

# Nested Watersheds

(Source Unknown But Used By Many)

This activity demonstrates to youth the concept that smaller watersheds make up larger watersheds, and how pollutants in a smaller watershed can ultimately affect larger watersheds.

Time: 25 minutes

Objectives:

1. Define a watershed
2. Understand that smaller watersheds make up larger watersheds
3. Identify sources of nonpoint source and point source pollution in a watershed
4. Identify ways to reduce pollution

Materials:

- 4 large clear bowls (stackable bowls that fit inside of one another - large, medium, small, and smaller – see photo below)
- 3 large industrial size cans – cut both ends of each can off/out
- food coloring (3 colors are needed)
- water to fill each bowl



Image Citation: S. Patton, University of KY CAFE

#### Instructions:

1. Before the activity begins, stack bowls using cans as seen in photo on page 1. Add water to almost fill first three top bowls. For the largest bowl fill bowl  $\frac{3}{4}$  full of water. Each bowl will represent an individual watershed.
2. To begin activity, discuss concept of watershed with youth.
3. Discuss how each bowl represents an individual watershed. Ask youth if they know what watershed they live in. Discuss how we all live in a watershed, and how smaller watersheds form larger watershed. Example: Sally lives in the Licking River Watershed, which is part of the Ohio River Watershed, which is part of the Mississippi River Watershed. Have a map of local watersheds as a visual.
4. Demonstrate how water flowing in a smaller watershed travels into larger watersheds by adding water to the first (smallest) bowl on top. Allow the water to overflow into the other bowls.
5. Talk about different pollutants that may be present in a watershed. For example, pesticides, fertilizers, oil, automobile fluids, silt, waste products, etc. Discuss nonpoint source and point source pollution.
6. Illustrate different pollutants in each watershed (or bowl) by adding different colors of food coloring to the first three bowls.
7. Discuss what happens during a rain event. The pollutants in the first watershed (or bowl) will pollute the larger watersheds.
8. Demonstrate a rain event by adding more water to the first watershed (or bowl). Discuss what happens if the second watershed (or bowl) has a rain event and the first watershed does not. Demonstrate this by adding water to the second watershed (or bowl) and not adding water to the first watershed (or bowl).
9. Discuss how these rain events have affected the larger watersheds (third and fourth bowls). Discuss what happened to the different colors that represented different pollutants. Did the colors mix? Relate this to nonpoint source pollution. Discuss how the different colors of food coloring mixed and now cannot be distinguished from one another. Talk about nonpoint source pollution and how it cannot be separated out to one source or starting place.

#### Reflection Questions:

1. What pollutants may be present in the watershed you live in?
2. How can these pollutants be reduced? Discuss ways 4-Hers can decrease pollution in their watershed.

#### Opportunities:

- Take a walking or driving tour of your watershed. Identify sources of pollution.
- Host a communitywide clean-up event. Hand-out educational materials, such as fliers and brochures, to inform others about local watersheds and water quality.

#### 4-H Life Skills

Head: Critical Thinking and Learning to Learn

Heart: Communication and Sharing

Hands: Responsible Citizenship

Health: Self-Responsibility

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