2013 NEW HAMPSHIRE ENVIROTHON: FISH AND WILDLIFE TEST

SECTION I - Wildlife Identification [1 pt each] **Team #:_____**

Calls

1. *American Woodcock*
2. *American Toad*
3. *Northern Mockingbird*

Fish

4. *Pumpkinseed Sunfish*
5. *Chain Pickerel*
6. *Rainbow Trout*
7. *Yellow Perch*

Amphibians/Reptiles

8. *Red-backed Salamander*
9. *Wood Turtle*
10. *Garter Snake*

Mammals

11. *Grey Fox pelt*
12. What family is Number 11 in?

__Canid_____

13. *Ermine pelt*
14. *otter pelt*
15. *Deer tracks/scat*
16. What family is Number 15 in?

____cervid_____

17. *Bobcat pelt*
18. *Raccoon tracks and scat*
19. *Muskrat pelt*

Birds

21. *Eastern Bluebird*
22. *Red-tailed Hawk*
23. *American Bittern*
24. *Ruffed Grouse*
25. *Eastern Phoebe*

Extra Credit

26. *Snowy Owl*
27. Where does this species typically breed?

arctic region

28. When and where would you expect to see this species in New Hampshire?

Winter, open areas that mimic tundra

SECTION IIA - Vocabulary **TEAM #:_____**

Write the letter of the matching definition in the blank provided. (2 points each)

Ecotone	***__J__***	A. Number of individuals in a population that a given habitat can support.
Habitat	***__B__***	B. The region where a plant or animal naturally grows.
Niche	***__D__***	C. An organism whose diet is dominated by plant material.
Interspersion	***__F__***	D. The specific space occupied by an organism within its habitat.
Species	***__G__***	E. A substance or object required by an organism that is scarce relative to its demand.
Riparian	***__I__***	F. Intermixing of cover types, land uses, and conditions for meeting the needs of specific species.
Limiting Factor	***__E__***	G. Individuals that can interbreed and produce viable offspring.
Herbivore	***__C__***	H. A geographic area of land bounded by hills that drains waters to a shared destination.
Carrying Capacity	***__A__***	I. Living or growing along the banks of a river or other waterway.
Watershed	***__H__***	J. A habitat type defined as the sharp transition of two or more distinctly different habitat types.

SECTION IIB

Fill in the blanks (2 points each)

1. A group of animal and plant species living together and having close interactions in a defined area is called a ***Community***

2. A domestic animal that has escaped or been abandoned and now lives and acts like a wild animal is called ***Feral***

3. The sequence of change in habitat types that occurs after a site has been modified by a disturbance is called ***Succession***

4. The biochemical process where the energy of light is converted into chemical energy in plants is called ***Photosynthesis***

5. An animal whose body temperature is independent of the temperature of its surroundings is called a ***Homeotherm***

Section III – Concepts **Team #:_____**

Question 1 (25 points): A local land trust (land trusts purchase or hold land for open space) has been gifted 150 acres of land in Merrimack County, New Hampshire. The property includes 75 acres of hay fields, a 12 acre pond, and a cold water stream that runs through the center of the property. The land trust wishes to maintain the hay fields in active agricultural production and wants to manage the rest of the land for wildlife and they have contracted you to make recommendations to them.

A. List 5 things you can do to understand the property and its habitat to help you prepare your management recommendations (1 pt. each):

Observe the species on the property
Inventory the habitat
Make a map of the habitats
Make a list of species you would expect on the property based on the habitat
Research the history of the property
Inventory the wildlife
Check state databases for any known contaminant sources

B. Using *A Landowners Guide to Inventorying and Monitoring Wildlife in New Hampshire* as a reference, list a inventory method that is specific for the following species (2 pts. each):

1. American woodcock***: peenting survey****, breeding bird atlas/survey, hunter survey*

2. Ruffed grouse***: drumming counts****, breeding bird atlas/survey, hunter survey*

3. American Bittern: ***night bird and marsh bird survey****, breeding bird atlas/survey*

4. Upland Sandpiper: ***grassland nesting bird survey****, breeding bird atlas/survey*

5. Eastern bluebird*: **nest box survey**, breeding bird atlas/survey*

6. Red Fox*: **predator scent post survey**, snow track survey, mammal checklist*

7. Red-backed Salamander: ***salamander cover board survey****, amphibian checklist*

8. Snapping Turtle: ***turtle basking survey****, amphibian checklist*

Section III – Concepts **Team #:_____**

C. If you conducted a snow track survey on this property in January, would you expect to find tracks of the following mammals present? Why or why not? (1 pt. each):

	Present (Y/N)	Why?
Mink:	__*Y*____	__*Habitat present (pond and stream)*_____
Striped Skunk:	__*N*____	___*Hibernating*_____

Question 2 (10 pts.): Winter is the most stressful time of year for most forms of NH wildlife. The key hardships are a lack of food and cold temperatures.

Name five (5) physical/behavioral adaptations that wildlife uses to deal with winter in New Hampshire and name one species that uses that adaptation. (1 pt each)

Adapation	Species
1. Migration	*Birds*
2. Hibernation (torpor)	*chipmunk, bat, woodchuck opossum, frog, turtle, bear*
3. Grow a winter coat/change coat color	*color change (hare, ermine) winter coat (mammals)*
4. Store food for the winter	*squirrel, beaver, muskrat*
5. temporary habitat changes (yarding, subnivian space, softwood cover, etc.)	*deer (yarding) small mammals/weasels (subnivian space) grouse and turkeys (softwood cover), flocking to feeders (birds)*

Section III – Concepts **Team #:_____**

Question 3 (10 pts). Imagine that you are a Wildlife Manager for the state of New Hampshire.

A. Name three tools that you can use to improve habitat quantity and/or quality for wildlife. (2 pts. each):

Control Non-Native Invasive Vegetation, Delay Crop Harvest, Establish Field Buffers, Establish Native Grasses and Forbs, Forest Management Techniques, Leave Grain Unharvested, Manipulate Succession, Nesting Structures, Plant/Manage Food Plots, Plant Trees, Plant Shrubs, Ponds: Construction/Reconstruction, Ponds: Deepen Edges, Ponds: Fertilize/Lime

B. Name two tools that you can use to manipulate wildlife population numbers in the state. (2 pts. each):

Manipulating season length for hunted/fished species, closing seasons, closing areas to harvest, sex specific targets, slot limits translocation, reintroduction, collaborative efforts with adjacent states

Question 4 (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.

A. Why was the Pittman-Robertson Act passed? (2 pts.):
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.

B. What is the name of the act passed in 1950 that provides the same benefits to fisheries resources? (2 pts.):
The Dingell-Johnson Act or Sport Fish Restoration Act

C. On what purchases are taxes charged to raise funds for wildlife/fisheries restoration? (2 pts.):
Firearms, ammunition, archery equipment, fishing tackle, motorboat fuel

D. Up to what percent of project costs can be covered by federal funds? (2 pts.):
75% (give partial credit if they say at least 50%)

E. Who, ultimately, pays for sport fish and wildlife restoration in the United States? (2 pts.):
Consumptive users/sportsman/hunters and anglers