

# WaterWeb

A SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT NEWSLETTER FOR GRADES 6-8

## Florida's Wetlands

**Alligators, insects, cypress trees, little blue herons, muddy soil and pickerelweed are just a few examples of the diverse parade of wildlife existing in Florida's wetlands.**

Wetlands are found throughout Florida. The plants and animals that live in these special places make up an elaborate, yet fragile, ecosystem in which things depend on one another for survival. Many birds, fish, mammals and reptiles use wetlands as breeding and nursery areas for their young. Wetlands also act as powerful sponges that can soak up huge amounts of excess water from rainfalls. This helps to prevent flooding. Known as "nature's kidneys," wetlands help purify and filter water that passes through them. For these reasons, wetlands are very important to Florida's water supply.

While we often picture freshwater wetlands, there are also saltwater wetlands. Florida's coastal areas are stabilized by wetlands, which serve as barriers and

buffers against wind and waves. In these wetlands you'll find mangroves, buttonwoods, seagrasses and other salt-tolerant trees and plants.

As you study wetlands, you'll notice how much these systems have changed over time. In the past, people often took wetlands for granted and considered these areas useless. Today we know how important wetlands are to Florida. For this reason, many organizations are working to restore, maintain and protect wetland areas. One nearby restoration is taking place in the Everglades.

Let's always remember that wetlands are crucial in keeping our environment clean and healthy.



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What's Inside



## A Few Facts and Figures About Our Wetlands

**D**id you know our state contains about 20 percent of all the wetlands in the United States? Below are a few important highlights about wetlands.

### Look Back in Time

When Europeans began to settle the United States, there were about 200 million acres of wetlands. Today, more than half the wetlands in our country have been drained or filled. In Florida, more than half of our original wetlands have disappeared.

### Wetland Hydrology

Wetlands naturally hold water. But the amount of water in a wetland varies based on the amount of rainfall that occurs in an area. Water levels in wetlands typically rise during the rainy season and decline during the dry season. These fluctuations have a direct impact on the lifestyles and adaptations of the plants and wildlife living there.

### Special Species

Wetlands are some of the most productive and diverse ecosystems on the planet, providing home to a variety of plants and animals. More than one-third of the country's threatened and endangered species live in wetlands.

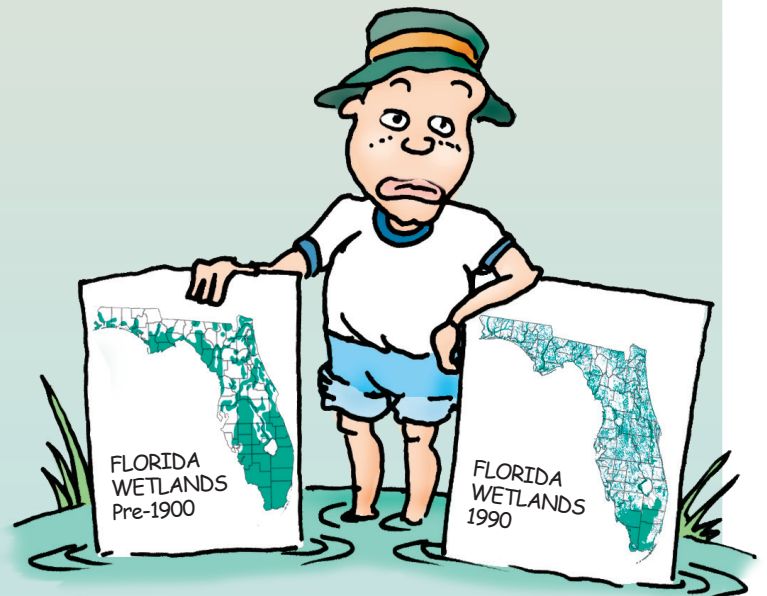
### The Ultimate Natural Site

Within the boundaries of the Southwest Florida Water Management District lies the Green Swamp Wilderness Preserve. It covers

approximately 560,000 acres and contains several types of freshwater wetlands. The Preserve is also the starting point of four major rivers. See page 4 to learn more about this fascinating place.

### Mindful Mitigation

Mitigation is a government wetland protection policy designed to make up for the destruction of a wetland area. Mitigation occurs when a wetland area is altered and developed for roads, buildings, neighborhoods and businesses. Through the mitigation process, a similar wetland area nearby is created, preserved, enhanced or restored to make up for the wetlands that were drained or filled for human activity. Mitigation prevents the amount of wetlands from being reduced any further.



### Checkout Time

Place a ✓ next to each correct statement.

- 1. Less than 105 million acres of wetlands currently exist in the continental United States.
- 2. Approximately 560 rivers flow through the Green Swamp.
- 3. A small percentage of wetland animals are endangered or threatened.
- 4. Mitigation prevents a wetland from being destroyed.

Answer: Only 1 is correct.

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## LEARN MORE ABOUT IT

### Words About Wetlands

As you study the vocabulary used to describe wetlands, form a picture in your mind of a wetland area. Then pretend you are an environmental scientist who has just arrived at a wetland. Use a separate sheet of paper and the vocabulary below to write a paragraph that describes your surroundings. Be creative.



**aquatic** – growing or living in water

**bog** – wetland area that has spongy ground covered mostly by sphagnum moss

**ecology** – study of all the relationships in an environment

**ecosystem** – a living community of plants and animals and their interrelationship with the environment

**estuary** – coastal area where freshwater rivers and streams flow into and mix with salt water

**food web** – a grouping of interrelated food chains in an ecological community

**freshwater wetland** – a wetland containing fresh water and located inland

**hydric soil** – soil that has been wet for long periods

**mangroves** – tropical trees that grow along flooded coastal banks

**marsh** – a wetland usually characterized by grasses and similar plants

**peat** – soft, brown plant material formed at the bottom of a wetland

**saltwater wetland** – wetland containing salt water and located along the coast

**slough** – small, sluggish creek in a wetland

**swamp** – a wooded wetland area where the soil is saturated and often has water covering it

**wetland** – lands that are wet all, or part of the year



## I Was Wondering...

### Question:

*What are those wild-looking air plants I see growing on the trunks and branches of trees?*

### Answer:

They are called epiphytes (ep-ih-fites), or air plants. Epiphytes are most commonly found on cypress trees, some oaks and mangroves. The three main groups of epiphytes are bromeliads, ferns and orchids.



## WHAT'S NEWS?

# The Green Swamp — Step Into Real Florida

Taking a step into the Green Swamp is taking a step into “real” Florida. It is an opportunity to experience an interactive and natural attraction. It provides habitat for a variety of wildlife, drinking water for people and a place of recreation and enjoyment for all.

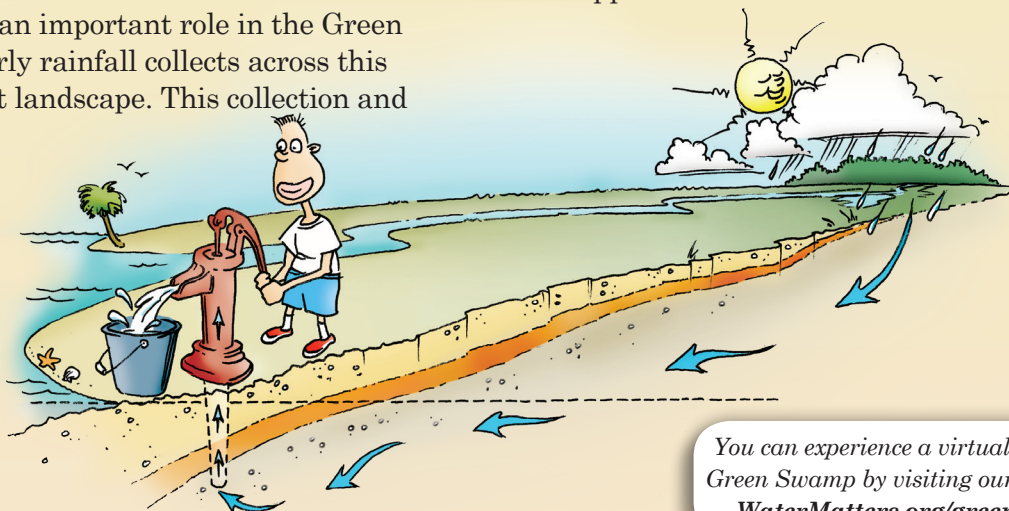
The Green Swamp gets its name for the extensive areas of lush vegetation that cover much of the region and the annual flood conditions it exhibits. The Green Swamp is made up of many swamps interconnected across a vast landscape in a network of wetlands and uplands. It covers about 560,000 acres in the center of Florida.

Water plays an important role in the Green Swamp. Yearly rainfall collects across this extensive flat landscape. This collection and

storage of rainfall helps provide flood protection and natural treatment of runoff water. Did you know that much of the Green Swamp’s water is stored underground in the porous limestone of the Floridan aquifer system? Because the underground aquifers are so close to the surface of the land, portions of the Green Swamp are very important for groundwater recharge.

### Green Swamp Facts:

- It is the headwaters for the Hillsborough, Withlacoochee, Peace and Ocklawaha rivers.
- The Floridan aquifer system actually reaches the earth’s surface in parts of the Green Swamp.
- It supports over 330 fish and wildlife species.



You can experience a virtual tour of the Green Swamp by visiting our website at: [WaterMatters.org/greenswamp](http://WaterMatters.org/greenswamp)

## Analyze It

Use your math skills to solve the following problems. The answers are included in the teacher’s guide.

1. The Green Swamp covers 560,000 acres of Florida backcountry. The Southwest Florida Water Management District owns approximately 110,000 acres of this land, which is called the Green Swamp Wilderness Preserve. Rounding up to the nearest one hundredth, what percentage of the Green Swamp consists of the Wilderness Preserve? \_\_\_\_\_

What fraction does this represent? \_\_\_\_\_

For an extra challenge, develop a Venn diagram of your answer.

2. About 30,000 people visit the Green Swamp Wilderness Preserve each year. Based on this number, what is the average number of visitors each month? \_\_\_\_\_

## HAPPENINGS IN YOUR AREA

# Ten-Point Wetland Survey

Here is your opportunity to begin studying the health and condition of a nearby wetland. Visit a wetland area near your home or school and complete the following survey. Then share your findings with other classmates.

1. Describe the overall appearance of the water. Use words such as clear, muddy, scummy, foamy, oily, etc.

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2. Approximately what percent of the wetland area is covered with water? \_\_\_\_\_ percent

With plants and other vegetation? \_\_\_\_\_ percent

3. Describe how the area smells. Is it free of odor or does it smell musky, or perhaps like chemicals or rotten eggs?

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4. What is the land nearby used for? Are there homes, natural areas, businesses, etc.?

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5. Name some of the plants, fish, insects, birds and other wildlife you observed.

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6. Is there litter in the area? If so, describe the kinds of litter you've found.

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7. How would you rate, by sight, the condition of this wetland area? Check one of the following:

- very healthy
- somewhat healthy
- poor condition
- very poor condition

**For an extra challenge, encourage your parents or teacher to perform water quality testing on the wetland area. You may find that looks can be deceiving in determining the health of a wetland.**



## YOU CAN MAKE IT!

# Air, Land and Water Temperature Changes Within a Wetland

Wetlands experience many changes because of the weather. In this month-long activity, you will have an opportunity to measure the temperatures of different parts of a wetland. Discover how temperatures can help determine which plants and animals decide to live in the wetland.

### Learning Goals

- To engage in a hands-on activity about wetlands.
- To develop an awareness of how temperature changes affect life in a wetland.

### Subjects

- Science
- Mathematics
- Language Arts

### Materials

- 3 Celsius thermometers
- 3 Fahrenheit thermometers
- 3 laminated (waterproof) pieces of poster board
- 3 meter measuring sticks
- 3 small posts for signs
- colored pens or markers
- paper for making charts
- tape or staples
- string
- camera (optional)

## Activity

1. Determine a day of the week that you will conduct this study. Try to visit the sites at the same time each week.
2. Select three different locations at a wetland area. Divide the class into three groups so that each group will be responsible for monitoring one of the sites.
3. Make three signs using poster board, markers and small posts. Label the first Site No. 1, the second Site No. 2 and the third Site No. 3. Attach the signs to the posts with tape or staples. Place the signs at the correct locations.
4. Have each group go to their assigned site. Using meter sticks, try to measure temperatures within a distance of 3 meters from the signs.
5. Use the Celsius and Fahrenheit thermometers to measure the air, soil and water temperatures near the signs.  
**For Air:** Tape the thermometers to the sign.  
**For Soil:** Push the thermometers into the soil.  
**For Water:** Tie the thermometers to strings and lower each one gently into a wet area. At times there may not be water in the area. Be sure to make note of this on the chart.
6. Record the data on the charts. Use the sample to help you.
7. Each week, take pictures of the three different sites to illustrate the changes that have taken place. Describe these changes.

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	_____	_____	_____

## Just for Fun

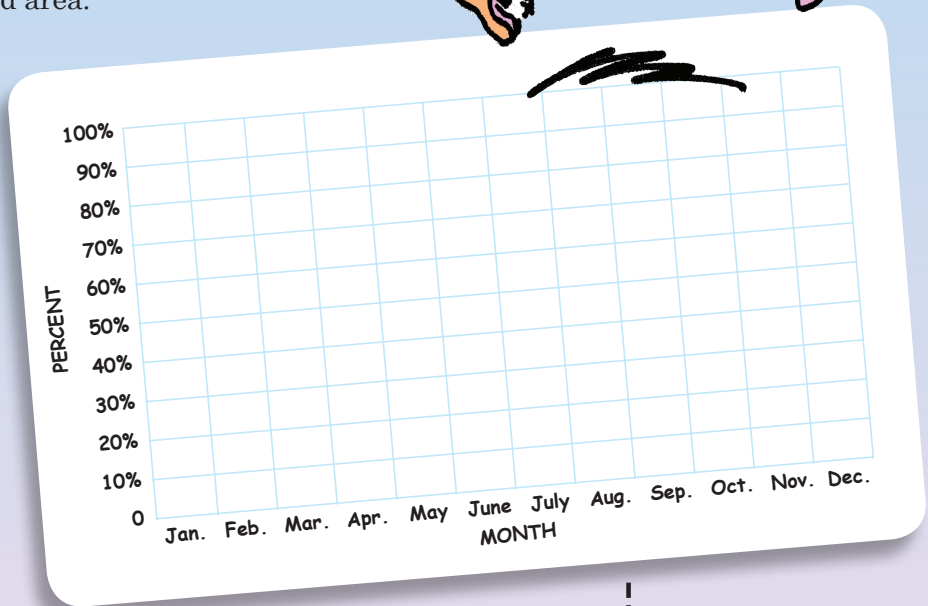
These activities are not just for fun — they will help you improve your math skills too!



### Wetlands Puzzler

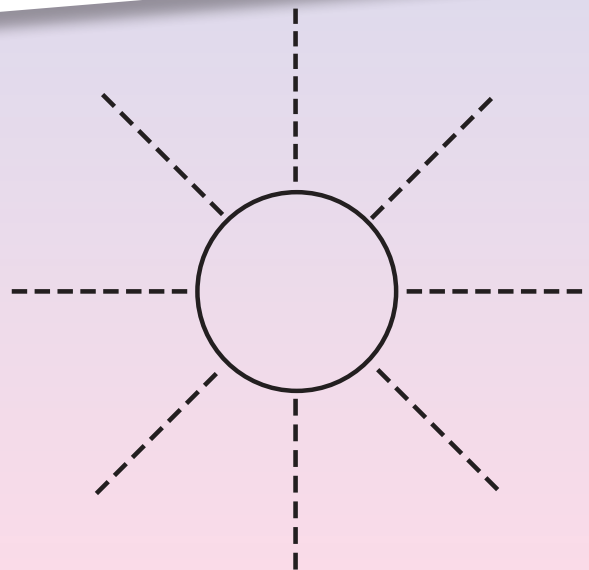
The percent of land covered by water in a wetland area can change from month to month. Plot the points on the piece of graph paper by using the following information. Explain how the graph could be used by a scientist to manage a wetland area.

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

A concept map allows you to diagram information. Place the word “wetlands” in the circle at right. Then, add eight facts you learned about wetlands to the lines surrounding the circle. Compare your concept map with others.



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## Surfing for More Info

If you are interested in learning more about topics covered in this newsletter, be sure to search the Internet. Following are a few key words to get your feet wet in the world of wetlands. Try combining a few terms to narrow your search.

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|-------------------------|------------------|
| <b>Wetlands</b>         | <b>Florida</b>   |
| <b>Marshes</b>          | <b>Ecology</b>   |
| <b>Freshwater ponds</b> | <b>Estuaries</b> |
| <b>Habitats</b>         |                  |



Now, are you ready to explore one of the best examples of Florida's natural environment? Then sign up for the Green Swamp virtual tour. Just go to our web site at [WaterMatters.org/greenswamp](http://WaterMatters.org/greenswamp)

## What Do You Think?

You learned that people years ago thought of wetlands as wastelands. Describe three reasons why you think wetlands are important now and to the future of our environment.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**Southwest Florida**  
*Water Management District*

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