Wetlands and Their Inhabitants

Teacher's Guide

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Objectives:

After completing this lesson, students will be able to:
- Describe a wetland environment.
- Describe the basic value and functions of wetlands.
- Identify the plants and animals that rely on wetlands to live.

Maryland Learning Outcomes:

Social Studies Skills

Students will demonstrate an understanding of historical and current events using chronological and spatial thinking, develop historical interpretations, and frame questions that include collecting and evaluating information from primary and secondary sources.

- Find, interpret, and organize primary and secondary sources of information including pictures, graphics, maps, atlases, artifacts, timelines, political cartoons, videotapes, journals, and government documents.

Worksheets:

- Wetland Inhabitants Worksheet
- Wetland Web
- Marsh Metaphors

Teacher Background:

Chesapeake Bay wetlands – indeed, all wetlands – are valuable for many reasons. They provide clean water, sources of food, habitat for wildlife, flood control, and recreational opportunities. The importance of wetlands to our lives makes them a meaningful topic of study.

Introduction and Motivation:

Introduce a simple definition of a wetland to your students, i.e. "marshy land that is at the edge of a body of water, such as a river, creek, lake, or bay." This should help students to realize that at some point, each of them has probably seen a wetland, if only on television or in a book. Introduce students to some historical and literary references to swamp and marsh lands. Examples include:

Henry David Thoreau

"I enter the swamp as a sacred place – a sanctum sanctorum. There is the strength, the marrow of Nature."

Gerard Manley Hopkins

"What would the world be, once bereft
Of wet and of wildness? Let them be left,
O let them be left, wildness and wet;
Long live the weeds and the wilderness yet."

Your students might also enjoy discussing the ways in which wetland terminology has become part of our modern speech. Phrases like "bogged down," "swamped," or "get stuck in the mire" all reflect characteristics associated with marshes. Ask your students what they think a wetland is like – what does it look like, how does it smell, etc.?

Lesson Development

This lesson does not require students to leave the *Exploring Maryland* web site. It is designed for the students to complete independently, or with a moderate amount of teacher assistance.

At the start of this lesson, your students are asked to imagine the types of places that the crew aboard *Pride II* see as they travel around Chesapeake Bay. You might use this as an opportunity to lead a brainstorming session listing all of the possible land uses around the Bay. They may come up with cities and towns, farms, fields, forests, and marshes.

Next, students are asked to imagine the sorts of plants and animals that the crew might see. Again, you can do this part as a group, allowing students to brainstorm a list, or students can complete this activity independently, or with a partner. Ask them where they think most of these animals live or find food. This is a good introduction, as most of the wildlife associated with water in Maryland rely on wetlands for food or protection at some stage in their lives.

To truly understand the value of wetlands to the entire Bay watershed, students will need to know not only about wetlands as habitat, but also about the role they play in flood control and filtering water. Throughout this lesson, wetlands can be compared to everyday objects in an attempt to clarify the important things that wetlands can do. Wetlands are sometimes like sponges, absorbing and holding water. They are also a nursery for baby fish and other critters. They filter water like a coffee filter and act as a strainer for larger particles. These ideas will be reviewed when students complete the Marsh Metaphors Worksheet at the end of this lesson.

This lesson focuses particularly on the interactions between wetland inhabitants. The salt marsh ecosystems of Chesapeake Bay are among the most productive ecosystems in the world. Tiny bits of decaying plant matter called detritus form the base of the salt marsh food web. The bacteria that eat these plants are consumed by fiddler crabs, snails, insects, and even some fish. Larger birds and mammals eat these smaller critters. Students will complete a simple food chain using the Wetland Web Worksheet.

It's important to remember that humans are an important part of this chain. In fact, almost every type of Bay seafood that we enjoy depends upon wetlands for survival at some point in its lifecycle! Consider discussing the importance of seafood in Maryland with your students.

Allow them to think about who might be affected if wetlands continue to be lost throughout our watershed.

Thoughtful Application:

The Marsh Metaphors Worksheet can be used to assess your students' understanding of the functions of a wetland. If students can describe the similarities between wetlands and a sponge, a coffee filter, a house, and other appropriate objects, then they have clearly grasped the ideas illustrated in this lesson.

After the students have completed the Marsh Metaphors Worksheet, they are asked to think again about the crew aboard *Pride II* as they travel around Chesapeake Bay. Students are asked to draw a picture of a wetland scene. They are then directed to write a short description of an encounter with a wetland creature. You will need to supply paper for this final activity.

Scoring Tool:

Students will receive	
2 Points	· If the drawing includes characteristic wetland water, plants, and grasses, and several wetland creatures. · The description correctly describes an encounter between a human and a wetland creature.
1 Point	· If the drawing includes characteristic wetland water, plants, and grasses, and at least one wetland creature. · The description minimally describes an encounter between a human and a wetland creature.
O Points	· If the drawing does not includes characteristic wetland water, plants, and grasses, and contains no wetland creatures. · The description incorrectly describes an encounter between a human and a wetland creature.

Lesson Extensions:

- To more fully assess your students' understanding of the complexity of life in a wetland, ask your students to create a 3-dimensional food web that includes at least 5 living things and shows the relationship between them.

- Make a marsh mural! Allow students to create a wetland scene that includes plants and wildlife that they might expect to find in a Bay wetland. Show interactions between various organisms. Display the mural in a well-traveled hallway for the whole school to enjoy.

- "Visit" a freshwater marsh on the Jug Bay Wildlife Sanctuary's web site http://members.aol.com/jugbay/Tour.htm. If possible, follow-up by taking a real tour of the sanctuary with one of the staff naturalists. Such a visit offers excellent opportunities for students to participate in data collecting "hunts" for specific plants, birds, reptiles, and amphibians.

- Create a schoolyard wetland. Including students in planning and planting a wetland study area on the school grounds provides the opportunity for long-term hands-on observation of life in this exciting ecosystem. The National Wildlife Federation, U.S. Fish and Wildlife, and Environmental Concern all have materials that can help you get started.

- Visit the NOAA photograph and image collection web site to find more pictures of the Chesapeake Bay wetlands and inhabitants: http://www.photolib.noaa.gov/index.html

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