

# Missouri State Envirothon Challenge

## Forest Ecostation

### Forest

F1. (2 points) Den trees are:

- A. trees where wildlife like to congregate.
- B. live trees with cavities constructed by primary excavators.
- C. harvested trees that are used in the housing industry.
- D. standing dead trees at least 6 inches in diameter and 20 feet tall.
- E. partially felled trees that have caught on other tree limbs during the cutting process.

F2. (2 points) What is the standard height at which foresters measure tree diameters (DBH)?

- A. 1.0 foot above the ground
- B. 4.0 feet above the ground
- C. 4.5 feet above the ground
- D. It varies with the height of the forester

F3. (4 points) Which hardwood tree species are dominant in the overstory on this forest site? Circle all that apply.

- A. white pine
- B. shagbark hickory
- C. tulip poplar
- D. white oak
- E. post oak
- F. all of the above

F4. (12 points) Conduct a forest inventory by completing the following table using numbered trees,

Tree Number	Tree Species (common name)	Diameter at breast height	Wildlife or commercial value	Tree height
#1	black oak	13.8 inches	wildlife	64 feet
#2	post oak	10.9 inches	either	64 feet
#3	shagbark hickory	7.3 inches	wildlife	64 feet

F5. (2points) What species of wildlife would likely benefit if a portion of this site was clear-cut?

- A. wildlife that rely on early successional forest habitat
- B. wild turkey
- C. ruffed grouse
- D. songbirds that use brushy areas
- E. all of the above
- F. none of the above

F6. (4 points) What are the best uses of this wooded site today?

Wildlife habitat and watershed protection are the best uses. Recreation

F7. (10 points) Give 5 reasons to plant trees?

Filter water; clean the air; absorb carbon dioxide; wildlife shelter; wildlife food; make money; trap snow; block winter winds; improve aesthetics; building material; cool homes; prevent erosion; recreation; hunting.

F8. (4 points) What is the name of the small tree next to the pink flag?

Sassafras

F9. (6 points) Are the pines on this site natural? Why or why not?

Yes            No

There are no pines that are native to this part of the state. Many of the pines are in straight rows which would indicate an artificial planting.

*FIO.* (4 points) There are a variety of conifers in the area. Circle all that are present and listed below.

A. eastern redcedar

B. loblolly pine

C. white pine

D. Norway spruce

E. none of the above

*FII.* (2 points) How many years old was this tree (see stump) when it was cut? 88 years

88 years (78 – 98)

## Wildlife

W1. (4 points) The Indiana Bat has basic requirements from one type of mature tree (pole to sawlog) listed below. What is this tree and what particular part of the tree does the bat utilize. Is it present on this site?

- A. Swamp White Oak
- B. Northern Red Oak
- C. **Shagbark Hickory**
- D. Bitternut Hickory
- E. White Pine

yes

W2. (6 points) As a forest ages successionaly, large old growth type trees are important for several species of game and non-game species. What is the term used for this type of tree within this forest community and list three species of resident wildlife species that would use this type tree.

**Wolf Tree or Den Tree**

**Raccoon, Squirrels (Tree and Flying), Pileated Wood Pecker**

W3. (6 points) In an Oak - Hickory stand of forest "Timber - Wildlife Coordination" in timber management schemes involve the management of "mast bearing" species of trees. Name three different forms of mast produced by the trees on this site and three species of wildlife that would utilize this food.

**Acorns, Hickory Nuts, Ash fruit, Walnuts**

**Deer, Turkey, Squirrels, Woodrat, Woodland Mice**

## Aquatics

A1. (4 points) Are the trees on the pond dam harmful or beneficial to the pond?  
Why?

Harmful, roots growing in the pond dam can cause the pond to leak

A2. (4 points) Using the attached topographic map, draw a line representing the watershed for the highlighted body of water.

### Attached Map

A3. (6 points) Put the following in order from worst to best for soil erosion potential.

Pasture - Subdivision - Row crop field - Parking lot - Forest - Natural prairie

Parking Lot - Row crop field - Subdivision - Pasture - Natural prairie - Forest

A4. (4 points) Trees are sometimes referred to as a sink for herbicide, what is meant by that?

Trees catch herbicides as they leave the field and slowly release the nutrients as they lose leaves or die

A5. (2 points) Are the trees at this site effective in prolonging the life of the pond below?

Yes

## Soils

S1. (4 points) The type of trees growing on a site are an indicator of soil properties. Give at least one example and explain.

White oak grows well on deep, moist soils, Hickory, post oak and chinkapin oak are more prevalent where the rooting depth is restricted or the moisture supply is limited.

S2. (4 points) Aspect and position on the landscape affect tree growth. List at least 2 factors they influence.

Available sunlight, air drainage. soil temperature, soil moisture.

S3. (4 points) Large plants such as trees, are more than just the source of organic matter. What other soil related functions do they provide?

They help break rocks apart and mix soil articles, and root channels provide pathways for water and air movement through the soil.