

**2009 SWCD Area 1 Envirothon**  
**Camp Clay, Van Wert, OH**

## **Current Issues**

***Do not write answers on this paper.***

- ***Indicate the one best answer choice for each question on the “Current Issues” Scantron answer card.***
  - ***Use a No. 2 pencil.***
  - ***Erase changes completely on scantron card.***
1. Biodiversity is often used to measure of the health of an ecosystem. By definition, biodiversity is:
    - a. the study of the effects of climatic conditions on organic life and communities.
    - b. the biological study of the geographic distribution of plants and animals.
    - c. the totality of genes, species, ecosystems and natural landscapes of a region.
    - d. the life processes or characteristic phenomena of a group of living organisms.
  2. Human population density limits biodiversity in natural systems. What was the density of Ohio’s human population human population in the year 2000?
    - a. 177 people/mi<sup>2</sup>
    - b. 277 people/mi<sup>2</sup>
    - c. 377 people/mi<sup>2</sup>
    - d. 477 people/mi<sup>2</sup>
  3. What two abiotic factors most directly influence the level of biodiversity in an ecoregion?
    - a. soil composition and plant biota
    - b. intensity of solar radiation and availability of water
    - c. nutrient runoff and nitrogen levels
    - d. ecoregion location and availability of food
  4. The alteration of aquatic habitats is a principal factor in:
    - a. aquatic conservation.
    - b. impact to native species.
    - c. the loss of biodiversity.
    - d. b and c.
  5. What term describes a species whose loss, when compared to the loss of other species in the ecosystem, has a disproportionate negative impact on the community?
    - a. keystone
    - b. fundamental
    - c. functional
    - d. dominant
  6. The biggest threat to rivers, streams, and other waterways in Northwest Ohio is:
    - a. high nitrate levels.
    - b. non-native species.
    - c. sediment load.
    - d. roadside litter.

7. Where in the world (i.e. biogeographic realm) and in what type of habitat, is the largest proportion of declining amphibian species found?
  - a. afrotropical lowland, wetland-associated species
  - b. palearctic montane, stream-associated species
  - c. nearctic grassland, wetland-associated species
  - d. neotropical montane, stream associated species
  
8. One way of evaluating our success at protecting the natural habitats is to compare the proportion of the protected to the proportion converted for human use (i.e. Boreal forest, 8.9% is protected; 2.4% converted – moderately successful). Which habitat type is least protected?
  - a. flooded grasslands
  - b. temperate broadleaf and mixed forests
  - c. temperate grasslands, savannahs and shrub-lands
  - d. tropical/subtropical moist broadleaf forests
  
9. The Soil Scientist for the Area 1 Envirothon recently visited the Amazon Rainforest in Ecuador. Many pharmaceutical companies visit this area to find medicinal plants for new drug compounds before the plants are destroyed. Which of the following represents a threat to the continued existence of these plants?
  - a. clear cutting of the forest for timber
  - b. land clearing for farming
  - c. global climate change
  - d. all of the above
  
10. Which cause for loss of biodiversity in an ecoregion is most threatening to an endangered species?
  - a. pollution
  - b. nonnative species
  - c. habitat loss
  - d. over-exploitation
  
11. Bank stabilization serves what purpose in waterways?
  - a. enhancement of fish and wildlife habitat
  - b. reduction of local stream velocities
  - c. eliminates the need for riparian corridor
  - d. a and b
  
12. The number of mass extinction events that the earth has witnessed depends upon one's time frame and definition of massive. However, in the past 540 million years there are generally considered to be five such events. The most well-known of these is the one during which the non-avian dinosaurs disappeared. Which is it?
  - a. Cretaceous-Tertiary event
  - b. Permian-Triassic event
  - c. Triassic- Cretaceous event
  - d. Ordovician-Silurian event

13. Biologists generally recognize three levels of biodiversity: genetic, species and ecosystem. Which of the following is an example of genetic diversity?
- black bear and grizzly bear
  - hyacinth macaw and scarlet macaw
  - greater panda and lesser panda
  - Florida panther and mountain lion
14. Which of these changes in small stream ecosystem most directly impacts the biodiversity of downstream rivers, lakes, and estuaries?
- urban development
  - water pollution
  - filling floodplains
  - introduction of exotic species
15. The Auglaize River and Blanchard River watersheds experienced significant flooding in 2007. Which of the following is not a means of flood remediation?
- channelization
  - increased development of impervious surfaces
  - log jam removal
  - wetland development
16. What results when a large proportion of the biosphere contains only a small number of species?
- biodiversity
  - an unstable system
  - variation within a population
  - b and c
17. Which two 20<sup>th</sup> century phenomena have increased the introduction of exotic (nonnative) species worldwide?
- aerosol use and global climate change
  - urbanization and global industrialization
  - global travel and trade
  - deforestation rates and urban sprawl
18. Since its North American introduction which exotic species has caused nearly \$700 million in losses to American hardwoods (elm, oak, birch...etc) throughout the midwest and the northeast?
- purple loosestrife
  - cogongrass
  - Asian longhorned beetle
  - European gypsy moth
19. Which of the following could lead to a large-scale ecosystem collapse by mid 21<sup>st</sup> century?
- decreased plant consumption
  - increased global consumption levels
  - increased regionalization
  - introduction of exotic species

20. Which of the following numbers most closely represents the percent of original wetlands lost in Ohio?
- 23%
  - 62%
  - 75%
  - 90%
21. Scientists believe invasive species are among the most significant threats to biodiversity at every level. Which one of the following is not a characteristic of an invasive species?
- has few natural controls such as predators, diseases or insects
  - tolerates a wide range of conditions
  - dislikes new climate and environmental conditions
  - disperses itself with ease
22. Which of the following is not an invasive or exotic species threatening Ohio's forests?
- amur honeysuckle
  - rusty blackswallow
  - garlic mustard
  - ailanthus
23. Which disease/pest has not been detected in Ohio at this time?
- emerald ash borer
  - chestnut blight
  - sirex wood wasp
  - gypsy moth
24. One ecoregion other than the Southern Great Lakes Forests ecoregion, occurs in significant numbers in Ohio. This ecoregion is in our area. What is it?
- Appalachian/blue ridge forests
  - Appalachian mixed mesophytic forests
  - central forest/grassland transition zone
  - central U.S. hardwood forests
25. The most wasteful manner (defined as most money spent for least positive effect) our society threatens biodiversity is by:
- continuing public subsidies (via taxes) for logging, mining and grazing public lands.
  - continuing public subsidies (via taxes) for mass transit projects.
  - establishing wilderness areas.
  - protecting threatened habitats.
26. Plant-based pharmaceuticals are an example of which of these types of values or reasons to conserve biodiversity?
- aesthetic
  - ethical/moral
  - economic
  - ecosystem services

27. Using simple criteria to measure biodiversity, two ways a species contributes to biodiversity for any particular area include:
- indigenoussness and evenness.
  - indigenoussness and species richness.
  - evenness and connectance.
  - species richness and dominance.
28. An ecosystem is a fragile, complex web of life. Introduction of new animal or plant species can wreak havoc on its natural balance. When new species are invasive, they choke out native forms of life, wiping out the diversity that establishes a healthy system. One example is the house sparrow, introduced to North America from England in 1851. What is the current worldwide population trend of house sparrows?
- declining
  - increasing
  - stable
  - endangered
29. In which time period, according to the Ohio Dept. of Agriculture, did Ohio lose more than 6.9 million acres, nearly 1/3, of the state's agricultural lands?
- 1950—2000
  - 1960—1970
  - 1970—1980
  - 1980—2000
30. What is the term for the simplified classification of groups of species that perform similar roles in an ecosystem process?
- keystone
  - relationship
  - fundamental
  - functional
31. Which of the following is not a benefit of maintaining current levels of biodiversity?
- greenhouse gas regulation
  - erosion control
  - increased fossil fuel sources
  - soil quality control