

2018 Area 2 Envirothon: Aquatics

- Find the tall plant with the feathery plume near the placard for "Question 1" at the entrance to the wetland. What type of plant is this?
 - Typha* (cattail)
 - Phragmites* (common reed)**
 - Scirpus* (bulrush)
 - Carex* (sedge)
- Inspect the map on the table depicting your current location with a red arrow. Identify which watershed(s) you are standing in.
 - Lake Erie
 - East Branch Rocky River
 - East Branch Rocky River, Lake Erie
 - East Branch Rocky River, Rocky River, Lake Erie**
- Observe the wetland area at the placard for "Question 3" on the table as directed by the arrow. How would you best describe this wetland?
 - Marsh
 - Vernal Pool/marsh
 - Swamp/wet meadow**
 - Woodland
- Please inspect the plant sample on the table at the placard for "Question 4". What type of plant is this?
 - Typha* (cattail)
 - Phragmites* (common reed)
 - Scirpus* (bulrush)
 - Carex* (sedge)**
- Find the tree with the placard for "Question 5" on the trunk. Identify this tree with the deeply furrowed bark.
 - Green ash
 - Black ash
 - Eastern cottonwood**
 - Sycamore
- Which of the following fish is not a gamefish species?
 - Largemouth bass
 - Rainbow darter**
 - Rainbow trout
 - Northern pike

7. Identify the phrase that best defines the hydrologic term, watershed.
- A. Catchment area drained by a stream system**
 - B. A forested wetland and the surrounding saturated area
 - C. A pond
 - D. An area where people store water in the event of an emergency
8. You and your team would like to find reports documenting the biological and water quality of a nearby river in the State of Ohio. Select the agency that would have such reports publicly available.
- A. Ohio Environmental Protection Agency**
 - B. Ohio Department of Natural Resources
 - C. Ohio Department of Transportation
 - D. Ohio Division of Watercraft
9. What three features do the US Army Corps of Engineers use to delineate an area as a wetland?
- A. Aquatic plants, flooded soil, and waterfowl
 - B. Presence of water during at least part of the year, hydrophytic vegetation, and hydric soils.**
 - C. Anaerobic substrate, aquatic plants, and amphibians
 - D. Standing water, aquatic plants, and aquatic animals but NOT fish
10. Nutrients are required for the growth of photosynthetic organisms in both aquatic and terrestrial ecosystems. Identify the nutrient that most limits the growth of photosynthetic organisms in freshwater ecosystems.
- A. Nitrogen
 - B. Phosphorus**
 - C. Magnesium
 - D. Potassium
11. What are the common names of the three insect orders used globally as indicators of good water quality?
- A. Stoneflies, mayflies, and caddisflies**
 - B. Stoneflies, caddisflies, and dragonflies
 - C. Mayflies, hellgrammites, and stoneflies,
 - D. Hellgrammites, caddisflies, and mayflies
12. If you observed a small stream with greenish, slimy-looking algal growth on the rocks, a likely issue this stream would be facing would be:
- A. Nutrient enrichment**
 - B. Lack of aquatic life
 - C. Point source pollution
 - D. Peak storm water runoff issues

13. What is the most widely used fisheries data collection method used by the widest array of Ohio agencies?
- A. Trapnetting
 - B. Gillnetting
 - C. Creel surveys
 - D. Electrofishing**
14. In a temperature stratified lake, the layer representing the most rapid change is called the:
- A. Thermocline**
 - B. Thermometer
 - C. Epilimnion
 - D. Hypolimnion
15. Total Maximum Daily Load (TMDL) refers to:
- A. The total volume of treated wastewater that any permitted facility is allowed to discharge in the stream in any twenty-four period.
 - B. The cumulative pollutant load designated for an impaired water body.
 - C. The amount of a particular pollutant that a water body can receive on a daily basis without violating state water quality standards.**
 - D. The total pollutant load allowable in urban stormwater runoff.
16. Which of the following geologic formations (bedrock) would yield the highest pH groundwater?
- A. Sandstone
 - B. Limestone**
 - C. Shale
 - D. Granite
17. If you observe a strikingly bright greenish yellow hue in an area stream, what is the most likely culprit?
- A. A spill of antifreeze
 - B. A spill of Mountain Dew
 - C. A tracer dye study is ongoing**
 - D. A sewage discharge has occurred
18. The Qualitative Habitat Evaluation Index (QHEI) is used to score:
- A. The qualitative biodiversity of an aquatic habitat
 - B. The relative quality of habitat components in a stream reach**
 - C. The quality of a wetland habitat
 - D. The relative number of habitat units in watershed

19. Which fish species would be expected in both the Ohio River AND Lake Erie drainage of Ohio?

- A. Paddlefish
- B. Muskellunge**
- C. Steelhead trout
- D. Burbot

20. Which are the most important contributing characteristics regarding the damage that can be done by storm water run-off?

- A. Pollutants and volume
- B. Pollutants and timing
- C. Volume and timing**
- D. Volume

21. Blue-Green Algae are also called

- A. Diatoms
- B. Neurotoxins
- C. Cyanobacteria**
- D. Chlorophyta

22. Eutrophication can result in fish kills. What is the mechanism by which this most commonly occurs?

- A. Nutrients suffocate/poison the fish
- B. Phosphorus binds to dissolved oxygen molecules and renders them biologically unavailable
- C. Nutrients attracts bacteria that are detrimental to fish
- D. Oxygen is depleted during decay of excessive algae/plants caused by excessive nutrients**

23. In Ohio, a Primary Headwater Habitat Stream is defined as:

- A. A stream with a width of less than 2 meters
- B. A first order stream
- C. A perennial stream that is always flowing
- D. A stream with a drainage area of less than 1 square mile**

24. In a stream ecosystem, which of the following assemblages of fish would indicate the best water quality?

- A. Rainbow trout, smallmouth bass, bluntnose minnow
- B. Channel catfish, common carp, creek chub
- C. Rainbow darter, stonecat madtom, redbside dace**
- D. Green sunfish, white sucker, yellow bullhead

25. There are two categories of pollution that enter Ohio's waters. Some pollution comes from a specific, identifiable source and is called point source pollution. The source of other types of pollution cannot be readily traced to a specific source and is called nonpoint source pollution. One of the following nonpoint source pollutants currently is the greatest threat to Ohio's waters. Which is it?

- A. Soil erosion and sedimentation**
- B. Industrial discharges
- C. Failing septic systems
- D. Effluent from WWTPs