

## Wetlands



*The Southwest Florida Water Management District (SWFWMD) offers the Currents water resources newsletter for high school students. The newsletter is correlated to grades 9–12 of the Next Generation Sunshine State Standards provides an interesting way for students to increase their awareness and respect for Florida's precious water resources.*

*This issue of Currents focuses on wetlands. It includes an introduction to wetlands, an article about various types of wetlands, reasons why wetlands are important, information about tannins, a measurement activity using wetland trees, careers in wetland environments, and activities and suggestions for learning more about wetlands using the Internet. All the information and activities are designed to teach students about wetlands. In addition, we have included Currents Challenge, which contains items similar to those students could expect to find on the Florida Comprehensive Assessment Test (FCAT).*

*Many other free materials are available from the SWFWMD and can be ordered online at [WaterMatters.org](http://WaterMatters.org). We also offer free 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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### **Introduction** **Pg 2**

Ask students to share their experiences in wetland environments. Discuss the impact Florida's growing population has on wetlands. Emphasize the importance of protecting wetland areas to ensure a clean and healthy environment for future generations.

### **The World of Wetlands** **Pg 2**

Ask students if they can name a specific type of wetland or the difference between a swamp and a marsh. Read about some of the wetlands in Florida. Then have students complete the writing activity and share their responses with others.

### **Q&A** **Pg 2**

Ask students to predict the appearance of water in a wetland area. Would they expect it to be clear, cloudy, tinted, etc.? Have them provide reasons for their answers. Then have students read the question and answer.

### **Why Are Wetlands Important?** **Pg 3**

Ask students if they know any reasons why wetlands are important. Read the article and ask if they can think of any additional reasons wetlands are essential to the natural environment.

### **Whiz Quiz Answers:** **Pg 3**

1-True, 2-False, 3-False, 4-True, 5-False

### **Classroom Activity** **Pg 4**

#### **Measuring Up Our Wetland Trees**

Ask students to list the types of trees that they would expect to find in a nearby wetland area. After completing the activity, have students share their data and answers to the discussion questions.

### **Wetland Facts & Currents Quiz** **Pg 4**

Read the interesting facts about wetlands and encourage students to add their own to the list. Ask students to develop good questions for our Currents Quiz and send them in as a class set.

### **Careers in Wetland Environments** **Pg 4**

Encourage students to learn about other environmental careers by visiting the library or surfing the Internet.

### **Sites To Explore** **Pg 4**

For a virtual wetland experience, have your students take the Green Swamp tour by visiting the SWFWMD's website listed in this section.



# CURRENTS 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 are similar to the FCAT.

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

- 1** Which one below is a characteristic of a wetland?
  - a. The soil is rarely waterlogged.
  - b. The soil is covered with only salty water.
  - c. The surface water contains a high amount of oxygen.
  - d. The soil is hydric.
- 2** Which type of wetland resembles a pond filled with grasses and flowers?
  - a. coastal marsh
  - b. mangrove swamp
  - c. freshwater marsh
  - d. cypress swamp
- 3** What percent of all existing wetlands in the United States are located in Florida?
  - a. 5 percent
  - b. 30 percent
  - c. 15 percent
  - d. 20 percent
- 4** What is the difference between a swamp and a marsh?
  - a. Swamps are full of fresh water; marshes are full of salt water.
  - b. Marshes are filled with grasses; swamps are filled with trees.
  - c. Marshes are full of fresh water; swamps are full of salt water.
  - d. Swamps are filled with grasses; marshes are filled with trees.
- 5** Which type of trees are often called “walking trees” because of their roots?
  - a. cypresses
  - b. white mangroves
  - c. black mangroves
  - d. red mangroves
- 6** What is a simple technique that can be used to measure the height of a tree?
  - a. circumference measurement
  - b. shadow measurement
  - c. annual ring counting
  - d. leaf measurement
- 7** How do wetlands help to protect water quality?
  - a. They filter sediments, nutrients and other material from runoff.
  - b. They cause areas to flood into larger water bodies.
  - c. They prevent water from being stored in their areas.
  - d. They cause the water to be filled with tannins.
- 8** Which area of science focuses on the study of plants and animals found in freshwater ecosystems?
  - a. marine biology
  - b. aquatic biology
  - c. hydrogeology
  - d. botany
- 9** Careers in wetland environments that involve studying mammals, birds, snakes, fish or amphibians are associated with which of the following broad fields in science?
  - a. geology
  - b. botany
  - c. zoology
  - d. biology
- 10** What is an important message of this issue of *Currents*?
  - a. The future of our wetlands depends on the support from government agencies, private groups and citizens.
  - b. Regardless of what citizens do, all the wetlands will disappear within a decade.
  - c. Wetland restoration is cheaper than education and preservation.
  - d. Wetland areas will continue to expand in number and size throughout our state.

## Activities in *Currents Wetlands* address the following Next Generation Sunshine State Standards for grades 9–12:

- SC.912.N.1.1: Define a problem based on a specific body of knowledge, for example: biology, chemistry, physics, and earth/space science, and do the following:
1. Pose questions about the natural world
  2. Conduct systematic observations
  3. Examine books and other sources of information to see what is already known
  4. Review what is known in light of empirical evidence
  5. Plan investigations
  6. Use tools to gather, analyze, and interpret data (this includes the use of measurement in metric and other systems and also the generation and interpretation of graphical representations of data, including data tables and graphs)
  7. Pose answers, explanations, or descriptions of events
  8. Generate explanations that explicate or describe natural phenomena (inferences)
  9. Use appropriate evidence and reasoning to justify these explanations to others
  10. Communicate results of scientific investigations, and
  11. Evaluate the merits of the explanations produced by others.
- SC.912.L.17.3: Discuss how various oceanic and freshwater processes, such as currents, tides, and waves, affect the abundance of aquatic organisms.
- SC.912.L.17.7: Characterize the biotic and abiotic components that define freshwater systems, marine systems and terrestrial systems.
- SC.912.L.17.8: Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.
- SC.912.L.17.9: Use a food web to identify and distinguish producers, consumers, and decomposers. Explain the pathway of energy transfer through trophic levels and the reduction of available energy at successive trophic levels.
- SC.912.L.17.12: Discuss the political, social, and environmental consequences of sustainable use of land.
- SC.912.L.17.17: Assess the effectiveness of innovative methods of protecting the environment.
- SC.912.N.4.2: Weigh the merits of alternative strategies for solving a specific societal problem by comparing a number of different costs and benefits, such as human, economic, and environmental.