



# The Clifton Institute

## 2022-2023 Program Guide

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### Get in Touch with Us!

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Our office is open  
**Tuesday - Saturday, 9AM - 5PM**



## Teaching Philosophy

The Clifton Institute is an environmental non-profit organization located just north of Warrenton, Virginia. Our mission is to inspire a deeper understanding and appreciation of nature, to study the ecology of our region, to restore habitat, and to conserve native biodiversity. We provide environmental education programs for all ages, as well as conduct scientific research about Piedmont ecology and land management, the results of which are shared back with our community. Our **900-acre field station**, permanently protected under a conservation easement, acts as our classroom and lab. The goals for all of our education programs are:

- to **teach** students about Virginia's native plants and animals,
- to **foster** scientific and critical thinking skills,
- and to **inspire** feelings of curiosity, wonder, and compassion for nature.

In addition to the field trips described below, we also provide free monthly family nature walks, summer camps, and programs for adults. You can learn more about us by visiting our website [cliftoninstitute.org](http://cliftoninstitute.org), by following us on Facebook [@clifton.institute](https://www.facebook.com/clifton.institute), or by emailing us at [info@cliftoninstitute.org](mailto:info@cliftoninstitute.org).

## Program Overview

### Available Programs for School/Homeschool Groups

#### Guided Hike (page 2)

Come experience the many trails on our property with a guided hike! Our staff are skilled in ecological topics related to insects, birds, plants, and more. Let us know what works best for your group!

#### Field Trip (page 3)

If you're looking for a more structured program, check out the five field trip themes we are offering for the 2022-23 academic year! Your students will contribute to ongoing research projects we have on our property while learning valuable skills related to data collection in the field, science communication, and more!

#### Program Fees\*

Less than 10 students	10 or More Students
<b>\$50 minimum</b>	<b>\$5 / Student</b>



\*We will not let financial issues get in the way! If you are interested in signing up for a program but are unable to pay the program fee, please let us know!

Click [HERE](#) to request a program for your group today!

"Having a program such as Clifton is invaluable to real-life experiential science education in our area." - Jerry Hull, 5th grade teacher, Brumfield Elementary

## Guided Hike

With over 900 acres, 10 miles of trails, and habitats including creeks, forest, and grassland, we have a lot to offer! We would love to lead your group on a hike of our property to learn about our unique local flora and fauna while appreciating the beauty of nature. We may even stumble across a skulking Box Turtle, a hunting American Kestrel, or a new species we've never seen on the property! Each season brings new sights to our surroundings so come more than once during the year for a different experience.

If you want to make the trip relevant to current lessons you are covering, we are more than happy to accommodate related concepts on the hike. Possible topics include: **adaptations, life cycles, pollinators, insect orders, and more!**



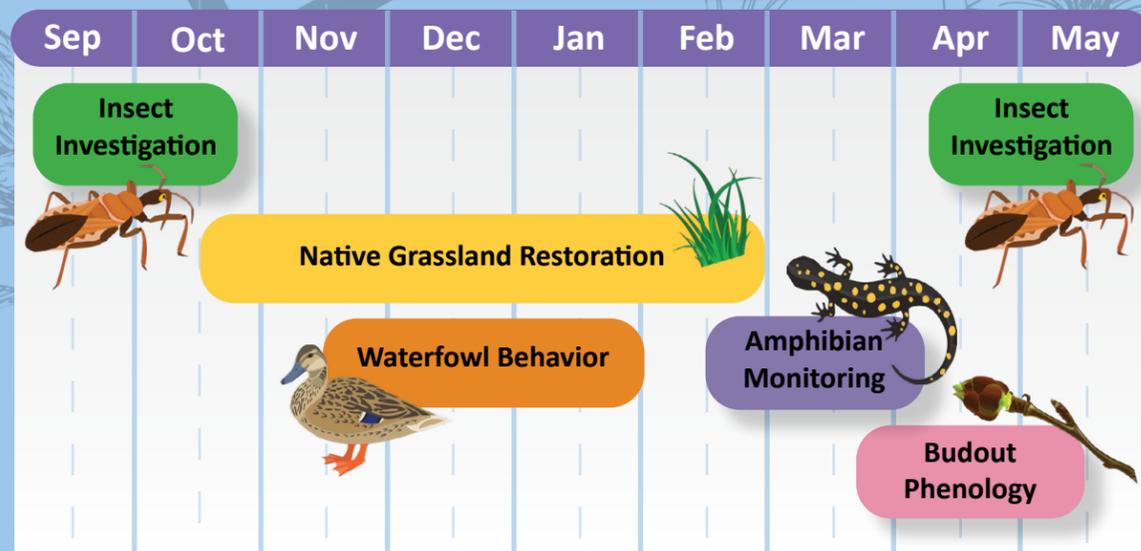
Access a PDF of our trail map here: [cliftoninstitute.org/trails](http://cliftoninstitute.org/trails)



"Thanks so much, for the pictures and a fun time Wednesday! The kids described it as epic!!!" - Kathryn Mullet, 2nd grade teacher, Pearson Elementary

## Field Trip Overview

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### About our Field Trips

In the 2022-2023 school year, we will be offering five projects for field trips to participate in. Each project is only active during a certain time of year (insects in the summer, amphibians in the spring, etc.) - come back more than once and experience different projects throughout the year!

Our experienced staff will guide students through the research projects by breaking them into bite-sized tasks that are aligned with [grade-appropriate SOLs](#). Most importantly, we make space for students to feel the joy following their curiosity and the magic of exploring nature together.

### Pre-/Post-Materials

Before and after your visit, we will send you materials to cover in class. Depending on the trip, these resources will take the form of an introduction video, lesson plans, and links to other sources if you want to make the most of your trip to our field station!

### Field Trip Itinerary

- 1 Introduction
- 2 Short Hike
- 3 Data Collection
- 4 Data Analysis
- 5 Discussion & Reflection



*"We all enjoyed our morning with you. Thank you for your expertise and giving the students the opportunity to dig into classification. Giving them the space and time to slow down and pay attention in the woods was wonderful to see."* - Theo Grayson, MS Science Teacher, Mountainside Montessori

## Field Trip Summaries

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### Trip #1: Insect Investigation

(August - 3rd week of October / 2nd week of April - end of May)



Insects are, without contest, the most abundant, diverse, and accessible animals on earth. They are pollinators, scavengers, farmers, parasites, predators, and the primary food source for a huge number of other animals. One of the animals that relies on insects for food is the American kestrel (*Falco sparverius*). Kestrels are North America's tiniest falcon and their numbers have been plummeting for the last 50 years for reasons that are still unclear. Here at Clifton, we are trying to understand how our local kestrels--both adults and their young--are [using landscapes that are managed in different ways](#). Because around half of a kestrel's diet is insects in the summer, specifically grasshoppers, we need your help going into our fields and seeking an answer to the question:

**"Does the way we manage land affect insect communities?"**

#### Essential Questions by Grade Level:

K-5: Does burning affect the number of grasshoppers?

6-8: Does burning lead to higher insect abundance?

9-12: Does burning lead to higher insect abundance and diversity?

**Skills:** Communicating findings, Graphing, Hiking, Identifying local species, Sweep-netting, Tallying and counting, Teamwork building



### Trip #2: Native Grassland Restoration

(2nd week of October - 4th week of February)



The climatic conditions of Northern Virginia favor the growth of temperate forest. If this is the case, why do patches of grassland like those at Manassas Battlefield and Jones Nature Preserve exist? Something must be responsible for the disturbance that keeps trees from taking over. Some sources point towards Native Americans who used fire to clear land for agriculture. Other sources say free-roaming bison that grazed young saplings or the spreading of wildfires by natural storms. Since 2019, we have been participating in a [prairie restoration project](#) to learn more about how this habitat is created and how fields of Tall Fescue (*Festuca arundinacea*), an exotic species, can be converted to a diverse prairie fit for native pollinators and breeding birds. Students on this trip will collect data in mowed vs burned sections of our grassland to answer the question:

**"How do you create a Piedmont Prairie?"**

#### Essential Questions by Grade Level:

K-2: Does fire affect grasses?

3-5: Does fire help native grasses?

6-12: Does fire help native grass and prevent succession?

**Skills:** Communicating findings, Graphing, Hiking, Identifying local species, Quadrat sampling, Tallying and counting, Teamwork building



*"I am truly grateful to have these dedicated conservationists and this environmental treasure so nearby in Fauquier County."* — Barbara Dennee, 5th grade teacher, P.B. Smith Elementary School

### Trip #3: Waterfowl Behavior

(3rd week of November - 4th week of January)



Ethology, the study of animal behavior, is often used in conservation settings to learn more about the behavior of species, populations, and individuals. If you've ever watched birds at a feeder, observed a bee pollinating a flower, or kept an eye on the raccoon lurking around your house, you have already delved into animal behavior analysis! During the winter, our two ponds are full of waterfowl species including geese, ducks, and swans! Students will learn basic waterfowl ID and different techniques to observe and record animal behavior. Older groups (6-12) will pose their own questions to answer while here. Data from all trips will be compiled at the end of the season to learn more about the behavior of our waterfowl throughout the winter. Join us in November to help us answer the question **"How does waterfowl behavior change through the winter year after year?"**

**Essential Questions by Grade Level:**

- K-5: How do waterfowl spend their time?
- 6-12: How does behavior differ between waterfowl species? Individuals?

**Skills:** Communicating findings, Graphing, Identifying local species, Question-posing, Tallying and counting, Teamwork building, Using an ethogram, Using binoculars



### Trip #4: Amphibian Monitoring

(3rd week of February - 1st week of April)



Despite the chilly temperatures and short days of late winter, animals are stirring. With the first heavy rain of early spring, from beneath logs and rocks deep in the forest, emerge hundreds of frogs and salamanders. Some species make their way to small seasonal bodies of water called vernal pools to mate and lay eggs before heading back to their forest home. Here at Clifton, we are excited to expand on a [2019 Spotted Salamander \(\*Ambystoma maculatum\*\) project](#) that was started by students from the Smithsonian-Mason School of Conservation. We have several vernal pools at Clifton—some man-made, some small, some close to roads--and each acts in a slightly different way over the course of the spring. We want your help figuring out **"How do different vernal pools change over time and what does it mean for amphibians?"**

**Essential Questions by Grade Level:**

- K-2: Does the length, depth, and water temperature of vernal pools affect the number of salamander egg masses?
- 3-5: Does the volume, water temperature, and pH of vernal pools affect the number of salamander egg masses?
- 6-8: How does the size, depth, water temperature, pH, and amphibian community of a vernal pool change over time?
- 9-12: How do different vernal pools change over time in their biotic and abiotic qualities?

**Skills:** Communicating findings, Graphing, Hiking, Identifying local species, Measuring length/depth, Reading a thermometer, Tallying and counting, Teamwork building, Using pH strips



*"Having a program such as Clifton is invaluable to real-life experiential science education in our area." - Jerry Hull, 5th grade teacher, Brumfield Elementary*

### Trip #5: Budout Phenology

(4th week of March - 2nd week of May)



Humans have been noting the "firsts" for a long time—the day the purple martins return in spring, the night when spring peepers peep or fireflies blink, the first ripe pawpaw. This study of the timing of the seasonal changes in plants and animals is called phenology. Studying the dates that a redbud first flowers, leaves-out, and fruits over the course of a year gives us a set of information and makes us feel attached to that tree. However, when we can look at the first flowering date over the last 100 years, we begin to see a bigger picture. We are able to detect change. And that's exactly what phenologists are finding. As the global climate warms and weather patterns change, the timing of the world's plants is also changing. Here at Clifton, we are just beginning to track the lives of a select few trees. We want to answer the question: **"What does spring look like at Clifton and how is it changing over time?"**

**Essential Questions by Grade Level:**

- K-2: Do the same species of tree leaf-out, bloom, and fruit at the same time as each other?
- 3-5: Do different species of tree spend different amounts of time in each phase of their life cycle?
- 6-12: How has the leaf-out, bloom, and fruiting time of 10 different species of trees changed over time?

**Skills:** Communicating findings, Graphing, Hiking, Identifying local species, Reading a thermometer, Scientific illustration, Teamwork building



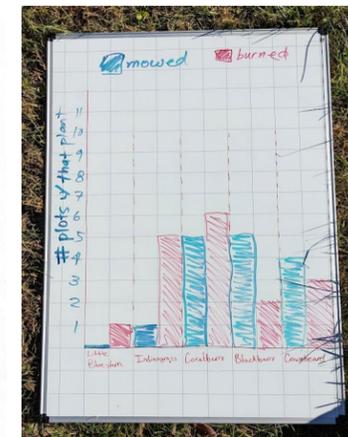
### Data Collection (Example)

#### Trip #2: Native Grassland Restoration (Grades K-5) - Quadrat Sampling

On this trip, students will work in groups to measure the presence/absence of plant species using quadrats in our grassland restoration field. As a group we will compare data from burned and mowed sections of the field.

Grassland Data Sheet  
 Leader Name: FRIDGET Weather: <sup>Sunny, small clouds</sup> chilly, warm in the sun, windy Date: 10/27/22

Circle section: WHITE YELLOW RED	Little bluestem	Indiangrass	Coralberry	Blackberry	Crownbeard
MOWED (tally)					
MOWED (totals)		①	⑤	⑤	④
BURNED (tally)					
BURNED (totals)	①	⑤	⑥	②	③



*We had such a wonderful time!! The kids loved every moment! We will certainly want to come again next year so keep us up to date :) Thank you for putting on such a great learning event for the students. -Sarah Moehl, 3rd grade teacher, Pierce Elementary*

We know how important SOLs are inside of the classroom so we wanted to incorporate them into our field trips including the pre-trip and post-trip materials. Please refer to the list below to learn more about how each field trip aligns with up-to-date Science standards by grade level.

	K-2	3-5	6-8	9-12
Insect Investigation	K.1, K.3, K.7, K.10 1.1, 1.5, 1.8 2.1, 2.5	3.1, 3.5, 3.8 4.1, 4.3, 4.8b 5.1	6.1, 6.9 LS.1, LS.3, LS.5, LS.6, LS.8, LS.9	BIO.1, BIO.8 ES.1
Native Grassland Restoration	K.1, K.3, K.7, K.8, K.10 1.1, 1.4, 1.5, 1.6, 1.7 2.1, 2.4, 2.5, 2.7c, 2.8	3.1, 3.5, 3.8, 4.1, 4.3, 4.8b 5.1	6.1, 6.9 LS.1, LS.3, LS.5, LS.6, LS.8, LS.9	BIO.1, BIO.7, BIO.8, ES.1
Waterfowl Behavior	K.1, K.3ab, K.9, K.10 1.1, 1.5 2.1, 2.5, 2.7ac	3.1, 3.4b, 3.5 4.1, 4.8b 5.1	6.1 LS.1, LS.7, LS.8	BIO.1 ES.1
Amphibian Monitoring	K.1, K.3, K.7, K.10 1.1, 1.5, 1.8 2.1, 2.4a, 2.5	3.1, 3.5, 3.8 4.1, 4.3, 4.8 5.1	6.1, 6.9 LS.1, LS.3, LS.5, LS.6, LS.8, LS.9	BIO.1, BIO.8 ES.1
Budout Phenology	K.3, K.7, K.9, K.10 1.4, 1.7 2.4b, 2.5, 2.7, 2.8	3.5 4.2, 4.3, 4.4, 4.8b 5.1	6.1, 6.9 LS.3, LS.6, LS.8, LS.9	BIO.8



*"Thank you so much for hosting us! Everyone told us how wonderful the Clifton Institute was, and they were right! We had the best time! It was the first field trip for all of the students in a VERY long time (COVID), and they loved every second of it!" -Tara Lull, 2nd Grade teacher, Wakefield Elementary*

**1. How much does a field trip cost?**

- The cost is \$5 per student for all programs regardless of length. We do not charge for teachers or chaperones.

**2. Do I pay before the trip?**

- We usually send school groups an invoice electronically after the program. There is a place in our Field Trip Request Form to enter the contact information to which an invoice should be sent. That way we can charge for the actual number of students that attend. If you would prefer to bring a check or cash on the day of the trip you may do that as well.

**3. How long do field trips usually last?**

- The longer students are able to stay at the field station, the better! We encourage teachers to come for a whole day if possible. However, our programs are flexible and can be as short as 2 hours or as long as the school day depending on the teacher's schedule. In the Field Trip Request Form, we ask teachers to specify a start and end time and whether students will be eating lunch on site.

**4. What is the process for rescheduling or cancelling a field trip?**

- Please alert us as soon as you need to reschedule or cancel a program! Programs that cancel within 7 days of the trip for reasons outside of severe weather or illness outbreak will be charged a \$50 fee.

**5. What if rain is predicted for the day of the field trip?**

- We hold field trips even in light rain and hot / cold temperatures. However, should a greater than 70% change of heavy rain, snow or thunderstorms be predicted for the day of the trip, Clifton staff will be in touch with our point of contact to discuss rescheduling within 48 hours of the trip. We will make a final call no later than 5PM the day before the trip.

**6. What is the minimum and maximum group size?**

- We request a minimum of 10 students in order to run a program. If fewer than 10 students attend we charge a minimum flat rate of \$50. We have space school buses and staff to manage groups of up to 75 students. If you have a larger group, please contact Bridget Bradshaw (bbradshaw@cliftoninstitute.org) to discuss options.

**7. Is there a limit to the number of chaperones that can attend?**

- Our parking lot can only hold around 25 vehicles. All adults are free, though we ask that chaperones help manage the group and keep side conversations to a minimum if they choose to come. If they do not wish to participate, then they are welcome to hang out and talk near the house so long as it is not disruptive to the program.

**8. Is there a place to eat lunch?**

- We have 6 outdoor picnic tables and plenty of lawn space for students to eat lunch. However, we only have enough covered space for around 20 students, so be prepared to take lunch back to school if it begins to rain heavily during the program.

**9. Are there bathrooms?**

- We have 2 port-a-johns and a portable handwashing station at the peach house.

**10. Are there ticks?**

- Yes! From April through October we have dog, deer, and lone star ticks. Staff usually wear either tall rubber boots or shoes with permethrin-treated gaiters to keep ticks off. These are both preferable to using bug spray on shoes, as some of our programs involve work with insects and amphibians who are extremely sensitive to bug spray. However, ticks happen and all of the staff are accomplished tick-removers. Students should always check for ticks when they get home!

## Frequently Asked Questions (cont'd)

### 11. What attire is recommended on field trip?

- Clifton staff often wear rubber boots year-round in order to keep feet dry on dewy mornings and ticks off in the spring through fall. Sturdy closed-toed shoes are also a good option. Almost all of our trails are mown grass. Long pants are also recommended to keep from getting insects bites, scratches, or irritation from grass. Layer appropriately, as we will be starting and stopping, sitting and hiking!

### 12. What do we do with our trash?

- We are a pack-in, pack-out facility. This means that any trash visitors generate while they are here should be brought out with them. The exception to this is paper towels from the handwashing station which can go in the trash can provided. However, any foody trash in there will cause the whole thing to be upended by racoons and/or bears. Please plan to bring your own garbage bag. Thank you for helping us keep the field station trash-free!

### 13. What are your COVID protocols?

- All of our staff are fully vaccinated for COVID-19 and all of our programming takes place outdoors. We are happy to comply with any masking protocol that is in place with visiting groups. Even if students are not wearing masks outside, we ask that students bring masks with them in the event that a staff member needs to take them inside or perform any first aid. If you need to reschedule or cancel because of COVID (or any other infectious disease) outbreak, please let us know and we will waive the \$50 cancellation fee. Thank you for helping reduce the spread!

### 14. Can I come see the field station before our visit?

- Please do! We offer a multitude of free walks and other programming where you can come and explore the grounds with a staff member. To see our events, please visit <http://cliftoninstitute.org/events>. The property is open to Friends of Clifton (\$40 annual donation) on Saturdays from January-October where are welcome to explore on their own. If you are interested in seeing the property or learning more about the visit before you bring your class, please contact Bridget Bradshaw ([bbradshaw@cliftoninstitute.org](mailto:bbradshaw@cliftoninstitute.org)).

### 15. Do you provide in-classroom visits?

- If you are interested in having us facilitate pre or post-trip activities at your school, please contact Bridget Bradshaw ([bbradshaw@cliftoninstitute.org](mailto:bbradshaw@cliftoninstitute.org)). We are a very small staff and our busiest months are October, November, April and May. We will do our best to find a time to come to you, but cannot guarantee it.

### 16. If I am organizing a homeschool trip, what programs are available to me?

- Any program in our Program Guide is available for homeschool students! For the Field Science Experience programs, students must be 6 or older and must be dropped off here. Parents and younger siblings are welcome to remain near the house while we take the students into the field. You may also choose a Guided Hike, which are open to the entire family, provided all participants are able to walk for around 1.5 hours. We are a small and flexible team, so please reach out to Bridget Bradshaw ([bbradshaw@cliftoninstitute.org](mailto:bbradshaw@cliftoninstitute.org)) if you have any specific requests and we can address them on a case-by-case basis!

