

# Marsh Mystery

Location: RiverWalk Learning Station 5

Program Levels: Junior, Cadette

**Objective:** Girls will be introduced to the concept of bioaccumulation and discuss factors contributing to pollution of resources.



## Materials Provided

- The Mystery of Catoctin Creek*
- Sheet of possible solutions for the town
- Identity Labels
- Pesticide necklaces
- Map of the area

## Activity Steps

1. Begin by reading *The Mystery of Catoctin Creek* to the girls. Show them the map to illustrate the story and help them trace the movement of the pesticides.
2. Ask the girls if they have any ideas how the boy might have become ill. After a couple of suggestions have been made, explain that they are going to role-play to try to find out what might have happened.
3. Explain to the girls that although you have a pretty good idea of the people's side of the story, you may be able to solve the mystery by examining the marsh animals' side of the story.
4. Give each girl an identity label and explain that they will each represent a component of the marsh ecosystem.
5. Start at the "bottom" of the food web to try and uncover clues to this mystery by following the Marsh Mystery Action Steps (on the back of the story).
6. Read the story again and review how the bioaccumulation occurred. Have the girls answer the discussion questions to ensure that they understood what happened in the story.

## Discussion Questions

- **How did the people get sick?**

Bioaccumulation of the pesticide caused the sickness. The sick people ate fish caught in the Potomac River. These fish fed in the marsh, a drainage area for the Taylorstown farms, before they moved downstream to the river. Some of the contaminated fish were sold in Point of Rocks, while others were sent to a market in northern Maryland.

- **Why didn't the people in Taylorstown get sick?**

The Taylorstown kids fished and swam in Catoctin Creek upstream of the runoff from the farms. The marsh is downstream from the farms, so it was contaminated when the pesticide washed down and accumulated in its sediment, water, plants, and fish. If the citizens of Taylorstown had eaten the marsh fish, they would have become sick, too.

- **Why didn't the water test show dangerous levels of pollutants?**

The marsh filtered out some of the pollutants, so the water that flowed on to the Potomac River was not badly contaminated. The marsh was not able to filter out all of the pesticide, however, so the chain of bioaccumulation began.

- **When pollutants wash away, are they really away? Is the problem gone? Is the presence of the marsh part of the problem?**

No! Discuss the benefits of having the marsh there (helps filter pollutants; provides food and cover for valuable animals – animals that give us food and jobs, and animals we just enjoy seeing). If people did not pollute, problems such as the one in the story would not occur.

### Extensions

#### On the Trail

Talk about the list of possible solutions to the town's problem, having the girls role-play the characters to decide which solution each would prefer. Vote on the solutions or work together to propose a compromise.

#### Beyond the Trail

Learn about the various types of wetlands. Explore salt marshes, mangrove swamps, bogs, freshwater marshes, and more. If you can, arrange to visit one. Consider going to the Battle Creek Cypress Swamp in Calvert County, MD—the northernmost Cypress swamp in the USA. Visit [www.calvertparks.org/Parks/CypressSwamp/CShome.htm](http://www.calvertparks.org/Parks/CypressSwamp/CShome.htm) for the location and more information.