seen a sale on potting soil at a big chain drugstore, whose name begins with a "W", that you find on most every corner. She bought several bags of potting soil, threw them in her "beemer's" backseat and proceeded to continue her shopathon. Sissy is not practicing to be a Recessionista. I digress.

After buying groceries and eating lunch at the local bistro, my sister drove back home. Upon arrival she hauled the bags of potting soil from the back seat of her car, through the garage to the back porch and began potting her Petunias, Pelargonium and Periwinkles. All seemed to be going well and she was making good time as she shoveled out soil with her little garden trowel. Many pots later, she looked into the plastic sack as she got another trowel-full of soil and lo and behold there was the mother of all Copperhead snakes (*Agkistrodon contortrix contortrix*).

The Southern Copperhead reaches an adult length of 24 to 26 inches. They have a pale brown to light tan body, often with a pinkish tint. Their yellow eyes have elliptical or cat-like pupils. Its body, covered with rough scales, is patterned with dark, hour glass-shaped cross bands, wider at their base and narrow across the back. Copperheads have heat-sensing "pits" located between the eyes and nostrils, hence the name "pit viper". Familiarize yourself with this snake because you do not want to get close enough to see these "pits." The Copperhead is found in the eastern United States to the central and southern states, and in the eastern third of Texas. Southern Copperheads prefer places to hide that include leaf litter, logs and branches. They can be found in mixed pasture and wooded lowlands, usually within a river bottom. They are sometimes present in wooded suburbs, adapting to the presence of humans.



The Copperhead's diet consists of baby cottontails, swamp rabbits, rats, mice, birds, snakes, lizards, baby turtles, frogs, toads, and insects, especially grasshoppers and cicadas. So, there is one positive of having this creature in your garden, maybe. They are preyed on by other snakes and birds of prey.

These snakes reach sexual maturity within two to three years. Mating season is in the spring (February to early May), shortly after leaving winter dens; and fall (August to October) with fertilization delayed until following spring. Being a pit viper, Copperheads do not lay eggs. Instead the eggs are kept inside the female's body until the eggs are ready to "hatch." Incubation time is 105 to 110 days. The four to eight young, 7 to 10 inches (17 to 25 cm) long, weigh less than an ounce (28 g) at birth. Although duller in color, they look much like adults with yellowish tail-tips. These tail-tips fade after the third or fourth year. Females provide no parental care after birth (well duh!). One Copperhead was reported to have lived 23 years and 2 months in captivity, but in the wild, the average lifespan is probably 6 to 8 years.

Southern Copperheads are active during daylight hours (diurnal) during early spring and late fall, at which time they will generally depend on the ability of their bodies to blend in with their environment to obtain prey and avoid enemies. They are nocturnal during the summer heat, actively hunting for prey during the cooler evening hours. Southern Copperheads often eat one single meal every three weeks-even during their most active months. These snakes sometimes nest with other snake species during hibernation. Like all vipers, Southern Copperheads use the "pits" behind their eyes to help locate the heat of their prey. Lying motionless on a bed of dead leaves, this snake's pale-brown and chestnut-colored body is all but invisible. These are venomous snakes, but they are slow-movers.

Whether adult or juvenile, the Copperhead's bite is seldom fatal because of its short fangs (1.2 to 7.2 mm in length) and the small amount of venom that is released. The venom's most important function is to kill animals to be eaten. Defense is only a secondary function. If bitten, you should seek medical attention. That being said, you should take some safety precautions to keep yourself from harm. Don't put your hands or feet anywhere until you can see exactly what is there. Never step over a log without first seeing what is on the other side. If you must move a log, use a long stick or garden tool first. Creatures have wonderful protective coloration. Use a flashlight when moving about at night, even in your yard. Wear protective clothing if working in the woods or around brush. Freeze when snakes are known to be nearby until you know where they are. Allow the snake to retreat. If you must move, back slowly and carefully away from the snake.

Now the rest of the story. After much screaming and running around, my sister summoned her 26 year-old son for help. Now, Bubba doesn't like to kill stuff so his idea of handling this calamity was to take the potting soil to the backyard and turn the snake loose. I told her she should have taken the bag with snake back to the drugstore and get her money back. She was afraid to do that for fear they would charge her for the snake. Did I ever tell you that I am the smart one in the family?

Wesley the Owl : The Remarkable Love Story of an Owl and His Girl, book review

by W. Michiel Hawkins, Mississippi Master Naturalist 2009

The cover of the book "Wesley the Owl: The Remarkable Love Story of an Owl and His Girl," caught my eye from several standpoints. One, I have an interest in nature, two, a lot of that interest comes from birds. The cover shows a young barn owl with a look that stops you and invites you to look inside. You meet the author, Stacy O'Brian and Wesley, the barn owl. Stacy is a Caltech student that is becoming a biologist. The story begins when Stacy receives an orphaned barn owl with an injured wing.

Ms. O'Brian gives an excellent account of caring for a wild bird of prey. The author presents two viewpoints, the scientific knowledge about animals and the emotional side of animal care. You gain insight into human animal relationships. The author gets to know Wesley with a deep and unique scientific understanding. Owls are found throughout man's literature and mythology. Barn owls learned early on, I suspect, to forage at night around the tribal garbage dumps for mice and rats. The amount of mice required by a Barn Owl is fantastic. Wesley, as an adult, was reported to eat three to four large whole mice a day. Ms. O'Brian's estimate of 28,000 mice in Wesley's nineteen year life time may be conservative. An interesting byproduct of mouse eating is a regurgitated pellet containing hair and bones of the mouse. These pellets are used by biologist to identify the type of mouse eaten. In the book she relates how the pellets were prized for teaching students how to determine types of mouse bones.

In the book there are references to Owl verbal communication and illustration of temperaments. Owls are playful and curious. Wesley gives Stacy a run for her money in the relationship learning to fly and deal with a human versus a total owl environment. I think the book provides insight and creates questions for naturalists and biologists.

Interesting Excerpts- Barn owls are quite different from all other owls. They are in a complete separate family called *Tytonidae*, while all other owls of the world are in the family *Strigidae*, meaning "typical owls."

It is estimated that barn owls first started to appear in the fossil record during the Paleocene age (65-57.8 million years ago). The modern barn owl, *Tyto*, appeared around the middle of the Miocene period (23.7-5.3 million years ago and diversified during the Pliocene (5.3-1.6 million years ago) and Pleistocene (1.6-0.01 million years ago) periods. Wesley's species, *Tyto Alba*, started showing up in the fossil record during the Pleistocene. Although owls are sometimes included in discussions of raptors, the truth is they are thought to be more closely related to nightjars than to diurnal (daytime) birds of prey (Falconiformes). Nightjars, which include Whip-poor-wills, actually look like some kind of missing link between a regular bird and an owl.

Another attribute that makes owls unique is their brain structure, which is completely different from that of most vertebrates. The Barn Owl's cortex is mostly dedicated to process sound rather than visual images. Wesley could hear things I couldn't even perceive, and sometimes he would freak me out by staring at some spot on the wall and hissing, even going into a threat display. When I went to the spot and pressed my ear against it, I might hear the tiniest sound-perhaps a mouse or bug walking along or chewing.

To extend the book and learn more about Barn owls go to (Google) Cornell University's website on birds. Find you way into, "The Great Backyard Bird Count," look for records from 2000-2009. Look for the difference in Barn owl reports. One I saw reported 16 sightings in 2005 and now it is down to 6 in 2009. There can be a lot of reasons for this. I wonder how many Barn owls are out there.

Websites of Interest

<http://www.epa.gov/owow/nps/lid/video.html>

<http://www.epa.gov/owow/wetlands/education/wetlandsvideo/>

<http://msucares.com/>

This newsletter was compiled by Dr. Chris Boyd. For more information, visit our office at 1815 Poppo Ferry Road, Biloxi, MS 39532 or telephone (228) 388-4710.