



Dr. Liesl Erb, Professor of Conservation Biology at Warren Wilson College, has devoted her life to motivate her students and the surrounding community to recognize how human activities are impacting wild animals, particularly mammals that are living in mountain regions. Along with her students, Erb spends hundreds of hours to studying local species and communities of concern among conservationists. In addition to serving as the Mammalogy Science Mentor for ecoEXPLORE, she is currently leading her students in a collaboration with multiple community partners to build a citizen-science project focused on bats.

PROFESSOR SPOTLIGHT

by Rachel Clevenger

Warren Wilson College and Conservation Biology

Chasing Dreams, Feathered or Not

Erb notes that as an undergraduate, she spent many a late night chasing owls through forests, pursuing the exhausting and even perilous work in the name of conservation. Since that time, after earning her Ph.D. in Ecology and Evolutionary Biology from the University of Colorado—Boulder, Erb has continued to chase imperiled, elusive species. She adds, “Conservation biology programs at small colleges are even rarer than those owls I pursued years ago. I love our community of Warren Wilson Owls, where students can chase their dreams, feathered or not, from day one.”

In the Environmental Studies programs at Warren Wilson College, students learn to appreciate the complicated but symbiotic relationship that connects humans and the environment; they are focused on understanding how society impacts the environment, as well as the converse. Rather than treating an academic view of this connection as a purely analytical exercise, they are called to learn via experiential, hands-on learning where they are invested in exploring a future that allows for mankind and nature to thrive.

Explaining that the major ties in well with a focus on applied learning, Erb notes that students are being trained to actively improve

biodiversity on the planet through studies of conservation science. She believes, as such, students are in a position to “change the world” while in college by integrating the natural sciences with social sciences, rather than waiting until after graduation to start making a difference in their communities.

Citizen Scientists and Batboxes

In addition to all her teaching and service for Warren Wilson College, Dr. Erb is the Mammalogy Science Mentor for ecoExplore, a citizen science program for K-8 children that was developed by The North Carolina Arboretum; ecoExplore works to combine kid-friendly technology with scientific exploration to foster an engaging learning environment and encouraging kids to participate in citizen science and explore nature.

In essence, Citizen Science encourages people of all ages to collect and submit data to scientists, which assists in research. As citizen scientists, they assist professional scientists who are focused on ways changes in the environment impact animals, plants, and natural resources.

Though there are seventeen species of bats in North Carolina, and thirteen species specific to western North Carolina, disease is wiping out many of these bats, and Erb believes most people are not cognizant of the benefits bats

provide for agriculture and farming, such as eating moths and mosquitoes. The services provided to farmers, in terms of natural pest control and money saved, is nearly inestimable.

Additionally, Erb is focused on “improving outreach,” as she and a handful of her talented students set up acoustic monitoring, so they can use high-pitched frequencies via an app attached to their smartphones to echo-locate bats and track their movements. Meanwhile, she and her students are working to convince the public of what is meaningful to them to know about bats and their benefit to the ecosystem, in order to engage fellow citizens in the conservation efforts.

During the summer, bats are clearing out crops for farmers at night, but during the day they need a place to roost. Thus, one of the primary issues Erb and her students have been facing is one of habitat loss, as bats no longer have places where they can hibernate. Erb and her team have focused on building batboxes; as part of the project, she has engaged with students who are talented woodworkers.

Student Elsa Cliner helped lead that project on the woodworking crew, and she notes how much she has enjoyed “being able to create something that is going to be used,” viewing the fruits of their labors in real-time. However, her work with Erb has gone beyond the batbox



project. Having taken several classes with Erb, she has been struck by how talented Erb is as a lecturer, as she has an innate ability to share complex ideas with her students while keeping them invested, questioning, and fully engaged. Cliner adds, “She really takes the time to get to know her students as individuals.”

Corinna Steinrueck, a current Warren Wilson student, also views one of Erb’s greatest assets as this ability to convey complex data in innovative ways, so her students are able to grasp and retain the material. She adds, “Sometimes it is through going into the field and observing or conducting a study, and other times she creates activities that require us to critically think about what we have been learning and apply it.” Steinrueck believes Erb’s choices allow her students to experience a more nuanced, deeper understanding of the material.

Steinrueck also shares that Erb’s creativity in teaching is not her only strength; her approach—with a focus on positive reinforcement—ensures that her students are intellectually challenged but that struggling students will not feel

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discouraged. Steinrueck states, “I have seen countless students thrive in Liesl’s classes because of her innovative teaching and belief in each individual’s ability to succeed.”

The Hope Squad

Cliner notes that another of Erb’s pedagogical gifts is her ability to manage to “keep it positive even when dealing with heavy topics.” In the

Conservation Biology course, for instance, Erb started a “Hope Squad,” where students would take turns sharing an optimistic story from somewhere in the world, some forward movement in conservation that could keep them focused on momentum—not focused on roadblocks.

Cliner focused on the successful rewilding of beavers in the UK, where they had been extinct



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for nearly 500 years. Researchers released a few at a time and carefully monitored their progress, until eventually the species was repopulated in the UK, improving the wetlands and decreasing flooding.

For his story of hope, Warren Wilson student Tristan Perryman shared that a partnership between Apple and The Conservation Fund to protect working forests was benefiting both Apple and North Carolina. The effort ultimately protected North Carolina's Green Swamp Preserve, home to the Venus flytrap and five other rare species. Across 300 acres that were purchased in North Carolina, The Conservation Fund planted 185,000 trees, including the Atlantic white cedar and the native longleaf pine, trees that provide a home for a rare butterfly.

Recent Warren Wilson graduate Brian Wuertz shared how interns and partner organizations are using camera trapping—a simple technological tool—to study wildlife in the Great Smoky Mountains, whereby researchers can learn more about animals' behavior in the wild without human involvement. The non-intrusive cameras are activated by movement, so the team can study elk and bears without putting biologists in the field. Their goal is to protect wildlife in crossing areas to examine if new structures were needed at overpasses or underpasses, which has a direct impact on public safety as well.

Perryman notes that Erb is the reason he is pursuing a degree in Conservation Biology, saying that her “positive outlook and disposition is contagious.”

Noting that her work both inside and outside of the classroom have served him in ways he finds invaluable, Perryman adds, “In a field where it is easy to become pessimistic, she helps me to stay positive and look on the bright side.”

Similarly, Wuertz, who is still involved with the BAM (Bat Acoustic Monitoring) project, shared a similar experience. While Erb certainly played a crucial part of his education and subsequent employment, helping him secure an internship that resulted in his current position as a Wildlife Fellow with the National Parks Conservation Association, the most powerful influence may be an indirect one. Like his peers, he was impressed by Erb's “very hopeful outlook on conservation,” despite any number of setbacks or frustrations. She simply refused to be overwhelmed by challenges, he explains.

Wuertz notes that while a sunny outlook is not necessarily his own default position, now

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that he is working in the real world he often inhabits a room filled with conservationists who may quickly grow overwhelmed and disillusioned by the number of roadblocks.

He saw firsthand how important it was to somehow project a positive, undaunted forward movement—and maintain an optimistic energy in the room—in order to not become bogged down to the point of apathy and inertia. He saw that in Erb's classrooms, and he knew how powerful an influence that relentless optimism could be. Thus, in his own workplace, he does all he can to play that role—to be that voice of hope.



ABOUT THE AUTHOR: Dr. Rachel James

Clevenger earned her M.Ed. degree from

Mississippi College. After finishing her PhD

in Composition and Rhetoric, she taught and served as the University Writing Center Director for Birmingham Southern College and University of Alabama at Birmingham. Most recently, she taught Business Communications at Samford University.



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