

# NJSOC Class Descriptions 2023-24

## The Environmental Sciences

### Beaver Ecology

This field investigation of the beaver (*Castor canadensis*) concentrates on adaptations, ecological relationships, and the general life history traits of this species. Participants will have the opportunity to get a close-up look at a preserved beaver specimen, to discuss a brief historical overview of beavers in New Jersey, and to hike to a former beaver pond where beavers once lived. In the field, evidence of the beavers' influence on the natural landscape will be observed. In conclusion, participants will compare the beaver's impact on the environment to human impact on the environment.

### Cool Schools: Designing for Climate Change

In this activity, students will observe how different types of surfaces have an effect on temperature and learn how albedo and the concept of Urban Heat Islands relate to those surfaces. Students will collect data from the NJSOC campus and use the information that they collect to make suggestions on how to reduce the Urban Heat Island effect around a typical school. This activity aligns with New Jersey's Climate Change standards.

### Fish Ecology

This hands-on field-oriented class introduces students to the field of ichthyology, a branch of zoology that concentrates on the study of fish. Students will learn to appreciate the scientific, historical, aesthetic, and recreational values associated with fish. All participants will actively engage in the capture, identification, weighing, measuring and release of the fish in Lake Wapalanne. The ecological importance of fish, threats to their populations, and conservation measures will be summarized.

### Herpetology

Herpetology is the study of reptiles and amphibians. This session is a practical field and classroom approach to understanding reptiles and amphibians, particularly frogs and salamanders. Session activities include a brief discussion of the similarities and differences between reptiles and amphibians and their value to the wildlife community. Students will have the opportunity to look for and collect live specimens of the different species of frogs and salamanders on SOC grounds. Field guides and taxonomic keys will be used to identify the various species that are collected. The session will end with a discussion of the importance of herptiles in natural communities, the threats they face, and what each of us can do to minimize those threats.

### Interpretive Hike

This free-form session takes advantage of whatever is of interest during a hike through Stokes State Forest. Anything and everything is addressed on these student-lead hikes. Topics of discussion inevitably include plant-animal interactions, nutrient recycling, soil building, wildlife

micro-habitats, evolution and coevolution, natural selection, forest regeneration, invasive species and much more.

## Questing

This course will tap into the students' sense of adventure as they embark on a quest that takes them to various places on the campus and in the forest. Clues and riddles will lead the students on a hike where they will learn about local geology, biology, and ecology.

## Water Ecology

This is one of our most popular sessions. This session is a quality approach to water as a key human resource. Session activities include a brief description of water on the planet and how it relates to all life and a survey of stream water quality using water test kits and aquatic organism sampling. The majority of the class is conducted on the Big Flatbrook during spring and fall.

## Wildlife Ecology

This session concentrates on the inherent values of wildlife in our current culture and the critical interface that exists between wildlife and human populations. The importance of wildlife species to the survival of human populations in both the past and present is stressed. Important ecological processes carried out by wildlife species are covered as well as an examination of specific human/wildlife interactions. Activities in this session include: an exploration hike to observe native wildlife in their natural habitats, a food pyramid and web simulation, and a habitat search for wildlife signs.

## Wildlife Skull Stories

Although skulls are common to all vertebrates, they vary from species to species, and even among individuals of the same taxonomic group. Knowing what to look for—both the similarities and the differences—can provide a fascinating perspective on how animals are related, what they eat, how they avoid being eaten, how they're responding to ecological change, and where our own species fits into the evolutionary picture.

## Web of Life

An exciting game of predator and prey. Students simulate how the food pyramid operates in nature. As herbivores, omnivores and carnivores, they scavenge the NJSOC campus in search of their basic needs while avoiding predators, humans, pesticides, etc. In addition to learning about the structure of survival and bioaccumulation, students learn that everything is connected, everything goes somewhere, nature knows best, and there is no such thing as a free lunch. These make up what Barry Commoner called, "The Four Laws of Ecology." Group size: 30+ needed

## The Social Sciences

### Woodworking for Wildlife

The overall purpose of this session is to give students a feeling for early American use of wood and forest resources, as well as an understanding of the implications of this use in influencing our contemporary attitudes toward forest resources. Typical activities include:

- a discussion of wood crafts which may at one time have been important to the participants' home community
- a display of various objects relating to these crafts
- a brief survey of five to six trees significant to early American woodworkers
- a demonstration of several primitive woodworking tools
- an opportunity for participants to use these tools to fashion their own wood artifact

### Metalsmithing

The folklore behind early American metalsmithing and the ecological dilemma of today are combined to provide a unique look at the problems that have faced our nation for nearly two centuries. Students will experience the joy of bending and hammering red-hot metal in blacksmithing and fashioning tin in whitesmithing as they produce an artifact of colonial America. Consideration will be given to consumptive uses of non-renewable, yet recyclable, resources and some of the environmental impacts of mining. Please wear a long-sleeved shirt and long pants.

### Pioneer Life

Situated in a 19th-century hand-hewn log cabin, this session focuses on daily living skills and history of pre-industrial America. Discussion centers on providing living necessities, particularly food and shelter (housing and clothing). Activities such as cornbread preparation and an exterior and interior cabin analysis illustrate how necessities were provided for in pre-industrial times. Comparisons are drawn between the environmental impacts of the pre-industrial lifestyle and our present lifestyle, with special emphasis put on different sources of energy, and renewable and nonrenewable resources use.

## The Humanities

### Climate: Change Maker!

Discussing climate change often evokes many different thoughts and emotions that can be hard to express. This class provides a framework for students to express those thoughts and emotions regarding the topic through ephemeral art and poetry. This course follows a similar framework to our Nature Art and Poetry class, but puts more emphasis on climate change to align with New Jersey's Climate Change standards. *It is essential that participants come into this field experience with sufficient background knowledge on climate change. Please refer to the Background section of this course's lesson plan for a list of core ideas from NJ State Standards that should be covered prior to participants' arrival.*

## Conservation Photography

Capturing images of the natural world is one of the most pleasurable and rewarding ways students can express their feelings about the environment artistically. For many students who struggle with drawing, painting and other methods for creating art, photography provides a workable medium that allows them to be creative and expressive. The advent of digital photography has opened a new door into visual creativity, providing tools for self-expression that were formerly unavailable to all but the most accomplished artisan. This session introduces the students to the artistic power and potential of photography to change the way we interact with the natural environment, through the creation of inspirational images of the natural world.

## Nature Art and Poetry

Based on a program designed by the Monarch Teacher Network, this class encourages students to engage all their senses to develop/increase their knowledge, appreciation and respect for the environment. Students briefly explore a natural area, reflect on the available natural materials and create a work of ephemeral landscape art using only materials provided by nature. They interpret their artwork, giving it a voice, through creative writing. Research reveals there is an ancient and intimate connection between language and landscape found in all cultures throughout the world. Voices projects allow students to develop their inherent gifts as artists, orators, writers, and performers while developing respect for nature, other people, and other cultures.

## Nature Journaling

Journaling advances the foundation of learning through inquiry, investigation and scientific thinking, whether it is of plants in the forest or in a community garden, birds on a pond or icicles dangling from the eaves of a building. In this outdoor activity, students will focus their observations, curiosity and creativity with words, pictures and numbers using a sketchbook and pencil. Focused journal entries will give structure to observation and help form important questions and lasting memories. Students will be exposed to simple artistic elements of design—such as shape, color and value. They will notice, wonder and connect to familiar objects.

## The Outdoor Pursuits

### Adventure / Challenge Activities

*Classes in this area are intended to help students build confidence individually and in groups. Teamwork, critical and creative thinking, and increased social skills are the primary objectives of these sessions.*

### Action Socialization Experience/ Group Initiatives

An ASE is a problem-solving situation that stimulates immediate participation in the activity. These experiences encourage small groups of students to cooperatively decide on a solution to a carefully designed problem and then carry out their plan of action as quickly and efficiently as possible. As a result, the students realize that through communication and cooperation they are able to solve numerous challenges. ASE activities are timed, with students given approximately 15 minutes at each station; Group Initiatives consist of the same activities, but are untimed.

## Climbing Wall

Our climbing wall, which has a 20 ft face and a 35 ft face, offers many different levels of challenge, allowing for all students to choose a challenge level that is appropriate for them. A belay rope is attached to the student and is taken in by the belay system as the climber ascends so that there is little risk to the climber. Success on the wall is measured by the climber's motivation to do his or her best, not in terms of the height the climber achieves. Note: ten students require approximately two hours to climb the wall. An SOC instructor must be at the wall at all times during this session. *Since both Climbing Wall and Confidence Course are intended to increase self-confidence and are therefore similar, no single group should expect to participate in both of these sessions. Before any visiting teachers can lead this session they must successfully complete an on-site training seminar prior to their school's visit.*

## Confidence Course

This session takes students through sequential activities that require both trust in the group members and confidence in oneself. As the group demonstrates its ability to compassionately care for the individual members, the SOC trained facilitators lead the group through increasingly challenging activities. Wind in the Willows, Confidence Course, Wild Woosey, and Cargo Net may be some of the activities in this session. *Since both Climbing Wall and Confidence Course are intended to increase self-confidence and are therefore similar, no single group should expect to participate in both of these sessions. Before any visiting teachers can lead this session they must successfully complete an on-site training seminar prior to their school's visit.*

## Wilderness Education Activities

*The main objective of these lessons is to develop outdoor skills. These are skills that will allow students to enjoy our natural resources with minimum impact.*

## Orienteering

Introduction to and practical application of map and compass skills. Following a lesson on how to use a compass, participants will put their new skill to use on one of our orienteering courses. Please download the [Intermediate Orienteering](#) information sheet to access the bearing for our woodland course.

## Survival

Staying alive in the woods requires one to remain calm and make the best possible use of what is available in the area to obtain the basic necessities of life. Although the emphasis is on basic survival concepts, shelter building, starting a fire, finding drinking water, and foraging for food are among some of the subjects that may be covered.

## Survival with Orienteering

The NJ School of Conservation is surrounded by over 15,000 acres of forest land (for perspective, the fenced off corral area on the Sequoya side of the campus is about 1 acre). In order to effectively adhere to our mission of instilling an environmental responsibility to those who wander through, we must first provide a safe way for students to navigate through the forest. In this class, students will have an opportunity to navigate throughout Stokes State Forest with the use of compasses and trail markers. Additionally, they will learn methods on how to handle moments of confusion that they might encounter when exposed to what can be an overwhelming amount of land. At SOC we also believe confidence leads to an increased comfort level while in natural areas. If students are more comfortable in natural areas, then they are more likely to visit

them, and while there, they will more thoroughly enjoy these places. Increasing anyone's enjoyment and interaction with the natural world should in turn foster an improved environmental ethic.

## Hiking

No matter what the season, there are many things to be seen while walking the trails of Stokes State Forest. A New Jersey School of Conservation staff member will help you plan a hike based on the needs and abilities of your group. An all-day hike can be arranged to meet your needs in any one of the four teaching areas or a combination of: the Sciences, Humanities, Social Studies, or Outdoor Pursuits. An all-day hike emphasizing Outdoor Pursuits may include trail techniques, emergency preparedness, as well as some natural history interpretation. Have students bring their own day-packs and water bottles on hikes when lunches are carried.

## Outdoor Recreational Activities

*The primary objective of these activities is to introduce and begin to build skills in outdoor sports that students can continue to enjoy for a lifetime. Because the emphasis is on fun, we must be aware of those times when the weather conditions are too severe for the activity to be enjoyable. Alternative plans for indoor activities are advised.*

## Archery

The major part of this session concentrates on teaching shooting skills. Safety is emphasized at all times during the course of the lesson. Archery is not available during the winter months.

## Canoeing/Boating

Although the major emphasis of this session will be on canoeing, the proper use of rowboats will also be covered. In canoeing, a variety of skills can be taught, including proper techniques for loading and unloading from a dock, carrying, as well as various paddle strokes. This session is intended to give students an opportunity to experience canoeing or row boating in a recreational rather than an academic setting.