



# Fly Away Home

**Age range:** 10-14

**Time:** 90 minutes

**Subjects:** Science, Geography, Math

**Resources:** Class photocopies of handouts: *Fly Away Home* and *Boreal Forest Migration Map*, two differently coloured writing utensils, pencil crayon

## Learning Outcome

Students will investigate the importance of Canada's boreal forest habitats by mapping the migratory movements of two bird species that use the boreal forest as a nesting ground.

## Hook: Choosing Where to Have Offspring

In small groups, students will brainstorm factors involved in deciding where to raise children. What is important when choosing a place to raise a child? Remind students that future parents may consider a location among Canada's provinces or territories, a city versus a rural area, or even a different country, where one of the parents might have grown up or where the parents may wish to work for a few years.

**Answers** could include: a place where crime rates are low, where there are lots of opportunities, a place close to the arts, recreational pursuits, nature and/or family, a place where the children can experience life where their parents grew up, and/or experience a certain culture, etc.

**Next, show maps of the boreal forest** (pages 4 and 5) and explain why the boreal forest is a highly suitable breeding habitat for many hundreds of bird species and how birds migrate. (See page 6). You may also use the Hinterland Who's Who handout on the boreal forest:

<http://www.hww.ca/hww2.asp?id=354>

## Procedure

1 Using the handouts, students plot the seasonal migration of the two bird species listed (using different colours) and answer the questions.

## ✳ Extensions

Teaching kit Volume 7 features another exciting boreal migration activity entitled *Following the Caribou*.

Given a copy of the background material on page 6, students could create a poster 'advertising' the boreal forest as an excellent breeding habitat for birds.

Students could take on the personas of migrating birds and keep a diary of what is happening in their lives as they migrate and breed. For more information on the Broad-winged Hawk, visit a website such as <http://www.birding.com/topbirds/784bwh.asp>. For more information on the Lesser Scaup, visit a site such as <http://www.ducks.org/hunting/waterfowlGallery/11/index.html>

## ✔ Answers

- About 16 000 to 17 000 km yearly in total.
  - About 10 000 km yearly in total.
  - About 4 weeks in spring, 6 weeks in winter - isn't that incredible?
- Each point on the map is an approximation of where most of the birds are found at that point in the year. Animals of any migratory species are spread out at any given time.
- We can minimize forest fragmentation, which is to say we can leave large areas of forests and wetlands relatively undisturbed, so that migrating species have intact natural areas at which to stop and refuel along the way.
- Birds are adapted to migration by being able to store energy and fly without eating for long distances, although there is some refuelling along the way. Although research on navigation is not conclusive, it is believed that birds navigate by using landmarks, the position of the sun and the Earth's magnetic field.
- The boreal forest contains a wide variety of relatively undisturbed forest and wetland habitats that contain rich food sources that birds feed to their young.
- Resident species are adapted for the cold both structurally and physiologically. For example, the arteries in their legs, which carry warm blood from the heart, are positioned against their veins, which carry colder blood coming upwards from the feet. The heat from the arterial blood continuously warms the returning colder blood. Also, resident species have adapted to eat the foods that are available in the boreal forest during the winter.



# Fly Away Home – Migrating to the Boreal Forest’s Nursery of the North

The **Broad-winged Hawk** is a stout and compact bird of prey that lives in the forest of the eastern United States and the southern boreal forest of Canada. At the peak of this bird’s spring and fall migrations, large flocks (in the tens of thousands of birds) can be seen. Forest fragmentation (when the forest is cut up by roads and other developments) threatens this species in some areas, but they appear to be expanding their breeding range westward, especially in Canada.

The **Lesser Scaup** The majority of these birds migrates to wintering areas along the Gulf of Mexico and coastal Florida. Tens of thousands of these birds feed and rest at each of several major stopover sites on the lower Great Lakes during spring and fall. The population of this waterfowl species has declined since the mid-1980s. Contaminants and changes in breeding habitat or food resources are thought to be the primary factors contributing to their decline.

**Mapping activity:** After you have placed the points for each species on your map as outlined in the chart below, use a different colour for each bird to join the points together. Label the points with the time of year.

Time of Year	Corresponding Location of Broad-winged Hawk ( <i>Buteo platypterus</i> )	Time of Year	Corresponding Location of Lesser Scaup ( <i>Aythya affinis</i> )
Mid May-August	15, E (but breeds all over boreal forest)	May-September	15, E (but breeds all over boreal forest)
Mid-September	6, H	Mid-October	12, H
November	5, M	Mid-November	11.5, I
Dec/Jan/Feb	2, L	Dec/Jan/Feb	7.3, K (on islands)
March	4, L	March	9.5, halfway between I and J
Late-April	5, (halfway between K and L)	April	11.5, I
Early May	8, G	Mid-May	12.5, H

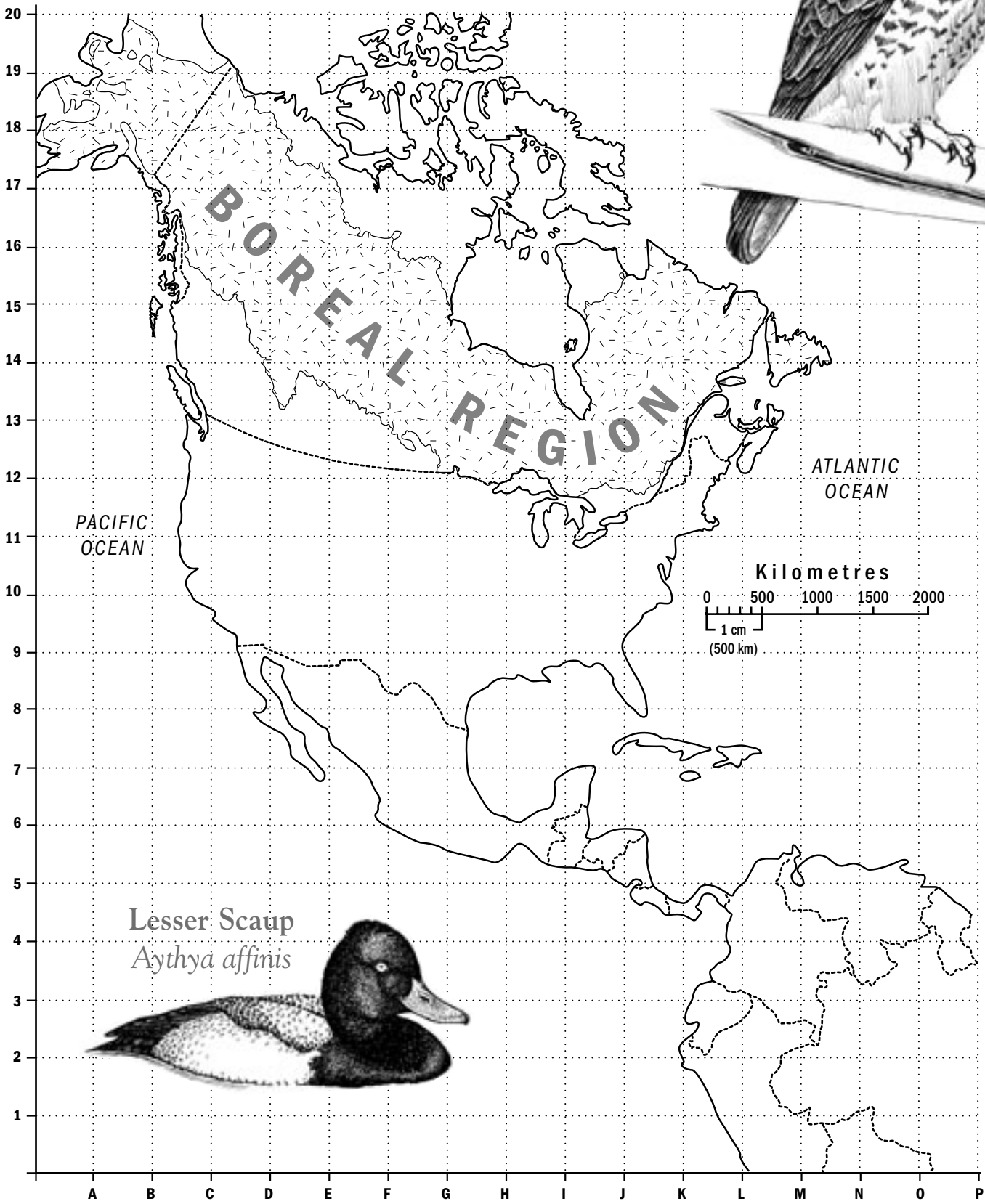
## Questions:

- Using the graph’s scale of 1 cm: 500 km (1 cm on your sheet equals a distance of 500 km), calculate the total approximate distance travelled one way by the Broad-winged Hawk throughout the year. Double this amount to determine the total annual migration distance traveled.
  - Do the same for the Lesser Scaup.
  - Take a guess: how long does it take the Broad-winged Hawk to migrate in September (south) and April (north) every year?
- Why are your points on the map not a completely accurate representation of the movement of the entire species at any given time of the year? (Hint: think about how large a group of birds we are talking about!)
- What can we do to reduce the human-created obstacles and/or human activities that can make it difficult for animals during their migration? (Consider obstacles such as towns and other developments, snowmobile and vehicle traffic.)
- How are birds able to migrate over long distances and find their way, besides having the ability to fly?
- Why is Canada’s vast boreal forest so suitable and important as a nesting ground?
- Why are some birds ‘resident’ species? (This means they stay in the boreal forest all year round.)
- Locate the outline of the boreal forest on your map. Colour it in lightly and label it with the words: **“Nursery of the North” – Canada’s boreal forest provides a vast and largely undisturbed area for birds to raise their young. It contains more water in its lakes, wetlands and rivers than almost any other place on Earth.”**



Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Broad-winged Hawk *Buteo platypterus*



### Lesser Scaup *Aythya affinis*

