

WaterWeb

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT

Florida's Wetlands

TEACHER'S GUIDE

Welcome to the wetlands issue of WaterWeb! As part of the Splash! Water Resources Education program, the Southwest Florida Water Management District (SWFWMD) offers the WaterWeb water resources newsletter, designed especially for middle school students. The newsletter is correlated to grades 6–8 of the Sunshine State Standards and provides an interesting way for students to increase their awareness and respect for Florida's precious water resources.

This issue of WaterWeb focuses on wetlands. It includes an introduction about the importance of wetlands, a few facts and figures about them, special wetlands vocabulary, information about the Green Swamp, a survey for students to conduct, an activity about the effects of temperature on wetlands, and games and suggestions for learning more about wetlands. All the information and activities are designed to teach students about the important role wetlands play in our environment. In addition, we have included WaterWeb Challenge, which contains items similar to those students could expect to find on the Florida Comprehensive Assessment Test (FCAT). Let WaterWeb make a splash in your classroom today!

Many other free materials are available from the SWFWMD and can be ordered online at WaterMatters.org/publications/. We also offer water resources workshops for teachers. Please contact us if you have any questions or suggestions about our water resources education programs.

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Southwest Florida
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Introduction page 1



Ask your students about any experiences they may have had at a wetland area. Have them try to define a wetland and describe what it looks like. Then read the article together. Ask students if they can find news about wetland restoration projects that may be occurring in their area.

Sunshine State Standards

Science (6–8): *Processes that Shape the Earth, SC.D.2.3; How Living Things Interact with Their Environment, SC.G.2.3.*
Social Studies (6–8): *People, Places, and Environments, SS.B.2.3.*



A Few Facts and Figures page 2

A Few Facts and Figures About Our Wetlands

Emphasize the important role wetlands play in maintaining a healthy environment. Read the highlights about wetlands; then have students complete the quiz that follows. For an additional activity, ask students to develop a few true/false statements to quiz their classmates about the factual information presented on wetlands.

Sunshine State Standards

Science (6–8): *Energy*, SC.B.2.3; *Processes that Shape the Earth*, SC.D.1.3, SC.D.2.3; *How Living Things Interact with Their Environment*, SC.G.1.3, SC.G.2.3. Social Studies (6–8): *People, Places and Environments*, SS.B.2.3.

Learn More About It page 3

Words About Wetlands

Environmental scientists use special vocabulary in their work with wetlands. Have students study the vocabulary and complete the creative writing activity associated with it. Have students share their paragraphs.

Sunshine State Standards

Science (6–8): *Processes that Shape the Earth*, SC.D.2.3; *How Living Things Interact with Their Environment*, SC.G.1.3, SC.G.2.3. Language Arts (6–8): *Writing*, LA.B.2.3.



I Was Wondering... page 3

It's fun to learn unusual facts about science topics. Have students read this section and then have them share any other interesting facts they may know about plants that grow in wetlands.

Sunshine State Standards

Science (6–8): *Processes of Life*, SC.F.2.3.



What's News? page 4



The Green Swamp — Step Into Real Florida

Ask if any of your students have visited the Green Swamp. If possible, point out the Green Swamp on a map of Florida. Then read the article. Have students complete the “Analyze It” section and discuss their answers.

Answers:

1. 20 percent, one-fifth
2. 2,500 people

Sunshine State Standards

Mathematics (6–8): *Number Sense, Concepts and Operations*, MA.A.3.3, MA.A.4.3; *Measurement*, MA.B.1.3; *Data Analysis and Probability*, MA.E.1.3, MA.E.3.3.



Happenings in Your Area page 5

Wetland Survey

You may want to do this activity as a whole class, in small groups or as individual assignments. Read through the survey together and then have students fill in their responses to the prompts about a wetland. Discuss the results with the entire class.

Sunshine State Standards

Science (6–8): *Processes that Shape the Earth*, SC.D.1.3, SC.D.2.3; *How Living Things Interact with Their Environment*, SC.G.2.3; *The Nature of Science*, SC.H.1.3. Social Studies (6–8): *People, Places and Environments*, SS.B.2.3. Language Arts (6–8): *Writing*, LA.B.2.3.

You Can Make It! page 6

Air, Land and Water Temperature Changes Within a Wetland

The purpose of this activity is to demonstrate the effect weather can have on a wetland area. For best results, allow four weeks to conduct the study. Most schools have a wetland area/stormwater pond nearby, which is conducive for this kind of study. This activity may be repeated throughout the year to show how the same wetland area can exhibit changes from season to season.

Wetland Temperatures at Site # _____			
Date:	Air Temp. F° and C°	Soil Temp. F° and C°	Water Temp. F° and C°
Week 1			
Week 2			
Week 3			
Week 4			

Sunshine State Standards

Science (6–8): *Processes that Shape the Earth*, SC.D.1.3, SC.D.2.3; *How Living Things Interact with Their Environment*, SC.G.1.3, SC.G.2.3; *The Nature of Science*, SC.H.1.3. Social Studies (6–8): *People, Places and Environments*, SS.B.2.3. Mathematics (6–8): *Measurement*, MA.B.1.3, MA.B.2.3, MA.B.3.3, MA.B.4.3; *Data Analysis and Probability*, MA.E.1.3, MA.E.2.3, MA.E.3.3.

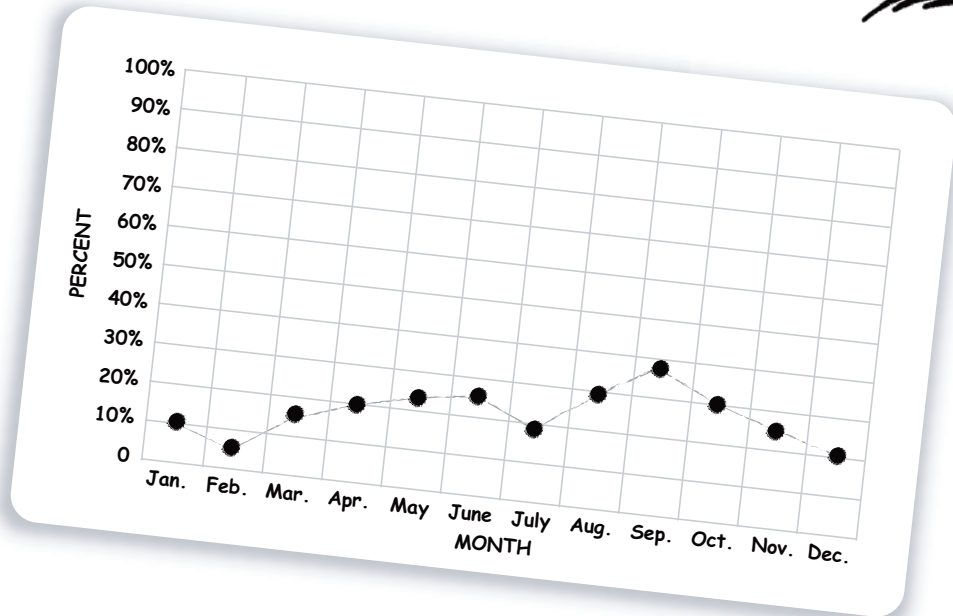
Just for Fun page 7



Although these activities are meant to be fun, they are designed to reinforce important math skills and concepts associated with wetlands.

Wetlands Puzzler Answers

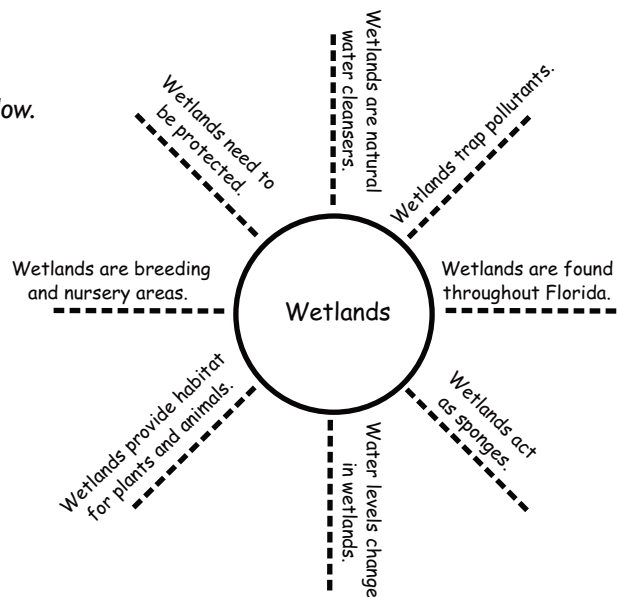
- Jan. – 10 percent
- Feb. – 5 percent
- Mar. – 16 percent
- Apr. – 20 percent
- May – 23 percent
- June – 26 percent
- July – 19 percent
- Aug. – 29 percent
- Sep. – 37 percent
- Oct. – 30 percent
- Nov. – 25 percent
- Dec. – 20 percent



Wetlands Concept Map

Answers may vary. Some acceptable responses are shown below.

- Wetlands are found throughout Florida.
- Wetlands act as sponges.
- Water levels change in wetlands.
- Wetlands provide habitat for plants and animals.
- Wetlands are breeding and nursery areas.
- Wetlands need to be protected.
- Wetlands are natural water cleansers.
- Wetlands trap pollutants.
- Wetlands are always changing.



Sunshine State Standards

Mathematics (6–8): *Number Sense, Concepts and Operations*, MA.A.3.3, MA.A.4.3; *Measurement*, MA.B.1.3; *Geometry and Spatial Sense*, MA.C.3.3; *Data Analysis and Probability*, MA.E.1.3, MA.E.3.3



Surfing for More Info page 8

A lot of information about topics related to wetlands is available on the Internet. Encourage your students to take the virtual tour of the Green Swamp on the SWFWMD web site at WaterMatters.org/greenswamp/.

Sunshine State Standards

Science (6–8): *Processes that Shape the Earth*, SC.D.1.3, SC.D.2.3; *How Living Things Interact with Their Environment*, SC.G.1.3, SC.G.2.3. Social Studies (6–8): *People, Places and Environments*, SS.B.2.3. Language Arts (6–8): Reading, LA.A.2.3.

Tell us what you think! page 8

Please encourage your students to complete this activity. You may even want to send their responses to the SWFWMD as a class set. We are always interested in hearing students' thoughts about protecting and preserving our natural resources. This section gives them an opportunity to show they care about their environment.

Sunshine State Standards

Science (6–8): *Processes that Shape the Earth*, SC.D.1.3, SC.D.2.3; *How Living Things Interact with Their Environment*, SC.G.1.3, SC.G.2.3. Social Studies (6–8): *People, Places and Environments*, SS.B.2.3. Language Arts (6–8): Writing, LA.B.2.3.

WaterWeb Challenge

Items included in the Challenge are similar to those presented on the Florida Comprehensive Assessment Test (FCAT). Make copies of the Challenge and explain to students that this provides good practice for preparing for the FCAT. Students should be allowed to use the *WaterWeb* issue as they complete the Challenge.

Answers to multiple-choice items: 1-b, 2-a, 3-b, 4-a, 5-c, 6-a, 7-b, 8-c, 9-b, 10-d

Extended-Response Items

Question 1.

Responses will vary. Students should be able to demonstrate an understanding of the many ways wetlands help to create an overall healthy environment for us to enjoy.

Score 2 points if... The response indicates the student has a thorough understanding of the usefulness of wetlands. The student has provided three principles that are accurate and complete as discussed on pages 1 and 2 of the newsletter.

Score 1 point if... The response indicates the student has a partial understanding of wetlands and their importance. The student has provided two principles that are accurate and complete.

Score 0 points if... The response is inaccurate, confused or irrelevant.

Question 2.

Responses will vary. Students should be able to demonstrate an understanding of the concept of mitigation (information is presented in the “Mindful Mitigation” section on page 2 of the newsletter).

Score 2 points if... The response indicates the student has a thorough understanding of mitigation.

Score 1 point if... The response indicates the student has a partial understanding of mitigation. The student has provided a response that is essentially correct, but the information is too general or too simplistic.

Score 0 points if... The response is inaccurate, confused or irrelevant.

Sunshine State Standards

Science (6–8): *Processes that Shape the Earth*, SC.D.1.3, SC.D.2.3; *How Living Things Interact with Their Environment*, SC.G.1.3, SC.G.2.3. Social Studies (6–8): *People, Places and Environments*, SS.B.2.3. Language Arts (6–8): *Reading*, LA.A.2.3; *Writing*, LA.B.2.3.

WaterWeb Challenge

Directions: This is your opportunity to demonstrate what you have learned about wetlands. It is also an opportunity for you to practice taking items that may be similar to the FCAT. Do your best and meet the challenge!

For each multiple-choice item, select the best answer.

1. In this issue of *WaterWeb*, you have learned a lot about wetlands. What is the most important role of these special areas in nature?
 - a. They provide habitat for a few species of wildlife.
 - b. They help create a healthy environment for all living things.
 - c. They provide an area that can be drained and filled for development.
 - d. They help reduce the amount of wildlife in an area.
2. What is a main characteristic of a wetland?
 - a. water and saturated soils
 - b. sandy soils and heat
 - c. minimal vegetation and frozen water
 - d. dry areas and mountains
3. An interesting network of feeding relationships exists in a wetland area. Which one below is an example of this?
 - a. A snake becomes a meal for a bug.
 - b. A mouse becomes a meal for a snake.
 - c. An alligator becomes a meal for an epiphyte.
 - d. A raccoon becomes a meal for a turtle.
4. What term is used to describe government wetland protection policies that help make up for the destruction of wetland areas?
 - a. mitigation
 - b. food chain
 - c. wasteland development
 - d. wetland hydrology
5. Which of the following creatures would you NOT expect to find in a wetland?
 - a. raccoons
 - b. herons
 - c. penguins
 - d. snakes
6. Why is the Green Swamp important to our area?
 - a. It provides drinking water, habitat for wildlife and recreational areas.
 - b. It covers 100 square miles in the center of Florida.
 - c. It cannot be used by the public.
 - d. It rarely has flooded areas.
7. In this issue, what was the purpose of conducting a survey of a wetland area?
 - a. To convince people mitigation should occur
 - b. To find out about its overall condition
 - c. To determine whether or not to build on it
 - d. To establish a way to drain and fill it
8. Which of the following statements is true?
 - a. Fluctuations in temperatures do not impact life in a wetland.
 - b. High temperatures cause everything to die in a wetland.
 - c. Fluctuations in temperatures have a direct impact on life in a wetland.
 - d. Wet conditions keep changes from occurring in a wetland.
9. How can you help people in your community become aware of the importance of wetlands? Choose the best answer.
 - a. Explain ways to drain and fill wetland areas for the purpose of development.
 - b. Encourage them to visit a wetland area and observe its natural beauty.
 - c. Encourage them to support efforts to reduce the amount of wetlands.
 - d. Convince them that wetlands are really wastelands.
10. What is an important message of this issue of *WaterWeb*?
 - a. We should try to reduce the size of wetland areas.
 - b. Wetlands will continue to be thought of as wastelands.
 - c. We will always have wetlands regardless of human activities.
 - d. Wetlands are worth protecting for our future.

