

 **2022 New Hampshire Envirothon - Wildlife Section**

The information below is designed to assist in preparing for the wildlife section of this year’s New Hampshire Envirothon. The wildlife section will evaluate knowledge of general wildlife biology and basic wildlife management. An understanding of basic ecology and habitat management concepts and principles is important. In addition, students should be familiar with this year’s theme, Waste to Resources: Focus on Plastics as it relates to wildlife.

The wildlife section test is composed of three sections. *Section I* is the wildlife identification section in which teams will be asked 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 in which teams will be asked to identify ecological concepts and principles. *Section III* is the synthesis section in which teams will need 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 is based on the objectives listed below.

**Objectives**:

**Section I**

1. Identify common New Hampshire wildlife listed on the attached species list through pictures, vocalizations, pelts, or scat/ track combinations.

**Section II**

**2.** Define and explain basic ecological concepts and terminology, including limiting factor, carrying capacity, territory, home range, niche, extirpated, ecosystem, biotic, abiotic.

**Section III**

3. Name physical and behavioral adaptations of wildlife that enable them to survive winter and be able to cite examples. (i.e. migration, hibernation, changes in food, fur/feathers, home range, etc.)

4. Describe ways natural resource or wildlife managers can enhance habitat for wildlife. Understand some of the basic "tools" of wildlife managers (hunting, habitat manipulation, population census techniques, people management, etc.)

5. Describe the flow of energy between biotic and abiotic parts in an ecosystem.

6. Explain why a landscape would/would not be suitable for a species considering its habitat needs.

7. List ways a land manager can improve the landscape for specific species by knowing their habitat requirements.

8. Describe major factors that pose risks to wildlife.

9. Explain how resources can benefit wildlife species.

10. Name ways waste is managed that is detrimental to wildlife.

11. Describe the anticipated impact of pollution on at least five wildlife species in New Hampshire.

12. Describe how the federal Wildlife and Sport Fish Restoration Program benefits wildlife populations.

**Study Aids and Questions**

Past tests are posted on the wildlife section’s webpage on the NH Envirothon website so teams can become familiar with the types of questions that will be asked and the test format.

If advisors have questions regarding the above information, feel free to contact a representative of the wildlife section,

**References**:

References are located on the wildlife section webpage on the NH Envirothon website.

**Wildlife Identification List:**

Below are the lists of fish and wildlife species students should know. In addition, it is important to be familiar with their habitat requirements and natural histories in order to answer some of the Section III questions. (*Note*: Students are not expected to know scientific names.)

**Fish:**

With the use of a dichotomous key (find the key on the wildlife page of the NH Envirothon website), be able to identify the following fishes of New Hampshire from pictures or drawings:

**Sunfish Family (Centrarchidae)**

Micropterus: largemouth bass (*salmoides*) and smallmouth bass (*dolomieui*)

Lepomis: redbreast (*auritus*), pumpkinseed (*gibbosus*) and bluegill (*macrochirus*)

**Catfish Family (Ictaluridae)**

Ictalurus: brown bullhead (*nebulosus*) and yellow bullhead (*natalis*)

**Sucker Family (Catostomidae)**

Catostomus: white sucker (*commersonii*) and longnose sucker (*catostomus*)

Creek chubsucker (*Erimyzon oblongus*)

**Perch Family (Percidae)**

Yellow perch (*Perca flavescens*)

Walleye (*Stizostedion vitreum*)

**Amphibians and Reptiles:**

Without the use of a key, be able to identify the following species of amphibians

and reptiles from pictures or vocalizations:

**Salamanders Turtles**

Spotted salamander (*Ambystoma maculatum*)

Spotted turtle (*Clemmys guttata*)

Red-backed salamander (*Plethodon cinereus*)

Snapping turtle (*Chelydra serpentine*)

Eastern box turtle (*Terrapene carolina*)

**Frogs Snakes**

Spring peeper (*Pseudacris crucifer*)

Northern water snake (Nerodia sipedon sipedon)

Green Frog (*Rana clamitans*)

Garter snake (*Thamnophis sirtalis*)

**Birds**

Without the use of a key, be able to identify the following species of birds from pictures or vocalizations (Note: bird pictures will be males in breeding plumage):

**Game Species Pasture Birds**

Wood duck (*Aix sponsa*)

Killdeer (*Charadrius vociferous*)

Canada goose (*Branta canadensis*) American woodcock (*Scolopax minor*)

Wild turkey (*Melegris gallopavo*)

**Wading Birds**

American bittern (*Botaurus Ientiginosus*)

Great blue heron (*Ardea erodias*)

**Gulls & Terns**

Common gull (*Larus canus)*

Herring gull (*Larus argentatus)*

Common tern (Sterna hirundo*)*

**Passerines**

American robin (*Turdus migrayorius*)

Brown-headed cowbird (*Molothrus ater*)

American crow (*Corvus brachryhynchos*)

Bobolink (*Dolichonyx oryzivorus*)

Bluebird (*Sialia sialis*)

Black-capped chickadee (*Poecile atricapillus*)

Blue jay (*Cyanocitta cristata*)

European starling (*Sturnus vulgaris*)

**Raptors**

American kestrel (*Falco sparverius*)

Barred owl (*Strix varia*)

Broad-winged hawk (*Buteo platypterus*)

Great-horned owl (*Bubo virginianus*)

Red-tailed hawk (*Buteo jamaicensis*)

Bald eagle (*Haliaeetus leucocephalus*)

**Mammals**

Without the use of a key, be able to identify the following species of mammals from vocalizations, pictures, and/or scat-track combinations:

Eastern Coyote (*Canis latrans*)

Gray Squirrel (*Sciurus carolinensis*)

Grey Fox (*Urocyon cinereoargenteus*)

Beaver (*Castor canadensis*)

Red Fox (*Vulpes vulpes*)

Muskrat (*Ondatra zibethicus*)

Raccoon (*Procyon lotor*)

Striped Skunk (*Mephitis mephitis)*

Porcupine (*Erethizon dorsatum*)

Woodchuck (*Marmota monax*)

Virginia Opossum (*Didelphis virginiana*)

House Mouse (*Mus musculus)*

White-tailed Deer (*Odocoileus virginianus*)

Norway Rat (*Rattus norvegicus*)

Moose (*Alces alces*) Bobcat (*Felis Rufus*)

Ermine/Weasel (*Mustela erminea*)

Canada Lynx (*Lynx canadensis*)

Mink (*Mustela vison*)

Snowshoe Hare (*Lepus americanus*)

Fisher (*Martes pennanti*)

Eastern Cottontail (*Sylvilagus floridanus*)

Eastern Chipmunk (*Tamias striatus*)

Red Squirrel (*Tamiascirus hudsonicus*)

Big Brown Bat (*Eptesicus fuscus*)