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Hardwood Ecosystem Experiment

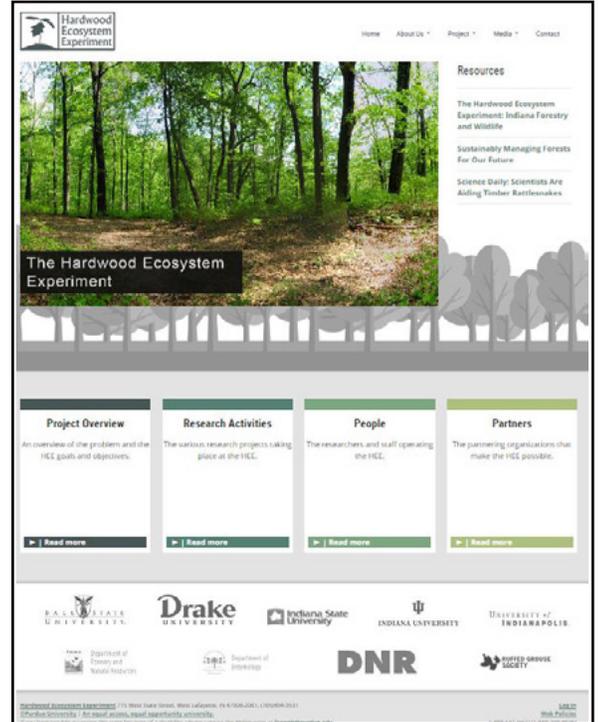
# THE HEE UPDATE

<http://HEEForestStudy.org>

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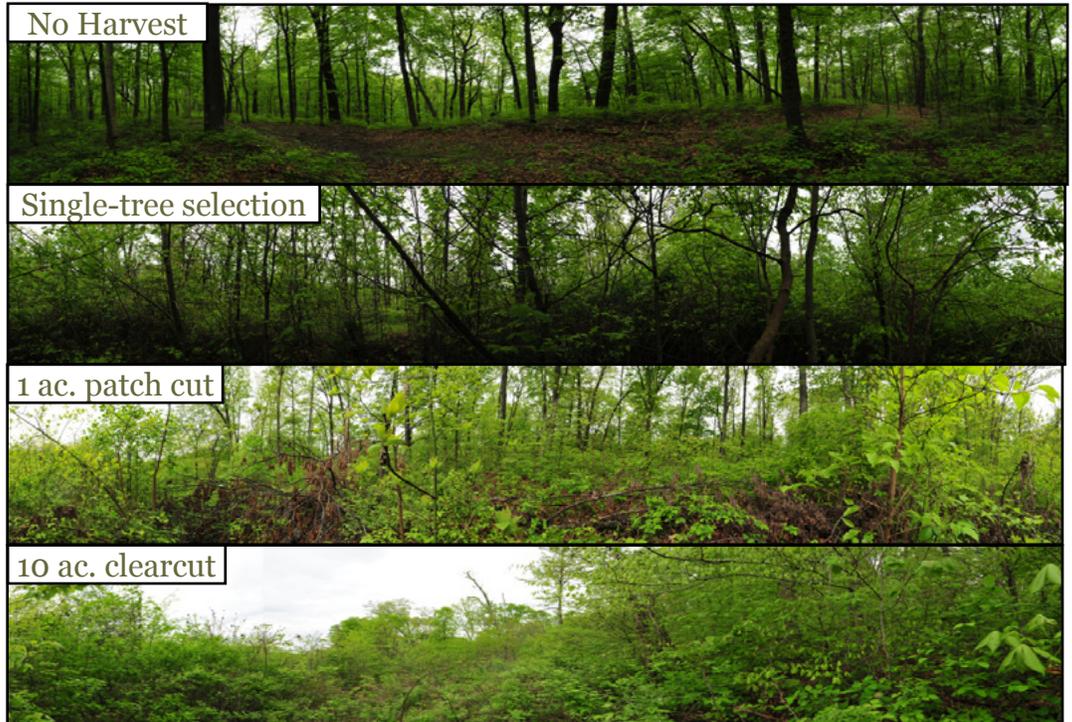
## A NEW LOOK

The HEE website has a new look and new content! Starting in Fall 2015, the transition began towards a new design for the HEE website. Diana Evans, Extension Information Coordinator and Department Web Support, along with Jake Burch, Assistant Web Designer, for the Forestry and Natural Resources Department at Purdue University, designed the site with input from HEE staff. On the remastered website, you can find updated information about the research going on at the HEE, videos about research findings, recent publications, HEE newsletters, job postings, and more!



Check out the new design and content at <http://HEEForestStudy.org>

HEE Harvest Panoramas, Spring 2016, 8 Years Post-harvest



## Congratulations Claire!

This Spring, Claire Nemes obtained her Master's degree from Ball State University. Claire was a graduate student of HEE Researcher Dr. Kamal Islam. Her thesis is entitled, "Cerulean Warbler (*Setophaga cerulea*) Microhabitat Use in Southern Indiana".

Claire will now be working for Virginia Tech's Conservation Management Institute as a Wildlife Biologist/Natural Resource Specialist at the Quantico Marine Corps Base in Virginia.

Congratulations Claire!

## New HEE Publications

1. Murray, B.D., C.R. Webster, M.A. Jenkins, M.R. Saunders, and G.S. Haulton. 2016. Ungulate impacts on herbaceous-layer plant communities in even-aged and un-even-aged managed forests. *Ecosphere* 7(6): e01378. [10.1002/ecs2.1378](https://doi.org/10.1002/ecs2.1378).
2. Kellner, K.F., N.I. Lichti, and R.K. Swihart. 2016. Midstory removal reduces effectiveness of oak (*Quercus*) acorn dispersal by small mammals in the Central Hardwood Forest region. *Forest Ecology and Management* 375: 182-190.
3. Barnes, K.W., K. Islam, and S.A. Auer. 2016. Integrating LIDAR-derived canopy structure into Cerulean Warbler habitat models. *The Journal of Wildlife Management* 80(1):101-116.
4. MacGowan, B.J., A.F.T. Currylow, and J.E. MacNeil. 2016. Short-term responses of Timber Rattlesnakes (*Crotalus horridus*) to even-aged timber harvests in Indiana. *Forest Ecology and Management*, [http://dx.doi:10.1016/j.foreco.2016.05.026](https://doi.org/10.1016/j.foreco.2016.05.026)

## New Graduate Students

### Keifer Titus

Keifer recently graduated from Radford University with a degree in Environmental Biology. He is now working on his M.S. degree with HEE Researcher Dr. Tim Carter at Ball State University.



Keifer is studying the effects of timber management, specifically shelterwood harvests, on bat activity in southern Indiana to understand how forest structure and composition change across a forest gradient and what variables are driving bat habitat selection.

### Garrett MacDonald

Garrett is a native of Spokane, WA and joins the HEE after most recently working with the Cornell Lab of Ornithology on a project examining the breeding ecology



and winter habitat quality of Hudsonian Godwits in Alaska and Chile, respectively. He is now working on his M.S. degree with HEE Researcher Dr. Kamal Islam at Ball State University. Garrett is investigating fledgling habitat use and seasonal movements of Cerulean Warblers after they depart Indiana.

## Snapshots from the 2016 Field Season



*Photo captions (clockwise from top left):*

Acoustic equipment deployed in one of the harvest areas for bat acoustic surveys (photo: Keifer Titus).

A chipmunk caught during small mammal surveys at the HEE (photo: Dana Nelson).



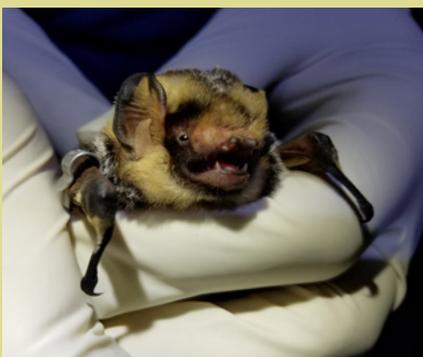
A scarlet tanager in one of the research areas that was clearcut in 2008 (photo: Patrick Ruhl).



A yellow lady slipper orchid in a HEE research area this spring (photo: Charlotte Owings).



A hoary bat captured during bat surveys at the HEE (photo: Helen Sung).



A Cerulean Warbler fledgling that was banded and tracked by the Cerulean Warbler crew (photo: Kelsey Pangman).

*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](mailto:freemac@purdue.edu). Please include any information about the pictures.*

## Outreach

On June 23rd, teachers taking part in the Indiana Natural Resources Teachers' Institute coordinated by Project Learning Tree, Indiana DNR, and Purdue FNR Extension spent the morning learning about the research that takes place at the HEE. The teachers visited a few of the HEE research areas and got hands-on experience taking measurements and collecting data that are routinely collected at the HEE. The teachers spent the rest of the week-long program learning about various aspects of forest ecology, management, and the forestry industry. At the end of the week, teachers left with various resources that they can utilize in their classrooms.



*Participants of the Natural Resources Teachers' Institute learning tree inventory techniques*

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

## From the Project Coordinator

While compiling this newsletter, one of the words that kept coming to mind was the word "change". In the last six months, we have had new people become involved with the project (including a new project coordinator, field technicians, and graduate students), new questions being asked and studied, and the development of a new design and content for our website. However, changes at the HEE have not been restricted to new people, questions, and media. The areas in which our researchers and technicians are working look dramatically different than when the project began. One of the most dramatic examples is one of the HEE research areas that was clearcut in 2008 in Morgan-Monroe State Forest (*see photos below of the site clearcut in 2008 (left) and in June 2016 (right)*). It is amazing to see what a difference eight years can make and the density of vegetation that is now present there. I am excited to see what changes we may continue to see in the next 90 years of the project, what new questions we will explore, and what we will learn from continuing to monitor these areas.

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## Hardwood Ecosystem Experiment

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