

# UNDER WETLAND SKIES

**Developed by:** Andrew Hirtle

**Adapted from:** Project WILD Aquatic (Council for Environmental Education. Project WILD Aquatic. Houston, 2004.)

**Time:** 45 minutes

## **Overview**

This activity introduces participants to migration concepts and wetland bird identification, through a inquiry learning activity, and a game activity.

## **Benchmarks Addressed**

- 1) SC.03.2.A.1(1)Recognize characteristics that are similar and different between organisms.
- 2) SC.03.2.A.1(2)Describe the basic needs of living things.
- 3) SC.03.2.C.1(1)Describe a habitat and organisms that live there.
- 4) SC.03.2.C.1(2)Identify how some animals gather and store food, defend themselves, and find shelter.
- 5) SS.03.3.0.4(1)Identify physical characteristics of places and compare them.
- 6) SS.03.3.0.1(1)View and draw simple maps and pictures to locate, describe, and show movement among places.

## **Learning Objectives**

By the end of this activity, participants will be able to:

1. Identify the wetlands as a habitat.
2. Name three characteristics of five birds found in the West Eugene Wetlands, and the entire western region.
3. Define migration and describe two elements critical to migratory birds.

## **Materials Needed**

- 1) Large color photos of wetland bird species (provided in background material)
- 2) Large field
- 3) 15 paper plates for place markers
- 4) Poster (appropriately size for arrangement of photos)
- 5) Guide to western birds (recommend Udvardy, Miklos. The Audubon Society Field Guide to North American Birds. New York: Alfred A Knopf, Inc., 1977)

## **Background Material**

-Background material for activity two.

“ Birds that migrate depend not just on one suitable habitat, but two and often three habitats. For example, some birds nest and raise their young in the northern limits of their ranges. The same birds may also require suitable habitats in the southern limits of their range to live during the winter. Because migrating birds travels hundreds or thousands of miles between nesting and wintering grounds, resting and feeding sites (known as stopovers)are crucial.

A variety of remarkable migrating shorebirds and waterfowl inhabit the skies and waters of the United States. Many migrating birds- ducks, geese, cranes, herons, rails, terns, and plovers, for example-require wetlands in their breeding, stopover, and wintering grounds. Without wetlands dozens of species of water birds face loss of necessary habitat.

Over the past 150 years, water bird populations have been threatened by the alteration of habitats and the direct mortality of birds. Numerous populations of water birds have declined, some significantly. The disappearance and degradation of wetlands are major threats to the survival of migratory water birds. Destruction of wetland habitats reduces the quantity of suitable nesting, feeding, and resting areas. Alteration of wetland habitats often reduces the quality of habitats, making them unsuitable for water birds. Wetland habitats, usually found in low, fertile plains along watercourses, were historically prized for conversion to farmland and settlements. Agriculture and development, both residential and industrial, have reduced the number and quality of natural wetlands.

Direct mortality of water birds occurs in various ways. The migration routes of North American water birds are well known. Before the passage of regulations regarding the hunting of water birds, market hunters of the 19<sup>th</sup> century decimated the flocks by taking advantage of the vast numbers of water birds that concentrated at strategic points along these routes. Pollution, through insecticides and herbicides for example, has also taken a toll. The birds ingest the poisons through the food chain, sometimes with lethal effects. In some cases, pesticides also kill the birds' food, reducing their food supply. (pg. 14-16, Project WILD Aquatic)"

"Migration: the periodic movement of animals from one area to another and back again as a natural part of their lives. (pg. 254, Project WILD Aquatic)"

-Background material for activity one.

-For this activity the facilitator is to create a poster. On one side, arrange photos of the five birds described below, these photos should be large enough for every student in your class to see. Below each photo write in the common name for the bird depicted. On the back of the poster, or a separate sheet, attaché the characteristic list provided below.

-Quality photos for this activity can be found in any of the various western bird guides (recommend Udvardy, Miklos. The Audubon Society Field Guide to North American Birds. New York: Alfred A Knopf, Inc., 1977)

Great Blue Heron, this bird...

- mainly calls when startled or alarmed and makes a loud *grak* or *kraak*.
- lays 3-7 blueish green eggs in a stick nest.
- averages 48 inches in height
- diet mainly consists of fish and amphibians
- gains its name from the blue grey color of its feathers

Osprey, this bird...

- occurs on every continent, at least as a winter visitor.
- has a distinct bend in the elbow while flying
- lays 2-4 brown blotched eggs
- feeds entirely on fish
- is a large hawk, whose head is white and has a dark line through the eye.

Redwing Blackbird, this bird...

- nests are far apart, and the males defend a sizable territory
- lays 3-4 pale blue eggs
- is widespread from sub arctic Canada to Central America
- is often seen perched on cattails
- males have a patch of red and yellow on their shoulder.

Canada Goose, this bird...

- passes on knowledge of migration routes from parent to offspring during a single migration
- lays 4 to 8 large white eggs
- males can weigh up to 13 pounds
- makes a musical *honk* when it calls
- has a long black neck, black head, and black bill

Western Meadowlark, this bird...

- lays 3-7 heavily spotted brown eggs in a grassy domed nest
- has a variety of loud cheerful songs
- 8 to 11 inches tall, similar in size to a robin
- is the Oregon state bird
- has a black V on its chest

## **Activity 1 Description**

-This activity requires large color photos of wetland birds from list, and a large poster to arrange them on. This activity will address the first learning objective, and will last approximately 25 minutes.

Step 1-Make Introductions, and briefly explain agenda(1-2 minutes)

Step 2- Give a brief introduction to the wetlands, explain the three parts of a wetland, hydrophilic soil, plants, and water.(1-5 minutes)

Step 3- Bring class outside to a nearby area where there is a possibility for waterfowl viewing. Make sure to point out/ identify/give information about any birds which you can spot along the way or while at the site, also make sure to answer any questions students may have regarding the wetland habitat.(5 minutes)

Step 4- Present class with poster depicting various wetland species of birds and their common names, as described in background information. Address each photo and read the common name aloud. (1-2 minutes)

Step 5- Begin reading list of facts(provided) for each species. The list of facts are articulated so they begin very broad and end specie specific. After reading a few facts, ask the class to guess which bird they think you are describing, but make sure not to give away the correct answer until the students come to a consensus. After the whole group agrees on what bird is being described, read the remaining facts, and continue to the next species. On occasion ask the students why they think a bird has a certain characteristic. This activity should encourage students to think about various characteristics of birds and their specific adaptations for survival.(10-15 minutes)

Step 6- ask class if they have any questions and wrap up activity.(1-2 minutes)

### **Activity two Description**

-This activity requires a large field and 15 place markers. The goal of this activity is to address the second learning objective through a game developed by project WILD aquatic. This activity should last about 20 to 25 minutes.

Step 1- walk class over to open field, again make sure to point out/identify/ give information on any birds which are spotted along the way. (1-3 minutes)

Step two- once in the field set out equal numbers of place markers, set up enough so there is one for every two students, designate winter habitat and nesting habitat on either end, and a stop over habitat in the middle (the entire field should be approximately 90 feet in length).(1-2 minutes)

Step 3- Have the students imagine they are a specific migratory bird from the wetlands ( a green heron, Canada goose, ext.),and tell them they will be “migrating” between the three sites. Explain to the students they must have one foot on each base during the migration in order to survive. If no habitat is available and all bases are filled then the student is dead and should watch from the sidelines. Let those students who don’t survive know they will be back in the game shortly.(1-3 minutes)

Step 4- Question students on various factors which limit migrating bird populations, including changes in habitat of either stopovers, nesting sites, or wintering grounds.(1-3 minutes)

Step 5- before beginning the activity tell the students to play fair and not to fight over bases. Begin the activity at the wintering grounds (slowly at first). On the first run through allow all students to make it through the stopover and onto the nesting ground. Before leaving the stopover point explain to the students the importance of the various migration habitats, and explain how wetlands provide all three of the migration sites for various birds, but emphasis what the wetlands mean to their specific species. Also, address the current season, and comment on how migratory birds are currently using the wetlands.(1-5 minutes)

Step 6- Before students migrate back toward the wintering grounds remove one of the habitats from the stopover point, explain your reasoning for this by using a habitat loss scenario provided. Continue removing and replacing habitats at each migration point, until the end of the game. When new habitat is added bring students who have died back as young, first years.(10-15 minutes)

Step 8- at the end of the game evaluate what the students have learned by asking questions to the class regarding information covered in the activities, such as what are some characteristics of the blue heron, or what are some ways migratory bird habitat can be altered. Quickly review information for any questions the class may struggle to answer.(5 minutes)

Habitat scenarios-

1) A farmer near the West Eugene Wetlands has decided to plow and plant a field which he has left open for the last 20 years. 25 acres of prime stopover habitat are drained, remove one place marker.

2) A country in South America has experienced an increase of illegal hunting of your species, remove one place marker for wintering grounds.

- 3) A town in coastal Alaska has redirected their sewage water into a local estuary, which is a breeding habitat for your species, remove one place marker from nesting habitat
- 4) After extensive protesting from concerned citizens, the government of the South American country has decided to increase law enforcement and has hired a new staff of game wardens, add one place marker to wintering grounds.
- 5) A nearby landowner donates their land to the west Eugene wetlands, add one place marker to stopover habitat.
- 6) There is a large increase of Arctic fox in your nesting habitat, remove one place marker from nesting habitat.
- 7) A city in Central America is experiencing urban expansion near your wintering grounds, remove one marker.

### **References**

- 1) Council for Environmental Education. Project WILD Aquatic. Houston, 2004.
- 2) Udvardy, Miklos. The Audubon Society Field Guide to North American Birds. New York: Alfred A Knopf, Inc., 1977.