Community Connections Through Conservation

Written by Nicole Freidenfelds, Visiting Assistant Extension Educator, NRCA Program Coordinator, Department of Natural Resources and the Environment, University of Connecticut

The Natural Resources Conservation Academy (NRCA) at the University of Connecticut (UConn) is a unique program that engages Connecticut teens and adult volunteers throughout the state with conservation efforts at the community level. The NRCA includes two different programs students can choose to participate in – the Conservation Ambassador Program (CAP) and the Conservation Training Partnerships (CTP) Program. With the guidance of UConn faculty and students, Academy participants in both programs conduct projects that address local conservation issues, such as creating an inventory of invasive plant species for a specific property, collecting water quality data for stream/wetland protection, using geospatial technology to map resources or features of interest in a given area, along with many others. The products that result from these projects contribute to scientific research and vary from educational presentations and pamphlets to interactive online maps and short videos.

Evelyn, a student in the Conservation Ambassador Program, digs through leaf litter for earthworms and eastern red-backed salamanders with her community partner, Annette Evans, a doctoral student from the Ecology and Evolutionary Biology department at UConn.

PHOTO: A. CABANISS, UCONN NRCA

Popular among NRCA participants are conservation projects that focus on diverse topics related to wildlife. The species and habitats they choose to explore range from insects to bears and backyards to city trails. Here, we highlight a number of wildlife-related projects being conducted by members of the current NRCA class.

Listening for State-listed Bats

All of Connecticut's native bat species are considered of greatest conservation need according to the state's Wildlife Action Plan, and all but one are listed under the state's Endangered Species Act. In addition to habitat loss and disturbance to roosting sites, another major threat to bats is the deadly fungus that causes white-nose syndrome, which has resulted in the death of tens of thousands of bats since it was first discovered in Connecticut in 2008.

Working as Conservation Training Partnerships (CTP) teammates, Laurie and Aiden are using acoustic recording devices to survey for bats throughout northwest Connecticut. Aiden, a high school student, notes that they are not only contributing valuable data to the state's long-term bat monitoring efforts, but also helping "educate the public about bats and their importance in the environment." Bats are often misunderstood, even though they provide important ecosystem services, such as reducing the number of insect pests (e.g., mosquitoes) and pollinating plants in some environments.

As one of Kent Land Trust's Board

Dr. Erin Kuprewicz, Vertebrate Collections Manager in UConn's Biodiversity Research Collections, Department of Ecology and Evolutionary Biology, lends her expertise during a tour of the vertebrate collections for a closer look at the mammals that benefit from beaver-created wetlands.
PHOTO: N. FREIDENFIELDS, UCONN NRCA

of Directors, Laurie particularly wants to focus their survey efforts in the town of Kent, land trust properties, and specific micro-habitats within these areas so that the town and land trusts can better manage habitat for bat species. She also points out the need for well-trained wildlife rehabilitators who can care for abandoned or injured bats to help release them safely back into the wild.

Salamanders vs. Earthworms

Over the past few decades, an increase in human activity and movement has enabled the spread of non-native earthworms into new areas of North American forest ecosystems. These invasive earthworms are driving changes in soil structure, nutrient cycling, and competition with native species for food and/or space.

Evelyn, a member of the NRCA's Conservation Ambassador Program (CAP), notes that "something as small as an earthworm can affect the ecology of a forest." She is partnering with Annette Evans, a doctoral student at UConn, to examine the impacts of non-native earthworms on the abundance of eastern red-backed salamanders (*Plethodon cinereus*) in southwestern Connecticut. It is thought that earthworms reduce the amount of leaf litter and detritus on the forest floor, which in turn reduces the availability of invertebrates that make up the majority of salamander diets.

As Annette points out, "The introduction of non-native species, such as earthworms, can have devastating consequences for native ecosystems, including those in your town! Everyone can help preserve native Connecticut

Aiden is using SonoBat software to analyze bat acoustic recordings as part of his Conservation Training Partnerships project.
PHOTO: L. DOSS, MARVELWOOD SCHOOL

wildlife, such as salamanders, by not dumping unwanted plants or animals outside and never removing rocks or fallen logs from forests (even those next to your backyard!), as they provide important homes to native wildlife."

Birds of a Feather

Michael and Michaela are a father-daughter CTP team whose goal is to combine Michaela's passion for birding and Michael's passion for the Oswegatchie Hills Nature Preserve in East Lyme. According to Michaela, "The Oswegatchie Hills is an astounding place, with countless stories to tell." She and her dad plan to create a series of entertaining and educational videos about the preserve "in hopes that it will bring more interest to the Hills." Michael adds that when people become fascinated by the different things they can see and experience in the woods, they become more passionate about nature and thereby more inclined to preserve it.

Eastern red-backed salamanders (*Plethodon cinereus*) occur throughout Connecticut and are commonly found under leaf litter and woody debris on the forest floor.

PHOTO: N. FREIDENFIELDS, UCONN NRCA

Ovenbirds and Stock Market Models

Ovenbirds are olive-green warblers commonly heard singing throughout Connecticut forests during spring and summer, and the subject of CAP member Allie's project. She is working with Eliza Grames, a UConn doctoral student, to better understand factors that affect ovenbird singing. Using models similar to those in financial market trading and earthquake aftershock analysis, Eliza and Allie are exploring the role of time during the breeding season and forest fragmentation on ovenbird singing behavior.

When asked about the project, Allie said it is "a perfect fit for me because I am passionate about computer science and technology, as well as environmental conservation. I was surprised when I began my project at how easily accessible it was to me. I am not an expert on bird calls or Connecticut bird species, but I was immediately able to start learning more. It's important to understand that environmental conservation can be connected to many other fields (in this case, computer science) and that all forms of research are valuable." Eliza hopes "to help Allie develop programming skills that she can use in her future research and give her an opportunity to combine her interests in computer science and wildlife."

Eager Beavers

Inspired in part by the book *Eager: The Surprising, Secret Life of Beavers and Why They Matter* by Ben Goldfarb, CTP teammates, Christin and Melinda, are creating an online story map featuring a beaver-created wetland at Mendell's Folly preserve, a property of the Bethany Land Trust. Their story map will include information they gained during a recent visit to the UConn Storrs campus. Melinda and Christin were given a tour of the UConn vertebrate collections by Dr. Erin Kuprewicz and met with Anna Puchkoff, a graduate student in the department of Natural Resources and the Environment, to learn more about wetlands, the valuable services they provide, and the organisms that use them.

Melinda's goal with this project is to educate the general public and to encourage more people to participate in citizen science programs like the NRCA or smaller events, such as The Great Backyard Bird Count.

Interested in learning more about the Natural Resources Conservation Academy and conducting a local wildlife-related conservation project? Visit *https://nrca.uconn.edu* or email *nrca@uconn.edu* for more information. Programs are available for teens and adults. The CTP program is funded by a grant from the National Science Foundation; CAP support is provided in part by the Goldring Family Foundation, Inc.