

Bull Shoals Field Station Newsletter

Winter 2011-12

Director's Notes



Janice Greene

Now's your chance to become a charter member of the "Friends of Bull Shoals Field Station."

Contributors at all levels are appreciated. No gift is too small (nor too large!). You'll find out more on page 6. Join us today!

What a great year for the Field Station! We had a busier summer than ever before with research, classes, and the GLADE Academy. Two bird researchers from the University of Missouri stayed the whole summer to conduct nesting surveys as part of a study on effects of burning. Other researchers from Kansas State, Mississippi State, and Ohio State used our facilities this summer too. Alicia Mathis' herpetology research group collected study organisms for four graduate student projects. Celeste held a class on Ozark Lichens. We have a beautiful variety on the area and if you haven't looked closely, you should. We held our third year of the Green Leadership Academy for Diverse Ecosystems (GLADE) for high school juniors and seniors (see related story on page 3). We also completed our second full season of bird banding. We caught more birds and several new species compared to the first year (more on page 2). Early mornings at the field station are full of wildlife activity!

We are excited about 2012. We already have the Missouri Native Plant Society spring meeting scheduled, the 4th year of GLADE and several classes including Ozark Natural Communities (Janice), Riparian Ecology for Educators (Erica), and Plants and Ozarks Culture (Celeste).

If you would ever like to tour the Field Station, give us a call and we will schedule a trip.

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Class/Events in 2011

- Herpetology (B.Greene), Apr 9
- Plant Taxonomy (Bowe), Apr 16
- GLADE (J. Greene, Prussia), Jun 19-25
- Ozarks Lichen Ecology (Prussia), July 11-12 & 18-19
- Limnology (Havel), Sep 17
- ID of Woody Plants (Bowe), Oct 1 & 8
- Mammalogy Field Trips (Robbins, Tomasi), Sep 30-Oct 2 and Oct 13-14
- ID of Woody Plants (Bowe), Oct 1 & 8
- Sustainability Major Workshop (Wait), Oct 8
- Plant Ecology (Wait), Oct. 29
- GLADE Reunion, Nov.12
- Christmas Bird Count (J. Greene), Dec. 30-31

GLADE 2011

Green
Leadership
Academy for
Diverse
Ecosystems

(story on page 3)



Coordinators' Corner



Erica Cox, MO Project WET coordinator

Project WET had its best year yet in 2011, with 23 WET workshops held, state-wide, and a total of 383 workshop participants, ranging from college students, agency and non-profit environmental educators and classroom teachers. Besides

Water Education for Teachers—Missouri Project WET

the normal number of WET workshop offerings, Project WET benefitted from workshops funded by grant projects.

In early 2011, Project WET was awarded a one-year grant from the Conservation Federation of Missouri to support middle school teachers from Columbia, who were participating in the MO Dept. of Natural Resources first environmental camp for 7th graders at Mark Twain State Park. These teachers attended a Project WET workshop, which provided them the activity guide for use in their classrooms.

The Project WET guide had its first-ever revision and the new guide was available in September 2011, so I've also been traveling to parts of the state, re-training WET workshop facilitators with the new guide and accompanying technology pieces. So, lots of positive changes happened for Missouri Project WET!

Last winter, Project WET was notified that we had

received a large Clean Water Act Section 319 grant from the Missouri Department of Natural Resources (and Region 7 EPA) to support a series of 15 Project WET workshops offered state-wide. The locations of these workshops correspond with designated impaired waters around the state and include a local speaker to talk about water issues in each area. Classroom teachers, agency educators and other non-formal education groups are the intended audiences and we've already started these workshops.

Project WET is also a partner for a large urban watershed grant, also from the DNR Section 319 and will provide educational opportunities for this monitoring and implementation grant. The City of Springfield, Greene County, Watershed Committee of the Ozarks, and OEWR are also involved with this grant. This is another 4-year grant, with Missouri Project WET focusing on teacher workshops in 2013 and 2014.

Leopold Education Project (LEP) in Missouri

The mission of the Leopold Education Project is to create an ecologically literate citizenry so that each individual might develop a personal land ethic. LEP's primary objective is to teach conservation and a respect for natural resources through hands-on activities in the outdoors using *A Sand County Almanac* as a foundation..

This year's highlights include presentations at the National LEP Conference in July of the Homeschooler Model for LEP Training and Partnering Youth with Communities (focus on GLADE). Great discussions resulted from these sessions and many attendees were interested in replicating our models in their areas.

In November we were finally able to coordinate a screening of *Green Fire*, the documentary about Aldo Leopold and his evolving philosophy relating to wildlife and its management. The Springfield

Conservation Nature Center hosted the movie and was the site of LEP workshops on the day of and the day after the screening. Celeste was joined by Curt Carter, well-known environmental troubadour and Illinois LEP coordinator, who co-led the workshops and serenaded the movie audience with his guitar and original melodies. A reception with Dutch oven desserts wrapped up the evening attended by over 100 persons.

If you know anyone interested in attending an LEP workshop using the new activity guides (Exploring the Outdoors with Aldo Leopold; LEP-GPS) or the original, "Lessons in a Land Ethic," don't hesitate to contact me to schedule a workshop or find one already scheduled: CelestePrussia@Missouristate.edu



Celeste Prussia, BSFS Manager & MO LEP coordinator with Gillbey

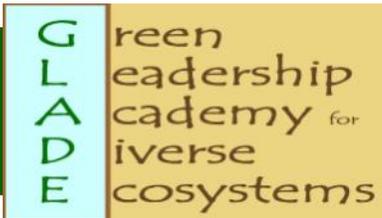
National Parks Service Grant Awarded to Janice Greene and Erica Cox

In 2011, Janice Greene and Erica Cox received a National Park Service education grant. This grant work started with an initial project from summer of 2010, working with local teachers to develop lesson plans, using Heartland Network scientific data (<http://science.nature.nps.gov/im/units/HTLNL/>) for use in classrooms and interpretive staff for public programs in area National Parks—Wilson Creek National Battlefield (water focus for middle school students) and George Washington Carver National Monument (prairie focus for high school students).

From this work, Erica traveled to the George Wright Society Conference in New Orleans (March 2011) with Mike DeBacker, other Heartland Network NPS staff and a Miller High School teacher as part of a panel discussion on education in the parks. The featured project was the high school prairie lesson, using the Heartland Network data; this project was also adapted for use with elementary Junior Ranger students in summer 2011 at George Washington Carver NM.

This new grant will support additional work using the work of Heartland researchers and making this information accessible to the public.

GLADE at BSFS



The Bull Shoals Field Station hosted its third week-long residential program June 19-25, 2011 with 16 motivated southwest Missouri high school students who desired to impact their communities in the areas of environmental sciences and conservation leadership. The GLADE project is a collaborative effort between the Greater Ozarks Audubon (GOAS) and Missouri State University. We have received funding from TogetherGreen, a National Audubon Society program funded by Toyota Motors. The Community Foundation of the Ozarks, L.A.D. Foundation, North Face, and Missouri Department of Conservation made grant awards or provided in-kind support to GLADE 2011.

GLADE is an Ozark ecology-centered educational academy and habitat restoration project in the White River Glades and Woodlands Important Bird Area (IBA) within the Drury-Mincy Conservation Area.



Soil Invertebrate study

Rogersville High School and licensed bird-bander, served as assistant directors for the academy and contributed to the program curriculum. Every aspect of the curriculum was designed to highlight an ecological issue specific to the Ozarks ecosystem with an underlying mission to restore habitat for endangered Missouri species.

During the academy, students 1) surveyed summer birds through mist-netting, banding, and birding excursions; 2) examined the effects of prescribed burns on Ozark ecosystems through vegetative inventory and invertebrate investigations; 3) monitored water quality of Ozark streams; 4) learned about the unique Karst topography of caves, sink holes, and other geological formations; 5) worked on glade restoration by removing Eastern red cedar; and 6) engaged in activities designed to develop leadership and effective communication skills.

So, what comes after a GLADE week? COMMUNITY PROJECTS!!! Here are a few:

- Sarah Bakker & Amy Norvall—Establish Kickapoo HS Rain Garden
- Taylor Smith—Drury U. Reusable Grocery Bags
- Molly Turpin & Shannon Wenkel—Reeds Springs HS Recycling
- Zachary Morris—Nixa HS Courtyard Plantings
- Haley Smith—Native Garden—Springfield Library
- Elaina Bullard—Greenways Native Planting
- Ariel Braswell—Table Rock Lake Shore Clean-up
- Johnalee Jacks, Gage Rudick & Taschia Hall—Sparta City Parks Bluebird Trail
- Tim Hicks—Restore Dickerson Park Zoo's Mews
- Brad Barnhardt—Bat Houses at Nixa Elementary
- Kelsey Rumley—Rehab Outdoor Classrooms & Trail system at Ozark Upper Elementary (OUE)
- Michael Withrow—Erect Leopold Benches bird feeders and signage for OUE project
- Robert Powell—Native Plants for OUE
- Veronica Schultz—Nixa HS Plantings

Thanks to ALL our students, funders, presenters, organizers and volunteers!!!



Brian Greene's blacksnake was a hit!

GLADE



Ants on a Log—leadership skills building

"Our goal is that each academy participant develops the leadership skills and ecological knowledge to reach others and make a positive difference in our natural environment," said Greg Swick, Director of GLADE. Celeste Prussia, BSFS manager, and Andrew Kinslow, teacher at Logan-

Community-Based Social Marketing Lecture and Workshop

Bull Shoals Field Station hosted a Community-Based Social Marketing (CBSM) lecture and workshop that was presented by Dr. Rick Chenoweth, Emeritus Professor of Environmental Psychology at the University of Wisconsin-Madison. Attendees included the Missouri State University, the Cities of Springfield and Branson, James River Basin Partnership, Missouri Department of Natural Resources, and the Missouri Department of Conservation. Community-Based Social Marketing draws on knowledge of psychology and marketing strategy to design outreach programs that encourage the public to adopt sustainable behaviors at the community level.

Shed-to-Laboratory Renovation a Success



The shed at BSFS in pre-renovation condition

Our laboratory is now functional! We have finished renovations of the old stone shed, with support from the National Science Foundation, and have stocked the lab with basic equipment. The lab is connected to our solar power system, and we have installed a propane refrigerator and on-demand water heater. Even Celeste's custom floor finish completed our lab with very little carbon footprint! If you would like to use the lab for a class or for some research, contact one of us to determine if we have or can get the equipment you need.



BSFS wet lab ready for use

Ozarks Lichen Ecology Led by Celeste Prussia



Teloschistes chryophthalmus
The Golden-eyed Lichen

BSFS offered a four-day class in July to provide insight into the biodiversity of native Ozarks lichens and their habitat preferences. The class also explored how lichens may be used for food, art, medicine, decoration or fiber dyeing, and inspiration.

Nine MSU graduate and undergraduate students selected lichen attributes for their team class presentations and undertook independent culminating projects. They gathered found lichens

(meaning no lichens were removed from their in situ substrates) to build collections to teach others about their new-found interest.

Some of the culminating student projects were truly amazing and were donated to the BSFS for use in other classes to teach about lichens. One example is Lichenopoly, developed by undergraduate Danielle Newton and patterned after the board game Monopoly. Danielle coordinated

the property card colors to match colors with the lichens for which they were named. The railroads were named after the basic lichen forms. She even made the chance and community chest cards reflect the events that happen to lichens in situ. The ultimate customization to the game was Danielle's feat to embed lichens into acrylic for the player game pieces. Way to go, Danielle!



Placing a band on a Carolina wren

Bird Banding – Year 2—Janice Greene and Andrew Kinslow work with MSU students to document summer birds at BSFS

The day starts early for summer bird banding at 6:00am. Spider webs are everywhere as you walk through the woods; most of us walk with a stick to avoid getting the web in the face. Nets are unrolled and spread open. Mist netting has begun. As we wait to check the nets, every 30-40 minutes, we record all bird species we hear or see. Everyone gets a little excited when it's time to check the nets because we never know what we will get – nothing, a cardinal which has a mean bite, a colorful warbler or something else.

The birds can get amazingly tangled in the nets. You must be patient and gentle as you remove the net from their tail, wings, and head. Birds are placed in individual bags then taken to our processing station. Each bird gets a metal band on its leg, then gets weighed, measured, and aged. If it's a new species, a spectacular species, or has unusual molt patterns, it is picture time. Everyone loves to hold the birds and have their picture taken with it. It is a treat for everyone who attends the banding sessions.

Summer 2011 was our 2nd complete banding season. Undergraduate student, Benjamin Smith, and new graduate student, Tara Elmore, assisted Janice Greene and Andrew Kinslow all summer. We caught 110 birds of 23 species. Our complete list is found in the Table. Some highlights were American Redstart, Northern Parula, and Yellow-breasted Chat (all found in 2010), Prothonotary Warbler, Downy Woodpecker, and many others. As in 2010, Indigo Buntings were among the most numerous birds in 2011.

Number and species of birds banded at the Bull Shoals Field Station

Acadian Flycatcher	6	Eastern Phoebe	1	Prothonotary Warbler	5
American Redstart	11	Easter Wood Peewee	2	Red-eyed Vireo	4
Black-and-White Warbler	8	Great Crested Flycatcher	1	Ruby-throated Hummingbird	2
Blue Grosbeak	1	Indigo Bunting	16	Summer Tanager	7
Brown Thrasher	2	Kentucky Warbler	6	Tufted Titmouse	3
Carolina Chickadee	6	Louisiana Waterthrush	1	White-eyed Vireo	4
Carolina Wren	5	Northern Cardinal	13	Yellow-breasted Chat	2
Downy Woodpecker	2	Northern Parula	2		



Eastern Phoebe Nest Monitoring at Mincy House

Every year since 2004 when BSFS purchased the Mincy House, Celeste Prussia has monitored the Eastern Phoebe nesting activity on the porch. Annually, two or more nests are constructed then four eggs are laid, hatched, and the young fledged. In late summer 2011, during a season of extreme heat and drought in the area, the second nest had eggs that hatched but the young died. Most were found on the floor of the porch in a dehydrated condition after noon, although they were observed alive in the morning. Fortunately, the first nest of 2011 succeeded as seen in the photograph of the four nestlings ready to fledge. This picture was taken on the day when Mr. Blacksnake was slithering along the bottom railing of the porch—surely aware of the potentially tasty morsels above his head. He was gently relocated.

Dr. Bowe's Plant Identification classes take trips to the field station



Plants aren't the only objects of interest found on botany field trips as demonstrated by the feinting snake that held the attention of the group

On Saturday, April 16, 2011, Michelle Bowe's Plant Taxonomy class took a trip to the field station without her. Tara Herring was in charge and aided by Larry Wegmann, president of the Southwest Chapter of the Missouri Native Plant Society. It was a fairly cold day, and Michelle had considered taking her three-week old baby on the trip, but given her lack of sleep and the temperature, she decided against it. The group visited the Mincy house, Bear Cave trail glade, and the area around Bee Creek in the Mincy Conservation area. The group found all of the typical plants such as Indian paint brush (*Castilleja coccinea*), wild hyacinth (*Camassia scilloides*), shooting star (*Dodecatheon meadia*) and yellow puccoon (*Lithospermum canescens*) in the glades and many spring wildflowers such as *Trillium*, Jacob's ladder (*Polemonium reptans*), blood root (*Sanguinaria canadensis*), pawpaw (*Asimina triloba*), and wild ginger (*Asarum canadense*) in the floodplain near Bee Creek. In addition, Michelle was surprised to hear that Larry found some Virginia

bluebells (*Mertensia virginica*) under the bridge along Bee Creek, and hopes that she will be able to find it in Spring 2012 when not only the Plant Taxonomy class, but the entire Missouri Native Plant Society, visits the field station. Larry also found some Southern Blue Flag (*Iris virginica*), a species which had not previously been reported for the area.



Photo Larry Wegmann

On Oct. 1 and 8, 2011, Dr. Bowe took her Woody Plant identification class to the field station, this time bringing along baby Julian and his father, Brian Edmond. The group found post oak (*Quercus stellata*), winged elm (*Ulmus alata*) and deciduous holly (*Ilex decidua*) near the Mincy house. The group confirmed that the main large shrubs surrounding Buttonbush pond were indeed buttonbushes (*Cephalanthus occidentalis*). We also found lowbush blueberries

(*Vaccinium* spp.), pawpaw (*Asimina triloba*), southern red oak, (*Quercus falcata*) and even a few small black gum trees (*Nyssa sylvatica*). On the second trip, we were excited to find supplejack (*Berchemia scandens*) near bear cave—this was the first time Dr. Bowe had seen it in the area. After much searching along Bee Creek, we found wahoo (Missouri's native *Euonymus*; *Euonymus atropurpureus*), bladdernut (*Staphylea trifolia*), and after almost giving up, wafer ash (in the citrus family; *Ptelea trifoliata*). We also saw ninebark (*Physocarpus opulifolius*) and the endemic Ozark witch hazel (*Hamamelis vernalis*), two traditional medicinal plants of this area.

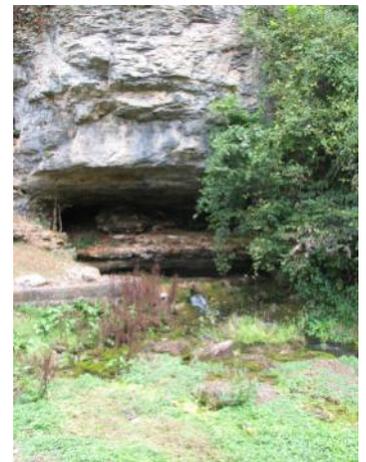
In addition to all of the trees we examined, several herps were spotted. Someone in the group found a marbled salamander under a log near buttonbush pond. On the way to the Drury house for lunch, the van straddled a hognose snake, and of course we had to stop for a photo-op. The hognose obligingly played dead (see photo) for everyone including the children of one of the students. After lunch, we examined several hickory species and then headed west down the gravel road to go to Bee Creek. All in all, both Fall trips were excellent, and the baby only cried a little bit on the way home, which was good because someone needed to keep the driver awake!

Beth Bowles Monitors Ozarks Springs

Beth Bowles received an EPA non-point source pollution grant from the Missouri Department of Natural Resources to conduct monitoring and assessments of eight springs in the Missouri Ozarks. The objectives of the Ozarks Springs Project are to increase awareness of the effect of nonpoint source pollution on spring ecosystems and provide the public and community organizations with a resource for current information on springs important to their communities.

Specifically, the project goal is to create an online resource of current hydrological, biological, and water quality data on targeted springs in the Missouri Ozarks region. For each spring, the web resource will

include recharge points for the spring, available water quality and biological data, and a Spring Scorecard. The Spring Scorecard, developed in the project, will be an assessment tool to provide specific and readily understandable information about the ecological health of the springs. Organizations can use this information to target watershed education efforts in the community. In addition, the website will include community education resources such as an introduction to groundwater hydrology and spring biology, nonpoint sources and impacts to groundwater, and specific actions that can be taken by residents to reduce impacts to springs in their community.



Mouth of Clear Creek

Oklahoma Algae

Beth Bowles has been awarded a contract with Oklahoma State University to process phytoplankton samples from lakes across Oklahoma collected by the Oklahoma Water Resources Board. Beth will be identifying the algae to genus and measuring the cells to estimate their volume with the help of Lauren Bansbach, who is an undergraduate laboratory assistant to the project.

Bull Shoals Field Station
Missouri State University
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Visit us on the web...
bullshoals.missouristate.edu

Our mission is to provide a location for faculty, students, and visiting scientists to conduct research and educational programs that increase public understanding of southwest Missouri ecosystems.

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Friends of Bull Shoals Field Station

Are you interested in the protection of southwest Missouri's unique ecosystems? Do you have a love of the outdoors? Did you do field research as a student at MSU? Have you shared your excitement about nature with others? If you answer yes to any of these, then you're a perfect fit to be a **Friend of Bull Shoals Field Station**, a new organization to support research and education about the Missouri Ozarks.

Your membership donation will help support:

Undergraduate and Graduate Research Projects

- Funds for equipment purchases, supplies, and transportation to/from BSFS
- Summer stipends will eventually be provided as the funding builds

Education Projects

- Green Leadership Academy for Diverse Ecosystems (GLADE) – high school juniors and seniors
- Teacher workshops on resource education
- Potentially K-12 programs

Ongoing Research and Monitoring Projects

- Monitoring Avian Productivity and Survivorship (MAPS) – bird banding
- Water Quality Monitoring and more!

Members will receive the annual newsletter and the quarterly updates. Members will also receive an invitation to a Biennial Field Station Celebration to highlight our programs and celebrate the Ozarks. Sustaining members will receive periodic additional opportunities. Corporate members will be able to have their logo on BSFS publications.

Complete this form and return it to Janice Greene, Bull Shoals Field Station, Missouri State University, 901 S. National Ave., Springfield, MO 65897. Please, make checks payable to: Missouri State University Foundation.

Or—You can give online today at www.missouristate.edu/giving (enter Bulls Shoal Field Station in search bar).

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Membership Categories

- | | |
|---------------------|-----------------------|
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