



# Seahorse Rescue Mission

## Classroom Program for Grades 9-12



**Program Description:** Seahorse populations are declining and we need your help! Students will complete background research and conduct chemical water tests as they determine the source of the pollution. Can your group save the seahorses?

**Lesson:** Learn how to test water for basic impurities. Discuss effects on animal populations.

**Conservation Message:** We have the responsibility to act, to be good stewards and to leave a healthy ecosystem for our families and future generations.

### Curriculum Objectives:

**Hamilton County, TN** students will apply the following **Grademarkers/Benchmarks:**

- ◆ Investigate the interactions of organisms with their environment through different relationships, population dynamics and patterns of behavior.
- ◆ Analyze and predict how the impact of human activities and technology affect the environment and the earth's resources.
- ◆ Convey scientific information using illustrations, effective communication skills, mathematical concepts and a variety of technologies.

**Tennessee** students will apply the following **Science Curriculum Content Standards:**

- ◆ The student will investigate the relationship and interaction between living organisms and their environment.
- ◆ The student will trace the interaction of humans with their environment.
- ◆ The student will investigate factors that influence and are influenced by the natural environment.

**Georgia** students will apply the following **Science Performance Standards:**

- ◆ Students will identify and investigate problems scientifically.
- ◆ Students will communicate scientific investigations and information clearly.
- ◆ Students will assess the dependence of all organisms on one another and the flow of energy and matter within their ecosystems.

**Alabama** students will apply the following **Science Course of Study Content Standards:**

- ◆ Identify positive and negative effects of human activities on biodiversity.
- ◆ Identify reasons coastal waters serve as an important resource.
- ◆ Identify major contaminants in water resulting from natural phenomena, homes, industry and agriculture.

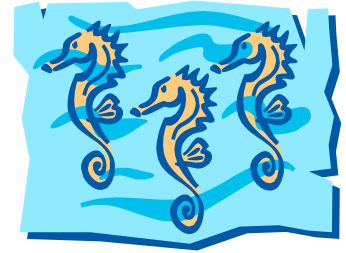
Additionally, all students will apply the following **National Science Education Content Standards:**

- ◆ Develop an understanding of natural and human-induced hazards.
- ◆ Develop an understanding of environmental quality.
- ◆ Develop an understanding of abilities necessary to do scientific inquiry.



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## Activity Sheet



*Unscramble the words to complete the sentences below:*

- \_\_\_\_\_ 1. A natural unit that includes living and nonliving parts interacting together is called an O C S E S Y M T E.
- \_\_\_\_\_ 2. A S R A T E H E D W is an area of land that drains into a water body. Its boundaries are the highest points of land around that water body.
- \_\_\_\_\_ 3. Even though they don't look like fish, H E R S A S E S O have gills and fins and are classified as fish. Some of the characteristics that set them apart from other fish are their tube-shaped mouths, independently rotating eyes, elongated bodies ending in prehensile tails, and a unique twist in reproduction with males carrying the fertilized eggs.
- \_\_\_\_\_ 4. The movement of rainfall along the top of the ground into the nearest body of water rather than soaking into the ground is called F U O F R N. This occurs when the soil cannot hold any more water or when the ground is covered with pavement or another impermeable surface.
- \_\_\_\_\_ 5. An area in which an organism lives and can obtain food, water, shelter and space is called its T I H T A B A.
- \_\_\_\_\_ 6. The P I A R A I R N N E O Z refers to the area directly adjacent to a waterway. It includes the vegetation that covers the bank and the strip of land of at least 100 feet out from the waterway. These areas can provide many benefits, including wildlife habitat, natural flood control, shoreline erosion control, pollution reduction, and recreation.
- \_\_\_\_\_ 7. Pollution where the source is broad and cannot be easily pinpointed is also called N I O P N O N T U S R O E C pollution.
- \_\_\_\_\_ 8. I P N O T U S R O E C pollution is discharge from a particular pipe or leak which can be easily pinpointed.
- \_\_\_\_\_ 9. The presence of any substance that harms the environment is called L O P T I L U N O; categories include chemical, biological and thermal.
- \_\_\_\_\_ 10. T I N T S E R U N such as phosphorus and nitrogen are used for fertilizers and are naturally found in sewage and animal wastes. Plants depend on them for growth. Excess T I N T S E R U N can enter a waterway when fertilizers are overapplied, septic systems leak, or when sewage effluent is insufficiently cleaned. In seahorse habitats, T I N T S E R U N increase algae growth which blocks sunlight from reaching the sea grass beds. The sea grasses die off and the seahorses lose their homes.

*Answers can be found on our Website at  
[http://www.tnaqua.org/KidsTeachers/Program\\_descriptions.asp](http://www.tnaqua.org/KidsTeachers/Program_descriptions.asp)*

