



2010 New Hampshire Envirothon - Wildlife Section

The information below is designed to assist you in preparing for the wildlife section of this year's New Hampshire Envirothon. The wildlife section will evaluate your knowledge of general wildlife biology and basic wildlife management. You will also need to understand basic ecology and habitat management concepts and principles. In addition, you should become familiar with this year's theme, *Protection of Groundwater Through Urban, Agricultural, and Environmental Planning*, as it relates to wildlife.

The wildlife section test is composed of three sections. Section I is the wildlife identification section where we will ask teams to identify wildlife found in New Hampshire through the use of pictures, calls, pelts, mounts, or scat-track combinations. Section II is the vocabulary section where teams are asked to match ecological concepts and principles to their corresponding definitions. Section III is the synthesis section where teams are asked to put their knowledge of species habitat needs and wildlife biology/management techniques together and apply that knowledge to make decisions regarding real world scenarios in a series of multi-part essay questions. The test will be based upon the objectives listed below.

Objectives:

1. Identify common New Hampshire wildlife including fish, birds, reptiles, amphibians and mammals. Be able to identify wildlife through pictures, calls, pelts, mounts, shells, or scat/track combinations.
2. Describe food chains and food webs (including predator-prey relationships) and be able to cite examples.
3. Evaluate a given habitat for its suitability for a designated species (given a description of the habitat needs of the species) or list species likely to live there.
4. Describe ways that habitat can be improved for specific species by knowing their habitat requirements.
5. Define and explain basic ecological concepts and terminology (i.e. limiting factor, carrying capacity, territory, home range, niche, etc.).
6. Describe wildlife physical and behavioral adaptations to their habitats and be able to cite examples. (i.e. migration, hibernation, defense posturing, etc.)
7. Understand some of the basic "tools" of wildlife managers (hunting, habitat manipulation, population census techniques, people management, etc.)
8. Describe major factors affecting threatened and endangered species and methods used to improve the populations of these species.

9. Describe how human activity is changing the world we live in and what impact this has on different wildlife species and the habitats that support them.

References:

The following references will help you prepare for the test that will be given by the Wildlife Section. The books listed below are just suggested texts. We encourage you to utilize these and/or other books regarding wildlife and ecology that may be available at your school library or your town's public library. The web sites listed below may also serve as a starting point. There are a myriad of other web sites available. We encourage you to begin your preparations at the National Envirothon web site (<http://www.envirothon.org/>), in particular, the sections on objectives, definitions, and resources.

Peterson Field Guide Series, Audubon Society Field Guide Series, or Stokes Field Guide Series: Mammals, Birds, Reptiles and Amphibians.

Freshwater Fishes of New Hampshire, Scarola, John F. (available from NH Fish and Game Dept.).

New England Wildlife: Habitat, Natural History, and Distribution - Northeastern Forest Experiment Station Report NE-108. 2001.

The Field Guide to Wildlife Habitats of the Eastern United States - Benyus, Janine M. 1989.

The Economy of Nature: A Textbook in Basic Ecology, Riklefs, Robert E. 1990.

Ducks, Geese and Swans of North America, Bellrose, Frank C. 1980.

Web Sites/Links:

The web sites/links listed below will be helpful in your preparation for the wildlife portion of the Envirothon this year.

The NH Wildlife Action Plan: http://www.wildlife.state.nh.us/Wildlife/wildlife_plan.htm

Online Field Guide: <http://www.enature.com/home/>

Cornell Lab of Ornithology: <http://www.birds.cornell.edu/>

New Hampshire Wildlife Profiles: http://www.wildlife.state.nh.us/Wildlife/wildlife_profiles.htm

Wildlife Species in New Hampshire: <http://extension.unh.edu/Wildlife/WLSpecies.html>

Habitat Stewardship Brochure Series: <http://extension.unh.edu/Wildlife/HabitatStewardshipSeries.htm>

USFWS NH Envirothon website: <http://www.fws.gov/newengland/outreachnhenvirothon.htm>

Some Previous Year's Test Questions:

Section II Questions:

1. This definition, "A condition present in an environment in such short supply that it restricts growth, reproduction, or other life processes" is best described by what word. (2 points)
2. This definition, "A reversible change in the morphology or physiology of an organism in response to environmental change" is best described by what word. (2 points)

Section III Questions:

3. Would having farmland adjacent to the forest positively or negatively impact the carrying capacity for populations of white tail deer, bobcat and woodcock? Give at least one reason to support your answer for each species. (3 points)
4. Name three techniques you could use to maintain old-field habitat for species-specific wildlife management. (3 points). Name 3 species that you would expect to find in old fields. (3 points)

Wildlife Identification List:

Below are the lists of fish and wildlife species that you will be expected to know for the 2010 New Hampshire Envirothon. In addition to being able to correctly identify a species in Section I, it will be important that you are familiar with the habitat requirements and natural histories of the species listed in order to answer some of the questions in Section III. (Note: You will not be expected to know scientific names).

Fish:

With the use of a dichotomous key, be able to identify the following fishes of New Hampshire from pictures or drawings:

Sunfish Family (Centrarchidae)

Micropterus: Largemouth (*salmoides*) and Smallmouth (*dolomieu*) Bass

Lepomis: Redbreast (*auritus*), Pumpkinseed, (*gibbosus*), and Bluegill (*macrochirus*) Sunfish

Pike Family (Esocidae)

Northern Pike (*Esox lucius*)

Chain Pickerel (*Esox niger*)

Catfish Family (Ictaluridae)

Ictalurus: Brown (*nebulosus*) and Yellow (*natalis*) Bullhead

Trout Family (Salmonidae)

Salmo: Rainbow (*gairdneri*) and Brown (*trutta*) Trout, Atlantic Salmon (*salar*)

Salvelinus: Brook (*fontinalis*) and Lake (*namaycush*) Trout

Perch Family (Percidae)

Yellow Perch (*Perca flavescens*)

Walleye (*Stizostedion vitreum*)

Amphibians and Reptiles:

Without the use of a key, be able to correctly identify the following species of reptiles from shells, pictures, or vocalizations:

Red Spotted Newt (*Notophthalmus viridescens*)

Red-Backed Salamander (*Plethodon cinereus cinereus*)

Painted Turtle (*Chrysemys picta*)

Snapping Turtle (*Chelydra serpentina*)

Spring Peeper (*Pseudacris crucifer*)

