

What Lives in a Wetland? *Handout*

Students practice for the FCAT while learning about Florida wetlands

WETLAND WONDERS

How can you tell that a place is really a wetland? It's not as easy as you might think. These important ecosystems come in many different forms, including estuaries, swamps, marshes, rivers, springs, and lakes. Some wetland areas are underwater throughout the year. Others are only damp and mucky during the rainy season. Some wetlands have salty water, while others have fresh water. So how can you be sure something is a wetland? Well, all wetlands have two things in common. First, they're all wet — at least for part of the year. Second, they are full of plants and animals which are built to survive in wet habitats.

Wetland plants have adapted to handling tough conditions, including poorly oxygenated soil, poor stability, and for some living in the water, low sunlight. For example, did you know plants breathe in oxygen through their roots? This causes problems in a wetland when roots are covered by water. Cypress trees deal with this problem by growing roots that stick up above the surface of the water, like snorkels. These cypress "knee" snorkels may help the roots to breathe and make the tree more stable in soggy wetland soils. Stability is also important in wetlands because soft, muddy soils cannot anchor a tree against high winds. To help hold themselves upright, many wetland tree trunks become "buttressed," with wide, swollen bases. If you see a buttressed tree trunk, this is a clue that the area is probably wet during some part of the year. These same trunks lift wetland tree leaves high above the water's surface to reach sunlight. Lacking this strong trunk, underwater plants must deal with the layer of water that stands between them and the sun's rays. Lily pads have a unique solution; their leaves float up to the water's surface where they can reach sunlight!

Wetland birds and mammals have their own set of challenges to deal with, including staying warm, keeping dry, and moving effectively in a watery environment. For example, swimming underwater all day can really lower an animal's body temperature. Manatees handle this problem by growing thick layers of fat and blubber to keep them warm. Wetland birds face another difficulty; damp feathers don't fly very well. They've got to keep their feathers dry. Fish-spearing birds, like egrets, have long, skinny legs and long, thin beaks that hold their feathers well above the water. Ducks keep their feathers dry by spreading natural waterproof oils on their feathers. These birds are constantly preening – combing their feathers and keeping them well oiled - which allows them to swim as often as they like while keeping their feathers dry. All three of these animals are built for moving effectively in wetland environments.

An egret's long, thin toes help it balance on muddy shores. The duck's webbed feet and the manatee's broad tail help to move them through the open waters. But each of these animals must still get its head to the surface to breathe. Frogs have webbed feet like ducks, but they have an extra adaptation that helps them move effectively through water. They can breathe through their skin. That way, if frogs are underwater too long, they have a back-up plan for getting oxygen! Humans do not have blubber, webbed feet, or breathable skin to adapt them for living in or under water for prolonged periods of time. As a result, people should take safety precautions when visiting swimming areas. Remember, knowing how to swim can save your life! If you don't already know how, learn today!

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1. According to the article, what are two ways that plants are adapted to survive in wetland environments?

2. According to the article, all wetlands have two things in common. Which of the following best describes those two things?

- a. Deep fresh water throughout the year and tall white egrets
- b. Salty water part of the year and plants adapted to handle salt
- c. Water during part or all of the year and water-adapted plants and animals
- d. Water only during the rainy season and lily pads that float

3. If the article needed a new title, which of the following would work best?

- a. Wet or Dry?
- b. Wetland Adaptations
- c. Amazing Animal Adaptations
- d. Cool Wetland Plants

4. People have different opinions about natural areas like wetlands. Use details from the article to prove that the following opinion is FALSE: "Wetlands are all the same – soaking wet and filled with nothing but bugs."

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FCAT-FRIENDLY WRITING PROMPTS:

1. Wetland soils are often dark and oozing, and smell sulfurous like boiled eggs. Think about the kinds of soil (dirt) you've seen in schoolyards, neighborhoods, parks, or beaches. Write to explain how a kind of soil you've seen looks, feels, or smells different from wetland soils.
2. At night, Florida wetlands are filled with the sounds of frogs. Imagine that you are a frog calling as loud as you can. Write to explain what your song is saying to other frogs.
3. Florida swamps have beautiful orchid flowers, buzzing mosquitoes, and cool, still waters. Imagine that flowers, mosquitoes, and water could talk. Write a story about a conversation they might have in a Florida swamp.
4. Large mammals, including bears, panthers, and manatees, live deep inside some Florida rivers and wetlands. Imagine that you are a bear, panther, or manatee. Write a story about the first time you see a human being visiting your river or wetland.

FCAT-FRIENDLY MATH QUESTIONS:

1. Plants that are brought to Florida from other places are called "exotics." These exotic plants sometimes invade wetland areas that should be filled with Florida plants. The table shows the dates that several exotic plants were introduced into Florida. Choose the date that reflects the "mode."

- a. 1565
- b. 1871
- c. 1930
- d. 1950

2. Hygrophila plants were imported from India for use in household aquariums. These plants were released into Florida wetlands and have become a serious problem because they spread so quickly. In one year 0.1 acres of hygrophila can grow enough to cover 10 acres. If 2 acres of wetland in your neighborhood is covered by hygrophila plants now, how many acres will be covered after 1 year?

- a. 20
- b. 40
- c. 200
- d. 400

Florida Exotic Plant Introduction Dates

Exotic Plant	Date Plant was Brought to Florida
Water Lettuce	1565
Skunk Vine	1897
Wild Taro	1910
Latherleaf	1930
Melaleuca	1930
Hygrophila	1945
Hydrilla	1950

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3. Latherleaf plants are invading the Florida Everglades. Stems of this plant can grow 32 feet in one year. How many feet do these plant stems grow in one month? Be sure to show your work and round your answer to the nearest tenth.

4. The water hyacinth is a floating plant that forms dense green mats across the top of the water. This plant grows very quickly. It can double its population in only eight days. If one water hyacinth invades a lake, how many hyacinth plants will there be after 8 weeks? Round your answer to the nearest whole number.

- a. 32
- b. 64
- c. 128
- d. 256

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