

Bull Shoals Field Station - Newsletter

December 2005

Dr. Janice S. Greene, BSFS Director
Celeste Prussia, BSFS Manager



Director's Notes

What an exciting year it has been at BSFS! Our facilities continue to grow and improve. We have made and will undertake several improvements to the Drury House (see Facilities Update section). We have added new bunk beds, dressers, and other miscellaneous furniture to the "new house" and hope to add a satellite internet connection soon. (We are still looking for someone to name the house after.) With these improvements, we'll be able to offer more classes and workshops for students and the community. We are trying to get some geoscience equipment installed (see related

section) which will provide learning opportunities for more Missouri State and other university students. We have had several research projects completed and still have some ongoing projects. I could go on with all the things that are happening and will happen. Please feel free to give me or Celeste a call and arrange a visit. If you would like to support the Bull Shoals Field Station with a donation of equipment or money, please contact me. Thanks for your support.

--Janice Greene

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New External Advisory Committee

We have established an external Advisory Committee to help advise BSFS staff on community outreach and to provide ideas and help in fundraising. Current members include Mr. Don Baker, retired Branson businessman and former resident of the Drury House; Mr. David Cook, President of First Community Bank of the Ozarks in Branson; Mr. Buddy Roberts, Buddy Roberts Sales Co. in Forsyth, and Dr. Grant Woods, Woods and Associates, Inc. and Missouri State Alumni. Mr. Baker has been a big help in getting this committee established and in providing information about the Drury House. We heartily thank you all!

Logo Design in Process

Janice has enlisted the talents of Jeanne Stephens to design a BSFS logo that will combine elements of our mission and present an attractive identifier. This is no easy task for an artist, especially when there is a committee of more than two people. We are fortunate that the committee members are not territorial with each requesting representation of a specific area of study.

Here's the most recent concept design - it is not the final version but give overall feel for the direction of progress on a BSFS logo.



Upcoming Events for 2006

- ◆ March 18 - Master Naturalist Field Class
- ◆ May - BSFS Field Day Open House (stay tuned for date)
- ◆ June 16/17 and 23/24 - Ozark Ecosystems class
- ◆ July 7 and 21 - Teaching Science with Journals
- ◆ July 13/14 - Leopold Education Project workshop

We're on the Web!
<http://bullshoals.missouristate.edu>

Faculty & Staff

Dr. Alexander Wait and students are completing research on how fire is affecting plant community structure and ecosystem processes at the Field Station. Pam Brown completed her thesis examining levels of herbivory on oak seedlings and saplings. Pam and former graduate student Doug Aubrey are currently working on manuscripts for American Midland Naturalist and Forest Ecology and Management, respectively. David Pulley, a former undergraduate student and current graduate student working with Dr. Moll, presented his findings on the effects of fire on soil respiration at the Missouri Natural Resources Conference. Mari Shuler, an undergraduate biology major, worked in Dr. Wait's lab processing leaf litter samples as part of long-term monitoring of forest production.

Celeste Prussia, M.S., and graduate students, Brian McMinn and Angela Bandy, continue to collect water samples from five sites for the Upper White River Basin Foundation. Four sites are on Beaver Creek, three in Bradleyville (upstream of, within, and downstream of the town center) and one at Kissee Mills. The Bull Shoals Lake site is in the main channel near K-Dock Marina. Each site is sampled 33 times a year for dissolved oxygen, total nitrogen, total phosphorus, and *E. coli* colony forming units. Two years of data collection have shown that there is tremendous variability in the parameters in Beaver Creek. Most of the time, values fall within state guidelines, however, high values tend to follow rain events. For more information, contact Steve Stewart, Executive Director of the Upper White River Basin Foundation, Stewart@whiteriverbasin.org, or at the UWRBF office: (417) 334-7644.

Corinne Schoppet records data for a captured mouse in the oak forest



Graduate Students

Successfully completed research and thesis defense was accomplished in 2005 by the following Biology Department graduate students whose work related to the BSFS:

Brad Mormann - "Winter Roosting Ecology of Red Bats (*Lasiurus borealis*) in Southwest Missouri" - Brad's work provided evidence of the need to consider the use of winter/spring forest burns and the availability of oak/cedar forests in the management of over-wintering red bats.

Miranda Milam-Dunbar - "Ecophysiology of Hibernating Eastern Red Bats (*Lasiurus borealis*)" - Miranda's lab work complemented Brad's field work. Her goals were to describe the correlation between winter arousals and ambient temperature and to track

changes in metabolism and body temperature during hibernation and arousals at various ambient temperatures to estimate a winter energy budget for this species.

Pam (Brown) Lucas - "Foliar Herbivory on Understory Oaks as a Function of Forest Type and Prescribed Burning" - Pam's research data suggest that Ozark oak forest habitats are potentially more susceptible to herbivore damage than savanna habitats, especially following a prescribed burn.

Corinne Schoppet - "Acorn Contribution to Mammalian Energetics" - In her investigation of the consumption of acorns by mammals of an oak forest, Corinne separately calculated consumption by mice, squirrels, and deer. Her data was used to estimate the importance of acorns on their winter survival and the impact of these mammals on acorn survival.

Christmas Bird Counts

Once again BSFS participated in the Annual Taney County Christmas Bird Count (CBC) held on January 2, 2005, thanks to the Greater Ozarks Audubon Society (GOAS). On the Drury Wildlife Area, the most numerous avians were the Dark-eyed Junco (number one for two years in a row!), American Crow and Canada Goose (tied for second), plus American Goldfinch, Northern Cardinal, Carolina Chickadee, and Bluebird (tied for third). Visit the BSFS website at <http://bullshoals.missouristate.edu> to see the complete list of birds recorded for Dec. 2002, Jan. 2004, and Jan. 2005.

The "2005" CBC was held on January 2, 2006, and we'll post the results on the BSFS website when received.

New Geoscience Equipment

We are working with Kevin Mickus, Geography, Geology and Planning Department, to try and get a permanent seismic station and a magnetotelluric station at the BSFS as part of the national Earthscope Project. The magnetotelluric station measures the earth's time-varying electrical and magnetic fields in order to determine the earth's conductivity structure with depth (down into the middle mantle). We are working on getting details ironed out. This will be a great addition to the station if we can get it to happen.

Facilities Update

The National Science Foundation Field Station and Marine Laboratory grant (DBI-0330657) has allowed us to drill a new well, install a solar-powered pump and a peat moss-based septic system, and replace the plumbing and electrical wiring at the Drury House. In addition, a federal appropriation to the U.S. Army Corps of Engineers, through Representative Roy Blunt's office, will help us to complete many of the renovations on the Drury House. Replacement and insulation of the exterior plaster and lath walls, new windows, installation of a solar power system for the house and a back-up generator will allow the house to be fully functional as a place for graduate students, visiting researchers, and classes to use. In addition, an ADA accessible bathroom is planned. Depending upon the costs of these improvements, there may be enough money to build a classroom building. We want flexible space that can be used for meetings and formal presentations or for class activities and labs. If there is not enough money to construct the building this year, we will be searching for funds to do this. The Corps of Engineers will be starting their renovations early in 2006. Look for an Open House in May when renovations are complete.

New Picnic Tables for Shelter

Sure, they may not look inviting as a place to sit and have lunch, but that will change in the near future. We received our heavy-duty (emphasis on heavy!) recycled plastic picnic tables in December and were surprised at their weight and state of disassembly. Five standard tables and one that will accommodate wheelchairs compose the bulk of "furniture" we needed for classes and groups using the shelter.

A naming opportunity for the shelter still exists. Contact Janice Greene for more info.



New picnic tables awaiting assembly at Drury House shelter

New Acquisitions

We were very fortunate this year to be able to make some much-needed purchases that have improved our ability to meet the needs of classes or maintenance operations. These include:

Bunk beds and dressers - Beautifully made by workers under the care of the Missouri Department of Corrections, ten wooden bunk beds with mattresses and three wooden dressers were purchased for the bedrooms of the "new house". The bunks give overnight residents a better night's sleep and improves our image as a professional operation.

Garden tractor/mower - Last summer we were hard-pressed keep up with mowing using a walk-behind mower. While neighbors kept asking, "When are you going mow that place?", we kept pushing away with the little mower as best we could. The new mower glides over the terrain (well, the parts of it without the usual allotment of Ozark stones) and we can now mow behind the house as well.

Pontoon boat - The old boat used for access to the open waters of Bull Shoals Lake for classes and research was on loan from the University of Missouri at Rolla. After stranding the captain and crew a number of times (fortunately not while classes were on board), she's been replaced with a gently-used 10 passenger pontoon boat from the rental fleet of K-Dock Marina. The new boat carried Dr. Wait's Plant Ecology class and a Limnology class from Arkansas State. She's received good grades from both classes and the BSFS water quality monitoring team as a reliable and lake-worthy craft.



Limnology class from Arkansas State on new BSFS research boat

Woods is Back!

Grant Woods of Woods and Associates, Inc. started his research on white-tailed deer at the Drury-Mincy Conservation Area (pre-BSFS) as a graduate student at SMSU (now Missouri State). He returned to the area as a favor to BSFS to present a seminar on deer management. Approximately 30 individuals, most from the local community, attended on a rainy, cold night in February at the Mincy Community Center which is just outside the Drury Wildlife Conservation Area. Grant's presentation included a discussion of deer biology and behavior with how landowners and hunters can use this information to improve deer herd quality.

Bull Shoals Field Station

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Field Station Wish List

If you are interested in supporting the BSFS, there are several ways. You may provide a donation of cash or supplies/equipment (see wish list or call for the latest requested items), etc. We also have naming opportunities with the two facilities. For a specified donation, we will name a room after you or whomever you wish. We have living areas, meeting spaces, and laboratory/office rooms. If you are interested in any of these opportunities, please contact Janice Greene, BSFS Director, or Faith Giedd, Missouri State University's Director of Development.

Wish list:

House: pots and pans, small appliances, dishes, bowls, mugs, glasses, stainless flatware, lounge chairs, dining table & chairs, end tables, and the like.
Outdoors: truck (4X4 and 2WD or SUV), wheel barrow, deck furniture for the new house, and native plants for glade and wildlife gardens.

We really need loam for the site at the new shelter to landscape the area. If you know of a source of free loam or topsoil, please call us at 417-836-6867.



New water tank and water heater at the Drury House

Gifts

A microwave for our new house was given by **Joe McMillian**, Biology Department alumnus, in honor of Dr. Robert Wilkinson, Jr.

A kitchen range was donated for the Drury House was donated by **Paul Frese**.

Thank you!

Newsletter Recipients

If you would like to continue to receive these newsletters, you do not need to do anything. If you would like an electronic version, send your e-mail address to Celeste Prussia:

CelestePrussia@MissouriState.edu. If you do not want to receive BSFS newsletter, please let us know and we'll remove you from the list.

BSFS People

Management Operations

Janice S. Greene, Biology Professor, BSFS Director 417-836-5306
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Administrative Committee

William A. Alter, Director of Sponsored Research
James Baker, Assistant to the President
Larry Banks, Dean College of Natural & Applied Sciences
William Cheek, Associate Dean of College of Natural & Applied Sciences
Frank A. Einhellig, Acting Provost

BSFS Committee

Brian D. Greene, Biology
John E. Havel, Biology
John S. Heywood, Biology
Emmett R. Redd,
Physics, Astronomy & Materials Science
Charles W. Rovey, GGP
Gary Meints, Chemistry

Missouri Department of Conservation
Larry Rieken

U.S. Army Corps of Engineers
Mark Case

2005 Visitation Statistics

Missouri State University Classes	Non-Missouri State Classes
-- Geohydrology	-- Arkansas State - Limnology
-- Herpetology	
-- Mammalogy	
-- Mammal Ecology	-- Kansas State University - Entomology
-- Plant Ecology	

The mission of the Bull Shoals Field Station is to provide a location for faculty, students, and visiting scientists to conduct research and educational programs that promote public awareness and foster understanding of southwestern Missouri ecosystems.

Reduced use in 2005-06 is due to restrictions from construction & remodeling work at the Drury House