

Total  
Station

## 2009 Missouri Envirothon Wildlife Ecostation

1. Walk around the area (see map on table for area boundary) and assess the existing habitat. Use the attached On-site Habitat recommendations Score Card and determine which practices are needed for each species indicated on the scoresheet to improve their habitat. The landowner is interested in improving the area for rabbits. He has not seen rabbits in years and has heard that habitat management can bring them back. He wants to be able to take his sons deer hunting and see more bluebirds along the drive.(15 points)

2. Early stages of plant succession are more productive for wildlife such as quail. Name two different management practices that you could use at this site that would encourage early plant succession stages. (4 points)

*Timber stand improvement, fescue eradication, light disking, food plots, edge feathering, forest openings*

3. Millions of acres of Missouri forest and prairie have been converted to tall fescue. Describe two disadvantages to wildlife? (4 points) Describe one method to control fescue. (2 points)

*It crowds out beneficial food plants, invades habitat and is too thick for many ground nesting birds such as quail.*

4. At what stage of succession is the area marked by the sign "A". (2 points)

*Stage 3, perennial grass/forbs*

5. Explain the term 'interspersions'. (3 points)

*Mixing plots of different successional stages within an area is called interspersions. Usually, more interspersions supports a greater variety of wildlife,*

6. Using the aerial photo provided. Prioritize the four circles, 1-4. #1 the most suitable habitat and #4 the least suitable habitat, for each of the 4 species indicated on the attached Aerial Photo Score Card. (10 points)

Page  
Total

## On-site Habitat recommendations Score Card

Eastern Deciduous Forest	Eastern Cottontail	Eastern Wild Turkey	Whitetail Deer	Eastern Bluebird											
2. Brush chopping (mowing)															
3. Brush piles															
5. Controlled (prescribed burning)															
6. Corridors															
8. Decrease bag/creel/season limit															
9. Disking															
10. Fertilize ponds															
12. Fish (pond) or wildlife survey															
14. Grain, leave unharvested															
15. Harvest timing (crops/hay)															
16. Increase bag/creel/season limit															
17. Livestock grazing management															
18. Nesting boxes/structures/platforms															
19. Plant food plots															
20. Plant grass and forbs															
21. Plant mast trees															
22. Plant trees or shrubs															
24. Ponds, clear muddy water															
25. Pond construction															
27. Ponds, deepen edges															
28. Ponds, remove trees near dike															
29. Ponds, repair spillway															
30. Ponds, reseed watershed/filter strip															
31. Ponds, restock															
32. Ponds, stop leaks															
34. Roosting platforms/perching poles															
35. Root plowing															
37. Snags, dead, down woody material															
41. Tillage, eliminate in fall															
42. Timber harvest, clear-cut															
43. Timber harvest, selective cut															
44. Water control structures															
45. Water developments for wildlife															
46. Wildlife damage management															
47. Tall Fescue Conversion (MO only)															

Habitat Management Recommendations Scorecard

Possible 15 points (score recorded on number 1 of the first page)

Score = [(total correct – total incorrect)/total possible correct] x 15

# Activity Scorecard

Instructions: For each species, rank the areas outlined for their habitat value. Mark an "X" in the box with the appropriate ranking for each species. DO NOT consider potential of the area - only its present quality. DO NOT consider surrounding areas - only areas outlined.

## Wildlife Species

### *Habitat Evaluation of Aerial Photographs. (10 points)*

	1	2	3	4	5	6	7	8
	Eastern Bluebird	E. Wild Turkey	N. Bobwhite	G. Horned Owl				
1 2 3 4								
1 2 4 3								
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<b>Score</b>								

Score

Wildlife  
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1. List two examples of forestry management practices that are used to improve wildlife diversity within a timber stand and list a wildlife species for each practice that would benefit. (4 points)

*Selective timber harvest, forest openings, clear cut with wildlife species benefited*

- 2 Den trees are important for which of the following? (2 points)

- a. **Wood duck**
- b. Badge
- c. Longtail weasel
- d. None of the above

3. What tree listed below can best tolerate a prairie fire? (2 points)

- a. Sugar Maple
- b. Bur Oak**
- c. Eastern Red Cedar
- d. Green Ash

4. List two (2) values that a woody plum thicket would have along the edge of this woodland for Northern Bobwhite? (2 points)

*Protection from predators and weather extremes, Escape cover, Loafing cover*

5. What type of timber management is most detrimental to the Eastern Gray Squirrel? (2 points)

*Clear Cut*

6. Explain why, during a timber harvest operation, a buffer zone should be left unharvested along streams and other waterbodies. (3 points)

*. To prevent disturbance to the litter layer and soil during timber harvest right next to the creek. This type of disturbance could cause water quality problems for the stream during rainfall events.*

Page  
Total

1. Explain the difference between biological carrying capacity and cultural carrying capacity. Give an example relative to this site in which they might differ. (4 points)

*Biological carrying capacity(BCC) is the number of animals that can be supported by available habitat or the maximum number of individuals or inhabitants that an environment can support without detrimental effects. Cultural carrying capacity(CCC) is defined as the maximum number of deer that can coexist compatibly with local human populations. The CCC can be higher or lower than BCC since some people have high tolerances for deer and deer-related issues while others do not. The CCC becomes especially important in suburban deer management and in many agricultural regions.*

**(2 points for definitions and 2 points for recognition of issues of human tolerance to damage or potential damage)**

2. What is mast? List three (3) wildlife species that feed on mast. Explain why mast is a particularly important food. (5 points)

*Mast refers to nuts: acorns, nuts and seeds. Species that feed on mast in this area include: deer, squirrels, chipmunks, wood ducks, wild turkey and bears. They are an important fall food because they are high in fat so they help animals put on fat before winter.*

3. Place all of these animals in an ascending food chain. (6 points)

- |                  |                          |
|------------------|--------------------------|
| a. Green Sunfish | 1 - <i>Phytoplankton</i> |
| b. Phytoplankton | 2- <i>Caddis Fly</i>     |
| c. Bullfrog      | 3- <i>Bullfrog</i>       |
| d. Raccoon       | 4- <i>Green Sunfish</i>  |
| e. Caddis Fly    | 5- <i>Raccoon</i>        |
| f. Bobcat        | 6- <i>Bobcat</i>         |

1. Productivity of soils has a direct effect on wildlife habitat. What is the benefit of a deep soil (Horizon A) with high nutrient levels? (3 points)

*More seed production, more diversity of plants, more cover*

2. Wildlife needs warm season grasses for food and cover, and they use ponds for water. List the pages in the soil survey where you can find information about site suitability for ponds and wildlife plantings. (3 points)

3. Most Missouri amphibians and reptiles prefer: (2 points)

- a. **Moist soils covered with leaf litter**
- b. Well-drained, dry soils
- c. Shallow rocky soils with minimum vegetation
- d. Both b and c

4. Planting legumes into a cool season pasture adds diversity for wildlife. Legumes also fix what nutrient into the soil, which is utilized by the cool season grass? (2 points)

*Nitrogen*

5. Planting a variety of trees and shrubs along stream banks will stabilize soils and reduce erosion. How does this protection of soil benefit wildlife? (3 points)

*Vegetation grows right down to the water edge providing cover for all animals using the stream, diversity of plants provides for a diversity of wildlife, keeping sediment out of the stream increases aquatic life and diversity and provides feeding source for more wildlife species.*

6. Soil fertility will determine which of the following for wildlife? (2 points)

- a. Health and vigor
- b. Reproduction
- c. Size of animals and plants
- d. **All of the above**

1. Take a look at the edge near this ecostation. Is it considered a high contrast edge or a low contrast edge? Explain your answer. (3 points)

*Low-contrast edge is formed when structurally similar stages of plant succession are adjacent to one another. High-contrast edge is produced when two structurally different stages of plant succession meet. This would be considered low-contrast because there is a transition zone between the forest and the wide open mown areas, that have shrubs and small trees.*

2. Gypsy moth, an invasive species which can cause widespread defoliation of oak forests, are known to hitch rides to Missouri on recreational vehicles that have been in gypsy moth infested areas of the eastern U.S. If gypsy moth becomes established in Missouri, list some of the effects on wildlife this species will have. (6 points)

*The gypsy moth will not destroy the forest, but it will drastically change it. Weakened trees will begin to die. Trees not preferred by the moth will increase. In Missouri that means ash, black locust, dogwood, red cedar and hickory may begin to dominate areas that had been predominately oak.*

*Wildlife species will shift depending on their favorite breeding sites and food source. Birds that nest high in the forest canopy may decline because of exposure to predators. Woodpeckers may increase because of more dead standing snags. Wildlife species dependent on oaks may decline.*

*Because dying oaks will open the canopy and let in more light, shrub and understory species will increase along with the animals that feed on them. Water quality will be affected by large amounts of leaf bits and insect droppings falling in streams and lakes. This will affect aquatic species, favoring some and discouraging others.*

**(1 point each for mention of birds, aquatic life and other animals with an additional point for explanation of how they will be affected.)**

3. What are three (3) ways a non-native species of wildlife could be introduced into a new habitat. (6 points)

*purposely shipped into country  
accidentally included in plant materials or plane gear  
wild blown seeds  
birds and other animals serve as transport (feet, fur or poop)  
water movement*

Page  
Total