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Hardwood Ecosystem Experiment

THE HEE UPDATE

http://HEEForestStudy.org

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HEE HABITAT WORKSHOP

The HEE will host a workshop entitled "Integrating Wildlife Habitat into Land Management Prescriptions" on March 11-12 at the Seasons Lodge in Nashville, IN. Sponsored by the IN Division of Forestry, Purdue University, IN Society of American Foresters, the Wildlife Society, the Nature Conservancy and the Center for Bat Research, Outreach and Conservation at Indiana State University, the program will feature modules emphasizing bats, birds, amphibian and reptiles, and small mammals. Indoor sessions on March 11 will describe habitat needs of these taxa groups. Participants will then apply that knowledge during simulated tree marking exercises on the morning of March 12.

This workshop is for foresters, wildlife biologists and land managers. It qualifies for continuing education credit, specifically for 5 hours under Category I for TWS members and 7 hours under Category 1 for SAF members. Preregistration is required by February 20; cost is $20 for students, $80 for SAF and TWS members, and $95 for everyone else. Please contact Brian MacGowan at 765-647-3538 or macgowan@purdue.edu, or http://www.agriculture.purdue.edu/fnr/itws/docs/2015%20spring%20habitat.pdf for more information.

HEE Employment Opportunities

We are currently searching for a field assistant and several field technicians for the upcoming summer data collection. The field assistant will be conducting breeding bird surveys (May-June), small mammal trapping (July-August, October), and woodland salamander surveys (Sept.-Nov). This position will have additional responsibility for assisting with acorn surveys, data collection for prescribed fire treatments, and other tasks as assigned. This individual will serve a crew supervisor and be the housing facility manager during the field season. Compensation is $12.00 per hour plus housing.

There are up to seven field technician positions available. Primary duties will be to conduct aural bird surveys and small mammal trapping. Bird surveys may also be conducted on sites in the Hoosier National Forest between the HEE and Tell City, IN. Additional duties may include nighttime owl surveys, insect sampling, and vegetation surveys. Compensation is $10.00 per hour plus housing.

Contact Jeff Riegel (jriegel@purdue.edu) for more information and to apply.

HEE RESEARCH SPOTLIGHT

The Spiders of the HEE

Dr. Marc Milne, Department of Biology, University of Indianapolis

Arachnids are an important, yet understudied component of most forest communities. They serve as important predators of many invertebrate taxa and are components of avian and mammalian diets. Despite these key roles, the efforts of forest management on woodland spiders is largely unknown.

Dr. Marc Milne aims to help fill that knowledge gap using the HEE study as his laboratory. Over the next 10 years, Mark will 1) determine the diversity and abundance of spiders within southern Indiana hardwood forests; 2) determine how land use and timber harvesting regimes affect that diversity and abundance; and 3) determine how timber harvesting and prescribed fire interact to either promote or reduce arachnid communities.

Sampling for spiders will occur year-round. There area a variety of methods that will be used. Hand sampling is used to look through the leaf litter, on vegetation, and on the ground. Sweep netting uses a sweep net to collect spiders from low vegetation, while shrub beating using a beating sheet and stick to knock spiders off of higher vegetation. Pitfall trapping will be used as well; this involves digging a small hole (< 15 cm deep) and placing small cups (~250ml) into the ground. These cups are filled with either propylene glycol, a non-toxic antifreeze, or with soapy water. These traps are collected weekly. Finally, Berlese funnel traps will be used with field-collected leaf litter. In Mark's lab, the litter is placed in a large funnel atop a flask of preservative; spiders tend to flee deeper into the litter, eventually falling into the preservative.

If you see Mark on one of his weekend collection trips to HEE, please say hello. Welcome to HEE, Mark!

New HEE & HEE-Related Publications

Currylow, A.F.[a], A.J.Johnson and **R.N.Williams**[a]. 2014. Evidence of ranavirus infections among sympatric larval amphibians and box turtles. *Journal of Herpetology* 48(1): 117-121. DOI: 10.1670/12-235

Kimble, S.J.A.[a], O.E.Rhodes, Jr. and **R.N.Williams**[a]. 2014. Unexpectedly low rangewide population genetic structure of the imperiled eastern box turtles. *PLoS ONE* 9:e92274. DOI: 10.1371/journal.pone.0092274

MacNeil, J.E. and **R.N.Williams**[a]. 2014. Effects of timber harvests and silvicultural edges on terrestrial salamanders. *PLoS ONE* 9(12):e114683. DOI: 10.1371/journal.pone.0114683

Wagner, J.R. and **K.Islam**. 2014. Nest-site selection and breeding ecology of the Cerulean Warbler in southern Indiana. *Northeastern Naturalist* 21(4): 515-528. DOI: 10.1656/045.021.0403

New HEE Graduate Students

Dana Nelson

Dana is originally from Kansas and is a M.S. student studying small mammals under the direction of Dr. Rob Swihart at Purdue. She is collecting mark-recapture data to assess the effects of silvicultural treatments on the density and vital rates of white-footed mice and chipmunks. Additionally, Dana will be assessing the short-term responses of small mammal populations to prescribed burns that will be implemented on the HEE research units in 2015 and 2016.

Claire Nemes

Claire is originally from Maryland, but is thrilled to be working at Ball State University on her M.S. degree. For her thesis, she is studying Cerulean Warblers (*Setophaga cerulea*) on the HEE be using radio telemetry to track the movements of fledgling warblers. This will allow her to determine how their habitat use differs from that of adult birds, and how this fledglings may be affected by different silvicultural practices.

Timothy Divoll

Tim studied spatio-temporal relationships between bat species in coastal Maine to obtain his M.S. from the University of Southern Maine before coming to Indiana. He is working on the foraging ecology of northern long-eared (*Myotis septentrionalis)* and Indiana bats (*M. sodails*). In the field, he is tracking bats at night to determine where they forage and then collecting insects in different silvicultural treatment plots and prescribed fire areas. In the lab, he is using molecular techniques to extract and sequence insect DNA from bat fecal pellets in hopes of relating diet to resource use and insect availability and characteristics.

New HEE & HEE-Related Publications

Kellner, K.F., **J.R.Riegel** and **R.K.Swihart**. 2014. Effects of silvicultural disturbance on acorn infestation and removal in the central hardwood forest region. *New Forests* 45(2): 265-281. DOI: 10.1007/s11056-014-9409-9

Kellner, K.F. and **R.K.Swihart**. 2014. Changes in small mammal microhabitat use following silvicultural disturbance. *American Midland Naturalist* 172(2): 348-358. DOI: 10.1674/0003-0031-172.2.348

Emphasis indicates: **HEE principal investigator (PI), *HEE graduate student*, HEE Staff,** [a] Former PI or graduate student

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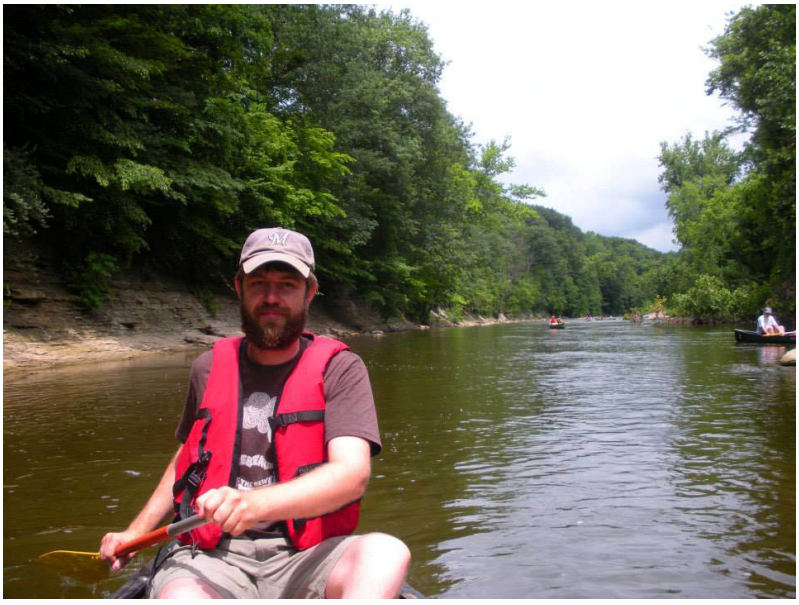
A Goodbye from the Project Coordinator

The last two years I've spent as HEE coordinator have been invaluable and I've gained an incredible amount of experience. All of the projects I have worked on, and the people I have worked with, have been great. However, after being away from my home state of Wisconsin for close to a decade, I found it too hard to refuse an offer for a position there. So this is the last newsletter you will receive from me; the next will be written by the new HEE coordinator.



Of all the things I've learned from the HEE, perhaps the most important is just how complex Indiana's forested ecosystems are. There is no panacea for maintaining ecological integrity in Indiana's forests. The effects of both the decision to manage a forest and the decision not to manage a forest can be positive for some ecological communities and negative for others. I realize that the paramount factor to consider is how we can assess what current and future ecological problems will be and to develop management objectives that address those concerns. In some cases, not managing a forest may be the best decision. In others, such as creating habitat for early successional bird species, intensive forest management may be necessary. In most cases, it is probably more important to consider the impact of a management decision not only at the level of the treatment (i.e. 10's of acres) but how the treatment fits in the context of the landscape (i.e. 1000's of acres). Large forested landscapes such as those in southern Indiana provide a prime opportunity for using forest management to create diverse habitat structure across the landscape that can provide the greatest benefit to the most species. In the position I'm moving to I will be working with Audubon and the US Fish and Wildlife Service managing bottomland hardwood forest with a focus on maintaining and restoring bird habitat. The great research being conducted on the HEE will certainly inform and guide on-the-ground decisions in my new position and I am certain the research will become increasingly valuable to other land managers and policy makers in Indiana, the Midwest, and throughout the US. I'm looking forward to seeing the information that comes out of the HEE in the future, and I hope that you are too!

Thanks so much for the opportunity to serve, and please don't hesitate to get in touch. My new email address will be ameier@audubon.org.

Andy Meier