

## AQUATIC ECOLOGY STATION

Instructions: You have one (1) hour to complete the following questions. Partial credit may be awarded on some questions, so BE THOROUGH! If you need additional space, write on the back of the sheet and number your answers.

1. Define Watershed. [3pts]

All the land that drains to a specific point on the landscape.

pts

3

2. Draw a picture of the water cycle using this watershed and include at least five (5) of the nine (9) major water storage locations found in the water cycle. [15 pts]

- Clouds
- Lake
- Soil
- Plants
- Animals
- Groundwater
- River

15

3. List five (5) functions and/or values of a Wetland. [3 pts each for total of 15]

- water quality improvement
- flood protection
- erosion control
- groundwater recharge and discharge
- biological habitat
- education
- recreation
- aesthetic value
- economic

15

33

Page 1 Subtotal

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Page 1 33 + Page 2 32 + Page 3 22 + Page 4 13 = Point Total for Aquatic Ecology 100

Page 5 25 = Point Total for Special Topic 25

4. List the eight (8) types of Wetlands found in Oklahoma. [1 pt each for total of 8]

- riparian corridor
- swamp
- marsh
- bog
- oxbow
- closed depression
- forested wetland
- playa

pts

8

5. Identify the labeled fish. [2 pts each for total of 8]

- a. Common name: bluegill
- b. Common name: shiner
- c. Common name: mosquitofish
- d. Common name: silver sides

8

6. Identify the labeled invertebrates. [2 pts each for total of 8]

- a. Common name: beetle
- b. Common name: crawfish
- c. Common name: shrimp
- d. Common name: scud

8

7. List a 4-stage aquatic food chain using the animals identified in Questions 5 & 6. [8 pts, no partial credit]

Example: shrimp ⇒ crawfish ⇒ bluegill ⇒ scud

8

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8. List a 4-stage aquatic food chain of organisms found in this area NOT using the animal identified in Questions 5 & 6. [8 pts, no partial credit]

pts

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8

9(a). Identify the labeled piece of equipment. [3 pts]

**Seine**

3

9(b). Label the parts indicated on the equipment in Question 9(a).  
[1 pt each for total of 3]

- a. **brails**
- b. **float line**
- c. **lead line**

3

10(a). Identify the labeled piece of equipment. [3 pts]

**Gill net**

3

10(b). Label the parts indicated on the equipment in Question 10(a).  
[1 pt each for total of 2]

- a. **float line**
- b. **lead line**

2

11. Choosing from the two (2) pieces of equipment identified in Questions 9 & 10, which one would you use to determine the success of last year's *Lepomis spp.* hatch? [3 pts]

**Seine**

3

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12. Using the equipment provided, determine the following parameters for this part of the lake. Include appropriate units with your answers. [2 pts each for total of 8]

pts

a. Water Temperature: 58 - 65 °F (depending on time of day)

8

b. Air Temperature: depends on time of day

c. Dissolved Oxygen: 9 - 11 mg/L

d. pH: 8.0 - 8.5

5 bonus points were given if proper safety equipment was used during the water chemistry portion of the test.

13. Based on the information from Questions 5, 6, 12, & 15, rate the relative health of this aquatic ecosystem. Briefly explain what led you to this conclusion. [5 pts]

Relative health is Fair.

5

Statements related to the following:

- water chemistry parameters
- species diversity
- habitat components

14. Due to the multijurisdictional regulators on Lake Texoma, what is the #1 obstacle that must be overcome before any new management regulations can be implemented on this lake? [5 pts]

pts

**too many jurisdictions trying to regulate the lake**

**5**

15. List five (5) factors affecting this site's aquatic ecosystem in a negative manner. [2 pts each for total of 10]

**10**

**Factors related to the following:**

- **water quality**
- **water quantity**
- **invasive species**
- **loss of habitat**

16. List one (1) best management practice that can be done at this site to improve the water quality for each of the five (5) major water storage locations you listed in Question 2. [2 pts each for total of 10]

**Depends on answers in Question 2.**

**10**

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