

## 2014 New Hampshire Envirothon: Fish and Wildlife Test

Grade: \_\_\_\_\_

Team # \_\_\_\_\_

### Section I - Wildlife Identification (25 points - 1 pt. each)

#### Calls

1. Northern Leopard Frog
2. Wood Frog
3. Killdeer
4. Bobolink

#### Fish

5. Largemouth Bass
6. Bluegill Sunfish
7. Chain Pickerel
8. Brook Trout

#### Amphibians/Reptiles

9. Northern Black Racer
10. Painted Turtle
11. Spotted Salamander
12. Northern Water Snake

#### Mammals

13. Red Fox
14. Woodchuck
15. Ermine/Weasel
16. Virginia Opossum
17. Striped Skunk
18. Eastern Coyote

#### Birds

19. Brown-headed Cowbird
20. Turkey Vulture
21. American Woodcock
22. Barn Swallow
23. Eastern Screech Owl
24. Northern Mockingbird
25. American Bittern

**Section II (30 points)**

**Team #:** \_\_\_\_\_

**Write the letter of the matching definition in the blank provided. There are more definitions than terms, so read them carefully! (2 pts. each)**

- |                   |          |  |
|-------------------|----------|--|
| Phenology         | <u>F</u> | A. Animals that are most active during the day.  |
| Natural Selection | <u>S</u> | B. Maintenance of constant internal physiological conditions in the face of a varying external environment   |
| Fecundity         | <u>E</u> | C. Seasonal depressional wetlands – important for amphibian breeding   |
| Photoperiod       | <u>O</u> | D. The localized elimination of a species from a region  |
| Homeostasis       | <u>B</u> | E. The rate at which an individual produces offspring  |
| Carrying Capacity | <u>G</u> | F. The study of the response of living organisms to seasonal and climatic changes to the environment in which they live  |
| Sexual Dimorphism | <u>Q</u> | G. Numbers of individuals in a population that a given habitat can support.  |
| Nocturnal         | <u>K</u> | H. A reversible change in the morphology or physiology of an organism in response to environmental change  |
| Extirpation       | <u>D</u> | I. A condition present in an environment in such short supply that it restricts growth, reproduction, or other life processes                                    |
| Acclimation       | <u>H</u> | J. A region on mountain tops where extreme weather conditions make survival impossible for tall trees  |
| Limiting factor   | <u>I</u> | K. Animals most active during the night  |
| Herbivore         | <u>L</u> | L. Organisms whose diet is dominated by plant material   |
| Succession        | <u>P</u> | M. Organisms whose diet is dominated by animal material  |
| Vernal Pool       | <u>C</u> | N. The rate at which fetuses develop   |
| Niche             | <u>R</u> | O. Length of daylight  |
|                   |          | P. The sequence of change in habitat types that occurs after a site has been modified by a disturbance.  |
|                   |          | Q. The difference of physical form between males and females of the same species   |
|                   |          | R. The specific role occupied by an organism within its community  |
|                   |          | S. The process that allows for individuals with inherited characteristics most suited to their environment to pass on those characteristics to their descendants |
|                   |          | T. Permanent wetlands found in forests – important areas for fish breeding   |

Section III – Concepts (45 points)

Team #: \_\_\_\_\_

Question 1 (15 points.):

Winter is the most stressful time of year for most forms of New Hampshire wildlife. The key hardships are a lack of food and cold temperatures.

A. Name five (5) physical/behavioral adaptations that help wildlife survive winter in New Hampshire. (1 pt each)

1. migration
2. hibernation (torpor)
3. grow a winter coat/change coat color
4. store food for the winter
5. temporary habitat changes (yarding, subnivian space, softwood cover, etc.)

B. For each adaptation listed above, name one species that uses that adaptation and tell us if the range of that particular species in New Hampshire is expected to increase, decrease or remain constant within the next 50 years<sup>1</sup>. (1 pt each)

<sup>1</sup> Assume the rate of climate change, increasing numbers of people living in NH, and conversion of open space into housing lots continues at their current rate.

	Species	Increase, Decrease or Constant
Adaptation 1:	birds	Note 1
Adaptation 2:	chipmunk, bat, woodchuck, opossum, frog, turtle, bear	Note 1
Adaptation 3:	color change (hare, ermine) winter coat (mammals)	Note 1
Adaptation 4:	squirrel, beaver, muskrat	Note 1
Adaptation 5:	deer (yarding), small mammals and weasels (subnivian space), grouse and turkeys (softwood cover)	Note 1

Note 1: Species specific - northern species, coastal species, most herps, and interior bird species will decrease, those that thrive in the presence of humans will increase, others will remain constant.

Question 2 (10 points):

Team #: \_\_\_\_\_

**A. The National Guard leases a field to a farmer for haying. The farmer hays the field twice each year, once in early June and again in August. For each of the following species, tell whether this management practice is beneficial, detrimental, or neutral and give one (1) reason for your answer. (6 pts.)**

**Bobolink:** detrimental: nesting & cover declines, predation increases

**Meadow vole:** detrimental: nesting & cover declines, predation increases

**Great Blue Heron:** neutral: species would not be found in this habitat

**B. Pollinators are integral to crop success. Give one (1) management tool you could use to benefit pollinator populations in an old field. (2 pts.)**

plant wildflower strips, plant flowering trees and shrubs along edge, colonize honeybees

**C. Give one (1) recommendation you would make to the National Guard and the farmer in order to improve the habitat for grassland species, while maintaining the ability of the farmer to harvest hay off the field. (2 pts.)**

harvest later - July or August

Question 3 (6 points):

**3A. The Eastern Bluebird (*Sialia sialis*) was once commonly found around New Hampshire's fields. However, it is now frequently being displaced by what two (2) introduced species? [2 pts]**

European starling and house sparrow

**3B. What are two (2) of the primary reasons species become endangered? [4 pts.]**

Habitat loss, environmental contamination, competition from introduced or non-native species, overspecialization, commercial use and abuse

**Question 4 (10 points)**

**Team #:** \_\_\_\_\_

**The habitat for which of the following species is enhanced with the inclusion of agricultural land? (yes or no)**

Moose	no	Red Fox	yes
Ruffed Grouse	yes	Turkey	yes
Muskrat	no	American Bittern	no
Woodcock	yes	Eastern Coyote	yes
White-tailed Deer	yes	Painted Turtle	no

**Question 5 (4 points)**

**Sponsored by Senator Key Pittman and Congressman Willis Robertson, the Federal Aid to Wildlife Restoration Act was passed by Congress and signed into law in 1937. That program was so successful at raising funds to support wildlife restoration that a similar act to support sport fish restoration was introduced to congress, sponsored by Congressman John Dingell and Senator Edwin Johnson. It passed and was signed into law in 1950. Together, the programs are referred to as the Wildlife and Sport Fish Restoration (WSFR) Program.**

**5A. How are funds raised to support wildlife and sport fish restoration in the United States through the WSFR Program? (2 pts.)**

An excise tax levied on shooting sports equipment, fishing tackle, motor boat fuel

**5B. Identify two types of projects that can be supported with Wildlife and Sport Fish Restoration Funds. (2 pts.)**

Wild bird and mammal, and sport fish research, habitat restoration, boat access, hunter education