

Wetland Metaphors

Citizens in this rapidly developing world must understand the benefits of wetlands as a resource for humans.

Objectives: Students will be able to:
1) describe characteristics of wetlands;
and 2) demonstrate their understanding of the importance of wetlands to wild-life and humans.

Methods: Use a selection of common objects for investigation as metaphors for natural functions of wetlands.

Grades: 1 - 12.

Time: 30-40 minutes.

Materials: large pillowcase, bag or box; sponge; small pillow; soap; egg beater or mixer; small doll cradle or pictures of nursery items; sieve or strainer; paper coffee filter; antacid tablets; small box of cereal or wild rice; 3x5 cards with (magazine) pictures representing other functions (see chart).

Background: *Why should we study wetlands?* We should care about wetlands because they provide special benefits to plants, animals, humans, and the total environment.

Because of the abundance of food, vegetative cover (shelter), and water found there, most wetlands are rich with diverse wildlife species. Coastal and inland marshes, for example, provide breeding, resting and wintering habitats for thousands of migratory birds -- including ducks, geese, swans, herons and other wading birds, and shorebirds. Many species of fish and shellfish that are important for commercial and personal use by humans reproduce and spend part, or all, of their life cycle in fertile wetlands adjacent to larger, more open bodies of water. A wide variety of reptiles, amphibians, insects, and crustaceans also breed and live in wetlands. Many mammals also depend upon wetlands. Often referred to as "nurseries," wetlands provide critical breeding and rearing habitat for countless numbers and kinds of wildlife.

Wetlands also have the unique ability to purify the environment. They act as natural filtering systems and have been shown to be extremely effective; e.g., they trap and neutralize sewage waste, allow silt to settle, and promote the decomposition of many toxic substances.

Wetland vegetation is highly beneficial. Plants absorb nutrients and help cycle them through the food web, and keep water's nutrient concentrations from reaching toxic levels. Through photosynthesis, they add oxygen to the system and

provide food to other life forms. Of great importance to humans is the flood control ability of wetlands. When runoff from rain and spring thaw is high, wetlands absorb excess water until it gradually drains away down streams and rivers and through the soil. Acting as buffers, healthy wetlands prevent flooding and erosion. In drier periods, wetlands hold precious moisture after open bodies of water have disappeared.

As remarkable and resilient as wetlands are, they do have limits. Their destruction and/or abuse -- through draining and filling for conversion to agriculture or the construction of roadways and housing developments, or general pollution -- can have devastating effects on wildlife, humans, and overall environmental quality. Although many wetlands are protected by federal and state laws, there is still a significant need to create a greater understanding of the importance of wetlands as wildlife habitat and as ecosystems that benefit us.

Procedure: Prepare a "Mystery Metaphor Container" (pillowcase, bag or box) filled with the common objects -- enough for each student or each small group of students. The container should have an opening large enough for a hand to reach in and retrieve an object.

➤ Introduce wetlands to the class, if you have not already, through posters, pictures, stories, etc. Ask: *How do you feel about wetlands? Do you think wetlands are important and why?* Discuss their answers and make a list of "pros" and "cons" on the board. Explain that you would like to see if they can expand the "pros" list through the use of

metaphors. Explain that metaphors represent a concept or idea through another concept or idea, such as "A tree is a home," or "books are windows of thought." The metaphors in this activity are common objects that represent benefits of wetlands.

➤ If necessary, provide the class with background information on the natural functioning of wetlands and their value as wildlife habitat. Use "Wetland In A Pan," page 95, if you need to give a demonstration.

➤ Divide the class into groups of four or five. A representative from each group will choose an item from the "Mystery Metaphor Box." All items in the box have something to do with wetlands. Each group must decide how the object could represent what a wetland is or does. Allow time for them to discuss their answers as a group, then each group will present its object and ideas to the class. Examples are given in the chart below, but students may come up with other clever ideas.

➤ As students report to the class, discuss each idea and invite others to add to those ideas. Add "pros" to the list on the board. At the end, ask the class to summarize the major roles that wetlands perform. *Have your attitudes about wetlands changed?* Close the activity by noting that humans have a connection to wetlands and that their survival depends largely on human activities. Other activities in this guide expand upon this point.

[Credit: "Wetland Metaphors," *Aquatic Project WILD*, pp. 49-52, © 1987, Western Regional Environmental Education Council. Used with permission from *Project WILD*.] ②

OBJECT	METAPHORIC FUNCTION
1 sponge	absorbs excess water caused by runoff; retains moisture for a time even if standing water dries up (sponge stays wet even after it has absorbed a spill)
pillow or bed	is a resting place for migratory birds
egg beater	mixes nutrients and oxygen into the water
cradle	provides a nursery that shelters, protects, feeds young wildlife
strainer	strains silt, debris, etc. from water (keeps water supply clean)
coffee filter	filters smaller impurities from water (excess nutrients, toxics)
antacid	neutralizes toxic substances
cereal, rice, picture of garden	provides nutrient-rich foods for wildlife and humans
soap	helps cleanse the environment as a whole
picture of zoo	habitat for a diversity of wildlife
picture of resort	resting or wintering place for migrating waterfowl