

Missouri State Envirothon Challenge

Wildlife Ecostation

Wildlife – Warm Season Grass Area

W1. (6 points) Identify the three species of native grasses provided.

Big Bluestem, Indian grass, Switchgrass

W2. (6 points) Describe the growth period for this type of prairie grass and compare this to growth periods of Fescue and Smooth Brome.

WSG - Mid June – Mid Sept

CSG - Late Feb./ Early March - Early July Sept - Late Oct.

W3. (8 points) Management via disturbance of Native Warm Season Grasses is crucial to its existence and long term benefits to many wildlife species. This field gets a management consideration every three to four years. Next year your objective for this field will be to reduce cool season grass encroachment, kill the woody invasion, and invigorate the stand of warm season grasses. List in the order from Most Preferred Management to Least Preferred Management from the following management options to obtain this objective:

- A. Disc mow and bale the hay.
- B. Prescribed burn.
- C. Sickle bar mow and leave hay.
- D. Graze cattle heavily from April to October.

B A D C

Hedgerow Area

W4. (4 points) Hedgerows and Fencerows are transitional areas between open type habitats. "Edge type" species like Bobwhite Quail and Cottontail Rabbit benefit from these areas. List two transitional zones you can observe at this site.

- A. WSG - Hedgerow
- B. Old field - Hedgerow

W5. (4 points) Neotropical migrating birds as well as resident bird species (game and non-game) require feather maintenance from "dusting". This is a way that ectoparasites as well as other debris can be removed. Warm and dry conditions usually promote this type of behavior. Select from those objects marked with orange flagging or flags, which would be utilized by these birds?

Dusting is used to remove lice and other ectoparasites from feathers and skin.

W6. (4 points) Name two management recommendations to improve the food and cover requirements of this site for Bobwhite Quail and Cottontail rabbit.

Back off management practices (mowing, discing) along hedgerow for 50-100 side to allow a more pronounced "transitional zone"

Brush piles, special shrub plantings, legume/bluegrass planting, food plots

Old Field Area

W7. (4 points) Old field Management usually revolves around "Successional Control". To provide the necessary escape cover, brood habitat as well as forage and mixes of forbes and grasses to benefit resident game and non game species, describe two successional control measures you observe at this site.

Dozing, discing, burning (prescribed), cut and remove

W8. (4 points) Autumn Olive was planted decades ago in attempts to provide a "berry" or "current" type food during the winter for many wildlife species. The species is not a Native species. It is now considered a "noxious species" (like Multiflora Rose & Musk Thistle) undesirable to Wildlife Managers. Why is it undesirable and what Native species do you observe that is a viable replacement?

Displaces native stocks due to it's agressiveness

Hawthorn, wild cherry (black cherry) wild plums

W9. (6 points) What wildlife species would you typically find as a result of good management in Old Field habitat types? Circle the first letter from ALL from the list below of those species found in Old Field Habitats.

- | | |
|-----------------------|--------------------|
| A. Canada Goose | F. Wood Duck |
| B. Prairie King Snake | G. Muskrat |
| C. White-tailed Deer | H. Red Fox |
| D. Bobwhite Quail | I. Prairie Chicken |
| E. Ornate BoxTurtle | J. Ruffed Grouse |

W10. (4 points) As a Wildlife Manager, you know that the peak of Bobwhite Quail is mid June and again in mid August. Wild Turkey broods are foraging for insects in late June through July. You decide that June is the only time you can burn this field. As a Manager, list what benefits and what adverse effects this burn will accomplish to the wildlife species and vegetation. Would you consider this time of burn again?

Benefits -- Decrease CSG agressiveness and presence, increase forb development like goldenrod, ragweed, reduce duff layer in grasses, kill small trees, may cause patchiness, burn pattern that wildlife prefer.

Adverse Effects – Impact on quail nesting, may impact quality of quail brood habitat, remove grass component tha quail use or nest construction, may remove grass structure and remain too open for chicks - precaton lack of escape cover

Probably not -- Earlier burn would benefit quail habitat and kill trees.

Forestry

F1. (4 points) What are the cone-like attachments on the shingle oaks adjacent to the fence opening?

Insect oak-galls

F2. (6 points) Why are trees invading at this site?

Lack of fire; natural plant succession; certain trees are more competitive than grass and weeds; a seed source is close

F3. (6 points) What value does the woody plum thicket have along the fence line? Discuss 3 (three) values.

Escape cover; food source; perching/roosting; nesting habitat; aesthetics; erosion control; carbon sequestering; air purification

Aquatics

A1. (2 points) Which aquatic animal has a "rostrum"?

- A. Muskrat
- B. Tadpole
- C. Bluegill
- D. Crayfish
- E. Caddis fly

A2. (6 points) Turtles are divided into which groups (circle Three)?

- A. Soft-shelled terrestrial turtles
- B. Soft-shelled aquatic turtles
- C. Hard-shelled terrestrial turtles
- D. Hard-shelled aquatic turtles
- E. Unshelled aquatic turtles

A3. (6 points) Given the following list of aquatic organisms, develop a food chain. (Start with the producer)

Redear sunfish Green heron Clam shrimp Walleye
Plankton Dragonfly larvae

Plankton, Clam shrimp, Dragonfly larvae, Redear sunfish, Walleye, Green heron

A4. (2 points) Which of the following fish is not native to Missouri?

- A. Silver lamprey
- B. Common carp
- C. Plains killifish
- D. Freshwater Drum
- E. Freshwater Eel

A5. (4 points) In a pond that is <6 ft. deep, what species would you expect to decline?
What species would replace them?

-Fish
-Frogs

Soils

S1. (6 points) List 3 of the 5 soil forming factors.

Climate, organisms, parent material, topography and time

S2. (4 points) What affects do living organisms have on soil formation?

Bacteria and fungi cause rotting of organic material, fix nitrogen, and improve soil tilth. Burrowing animals and insects loosen and mix the soil and increase water holding capacity and increase pore space within the soil.)

S3. (4 points) What soil properties should be considered when evaluating an area for wildlife habitat development? List at least 3.

Depth of root zone, texture of surface layer, available water capacity, wetness, slope, surface stoniness and hazard of flooding.