

Envirothon . 2017  
4. 26. '17

# 2017 Aquatics Exam

TEAM: \_\_\_\_\_

Score total: \_\_\_\_\_ /80

Fill in the blank... 8 points (2 each)

1. Ocean acidification is a(n)\_\_\_\_\_ in pH, caused by absorption of \_\_\_\_\_.
2. Oysters make their shells out of\_\_\_\_\_.
3. The\_\_\_\_\_ is the official state fish of Washington.
4. Most of Earth's oxygen is produced by \_\_\_\_\_.
5. What causes eutrophication in the Hood Canal? 4 points
  - a. Excess nitrogen
  - b. Minimal water circulation
  - c. Sunlight
  - d. All of the above
6. Which of these are invasive aquatic species in Washington? Circle all that apply... 2 points
  - a. European Green Crab
  - b. Atlantic Salmon
  - c. Coastal cut throat trout
  - d. Pygmy whitefish
7. What kind of estuary is the Salish Sea? 5 points
  - a. A coastal plain estuary caused by rising sea levels after the last ice age.
  - b. A tectonic estuary created where land subsided.
  - c. A bar-built estuary formed by sand bars that built up along the coastline.
  - d. A fjord estuary cut deep by glaciers
8. Which of the following rivers does NOT empty into Puget Sound? 2 points
  - a. Skagit River
  - b. Columbia River
  - c. Chehalis River
  - d. Dungeness River

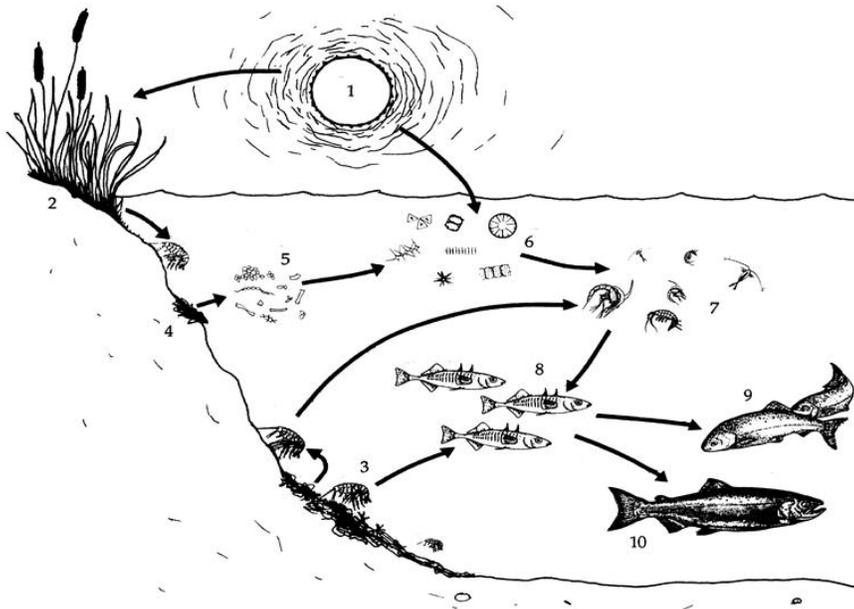
9. About how much water does an oyster filter daily? 4 points
- a. 40 gallons
  - b. 10 gallons
  - c. 100 gallons
  - d. 3 gallons
  - e. Less than a gallon

10. Match the terms to their definitions... 14 points (2 each)

|    |  |           |  |   |  |
|----|--|-----------|--|---|--|
| a. |  | Marsh     |  | 1 | Sites occurring along flowing water courses, the water course itself, and the surrounding terrain and vegetation. Subject to flooding and sedimentation processes. |
| b. |  | Bog       |  | 2 | A wetland dominated by woody plants.   |
| c. |  | Fen       |  | 3 | Water or soil with a pH greater than 7.4. Relatively high concentration of available base cations.   |
| d. |  | Swamp     |  | 4 | A wetland that has soft-stemmed plants adapted to grow in saturated soil conditions.   |
| e. |  | Anaerobic |  | 5 | A peat moss wetland that gets most of its water from precipitation.  |
| f. |  | Alkaline  |  | 6 | Occurring in conditions devoid of oxygen.  |
| g. |  | Fluvial   |  | 7 | A peat moss wetland that receives water and nutrients from runoff or groundwater.  |

True or False

11. Excessive pumping of a well can reverse the natural flow of groundwater into a river, causing the water level to fall in the river. \_\_\_\_\_ 6 points (1 each)
12. Surface water runoff is an example of nonpoint source pollution. \_\_\_\_\_
13. 100% of chum salmon that hatch in Kennedy Creek return to spawn \_\_\_\_\_
14. Salmon can use the Earth's magnetic field to navigate back to their home streams \_\_\_\_\_
15. There are just as many species of Atlantic Salmon as there are Pacific Salmon \_\_\_\_\_
16. Draining salt marshes leads to a reduction in mosquito populations \_\_\_\_\_



6 points (2 each)

Estuary Food Web. (1) Sun; (2) Cattails; (3) Amphipods; (4) Detritus; (5) Bacteria; (6) Plant Plankton; (7) Animal Plankton; (8) Stickleback; (9) Immature Chinook; (10) Adult Chinook.

17.

a. Look at the estuary food web above and give one example of a primary consumer.

\_\_\_\_\_

b. Give one example of a secondary consumer.

\_\_\_\_\_

c. Give one example of a tertiary consumer.

\_\_\_\_\_

18. Match the terms with their definitions...

12 points (2 each)

|    |                  |   |   |
|----|------------------|---|---|
| a. | Floodplain       | 1 | Any vegetation that offers protection and shading for the stream and its aquatic inhabitants.   |
| b. | Riparian zone    | 2 | Sections of the stream with a relatively low velocity that flow gently and smoothly with little or no turbulence at the surface of the water. |
| c. | Runs/Glides      | 3 | The zone of the stream cross section that is usually submerged and totally aquatic.   |
| d. | Streamside cover | 4 | The low area of land that surrounds a stream and holds the overflow of water during a flood.  |
| e. | Channel          | 5 | The area of natural vegetation extending outward from the edge of the stream bank.  |
| f. | Riffles          | 6 | Shallow, turbulent, but swiftly flowing stretches of water that flow over partially or totally submerged rocks.                               |

19. Use the water quality testing kits on the bench to complete a dissolved oxygen test for sample A and sample B.

*You should be performing these tests simultaneously to make sure you can complete the activity in time.*

**Results:** Sample A-\_\_\_\_\_

5 points

Sample B-\_\_\_\_\_

a. By analyzing your data, determine which sample is most likely taken from the Nisqually River? Why?\_\_\_\_\_

\_\_\_\_\_

6 points

b. By analyzing your data, which sample is most likely taken from the wetlands? Why?\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

6 points