



# Wildlife Ecology

## Class Outline

**Brief Synopsis:** Students will investigate the dynamic interrelationships of wildlife populations and their habitats. Through interactive demonstrations and explorations, students will learn about components of habitat, carrying capacity, limiting factors and biodiversity, and then see examples of these concepts at work in surrounding natural areas.

### Outcomes:

1. Students will demonstrate the dynamic nature of wildlife populations and list the factors that impact population levels.
2. Students will calculate the carrying capacity of a coyote population.
3. Students will evaluate the suitability of different habitats to supply the needs of local wildlife species.
4. Students will search for signs of how human actions impact wildlife biodiversity in positive and negative ways.

### Outline:

#### I. Wild vs. Domestic (20 minutes)

Students categorize laminated pictures of various animals as either wild or domestic and state a reason why they chose the category. The list of reasons then helps formulate a definition of wild versus domestic.

#### II. Oh Deer! (30 minutes)

Using the white-tailed deer's basic needs; food, water, shelter and space, students will explore population dynamics. Each student becomes either a deer searching for a specific need, or a need for which the deer are searching. After each round the population level is recorded and at the end of the activity the population data is graphed and interpreted.

#### III. Coyote Calamity (15 minutes)

Situations that specifically limit populations such as diseases (mange and parasites), extreme temperature conditions, flood and drought, wildfire, and low levels of prey populations (food) can occur naturally or can be human caused. Students work in groups of 2-3 to calculate the carrying capacity of a coyote population in different situations, and determine the limiting factor for that population.

#### IV. Biodiversity Hike (75 minutes)

While exploring three different habitat types at Eagle Bluff, each student searches for the appropriate needs of a local animal to determine whether or not their animal could survive in each habitat. By determining which habitat supports the largest number of different animals, the biodiversity of each habitat is established. These findings are then used in the conclusion of the class to illustrate how human actions on the landscape impact biodiversity in positive and negative ways.

### Quick Facts

**Class Length:** 3 hours

**Ages:** Designed for 5-8<sup>th</sup> grade

**Season offered:** Year round

**Time outside:** 2 hours

**Hike length/physical activity:**  
1 mile hike, moderate physical level.

**Pre-requisite/prior knowledge:**  
No special skills required

**Minnesota Academic Standards:**  
**Science:** 4.III.A.1, 5.IV.E.2, 5.IV.F.2,  
7.IV.C.2&4, 7.IV.F.5

**Math:** 4.II.A.1-3, 4.III.A.1, 4.IV.A.1,  
5.III.A.1, 5.IV.A.3, 6.IV.A

**Language Arts:** 4.I.A.1, 4.I.B.1&2,  
4.III.A.1,2&3, 5.I.A.1, 5.I.B.1,  
5.III.A.1,2&4, 6.I.B.4,  
6.III.A.1,3&6, 7.I.A.1,  
7.I.B.1&5, 7.III.A.1&6,  
8.I.B.1,5&8, 8.III.A.1,2,6&7