



Migration Headache

Objective: Students will learn the effects of habitat destruction on migrating waterfowl.

Materials:

20 pieces of scrap carpet
Playing field

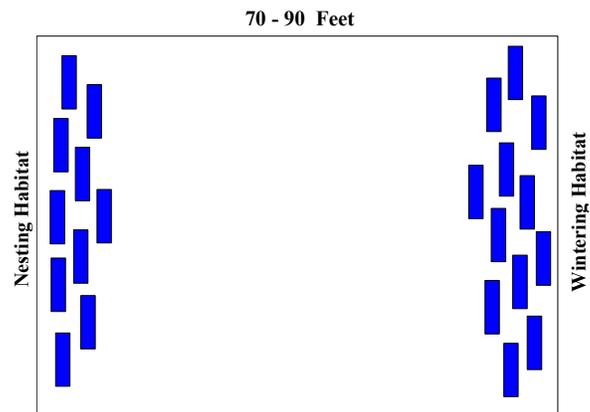
Background:

The primary threat to the survival of migratory water birds is the disappearance and degradation of wetlands. Without wetlands, dozens of species of ducks, geese, swans, and other water birds face loss of the necessary habitat for survival.

The migration routes, or flyways, of North American water birds are well known. Wetland habitats - usually found in low, fertile plains along water courses, have historically been prized for conversion to farmland and settlements. Today, the journeys of waterfowl take them over lands on which human influences are ever increasing in scope and magnitude. Agriculture, development, and industry are all reducing the availability of natural wetlands. Pollution, through pesticides such as insecticides and herbicides, as well as the use of lead shot rather than steel shot during hunting, all take their toll.

Procedure:

- Select a large playing area about 70 - 90 feet in length. Place the carpet pieces in two patches on the playing field as shown below:



- Choose the number of carpet pieces so that you have one piece for each three students at each end of the field. Designate one of the areas the wintering habitat and the other the nesting habitat. This means you have two set of carpets; one set at the nesting habitat and one set at the wintering habitat.
- Explain to the students that they are water birds and will migrate between these two areas at your signal. Tell them that the carpet pieces represent wetlands.

Grade Level:

4-12

Subject Areas:

Science, Language Arts,
Physical Education

Setting:

Large playing area or field

Skills:

Observation, identification,
evaluation, comparison

Prior Preparation:

Familiarize class with migration routes in North America. If possible, play the *Shorebird Migration Game* that has documentation included which will help children understand habitat destruction and its effects on waterfowl.

Vocabulary:

wintering habitat, nesting habitat, habitat haven

South Dakota Education Standards for 4th grade:

- At the end of their journey, the students will have to have one foot on a carpet piece in order to be allowed to continue. If they cannot get their foot on the carpet, that means they have not found any suitable habitat. They “die” and have to move - at least temporarily - to the sidelines and watch. During migration, the birds may want to “flap their wings,” moving their arms like birds in flight.
- Explain to the students that many factors will limit the survival of populations of migrating water birds. Some involve changes in the wintering and nesting habitats. There will be times of abundant food, water, shelter, and space suitably arranged to meet the needs of the birds. There will be other times when the habitat is stressed, with many factors limiting the potential for survival. Sometimes the area of available habitat is reduced. Tell the students that for purposes of this activity, only three water birds can accompany a “habitat haven” (piece of carpet) at any one time.
- Begin the activity with all the students at the wintering habitat. Announce the start of the first migration. Have the students migrate (no running) in slow motion to the nesting habitat. On the first try, all the birds will successfully migrate. Explain that there has been no loss in the area of available habitat. Thus, a successful nesting season is at hand.
- Before the students migrate toward the wintering habitat, turn over one piece of carpet from the wintering region. Explain that a large wetland area has been drained and used for agricultural purposes. Repeat the instruction to migrate and send the ducks to the wintering habitat. Have the three students that are displaced, stand on the sidelines. Tell the students that these three died as a result of loss of habitat. Remind any “dead birds” that they will have a chance to get back into the activity. They can come back as surviving hatchlings when favorable conditions prevail and there is habitat available in the nesting ground.
- Before the next migration to the nesting region, turn over four carpets in the nesting habitat. This represents a catastrophic loss. Tell the students that this is the result of an oil spill in the local river, severely damaging shoreline habitat. Note: This results in a large number of students waiting on the sidelines to re-enter in the nesting habitat. Before many cycles are repeated, provide them with an opportunity for re-entry. Each time, give the students examples of changes in the habitat conditions that could have taken place making it possible for them to survive. Two students can be made permanent monitors to turn over the carpets as you instruct them.
- Repeat the process for eight or ten migration cycles to illustrate effects on the birds. Give examples (listed below) that will cause variations in the wetlands population.
- A few examples of factors that can limit the survival of the population of waterfowl are: oil spills, droughts, wetland drainage, pollution and contamination of water, urban expansion, conversion of wetlands to farm land, conversion of natural waterways to canals, illegal hunting, lead shot in food supply, and disease.
- A few examples of factors that can favor the survival of the population of waterfowl are: preservation of wetlands, high rainfalls, restoration of habitats, dynamic balance with predators, human action aimed at protection and restoration of wetlands (such as education), regulation of hunting and human predation.

Extensions:

- Pick a species of water bird and learn about its characteristics. Conduct this activity again with each student
- Using a map, plot the major migratory routes of North American birds.
- Visit a national wildlife refuge, state wildlife area, bird observatory, private sanctuary, seashore, other habitat for migratory water birds.
- Find out about Ducks Unlimited. It is one example of a private organization dedicated to providing and protecting habitat for migratory water birds.