Discover!

Science

SAMPLE PDF

5B

Table of Contents

Lesson 42

Wetlands

By the end of this lesson, you will be able to:

- identify the different types of wetlands
- recall the effects humans can have on a wetland biome
- recognize how wetlands help the areas around them

Lesson Review

If you need to review aquatic biomes, please go to the lesson titled "Marine and Freshwater Biomes."

Academic Vocabulary

Read the following vocabulary words and definitions. Look through the lesson. Can you find each vocabulary word? Underline the vocabulary word in your lesson. Write the page number of where you found each word in the blanks.

- **bog:** a wetland biome that has low levels of nutrients (page ____)
- **marsh:** a wetland biome that can be found in freshwater or saltwater areas and is characterized by tall, soft grasses (page ____)
- **swamp:** a wetland biome that has by woody plants and trees (page ____)
- **wetland:** an aquatic biome that has plants that require constant submersion throughout the year (page ____)

Materials Needed

three empty three-liter bottles or milk cartons, four large glass jars, three cups of sand, three cups of garden soil, three cups of soil with plants and moss attached, eight cups of water, eight tablespoons of dirt, tape, a stopwatch

IN THE REAL WORLD

Take a quick trip to a local area that is constantly covered in water. What type of plants do you see here? How do they differ from other plants nearby? What other unique characteristics do you see at this location?

EXPLORE

Imagine you are traveling down the Mekong River in Vietnam on a boat similar to the one pictured on this page. You notice that there are unique plants located along the riverbank as you reach the place where the Mekong meets the ocean. The water in this location appears to be still. As you look into the brown water, you wonder what type of animals live here and how they might be similar or different from those further upstream or in the ocean. What types of animals do you think of? How do you think they would be similar or different to other animals that live in a different aquatic environment?

ANIMAL	HOW IT'S SIMILAR OR DIFFERENT TO OTHER ANIMALS

ONLINE CONNECTION

Mekong River

Use the internet to search for the location of the Mekong River. On a sheet of paper, create a map detailing its location. Circle where the river delta would be (where the river meets the ocean). Draw the unique plants and animals you think you would observe at this location.

READ

Wetlands

Areas such as the Mekong River delta are known as wetland biomes. **Wetland** biomes are a unique type of aquatic biome with plants that require constant submersion in water to survive. Wetland biomes can be found in terrestrial biomes around the world and can range from small areas of land to large swamps, such as the Everglades in southern Florida. Wetlands are unique because the water is stationary. Stationary means it does not move. The water level varies throughout the year in a wetland biome as it depends on the amount of rainfall.

Wetland biomes are also known as "nature's water filter." When it rains, wetland biomes serve as a net and catch the runoff water before it reaches aquatic biomes such as rivers, lakes, and oceans. The soil and plants in wetland biomes filter sediment like dirt and soil and pollutants like insecticides and herbicides, which are harmful chemicals used in farming, before the water continues into other aquatic biomes. The nutrients or chemicals found in the filtered particles are then consumed by the plants and animals that live within the wetland biome.

The Everglades

Lagoon in Comacchio, Italy

PRACTICE

Which of the following is a characteristic of wetland biomes?

A. They have the highest salt concentration of any biome.

B. They are dry during the summer months.

C. They have unique plants that are constantly submerged in water.

READ

Bogs, Marshes, and Swamps

Bogs are wetland habitats known for having very low levels of nutrients. Bogs form over thousands of years as a lake or pond fills with sediment. As sediment settles to the bottom of the lake, the water depth decreases, creating shallow, stationary water. This allows different plants and animals to thrive.

Marshes have soft, tall grasses like cattails and cordgrass. Marshes are excellent habitats for animals such as alligators and herons. They feed on the small reptiles and fish that hide in the tall grasses.

Swamps have woody plants and trees growing in the water. The mangrove swamps of the Mekong River are examples of this type of wetland. Cypress trees grow in large, swampy areas of eastern Texas and Louisiana along the Trinity River. Swamps are home to unique fish species such as alligator gar, as well as numerous snakes, alligators, and migratory birds.

Cordgrass

Alligator Gar

ONLINE CONNECTION

Everglades

Research the Everglades marsh of southern Florida. Create a poster or digital presentation detailing the unique plants and animals that make this habitat their home. Be sure to include characteristics of each.

TAKE A CLOSER LOOK

Wetlands as Nature's Water Filter

Create a model demonstrating how wetlands filter and purify runoff before it reaches aquatic biomes. To do this, you will need three empty three-liter bottles, four large glass jars, three cups of sand, three cups of garden soil, three cups of soil with plants and moss attached, eight cups of dirty water, tape, and a stopwatch.

1. Cut the bottom off of the bottles so that you are left with a funnel shape.
2. Place a bottle upside down in three of the jars. Secure the bottles to the jars with tape.
3. Pour two cupfuls of dirty water into the glass jar that does not have a bottle attached. Label this jar "A."
4. Fill one jar with three cupfuls of sand. Label this jar "B."
5. Fill another jar with three cupfuls of garden soil. Label this jar "C."
6. Fill the final jar with three cupfuls of soil and attach plants/moss. Label this jar "D."
7. Pour two cupfuls of dirty water into the bottle connected to jar "B." Use the stopwatch to record how long it takes for all the water to reach the bottom of the jar. Record this time in the table below.
8. Repeat with jars "C" and "D." Record the times for each in the table below.

JAR	TIME	DESCRIPTION OF WATER (CLOUDY, PARTLY CLOUDY, CLEAR)
B		
C		
D		

Which jar represents the wetlands biome? Why?

REVIEW

In this lesson, you learned:

- Wetland biomes are characterized by the unique plant species that grow in the stationary water present in this habitat.
- Bogs, marshes, and swamps are all examples of wetland habitats.
- Wetland biomes are nature's water filter due to their ability to filter sediment and chemicals from runoff before it reaches rivers and oceans.

Think About It

If the plant species found in wetland habitats were destroyed or decreased, what would happen to the biome's ability to filter runoff water?

SHOW WHAT YOU KNOW

Fill in the blanks with the correct vocabulary word.

Word Bank: marshes bogs swamps

1. _____ are characterized by very low nutrient levels.
2. _____ are characterized by woody plants and trees.
3. _____ are characterized by soft, tall grasses.

Choose the correct answer for each question.

4. An area of stationary water is located close to the coastal region. The water level varies slightly throughout the year, but grasses such as cattails are predominantly found in this area. What type of wetland habitat is most likely being described?
   - **A.** bog
   - **B.** swamp
   - **C.** coral reef
   - **D.** marsh

5. Which of the following would have the most negative impact on a wetland biome?
   - **A.** the opening of a new factory that dumps chemicals near the area
   - **B.** the introduction of a new species of fish to the area
   - **C.** the removal of an invasive plant species
   - **D.** treating the local plants for a fungus that was threatening to kill the plants

CREATE

Local Wetland Biome Model

Research and create a model of a specific wetland habitat such as a marsh, swamp, or bog found in your area. Use supplies from around your house such as cardboard boxes, index cards, colored pencils, and modeling clay to provide the following information:

- name of your habitat
- unique characteristics of the habitat
- specific plants and animals found in your wetland habitat

Answer the following question.

6. You discover that farmers above a local marsh are spraying their crops with high amounts of a pesticide. You observe that the amount of cordgrass in the marsh appears to be decreasing. You decide to write a letter to the farmers asking them to stop using the pesticide. What are two reasons you would give for why the farmer should stop using the pesticide?

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