

VIDEO: Freshwater Wetlands

Adapted from: Freshwater Wetlands-Life at the Waterworks. Educational Media Corporation / North Carolina State Museum of Natural Sciences.

Grade Level: Basic

Duration: 40 minutes

Setting: Classroom

Summary: Students watch a video about different types of freshwater wetlands, their soils, flora, and fauna and complete a worksheet.

Objectives: Students will become familiar with soils, flora, fauna, and specific threats and issues related to bogs, marshes, pocosins, savannas, river floodplains, and seasonal wetlands.

Vocabulary:

Hydric soils, hydrophytic vegetation
-See *Worksheet Answer Key for definitions of the following vocabulary words:* Pocosin, seasonal wetland, savanna

Related Module Resources:

- See the “Additional Module Resource” section of the Module Resource Binder for relevant fact sheets and articles

Materials (Included in Module):

- Freshwater Wetlands Video [Book Box]
- Freshwater Wetlands Worksheet
- Freshwater Wetlands Answer Key

Additional Materials (NOT Included in Module):

- TV, VCR

ACADEMIC STANDARDS (ENVIRONMENT & ECOLOGY):

7th Grade

- 4.1.7.D. Explain and describe characteristics of a wetland.
- Identify specific characteristics of wetland plants and soils.
 - Recognize the common types of plants and animals.
 - Describe different types of wetlands.
 - Describe the different functions of a wetland.
- 4.1.7.E. Describe the impact of watersheds and wetlands on people.
- Explain the impact of watersheds and wetlands in flood control, wildlife habitats and pollution abatement.
 - Explain the influence of flooding on wetlands.

10th Grade

- 4.1.10.D. Describe the multiple functions of wetlands.
- Describe wetlands in terms of their effects (e. g., habitat, flood, buffer zones, prevention areas, nurseries, food production areas).
 - Explain how a wetland influences water quality, wildlife and water retention.
 - Analyze wetlands through their indicators (e. g., soils, plants, hydrology).
- 4.1.10.E. Identify and describe natural and human events on watersheds and wetlands.
- Describe how natural events affect a watershed (e. g., drought, floods).
 - Identify the effects of humans and human events on watersheds.

12th Grade

- 4.1.12.D. Analyze the complex and diverse ecosystems of wetlands.
- Describe and analyze different types of wetlands.

BACKGROUND:

Wetlands are important natural areas characterized by standing water during at least part of the year, saturated, **hydric soils**, and **hydrophytic vegetation** (plants that are adapted to saturated soil conditions). Wetlands have many significant functions from absorbing and releasing water, mitigating floods, providing essential habitat and breeding grounds, filtering sediment, transforming and sequestering pollutants, to improving water quality and providing excellent recreational opportunities.

The best way to experience a wetland is to visit one in person; however, this is not always feasible. The second best way is to take a virtual tour of different types of wetlands by watching a video such as Freshwater Wetlands. Although some of the material covered in this video is North Carolina-specific, the videography and images are excellent and truly bring wetlands to life. Freshwater Wetlands contains gorgeous images of and informative narration about different types of wetlands and the soils, flora, fauna, and threats specific to those different types of wetlands.

OVERVIEW:

Students watch the 30-minute video, Freshwater Wetlands. They complete a worksheet and discuss different types of wetlands and the flora, fauna, soils, and threats specific to those different types of wetlands.

PROCEDURE:**Teacher Preparation:**

1. Procure a TV and VCR for the presentation of the video.
2. Photocopy an appropriate number of Freshwater Wetlands worksheets sheets for your students.
3. Fast forward the video approximately 4:45 minutes to the point where there is an icon of the state of North Carolina and the words “Mountain Bog” in the lower left hand corner of the screen. Start the video from this point. Part I of the video that you just fast forwarded through is specific to the Freshwater Wetlands Exhibit at the NC State Museum of Natural Sciences and is not relevant to Pennsylvania students.

Student Activity:

1. Briefly introduce the topic of wetlands and their importance.
2. Distribute Freshwater Wetlands worksheets to students and have them read over the questions. The questions are presented in the same order in which their answers are discussed in the video.
3. Watch the video attentively and complete the worksheet.
4. After the end of the video, give students a few minutes to complete their worksheets.
5. Go over the answers with students and foster discussion of the various questions when appropriate.

DISCUSSION:

Use worksheet questions to fuel discussion.

EVALUATION:

- Students have accurately completed the worksheet.

EXTENSIONS AND MODIFICATIONS:

- Have students work in groups to make brief documentaries, photo albums, or illustrated guides of wetlands and threats to wetlands in your area.
- Have students interview people in the community about their perception of our wetlands and threats to them.
- Invite local wetland specialists to make presentations in your classroom.

- Have students research different types of wetlands that are common in their communities and educate their peers or community groups.
- Contact your local Conservation District and/or Fish & Boat Commission Office to borrow more videos about wetlands.

NOTES (PLEASE WRITE ANY SUGGESTIONS YOU HAVE FOR TEACHERS USING THIS ACTIVITY IN THE FUTURE):



WORKSHEET : VIDEO - FRESHWATER WETLANDS

Name _____ Date _____

Part I: Sneak Preview

Your teacher will most likely fast forward through this section of the video.

Part II: Getting a Feel for Wetlands

Name two animals that are found in each of the types of wetlands listed below:

- a. Mountain bog - _____
- b. Saltwater Marsh - _____
- c. River - _____
- d. Seasonal Pond - _____
- e. Savanna - _____

Part III: Scientist in the Field

Savanna

2. Describe a savanna.

3. Describe the vegetation—what kinds of plants can be found in a savanna?

4. Name an endangered species that can be found in a savanna.

Mountain Bog

5. What are some reasons for the decrease in the number of mountain bogs in North Carolina?

6. Name a rare type of vegetation that can be found in a mountain bog.

Seasonal Wetland

7. What is a seasonal wetland?

8. During what months are seasonal wetlands filled with water?

9. What types of animals use seasonal ponds as breeding grounds?

10. Describe the soil found in a seasonal wetland.

11. Why aren't seasonal ponds without adjacent viable upland habitat suitable breeding areas?

Freshwater Marsh

12. Describe a freshwater marsh habitat.

13. What kinds of plants are good indicators of a freshwater marsh habitat?

Pocosin

15. Describe the vegetation and soils typically found in a pocosin.

16. How is a pocosin like a sponge?

River

17. Describe a river flood plain.

18. When is the river's water level the highest?

19. What kinds of vegetation can be found in the upper flood plains, where there is some flooding but not for long periods?

20. What kinds of vegetation can be found in the lower flood plains closer to the river?

Part IV: Carnivorous Plants – The Plants that Bite Back

The plants highlighted in this section are all carnivorous plants.

21. Name four carnivorous plants that are found in freshwater wetlands.

- a. _____
- b. _____
- c. _____
- d. _____



ANSWER KEY : VIDEO - FRESHWATER WETLANDS

Part I: Sneak Preview

Your teacher will most likely fast forward through this section of the video.

Part II: Getting a Feel for Wetlands

1. Name two animals that are found in each of the types of wetlands listed below:
 - a. Mountain bog - *animals include turtles and raccoons*
 - b. Saltwater Marsh – *animals include beavers, damselfly larvae, birds, water striders, turtles, spiders, eagles, water snakes, and frogs*
 - c. River – *animals include river otters, birds, ducks, turtles, herons, coyotes/foxes, and eagles*
 - d. Seasonal Pond – *animals include deer, snakes, and salamanders*
 - e. Savanna – *animals include insects, woodpeckers, bear, and alligators/crocodiles*

Part III: Scientist in the Field

Savanna

2. Describe a savanna.
Savannas are flat, wet areas with sandy soils that are covered by grasses.
3. Describe the vegetation—what kinds of plants can be found in a savanna?
Venus fly traps, sundews, and pitcher plants can be found in the ground layer of vegetation.
4. Name an endangered species that can be found in a savanna.
The federally endangered red cockaded woodpecker is found in North Carolina's savanna.

Mountain Bog

5. What are some reasons for the decrease in the number of mountain bogs in North Carolina?
Many of North Carolina's mountain bogs have been ditched, drained, grazed by livestock, or polluted by agricultural and industrial runoff.
6. Name a rare type of vegetation that can be found in a mountain bog.
The mountain sweet pitcher plant is a rare species of pitcher plant that can be found in mountain bogs.

Seasonal Wetland

7. What is a seasonal wetland?
Seasonal wetlands are defined by their ability to hold water for part of the year.
8. During what months are seasonal wetlands filled with water?
Seasonal wetlands begin to flood in the winter and early spring and dry up in mid- to late summer.
9. What types of animals use seasonal ponds as breeding grounds?
Amphibians.
10. Describe the soil found in a seasonal wetland.
Seasonal wetlands have peaty clay subsoil.
11. Why aren't seasonal ponds without adjacent viable upland habitat suitable breeding areas?
Animals live in the upland during the rest of the year. Without the upland, they have no place to live and therefore wouldn't come to breed in a seasonal pond without upland habitat.

Freshwater Marsh

12. Describe a freshwater marsh habitat.
Freshwater marsh habitats can be large or small but they almost always have some form of standing water. They are permanently flooded or wet.
13. What kinds of plants are good indicators of a freshwater marsh habitat?
Freshwater marsh habitats have diverse vegetation. Some plants that can be found in a freshwater marsh habitat include Bulrushes, cattails, Oliver bushes, black willow, water lilies, arrow heads, lizard tails and touch-me-nots.

Pocosin

15. Describe the vegetation and soils typically found in a pocosin.
A pocosin is an expansive wetland dominated by evergreen and deciduous shrubs. Pocosins have permanently saturated organic soils.
16. How is a pocosin like a sponge?
A pocosin is like a sponge because it soaks up water in the winter and slowly releases the water in the summer.

River

17. Describe a river flood plain.

River flood plains are located near larger rivers. The flood plains fill with water when the river floods. The plains have low water or are dry when the river is low.

18. When is the river's water level the highest?

The river water is typically the highest in the winter and early spring.

19. What kinds of vegetation can be found in the upper flood plains, where there is some flooding but not for long periods?

Sycamore, elm, sweet gum, and sugar berry thrive in the upper flood planes where there is shallow water or dry land.

20. What kinds of vegetation can be found in the lower flood plains closer to the river?

Ball cypress and tupelo gum can tolerate standing water year round and can be found in the lower flood plains.

Part IV: Carnivorous Plants – The Plants that Bite Back

The plants highlighted in this section are all carnivorous plants.

21. Name four carnivorous plants that are found in freshwater wetlands.

- a. *Pitcher plants*
- b. *Sundew*
- c. *Bladderwort*
- d. *Venus flytraps*