



# Grades 9-12

## & High School Ecology Clubs

### ASHLAND NATURE CENTER PROGRAMS

#### Advanced Field Ornithology

3 hours, \$8/student

Study, map, and compare and contrast bird populations at the Burrows Run Preserve. Use GPS systems and topographic maps to calculate area and estimate a variety of seasonal bird populations. Calculate differences in population densities for different habitats. You are able to continue the experience as you communicate and share information with students from Central America working on a similar study. This program utilizes binoculars, field guides, maps, GPS equipment, directional microphone, and a tape recorder.

#### Bird Box Biology

2 hours, \$6/student

Examine bird boxes to identify bird species and learn about their reproductive biology. Determine the population of four species at Ashland that use the boxes, count and note eggs, classify birds by choice of nesting materials, and count and handle nestlings. Make inferences about species habitat requirements and conservation history and record observations which are used to monitor Ashland's bird populations. May-June.

#### Demons, Dragons, and Damsels: Tales of the Night Sky

##### Classroom Outreach

1 hour, free with application\*

Learn night sky tales told by ancient peoples and discover the modern interpretations of these same phenomena – the tales that science tells. Ancient stories were born of inspiration and imagination, and varied from society to society. Explore the reasons for this variation and learn why scientific accounts do not depend on cultural differences. Use your imagination to create constellations and sky stories. This program can be customized to fit your current curriculum in the sciences or the humanities and is offered free of charge\* through a partnership with the Delaware Humanities Forum.

#### Forest Ecology at Flint Woods Preserve

2 hours, \$6/student

Visit three distinct forest types in the Flint Woods Preserve to compare their landforms, forest layers, dominant tree species,



soil classification, and leaf litter layer. Calculate the biodiversity index to compare each of the three sites.

#### Springs & Streams

2 hours, \$6/student

Visit three sites in a stream continuum at Burrows Run Preserve to test and compare them chemically, physically, and biologically. Follow the flow of water from a spring where it exits the ground downstream to the Burrows Run. On the way, test and record the changes in the water's chemical and physical properties and investigate the different forms of life that depend on the stream as the water flows over the land and is affected by the environment. This program qualifies your class to adopt a stream.

#### Stream Ecology

2 hours, \$6/student

Learn about Delaware Stream Watch and the variables that indicate the health of a body of water. Collect macro-invertebrates and perform physical and chemical water quality testing, such as pH and dissolved oxygen. Emphasis is placed on the possible harmful effects of human activity in the watershed. This program qualifies your class to adopt a stream.

**Additional programs offered** – See our website for complete descriptions

- Air Alert Field Study ~ 2 hours, \$6/student
- Biodiversity at Burrows Run Preserve Field Study ~ 2 hours, \$6/student
- Owls in Delaware Classroom Outreach ~ 1½ hours, \$7/student + \$35 travel fee
- Skull Study Classroom Outreach ~ 1 hour, \$6/student + \$35 travel fee



## COVERDALE FARM PROGRAM

### Coverdale Farm Pond Ecology

2 hours, \$6/student

Sample the pond at Coverdale Farm for diversity of aquatic life and create a trophic level pyramid. Measure depth, nutrient and oxygen levels, determine the pond's successional state, and use microscopes to observe organisms. This program qualifies your class to adopt a stream.



## ABBOTT'S MILL NATURE CENTER PROGRAMS

### Birds in Focus

2 hours, \$5/student

Explore the unique and varied adaptations of native birds, including body shape, beaks and feet. Investigate how these adaptations help them survive in their habitats. See mounted specimens and study the diversity of species in the Delmarva region. Use binoculars on a guided bird survey through different habitats. Find out how birds are affected by seasonal changes.

### Birds in Focus Classroom Outreach

1 hour, \$5/student + \$35 travel fee

Explore the unique and varied adaptations of native birds, including body shape, beaks and feet. Investigate how these adaptations help them survive in their habitats. See mounted specimens and study the diversity of species in the Delmarva region. Use binoculars on a guided bird survey through different habitats. Find out how birds are affected by seasonal changes.

### Orienteering & Compass Reading

3 hours, \$7/student

Experience firsthand how to navigate with a map and compass. Learn how to read a topographic map and interpret natural and human-made features. Measure your walking pace and take bearings. Combine all your navigation skills on a compass orienteering course.

### Owls in Delaware Classroom Outreach

1½ hour, \$6/student + \$35 travel fee

Learn about four resident owl species of Delmarva as you examine their structures and adaptations for survival. Study mounted specimens, listen and learn owl calls, and dissect owl pellets to explore the eating habits of owls.

### Pond Biodiversity by Canoe

3 hours, \$10/student

Explore Abbott's Pond by canoe! Learn canoe basics and examine what lives in and around the pond. Look for aquatic plant life, reptiles and amphibians, and birds that call Abbott's Pond home. Complete visual surveys, record data and drag a plankton net. Back at the nature center, examine the microscopic life found in the pond. This program qualifies your class to adopt a stream.

### Reptiles & Amphibians Classroom Outreach

1 hour, \$5/student + \$35 travel fee

Discover fascinating facts about frogs and toads, salamanders, turtles, and snakes during this exciting animal program. Live specimens aid in examining the differences between reptiles and amphibians and exploring the significance of their unique adaptations and life cycles.

### Skull Study Classroom Outreach

1 hour, \$5/student + \$35 travel fee

Use detective skills to identify and classify a variety of skulls from local mammals, birds, and reptiles. Examine teeth, eye, and nose structures to determine their function and how the animals live in their environments.

### Stream Ecology & Stream Watch

3½ hours, \$8/student

Learn about Delaware Stream Watch while studying the variables that indicate the health of a body of water. Collect macro-invertebrates and perform physical and chemical water quality testing, such as pH and dissolved oxygen. Examine water samples under a microscope, looking for the minute plants and animals that are the basis of the stream food chain. Emphasis is placed on the possible harmful effects of human activity in the watershed. This program qualifies your class to adopt a stream.

