

## My Way or the Pacific Flyway Game

Game adapted from The Incredible Journey by Explore the World with Shorebirds!

**Question** What is it like to migrate like a seabird or shorebird?

### Materials

Large outdoor space

6 cones or other boundary markers for the play field, 3 large hula hoops or ropes

3 Pennies or flags to identify predators: one peregrine falcon, one merlin falcon, one bald eagle

The Incredible Journey Game Cards (10 Northern, 10 Southern, 14 Staging Area), print and cut

A printed, cut-out of each of the birds in the list (optional) for students to pin or tape to shirts

### Set-up

Print and cut out game cards. Set one marker at each of the 4 corners delineating boundaries.

Set a cone on either side of the field at the midpoint between the corner cones to delineate where the predators may perch before the chase.

Pacific golden plover

Western sandpiper

Spotted sandpiper

Least sandpiper

Wilson's snipe

Short-billed

dowitcher

Long-billed

dowitcher

American avocet

Sanderling

Red knot

Killdeer

Black oystercatcher

Black tern

Bonaparte's gull

Black-headed gull

Mew gull

Heermann's gull

Caspian tern

Forster's tern

Common tern

Arctic tern

Black-necked stilt

Ruddy duck

Northern Pintail

American wigeon

Northern shoveler

Cinnamon teal

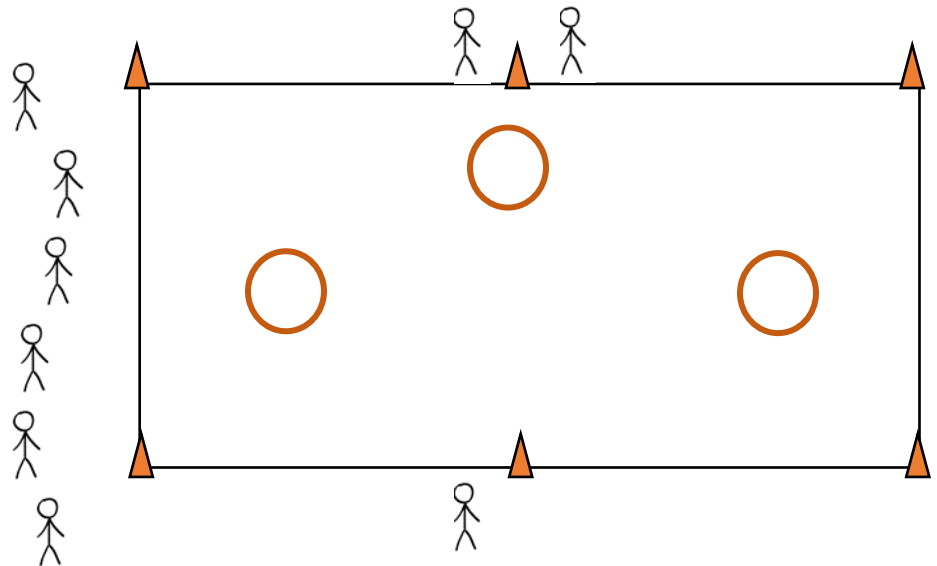
Mallard

Greater scaup

Lesser scaup

Brant goose

Snow goose



Select 3 students to be predators (peregrine falcon, Merlin falcon, or bald eagle)

Have all other students select a sea or shorebird to become from list.

### How to play

1. Select a migratory waterfowl to become. 3 students will be predators.

2. Pick one card at the wintering ground, one at each staging area, and one at the breeding ground, follow directions on the card and return it to the pile before flying away. You must stop to rest at each staging area.

3. You might die in a predator's talons or another cause. If you die, stand on the sidelines until you can be reborn and rejoin the game.

4. Make 4 migrations then plot the survival rate of each one on a graph.

5. Discuss: What kinds of events did you experience along the way?

Were there weather changes?

What were your causes of death?

Were these expected?

Are there ways humans could help keep the Pacific Flyway safe?

6. Optional: add printed, cut-out bird to the wall map of the Salish Sea.

NGSS Links:

**Science and Engineering Practices:** 2. Developing and using models

**Disciplinary Core Ideas:** LS2: Ecosystems Interactions, Energy and Dynamics

LS4: Biological Evolution: unity and Diversity

**Crosscutting Concepts:** 2. Cause and effect 4. Systems and system models

6. Structure and function 7. Stability and change

# The Incredible Journey Game Cards

## Ten - Northern Cards

(Make one photocopy.)

<p><b>NORTHERN CARD</b> Bad news! Unusually bad weather has limited your feeding time. You are too weak to make it to the first staging area. You die and must go to the sideline.</p>	<p><b>NORTHERN CARD</b> Severe weather in the Arctic tundra kept you from laying eggs. You have difficulty finding a sufficient supply of invertebrate prey (animals you eat). You struggle to keep up with the flock. Hop on one foot to your first staging area.</p>
<p><b>NORTHERN CARD</b> Yeah! Good weather and only a few predators have made it a great nesting season. Pick two people from the sidelines to migrate with you.</p>	<p><b>NORTHERN CARD</b> Lost wetlands on the way to your breeding grounds made you late and weak. You do not have time to reproduce. Crane flies and bloodworms are abundant so you double your weight. Begin your migration.</p>
<p><b>NORTHERN CARD</b> Hurrah! It's been a warm, wet summer. There was an abundance of shoreflies and danceflies to feed on. Your nesting is successful. Take one person from the sidelines with you. Begin migration.</p>	<p><b>NORTHERN CARD</b> Yikes! It's been a good year for weasels and a bad year for eggs. None of your young survive. Food was abundant. Begin migration.</p>
<p><b>NORTHERN CARD</b> Great! You have successfully hatched and fledged one of your young. Pick one person to migrate with you.</p>	<p><b>NORTHERN CARD</b> You are young and are not able to put on a sufficient fat load before migration begins. You are not so strong as the adults. Skip to the first staging area.</p>
<p><b>NORTHERN CARD</b> Bummer! A large fox population this year has increased fatalities. You are eaten. Go to the sidelines.</p>	<p><b>NORTHERN CARD</b> Yum! There is an abundance of amphipods and snails this year. You have easily doubled your body weight. You have had a successful nest. Take two people to migrate with you. Begin migrating!</p>



# The Incredible Journey Game Cards

## Ten – Southern Cards

(Make one photocopy.)

<p><b>SOUTHERN CARD</b> Yippee! It's been a good winter! A new wetland reserve area has been added to your winter grounds. There was plenty of food. Fly to your first staging area.</p>	<p><b>SOUTHERN CARD</b> Yuck! You are feeding on aquatic insects contaminated with DDT from the runoff of agricultural lands surrounding your wetland habitat. You become sick and die. Go to the sideline.</p>
<p><b>SOUTHERN CARD</b> How disappointing! You have had a rough nine months at your wintering grounds. Part of the wetland you have always returned to has been drained, causing more birds to compete for less food. You are weak. Hop on one foot to the first staging area.</p>	<p><b>SOUTHERN CARD</b> Bang! Hunting of shorebirds is still legal in South America. A hungry hunter shoots you. Go to the sideline.</p>
<p><b>SOUTHERN CARD</b> Too bad! Agriculture is spreading on your wintering grounds and, as a result, so is DDT. You die from pesticide poisoning. Go to the sideline.</p>	<p><b>SOUTHERN CARD</b> You're starving! Overcrowding due to the loss of wetlands has increased competition for what little food there is. You do not have an adequate fat load and your migration is difficult. You may skip to your first staging area.</p>
<p><b>SOUTHERN CARD</b> Oh no! More wetlands have been drained and turned into agricultural areas. You are unable to find enough food and eventually die. Go to the sidelines.</p>	<p><b>SOUTHERN CARD</b> Moo! The cattle industry is booming in South America. Your winter habitat is severely overgrazed, making it difficult to eat enough to put on an adequate fat load for migration. You must skip to your first staging area.</p>
<p><b>SOUTHERN CARD</b> Worms! Oodles of freshwater worms! It's been a great winter with lots of food. You easily increase your body weight from 20 grams to 40 grams for the long migration to the Arctic tundra. Migrate to the first staging area.</p>	<p><b>SOUTHERN CARD</b> Good news! Educating people about the need to preserve wetlands has paid off. More wetlands mean more food. You begin your next migration in good health.</p>



# The Incredible Journey Game Cards

## Fourteen – Staging Cards

(Make one photocopy.)

<p><b>STAGING AREA</b> Bye, bye! You did not find enough food to replenish your fat load, and the flock you were traveling with has left without you. You must wait one turn to continue on with another flock.</p>	<p><b>STAGING AREA</b> This is unnerving! You are on the perimeter (outer edge) of the flock and must constantly be on the look-out for predators. You do not eat enough to put on an adequate fat load. Hop to the next staging area.</p>
<p><b>STAGING AREA</b> Gobble, gobble! You have had warm weather and abundant food at this staging area. You have easily increased your weight by 100%! Begin your migration again.</p>	<p><b>STAGING AREA</b> Yikes! Your usual staging area has been drained for farming. You must scrounge to find enough food for the next leg of your journey. Hop on one foot to the next staging area.</p>
<p><b>STAGING AREA</b> Bad stuff! You find that this staging area has been contaminated with pesticides from surrounding agricultural lands. You become ill and die. Go to the sideline.</p>	<p><b>STAGING AREA</b> WHEEEEEEEE! You've got a full stomach and a tail wind pushing you on to your next staging area. A predator can't even catch you! Arrive at your next staging area quickly and safely.</p>
<p><b>STAGING AREA</b> Brrrr! Bad weather makes for a slow migration! Side step to your next staging area.</p>	<p><b>STAGING AREA</b> Bad stuff! Bad weather makes for a slow migration! Side step to your next staging area.</p>
<p><b>STAGING AREA</b> What? Your usual staging ground is swarming with people! A new recreation center has opened at your staging area. Being around so many people makes feeding difficult. You do not store enough energy. Walk to your next staging area.</p>	<p><b>STAGING AREA</b> Hooray! The Western Hemisphere Shorebirds Reserve Network has done a great deal to preserve important shorebird sites along your migration route. You find a surplus of food and quickly refuel for your continued migration.</p>

# The Incredible Journey Game Cards

## Fourteen – Staging Cards

(continued)

(Make one photocopy.)

<p><b>STAGING AREA</b> Gooney! You find one of your coastal staging areas covered in oil. You become covered with the thick goo and are unable to eat, fly, or maintain any body heat. You die. Go to the sideline.</p>	<p><b>STAGING AREA</b> Ugh! You have run into a head wind (wind blowing against you) and you are burning up a lot of energy. Take two steps forward and one step back as you make your way along your migration.</p>
<p><b>STAGING AREA</b> Whoopie! Education about wetlands has gained public support for the restoration of wetland areas. You have an abundance of snails and freshwater worms to feed on! You begin your migration in good health.</p>	<p><b>STAGING AREA</b> ZAP! New radio towers have been built across your migration route. You are zapped and die. Go to the sideline.</p>
<p><b>STAGING AREA</b> You find yourself feeding in the safety of the flock. Craneflies, danceflies, and shoreflies are abundant. You double your weight easily. Move on to the next staging area.</p>	