The Clifton Institute

Fall 2020

Note from the Directors

January will mark our three-year anniversary as co-directors of the Clifton Institute. We are so grateful for the many volunteers, donors, and program participants who have helped us get kids outside and protect native plants and animals in the last three years. While 2020 has been a challenge in many ways, we have used the opportunity to find new ways of accomplishing our mission, and we have big plans for 2021. These include teaching 1,500 children and adults about nature and the environment, finishing establishing native plants in the organic treatment of our grassland restoration experiment, advising landowners on property management for conservation, and studying the nesting habitat requirements of American Kestrels. **You can help us accomplish those goals by donating at cliftoninstitute.org/donate. Thank you for helping us inspire future generations of environmental stewards and conserve native biodiversity! —Eleanor and Bert Harris, co-directors**

Native Seed Collection and Sale

Our goal at the Clifton Institute is not only to promote native plants, but to restore native prairies the way they were before development, fire suppression, and the invasion of exotics led to their decline. To accomplish that goal, we advocate the use of locally native, Virginia-ecotype plants in restoration projects and wildflower meadow plantings. Unfortunately, seeds of many plant species that are characteristic of native grasslands in our area are unavailable commercially. Bert has spent the last two falls collecting seeds from native plants around the area. (We always collect with permission and we leave the vast majority of seeds to disperse naturally or be eaten by animals.) **This fall Bert collected seeds from 79 species, up from 37 species last year.** With the help of a dedicated volunteer, Bert has been busy cleaning and sowing the seeds in flats over the last couple of months.

On September 26 we held a plant sale, during which we sold seedlings grown from last fall's seeds. We also prepared a seed mix called "Piedmont Prairie in a Bag" to sell to landowners for meadow plantings. The mix includes 27 of the most characteristic and beautiful species that are found in grasslands in our area. We will have another sale next spring at which we will sell seedlings from this fall's seeds. We are also going to plant some of the seeds we collected this fall in rows at Clifton so that when they grow we can collect their seeds and sell a seed mix of northern Virginia ecotype seeds. Thank you to the Warrenton Garden Club who generously supported this work!

Bert collects Wild Bergamot seeds at the Clifton Institute

Native plant sale in September

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pre-K-12 Outdoor Education Continues

In a normal year, fall is our busiest time with school field trips. This fall, to accommodate virtual, hybrid, and home school students, we started **two new series of recurring programs: Nature School for grades K-5 and Middle School Nature Club for grades 6-8**. Instead of teaching a lot of kids one time each, we have taught a smaller number of kids over the course of several sessions. It's been rewarding to get to know the students better and to see how they have learned about and come to appreciate native plants and animals over the course of multiple visits.

We offered Nature School every other Wednesday morning. We had six sessions, attended by an average of 18 students. We taught the students about a variety of topics, including trees, vultures, grasses, beavers, and waterfowl. **On one rainy morning, the students learned the value of standing still in the forest as we found three salamanders and a box turtle and we got to watch a raccoon climb out of its hole in a tree.** One parent told us that her daughter has been "observing and explaining why… vultures are circling." Another told us that after Nature School "my daughter is a vulture know it all and both [my children] filled me in on beavers!" and that "we are so happy to have this local resource."

We hosted Middle School Nature Club every month. We had four meetings, attended by an average of 8 students. **A core group of students has started coming back month after month.** One month the students worked together to build a shelter out of logs and grass. Another month they circumnavigated the upper pond measuring beaver stumps and looking for beaver slides. There are still spots available at spring sessions of Middle School Nature Club!

We have continued to offer our monthly YHikes! and Piedmont Polliwogs programs through the fall, as well as a few virtual programs and small-group hikes for school groups. In the spring, we will be available to lead in-person programs for small groups of students and for virtual field trips. We've just updated our field trip program guide, which you can find online at **cliftoninstitute.org/education**. We hope we'll see you soon!


Nature School students see beavers on the lower pond!

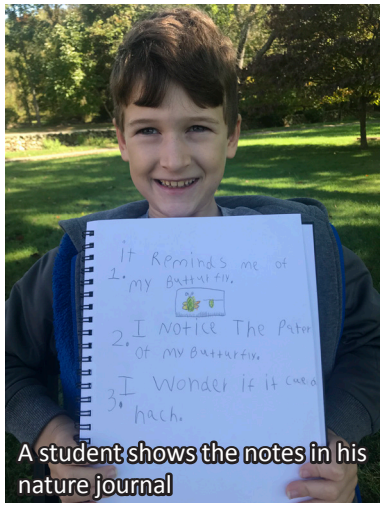

Nature School students find salamanders on a rainy day


Members of the Middle School Nature Club build a shelter out of natural materials


Students find looms during a branch weaving class

"Mrs. Alison and [Piedmont Polliwogs] have truly been such a highlight during this pandemic year! SO SO thankful to have her in our lives!"

—parent of a Piedmont Polliwog



A student shows the notes in his nature journal


Ms. Eleanor and a family on YHikes! look for birds

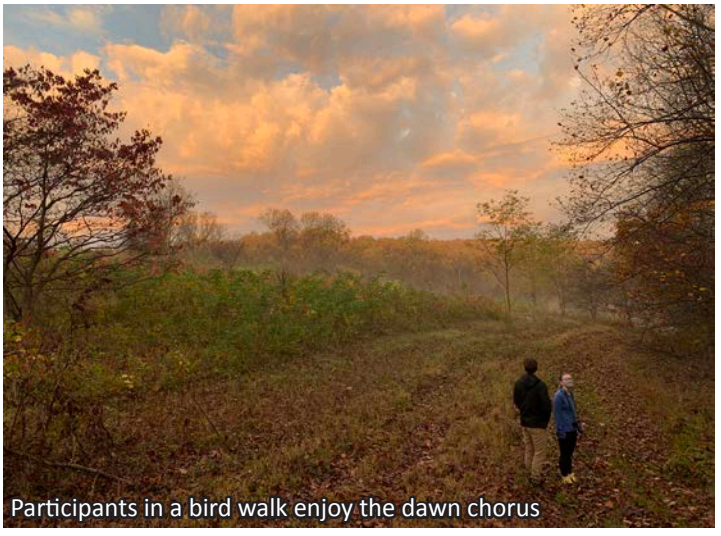

Friends measure trees in the forest

New and Old Adult Program Traditions

Since most of our adult educational programs are in small groups, we have been able to offer just as many this year and Zoom has allowed us to reach an even wider audience than normal. Bert, Eleanor and our Education Associate Alison Zak all enjoy carrying on our annual traditions, as well as starting new ones. In September we held our second annual Creatures of the Night program. **September is a peak time of year for katydids and crickets and it's an amazing time to get outside at night and hear the orthopterans singing, as well as owls, flying squirrels, and all sorts of other nocturnal creatures.** Also in September we held our **first annual Party in the Pawpaw Patch**. Alison shared her passion for pawpaws with our 17 guests with a brief talk and then we foraged from one of our most prolific pawpaw patches and everyone got to taste our most delicious native fruit. One guest at the Party in the Pawpaw Patch told us that "It's hard to imagine a better way to spend an evening." Our Mindful Naturalists series has continued throughout the pandemic. We ended the year of Mindful Naturalists with a meditative session around the fire in November and we look forward to restarting the series in 2021 with Hiking Meditation in January, Birding Like Buddha in February, and Songs of Dusk in March. **Our most popular program of the fall was Bert's talk entitled "What is a Piedmont Prairie?."** 51 people gathered over Zoom to learn about the preliminary results from our surveys of Piedmont prairies last summer and the threats these habitats face. You can read about those results on the next page. In total, between September and December we offered 25 adult programs that were attended by 238 people. We continue to offer in-person programs outside with limited registrations and masks required. You can find all the details on our calendar at **cliftoninstitute.org/events**.

"What keeps me coming back is the combination of the glorious setting of Clifton and Alison's thoughtful, low-key guidance, which always toes the satisfying line between structure and openness." —Lucy Turner, Mindful Naturalist

Guests at our Party in the Pawpaw Patch forage for pawpaws

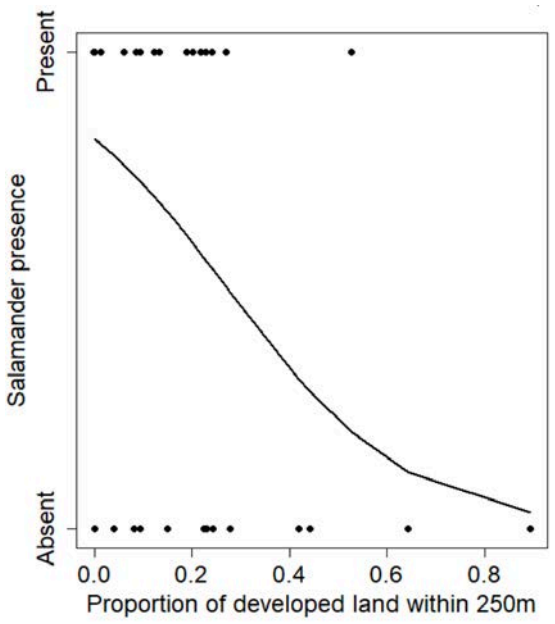


Participants in a bird walk enjoy the dawn chorus

Education Associate Alison Zak leads a yoga class on the lawn

Drawings of yellow crownbeard from our Introduction to Nature Journaling class

Research Rundown



Urbanization Affects Spotted Salamanders

Spotted Salamanders spend most of the year underground in forests. But they have to migrate to seasonally dry pools in the spring to breed, making them vulnerable both to being run over and to water pollution. In the spring of 2019 our Smithsonian-Mason School of Conservation (SMSC) intern Jessy Wilson and George Mason University intern Adam Garrity, assisted by a high school intern and a volunteer, visited 34 vernal pools from Washington, DC to Front Royal and recorded whether there were Spotted Salamander egg masses present. We used land cover maps to quantify the amount of developed area within 250 meters of the pool. In November Bert reported our findings at the Virginia Herpetological Society's fall symposium: **once 30% of the area surrounding a vernal pool is developed, Spotted Salamanders begin to disappear, as the graph to the left shows.** These results show how important it is to leave undeveloped buffers around vernal pools to help Spotted Salamanders breed successfully.

A powerline clearing with a profusion of blooming *Bidens aristosa*

Piedmont Prairies in Powerline Clearings

Grasslands of the northern Virginia Piedmont are diverse, but little studied. This summer our interns, along with collaborators from Virginia Tech, the Center for Urban Habitats, and Virginia Working Landscapes, surveyed 39 natural grasslands across five counties in the northern Piedmont. We found 433 species of plants, 84% of which were native, including one globally rare and four state-rare plants. We discovered that six of our research sites are of statewide importance in terms of native plant diversity, with >65 species of native plants documented in 100 square meters. The most diverse meadows were found on relatively basic, clay hardpan soils. **Surprisingly, the highest quality grasslands were found in powerline clearings that are mowed annually.** Unfortunately, three populations of rare plants in powerline clearings were accidentally sprayed with herbicide during our study. We are working with power companies, government agencies, and private landowners to improve management of these special grasslands.

Hyssop Skullcap, a characteristic species of northern Piedmont prairies, the seeds of which are not commercially available

Bird Surveys on Mt. Mitchell

Bert and Eleanor are working with Professor Reid and Professor Brett Scheffers at the University of Florida to study the effects of climate change on birds on Mt. Mitchell, North Carolina. Every year since 2016 the team has surveyed birds along a 4,800-foot elevation gradient. In 2020 we also surveyed plants as well. This spring our SMSC intern Aliya Hochstadt analyzed the data and found that **both Dark-eyed Junco and Golden-crowned Kinglet had moved uphill in just four years**. In the fall our SMSC intern Sophia Chapin found that elevation was a better predictor of where most bird species are found than was vegetation. We will continue to collect and analyze these data in the years to come.

Bert, Eleanor, and colleagues look for birds on Mt. Mitchell