

# Liquid Assets

Teacher Newsletter of the Slow the Flow Water Education Program

Fall & Winter 2008

**FortWhyte Alive** HUMAN. NATURE.



## Wetlands



### Did you know?

Wetlands are greatly threatened. Twenty-five percent of the world's wetlands are found in Canada, but up to 70% of Canada's wetlands have been lost.



### Quick Facts

Wetlands clean water by slowing it down. The reduced flow causes large particles to drop out of the water column, clearing the water. The slow-down also allows plants to absorb nitrogen, phosphate, and other pollutants from the water as they grow. Water enters a wetland carrying a high load of particulate and dissolved material, and leaves in a cleaner, clearer state.

The Prairie Pothole region of North America, covering parts of Manitoba, Saskatchewan, Alberta, North and South Dakota, Minnesota, Nebraska, and Iowa is considered to be the most productive area on earth for breeding waterfowl. A pothole is a small pond formed by glacial activity—perfect habitat for nesting ducks. Sadly, in some areas, up to 90% of the potholes have been drained.

### Why are wetlands important?

Not only are wetlands the home of approximately 600 species of wildlife in Canada, they also keep our water clean. Wetlands are often called the kidneys of the earth because they filter our water of harmful pollutants, excess bacteria and excess nutrients such as phosphorus and nitrogen. Wetlands also act as a natural sponge by storing excess water, preventing flooding. Water is then slowly released, reducing the impact of drought. Groundwater is also recharged by wetlands. Finally, wetlands are a great place to have fun! You can canoe, fish and watch wildlife in a wetland.

### How do we know if our wetlands are polluted?

Many animals spend the majority of their lifetime in water which makes them good indicators of water pollution. Some invertebrates such as stonefly and mayfly nymphs are pollution intolerant, whereas rat-tailed maggots, for example, are pollution tolerant. Finding a variety of invertebrates in a wetland indicates good water quality. Even amphibians such as frogs can indicate water pollution. When pollutants such as herbicides and fertilizers end up in our wetlands, mutations and deformations in amphibians can occur. Wetlands are nature's way of filtering and cleaning water, but they can only handle so much pollution before damage occurs. Man-made chemicals such as pesticides can cause problems, as very few living organisms have the capacity to metabolize, or break down, these compounds.

## How Does a Wetland Work? A Classroom Activity

We know wetlands act as sponges, cleaning our water ... but how does the process work? This activity illustrates the action of a wetland cleaning water—in the classroom!

### Materials:

Large pan	Measuring cup
$\frac{3}{4}$ cup water	Large sponge
1 tbsp pepper	Scissors

**1.** Discuss water pollution with the students. Explain to the students that the sponge represents a healthy wetland with plants. Have them cut the sponge so it can fit snugly in the middle of the pan.

**2.** Pour water into the measuring cup and add pepper which represents pollutants.

**3.** Pour the water in the pan on one side of the sponge. Make sure water does not rise above the sponge. Slowly tilt the pan so the water goes through the wetland. What does the water look like once it passed through the wetland? Did the sponge trap most of the pepper?

**4.** Ask the students to cut a piece of the sponge, either from the ends or the middle. Repeat the experiment. What happens when you destroy part of the wetland? Was the sponge able to trap most of the pepper?

**Need more information or activities to supplement *Slow the Flow* lessons? Call the FortWhyte Alive Water Education Coordinator at 989-8358.**



We all use water. As your students are a part of the age group that uses the most water per capita, any changes they can make to conserve will have a significant impact.

**DID YOU KNOW?  
TEENAGERS ARE  
THE LARGEST  
HOUSEHOLD  
WATER  
CONSUMER!**

### Need A Break ?

Students need a break from the classroom? Take a field trip to FortWhyte Alive for our **Blue Planet** school program this spring. This great program is designed for grade 7 and 8 and teaches students the importance of water conservation. Only 1% of the water available on earth

is freshwater, so we need to conserve this precious resource. We'll guide you through our wetlands and give you a chance to experiment with cleaning water.

For a change of pace, why not borrow a video, like *Down the Drain*, FREE, from FortWhyte's

library? Call our Education line at 989-8358 for details.

#### ***Down the Drain*** (12 minutes)

*Tour the City of Winnipeg's water supply from the intake gate at Shoal Lake, into our homes and workplaces, and out to the river via water treatment plants.*