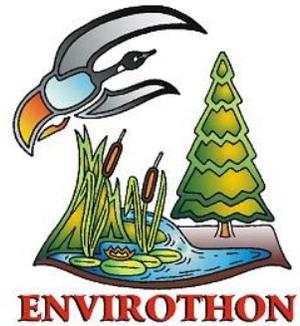


# NOVA SCOTIA ENVIROTHON

## *Sample Wildlife Test Questions*



Using the specimens shown, identify the species and list 2 adaptations for each species that enhances their chances of survival:

ID #	SPECIES	ADAPTATIONS
1		

Define the term “Wildlife”

There are 7 categories of Wildlife eg. fish. Name five (5) more:

You are the owner of a mixed farm operation and there is a resident population of coyotes living on the farm property. To date they have not interfered with either the livestock or humans. List 3 Pros and 3 Cons for removing this population.

List four habitat types found on most farms that benefit both the farm operator and wildlife. What benefit does each habitat type provide to the farmer? What benefit does each habitat type provide to wildlife?

The winter of 2013/2014 was longer and more severe than some previous winter seasons. List 1 possible effect that it may have had on the following species:

Black Legged Tick

White tailed deer

Snowshoe Hare

Define the following terms:

Biodiversity

Ecosystem

Riparian Zone

Shelter Belt

Town planners have asked you to provide a development plan for a 50 acre wetland within the town limits. List four recommendations you would make for the wetland project to ensure sustainable benefits are enjoyed by both the human and wildlife community:

Provide a Nova Scotia example for each of the following Species-at-Risk status categories. For each species named, give an example of an action that could be taken to work to promote the survival or recovery of the species:

Vulnerable

Extirpated

Endangered

Threatened

Extinct

WILDLIFE RELATIONSHIPS: Define the following relationships found in a natural environment and give 1 example of each:

Mutualism

Commensalism

Parasitism

Amensalism

WILDLIFE RELATIONSHIPS: Provide examples to fit the following definitions:

1. Mutualism is the way two organisms of different species exist in a relationship in which each individual benefits
2. Commensalism is a relationship between two organisms where one organism benefits without affecting the other.
3. Parasitism is a non-mutual symbiotic relationship between species, where one species, the parasite, benefits at the expense of the other
4. Amensalism, association between organisms of two different species in which one is inhibited or destroyed and the other is unaffected

You are a farmer in the Annapolis Valley and own 250 acres of which 50 acres are treed, 150 acres are fruit orchard and the remaining is open grassland. The farm is on lowland and there are several brooks and a wetland on the property.

Although most farms have resident wildlife populations, there is an overabundance of white tailed deer, beaver and raccoons. For each species, explain what might be attracting them to your farm, how might they impact your farm operation and how you could mitigate these impacts:

White tailed Deer

Beaver

Raccoon

As a wildlife specialist, you have been asked by a woodlot owner for actions they might take to enhance the wildlife component of their 200 acre woodlot. It is mixed woodland comprised of mature sugar maple, oak, yellow birch, beech, red spruce and hemlock. Most of the mature red spruce is in a dense 60 acre stand and there is another 50 acre stand of old growth eastern hemlock. A small brook runs through the woodlot. List 5 wildlife values this woodlot may provide and what management activities you would recommend to conserve or promote these values.

In the past few years there have been a number of issues associated with the aggressive behavior of coyotes in the province. Name two techniques used to address these issues and discuss whether or not they are effective. Give 2 reasons for each technique to support your answers.

Wildlife requires 4 basic elements in their habitat: Food, Water, Shelter and Space. It is not possible to measure Space in this exercise but the other elements can be noted. Rate the availability of each element of habitat for this site for the two species listed below:

**PILEATED WOODPECKER**

	HIGH	MEDIUM	LOW	COMMENTS
FOOD				
WATER				
SHELTER				

**FLYING SQUIRREL**

	HIGH	MEDIUM	LOW	COMMENTS
FOOD				
WATER				
SHELTER				

How does human/wildlife interface affect the following species?

Black Legged Tick

Coyote

Raccoon

Define the following terms:

Biodiversity

Carrying Capacity

Limiting Factors

Define a riparian area. Give 3 reasons why they are important

Bat populations in Nova Scotia are currently under a great deal of stress. Indicate the reason for this and describe the impacts to ecosystems if populations were decimated.

True or False:

- An extirpated species exists in captivity, but no longer exists locally in the wild
- Extinction is always a direct result of human activities
- An Endangered species is in danger of becoming extinct throughout all or a significant portion of its range
- The Bald Eagle is an endangered species in Nova Scotia

Biomagnification: Toxic chemicals and heavy metals often enter a system such as a river or stream when industrial, agricultural, and human wastes are improperly discharged. Often there is an increase in concentration of these substances that occur in the food chain. List the ways by which contamination such as heavy metals may affect the food chain.

This is a public park with demands of tourism, recreation, wildlife etc. Give examples of how you might integrate the requirements of human and wildlife use.

As the wildlife specialist on a community forest management committee list 4 priorities to be included in the management plan.

List one naturally occurring limiting factor and two human induced threats to the following species:

Moose

Coastal Plain Fauna

Snowshoe Hare

Match the term with the best-suited species from the list provided below (use each species only once).

1. Nocturnal	
2. Carnivore	
3. Benthic	
4. Diurnal	
5. Herbivore	
6. Crepuscular	
7. Anadromous	
8. Omnivore	
9. Metamorphosis	
10. Dicot	

Flying Squirrel

Snail

American Eel

Owl

Adult Lobster

Atlantic Salmon

Mink

Adult Winter Flounder

Wild Rose

Bobcat

Whitetail Deer

Cinnamon Fern

Black Bear

American Robin

Common Nighthawk

Red Squirrel

Swallowtail Butterfly

Porcupine

Spring Peeper

Common milkweed is an invasive species and a noxious weed in Nova Scotia. The plant grows in gardens, road sides, and fields, including pastures. It is poisonous to livestock, chickens, cats, and dogs and its aggressive spread can take over fields. However, milkweed is also food for monarch butterflies, a species of concern (monarch butterfly numbers are dropping on a North American basis). In fact monarch butterflies only lay eggs on milkweed and larval species feed on the leaves (the toxins from the plant make both the adults and larva unpalatable to predators). Common milkweed appears to be spreading in Nova Scotia. Should attempts be made to control the common milkweed or should it be left to spread and provide food for monarch butterflies? Why?

As the wildlife specialist, on a community forest management committee, name four priorities that you would include when developing a management plan

Fill in the blank with the appropriate term:

\_\_\_\_\_ is the gradual and orderly process by which ecosystems change and develop over time. Nothing remains the same and habitats are constantly changing.

\_\_\_\_\_ refers to groups of plant and animal species that regularly, or often, occur in association with each other within certain landscapes or physical environments.

A \_\_\_\_\_ is a dynamic system of plants, animals, and other organisms, together with the non-living components of the environment, functioning together.

A \_\_\_\_\_ is often located along the banks of rivers, streams, creeks and other water networks and is important habitat for wildlife and serves as a buffer, preventing sediment and pollution from reaching the water ensuring better water quality.

For a given region, \_\_\_\_\_ is the maximum number of individuals of a given species that an area's resources can sustain without significantly depleting or degrading those resources.

You are the manager of an Urban Park. The park is spread over an area of 120 acres within the town limits and contains walking trails, picnic areas, parking lots, ponds and treed lawns. Although most parks have resident wildlife populations, there is an overabundance of whitetail deer, coyotes, raccoons and geese within the park. For each species, explain what might be attracting them to the park, how they will impact the park and how you would mitigate these impacts.

Whitetail

Coyotes

Raccoon

Geese

Link each concept with one of the statements below that best describes what the concept is or does. Further explain each concept; using an example from Nova Scotia may be helpful to do this.

Concept	Best fit statement	Example/ Explanation
Apex Predator		
Trophic Level		
Primary Producer		
Cascade Effect		

- An organism that manufactures its own food
- A predator that has no predator
- The movement of species to areas with richer food resources
- Position occupied in food chain
- Extinctions triggered by loss of key species
- An organism that breaks down dead plant and animal material and wastes
- A carnivore that eats other carnivores
- Measurement of the impact of human activity on the earth

Land use decisions affect wildlife, but often in varying ways. Choose only TWO of the land use activities listed below. For each of the activities you select:

Describe one 'benefit' to wildlife. Identify a NS species that directly benefits from this land use activity and also briefly explain how it benefits (2 points).

Describe one 'cost' to wildlife. Identify a NS species that is directly harmed by this land use activity and also briefly explain how it is harmed (2 points).

Additionally, for each 'cost', propose a workable solution to reduce or remove the harmful effect(s) (2 points).

Land use activities:

- Creating a recreational ATV/ snowmobile trail through a stand of undisturbed variable-aged mixed woods.
- Allowing a cultivated 8 hectare field surrounded by forest to naturally revert to forested land
- Setting aside a 50 hectare area of mature climax forest for long term protection (i.e. a Protected Area)
- Damming a 10 metre wide stream that runs through a rich mature stand of hardwood trees to create a small lake.
- Clearcutting an over mature cultivated softwood stand containing many dead standing trees.

Activity 1	Benefit	Cost
	Description	Description
	Example Species / Explanation	Example Species / Explanation
	Suggested Solution	

Activity 2	Benefit	Cost
	Description	Description
	Example Species / Explanation	Example Species / Explanation
	Suggested Solution	

A community group has been granted permission to oversee the management of 10 000 ha of crown land for multiple values to benefit the local community. The land consists of a variety of ecological features typical to Nova Scotia, including softwood, hardwood, and mixed wood forests in a range of successional stages, inland wetlands and rivers, lakes, and lowland and upland areas.

Describe three products or services the land could be managed for to benefit the local economy.

For each:

- a) explain how to ensure the management of that product or service is sustainable;
- b) explain how managing for that product or service may have a negative impact on a particular wildlife species or habitat; and
- c) explain a measure that could be taken to reduce that potential impact.