



Habitat

Activity 1-9

Wetland Field Trip

How Valuable is This Wetland?

Adapted from *Lessons on the Lake* and
BTNEP/LSU AgCenter: *Wetland Functions, Values and Economic Resources*

Focus/Overview

Students learn best when they can directly experience the environment about which they are learning. This lesson focuses on the functions and values of wetlands by having students make direct observations about these characteristics while in the field.

Learning Objective

The learner will...

- visit and use observation to assess the site's functions and values.

Louisiana Grade Level Expectations (Science)

5: GLE-26	Identify and describe ecosystems of local importance (LS-M-C3).
7: GLE-39	Analyze the consequences of human activities on ecosystems (SE-M-A4).

Materials List

- map of wetland site you will visit
- background information on site
- field guides to wetland plants and animals
- binoculars
- containers, Ziploc bags
- dip nets and/or seine nets
- copies of worksheets
- cameras
- salinity test kit (optional)

Background Information

Educational and Research Values of Wetlands

Because of their biological richness and their specialized hydrology and other scientific qualities, wetlands are ideal locations for research and education in the natural sciences. In Barataria-Terrebonne, there are several good examples of field research and education facilities.

Louisiana University Marine Consortium (LUMCON; <http://www.lumcon.edu>)

at Cocodrie and the Louisiana Department of Wildlife and Fisheries Marine Lab at Grand Terre Island are two facilities where research and education programs related to the natural resources of the Barataria-Terrebonne estuary take place. In Thibodaux, the National Parks Service's Wetlands Cultural Center introduces the public visiting our area to all the fascinating aspects of the estuary. The Jean Lafitte National Park Barataria Unit near Lafitte, Louisiana, holds educational programs at the learning center and the park attracts local people, out-of-state travelers, and foreign visitors to the wetlands to walk the trails and learn about the ecology of the area. You may know of another area for your students to visit.

Field Trip Tips

If possible, take the students on a swamp tour or a canoe trip with a knowledgeable guide. Either way, it's best to bring the students *into* the wetland, rather than just to the edge of it. Always remember to remind students that safety is the first priority when in the field. This way, they are more likely to see interesting wildlife and gain a deeper appreciation for the ecology and the values of wetlands you have discussed.

Prepare students well before taking the trip. Be sure they understand the values and functions of wetlands so they can apply their knowledge. Go over the worksheets they will be completing either before you leave or as soon as you arrive at the site so the students understand what they need to do.

BTNEP Connection

Habitat

Grade Level

5, 7

Duration

½ day to full day field trip

Subject Area

science

Setting

field location

Vocabulary

herbaceous, aesthetics

Original Sources

Adapted from *Lessons on the Lake* and BTNEP/LSU AgCenter: *Wetland Functions, Values and Economic Resources*, Activity 13.



www.btnep.org



Take along as many adults as possible to help with interpretation and to enable you to break the class into small groups. If possible, hold an orientation meeting for adult chaperones before the trip to familiarize them with the activities, concepts and procedures.

Procedures

1. We have been discussing the functions and values of wetlands. Today we are visiting a wetland area. One task we will complete is an assessment of this wetland to decide how well it is performing the functions and values we talked about. (Pass out the two handouts: **Wetland Habitat Determination worksheet** and the **Wetland Wildlife Inventory**.)
2. First, how do we know this is a wetland? What are the characteristics of a wetland and does this site have those characteristics? (Wetlands are wet at least some of the time – they can be flooded or have water at or near the surface for at least part of the year. Wetlands also have unique soils – *hydric soils*. Hydric soils do not hold much oxygen and are saturated with water most of the year. Wetlands have plants that are adapted to the wet conditions and hydric soils. Plants that don't like having their roots wet do not do well in a wetlands habitat.) Let's first look at the dominant vegetation. What kind of trees or other plants grow here? (Point out the trees or dominant vegetation and identify them – cypress in a swamp, etc. The dominant vegetation will tell what kind of wetland habitat the site represents. Have students record the names of the dominant vegetation on their **Wetland Habitat Determination worksheet**.)
3. What kind of soil does this site have? (Collect soil samples in containers and pass them to each group so the students can look, touch and smell the soil sample.) Is the soil dark brown or black? Does the soil have a lot of decayed organic material? What does it smell like? Is it dry or wet? (Students fill out their observations about the soil samples on their **Wetland Habitat Determination worksheet**.)
4. Do we see a lot of water standing on the ground? So, is this a wetland? What kind of wetland is it? Swamp, freshwater marsh, brackish marsh, salt water marsh? How do we know? (If you have a salinity test, now is the time to have the students do this water quality test. Students record the salinity of the water and type of wetland habitat on their **Wetland Habitat Determination worksheet – Blackline Master #1**)
5. Now, let's look at a map of this area and see what other features there are in the area along with the wetland. (Locate on the map the area of the wetland, the point where you are, features such as levees, building, roads, fields (what are these fields used for? sewage treatment plants, storm water pumps, etc.) How might these features we have listed affect the wetland? How affected by human activity is this wetland? How might the wetland perform some of the functions we have discussed, such as flood protection, pollution control, etc.? Check off the value of the wetlands for these items on your **Wetland Habitat Determination worksheet – Blackline Master #1**. (Discuss how the wetland site performs these functions. Help students decide on the value it represents.)
6. Now we'll inventory some of the living things in the wetland. Use your **Wetland Wildlife Inventory – Blackline Master #2**. Use this checklist to check off some of the plants and animals in this particular wetland. We'll use nets to find out what living things are in the water. (The students may need help in observing and identifying the plants and animals. Consider bringing field guides to help students identify organisms. Although they may be unaccustomed to it, encourage periods of quiet observation. If there is a way of taking a hike along a levee or taking the students into the wetland in a boat or canoes, they are much more likely to see wildlife. As organisms are observed and identified, students should check them off on their inventory sheets. For the dip-netting or seining, you will need a shallow, easily accessible water area. With younger students, adults may want to do the actual collecting, and then the students can observe the catch and identify the organisms using ID sheets or field guide books. After the organisms are caught empty them into a shallow white tray for easy observation.)
7. Now we have learned about the plants and animals that live at this wetland site. We know where it is. We need to decide how it rates in other wetland values areas, such as wildlife habitat, recreational fishing, aesthetics and educational value. How do you think this site rates for wildlife habitat? Check "low," "medium," or "high" value on your worksheet under wildlife habitat. Do the same for aesthetics, which is the same thing as beauty. What about educational value? Is this a good site for learning about wetlands? Was it easy to get here? Is it a safe place? Rate this side for educational value.

Blackline Masters

1. **Wetland Habitat Determination Worksheet**
2. **Wetland Wildlife Inventory**

Assessment

- Students can create a concept map about the protective nature of the marsh during storms.

Extension

Science

Have students collect plant samples to create their own field guide of wetland plants.

Resources

BTNEP Resources:

Tradebooks:

Brewer, Duncan. 2003. **Wetlands (Biomes Series)**. Thameside Press. 57pp. ISBN: 1593891261.

The Biomes series looks at some of the Earth's major life zones: the natural networks of living things found in different regions of the world. Each title opens with one person's experiences, then considers how plants and animals interact with their surroundings. The book goes on to examine the human impact on the biome.

Throughout, special debate panels invite the reader to discuss selected issues. Wetlands are vital water stores and support a range of wildlife found nowhere else, but people often view them as places that should be drained and put to other uses. This book looks at how wetlands work, and at the impact human activities have had on them. Many wetlands are damaged or have disappeared -- do we want to save them? If so, how should we go about it? Age Range: 6 to 9.

Galko, Francine. 2002. **Wetland Animals**. Heinemann. ISBN: 32pp. ISBN 1403404437

Describes wetlands, the different kinds of animals that can be found in them, and their ecological importance. Age Range: 5 to 7.

Taylor, Dave. 1995. **Endangered Wetland Animals**. Crabtree Publishing Company. 32pp. ISBN: 0865055408.

Ten endangered animals are highlighted in each book with clear, simple text matched by stunning, full-color photographs by renowned wildlife photographer and author Dave Taylor. Each book helps guide the reader toward a greater understanding of the dangers these animals face as their habitats are continually degraded and destroyed. Age Range: 7 to 8.

Websites:

CDs

Louisiana Wetland Functions and Values CD developed by LSU AgCenter's Extension Service in conjunction with the U.S. Geological Survey's National Wetlands Center and the Louisiana Department of Natural Resources (DNR). To receive a copy, contact DNR (800/ 267-4019) or order on the Internet at <http://www.lacoast.gov>.

References:

Tiner, Ralph W. 1998. **Field Guide to Coastal Wetland Plants of the Southeastern United States**. 328 pp. University of Massachusetts Press ISBN: 0870238337 1998

Wetland Habitat Determination Worksheet



Name of the field trip location _____

1. Water and Soil Determination

Name two species of dominant vegetation: _____, _____

Organic material present? Yes No

Smell _____

Is standing water visible? Yes No

Is the soil saturated with water? Yes No

So, is this a wetland? _____

2. Wetland Type Determination

Is the wetland woody (trees present) or herbaceous (grasses with no trees present)?

If the vegetation is herbaceous, name the dominant species: _____

What is the salinity of the water? (circle the correct range)

1-2 ppt
freshwater

3-9 ppt
intermediate water

10-19 ppt
brackish water

20-35 ppt
salt water

3. Human Impacts Determination

What are the human impacts affecting this wetland? _____

4. Wetland Value Determination

How well do you think this wetland can provide **flood protection**?

Low Value

Medium Value

High Value

How well do you think this wetland can **filter and absorb pollutants and nutrients** from water entering the wetland?

Low Value

Medium Value

High Value

Referring to you Wetland Organism Checklist, how valuable is this wetland as a **wildlife habitat**?

Low Value

Medium Value

High Value

How valuable do you think this wetland is to people seeking **recreational opportunities** such as fishing, hunting canoeing, etc.?

Low Value

Medium Value

High Value

How would you rate the **aesthetics**, or beauty, of this wetland?

Low Value

Medium Value

High Value

How valuable is this wetland for **educational activities**?

Low Value

Medium Value

High Value

Does the area in which this wetland occurs provide economic benefits from **non-renewable resources**?

Low Value

Medium Value

High Value

Wetland Plant and Animal Checklist

Field trip location _____ Date _____
Wetland Observation Team Members _____

Brackish Marsh

Plants

- wire grass (marsh hay) cord grass
- three -cornered grass
- sea grass
- marsh elder
- marsh mallow
- bull tongue
- grant bulrush
- common threesquare
- deer pea
- switch grass
- Walter's millet
- southern maiad
- alligator weed

Animals

- otter
- white pelican
- lesser scaup
- blue-winged teal
- pintail
- blue crab
- brown shrimp
- menhaden (pogy fish)
- molly
- silverside
- great blue heron
- great egret
- white ibis
- glossy ibis
- rangia clam
- oyster
- copepods
- mottled duck

Additional Wetland Plant, Animal and Habitat Observations:

Wetland Plant and Animal Checklist

Field trip location _____ Date _____

Wetland Observation Team Members _____

Bottomland Hardwood and Natural Levee

Plants

- dwarf palmetto
- hackberry
- live oak
- water oak
- white oak
- trumpet vine
- Chinese tallow(invasive)
- bald cypress
- button bush

Animals

- rabbit
- armadillo
- deer
- opossum
- raccoon
- cane break rattlesnake
- box turtle
- garter snake
- speckled king snake
- barred owl
- red-tailed hawk
- turkey vulture
- crow
- blue jay

Additional Wetland Plant, Animal and Habitat Observations:

Wetland Plant and Animal Checklist

Field trip location _____ Date _____

Wetland Observation Team Members _____

Swamp

Plants

- bald cypress
- swamp tupelo
- black willow
- swamp red maple
- button bush
- blue iris
- smart weed
- alligator weed
- pickerel weed
- bulltongue
- water hyacinth(invasive)
- duckweed
- common salvinia
- water tupelo
- pumpkin ash
- water locust

Animals

- alligator
- blue gill
- mosquito fish
- giant water bug
- red eared slider
- golden silk spider
- raccoon
- great blue heron
- water snake
- water moccasin
- spotted gar
- leopard frog
- crawfish
- swamp rabbit
- nutria
- red-tailed hawk
- barred owl
- bald eagle
- turkey vulture
- snowy egret
- opossum
- alligator snapping turtle
- bald eagle
- freshwater catfish

Additional Wetland Plant, Animal and Habitat Observations:

Wetland Plant and Animal Checklist

Field trip location _____ Date _____

Wetland Observation Team Members _____

Salt Marsh

Plants

- oyster grass (smooth cordgrass)
- black needle rush
- black mangrove
- seagrass
- salt wort

Animals

- salt marsh snail
- speckled trout
- redbfish
- flounder
- diamond-backed terrapin
- salt marsh mosquito
- oyster
- blue crab
- oyster drill
- Atlantic Croaker
- Bay Anchovy

Additional Wetland Plant, Animal and Habitat Observations:

Wetland Plant and Animal Checklist

Field trip location _____ Date _____

Wetland Observation Team Members _____

Freshwater Marsh

Plants

- giant cutgrass
- bulltongue
- Roseau cane
- smartweed
- maidencane
- soft rush
- millet
- water lily
- cattail
- button bush
- groundsel
- arrowhead
- marsh mallow
- American lotus
- pickerel weed
- penny wort
- Southern wild rice
- coontail
- common duckweed
- spike sedge
- alligator weed

Animals

- red-winged blackbird
- otter
- bald eagle
- nutria
- bull frog
- cricket frog
- green tree frog
- white tail deer
- lubber grasshopper
- white ibis
- glossy ibis
- great egret
- snowy egret
- great blue heron
- alligator
- freshwater catfish
- mottled duck
- large mouth bass
- bald eagle

Additional Wetland Plant, Animal and Habitat Observations:

Wetland Plant and Animal Checklist

Field trip location _____ Date _____

Wetland Observation Team Members _____

Barrier Island/Beach

Plants

- iva
- groundsel
- glasswort
- oyster grass
- sea oxeye
- black mangrove

Animals

- brown pelican
- laughing gull
- tern
- willet
- plover
- sandpiper
- frigate bird
- bottle-nosed dolphin
- speckled trout
- flounder
- sheephead
- fiddler crab
- hermit crab
- red fish
- white shrimp
- brown shrimp
- skimmer
- Atlantic croaker
- oysters
- blue crab
- striped mullet
- reddish egret
- menhaden (pogy fish)

Additional Wetland Plant, Animal and Habitat Observations: