

## 2015 New Hampshire Envirothon: Fish and Wildlife Test

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

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

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

#### Calls

1. blue jay
2. great horned owl
3. green frog
4. red-tailed hawk

#### Fish

5. smallmouth bass
6. walleye
7. pumpkinseed
8. brook trout

#### Amphibians/Reptiles

9. red-backed salamander
10. snapping turtle
11. Eastern milk snake
12. bullfrog

#### Mammals

13. white-tailed deer
14. red squirrel
15. ermine/weasel
16. Virginia opossum
17. gray squirrel

#### Birds

18. raccoon
19. black duck
20. peregrine falcon
21. house sparrow
22. Northern mockingbird
23. spotted sandpiper
24. ring-billed gull
25. barred owl

**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)**

Biomagnification	E	A. Animals that are most active during the day.
Crepuscular	K	B. Maintenance of constant internal physiological conditions in the face of a varying external environment
Edge effect	N	C. Seasonal depressional wetlands – important for amphibian breeding
Riparian	M	D. the variety of life forms in a given area.
Biodiversity	D	E. The accumulation of chemicals in organisms in increasingly higher concentrations at successive trophic levels.
Endemic	Q	F. A process where water bodies receive excess nutrients that stimulate excessive plant growth.
Hypoxia	O	G. Numbers of individuals in a population that a given habitat can support.
Carrying capacity	G	H. Animals that eat primarily vegetative matter.
Omnivore	L	I. A condition present in an environment in such short supply that it restricts growth, reproduction, or other life processes
Adaptation	S	J. A region on mountain tops where extreme weather conditions make survival impossible for tall trees
Limiting factor	I	K. Animals most active during dawn and dusk
Eutrophication	F	L. Organisms whose diet is composed of both plants and animals
Succession	P	M. Located along the banks of a stream, river or other water way.
Vernal Pool	C	N. The tendency of wildlife to use the areas where two vegetative types come together.
Niche	R	O. Condition in which the body or a region of the body is deprived of adequate oxygen supply.
		P. The sequence of change in habitat types that occurs after a site has been modified by a disturbance.
		Q. Characteristic of being unique to a defined geographic location, such as an island or other defined geographic area.
		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 (9 points)

**Name three species of wildlife that frequently become nuisances in urban forests, identify a negative aspect their presence may have, and describe a management technique that can be used to control them.**

*Norway rat: damage to personal/public property, spread disease; Control: reduce food sources, including disposing of trash and dead animals, reduce available habitat, bait/poison*

*white-tailed deer: damage personal/public property, spread disease (deer ticks – Lyme Disease, babesiosis, brain worm) Control: make feeding illegal and enforce with fine/prosecution, trap and move, controlled harvest*

*Canada goose: damage to personal/public property, promote eutrophication of ponds, promote pollution of ponds (fecal coliform loads) and terrestrial areas; Control: exclusion fencing, make feeding illegal and enforce with fines/prosecution, harvest, destroy or paint eggs*

*Others include raccoons, squirrels*

#### Question 2 (10 points)

**2a: Name five factors common in urban areas that negatively affect wildlife.**

*degrades stream corridors/water quality  
invasive species  
poor air quality, as in auto and industrial exhaust  
reduced open space (manicured lawns/parks  
noise pollution  
light pollution  
road run-off  
industrial pollution  
degraded terrestrial areas ( trash and solid waste)*

**2b: Name five management tools to benefit wildlife in urban areas.**

*increase parklands and provide travel corridors between them  
green roofs  
plant native trees, shrubs and flowers: nut/seed or fruit bearing or pollinator friendly  
urban gardens of flower/vegetables  
keep vegetative buffers along surface water corridors  
eradicate invasive plant species and replace with native vegetation  
leave naturalized open spaces  
bird/bat houses  
provide well-aerated open water pond areas  
naturalize flowing stream channels (avoid channelization and concrete)*

**Section 3 (continued)**

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

**Question 3 (10 pts)**

**The biggest boon to wildlife in the United States came in 1937 when Congress passed the Federal Aid in Wildlife Restoration Act, commonly referred to as the Pittman-Robertson Act.**

**3a. Why was the Pittman-Robertson Act passed? (2 points)**

*Numbers of many wildlife species were dwindling or gone altogether because of unregulated hunting and loss of habitat. The Act was designed to counteract the wildlife crisis by providing local funding for wildlife management research; the selection, restoration, rehabilitation and improvement of wildlife habitat.*

**3b. What is the name of the act passed in 1950 that provides the same benefits to fisheries resources? (2 points)**

*The Dingell-Johnson Act or Sport Fish Restoration Act*

**3c. On what purchases are taxes charged to raise funds for wildlife/fisheries restoration? (2 points)**

*Firearms, ammunition, archery equipment, fishing tackle, motorboat fuel*

**3d. Up to what percent of project costs can be covered by federal funds? (2 points)**

*75% (give partial credit if they say at least 50%)*

**3e. Who ultimately, pays for sport fish and wildlife restoration in the United States? (2 points)**

*Consumptive users/sportsman/hunters and anglers*

**Question 4 (8 points)**

**A variety of physical and behavioral adaptations help each species of wildlife to be successful in their specific niches. Describe two physical and two behavioral adaptations for white-tailed deer and great blue heron that contribute to their survival in New Hampshire.**

*Deer: Physical: big ears, heavy winter fur, hollow hairs, digestive flora changes as food changes seasonally, no reproduction if nutrition poor, counter current heat exchange, fawn coloration, speed and agility  
Behavioral: yarding, bedding on south facing slope, move to wetland in spring, fawns stay still to evade predators*

*Great blue heron: Physical: long, pointed beaks for grasping/stabbing prey, long legs for wading, long toes, wide feet for wading in mud and disturbing the substrate, s-shaped neck for greater striking distance,  
Behavioral: stand and wait for prey, walk slowly, disturb substrate to expose/flush prey, use of feet and wings to disturb water to expose/flush prey, migration*

**Section 3 (continued)**

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

**Question 5 (8 points):** Using what you learned from the *Landowners Guide to Inventory and Monitoring Wildlife in New Hampshire*, provide a method for inventorying the following species

1. Wild Turkey: *Poult survey, hunter survey, bird checklist, breeding bird atlas, bb survey*
2. Barred Owl: *Night bird survey, bird checklist, breeding bird survey, breeding bird atlas*
3. House Sparrow: *nest box survey, breeding bird survey, bird checklist, breeding bird atlas*
4. Eastern coyote: *predator scent post survey, snow track survey, mammal checklist*
5. Eastern Cottontail: *snow track survey, pellet counts, mammal checklist*
6. Green frog: *calling survey, amphibian checklist, egg mass counts*
7. Painted turtle: *basking survey, amphibian checklist*
8. Red-backed salamander: *Cover board survey, amphibian checklist*