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Hardwood Ecosystem Experiment

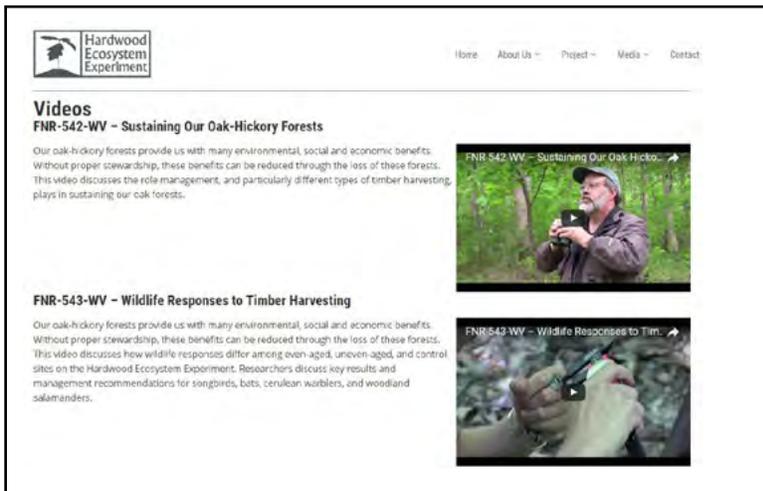
THE HEE UPDATE

<http://HEEForestStudy.org>

Charlotte Owings, Project Coordinator | 765-494-1472 | freemac@purdue.edu

NEW HEE VIDEOS

In April of this year, two new Purdue University Extension videos about the Hardwood Ecosystem Experiment became available. The first video, “Sustaining Our Oak-Hickory Forests”, provides an overview of the Hardwood Ecosystem Experiment and some of the factors that have led to the development of the HEE. The second video, “Wildlife Responses to Timber Harvesting”, features some of the HEE Researchers and Graduate Students discussing their findings on how different forest management practices affect breeding birds, bats, Cerulean Warblers, and salamanders. You can view the videos by visiting our website <https://heeforeststudy.org/videos/> or the Purdue University Extension Youtube Channel <https://www.youtube.com/playlist?list=PLtXSf1tu3Jd939XAQfJSPpciL884Oqtj0>.



*The Hardwood Ecosystem Experiment
Videos page on the HEE website*

Middle School Lesson Plan about Forest Management

Skye Greenler, a graduate student at Purdue University, has created a lesson plan for middle school students. The lesson, *The Great Clearcut Controversy*, asks students to investigate the effects of clearcuts on a number of different species and afterwards discuss how they would manage the forests. The lesson plan meets a number of Indiana Science Standards and utilizes real data from the Hardwood Ecosystem Experiment. It will be available later this year for **FREE** through Purdue University Extension and will be accessible on the Purdue University Extension website as well as through the Extension Education Store.



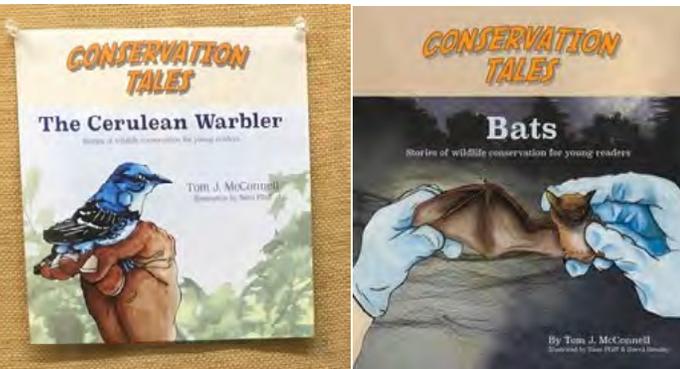
Graduate student Skye Greenler

Cerulean Warbler and Bat Children's Books

Dr. Tom McConnell at Ball State University has written two new children's books that feature HEE Researchers and graduate students: one about the Cerulean Warbler and one about bats.

Conservation Tales: The Cerulean Warbler follows a young girl named Alyssa who learns about ongoing research on the endangered Cerulean Warbler. Two Ball State graduate students (Clayton Delancey and Garrett MacDonald) working with Dr. Kamal Islam to study Cerulean Warblers at the HEE are included as characters in the book who help teach Alyssa about the research they are doing on the Cerulean Warbler and some of their findings.

Conservation Tales: Bats is the second book in the series and follows a young girl and her friends who learn about bat conservation and research while at summer camp. The book is based on research by HEE Researcher Dr. Tim Carter and his graduate students Keifer Titus and Kristi Confortin with support from the Organization for Bat Conservation.



Above: The covers of the new *Conservation Tales* books written by Dr. Tom McConnell and illustrated by Sami Pfaff and Sami Pfaff and Sierra Hensley, respectively. Images of the books were taken from the *Conservation Tales* website (see below).

You can find out more about the books by visiting <http://www.conservationtales.com/>.

New HEE Graduate Student

Elizabeth Bielke

Elizabeth Beilke hails from a small town in rural Wisconsin. She completed her undergraduate degree at the University of Wisconsin–Eau Claire and then spent a few years working for federal agencies like USGS and USFWS before returning to school. Now she is pursuing her doctorate with HEE Researcher Dr.



Joy O'Keefe at Indiana State University. She is still refining the details of her project, but is interested in bat trophic ecology and the intersection between bats, insects, and the forest.

Congratulations Dana!

This Spring, Dana Nelson obtained her Master's degree from Purdue University. Dana was a graduate student of HEE Researcher Dr. Robert Swihart. Her thesis is entitled, "Demographic responses of small mammals to disturbance induced by forest management".

Dana is now working for the Wyoming Game and Fish Department as a Non-game Project Biologist.

Congratulations Dana!

Snapshots from the 2017 Field Season



This spring and summer have been busy with numerous field surveys taking place. To the left are just a few of the photos taken by field technicians, graduate students, and HEE staff this summer. (Photo captions go clockwise from top left):

An eastern red bat caught during bat surveys (photo: *Lizz Beilke*)



A yellow-billed cuckoo caught in one of the HEE clearcuts (photo: *Will Britton*)

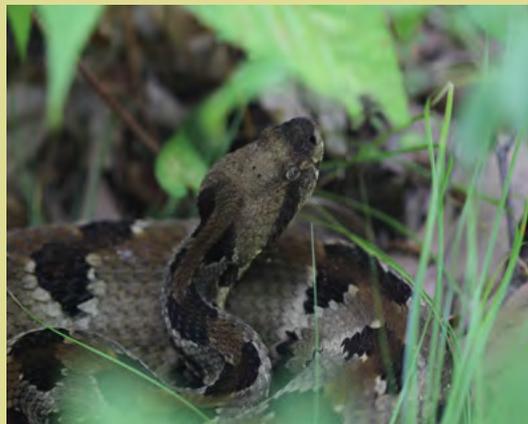
A slope climbed to reach an over-story plot by our summer field technicians working on overstory surveys. If you look very closely, you can see one of our technicians scaling the slope (photo: *Dave Ralston*)



A northern long-eared bat being fit with a radio transmitter (photo: *Tim Divoll*)

A timber rattlesnake found in a HEE research area (photo: *Andrew Jamison*)

A few of the moths caught in our moth traps this summer (photo: *Dave Ralston*)



A sassafras tree growing in one of the HEE nine year-old clearcuts (photo: *Charlotte Owings*)

A non-burned area on the left-hand side of the path and a just-burned area on the right side of the path after one of our spring burns (photo: *Dave Ralston*)

Do you have any pictures from any HEE related event or activity? If so, you can submit them to our Project Coordinator at freemac@purdue.edu. Please include any information about the pictures.

New HEE Publications

Hale, V., **B. MacGowan**, L. Corriveau, D. Huse, **A.F. Currylow**, and S. Thompson. 2017. Radio transmitter implantation and movement in the wild Timber Rattlesnake (*Crotalus horridus*). *Journal of Wildlife Diseases*, doi: 10.7589/2016-08-186

Kellner, K. and **R.K. Swihart**. 2017. Herbivory on planted oak seedlings across a habitat edge created by timber harvest. *Plant Ecology*, 218: 213-223.

Kellner, K. and **R.K. Swihart**. 2017. Simulation of oak early life history and interactions with disturbance via an individual-based model, SOEL. *PLOS One* <https://doi.org/10.1371/journal.pone.0179643>

Murray, Bryan D., Jeffrey D. Holland, Keith S. Summerville, John B. Dunning, Michael R. Saunders, and Michael A. Jenkins. 2017. Functional diversity response to hardwood forest management varies across taxa and spatial scales. *Ecological Applications* 10.1002/eap.1532

What's Happening at the HEE this Fall?

1. Mast surveys
2. Prescribed burning (two more areas to go to complete the first round of burning for all burn units!)

Field Tours and Presentations

This summer, we hosted a field tour of the HEE at Morgan-Monroe State Forest. The field tour was for the Natural Resources Teacher Institute. We also held an "indoor field tour" due to heavy rains for a group from the Association for Conservation Information.



Teachers participating in the Natural Resources Teacher Institute learning about moth surveys and prescribed burns at the HEE

Central Hardwoods Conference

Mark your calendars for **May 14-17th, 2018** for The Central Hardwoods Forest Conference. The conference will be held in Bloomington, Indiana at the Monroe Convention Center. Many HEE Researchers will be presenting their findings at the conference and on **May 17th**, there will be a HEE Field Tour.

Interested in scheduling a tour of the HEE for your group? Please contact the HEE Project Coordinator at freemac@purdue.edu or 765-494-1472.



Hardwood Ecosystem Experiment

Purdue University
Department of Forestry and Natural Resources
Pfundler Hall, Room G021B
715 W. State St. West Lafayette, IN 47907-2061