



Maryland State Envirothon Aquatics Study Guide

The four aquatic resource topic areas and listed objectives are similar to the Envirothon curriculum guidelines.

I. Abiotic Factors

1. Know the processes and phases for each part of the water cycle and understand the water cycle's role in soil nutrient erosion, and climatic influences.
2. Understand the concept and components of a watershed and be able to identify stream orders and watershed boundaries. Know the features of a healthy watershed and an unhealthy watershed. Understand why aquatic organisms and water quality is affected by the physical, chemical, and biological conditions of the water; this includes changes caused by climate change.

II. Biotic Factors

1. Understand the dependence of all organisms on one another (food web) and how energy and matter flow within an aquatic ecosystem. This includes oxygen, nitrogen, and carbon.
2. Identify common, rare, threatened, and endangered aquatic species as well as Aquatic Nuisance Species (ANS) through the use of a key.
3. Know how to use a dichotomous key to identify animals.
4. Be familiar with aquatic plants and animals visually and descriptively.

III. Aquatic Environments

1. Identify aquatic and wetland environments based on their physical, chemical, and biological characteristics.
2. Know characteristics of different types of aquifers, and understand historical trends and threats to groundwater quantity and quality.



3. Know Maryland's physiological provinces.
4. Be able to describe the difference between native, non-native, and invasive species

IV. Water Protection and Conservation

1. Interpret major provincial and/or federal laws and methods used to protect water quality (surface and groundwater).
2. Be familiar with the federal, state, and county agencies that provide oversight of water resources.

V. Fifth issue topic: Adapting to climate change

1. Fifth issue questions are sprinkled throughout the test; due to the transient nature of the 5th topic, specific objectives have not been defined.

