Drumlin Farm Wildlife Sanctuary

School & Group Programs

GRADES PRE-K–12

2018 | 2019

massaudubon.org/drumlinfarmeducation

Mass Audubon
Drumlin Farm Wildlife Sanctuary

Greetings, Educators!

Part wildlife sanctuary, part working farm, Drumlin Farm strives to educate students about the interdependence of people, land, and wildlife.

OUR GOAL is to integrate your classroom curricula with our educational programs, providing opportunities for students to investigate the ecology of diverse habitats; learn about native wildlife/adaptations; and better understand their place within the natural world.

OUR EDUCATORS are committed to an integrated, inquiry-based teaching approach that enables students to participate in authentic, hands-on field science.

OUR PROGRAMS are designed to support Massachusetts' Department of Elementary and Secondary Education Science and Technology/ Engineering frameworks. Students are encouraged to ask questions; plan and conduct investigations; collect, analyze, and interpret data; and communicate their findings through group discussions and presentations.

We look forward to delivering a program that meets your learning objectives and expectations!

About Mass Audubon Programs

Through field studies and classroom explorations, Mass Audubon programs provide hands-on, inquiry-based experiences with science content and practices. Our educators enhance students' scientific understanding of species and habitats; ecological concepts such as food webs, cycles, systems, adaptation, and evolution; climate change; and interrelationships between people and nature.

What's Inside

Drumlin Farm Wildlife Sanctuary
208 South Great Road
Lincoln, MA 01773

massaudubon.org/drumlinfarmeducation
rstuart@massaudubon.org
781-259-2220

Programs at Our Wildlife Sanctuary

Investigate the ecology of diverse habitats as well as the adaptations of the animals and plants that live at Drumlin Farm Wildlife Sanctuary. At the heart of the sanctuary is a working farm with a variety of livestock and crops. A well-maintained trail system, displays of native wildlife, and interactive features allow your students to experience and learn in a dynamic setting.

Grades Pre-K to Kindergarten

LIFE ON THE FARM (SELF-GUIDED) MAY–JUNE

2 hours: $9 per Student

Explore fields, gardens, barns, and trails at your own pace as you experience life on a farm. Interact with our teacher naturalists at learning stations as they engage in daily chores and farm activities. Observe and learn about wild animals that live in Massachusetts, enjoy a scenic hayride, and taste farm-fresh treats!

HOMES & HABITATS

2 hours: $10.50 per Student

Explore field, forest, and wetland habitats in small groups with our teacher naturalists as you look for tracks and other signs of native wildlife and their life cycles. Discover how each habitat supports the basic needs of plants and animals.

Grades 1–3

Price per Student
2 hours: $10.50 | 3 hours: $12

ECOLOGY OF SEEDS & PLANTS

Investigate the life cycles of wild and domestic plants through field study. Study the relationship between structure and function in an investigation of seeds and how they travel. Observe how the roots, leaves, stems, and flowers function together to help the plant grow and reproduce.

ANIMAL INVESTIGATIONS

Explore field, forest, and wetland habitats to create an in-depth study of life cycles, adaptations, food webs, and habitats of **one** of the following focus groups: **mammals, birds, reptiles and amphibians, or insects**.

Eastern Bluebird: ©*William Hottin*

Programs at Our Wildlife Sanctuary

Grades 1–3 *(continued)*

SOIL INVESTIGATIONS
Investigate different soil types and compare components, properties, and characteristics using the tools of a scientist. Learn about what soil is made of, where it comes from, and lifecycles of the organisms that are part of this critical habitat.

POND COMMUNITIES
Use dip nets and other scientific equipment to collect and discuss data and study organisms that live in and depend on wetland habitats. Discover their unique life cycles as you explore the water and surrounding upland habitat.

FROM FARM TO MARKET
Learn about growing crops and raising livestock as you help out in our fields and barn. Explore how and why we grow and raise what we do, and how food gets from the farm to your table. Depending on the season, participate in planting, weeding, harvesting, or caring for livestock.

WILD & DOMESTIC
Observe our resident wildlife and livestock, and compare and contrast the characteristics, adaptations, and habitat requirements of native wildlife and New England farm animals.

NATIVE PATHWAYS (SEPT–DEC)
Explore our fields and forests as if it were 1,000 years ago. What would you eat? What tools would you use to survive? Through a variety of hands-on activities, investigate the relationships among plants, animals, people, and the natural resources we share.

WINTER DETECTIVES (DEC–MAR)
Investigate adaptations that plants, animals, and humans use to survive winter. Learn about survival strategies including hibernation, migration, brumation, and dormancy as we search for animal tracks and signs.

MAPLE SUGARING SCIENCE (FEB–MAR)
Explore the history and production of this traditional New England crop. Learn about the structure and seasonal adaptations of maple trees as we transform sap into syrup. We'll examine the trees, collect sap, and learn about sugaring equipment of today and yesteryear.

Grades 4–6

Price per Student
2 hours: $10.50 | 3 hours: $12 | 4 hours: $14

POND ECOLOGY
Use aquatic sampling equipment to collect, identify, and compare physical, chemical, and biological aspects of pond and vernal pool ecosystems. Study the unique adaptations of organisms that require these habitats to complete their life cycle. Develop observational and critical thinking skills by learning to use keys and field guides while collecting and analyzing data.

THE SCIENCE OF SEEDS & PLANTS
Investigate the life cycles of wild flora and domestic crops, from seed to mature plant. Study photosynthesis, seed dispersal, and plant structures, functions, and adaptations as you conduct investigations in our forest and fields.

Programs at Our Wildlife Sanctuary

Grades 4–6 *(continued)*

ANIMAL ADAPTATIONS
Observe signs of local wildlife as you explore sanctuary habitats. Investigate adaptations that help animals survive (and thrive in) Massachusetts' changing seasons and varied ecosystems in **one** of the following focus groups: **mammals, birds, reptiles and amphibians, or insects**.

ECOSYSTEMS OF NEW ENGLAND
Learn how landscape, geology, and climate determine the interdependent structure of local ecosystems. Investigate habitats to collect data as you compare and contrast the different flora and fauna you document. Learn about how our local habitats are changing over time and the importance of biodiversity.

SOIL SCIENCE
Investigate soils and compost in various habitats including field, forest, farm, and wetland. As you collect and analyze samples, identify properties of soil and learn about erosion, decomposition, absorption, and other key elements of this critical ecosystem.

THE SCIENCE OF FOOD & FARMING
Learn about the process of growing, raising, and harvesting food as you work in our fields and with our livestock. Uncover challenges involved in getting food from farm to table. What are the energy, quality of life, and ecological issues surrounding the food industry? How is food production tied to habitat protection? Depending on the season, participate in feeding, mucking, planting, weeding or harvesting.

ECOLOGICAL ISSUES
Humans, plants, and animals all need a place to live, food to eat, and certain materials for survival. What is the balance between Earth's limited resources and our basic needs? Investigate the interrelationships of all living things as you observe our resident wildlife and working farm.

NATIVE PATHWAYS: PEOPLE & THE LAND (SEPT–DEC)
Investigate the interdependence of people, land, and wildlife through a variety of hands-on activities. What is our relationship to the first people who lived here? Compare and contrast our current way of life and how it has changed over the centuries through our use of land, resources, and technological developments.

WINTER ECOLOGY (DEC–MAR)
Investigate how winter temperatures, humidity levels, and snowfall affect the survival and habits of various plant and animal species. We'll study survival strategies such as hibernation, migration, brumation, staying active, and dormancy, as well as unique adaptations that make cold-weather survival possible.

MAPLE SCIENCE (FEB–MAR)
Learn maple tree identification, anatomy, and physiology as you observe the production of a traditional New England crop. Investigate physical and chemical changes that occur while comparing sap in various stages. We'll explore the sugarbush and the tools needed to convert sap into syrup.

Grades 7–12

Contact us for a curricular consultation to develop a customized program that meets your learning goals and objectives for grades 7–12:

School and Group Programs Coordinator Robin Stuart:
781-259-2217 | rstuart@massaudubon.org

Programs at Your School & in Your Community

Enrich natural history and science lessons while strengthening students' connections to the environment. Whether you want to bring nature into the classroom or take lessons outside, our programs offer insight into New England habitats and native species.

Classroom Discovery: A teacher naturalist visits your classroom with native wildlife and/or farm animals.

Field Science: A teacher naturalist takes you and your students to the schoolyard or a nearby habitat to discover ecology. Programs can include meeting native wildlife in the classroom.

Grades Pre-K to Kindergarten

Price per Session
Weekday: 30 minutes: $120 | 45 minutes: $165 | 1 hour: $195
Weekend: 1 hour: $240

Preschool Programs: 15 student maximum
Kindergarten Programs: 30 student maximum

WHICH CAME FIRST: CHICKENS & EGGS

Investigate bird life cycles as you observe and learn about chickens, their eggs, and behaviors.

HATCHING OUT

Birds aren't the only animals that lay eggs! Observe and compare other egg-layers such as reptiles, amphibians, or insects.

MAGNIFICENT MICE

Observe mouse families to learn about their behaviors, adaptations, and habitats. Discover how these fascinating animals use their senses to interact with their habitat and each other.

WILD & DOMESTIC

Explore the differences between wild and domestic animals by observing and comparing native wildlife and New England farm animals.

SOIL RECYCLERS

People aren't the only ones who recycle. Study worms and native mammals, birds, and reptiles to find out how animals recycle too!

WILD TALES

Hear a favorite childhood story and meet a wild character from the story! Learn where it lives and what it eats. Our favorites include *Frederick the Mouse*, *The Busy Tree*, and *Owl Babies*. Customization options available as well.

Programs at Your School & in Your Community

Grades Pre-K to Kindergarten *(continued)*

ANIMAL SENSES

Observe native wildlife and discover the ways in which they use their five senses to interact with their habitats and each other.

SEASONAL DISCOVERY

Explore the seasons as you observe native wildlife and learn about adaptations that help them to survive year-round. Your students can join our teacher naturalists for **Autumn Crawly Critters**, **Winter Warm and Fuzzies**, or **Springtime New Babies**. Book all three and save 10%.

Grades 1–3

Price per Session
Weekday: 30 minutes: $120 | 45 minutes: $165 | 1 hour: $195
Weekend: 1 hour: $240

30 student maximum

FOOD WEBS

All living things are connected. Observe native animals, and learn about their adaptations, habitats, and relationships with each other, humans, and the environment.

BIRD ADAPTATION

Observe native birds of prey and/or song birds and learn how specialized adaptations help them to see, hear, fly, find food, and survive in Massachusetts' changing seasons. Choose one of the following program focuses: birds of prey, songbirds or a comparison of both.

ADAPTABLE ANIMALS

Many animals learn to make city landscapes and suburban backyards their habitat. Learn how unique adaptations help them to thrive in these ever-changing environments.

WILD ANIMALS OF THE FARM

Farms provide critical habitat for wild animals as well as for raising livestock and growing crops. Observe native wildlife and discover adaptations that allow them to thrive in our farm fields, forests, and barns.

EGG LAYERS

Learn about the unique adaptation of egg-laying as you study egg development and compare and contrast various animals that lay eggs, including birds, reptiles, amphibians or insects.

MIRACULOUS MICE

Study mouse families and learn how they interact with each other and their habitat. Observe mice at different life stages as they investigate their surroundings, eat, care for their young, and create shelter.

SOIL-CYCLERS

Investigate the important role worms and other invertebrates play in a soil ecosystem, and observe native wildlife such as birds, mammals, and amphibians that depend on worms and other invertebrates for food and survival.

HABITATS: LIVING THINGS & THEIR ENVIRONMENT

Study a variety of native wildlife and learn where they live and why. Through observation and inquiry, investigate New England habitats and how different animals adapt to different ecosystems.

WETLAND HABITATS

We'll take you to a local wetland (pond, vernal pool or river) or bring a wetland to you! Learn about these important habitats through native wildlife observation and water sample investigation. Collect and record data as you explore plants, insects, and animals, and discover the role wetlands play in sustaining local biodiversity.

SOIL INVESTIGATIONS

Observe native wildlife that directly depend on soil habitats for food and shelter. Investigate your schoolyard or a nearby habitat to collect different soil types and compare their properties and characteristics.

Programs at Your School & in Your Community

Grades 1–3 *(continued)*

WINTER SURVIVORS

How do wild animals cope with the changing seasons? They migrate, hibernate, brumate or stay active! Observe native wildlife and learn about unique adaptations that allow animals to survive cold New England winters.

NATIVE NEW ENGLAND: CONNECTING PEOPLE, LAND, & WILDLIFE

People and animals interact with the land in many ways and continue to adapt to a changing environment. Through hands-on activities, artifacts, native stories, and wildlife observation, discover the relationships among plants, animals, people, and the land.

Grades 4–6

Price per Session
Weekday: 30 minutes: $120 | 45 minutes: $165 | 1 hour: $195
Weekend: 1 hour: $240

30 student maximum

WEB OF LIFE

Discover how living things are connected to one another and the world around them. Find relationships between plants, animals, people, and the flow of energy within an ecosystem.

SCIENCE OF BIRDS

Observe native birds of prey and/or song birds as you learn about adaptations they use to fly, find food, and survive in Massachusetts' changing seasons. Choose one of the following program focuses: birds of prey, songbirds or a comparison of both.

BACKYARD WILDLIFE

As we continue to expand where we live, work, and play, many animals have had to adapt by making backyards and city parks their habitat. Investigate how birds, mammals, reptiles, and amphibians interact with a changing ecosystem.

SOIL SCIENCE

Observe native wildlife that depend on soil habitats for food and shelter. Sample and study the components and properties of soil and learn about erosion, decomposition, water retention, and other key elements of this ecosystem.

WETLANDS & WATERSHEDS

We'll meet you at a local wetland (pond, vernal pool or river) or bring the wetland to you! Observe native wildlife, gather water samples, and collect data to compare the physical, chemical, and biological components of these critical habitats.

WINTER SURVIVAL

Winter is a challenging time for New England wildlife and requires both physical and behavioral adaptations for survival. Observe native wildlife and learn about survival strategies such as migration, hibernation, brumation, staying active, and dormancy.

HABITATS & ADAPTATIONS

What's the connection between habitats and adaptations? Compare the physical and behavioral adaptations of local animal species and how these relate to their roles within an ecosystem.

Grades 7–12

Contact us for a curricular consultation to develop a customized program that meets your learning goals and objectives for grades 7–12:

School and Group Programs Coordinator Robin Stuart:
781-259-2217 | rstuart@massaudubon.org

Leaders in Environmental Access for All (LEAF)

Environmental education programs for people of all abilities

For pricing and details, contact Accessibility Coordinator Erin Pitkin:
781-259-2247 | epitkin@massaudubon.org

SENSORY FARM EXPLORATIONS

Using all of our senses we will explore and experience life on a local farm. Students will have the opportunity to participate in adapted daily chores and other adapted farm activities.

SENSORY NATURE EXPLORATIONS

Using all of our senses, we will explore fields, trails, forests, and wetlands. Through a variety of hands-on activities, investigate the relationships between plants, animals, people, and the resources we share.

CUSTOM OUTREACH PROGRAMS

Programs include bringing native wildlife into the classroom, or guided investigations of outdoor areas at or near your school. Our programs enrich natural history and science lessons and help build connections to the environment.

ACCESSIBLE CURRICULUM SUPPLEMENTAL MATERIALS

We strive to ensure that every student has the tools they need to participate in our environmental programs.

Chaperone Lesson Packet
Curriculum Social Stories
Accessible Terrain and Curriculum Locations

VOCATIONAL PROGRAMS

Students have the opportunity to learn and practice skills important to future employment and education. Our staff will work with your program's needs to incorporate vocational and transitional goals such as job descriptions, task lists, resume submittal, application, interview, and intern handbooks.

Farmhand Intern
Groups of two or more

Ecological Studies Intern
Groups of three or more

Wildlife Care Intern
One student: Requires application and interview

Please note: *Space is limited and students must be chaperoned. Drumlin Farm does not provide job coach services.*

Leaders in Environmental Access For All
at Drumlin Farm Wildlife Sanctuary

Headstarting Native Frogs: Lifecycles & Conservation Science in the Classroom

In collaboration with Zoo New England's Grassroots Wildlife Conservation

For pricing and details, contact School and Group Programs Coordinator Robin Stuart:
781-259-2217 | rstuart@massaudubon.org

Helping Native Frogs
Guided by Mass Audubon scientists and Zoo New England's Grassroots Wildlife Conservation, this headstart program is a critical component of a larger initiative to restore populations of native frogs.

Students across Massachusetts are helping to reverse decreasing populations by raising, or "headstarting," tadpoles to be released into breeding pools at Mass Audubon wildlife sanctuaries in Lincoln and on Cape Cod.

Lessons Learned
Students will learn about lifecycles, adaptations, and pond ecology while taking an active role in conserving local species in Massachusetts.

By raising native tadpoles in the classroom and releasing them into the wild, students will increase chances of survival and future breeding for these amphibians.

How it Works
Scientists deliver native and locally sourced wood frog tadpoles to the classroom in late spring.* Students then nurture the tadpoles as they metamorphose into frogs, at which point they are collected and released into the wild.

***Please note:** *If spadefoot toads (a threatened species) breed during the school year, students will have the option to monitor both sets of tadpoles for comparison, or raise spadefoots after woodfrogs, if desired.*

Mass Audubon

ZOO NEW ENGLAND'S
Grassroots Wildlife Conservation

Afterschool Enrichment Programs

We provide a dynamic and inquiry-based after-school enrichment experience. Students learn about field science, local habitats, and wildlife. Individual and series programs are available and may include nature-based crafts, games, literature, storytelling, journaling, and other hands-on activities.

Naturalist-in-Residence Programs

A Drumlin Farm teacher-naturalist will facilitate seasonal explorations of schoolyard or nearby habitats. Programming is integrated into classroom curricula to increase students' knowledge of and appreciation for local landscapes, and wildlife.

Teacher-naturalists partner with classroom teachers to develop lessons that vary in structure. Examples include field studies; planting/harvesting; meeting native wildlife; and incorporating nature-based literature, art, and journaling.

Customized Programming

We offer personalized curricular consultation and customized programming to meet your learning goals and objectives. Options include:

Assemblies
Scout Programs
Home School Programs

Contact Us

For all Additional Programs and Professional Development, contact School and Group Programs Coordinator Robin Stuart:
781-259-2217 | rstuart@massaudubon.org

Professional Development Programs

We are a DESE-approved PDP provider.

Workshops are designed to give classroom teachers and additional staff tools needed to develop and implement engaging field investigations that support core concepts and practices found in the Massachusetts Science Standards.

We study local habitats to learn about ecological principles, scientific inquiry, and species identification. Our educators will demonstrate how to teach lessons in a classroom or schoolyard setting, using a hands-on, practice-based approach.

Workshops

Potential program topics include...

- Integrating Massachusetts Science Standards
- Curriculum Review
- Schoolyard Habitat Investigations
- Content Workshops
- Schoolyard Citizen Science
- Curriculum Planning & Support

Nature School

It All STEMS from Nature: Nature School for Classroom Teachers Grades K–8

July 29, 2019–August 1, 2019
9:00 am–3:00 pm *with call back date 11/21/19*

Join Mass Audubon educators and scientists for four days of teaching and learning! Practice field science and inquiry-based learning methods by studying local habitats, conducting field research, and designing investigations that will have direct applicability to your classroom and curriculum with peers in grades K–5 and 6–8. This course highlights integrating the Massachusetts Science Standards and will introduce principles of ecology. Upon completion of this course, you will understand:

- How to integrate MA Science Standards
- How to introduce principles of ecology
- Methods and resources for guiding students' habitat explorations and learning

**Offered in partnership with the Education Collaborative. Upon completion, two graduate credits will be provided by Framingham State University. Space is limited and early registration is suggested. Class price is TBD. EDCO and TEC members will receive a membership rate.*

Mass Audubon
208 South Great Road • Lincoln, Massachusetts 01773

Mass Audubon protects 36,500 acres of land throughout Massachusetts, saving birds and other wildlife, and making nature accessible to all. As Massachusetts' largest nature conservation nonprofit, we welcome more than a half million visitors a year to our wildlife sanctuaries and 20 nature centers. From inspiring hilltop views to breathtaking coastal landscapes, serene woods, and working farms, we believe in protecting our state's natural treasures for wildlife and for all people—a vision shared in 1896 by our founders, two extraordinary Boston women.

Today, Mass Audubon is a nationally recognized environmental education leader, offering thousands of camp, school, and adult programs that get over 225,000 kids and adults outdoors every year. With more than 125,000 members and supporters, we advocate on Beacon Hill and beyond, and conduct conservation research to preserve the natural heritage of our beautiful state for today's and future generations. We welcome you to explore a nearby sanctuary, find inspiration, and get involved. Learn how at massaudubon.org.