

# Activity 25: Birds and Worms

## Overview

Camouflage is an important survival strategy in the animal kingdom. In this activity, students will discover the value of protective coloration as they pretend to be birds in search of colored worms or bugs.

## How to Use This Information

This supplement enhances the information provided in the Background section of this activity. Use this material in addition to the information contained on page 111 of PLT's Pre K-8 Activity Guide.

## Resources

Foss, Carol R. edited by. Atlas of Breeding Birds in NH, Audubon Society of NH, Arcadia, Dover, NH, 1994.

NH Fish and Game Dept., NH Natural Heritage Inventory, UNH Cooperative Extension, and USDA Forest Service. Threatened and Endangered Plants and Animals in New Hampshire's Forested Habitats. Durham, NH: UNH Cooperative Extension, 1998. [www.extension.unh.edu/forestry/Docs/rare-intro.pdf](http://www.extension.unh.edu/forestry/Docs/rare-intro.pdf)

Wildlife Habitat Activity Kits for New Hampshire. Durham, NH: UNH Cooperative Extension, 1999. This kit contains an extensive reference library and animal tracks, skins, skulls, and puppets. All or part of the kit may be borrowed from the NH Fish and Game Dept. in Concord. [www.wildlife.state.nh.us](http://www.wildlife.state.nh.us)

NH Fish and Game Department  
[www.wildlife.state.nh.us](http://www.wildlife.state.nh.us)

US Fish and Wildlife Service  
<http://endangered.fws.gov>

National Audubon Society  
[www.audubon.org](http://www.audubon.org)

Audubon Society of NH  
[www.newhampshireaudubon.org](http://www.newhampshireaudubon.org)

Bird Calls  
[www.enature.com/birding/audio](http://www.enature.com/birding/audio)

UNH Cooperative Extension – Wildlife  
<http://extension.unh.edu/wildlife/wildlife.htm>

## Correlations to NH Frameworks

Literacy:

Written and Oral Communication:

Oral Communications: 1.1, 1.4

Science:

Life Science: LS1.2

Science Process Skills: SPS1.1, SPS1.4, SPS4.3

Correlation found at  
[www.nhplt.org/Correlations.htm](http://www.nhplt.org/Correlations.htm)

# Birds in New Hampshire

Many birds inhabit New Hampshire. According to the NH Fish & Game Department, there are approximately 310 species of birds found in New Hampshire, not including introduced species! Most are known to nest in the state, but others occur as migrants, winter residents, or visitors from breeding sites in adjoining states.

## Predatory Birds

Some of these birds are predators, feeding on other animals or insects for all or part of their diet. Despite the use of camouflage and other adaptations by their prey, these birds are quite successful at locating prey throughout their habitats.

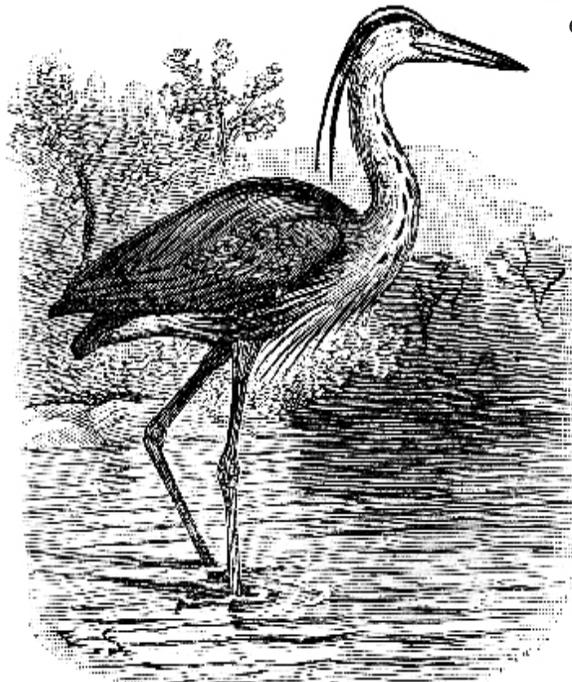
## Survival of the Fittest?

Camouflage is only one adaptation that species develop as a means of survival. Since many predators have a keen sense of smell and /or taste, two other important adaptations involve bad smell and nasty taste. For example, skunks, green stink bug (green soldier bug), and some beetles use their smell to repel predators. The eastern newt has unpalatable compounds and powerful toxins in its skin that emit a nasty taste to would-be predators.

Other adaptations have very little to do with the senses. These include physiological and anatomical capabilities that aid in the survival of the species. For instance, some aquatic species—such as mummichogs in estuaries—can hide in oxygen-low mud and small pools during low tide and avoid predation. The four-toed salamander can drop off its tail when grasped by a predator. The tail will continue to twitch for several minutes afterwards, preoccupying the predator.

Despite the various adaptations species possess, some become endangered or threatened. This often occurs due to loss or change of a species' habitat. Other times, it may be due to over-hunting, over-fishing, or collecting by humans or competition with other species. What-

ever the reason, some species populations have dropped so low that their survival is threatened by extinction.



Great Blue  
Heron

Heron art courtesy  
FCIT, <http://etc.usf.edu/clipart>

Species can be designated endangered or threatened at the state and federal levels. Those that are threatened or endangered throughout their expected habitat range are listed federally. Some species are only rare in a portion of their range and are abundant elsewhere: they are listed at the state level. For instance, the Karner blue butterfly is endangered statewide and nationally. The osprey, by contrast is threatened in New Hampshire, but abundant globally. Of more than 15,000 species of wildlife in the state, 27 are considered endangered and 13 threatened, including five mammals, five reptiles, three fish, two mussels, nine insects, one amphibian, and fifteen birds.

Due to federal and state regulations and restoration efforts, some species populations are increasing. For example, the bald eagle—our national symbol—was upgraded from endangered to threatened by the federal government in the mid 1990s. In June 2007, bald eagle populations had recovered to a degree that allowed it to be removed from the federal threatened and endangered species list. With only a few breeding pair in the state, however, the bald eagle remains a threatened species in New Hampshire.

## Some Predatory Birds of New Hampshire

<u>Bird</u>	<u>Habitat</u>	<u>Prey</u>
common loon	forested lakes and rivers, oceans and bays in winter	fish, shellfish, frogs, aquatic insects
osprey	lakes, rivers, coast	fish
bald eagle	lakes, rivers, marshes, coast	fish
northern harrier (marsh hawk)	marshes, open grasslands	small mammals, birds, snakes
red-shouldered hawk	deciduous woodlands, especially where there is standing water	birds, mammals, reptiles, amphibians, insects
barred owl	mixed forests of mature trees	small mammals, birds
great horned owl	woods near open areas	rodents, rabbits, birds, skunks, porcupines (occasionally)
piping plovers	beaches	insects, crustaceans, mollusks, egg of marine animals
great blue heron	lakes, ponds, rivers, marshes	fish, frogs, other aquatic animals
eastern meadowlark	meadows, pastures	cutworms, caterpillars, grasshoppers
ruby-throated hummingbird	gardens, parks, woodlands	minute insects
belted kingfisher	sand banks near rivers and streams	fish, crabs, crayfish, salamanders, mice, insects
cedar waxwing	open deciduous and coniferous woodlands, apple orchards, shrubby fields near water	insects
bobolink	meadows, marshes	grasshoppers, caterpillars, cutworms, crickets
American robin	open land and forest edge	earthworms, insects (mostly beetles and moths)

# Endangered Wildlife

Endangered wildlife are those native species that are in danger of extinction in New Hampshire because of a loss or change in habitat, exploitation, predation, competition, disease, disturbance or contamination. Endangered species are more imperiled than threatened species. Their survival is in immediate danger without assistance.

## INVERTEBRATES

Dwarf wedge mussel \*\*  
Brook floater mussel  
Ringed boghaunter  
Cobblestone tiger beetle  
Puritan tiger beetle\*  
Frosted elfin butterfly  
Karner blue butterfly\*\*  
White Mountain fritillary  
Persius duskywing skipper

## FISH

American brook lamprey  
Shortnose sturgeon\*\*

## REPTILES

Blanding's turtle  
Eastern hognose snake  
Timber rattlesnake

## AMPHIBIANS

Marbled salamander

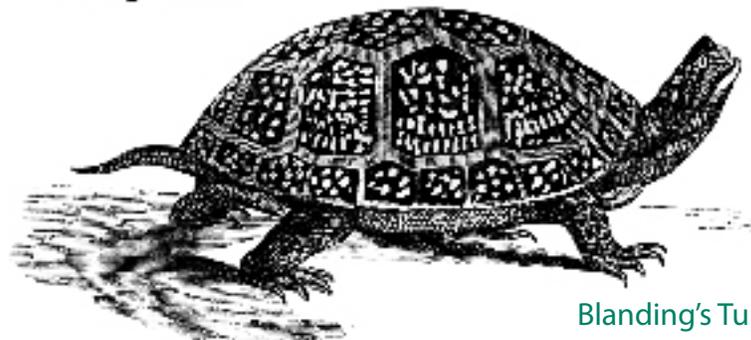
## BIRDS

Northern harrier  
Golden eagle  
Common nighthawk  
Piping plover\*  
Upland sandpiper  
Roseate tern\*\*  
Least tern  
Sedge wren

## MAMMALS

Small-footed bat  
New England cottontail  
Canada lynx\*  
Gray wolf\*\*

\* Federally Threatened  
\*\* Federally Endangered



Blanding's Turtle

# Threatened Wildlife

Threatened species will become endangered if their habitats continue to decline.

## INVERTEBRATES

Pine pinion moth  
White Mountain arctic

## FISH

Bridle shiner

## REPTILES

Spotted turtle  
Black racer

## AMPHIBIANS (none)

## BIRDS

Pied-billed grebe  
Common loon  
Bald eagle  
Peregrine falcon  
Common tern  
American three-toed woodpecker  
Grasshopper sparrow

## MAMMALS

American marten