

1. American beech trees become hollow with age thus providing excellent den sites for a host of wildlife. As a species for urban forestry programs, however it might not be ideal. Once the tree begins to hollow out, it becomes a risk of falling or breaking and possibly ultimately damaging property or residents. Nest boxes serve as good substitutions to beech trees for many cavity-nesting species or simply for wildlife to find shelter from the elements, such as:

- A. Killdeer
- B. Eastern chipmunk
- C. Southern flying squirrel**
- D. House mouse

2. Since 2006, a disease has devastated populations of a particular group of native mammals across Eastern North America, causing the most precipitous wildlife decline of the past century. This sickness has killed at least 5.7 million individuals since it was discovered in New York State. Today, seven species in 25 states and 5 Canadian provinces have been diagnosed with the devastating disease. Biologists are working everyday toward a cure. Select the correct name of the disease combined with the correct order of the animals affected.

- A. White-nose syndrome, Chiroptera**
- B. Chronic wasting disease, Artiodactyla
- C. Chronic wasting disease, Lagomorpha
- D. White-nose syndrome, Rodentia

3. This property attracts many different species of songbirds. What avian species, identifiable by its flashy white tail feathers in flight and mostly gray appearance, is likely to be sighted here, but only during winter months? It spends the rest of the year on the forest floors of Canada and western mountains of the U.S.

- A. Northern bobwhite quail
- B. Gray catbird
- C. Northern cardinal
- D. Dark-eyed junco**

4. Many species of wildlife migrate through the Buckeye State. A large variety of hawks, waterfowl, and neotropical species use the habitat in Ohio as staging areas during their migrations. In which flyway is Ohio included when managing for migratory wildlife?

Mississippi

5. Which of the following is **NOT** a cavity nesting duck?

- A. Hooded Merganser
- B. Ring-necked Duck**
- C. Goldeneye
- D. Bufflehead

6. Which native Ohio animal helps control the spread of Lyme disease by consuming up to 95% of the ticks that attempt to attach to them?

- A. Eastern Wild Turkey
- B. Raccoon
- C. Opossum**
- D. Ruffed Grouse

7. The “Red Eft” is the terrestrial juvenile stage of what Ohio amphibian?

Red-spotted Newt

8. Eastern wild turkeys were extremely abundant when Ohio officially became a state in 1803. In just 100 years, they were completely extirpated from the state. Thanks to sound wildlife management, wild turkeys are one of the most abundant gamebirds existing in Ohio today.

Wild turkeys can be hunted in which seasons: **spring** and **fall**

What is the bag limit for each season: **2 (spring)** and **1 (fall)**

9. If an 18-year old angler chooses to fish in a pond on private property, with permission from the landowner, of course, would the angler be required to obtain a fishing license and if so, what kind? Choose the correct statement below.

- A. No license is required for anglers ages 18 and under regardless of property ownership
- B. A daily fishing license must be purchased by anglers 16 and over
- C. No license is required for anglers fishing private property regardless of age**
- D. A “private land” fishing license is required to be obtained for anglers of all ages fishing private property

10. By the early 1900s, Ohio's landscape had changed drastically when compared to the date of statehood. Many indigenous species were extirpated when the forested habitat was destroyed, making room for agriculture. Large predators like black bears and gray wolves that were known to prey on valuable livestock were also removed from their original territories, changing predator/prey relationships. New species took advantage of the distinctly different habitat and the changing human/wildlife population dynamics. Which species listed below proliferated statewide in the last several decades as a result of Ohio's changing landscape?

- A. Bobcat
- B. Prairie falcon
- C. Red wolf
- D. Coyote**

11. There are many benefits to incorporating urban forestry logic into a community and improved wildlife diversity is generally no exception. Disregarding the species of trees and plants chosen for a community might hinder the species and/or diversity of wildlife attracted to such flora. Planting beneficial native species will consequently improve conditions for native wildlife. Which species below offers a native plant source for wildlife in this area of Ohio?

- A. *Elaeagnus umbellata*
- B. *Rosa Multiflora*
- C. *Ailanthus altissima*
- D. *Cornus florida***

12. Which animal of the Viperidae family can be found in wetland habitats and is also considered a state endangered species? This snake has been documented in 30 Ohio counties historically, but only eight counties today.

- A. Eastern foxsnake
- B. Northern copperhead
- C. Eastern massasauga**
- D. Queensnake

13. The term "gregarious" means: **lives in flocks or herds**

14. Which native nocturnal bird lays its eggs on the forest floor?

- A. Eastern Screech Owl
- B. Eastern Whip-poor-will**
- C. Eastern Phoebe
- D. Tufted Titmouse

15. A female Black Bear will breed with multiple males during the breeding season. This type of relationship is referred to as:

- A. Monogamous
- B. Polyandrous**
- C. Polygynous
- D. Promiscuous

16. Over 400 species of birds have been reported in the state of Ohio. About 300 are recorded annually and 33 have only been spotted once. There are four species of birds that are common and widespread, but not native. These birds include the European starling, house finch, and house sparrow. Which is the fourth?

- A. Cedar waxwing
- B. Rock pigeon**
- C. Purple martin
- D. Louisiana waterthrush

17. This state endangered amphibian, found only in the highest quality streams throughout Ohio, uses its wrinkled skin as the major organ of oxygen/carbon dioxide exchange. Due to the sensitivity of this amphibian to poor water quality it is highly unlikely to be found in streams affected by nonpoint source pollution and sedimentation.

- A. Eastern cricket frog
- B. Common mudpuppy
- C. Eastern hellbender**
- D. Fowler's toad

18. Of a regularly occurring 19 species recorded annually in North America, a total of 12 owl species have been recorded in Ohio. A common yearlong resident, *Strix varia*, also known as the Variegated owl because of its plumage pattern, is known for its bizarre sound effects including hooting and caterwauling. Find the correct species below.

- A. Elf owl
- B. Barred owl**
- C. Northern Saw Whet owl
- D. Burrowing owl

19. Habitat is the key to wildlife survival. What is the term for the number of animals a habitat can support through the year?

Carrying capacity

20. Fruits and nuts from woodland flora are important food sources for many species of wildlife. Match the vegetative species with its corresponding mast:

- | | | |
|-------------------|----------|---|
| A. Sassafras | B | fleshy, oblong drupe |
| B. Hackberry | D | smooth capsule with 1 to 3 nut-like seeds |
| C. Boxelder | A | clusters of elliptical small green fruits |
| D. Yellow buckeye | C | seed attached to an elongated, thin wing |

21. Thousands of plants and animals have been introduced into North America. Over 85% of these plants and animals are not a problem for agricultural, ecological, or human health. In fact, a small number of noninvasive alien plants (e.g. corn, wheat, oats) form the basis of our agricultural industry. But in terms of biodiversity, invasive species are the second most important threat. Can you name the first threat to biodiversity?

- A. Disease
- B. Habitat loss**
- C. Pollution
- D. Sedimentation

22. Which one of the following species was extirpated from Ohio by the early 1900s, but due to reintroduction in 1986, flourish throughout two-thirds of the state?

- A. River Otter**
- B. Bobcat
- C. Beaver
- D. Ruffed Grouse

23. In what type of habitat would you be most likely to find a Bobolink?

- A. Grassy pastures or overgrown fields**
- B. Dense thickets
- C. Open mature forests
- D. Lake shores or waterways

24. You can find about 180 different species of this in North America. Only about 60 are considered native. The rest were inadvertently brought over from other countries in pots and spread throughout North America via agriculture, horticulture and fishing. Their subsequent impact has been both favorable and detrimental. While good for agriculture, it can be devastating to northern forest where no species were originally found. Which of the following does this describe?

- A. Sowbugs
- B. Earthworms**
- C. Mealworms
- D. Millipedes

25. Wetlands have been referred to by biologists as the cradle of life. Over 1/3 of Ohio's wildlife depends on wetland habitat for their survival. Habitat destruction is a major reason for wetland wildlife populations decreasing. One particular invasive plant is threatening our wetlands by outcompeting and replacing native grasses, sedges and other flowering plants which provide higher quality sources of nutrition for wildlife. Name this invasive exotic plant.

- A. Canada thistle
- B. Duck weed
- C. Fountain grass
- D. Purple loosestrife**

26. Found not only in Fernwood Forest but throughout all of Ohio, this species known in the scientific world as *Didelphis virginiana* prefers wooded areas interspersed with wetlands and farmlands. Quite adaptable, however, this animal can be found in suburbia and the city too. Males of this species are called _____ and females are called _____.

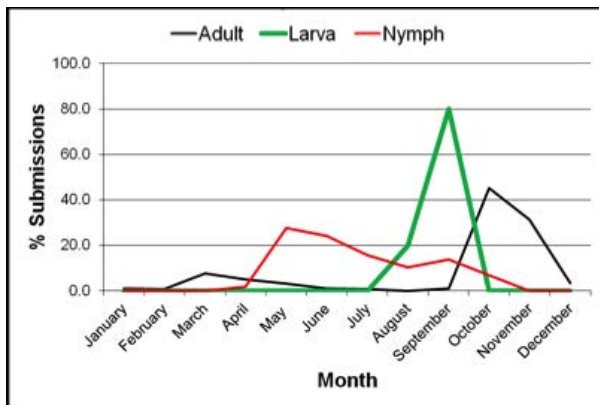
- A. Bulls and cows
- B. Jacks and jills**
- C. Boars and sows
- D. Cobs and pens

27. In Ohio, warm season grasses are very beneficial to certain upland game species such as ring-necked pheasants and cottontail rabbits. Which species of grass listed below is not an appropriate choice for providing warm season grass cover?

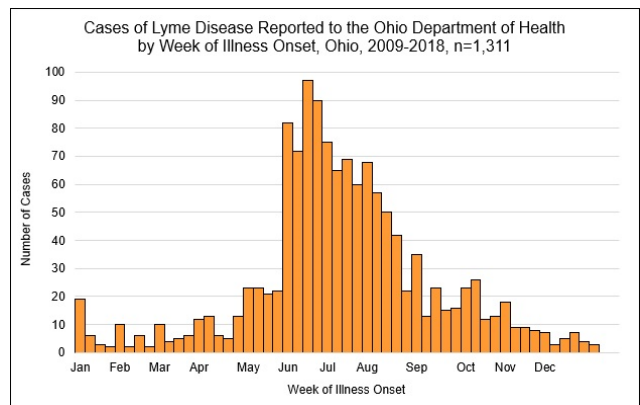
- A. Big blue stem
- B. Switchgrass
- C. Indian grass
- D. Tall fescue**

28. Urban and community forests include a multitude of environmentally beneficial projects. One such example is planting Mother Nature’s bird feeders – trees – which will leave urban wildlife enthusiasts with more time to spend watching birds in their communities instead of filling up and maintaining commercial feeders. Planting trees of different types, sizes, and form helps encourage diversity. Residents should think of yards in tiers and try to include a mix of large “canopy” trees and smaller mid-story trees, as well as shrubs and vines. Certain species of birds nest in “Top Tier” habitats: tall-growing hardwood tree species like oak, hickory, maple, sycamore, and elm. These trees also provide acorns, nuts, and fruits – high energy food sources. Select the bird species below that takes full advantage of top tier habitat.

- A. **Scarlet tanager**
- B. American robin
- C. Oven bird
- D. Eastern bluebird



Seasonal abundance of the blacklegged tick as evidenced by samples submitted to the Ohio Department of Health. Blacklegged tick adults are active during spring, fall, and winter; nymphs are active during spring and summer; and larvae are active during late summer. Left graph from HYG-2073: Ticks and Tick-Borne Diseases



29. This site is a great location to pick up ticks. Black-legged ticks, also known as deer ticks, are the only vector of Lyme disease in this region. Lyme disease not only affects humans, but pets and livestock as well. Using the above charts, what life stage is likely responsible for a majority of the lyme disease cases in Ohio?

- A. Egg
- B. Larva
- C. **Nymph**
- D. Adult

30. In 2017, the epizootic hemorrhagic disease (EHD) was confirmed in white tail deer and cattle in Jefferson County, OH. This disease is transmitted by small midges that bite flesh, and it is not known to be transmitted from animal contact. What is the best method to prevent livestock from contracting EHD?

- A. Keep deer and livestock separated
- B. Liberally apply DEET on livestock
- C. Reduce the local deer population through hunting
- D. Eliminate standing water sources and use insect control strategies on livestock such as back rubs, ear tags, and pour-ons**

31. Integrated pest management (IPM) is an ecosystem-based strategy that is often employed by growers to control a variety of pests and diseases in crops. IPM makes use of cultural (correct soil fertility, water as needed), mechanical (using good mowing, pruning practices), biological (promoting beneficial predators), and chemical controls. Chemical controls such as synthetic and organic pesticides are often used as a last resort once other methods have been exhausted. Prevention is often the first step of an IPM program, and the pest of interest needs to be accurately identified before control procedures occur.

The periodical cicada (brood VIII) will emerge this year in parts of Jefferson County. These cicadas are known to cause damage to fruit trees, especially young trees. Nymphs will suck sap from roots, and prolonged feeding on tree's root system can limit growth and fruit production. Adults will lay eggs in small twigs, resulting in twig splitting and a symptom called "flagging" in which dead twigs appear in the crown of a tree. Younger trees are most susceptible to damage because most of the branches are of the preferred size for cicadas. Which of the following is the best management strategy for minimizing damage from adult cicadas?

- A. Cover mature trees in cheesecloth to prevent cicadas moving from one tree to the next
- B. Cover young trees in cheesecloth to prevent adults from laying eggs in the small branches**
- C. Apply an insecticide treatment to kill the adult cicadas
- D. Wait out the cicada storm – it only lasts a few months

32. A gardener believes that rabbits have gotten into the vegetable plot and eaten much of the lettuce crop. Using the concept of IPM, what is the best approach to this situation?

- A. **Identify / confirm the culprit -> use preventative methods such as exclusion and habitat modification -> use hunting or trapping methods to knock down the current population**
- B. Use fumigation techniques to knock down the rabbit population -> use hunting or trapping methods to knock down the current population
- C. Identify / confirm the culprit -> use fumigation techniques to knock down the rabbit population -> use preventative methods such as exclusion and habitat modification
- D. Use preventative methods such as exclusion and habitat modification -> use fumigation techniques to knock down the rabbit population -> use hunting or trapping methods to knock down the current population

33. Honey bees are not the only bee species that are good at pollinating crops. Identify the insect on the right using the “Ohio Bee Identification Guide” provided.

- A. Bumble bee (*Bombus* spp.)
- B. Large carpenter bee (*Xylocopa* spp.)
- C. **Mason bee (*Osmia* spp.)**
- D. Squash bee (*Peponapis pruinosa*)



This insect has a robust thorax and abdomen. It is solitary, but you may occasionally see larger aggregations at some nest sites. These ones use mud as a building material.

Questions 34 through 37 are hands-on and refer to the Exhibits on the table.

34. Refer to Exhibit A. This track print belongs to which Ohio mammal that spends a great deal of time in and around water?

- A. **Muskrat**
- B. Beaver
- C. River Otter
- D. Mink

35. Refer to Exhibit B. Box turtles can be gender identified in part because of their shells. Is this a shell from a male box turtle or a female box turtle?

- A. **Male**
- B. Female

36. Refer to Exhibit C. This track print belongs to what native Ohio mammal?

- A. Raccoon
- B. **Virginia Opossum**
- C. Red Fox
- D. Gray Fox

37. Refer to Exhibit D. This skull, which belongs to one of Ohio's most sly predators, can be easily identified by looking at the temporal ridges on top of the skull. Here, the temporal ridges form a "U" shape. Which Ohio fox has the "U" shape on top of its skull?

- A. Red Fox
- B. Silver Fox
- C. **Gray Fox**
- D. Black Fox