



Habitat

Activity 1-8

Wetland ECO-Bingo

Adapted from Florida's 4-H Earth Connections Curriculum and BTNEP/LSU AgCenter: *Wetland Functions, Values and Economic Resources*

Focus/Overview

This activity can be used to introduce the concepts of habitat and ecosystem. It can also be used to review the concepts learned about wetlands.

Learning Objectives

The learner will...

- define the terms "ecosystem" and "habitat."
- identify the many habitats of the Barataria-Terrebonne estuarine ecosystem.
- identify the components of a habitat and an ecosystem.

Louisiana Grade Level Expectation (Science)

5: GLE-26	Identify and describe ecosystems of local importance (LS-M-C3).
-----------	-----------------------------------------------------------------

Materials List

- Wetland ECO-Bingo cards
- Beans, shells, corn or other markers
- Wetland ECO-Bingo game words
- Container for game words
- Shoe box

Background Information

The Barataria-Terrebonne Estuary may be thought of as the wetland ecosystem within which there are many distinct but overlapping habitats that support a specialized group of plants and animals. The habitats include: Bottomland Hardwood, Swamp, Natural and Artificial Levees, Freshwater Marsh, Intermediate Marsh, Brackish Marsh, Salt Marsh, Barrier Island, Beach, Bay, Lake, Bayou, and the Gulf of Mexico. If the students are able to take a field trip to at least one of these habitats, they will become familiar with some of the species. A description of the major habitat types can be found on the handout, **Wildlife Habitats of the Barataria-Terrebonne Estuary**. The Wetland Wildlife Checklist helps to define some of these habitats. In addition, more information about these habitats can be found in *Saving Our Good Earth: A Call to Action, Barataria-Terrebonne National Estuary Program Characterization Report*. Contact BTNEP for a copy.

Advance Preparation

1. Make ECO-Bingo cards, one per student. Laminate if possible.
2. Cut out the ECO-Bingo Games words.

Procedure

1. The Barataria-Terrebonne Estuary represents an ecosystem. Similar climate and conditions exist within the estuary. The definition of an ecosystem is an area where similar conditions, plants and animals exist. The definition of a habitat is similar, but a habitat is more specialized. Depending on the students' experiences, discuss the various habitats of the estuary, letting students give examples of plants and animals seen in the different habitats.

BTNEP Connection

Habitat

Grade Level

5

Duration

45 minutes

Subject Area

science

Setting

classroom

Extension Areas

art, language arts

Vocabulary

ecosystem, habitat

Original Sources

Adapted from Florida 4-H Earth Connections Curriculum and "Wetland ECO-Bingo!" in BTNEP/LSU AgCenter: *Wetland Functions, Values and Economic Resources*, Activity 3.



www.btnep.org



2. Within the Barataria-Terrebonne Estuary Ecosystem are many different habitats. The organisms found in each habitat are adapted to the conditions there. Habitats often overlap and animals may move from one habitat to another but finding certain plants and animals living together tells us what kind of habitat it is.
3. Divide the class into groups of two and give each group an ECO-Bingo card (or you can make enough bingo cards for each individual student) and some beans (or other markers). Have one student be the “caller” and give him or her the container of ECO-Bingo game words. The caller pulls the game words from the container and calls them out while the students place markers on the squares as the habitats are called. When a group fills their card completely, they call BINGO! Each time BINGO! Is called, each member of the group names a plant or animals that lives in one of the named habitats and gives a function or value (different from the last group) or the named habitat. The group must also tell how the habitat they name fits into the ecosystem of the estuary – what is its special place.

Blackline Masters

1. **Wildlife Habitats of the Barataria-Terrebonne Estuary**
2. **ECO-Bingo Game Words**
3. **ECO-Bingo Game Cards** (multiple copies)

Assessment

- The students will be able to identify a plant or animal from a given habitat
- The students will be able to give a function or value of a named habitat
- The student will explain how a habitat fits in an ecosystem

Extensions

The Arts:

Have students create dioramas of a chosen habitat. The dioramas can be made in a large shoe box. The dioramas can be accompanied by a written description of the habitat, the organisms that live there, and its functions and values within the Barataria-Terrebonne ecosystem.

Have students create drawings of different habitats within the BTE ecosystem.

Resources

BTNEP Resources:

Saving Our Good Earth: A Call to Action, Barataria-Terrebonne National Estuary Program Characterization Report.

Tradebooks:

Lisowski, Marilyn, and Robert A. Williams. 1997. **Wetlands**. Scholastic Library Publishing. 28pp. ISBN: 0531113116

Not long ago, wetlands were seen as dank, useless places where mosquitoes breed. Some were drained; others were used as dumping grounds. Today, we know that wetlands areas provide homes to a tremendous variety of wildlife. They provide us with food and water, act as flood barriers and prevent erosion. As readers carry out the projects and activities in this book, they too will come to appreciate the value of wetland ecosystems. Age Range: Young Adult

Stewart, Melissa, and Stephen K. Maka. 2003. **Life in a Wetland**. Lerner Publishing. 72pp. ISBN: 0822546876

Go on a journey through the swampy marshes and cattail-filled fields that are found where water and land combine. Using the Florida Everglades as an example, Life in a Wetland examines the physical features, processes, and many different species of plants and animals that make up a unique wetland ecosystem. Find out about the impact of humans and learn what makes it so special. Age Range: 12 and up.

Stille, Darlene R. 2000. **Wetlands (True Books-Ecosystems)**. Children’s Press.

Examines the different types of wetlands and the plant and animal life they support. Reading level: Ages 9-12.

CDs

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

Wildlife Habitat in Barataria-Terrebonne Estuary

From a purely biological viewpoint, wetlands are production machines, out-producing most other ecosystems several times over. Plant material (termed primary productivity) is produced in huge quantities, and it supports a complex food web made up of all kinds of consumers: worms, insects, spiders, fish, reptiles and amphibians, crustaceans, birds, and mammals. Detritus, or dead and dying plant and animal material, actually makes up the food source for most of the primary consumers in the food web. This productivity results in a huge variety of animal life.

Migrating ducks and geese depend on wetlands for resting and feeding during their long annual treks. Loss of wetlands means loss of waterfowl populations. The coastal wetlands of Louisiana are also a crucial stopover point for neotropical (from tropical South America) birds as they make their migrations in the spring and fall. They stop to feed and rest along coastal cheniers and ridges, giving birders an opportunity to see unusual and colorful species.

A number of endangered and threatened species also depend on wetlands for their survival and thrive in Barataria-Terrebonne. Nationwide, 79 wetland plant and animal species are listed as threatened or endangered. The Bald Eagle and the Brown Pelican are the best known of the recovering species that reside in Barataria-Terrebonne, but there are others, including several species of sea turtles and fish.

The marshes provide nutrition and shelter for numerous marine species that complete part of their life cycle in the coastal wetlands and the remainder in the open water of the Gulf of Mexico. Some species are economically, as well as biologically, important.

All of this adds up to an incredible diversity of plant and animal species supported by our coastal wetlands and represents high levels of biodiversity. One way to explain the importance of biodiversity is to imagine the ecosystem as a city bustling with "people" all taking care of the multitudes of jobs that need to be done each day. Plants are converting sunlight to energy; insects are converting plant matter to energy; decomposers, detritivores, and scavengers are tearing down dead, decaying material to make nutrients available for new plants and animals. Biodiversity means there are enough kinds of organisms to do all of the jobs in the ecosystem (the city). If biodiversity is diminished, some jobs go undone and the ecosystem is altered. It might be compared to when an essential group of workers goes on

strike and life becomes difficult for everyone.

Biodiversity is also important to humans because of the contributions to medicine and genetics-related research.

The Major Habitats of the Barataria-Terrebonne Estuary

Bottomland hardwood and natural ridge habitats represent the higher wet habitats of the estuary. The land is higher and the soils are better drained. Trees such as hackberry, palmetto and live oak thrive. Animals that prefer dry ground occupy these habitats. They include rabbits, deer, armadillos, squirrels, raccoons, box turtles, and king snakes. Humans have also occupied these habitats more than any of the others, converting the forest to farmland and urban areas. Much of the bottomland hardwood habitat is in the upper part of the estuary, while the natural levees extend like fingers towards the Gulf of Mexico, following the courses of the natural bayous.

Swamp habitat may be defined as forested wetland, flooded for a large part of the year. The dominant vegetation includes bald cypress, swamp tupelo gum, and red maple, three species adapted to living in flooded conditions. The animals found in the swamp are also adapted to wetter conditions. They include alligators and turtles, herons and egrets, nutria and swamp rabbits. The swamps are also found in the upper part of the estuary.

Freshwater marsh habitat is characterized by its wide variety of herbaceous plant species including bulltongue, giant cut grass, water lilies, and pickerel weed. Many species of birds, frogs, fish, snakes, and other reptiles inhabit the freshwater marshes. The freshwater marshes are found adjacent to the swamp, usually on the Gulf side, south of the forested wetlands.

Intermediate marsh habitat is a transition zone between freshwater and brackish marsh habitats. Though it has the largest number of furbearers, it has fewer species than the freshwater habitat, but more than the brackish habitat.

Brackish marsh habitat is characterized by having far fewer species of herbaceous plants than the freshwater marsh. Plants living in brackish marsh must be able to tolerate changing salinity levels as salt water and fresh water mix. The dominant species of plant is wire grass. Common animal species include otter, mink, ibis, white pelicans, blue crabs and shrimp.

Saltwater marsh habitat is a more specialized habitat, and fewer species are adapted to living in the harsh conditions of the salt marsh. The dominant vegetation is oyster grass, also called smooth cord grass or *Spartina alterniflora*. Other plants include black rush and black mangrove. The salt marsh snail lives on the stems of the oyster grass, and oysters, shrimp, crabs and numerous species of fish abound beneath the water. The saltwater marsh is the nursery ground for many Gulf species. Brown pelicans also are seen feeding with gulls and terns.

At the end of the estuary lie many **bayous and lakes** as the salt marsh gives way to the Gulf of Mexico. Most of the life is found beneath the water, as any fisherman knows. Redfish, shrimp, blue crabs, flounder, and oysters

are some of the many species living in these habitats. Almost half of Barataria-Terrebonne is made up of shallow open water, which includes saltwater bays as well as freshwater lakes further inland. Finally, the **barrier islands** represent the last terrestrial habitat before the open waters of the Gulf. The barrier island habitat is harsh. The species there are adapted to an unstable, salty environment. On the Gulf side, a barrier island is made up of a beach and low sand dunes inhabited by grasses and shrubs, including groundsel and iva. The bay side of the barrier island is dominated by salt marsh habitats. Barrier islands are subject to rapid erosion rates, and frequent storms, but they are very important, specialized habitats for many species, particularly seabirds.

ECO-Bingo Game Words

Cut out the words and place in a container. The "caller" draws the word cards and calls them out to the players.

BOTTOMLAND HARDWOOD FOREST	LAKE	BEACH
BARRIER ISLAND	SWAMP	INTERMEDIATE MARSH
SALT MARSH	AGRICULTURAL FIELD (Sugarcane Field)	ESTUARY
NATURAL LEVEE	GULF	BAY
BAYOU	ARTIFICIAL REEF	FRESHWATER MARSH