

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## CCE- Onondaga County 4-H Camp at the Parks

### Explanation of Program Guide

Welcome to our 4-H Camp program resource! Here you will find a one-pager for each program we offer at camp, including a description, vocabulary, pictures, and information to continue learning. Our goal is that this resource serves as a conversation starter for families exploring the option of attending camp, and also for campers that have/are attending camp to discuss what they've done and learned with their families and communities.

If you have any questions regarding our programs or camp in general, please reach out!

Name	Title	Phone	Email
Scott Hudson	Youth & Family Team Leader	315-424-9485 x 241	Soh27@cornell.edu
Maureen Bishop	4-H Educator & Camp Director	315-424-9485 x250	Msb399@cornell.edu

### Table of Contents

Archery .....	2
Arthropods.....	3
Fishing .....	4
Forestry .....	5
Geology .....	6
Hiking.....	7
Nutrition.....	8
Orienteering.....	9
Reduce, Reuse, Recycle .....	10
Shelter Building.....	11
Stream Ecology .....	12
Ticks.....	13
Watersheds & Water Quality .....	14

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Archery

Campers will learn the basics of archery from the parts of a compound bow and arrow, safety on the range, and how to adjust their shooting to hit the target. This program builds campers confidence, strength, and determination. They'll also practice goal setting as they reflect between each session and make improvements on their form, aim, and focus.

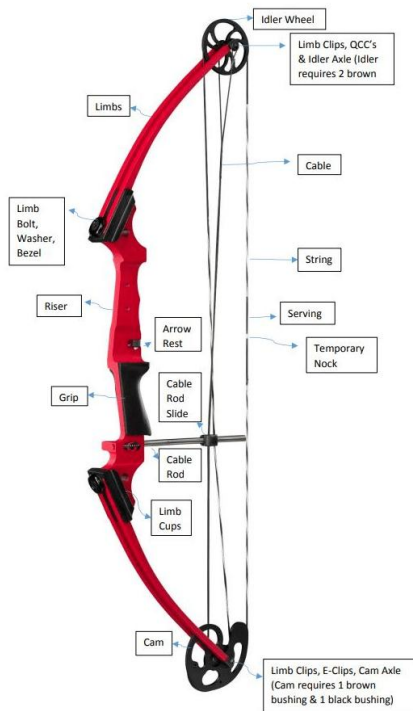
### Vocabulary

**Anchor Point (noun):** The final position of the bowstring hand/arm before release. It involves placing the hand at a specific spot to anchor on the face.

**Archery (noun):** The sport or skill of shooting with a bow and arrows, especially at a target.

**Arrow (noun):** The pointed projectile with a shaft and fletching that is shot from a bow.

**Compound Bow (noun):** A type of bow used in archery that has a pulley and cable system. See the image below to reference the parts of a compound bow.



### Learn More

- [NYS 4-H Shooting Sports](#)
- [National Archery in the Schools Program – Learning Center](#)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Arthropods

Campers will learn from a CCE Natural Resources Educator about different types of arthropods. They will practice using a dichotomous key to identify arthropod samples, and then venture through their natural environment to find and collect some for observation under a microscope!

### Vocabulary

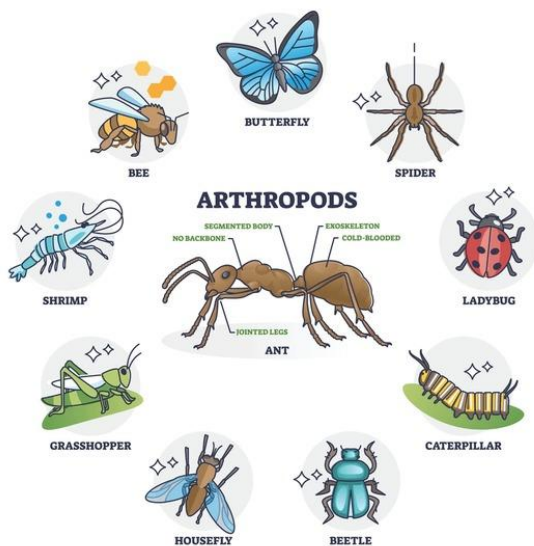
**Arthropod (noun):** Animals that have a hard outside covering called an exoskeleton. Insects, crustaceans, and arachnids are three of the largest arthropod groups.

**Arachnid (noun):** A group of small animals with bodies divided into two parts and eight legs. Arachnids are a type of arthropod. Examples: Spiders, ticks, scorpions, and mites.

**Bug (noun):** A type of insect that has a mouth shaped like a straw, which they use to pierce plants and drink their sap or other juices, or to eat other insects.

**Dichotomous Key (noun):** A tool that can be used to identify organisms or objects in the natural world, such as plants, animals, or rocks.

**Insects (noun):** A group of small animals with bodies divided into three parts and six legs. They usually have one or two pairs of wings. Insects are a type of arthropod. Examples: Bees, ants, butterflies, beetles, and flies.



# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Fishing

Campers will learn from a CCE Natural Resources Educator and a Department of Environmental Conservation (DEC) staff member about common freshwater fish in this area, ways to be safe while fishing, the equipment needed to fish, how to cast, and strategies for catching a fish.

### Vocabulary

**Bait (noun):** Any item placed on a hook with the intent of tricking fish into eating it.

**Bobber (noun):** A small, lightweight object used to keep bait at a desired depth and to help show when a fish may be biting.

**Cast (verb):** The act of swinging a fishing rod and releasing the line, to propel a bait or lure through the air.

**Reel (noun):** Part of the fishing rod used to wind and unwind the fishing line.



### Learn More

- [NYS DEC – Fishing Basics](#)
- [NYS DEC – Where to Find Fish in Lakes and Ponds](#)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Forestry

Campers will learn from a CCE Natural Resources Educator all about trees! For example, what trees need to grow and how to identify common trees. They will also learn about invasive species and how they impact our ecosystems and community forests. As campers explore in nature, they will learn the importance of trees and the many ways they help people, animals, and our planet.

## Vocabulary

**Arboriculture (noun):** The science and art of growing and caring for trees and shrubs.

**Coniferous (adjective):** Trees that have needles that stay green and stay on year-round; they also grow cones. Examples: Cedar, Fir, Pine, and Spruce trees.

**Deciduous (adjective):** Trees that lose their leaves and regrow them once a year. Examples: Birch, Maple, Oak, and Willow trees.

**Dendrology (noun):** The scientific study of trees.

**DBH:** This acronym stands for “Diameter at breast height”, which is the standard for measuring trees. DBH refers to the tree diameter measured at 4.5 feet above the ground.

**Invasive Species (noun):** A living thing that is: 1) Non-native, or not natural, to the ecosystem and, 2) That can cause or is likely to cause economic or environmental harm, or harm to humans.

**Photosynthesis (noun):** The process by which green plants and some other organisms use sunlight to make foods from carbon dioxide and water.



## Learn More

- [NYS DEC Urban & Community Forestry](#)
- [NYS Urban Forestry Council Resources](#)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Geology

Campers will learn from real-life geologists as they have hands-on experience with rocks and fossils from Central New York! They will explore the different invertebrate fossils found in New York State, learn what the rocks around us are made of, and how they formed through the rock cycle. While exploring the fossils, they will make guesses about the paleoenvironment (the environment the fossil creatures were living in millions of years ago) and explore how that environment has changed through time.

### Vocabulary

**Fossil (noun):** The remains or traces of plants and animals that lived long ago. Fossils give scientists clues about the past.

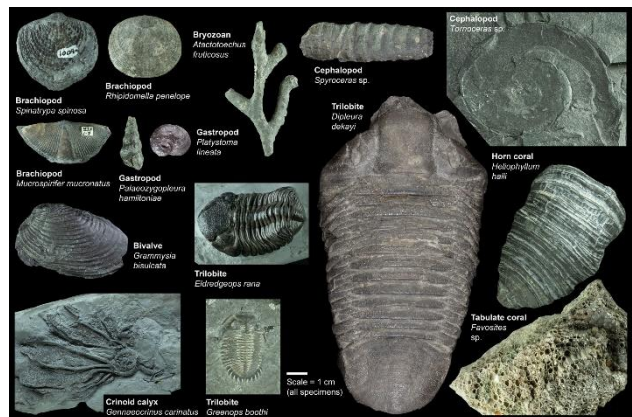
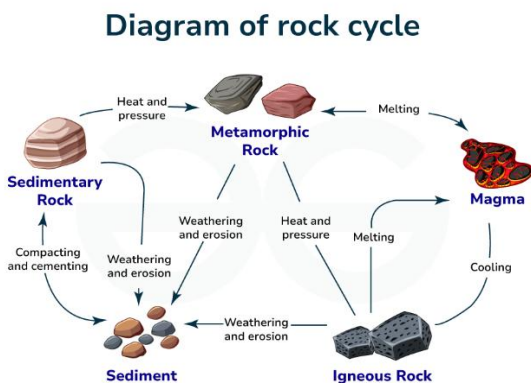
**Geology/Geologist (noun):** The study of the physical features and history of Earth. Scientists who work in geology are called geologists.

**Igneous (adjective):** Rocks formed by the cooling and solidifying of molten materials. Igneous rocks can form beneath the Earth's surface, or at its surface, as lava.

**Metamorphic (adjective):** Rock that was once one form of rock but has changed to another because of heat, pressure, or some other way without passing through a liquid phase.

**Paleontology (noun):** The study of plants and animals that lived millions of years ago.

**Sedimentary (adjective):** Rock that has formed through the deposit and solidifying of sediment, especially sediment transported by water (rivers, lakes, and oceans), ice (glaciers), and wind.



Example of fossils found in Central New York

### Learn More

- [Cornell Rock Parks](#)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



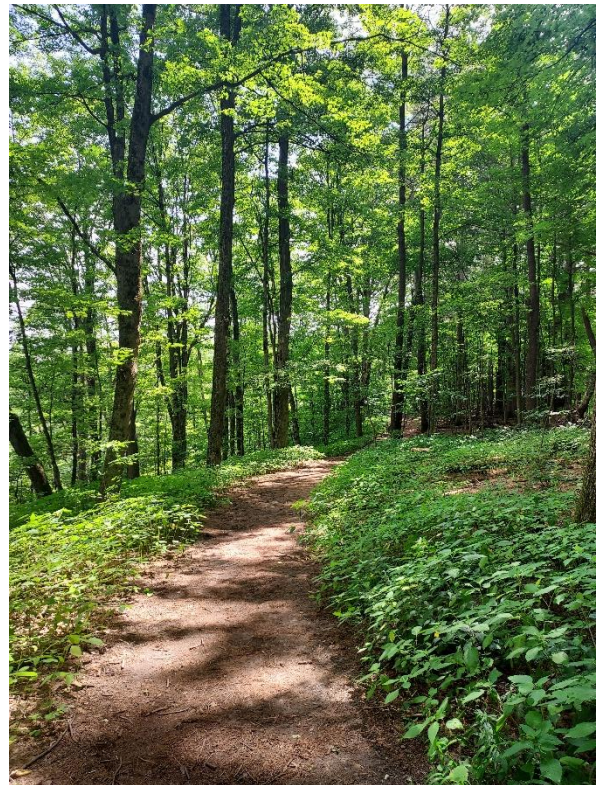
## Hiking

Campers will explore the awe and wonder of their natural environment by taking a hike through the park! Along the way they will pause to listen to birds, observe a plant, or smell a flower. They will learn the importance of respecting nature and the idea of “leave no trace”.

### Vocabulary

**“Leave no trace” (phrase):** This is a common phrase used in outdoor exploration to promote respect for our natural environment. There are 7 principles to this concept which include:

- 1) Plan ahead and preparing for your hike or trip
- 2) Travel and camp on durable surfaces
- 3) Dispose of waste or trash properly
- 4) Leave what you find
- 5) Minimize campfire impacts
- 6) Respect wildlife
- 7) Be considerate of others



### Learn More

- [Hiking in Onondaga County](#)
- [Leave No Trace – 7 Principles](#)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Nutrition

Campers will learn from CCE Nutrition staff about what our body needs to feel nourished and help us grow! They'll learn about fiber, the five food groups, and other important nutrients for our body, while also exploring the importance of physical activity and managing screen time.

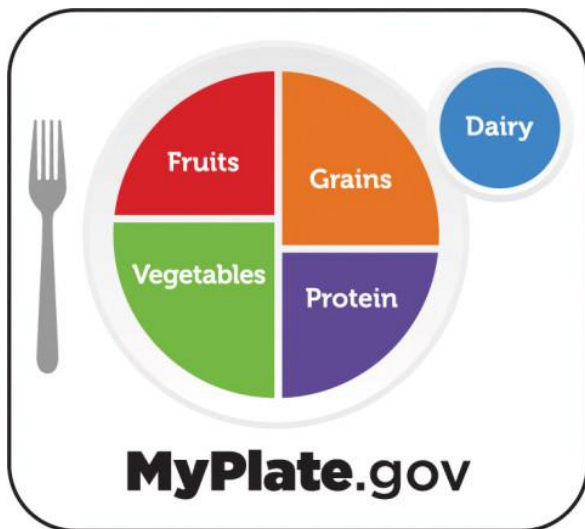
## Vocabulary

**Digestion (noun):** The process by which food and drink are broken down into smaller parts so that the body can use them to build and nourish cells and to provide energy.

**Fiber (noun):** A type of carb found in plants that the human body can't digest. Fiber cleans out your intestines and takes care of your digestive health. Examples: Fruits, vegetables, grains, nuts, seeds, and legumes.

**Nutrition (noun):** The process of providing the body with the necessary nutrients to grow, develop, and maintain good health. These nutrients (proteins, fats, carbohydrates, vitamins, minerals, and water) are found in a variety of foods from different food groups.

**Physical activity (noun):** Any bodily movement produced by skeletal muscles that requires energy use.



## Learn More

- [USDA MyPlate Kids Homepage](https://www.usda.gov/myplate/kids)
- [KidsHealth.org – Your Digestive System](https://kidshealth.org/en/teens/digestive-system)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Orienteering

Campers will understand the concept of orienteering, learn the parts of a compass and how to use it, and practice reading a map.

### Vocabulary

**Compass (noun):** An instrument for showing direction. A compass has a moving magnetic needle that points north.

**Contour (noun):** A contour line is a special line on a map or diagram. It connects all the points that have the same value for something like height or temperature. For example, on a map, a contour line would connect all the places that are at the exact same height above sea level.

**Map Scale (noun):** The ratio of a distance on Earth compared to the same distance on a map.

**North Arrow (noun):** A map symbol that shows the direction of north on the map.

**Orienteering (verb):** The crossing of land with the aid of a map and a compass.



### Learn More

- [BetterOrienteering.org – Basic Navigation Routine](https://www.betterorienteering.org/)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Reduce, Reuse, Recycle

Campers will learn with an Onondaga County Resource Recovery Agency (OCRRA) staff member all about what it means to reduce our waste and consumption, reuse materials, and recycle! They will learn about how Syracuse's waste to energy plant works, explore different materials, and discover ways to be creative with their reuse.

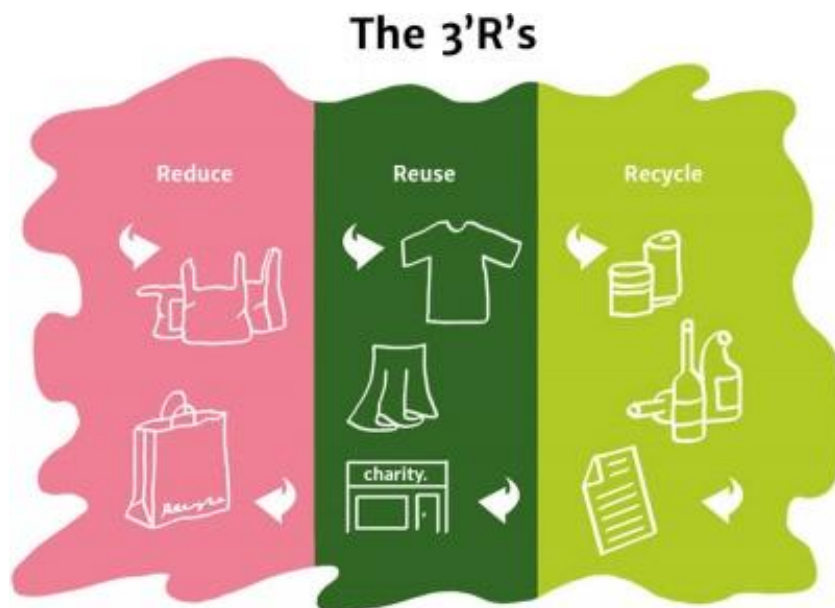
### Vocabulary

**Reduce (verb):** to limit the number of resources you use and the waste you create

**Reuse (verb):** to use something more than once or in a different way

**Recycle (verb):** to dispose of items in a way that allows it to be reused to make new things

**Waste-to-Energy Plant (noun):** a factory that turns waste or trash into energy that can be used for things like electricity to power homes. The plant in Jamesville, NY makes enough electricity to power 30,000 homes a year!



### Learn More

- [OCRRA – Tips for Reducing Waste](#)
- [OCRRA – Waste-to-Energy Facility](#)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Shelter Building

Campers will learn from professionals at a local construction company about how to build a simple shelter using rope, wooden poles, stakes, and tarps! They will learn how to tie knots, understand tension and how to create a structurally sound shelter that they can spend time in.

### Vocabulary

**Shelter (noun):** A safe place or building that protects people and animals from bad weather and danger. A shelter can be as simple as a tree or a cave, a tent for camping, or an apartment or house. At camp, our shelters are made from tarps, poles, and ropes.

**Taut Line Hitch (noun):** An adjustable friction knot used to create a tensioned line that can be easily lengthened or shortened by sliding the knot along the rope.

**Two Half Hitches (noun):** A basic binding knot made by tying two successive half-hitches around an object. This knot is used to attach a rope to a post, or other object.



### Learn More

- [McClurg Article about Camp Activity](#)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Stream Ecology

Campers will learn from a CCE Natural Resource Educator as they explore the ecology of a stream and search for macroinvertebrates!

### Vocabulary

**Ecology/Ecologist (noun):** A type of science that studies the relationships living things have with one another and with their physical surroundings, or environment. Scientists who work in ecology are called ecologists. Ecologists study how living things need one another for survival, and how living things use natural resources like air, soil, and water to stay alive.

**Ecosystem (noun):** All the plants and animals in a place, and the many ways they are connected to each other and to the non-living parts of their environment.

**Kick Net/D-Net (noun):** Nets that are used to collect macroinvertebrates.

**Macroinvertebrates (noun):** a spineless creature that is large enough to be seen without a microscope.

**Stream (noun):** A body of water that flows downhill in a channel in the landscape due to gravity.



# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



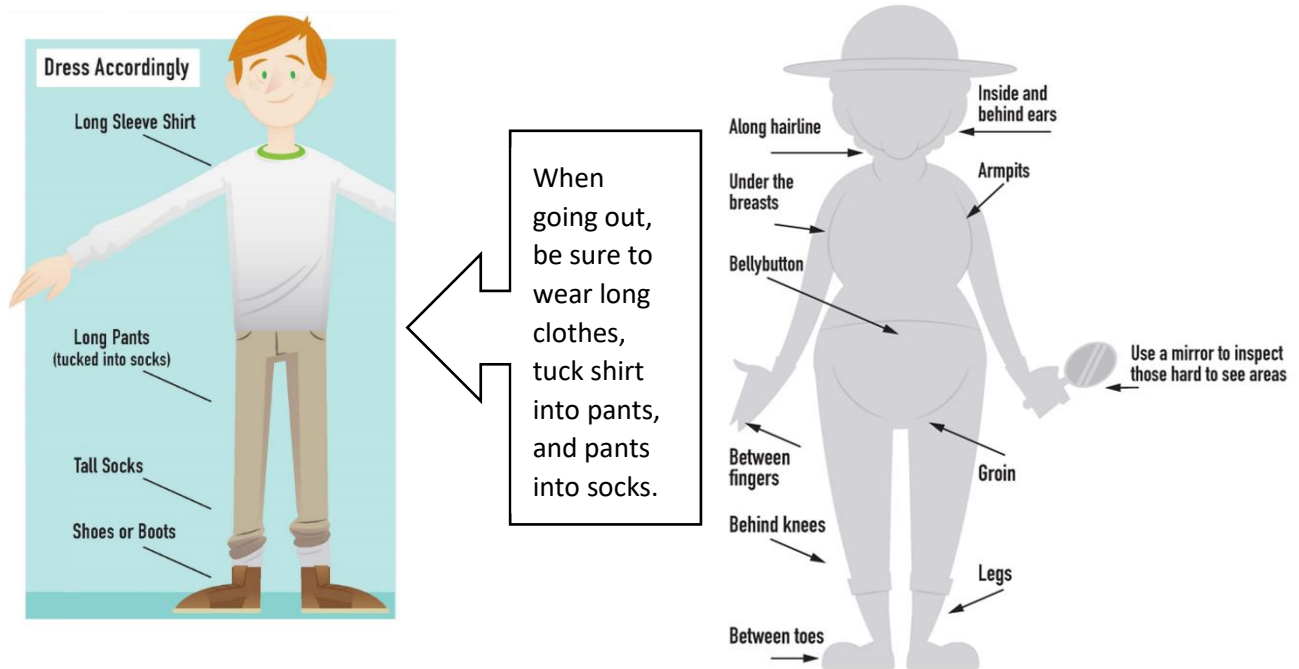
## Ticks

Campers will learn from a CCE Natural Resource Educator about ticks, where they live, and how to stay safe from them!

## Vocabulary

**Tick (noun):** A member of the arachnid family, a tick attaches itself to the skin of an animal and sucks blood. There are hundreds of kinds of ticks on the planet, and they can be found almost everywhere. Examples: Deer tick, Dog tick.

**Tick check (noun):** A thorough check of your body to look for ticks. Daily tick checks are the best way to protect yourself from tick bites.



## Learn More

- [Cornell College of Agriculture and Life Sciences – Don't Get Ticked NY](#)
- [NYS Department of Health - Ticks](#)

# Onondaga 4-H Summer Camp



**Program Presented By:**  
Cornell Cooperative Extension  
Onondaga County

**With Support From:**



## Watersheds & Water Quality

Campers will learn from a CCE Natural Resources Educator about the water cycle and watersheds! They will learn how watersheds are affected by pollution, and how to limit pollution.

### Vocabulary

**Nonpoint source pollution (noun):** Pollution that comes from runoff moving over the land or through the ground. As the runoff moves, it picks up natural and human pollution and carries it into water bodies. This type of pollution includes fertilizer, pesticides, chemicals, oil, sediment from construction or farms, road salt, bacteria and nutrients from pet or human waste, and more.

**Point source pollution (noun):** Pollution that comes from a source that is easy to see like a pipe, ditch, or boat spill.

**pH (noun):** A way to measure how acidic or basic a substance is. A pH less than 7 is an acid (e.g., battery acid, lemons, etc.). A pH higher than 7 is a base (e.g., baking soda). Pure water is neutral with a pH of 7.

**Turbidity (noun):** A way to measure how clear or cloudy water is.

### Water Pollution (noun):

When waste, chemicals, or other particles cause a body of water to become harmful to the fish and animals that need the water to survive.

**Watershed (noun):** An area of land that drains rainfall and snowmelt into water like lakes, streams, and rivers.

### Learn More

- [CCE-Onondaga Water Quality](#)
- [US Geological Survey \(USGS\) - Interactive Water Cycle Diagram](#)

