

# Exploring Our Wonderful Wetlands



Southwest Florida  
Water Management District

WATERMATTERS.ORG • 1-800-423-1476

Teacher's Guide  
Grades 4-7

# Dear Teacher:

Welcome to *Exploring Our Wonderful Wetlands*! This teacher's guide has been developed for use with the *Exploring Our Wonderful Wetlands* student publication and the Wetland Wonder Cards.

*Exploring Our Wonderful Wetlands* is targeted for students in grades 4–7 to increase their awareness and respect for our wetlands. It is correlated to grades 4–7 of the Next Generation Sunshine State Standards and Common Core State Standards. It includes a variety of information, questions, activities, games and websites to explore. In addition, we have included a Wetlands Challenge, with items similar to the Florida Comprehensive Assessment Test.

Many other free materials are available from the Southwest Florida Water Management District and can be ordered online at [WaterMatters.org/publications/](http://WaterMatters.org/publications/). We also offer water resources workshops for teachers. For additional information, please contact the Public Affairs Bureau of the Southwest Florida Water Management District at (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4757, or visit our website at **WaterMatters.org**.

## Exploring Our Wonderful Wetlands

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# Background

During the course of *Exploring Our Wonderful Wetlands*, your students will learn about wetlands in general and about the vital role wetlands play in west-central Florida. The Southwest Florida Water Management District (SWFWMD) works hard to protect our wetlands. The SWFWMD is the regional agency responsible for managing water resources and maintaining a balance between the water needs of current and future water users without harming the environment. The future of our wetlands depends on all of us working together.

As a teacher, you have a very important role in preparing students to take on the responsibility of environmental protection. Investing now in our students' education regarding the protection of our precious natural resources will help to ensure that when they reach adulthood, they will be responsible citizens who are actively involved in maintaining a clean and healthy environment. In turn, they will take on the role of preparing the next generation to continue this important mission.

The following tips are provided to help you guide your students through *Exploring Our Wonderful Wetlands*. Be sure to read the entire student publication, cards and teacher's guide in preparation for use with your students.

## **For each exploration:**

- Make copies of the Wetland Activity sections found in this teacher's guide. Answers to selected activities are on the following page.
- Read and discuss the Explorations presented in the student publication with your students.
- Have students respond to Wetlands Wit and Writing About Wetlands prompts in the student publication.
- Complete the Wetland Activity sections found in this teacher's guide.
- Use the Wetland Wonder Cards throughout the program. The cards may be used in any order that fits your needs.

## **Other activities:**

- As a class, review the vocabulary listed on page 19 of the student publication.
- Encourage students to look at the websites included on page 19 of the student publication.
- Have students complete the activities presented on pages 16–18 of the publication and check their answers, which are on page 19 of this teacher's guide.
- Make copies and administer the Wetlands Challenge on pages 16–17 of this teacher's guide.
- Have students complete the Wetland Metaphors activity on pages 12–13 of the student publication. Answers are on page 5 of this teacher's guide.

# Wetland Wonder Cards

These colorful illustrations may be used in any order and will provide your students with an opportunity to discuss what it really feels like to experience the different wetlands in our area. Be sure to allow sufficient time to brainstorm about a particular card so they can visualize what it may feel like to really be there. You may want to have them work in small groups to encourage more creative thinking. After a card has been discussed, have students respond to the "I wonder ..." writing prompt.

## **Wetland Wonder Card 1**

Paddling a canoe through wetlands.

## **Wetland Wonder Card 6**

An estuary is habitat for waterfowl.

## **Wetland Wonder Card 2**

A sandhill crane rests in a wet prairie.

## **Wetland Wonder Card 7**

Exploring nature in the Green Swamp.

## **Wetland Wonder Card 3**

Finding an epiphyte air plant in a cypress swamp.

## **Wetland Wonder Card 8**

A turtle returns to its nest in a hydric hammock.

## **Wetland Wonder Card 4**

A raccoon searches for food in a wetland.

## **Wetland Wonder Card 9**

Making observations in a cypress swamp.

## **Wetland Wonder Card 5**

A great blue heron wades in a saltwater marsh.

## **Wetland Wonder Card 10**

An egret wades in a saltwater marsh.

## **Wetland Activity Answers**

The Wetland Water Cycle (p. 6 of this teacher's guide): 1-condensation, 2-precipitation, 3-evaporation, 4-percolation, 5-transpiration

Wetland Creatures (pp. 9-10 of this teacher's guide): Answers will vary.

Reasonable answers include the following:

alligators: could be found in all of the wetland habitats

river otters: cypress swamp, hardwood swamp, freshwater marsh

whales: would not be found in any of these habitats

rabbits: hydric hammock, wet prairie

bobcats: hydric hammock, wet prairie


fish: cypress swamp, hardwood swamp, freshwater marsh

# Wetlands Metaphors

Pages 12–13 of the student publication contain an activity based on wetland metaphors. Before students begin the activity, explain the concept of a metaphor and ask them to provide general examples of their own. Make sure they grasp the idea before applying it to wetlands. The purpose of this activity is for students to develop an appreciation and understanding of wetlands through the power of metaphor, linking the characteristics and natural functions of wetlands to the familiar realm of everyday life.


## Answers to Wetland Metaphors Activity

**1** Wetlands act as giant sponges by absorbing heavy rainfall and releasing the water very slowly. This action helps to prevent flooding.




**SPONGE**

**5** Wetlands are resting places for a variety of wildlife.




**BED**

**2** Wetlands help purify and filter water that passes through them.




**FILTER**

**6** Wetlands support a wide diversity of wildlife.




**ZOO**

**3** Wetlands are important storage areas that collect rainwater.




**WATER TOWER**

**7** Food is abundant in a productive wetland.




**PRODUCTIVE GARDEN**

**4** Many recreational activities take place in and around wetlands.



**PLAYGROUND**

**8** Wetlands serve as buffers between fresh and salt water.



**BARRIER**

# Exploration 1

## Wading Into Our Wetlands

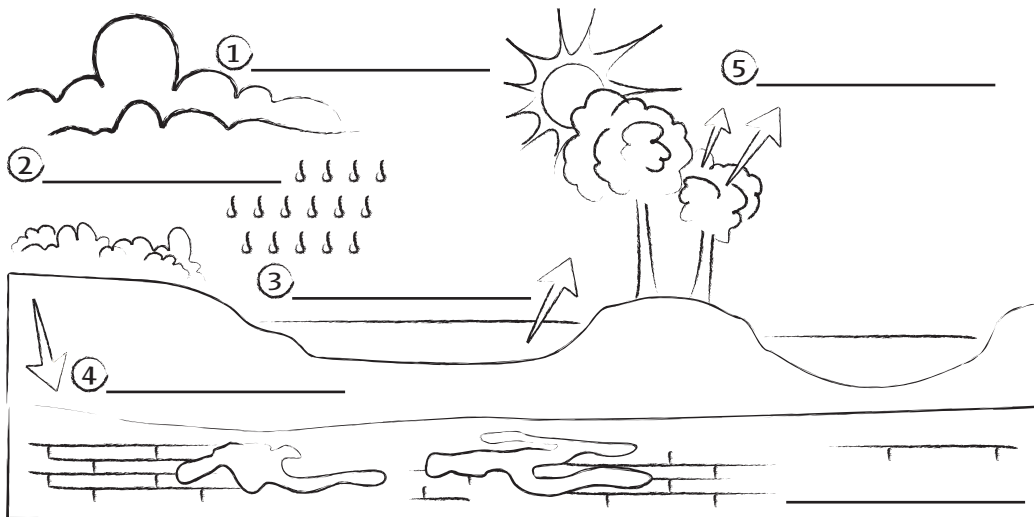
### Wetland Activity: The Wetland Water Cycle

**Directions:**

Did you know that the water in a wetland recycles itself over and over again? It is a process called the hydrologic cycle, or water cycle. The sun serves as the energy source that causes water to move continuously through many phases. Study the phases described on the chart. Then use the information to label the different phases in the illustration of the wetland water cycle.

### The Hydrologic Cycle

<b>evaporation</b>	vapor created when the sun heats water in lakes, streams, rivers, oceans, puddles, etc.
<b>transpiration</b>	vapor created when plants and trees give off moisture
<b>condensation</b>	tiny droplets of water formed when water vapor rises into the air and cools
<b>precipitation</b>	moisture released from clouds in the form of rain, snow, hail, etc.
<b>percolation</b>	downward movement of water through the ground



# Exploration 2

## Searching Our Saltwater Wetlands

### Wetland Activity: Florida's Magnificent Mangroves

**Directions:**

You have learned that mangroves are important to us. On a piece of paper make a list of several details about each type of mangrove. For example, you could begin by writing the word "tree" under each type. Review your completed lists to identify common and unique features. Then fill in these boxes.

**Unique Features of a  
Red Mangrove**

**Unique Features of a  
White Mangrove**

**Unique Features of a  
Black Mangrove**

**Common Features**

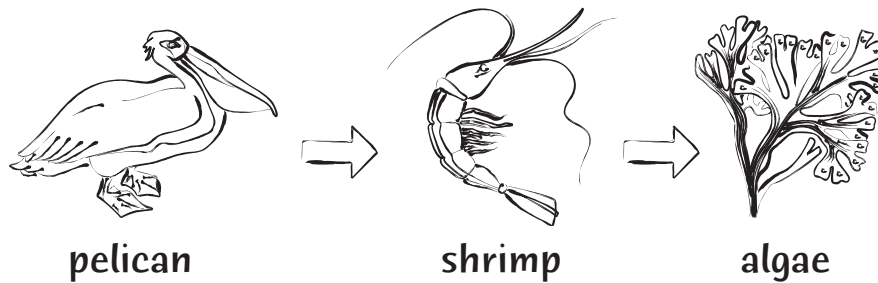
# Exploration 2

## Searching Our Saltwater Wetlands

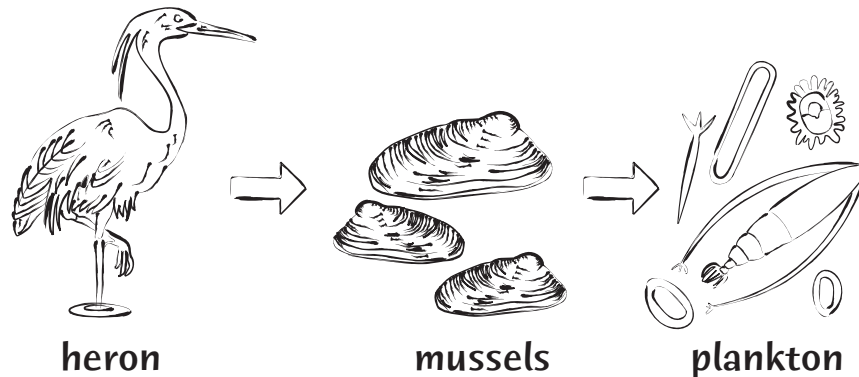
### Wetland Activity: The Wetland's Fabulous Food Chain

**Directions:**

Living things do not exist in isolation in a wetland. They live in a community and depend on others for survival. Each of the animals and plants in a wetland has a particular job. They are all part of a food chain, which is made up of those who produce food and those who eat it. For an example of the food chain in action, look at the illustration below. A diving bird may eat a shrimp, which had eaten some algae.



Here is another example of the food chain.



On a piece of paper create your own wetland's food chain by using these examples. Then describe your food chain to a classmate.



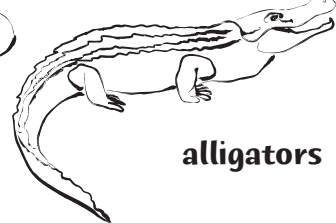



# Exploration 3

## Finding Out About Our Freshwater Wetlands

### Wetland Activity: Wetland Creatures

**Directions:**

During this exploration, you learned that a variety of creatures live in freshwater wetlands. Review the animals commonly found in the five different freshwater wetlands described in your publication. Then read the list of freshwater creatures listed below. Classify each creature by circling the correct habitats. Beware! One creature doesn't belong in any of these wetlands.

Freshwater Creature	Wetland Habitats		
<p>① </p> <p><b>alligators</b></p>	cypress swamp	hydric hammock	wet prairie
	hardwood swamp	freshwater marsh	
<p>② </p> <p><b>river otters</b></p>	cypress swamp	hydric hammock	wet prairie
	hardwood swamp	freshwater marsh	
<p>③ </p> <p><b>whales</b></p>	cypress swamp	hydric hammock	wet prairie
	hardwood swamp	freshwater marsh	
<p>④ </p> <p><b>rabbits</b></p>	cypress swamp	hydric hammock	wet prairie
	hardwood swamp	freshwater marsh	

Freshwater Creature

Wetland Habitats

5



**bobcats**

cypress  
swamp

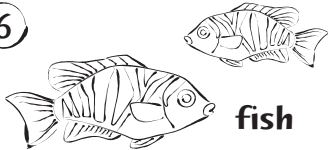
hydric  
hammock

wet  
prairie

hardwood  
swamp

freshwater  
marsh

6



**fish**

cypress  
swamp

hydric  
hammock

wet  
prairie

hardwood  
swamp

freshwater  
marsh

What kinds of creatures would you expect to find in wetlands that are flooded most of the year? Why?

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What kinds of creatures would you most likely find in wetlands that are rarely flooded? Why?

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# Exploration 4

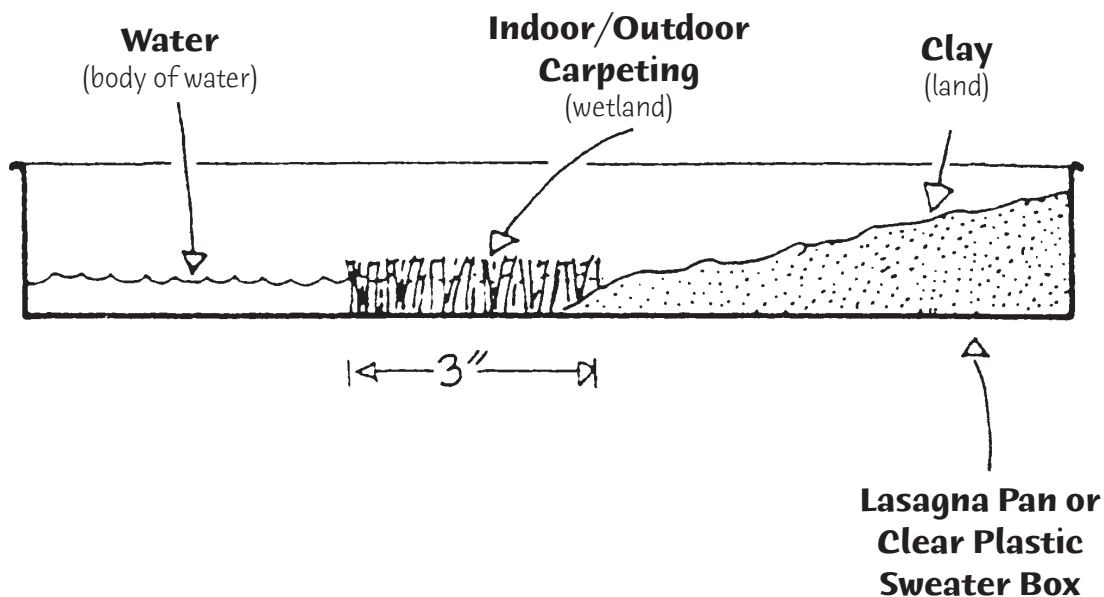
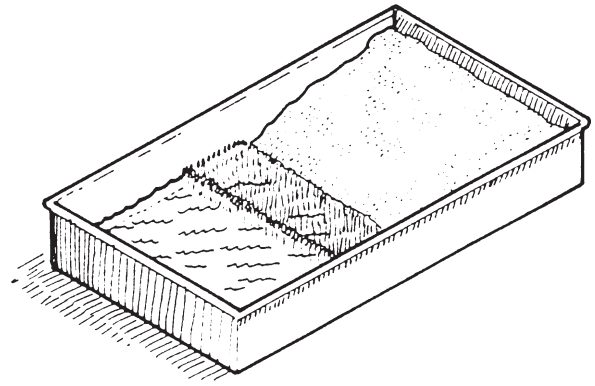
## Discovering What Wetlands Do

### Wetland Activity: Building a Wetland

This is a fun and easy activity that you can do at home. Be sure to take notes on what you observe during the activity. You can use this activity to teach others about how wetlands function and how important it is to protect them.

#### Materials:

- shallow pan
- modeling clay
- strip of indoor/outdoor carpet, 3 inches wide by the width of the pan
- container of clear water
- container of water mixed with sand
- turkey baster





# Exploration 4

## Discovering What Wetlands Do

### Wetland Activity: My Life in a Wetland

**Directions:**

Here is your chance to live in a wetland! Pretend that you are a wetland creature and describe what a typical day might be like in either a saltwater or freshwater wetland. Answer the questions below and use a separate piece of paper if needed.

What kind of creature are you? \_\_\_\_\_

Do you live in a saltwater or freshwater wetland? \_\_\_\_\_

Describe a typical day for your creature in a healthy wetland environment.

Now, describe what it is like to struggle through the day in an unhealthy wetland.

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Finally, describe where you would prefer to live and why.

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# Exploration 5

## Becoming Protectors of Our Wetlands

### Wetland Activity: Meet Our Major Wetland Areas

**Directions:**

In Florida, wetlands cover approximately 30 percent of the state. Many more wetlands existed before rapid development took place in many areas of the state. Look at the map of the major wetland areas in Florida on page 15 of the student publication. Draw an "X" to tell where you live. Then answer these questions.

### Florida Wetlands

Do you live near any wetlands? \_\_\_\_\_

If so, explain why you think they are saltwater or freshwater wetlands.

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### Wetlands Prior to 1900

Do you live near any wetlands that existed prior to 1900? \_\_\_\_\_

If so, do you think they were saltwater or freshwater wetlands? Explain.

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# Exploration 5

## Becoming Protectors of Our Wetlands

### Wetland Activity: Reviewing Wetland Websites

**Directions:**

Visit a few of the websites listed in your publication. Then select one and complete the following review.

#### Wetland Website Review

Name of website:

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Date of visit:

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Directions: Circle one for each question.

A= Excellent, B=Above Average, C=Average, D=Below Average

A B C D What overall grade would you give this site?

A B C D Was the information presented in an interesting way?

A B C D Did you learn more about wetlands?

What did you like most about this site?

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What did you like least about this site?

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Would you recommend this site to a friend? \_\_\_\_\_

Any additional comments?

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# Wetlands Challenge

## **Directions:**

This is your opportunity to demonstrate what you have learned about wetlands. It is also an opportunity for you to practice answering questions similar to those found on the FCAT. Do your best and meet the challenge!

### **1. What is a wetland?**

- a. An area that is flooded or has saturated soils for certain periods of time during the year
- b. An area that has unique soils that are different from soils found in other areas
- c. An area that contains special plants and trees that are commonly found in wetland areas and thrive in waterlogged soil or water
- d. All of the above

### **2. What are the two main categories of wetlands?**

- a. Cypress swamps and hardwood swamps
- b. Saltwater wetlands and freshwater wetlands
- c. Coastal marshes and forested wetlands
- d. Mangrove swamps and freshwater wetlands

### **3. Wetlands provide habitats for a variety of plants and animals. What is a habitat?**

- a. Hydric soil
- b. Waterfowl
- c. Natural home
- d. Species

### **4. Which one below is NOT an example of a freshwater body of water?**

- a. Coastal saltwater marsh
- b. Wet prairie
- c. Freshwater marsh
- d. Cypress swamp

### **5. How are the general features of a swamp and a marsh different?**

- a. A marsh has trees and a swamp has grasses
- b. A swamp is always dry and a marsh is always wet
- c. A swamp has trees and a marsh has grasses
- d. Only the marsh provides habitats for wildlife



- 6. Which statement is TRUE about our valuable wetland resources?**
- a. Most wetland loss in Florida occurred before the 1970s.
  - b. We have more wetlands now than we had 100 years ago.
  - c. People are now more aware of the value of wetlands.
  - d. both a and c
- 7. Which one below does NOT belong in a list of characteristics about a wetland?**
- a. It acts as a big sponge.
  - b. It causes flooding in nearby areas.
  - c. It helps to clean and purify water.
  - d. It is a natural area that holds water.
- 8. Choose the BEST reason for protecting the health and well-being of our wetlands.**
- a. So that wetlands will continue to exist
  - b. So that the quality of water can decrease
  - c. So that the number of wetlands can be reduced
  - d. So that fewer plants and animals will exist
- 9. Wetlands help our environment in many ways. Which one below does NOT belong in the list?**
- a. Wetlands help serve as nursery areas.
  - b. Wetlands help protect us from floods.
  - c. Wetlands help erode our coastlines.
  - d. Wetlands help store water.
- 10. The future of our wetlands depends on all of us working together. How can citizens get involved?**
- a. By volunteering their time on environmental projects
  - b. By writing a letter to government officials about wetlands
  - c. By learning more about wetlands and teaching others about them
  - d. All of the above

1

READ  
THINK  
EXPLAIN

Wetlands used to be thought of as wasted areas. Fortunately, people have changed their opinion about them. Describe how you think your grandparents viewed wetlands when they were your age. Then describe how people view them today. What changed their opinion about wetlands?

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2

READ  
THINK  
EXPLAIN

List several ways your friends and neighbors could help protect wetland areas near your home. Support your answer with details and information you learned from *Exploring Our Wonderful Wetlands*.

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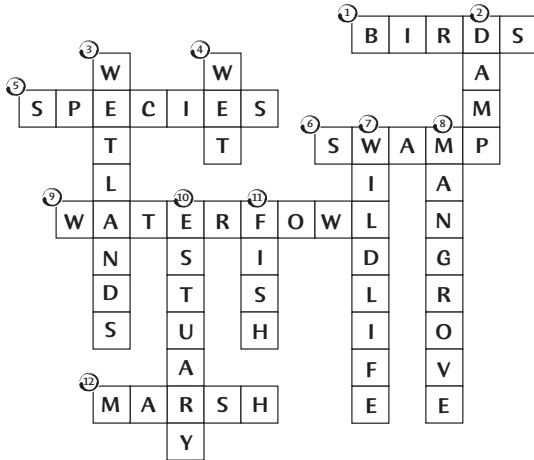
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# Answer Key for Wetland Activities

(Pages 17-18 of student publication)

C R O S S W O R D



W H O A M I ?

- ① M A R S H
- ② S W A M P
- ③ E S T U A R Y
- ④ S A L T M A R S H
- ⑤ M A N G R O V E
- ⑥ C Y P R E S S S W A M P
- ⑦ H A R D W O O D S W A M P
- ⑧ H Y D R I C H A M M O C K
- ⑨ F R E S H W A T E R M A R S H
- ⑩ W E T P R A I R I E

## Wetlands Challenge (Pages 16-17 of this guide)

Items included in the Wetlands Challenge are similar to those presented on the Florida Comprehensive Assessment Test (FCAT).

### Answers to multiple-choice items:

1-d, 2-b, 3-c, 4-a, 5-c, 6-d, 7-b, 8-a, 9-c, 10-d

### Answers to extended-response items:

**Question 1.** Responses will vary. Students should be able to demonstrate an understanding of how the views regarding wetlands have changed over the years.

**Score 2 points if . . .** The response indicates that the student has a thorough understanding of how the views regarding wetlands have changed over the years.

**Score 1 point if . . .** The response indicates that the student has a partial understanding of how the views regarding wetlands have changed over the years.

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

**Question 2.** Responses will vary. Students should be able to assimilate information about protecting wetlands.

**Score 2 points if . . .** The response indicates that the student was able to correctly assimilate information about protecting wetlands.

**Score 1 point if . . .** The response indicates that the student was able to partially assimilate information about protecting wetlands.

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

# Visiting Our Area Wetlands

There are many wetland areas located within the boundaries of the Southwest Florida Water Management District (SWFWMD). The following places of interest are listed in alphabetical order by county within the SWFWMD. You may want to contact these places for further information about visiting particular wetlands in your area.

## Charlotte County

**Charlotte Harbor Environmental Center**  
10941 Burnt Store Rd.  
Punta Gorda, FL 33955  
(941) 575-5435

## Citrus County

**Chassahowitzka National Wildlife Refuge**  
1502 S.E. Kings Bay Dr.  
Crystal River, FL 34429  
(352) 563-2088

**Citrus County Parks and Recreation**  
1410 S. Lecanto Hwy.  
Lecanto, FL 34461  
(352) 527-7677

**Crystal River Preserve State Park**  
3266 N. Sailboat Ave.  
Crystal River, FL 34428  
(352) 563-1136

**Fort Cooper State Park**  
3100 S. Old Floral City Rd.  
Inverness, FL 34450  
(352) 726-0315

**Homosassa Springs Wildlife State Park**  
4150 S. Suncoast Blvd.  
Homosassa, FL 34446  
(352) 628-5343

## DeSoto County

**Brownville Park**  
1885 N.E. Brownville St.  
*(6 miles north of Arcadia on Hwy. 17)*  
Arcadia, FL 34266  
(863) 491-5333

**Morgan Park**  
1100 W. Hickory St.  
*(Just east of the Peace River bridge on Hwy. 70)*  
Arcadia, FL 34266-3363  
(863) 993-4854

## Hardee County

**Paynes Creek Historic State Park**  
888 Lake Branch Rd.  
Bowling Green, FL 33834  
(863) 375-4717

## Hernando County

**Withlacoochee State Forest  
(Recreation/Visitors Center)**  
15003 Broad St.  
Brooksville, FL 34601  
(352) 754-6896

## Highlands County

**Highlands Hammock State Park**  
5931 Hammock Rd.  
Sebring, FL 33872  
(863) 386-6094

## Hillsborough County

**Aldermans Ford Park**  
100 Aldermans Ford Park Dr.  
Lithia, FL 33567  
(813) 757-3801

**E. G. Simmons Park**  
2401 19<sup>th</sup> Ave. N.W.  
Ruskin, FL 33570  
(813) 671-7655

**Flatwoods Park**  
14302 Morris Bridge Rd.  
Thonotosassa, FL 33592  
(813) 987-6211

**Hillsborough River State Park**  
15402 U.S. 301 N.  
Thonotosassa, FL 33592  
(813) 987-6771

**Lettuce Lake Park**  
6920 E. Fletcher Ave.  
Tampa, FL 33637  
(813) 987-6204

**Lithia Springs Park**  
3932 Lithia Springs Rd.  
Lithia, FL 33547  
(813) 744-5572

**Little Manatee River State Park**  
215 Lightfoot Rd.  
Wimauma, FL 33598  
(813) 671-5005

**Upper Tampa Bay Park**  
8001 Double Branch Rd.  
Tampa, FL 33635  
(813) 855-1765

### **Manatee County**

**DeSoto National Memorial Park**  
8300 DeSoto Memorial Hwy.  
Bradenton, FL 34209  
(941) 792-0458

**Lake Manatee State Park**  
20007 Hwy. 64 E.  
Bradenton, FL 34202  
(941) 741-3028

**Manatee County Parks and Recreation**  
5502 33rd Ave. Dr. W.  
Bradenton, FL 34209  
(941) 742-5923

### **Marion County**

**KP Hole Park**  
9435 S.W. 190<sup>th</sup> Ave.  
Dunnellon, FL 34432  
(352) 489-3055

**Rainbow Springs State Park**  
19158 S.W. 81<sup>st</sup> Place Rd.  
Dunnellon, FL 34432  
(352) 465-8555

### **Pasco County**

**Crews Lake Park**  
16739 Crews Lake Dr.  
Spring Hill, FL 34610  
(727) 861-3038

**Jay B. Starkey Wilderness Park**  
10500 Wilderness Park Rd.  
New Port Richey, FL 34655  
(727) 834-3247

**Withlacoochee River Park**  
12449 Withlacoochee Blvd.  
Dade City, FL 33525  
(352) 567-0264

### **Pinellas County**

**Anderson Park**  
39699 U.S. Hwy. 19 N.  
Tarpon Springs, FL 34689  
(727) 943-4085

**Boyd Hill Nature Preserve**  
1101 Country Club Way S.  
St. Petersburg, FL 33705  
(727) 893-7326

**Brooker Creek Preserve**  
3940 Keystone Rd.  
Tarpon Springs, FL 34689  
(727) 453-6800

**Fort DeSoto Park**  
3500 Pinellas Bayway S.  
Tierra Verde, FL 33715  
(727) 582-2267

**George C. McGough Nature Park**  
11901 146<sup>th</sup> St. N.  
Largo, FL 33774  
(727) 518-3047

**Honeymoon Island**  
1 Causeway Blvd.  
Dunedin, FL 34698  
(727) 469-5942

**Sawgrass Lake Park**  
7400 25<sup>th</sup> St. N.  
St. Petersburg, FL 33702  
(727) 217-7256

**Weedon Island Preserve**

1800 Weedon Dr. NE  
St. Petersburg, FL 33702  
(727) 453-6500

**Polk County**

**Lake Kissimmee State Park**

14248 Camp Mack Rd.  
Lake Wales, FL 33853  
(863) 696-1112

**Lake Wales Ridge State Forest**

851 County Rd. 630 E.  
Frostproof, FL 33843  
(863) 635-8589

**Saddle Creek Park**

**Polk County Parks and Recreation**

3716 Morgan Combee Rd.  
Lakeland, FL 33801  
(863) 499-2613

**Sarasota County**

**Myakka River State Park**

13207 S.R. 72  
Sarasota, FL 34241  
(941) 361-6511

**Oscar Scherer State Park**

1843 S. Tamiami Trail  
Osprey, FL 34229  
(941) 483-5956

**Sumter County**

**Half Moon Wildlife Management Area**

(travel west on S.R. 44 from Wildwood;  
before crossing the Withlacoochee River,  
turn north on C.R. 247)  
(352) 732-1225



WATERMATTERS.ORG • 1-800-423-1476

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The Southwest Florida Water Management District (District) does not discriminate on the basis of disability. This nondiscrimination policy involves every aspect of the District's functions, including access to and participation in the District's programs and activities. Anyone requiring reasonable accommodation as provided for in the Americans with Disabilities Act should contact the District's Human Resources Bureau Chief, 2379 Broad St., Brooksville, FL 34604-6899; telephone (352) 796-7211 or 1-800-423-1476 (FL only), ext. 4702; TDD 1-800-231-6103 (FL only); or email ADACoordinator@WaterMatters.org.