

2008 Area 1-Northwest Ohio Envirothon TEST--CURRENT ENVIRONMENTAL ISSUE STATION

“Recreational Impacts To Natural Resources”

Current Environmental Issues General Questions:

- 1) The impacts of ATV's and other off-road vehicles are well-documented. The Miller Conservation Farm has allowed some ATV use. Which of the following problems may be caused by excessive ATV use in a natural area?
 - A. Increase in infiltration (water going into the soil)
 - B. Decrease in erosion
 - C. Higher concentrations of runoff in trails and roadways during heavy rain
 - D. None of the above

- 2) What components of the hydrologic cycle are most altered by recreation?
 - A. Evaporation
 - B. Infiltration
 - C. Precipitation
 - D. Transpiration

- 3) Which of these is not usually considered an impact of horseback riding in a natural area?
 - A. Introduction of invasive species
 - B. Decreased infiltration
 - C. Compaction of soil
 - D. Increased plant growth due to fertilization by manure/dropping

- 4) Which of the following is not a way in which the people managing Miller Conservation Farm could decrease the impacts of recreation?
 - A. Limit the number of hikers, horses, bikes, and ATV's that have access to the Miller Conservation Farm
 - B. Create a campground
 - C. Designate “specific use” trails for hikers, ATV's, bikers and horses
 - D. Close the Miller Conservation Farm to the public

Current Environmental Issues General Questions (continued):

- 5) Erosion is taking place along a steep stream bank that runs through your park. You are concerned that sedimentation will be harmful to the well being of a rare mussel found in the stream. Which would you recommend be done?
- A. Collect all the mussels and relocate them to a clean stream.
 - B. Remove sediment, cut banks to steep angle, straighten the stream and line banks with rocks.
 - C. Stabilize the stream bank by creating a 3:1 stream bank slope and planting a vegetation buffer.
 - D. Build dams on the stream to slow the flow of water and trap the sediment.
- 6) The local park and recreation department would like to develop an amphitheater in a neighborhood park. The amphitheater would allow for a variety of programs and activities including high school band concerts. List key considerations for the department to consider in deciding how and where to locate the amphitheater?
- A. Proximity to neighbors and natural buffers to reduce potential sound pollution
 - B. Aesthetic impact to existing park amenities and neighbors - including lighting
 - C. Accessibility including the need to develop walking paths and additional parking areas
 - D. Proximity to utilities such as electricity
 - E. All of the above
- 7) Your local park is one that is highly developed with athletic courts, swimming pools, picnic shelters, an amphitheater, etc... You are looking at developing a trail system in a nearby wetland area through a grant that funds projects to allow access to recreation for people with disabilities. How must you balance this to allow people, with and without disabilities, to have access into this part of the park without harming the ecosystem, and yet enjoy the natural setting of the wetland?
- A. Put up a barrier fence keeping people out of areas that need to be undisturbed
 - B. Post signage that allows people to comprehend and understand the limitations of areas allowed by the public.
 - C. Utilize signage and clearly mark and identify trail head systems, have display kiosks that identify plants and wildlife, have display boards that allow people, with and without disabilities, the ability to know the rules of this area.
 - D. All of the Above

Current Environmental Issues General Questions (continued):

- 8) You are a public lands manager. It is your job to evaluate five locations for a potential new public river access. In order to provide public access to rivers, several factors must be evaluated. Which of the following considerations would be relevant?
- A. Cost versus benefits to the public
 - B. Construction impacts to the river
 - C. Should the access be located in or out of the floodplain
 - D. All of the above
- 9) Public trails provide a multitude of benefits to those who use them. What factors come into play when designing and building a trail system?
- A. Seasonally wet areas and soil compaction
 - B. Sensitive areas that include endangered species and nesting areas
 - C. Disturbance of the area by construction activities and vegetation removal
 - D. All of the above
- 10) Rivers and streams are considered “waters of the state” for the use and benefit of all. Which of the following is not ethical conduct when canoeing?
- A. Building a fire to cook lunch
 - B. Being quiet so as not to disturb others using the river
 - C. Picking up litter as you go, even though you may be trespassing on private property
 - D. Noting problem areas along the river to be reported to the proper officials
- 11) A new, larger foot bridge is being considered for construction over Sugar Creek within Miller Conservation Farm. Location is the key factor. Which of the following would be the best situation for building the bridge?
- A. High cost and removing a large number of trees
 - B. Low cost and removing a large number of trees
 - C. Replace the existing bridge and close the trail during construction
 - D. None of the above

Current Environmental Issues General Questions (continued):

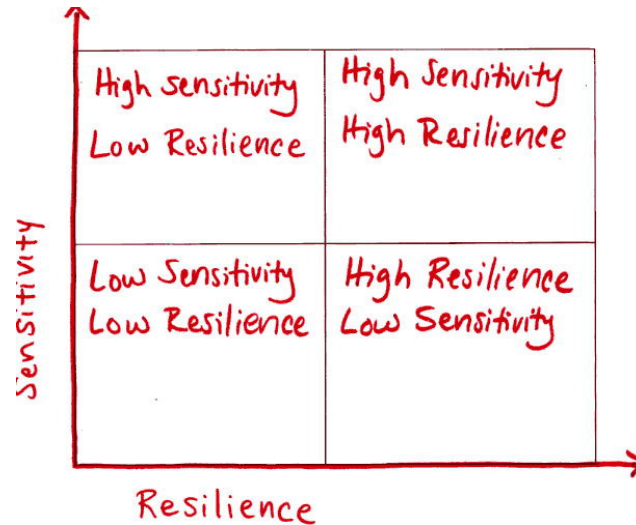
- 12) When assessing the health of a river or stream, which of the following parameters should be looked at.
- A. Biological, chemical, physical
 - B. Dissolved oxygen, pH, atmospheric conditions
 - C. Turbidity, pH, land use
 - D. Flow rate, pH, clarity
- 13) Hunting is an American tradition, and special hunts occur at the Miller Conservation Farm. Which of the TWO statements best apply to the Farm?
- A. Hunting is used as a recreational activity
 - B. Hunting has a limited effect on the Farm because of its small acreage
 - C. Hunting is used as a management tool
 - D. Hunting has a negative effect on the Farm because of over-harvesting
- 14) Unfortunately, in today's landscape, non-native species are rampant and take over native species. What are some control methods to reduce or eliminate non-native species?
- A. Controlled burning
 - B. Herbicides
 - C. Mechanical removal, such as bushhogging
 - D. All of the above
- 15) Outdoor areas require rules and regulations to protect the areas and their visitors. Which of the following are suitable uses for the Miller Conservation Farm
- A. Dirt-bike riding
 - B. Unrestricted ATV use
 - C. Off-trail hiking
 - D. None of the above
- 16) Stream Quality Monitoring (SQM) is a biological test that determines the health of a river or stream based on:
- A. The crustaceans that hide in the riffle areas
 - B. The mollusks that live in the rocky areas of the river
 - C. The insects that cling to the bottom of river rocks or burrow in the substrata.
 - D. All of the above

Current Environmental Issues General Questions (continued):

- 17) The sediment stick is used in Stream Quality Monitoring (SQM) to determine:
- A. Turbidity
 - B. Dissolved oxygen content
 - C. Sediment load
 - D. Either A. or C.
- 18) Macroinvertebrate sampling is a simple but effective means to gauge human impact of a river or stream provided:
- A. There are tolerant or intolerant species present at the sampling site.
 - B. The river is a designated *Scenic River*.
 - C. Sampling is done and recorded consistently from season to season.
 - D. Chemical testing is done simultaneously.
- 19) The biggest threat to rivers, streams, and other waterways in Northwest Ohio is:
- A. High nitrate levels.
 - B. Acid rain.
 - C. Sediment load.
 - D. Roadside litter.
- 20) Macroinvertebrates are good indicators of water quality because:
- A. They are fairly limited in relocation mobility.
 - B. They are an important food source for animals higher in the food chain and without them, the chain breaks down.
 - C. Because of their immobility, they are greatly impacted by aquatic pollution.
 - D. They breathe with gills.

Current Environmental Issues General Questions (continued):

Use the diagram and definitions below to answer questions #21 thru #23.



Sensitivity: the degree to which a land system undergoes changes due to natural forces following human interference.

Resilience: the ability of a land system to bounce back following human interference.

21) Study the diagram and definitions above. Which type of land would be most suitable for human recreation?

- A. High sensitivity, low resilience
- B. High sensitivity, high resilience
- C. Low sensitivity, low resilience
- D. High resilience, low sensitivity

22) Land that is easily degraded by human activity, but bounces back relatively easily can be categorized as:

- A. High sensitivity, low resilience
- B. High sensitivity, high resilience
- C. Low sensitivity, low resilience
- D. High resilience, low sensitivity

23) Land that is initially resistant to human activity, but once a threshold is passed, is very difficult to restore it can be categorized as:

- A. High sensitivity, low resilience
- B. High sensitivity, high resilience
- C. Low sensitivity, low resilience
- D. High resilience, low sensitivity

Current Environmental Issues Site Specific Questions:

- 24) Heavy foot traffic and motorized vehicles with high axle weights can cause serious soil compaction problems that reduce water infiltration which in turn, increases runoff and soil erosion. What sort of soil structure in the Topsoil Layer of the BoB (Blount) Soil at this station (Labeled #24) would indicate that soil compaction has occurred?
- A. Granular
 - B. Crumb
 - C. Platy
 - D. Single grained
- 25) Water tables near the surface of the soil increase the risk of soil compaction. The Grey Depletions of ferrous iron immediately under the topsoil layer indicate a seasonal high water table at that depth. What is the drainage class of this soil (See site labeled #25)?
- A. Well drained
 - B. Moderately well drained
 - C. Somewhat poorly drained
 - D. Poorly drained
- 26) Evaluate this site (Labeled #26), knowing that the intent of this location is to have family fishing opportunities. Know that you are approximately ½ mile from a water source and septic lines. What could you add to this site that would be beneficial AND have the least impact on the natural setting?
- A. Add trail signs indicating that bottled water is available at the front entrance shelter, provide a temporary port-a-jon, and provide a trash container with a lid so that animals could not open it.
 - B. Add a drinking fountain with drinking water piped from the public well located at the front gate approximately ½ mile to the north
 - C. Add a public restroom with running water obtained from pumping water out of the pond.
 - D. All of the above.
- 27) Heidelberg College needed to install electricity almost one half mile back to this point (Labeled #27) in order to power their research station located here. The decision had to be made about how to install this power source. Which of the following do you feel is the most accurate statement about this decision?
- A. Underground utilities are always preferred over overhead utilities as the hazards to wildlife are minimized (such as flight patterns being disrupted by power lines), and aesthetics are maximized.
 - B. Overhead power lines were considered, but were decided not acceptable because of the large number of tree branches in close proximity and the potential hazards of future maintenance.
 - C. Both of these are accurate statements

Current Environmental Issues Site Specific Questions (continued):

- 28) It is being proposed that a parking area is needed in this back area of the farm to hold up to ten cars to allow access for fishing and small programs held here. Where do you think we should place this parking area in order to create the most benefit with the least impact to natural resources?
- A. The Black Walnut trees, planted here from seedlings in the 1970s, should be removed, and the parking area put in its place. This area is mostly level already. (See area labeled 28A)
 - B. Remove the warm season prairie grass and old field habitat area that was planted in 1998. It is close, high and dry, and is upslope of the headwaters of Sugar Creek. (See area labeled 28B)
 - C. Move the parking lot to the two acre agricultural field west of the pond, as it is difficult to use for production agriculture because of its small size and difficulty accessing it with large tractors and combines of today's industry. This location is also furthest away from the Sugar Creek floodplain. (See area labeled 28C)
 - D. All of the above could be considered equal impacts to the natural features at this location.

**2008 Area 1-Northwest Ohio Envirothon
ANSWERS—CURRENT ENVIRONMENTAL ISSUE
STATION
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- 1) C
- 2) B
- 3) D
- 4) B
- 5) C
- 6) E
- 7) C
- 8) D
- 9) D
- 10) A
- 11) C
- 12) A
- 13) A and C both
- 14) D
- 15) D
- 16) D
- 17) D
- 18) C
- 19) C
- 20) C
- 21) D
- 22) B
- 23) C
- 24) C
- 25) C
- 26) A
- 27) C
- 28) C