

# **BIODIVERSITY BASICS**

## **Grades 7 - 8**

**NJCCCS: 5.1, 5.3, 5.4**

### **Field Trip Overview:**

Humans depend heavily on the Earth's biodiversity. During the program your students will discover what biodiversity is, its importance for humans and what we can do to preserve it. Students will participate in a bird survey in DeKorte Park as well as a hands-on demonstration of a disrupted food chain and the consequences it brings to the ecosystem.

### **Background Information:**

Environmentalists might define biodiversity as the total of all plant and animal life of the planet, and the planet itself – the air, water and land that supports animal and plant life. This diversity of living creatures forms a support system which has been used by each civilization for its growth and development. The rich biodiversity has been instrumental in providing humanity with food security, health care and industrial goods that has led to high standard of living in the modern world. Ironically it has also produced the modern consumerist society which is adversely affecting the diversity of biological resources upon which it is based. The diversity of life on earth is so rich that if we use it sustainably we can go on developing new products for generations. For this reason, we must realize the importance of biodiversity as an important resource.

The planet's biodiversity supports ecosystem services such as air quality, climate, water purification, and erosion prevention. Even though we know why it's important we don't know everything there is to know about species diversity. How many species are really out there? How many have we extinguished since the stone age? Does it really matter if we have extinguished species that we never even discovered? Knowing more about biodiversity impacts human health, agriculture, business and industry, leisure and cultural activities, and of course our conservation efforts. We can truly not understand why we should protect it if we don't know what it is that we are trying to protect.

## **Vocabulary:**

Autotroph: An organism that is able to form nutritional organic substances from simple inorganic substances such as carbon dioxide

Biodiversity: The variety of life in the world or in a particular habitat or ecosystem

Consumer: Organisms of an ecological food chain that receive their energy by consuming other organisms

Decomposer: An organism, especially a soil bacterium, fungus, or invertebrate, that decomposes organic material

Ecology: The branch of biology that deals with the relations of organisms to one another and to their physical surroundings

Ecosystem: A biological community of interacting organisms and their physical environment

Estuary: The tidal mouth of a river, where the tide meets the stream

Field mark: A visible mark or characteristic used in identifying a bird or other animal in the field

Food chain: A series of organisms each dependent on the next as a source of food

Food web: A system of interlocking and interdependent food chains

Gene: A unit of heredity that is transferred from a parent to offspring and is held to determine some characteristic of the offspring

Genetics: The study of heredity and the variation of inherited characteristics

Habitat: The natural home or environment of an animal, plant, or other organism

Heterotroph: An organism deriving its nutritional requirements from complex organic substances

Producer: An autotrophic organism that serves as a source of food for other organisms in a food chain. Producers include green plants, which produce

food through photosynthesis, and certain bacteria that are capable of converting inorganic substances into food through chemosynthesis

Salt Marsh: An area of coastal grassland that is regularly flooded by seawater

Silhouette: The dark shape and outline of someone or something visible against a lighter background, esp. in dim light

Species: A group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding

Trophic level: Each of several hierarchical levels in an ecosystem, comprising organisms that share the same function in the food chain and the same nutritional relationship to the primary sources of energy

### **References / Resources:**

- Malhotra, Nitasha. *The Importance of Biodiversity*. N.p.: The Association for Geographical Studies, n.d. PDF.  
[The Importance of Biodiversity](#)
- [PBS: Earth on Edge](#)

## BIODIVERSITY BASICS

# Pre-Trip Activities

### 1. Up The Creek

This lesson plan from a New Zealand Website has various activities that you can use to introduce the term “biodiversity” to your students. We suggest conducting Activity 1 and 5 before you visit us here at the Meadowlands Environment Center. Activity 1 is an introduction to Biodiversity while Activity 5 is an interactive online game that will hopefully show students how things are interconnected in nature.

[New Zealand Department of Conservation: Biodiversity Activity](#)

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**Post-Trip Activities**

**1. Celebrate Urban Birds**

This activity from the Cornell Lab of Ornithology is a Citizen Science Project that allows your students to conduct a bird study in your local area. Just submit your information and they will mail you a packet with all the necessary materials!

[Cornell Lab of Ornithology: Celebrate Urban Birds](#)

To get your kit go here:

[Cornell Lab of Ornithology: Celebrate Urban Birds: Get Your Kit](#)