

Greater Victoria
& Saanich Peninsula

Migratory Birds & Migratory Bird Sanctuaries

An Online Educational Resource for Students, Teachers & Parents



INTRODUCTION

This FREE online educational resource for students, teachers and parents has been developed in partnership between the [Friends of Shoal Harbour](#) & the [Nature Canada NatureHood Program](#) to encourage students of all ages to get outside, explore nature and learn more about local migratory birds and their habitats.

Who are the Friends of Shoal Harbour?

The Friends is a registered charity dedicated to the protection of the [Shoal Harbour Migratory Bird Sanctuary](#). It depends on the hard work and commitment of a small group of local citizens who generously give countless hours of their time and energy. They do so because they care deeply about the health and safety of migratory birds.

To achieve their goal, the [Friends of Shoal Harbour \(FOSH\)](#) engage in a number of activities. They actively encourage the establishment of a community-based vision and plan that respects the birds, their habitat and the interests of the people who live, work and recreate next to and on the waters and foreshore of the sanctuary. To this end, the Friends engage with the adjacent municipalities of the Town of Sidney and the District of North Saanich as well as the general public.

[Click here to learn more...](#)

What Will You Learn About Migratory Birds?

- Fun Factoids
- How to identify different birds
- Why sanctuaries are important
- How you can protect migratory birds

Engaging hands-on activities also included!

*Throw on your coat,
jump into your gumboots,
grab your binoculars and get out
into nature & explore!*



Shoal Harbour Migratory Bird Sanctuary

Did you know?

Watching birds near your home is good for your mental health.

[Learn more...](#)

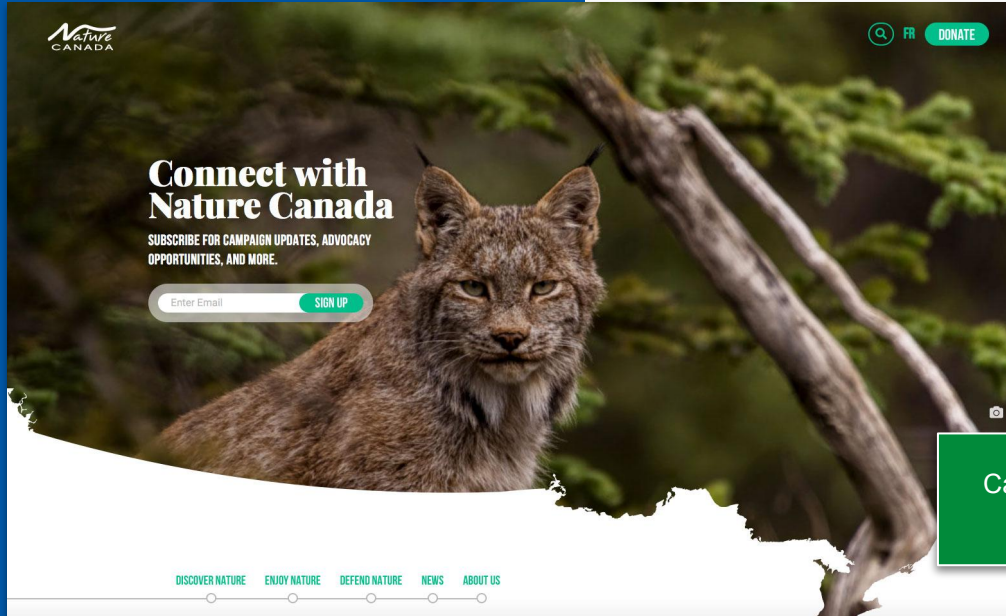
Visit Nature Canada at: naturecanada.ca

Who is Nature Canada?

Like the Friends of Shoal Harbour, [Nature Canada](#) is also a registered charity although it is based in Ottawa. Established in 1939, it is one of the country's oldest national nature conservation organizations and boasts of over 100,000 individuals and 800 affiliated organizations. Its mission has been and continues to be to connect Canadians with nature so that they respect, appreciate and defend it.

To achieve its mission, [Nature Canada](#) presses the federal and provincial governments for legislation to wild plants and animals as well as their habitats. It also seeks to engage Canadians in supporting these efforts through educational programs designed to raise their awareness and appreciation of nature.

[Naturehood](#) is one such program.



Can you think of 15 ways to be a good neighbour in your Naturehood?
[Click here to learn more...](#)

What exactly is a NatureHood anyway?

Good question! A NatureHood is your neighbourhood, but it can also be as large as the community you live or even larger, the region your community sits in. No matter how small or large the “hood”, nature can be found in all of them. It’s any place where you connect with nature’s wonder whether in your backyard, a tree-lined street or local park.

There’s a growing disconnect between modern urban societies and nature, coupled with the reality that there are many barriers (real and perceived) limiting people’s access to nature, such as distance, lack of knowledge, perceived cost, lack of equipment and cultural perceptions, just to mention a few. With the NatureHood program, [Nature Canada](#) seeks to address these and other barriers by helping people discover nature all around them right where they are.

A key component of the [NatureHood program](#) is getting people, especially young people, outside. Research has shown that Canadians are spending more time than ever before indoors and sedentary. Kids are replacing outdoor play time with sitting in front of computer or crouched over a smartphone. The lack of activity and connection with nature has negative impacts on our physical and mental health.

Through the [NatureHood program](#), [Nature Canada](#) and its partners, like the Friends of Shoal Harbour, develop and deliver activities to get people outside and connected with nearby nature.

Things to do in your Naturehood

- Go for a walk
- Look for insects
- Watch a bee pollinate a flower
- Watch birds at your bird feeder
- Smell a flower
- Observe wildlife



Video Length: 00:42

Funding to make the NatureHood program possible comes from [Environment and Climate Change Canada](#).

What is Environment & Climate Change Canada?

[Environment and Climate Change Canada](#) is a federal government department that strives to keep Canadians informed about what they can do to protect and conserve the country's natural history and how they can ensure a clean, safe and sustainable environment for present and future generations.

[The Canadian Wildlife Service](#), a branch of the department, has responsibility for the management of migratory birds and such other things as species at risk, invasive species, aquatic species, the international trade in protected animals and plants, and wildlife and habitat conservation.

The [NatureHood program](#) is seen as an effective community-based way of engaging Canadians in supporting this work.

TOGETHER, WITH THE HELP OF INDIGENOUS
KNOWLEDGE & LEADERSHIP

Video Length: 3:11

Check out the [Environment Canada YouTube Channel](#)



Video Length: 2:00

Learn more about the [Canadian Wildlife Service Programs](#)

Migratory Birds Convention Act (MBCA)

Way back in 1916, the Canadian and US governments signed the Migratory Birds Convention or Treaty to protect birds that migrated back and forth across the international border. At the time, an estimated 450 species did this every year and, by the [Migratory Birds Convention Act](#) passed in 1917, the majority of them and their habitat gained protection on this side of the border.

The creation of sanctuaries (protected areas) for these birds is one of the principle ways the Canadian government seeks to uphold its half of the Migratory Bird Treaty with the US.



Northern Pintail Male

Learn more about Canadian conservation, research, regulations, monitoring and permits related to migratory birds at:
<https://www.canada.ca/en/services/environment/wildlife-plants-species/migratory-birds.html>

Activity #1



1. Watch the video on this slide.
2. Choose a place you can safely go outside to do some observations. Ideally, this would be your favourite local beach, but it could be a nearby park or even your yard.
3. Head to your chosen place and spend 15-30 minutes observing with your senses. First, sit quietly for at least 5 minutes to listen, watch, and smell. Then, spend a bit of time exploring the area using the tips on the video and practicing safe social distancing.
4. **Use your phone to take a picture of the most interesting thing you see and then share it on our Google Classroom stream (or tell us about it in one sentence). 5 marks for completion.**

Migratory Bird Sanctuaries

What are Migratory Bird Sanctuaries (MBS)?

A Migratory Bird Sanctuary (MBS) is an area of land and sea designated for the protection and conservation of migratory birds. The Act and Treaty prohibit human activity that harms migratory birds, their nests or their eggs.

At present there are 92 sanctuaries across Canada, encompassing over 11 million hectares of migratory bird habitat. The first sanctuaries to be established were the Bird Rocks and Bonaventure Island & Perce Rock in 1919.

These were not the first protected areas for migratory birds. A little more than thirty years previously, the Canadian government created a protected area for migratory birds around Last Mountain Lake in Saskatchewan. Naturalist and scientist, John Macoun, provided much of the leadership for its creation. He retired to Sidney, BC from Ottawa in 1912 and immediately became an ardent advocate for the establishment of a migratory bird sanctuary over a large portion of the local waters. Unfortunately, he passed away in 1920 and did not get the chance to celebrate the designation of the [Shoal Harbour Migratory Bird Sanctuary](#) on April 10, 1931.

There are two other migratory bird sanctuaries in Greater Victoria: [Esquimalt Lagoon](#) and [Victoria Harbour](#).



**Migratory Bird Sanctuary
Sign at Esquimalt Lagoon**

Shoal Harbour Migratory Bird Sanctuary

The [Shoal Harbour Migratory Bird Sanctuary](#) encompasses 144 hectares of bays and mudflats in Sidney and North Saanich.

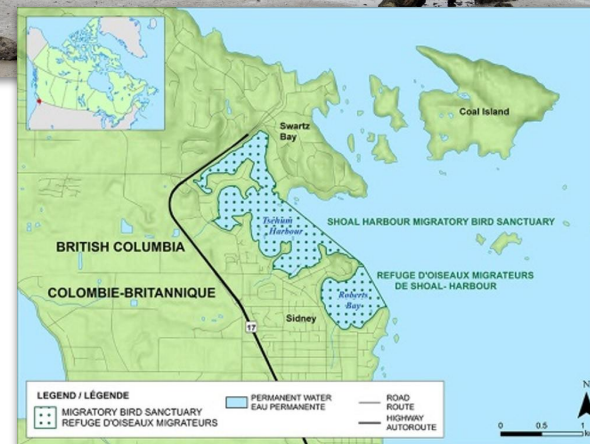
The surrounding ecosystem supports a rich diversity of seabirds, shorebirds and waterfowl during migration and through winter.

The shoreline is comprised of rocky outcrops and beaches of sand, gravel and silt.

More than 40 species of marine birds are regularly observed in this MBS, as well as more than forty species of passerine (perching) birds in the uplands, many not found elsewhere in Canada.



Two Male Buffleheads



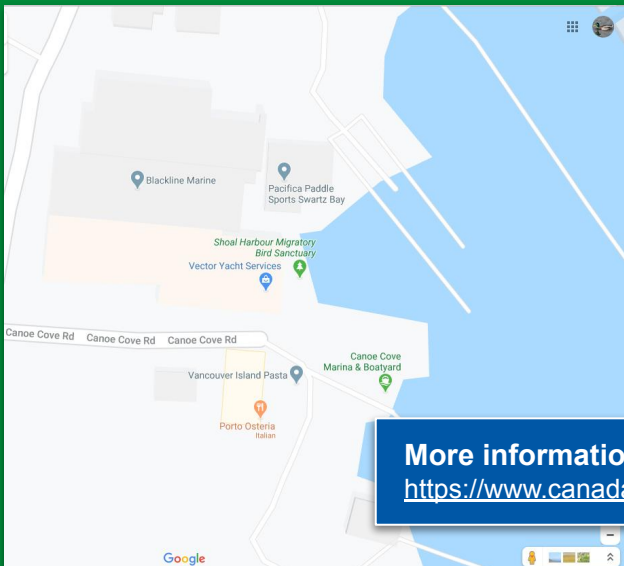
Primary Habitat

80% Shallow Marine Bay, 20% Tidal mudflats

[Click on image to zoom in on map...](#)



Google Maps Link to Shoal Harbour



Some key bird species found at Shoal Harbour -
Click on a few of these to see if you already
recognize them. It is okay if you don't!

[Green-winged teal*](#)

[American wigeon](#)

[Bufflehead*](#)

[Horned grebe*](#)

[Great blue heron](#)

[Common goldeneye*](#)

[Osprey](#)

[Bald eagle](#)

[Harlequin ducks](#)

[Black oystercatchers](#)

[Black-bellied plovers*](#)

[Black turnstones*](#)

[Heermann's gull*](#)

[Glaucous-winged gull](#)

[Mew gull](#)

[Bonaparte's gull*](#)

[California gull*](#)

[Pigeon guillemot](#)

[Rhinoceros auklet](#)

[Common murre](#)

[Brandt's cormorant](#)

[Surf scoters](#)

[Brant \(goose\)*](#)

**Denotes migratory bird. See slide/page #22 for a list of regional migratory birds.*

More information about Shoal Harbour MBS available at:

<https://www.canada.ca/en/environment-climate-change/services/migratory-bird-sanctuaries/locations/shoal-harbour.html>

Activity #2

1. Watch this video and read the next slide:



Activity #2 Continued: Sanctuary Safety Practices

Migratory Bird Sanctuaries are a refuge for many bird species. It is important that your behaviours are respectful and mindful of the birds and other wildlife within this habitat, as well as of the environment itself. Be sure to follow these safety practices:

- All native birds are protected by law and should not be disturbed or harmed.
- Move quietly and slowly when exploring and observing in a bird sanctuary.
- Be mindful of where you are stepping and how you are moving through the environment.
- Stay on trails or clearly marked designated areas for visitors.
- Use your eyes and ears only when exploring and observing.
- Be mindful of the wildlife. Do not chase or intentionally try to scare or scatter birds.
- It is not safe to touch, pet or feed the wildlife.
- Do not disturb any part of a bird's nest site, nest or eggs.
- Let feathers, leaves, rocks and anything else interesting you find stay where you find it. Only remove garbage or litter from the sanctuary. Everything else should stay there.
- Leave No Trace. Bring out what you took in.
- And most importantly...ENJOY the beauty of the sanctuary and all the living things within it!

Activity #2 continued:

2. On a sunny day (you'll see more birds), head to your favourite local beach with your phone (to take pictures), a notebook to record any notes you might want to take, and binoculars if you have them. If it is possible for you to go to a beach within the Shoal Harbour Migratory Bird Sanctuary (see Slide 10) that is great. If not, pick a beach that is easily accessible for you.
3. Find a quiet spot to sit and observe again. See how many different types of birds you can spot.
4. Take pictures of at least 3 different bird species you see. It will be easier for you to pick species you think you can identify or that seem to be the most numerous. Make any other notes about their appearance or behaviour that might help you identify them.

Activity #2 continued:

5. For each bird you take a picture of, try and note or sketch the following things:

- Shape of bird
- Size of bird
- Colour(s) of bird
- What do its wings look like?
- What does its bill look like?
- What does its leg and feet look like?

6. Return home and use Slide 11 to try and identify the 3 species of birds you took pictures of. This site may help too: www.allaboutbirds.org/news/

7. Add the photos and your possible bird identifications to a Google Document and share it with me. 10 marks for completion - it is okay if you ID is wrong!

The World of Migratory Birds

Please watch these two videos:



What is a migratory bird?

A migratory bird is a any bird species that travels from one place to another at regular times, usually over the course of a year, and often over long distances.

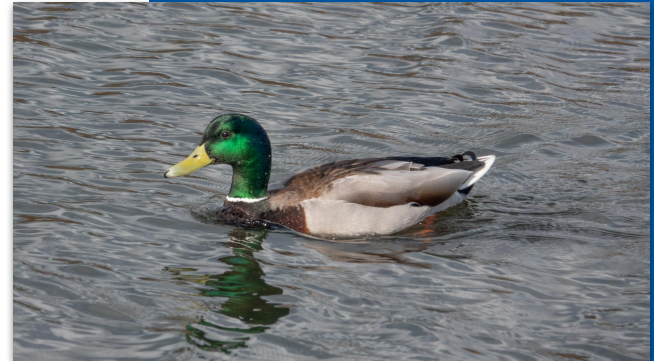
Why do birds migrate?

There are two primary needs that all birds have: obtaining sufficient quality and quantity of food and finding safe places for nesting and rearing young. Some species are able to survive year-round staying in one region, but most must move with the changing seasons to meet these needs. This means that each spring hundreds of birds are flying northward over Canada to take advantage of massive amounts of insects and budding plants. Then, each winter, they fly back south again.

Migrations can be short, medium or long in terms of the distance flown. A short-distance migrant is the Bufflehead (breeds in interior BC, winters in Salish Sea). Black Turnstone (breeds in Arctic Alaska, winters in Salish Sea) is a medium-distance migrant, while the Western Purple Martin is a long-distance migrant (breeds in Salish Sea, winters in Brazil, Argentina.)



Male & Female Buffleheads



Male Mallard

FUN FACT:

Caged birds will exhibit migratory restlessness, fluttering from one side of the cage to the other, each spring and fall.

How do birds navigate?

If the mechanisms of what causes birds to migrate are a bit of a mystery, how they navigate is even more of one.

First consider that some species fly thousands of kilometres during their annual migration cycle. They typically fly the same route year after year with very little deviation. Even more amazing, one-year old birds make this journey between their winter and spring homes on their own and never having done it before!

So how do they do it? Research has shown that the birds use the sun, stars and the planet's magnetic field to orient themselves. The position of the setting sun and familiar landmarks help as well.

Waterfowl tend to faithfully follow the same pathways each year and some species exhibit an uncanny punctuality with the timing of their arrival. Take the Bufflehead duck as an example. It arrives in Shoal Harbour every year on or very close to Oct. 15th.

Soar with the Birds!

Check out this amazing video footage taken by a migratory bird conservationist in Europe for National Geographic.



FUN FACT:

Homing pigeons may also have a sense of smell that detects the right flight path to take.



VOICES OF THE PACIFIC FLYWAY

Video Length: 13:01

What triggers Migration?

What triggers a migration is still a bit of a mystery. Scientists who study birds are called ornithologists think they caused by such things as changes in length of day, temperatures, and food supply. The cause could even be rooted in the genetics of a particular species.

What is a Migration Pathway?

A migration pathway (or flyway) is the flight path large numbers of birds use when migrating. A Flyway consists of all the areas used by migrating birds each year including breeding and wintering grounds, migration routes and stopover sites.

There are four major migration pathways in North America.

The three Migratory Bird Sanctuaries of Greater Victoria and Saanich Peninsula are located in the Pacific Flyway.

Learn more about North American Bird Migration at:

<http://www.natureconservancy.ca/en/feature-stories/migratory-birds.html>

What threats to do migratory birds face?

Migration is not for the weak. It's often a very arduous and dangerous undertaking. Whether short and long distances are crossed, the migrating birds face numerous threats.

What are some of these threats? Sheer exhaustion may top the list. Overly tired birds are more apt to be less wary of potential threats, such as predators. They may also collide with buildings, power lines, and the like.

The fatigue that comes with flying long distances can become even greater when the birds must battle against storms and headwinds.

Starvation also claims a large number of migratory birds each year. These birds need safe places to land and to refuel. But the destruction of habitat can leave them without any place to do this or may force them into smaller areas with many more birds where competition of food is extremely high. The result is some birds go without.



Building developments and human traffic threatens migratory birds and their habitats.

FUN FACT:

Migratory birds can remember and return to the same location as where they were born.



Pollution in the form of oil spills, garbage, waste and toxins can easily destroy migrating bird habitats.



FUN FACT:
Many birds migrate at night.

As mentioned above, collisions with obstacles are also commonplace. Perhaps as many as tens of thousands of birds strike structures. In addition to tall glass buildings and power lines, wind turbines also claim the lives of many migratory birds. The collision may not end in instant death. Sometimes, the bird falls to the ground with a broken wing or leg or is merely stunned. But any of these conditions make it easy prey.

Speaking of predators, they too kill thousands of birds each year. One of the most lethal is your household tabby. Cats are deadly hunters. Their stealth, speed and sharp claws and teeth are often no match for smaller song or shore birds.

Pollution does no one any good. Oil spills are incredibly dangerous. Birds that land or become trapped in an oil slick may drown as their feathers become soaked and heavy. Oil is toxic and can be absorbed through the skin, causing severe illness and death. Plastics floating in the ocean, lake or river may appear similar to a preferred food item which the bird eats. Not only does the plastic not breakdown but it also carries deadly forms of toxins that bind with it. These and other kinds of pollution essentially degrade or destroy critical habitat for migrating birds.

To these threats can be added disease, natural disasters, and inexperience. Hunting by people can also pose a serious threat.

What can you do to help migratory birds?

There's lots that you and your family, friends, schools and communities can do to help migratory birds.

Here's a few ideas:

- Use bird-friendly and landscaping techniques, such as planting native plants that provide food and shelter for birds;
- Even better, preserve natural habitat, whether it be a patch of forest, a mudflat or a marsh;
- Consider putting bird feeders out year-round but keep them clean so as not to spread diseases;
- Put silhouettes of birds of prey in large windows that birds are likely to strike to scare them off;
- Keep your pet cat indoors and your dog on a leash (off-leash dogs often chase birds causing them to burn up precious energy that may not be easily replaced thereby weakening the birds);
- Encourage the proper storage and handling of toxic materials such as oil and pesticides;
- Support strong enforcement of measures to protect migratory birds and their habitat; and
- Share your love of birds with others.



Unleashed dogs are a hazard and threat to migrating birds.

Learn more about threats to migrating birds at:
<https://www.thespruce.com/threats-to-migrating-birds-386307>

Common Migratory Birds

Of the Greater Victoria & Saanich Peninsula

Some Common Migratory Birds of Greater Victoria & Saanich Peninsula

FUN FACT:

Before migrating, birds enter a state called “*hyperphagia*” which results in them increasing their body weight and storing fat so that they will have sustained energy for the long flight ahead.

American white pelican*
Ancient murrelet*
Black turnstones*
Black-bellied plovers*
Bonaparte’s gull*
Brant (goose)*
Bufflehead*
California gull*
Canvasback*
Common goldeneye*
Green-winged teal*
Heermann’s gull*

Horned grebe*
Northern pintail*
Northern shoveler*
Pacific loon*
Red knot*
Red-necked grebe*
Redhead duck*
Ruddy duck*
Trumpeter swan*
Vesper sparrow*
Western grebe*
Yellow-billed loon*

**Denotes migratory bird.*

Male Buffleheads



Male & Female Northern pintail



Concluding Activities

Concluding Activities

1. Choose one of the birds listed on either Slide 11 or Slide 25 to be your focus. Ideally, this would be one of the birds that you were able to observe in Activity 2.
2. If possible, return to your observation site to complete your fieldwork by re-observing the bird you have chosen. Make notes on the following bird behaviours and your observations of them:
 - Where do the birds appear to be looking for or obtaining food?
 - What kind of food might they be eating?
 - Are the birds seen in flocks, pairs or as individuals?
 - What type of natural environment do the birds seem to prefer? (trees, shoreline etc.)

If you are not able to directly observe your chosen bird, do some research to help answer the questions above.

Concluding Activities Continued:

3. Linking together all that you have learned about marine ecosystems and the importance of biodiversity, chemical reactions and the changing chemistry of our oceans, and how energy transformations affect environments, discover the following using your chosen bird species as the focus. Aim for 15 points about:

The role this species plays in our local ecosystem and why it is important? You may include your direct observations in this section. **3-8 points**

Current threats to the success of this species and why they are occurring? **3-8 points**

What could (or is) being done to protect this species and its habitat and what people can do to help? **3-8 points**

Concluding Activities Continued:

4. Present your findings in the way that most suits your needs. This could be, but is not limited too, a Google Slides presentation, an informational poster, a public service announcement, a letter to our local, provincial, or federal government, a short film, a comic strip, acting out a play, creating a piece of art and sharing a photo of it, writing a story or poem, creating a fake newspaper article, singing a song... really you are only limited by the time and energy you want to spend on this (and you get 3 marks for putting it all together)!

Make sure you properly reference any sources you may have used to create your presentation (2 marks).

Concluding Activities Continued:

5. Share your finished product with me. I would like to also share these with the class and the Friends of Shoal Harbour. Please let me know if you would not like your presentation shared. ***This whole project is worth 20 marks - you will get full marks if you creatively put together the 15 points and include a properly formatted bibliography. It does not need to be elaborate, it just needs to be done by June 17th!***

6. Relax and enjoy your summer... once you are done this (and anything else you are missing), you are done Marine 10!

Resources & Contributors

Main Resources

The following is a list of the primary resources used for the creation of this online educational document:

Friends of Shoal Harbour

<https://shoalharbour.com>

Nature Canada

<https://naturecanada.ca>

<https://naturecanada.ca/enjoy-nature/your-naturehood/>

<https://naturecanada.ca/enjoy-nature/your-naturehood/what-is-naturehood/>

Environment & Climate Change Canada

<https://www.canada.ca/en/environment-climate-change.html>

<https://www.canada.ca/en/environment-climate-change/services/migratory-bird-sanctuaries/locations/shoal-harbour.html>

<https://www.canada.ca/en/environment-climate-change/services/migratory-bird-sanctuaries/locations/esquimalt-lagoon.html>

<https://www.canada.ca/en/environment-climate-change/services/migratory-bird-sanctuaries/locations/victoria-harbour.html>

<https://www.canada.ca/en/services/environment/wildlife-plants-species.html>

<https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection/convention-act-regulations.html>

<https://www.canada.ca/en/services/environment/wildlife-plants-species/migratory-birds.html>

Nature Conservancy

<http://www.natureconservancy.ca/en/feature-stories/migratory-birds.html>



Mallard & Wigeons

Additional Resources

The Spruce - Threats to Migrating Birds

<https://www.thespruce.com/threats-to-migrating-birds-386307>

Nature Canada - Bird eBooks

<https://naturecanada.ca/discover-nature/about-our-birds/bird-e-books/>

Friends of Victoria Harbour Migratory Bird Sanctuary

<https://vicharbourbirds.ca/>

All About Birds

<https://www.allaboutbirds.org/>

Birds protected under the Migratory Bird Convention Act

<https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection/convention-act.html>

The Eight Major Migratory Bird Flyways

<https://www.birdlife.org/worldwide/programmes/migratory-birds>

Migration Marathon: 7 Unbelievable Bird Journeys

<https://www.birdlife.org/worldwide/news/migration-marathons-7-unbelievable-bird-journeys>



Esquimalt Lagoon Migratory Bird Sanctuary

Additional Resources

Birds Canada

<https://www.birdscanada.org/>

Birdlife International

<http://www.birdlife.org/>

Ducks Unlimited Canada

<https://www.ducks.ca/>

National Audubon Society

<https://www.audubon.org/>

Victoria Natural History Society

<http://www.vicnhs.bc.ca/>



A view of Fisgard Lighthouse from the
Esquimalt Migratory Bird Sanctuary

Video Links

The following is a list of links to YouTube videos embedded in this online educational document:

Explore Your Naturehood (Nature Canada)

<https://youtu.be/SdexoyEbRiU>

Our Nature, Forever (Environment & Climate Change Canada)

<https://youtu.be/tjvVElp2rss>

The Canadian Wildlife Service (Environment & Climate Change Canada)

<https://youtu.be/nUfWNSCti7E>

Voices of the Pacific Flyway (Cornell Lab of Ornithology)

https://youtu.be/3_CqIJbZx4I

Soar Alongside Migrating Birds – and the Man Who Flies With Them (National Geographic)

<https://youtu.be/5QAjfH05IUE>



Shoal Harbour Migratory Bird Sanctuary

Contributors

A special thanks to the following people for contributing their expertise to the development of this resource:

Project Lead & Photography

Rick Searle

Research & Graphic Design

Starr Munro

Teacher Advisors

Pamela Carruthers

Maryke Jones

Kirsten Dibblee

Friends of Shoal Harbour

Bob Peart

Elaine Ethier

Farrell Boyce

NatureHood/Nature Canada

Camille Koon

For more information about this resource contact:
friends.shoalharbour@gmail.com



Male & Female Northern Pintail