



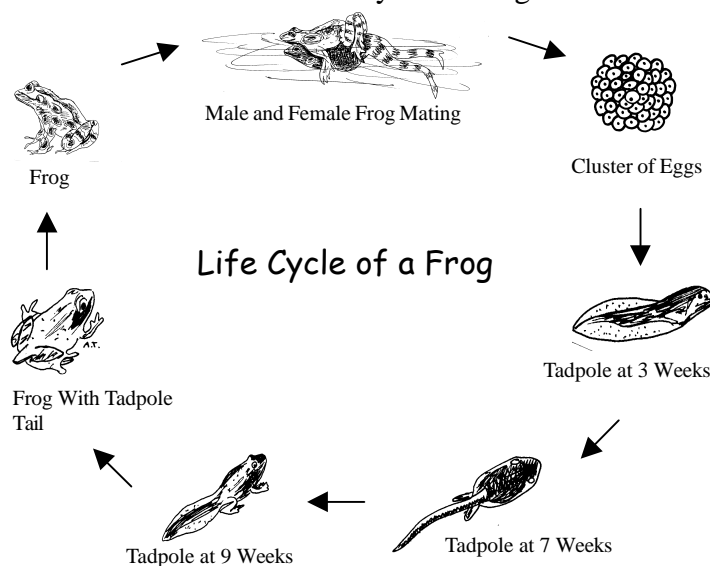
LEAPING FOUR LEGGED FROGS

F

rogs are fascinating animals. For the most part, they have been overlooked for hundreds of years until now. Why is there such a sudden interest? We have started noticing a decline in the frog population in recent years. We have been harming frogs and their homes. As a result, many **species** of frogs have become **endangered** and even **extinct**. Luckily, there are a lot of people who care deeply about protecting frogs. Many efforts are underway to save these fantastic animals. We hope that with this help, frogs will live with us for many years to come!

Frogs, along with toads, salamanders and caecilians (they look like worms), are **amphibians**. The word amphibian means double life. Amphibians will spend part of their lives in water and part on land. Amphibians have no shells, scales or outer dry covering so most of them live in damp and moist environments.

The picture below shows the life cycle of the frog. This cycle is like a circle... it begins where it ends. Read on to learn more about the story of the frog's life.



The Frog Cycle Story

When breeding (or mating) season begins, which will vary amongst frog species, the male frogs will be the first to actually head for the water in a pond, river, or stream. They must look for a site that would attract a female frog and once they've found it, they will begin to sing or call for a mate (female frog). This singing is called a **mating call**.

Each species has its own distinctive mating call. The call can be very deep and slow or it can be very fast and high-pitched. Usually, female frogs do not sing. In some species of frogs, such as the Tailed Frog, both sexes cannot sing at all.

Once the female has picked her mate, the male will climb onto her back and begin to stimulate egg release. As the eggs fall from the female, the male fertilizes them.

Frogs generally lay eggs in a cluster whereas **toads** will place their eggs in a long string, like beads on a necklace. Some frogs will lay thousands and thousands of eggs and some will lay only a few hundred eggs. The Bull Frog, for example, can lay 20,000 eggs. The Leopard frog may only lay 700 eggs. Depending on the species, the eggs will develop for days or even weeks until the tadpoles hatch from the eggs.

Once the eggs have hatched, **tadpoles** are released into the water. The newborn tadpoles are helpless at first. They have no eyes or mouths. All they can do is stick to a water plant or an egg jelly with tiny suckers, which are formed under the heads. After a few days, the tadpoles get mouths that let the tiny creatures eat teeny water plants.

Eventually, the tail will grow so that the tadpole is now able to swim. As the days go on, tiny fringes, which look like feathers, will grow on (cont...)

(the story goes on...)



either side of the tadpole's head. These fringes turn into **gills**, like those on a fish! The tadpole will breathe through these gills. In the next few weeks, the gills slowly disappear and are replaced by new ones which grow just under the skin on either side of the tadpole's head. Tadpoles breathe by gulping water through their mouths. The water passes over the gills, which take the **oxygen** out of the water and then passes through the holes on either side of the tadpole's head. This fishlike way of breathing lasts until the tadpole changes into a frog.

The tadpole stage ends when back legs begin to grow. Front legs also grow just behind the gills, but under the skin. After awhile, one leg pops out through one gill hole, and then the other.

The most important change in the frogs happens when they grow lungs to replace their gills. The frogs will come up and gulp air until eventually they are able to breathe only air, like humans! The frog's mouth and intestines will also change to allow the frog to eat new types of food.

As tadpoles continue to change into frogs, they will eventually develop bony jaws and teeth. While they are getting new jaws and teeth, the tadpoles will not eat until all the changes have finished. During the process, they will live off of food that has been stored in their tails. The tails will get smaller and smaller as the tadpoles change into frogs. By the time the tail has completely disappeared, the tadpole has become a frog.

This change that amphibians experience is called **metamorphosis**. The word metamorphosis means change in form. In the frog's case, tadpoles turn into frogs. The butterfly is another example of an animal that experiences metamorphosis. When hatched, butterflies begin their lives as crawling caterpillars and later transform into flying wonders.



For frogs, this change from tadpole to adult will usually happen in one season. However, there are some frog species that require more than one season to develop into adults. In this case, the tadpoles will **hibernate** throughout the winter, just like adult frogs do, until the following spring when they will then continue to change into adults.

(and on...)

Once the frogs have become adults, they will go on to live froggy lives until it is time for the cycle to begin again.

THE END!

Frog Words to Know!

- ~ **Amphibian**: an animal that beings life in the water and later lives on land. An amphibian must return to water in order to reproduce.
- ~ **Endangered**: facing extinction. Can you name three endangered species?
- ~ **Extinct**: no longer existing on earth. Example: Dinosaurs.
- ~ **Frog**: a smooth-skinned tailless amphibian.
- ~ **Gill**: an organ used to get oxygen from water. Fish breathe through their gills.
- ~ **Hibernate**: to sleep during the winter. Example: Bears are hibernating animals. Some bears will sleep all winter long until the weather warms up.
- ~ **Mating Call**: a sound produced by an animal to attract the opposite sex.
- ~ **Metamorphosis**: a change in physical appearance and structure. Example: A butterfly starts out as a caterpillar and before it becomes a flying insect.
- ~ **Oxygen**: a gaseous substance essential to life.
- ~ **Species**: a specific kind of animal, plant or fungi. Example: Bull Frogs are different from Spotted Frogs. Both Bull Frogs and Spotted Frogs are different frog species.
- ~ **Tadpole**: the beginning stage of a frog or toad.
- ~ **Toad**: a warty-skinned tailless amphibian. Toads can live in drier environments better than frogs can.



Different Frog Species of BC

Frogs are different from toads. A frog is adapted for living in the water. It has smooth skin and a streamlined shape that lets it move through the water easily. Its long back legs have webbed feet and are designed for swimming.

Toads are adapted for life away from the water. A toad has a tougher, warty-like skin that helps prevent water from escaping its body. Toads also have a short body and short legs that allow it to hop or crawl over land. Toads lack ridges on their backs. Frogs are better swimmers and hoppers than toads but toads are better at digging than frogs.

Did you know that British Columbia has 11 different frog species and only 1 toad species? The single toad species found in BC is called the Western Toad. They live in fields, forests, and meadows that may be quite far from water. During dry seasons, Western Toads will often hide away in holes in the ground until the climate changes. To protect themselves from predators, Western Toads bury themselves in the dirt.

The 11 frogs species found in BC are the Pacific Tree Frog, Striped Chorus Frog, Red-legged Frog, Wood Frog, Great Basin Spadefoot, Tailed Frog, Northern Leopard Frog, Spotted Frog (Oregon and Columbia Spotted Frog), Bull Frog, and Green Frog. Let us take a moment to learn some things about them.

1) The Pacific Tree Frog:

- ~ They are sometimes called the Pacific Chorus Frog.
- ~ They are often found far away from water in bushes or in the woods.
- ~ They can live away from water because they have a waxy coating on their skin, which protects their skin from drying out.
- ~ They have much louder calls than other frog species.
- ~ They like to sing for longer periods of time in the Spring than most other frogs.

2) The Striped Chorus Frog:

- ~ They can be found in the northeastern area of BC.
- ~ They are the smallest frogs in BC, and they sound like crickets.

3) The Red-Legged Frog:

- ~ They are one of the more common frogs of BC.
- ~ They like cool, usually well shaded ponds, lake edges, or streams.
- ~ They get their name from the reddish colouring on the underside of their legs.

4) The Wood Frog:

- ~ They like cold, moist environments, like the Red-Legged Frog.
- ~ They are the only North American amphibian that can be found in the Arctic Circle.
- ~ They can be found all over Canada.

5) The Great Basin Spadefoot:

- ~ They are excellent diggers and they can disappear from sight in just a few minutes! They use their back feet to push dirt out from under themselves and eventually up over their sides to cover their backs.
- ~ The Great Basin Spadefoot normally come out at night to catch insects, especially after it rains.
- ~ Their call is a loud, nasal quacking. It almost sounds like a slowed-down recording of ducks!

6) The Tailed Frog:

- ~ They get their interesting name from the “tail-like” structure found on males.
- ~ They have no voice.
- ~ They like to live in cold, fast flowing streams that run through forests.
- ~ Like the Great Basin Spadefoot, Tailed Frogs are active at night.

7) The Northern Leopard Frog:

- ~ They are not very abundant in British Columbia.
- ~ They get their name because the spots covering their bodies look like leopard spots.
- ~ They like to live in marshes, wet meadows, and moist, open woods.

8) The Spotted Frog:

- ~ They come in many different colours and patterns.
- ~ They have been divided into two groups: **The Oregon Spotted Frog** and **The Columbia Spotted Frog**.
- ~ Both the Oregon Spotted Frog and the Columbia Spotted Frog are gone from many parts of western BC. However, they can still be found, in small numbers, in many parts of central BC.

9) The Bull Frog:

- ~ They are the largest frogs in North America. They are an introduced species in BC, which means they were brought here from somewhere else. These frogs were released in BC around 80 years ago when people started to raise them for food. Because they are so big, the Bull Frogs eat other frogs or out-compete other frogs for food and habitat.
- ~ They are one of the major threats to both the Oregon and the Columbia Spotted Frog.
- ~ They like to live close to the water. In fact, they will spend most of their time in the water with their heads poking out to look around.

10) The Green Frog:

- ~ They, too, were introduced to BC, but so far, have not caused the same problems as the Bull Frogs.
- ~ Like the Bull Frogs, Green Frogs will spend much of their time in water.
- ~ They can be found in ponds and ditches on Vancouver Island and around the Lower Mainland.



Some Froggy Facts!

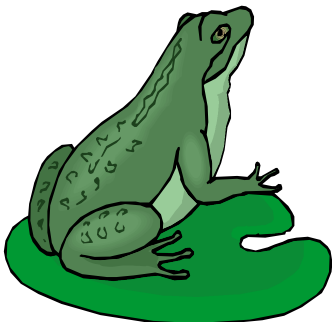
Did you know...

~ Frogs can be found on every continent in the world, except Antarctica!

~ There are over 3,850 species of tailless amphibians on earth.

~ Some frogs can survive in very cold conditions. Their bodies contain large amounts of glucose, which is a sugar, that acts like an antifreeze at cold temperatures.

~ A frog's tongue is attached at the front of its mouth instead of at the back like ours. It is covered with a sticky liquid that helps in catching insects.



~ Some amphibians on Earth have claws. A great example is the African Clawed Toad.

~ The Mascarene Frog holds the record for leaping. It can leap 17.5 feet in a single jump!

~ Tadpoles have gills, so they can breathe under water like fish.

~ Frogs spend much of their time eating.

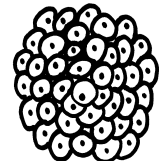
~ Frogs do not have to groom themselves because they have no fur!

~ Some frogs living in cold climates will hibernate during the cold months.

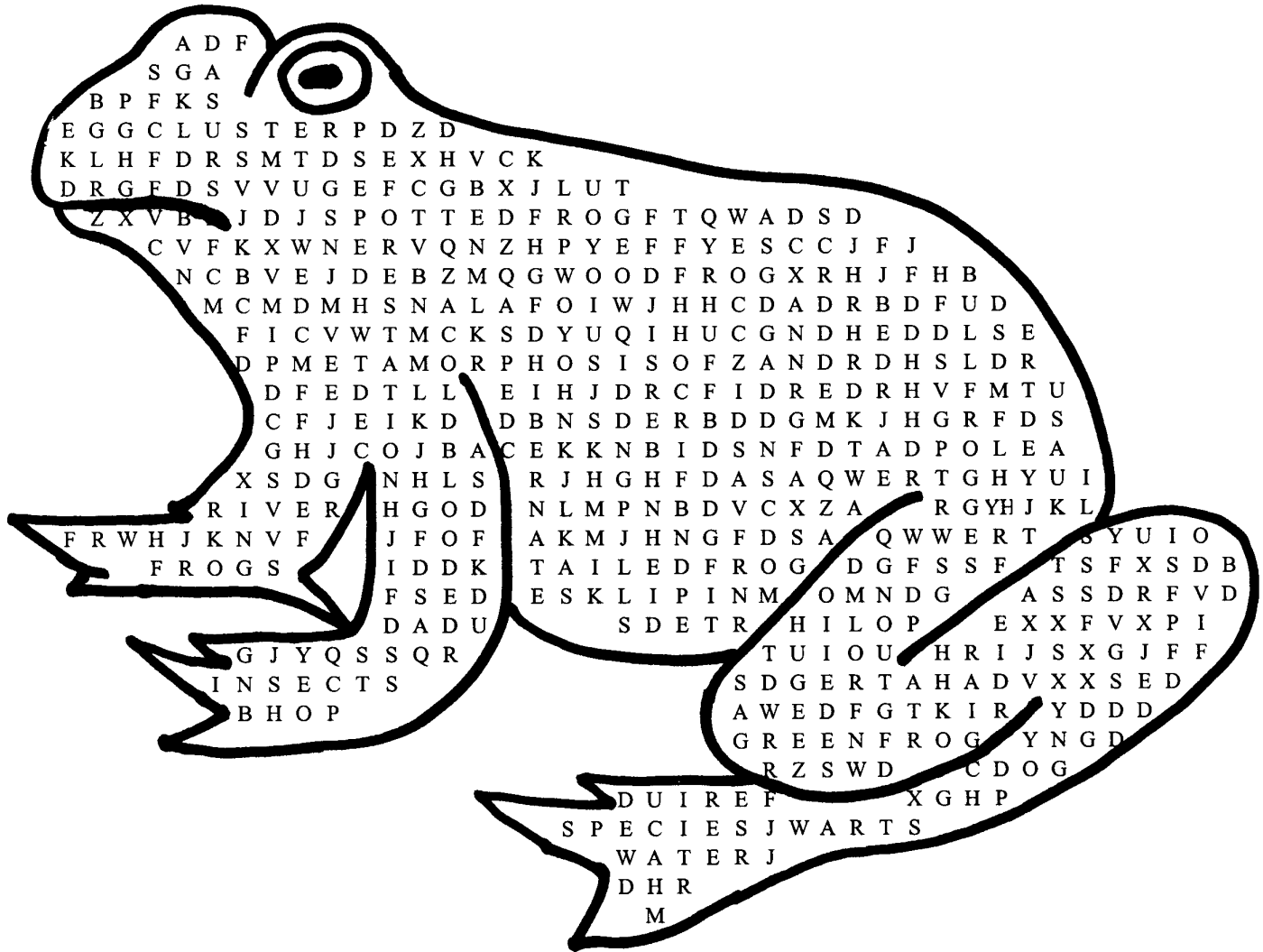
~ There are endangered frog species living in Canada.

~ Chemicals and pollutants in rivers and streams can cause problems with a tadpole's metamorphosis into a frog.

~ Frogs keep from dehydrating (drying out) by absorbing water through their skin. This means they can also absorb toxic chemicals in the water, which is very harmful to them.



Froggy Find!



In the picture above, try to find all the following words that relate to frogs!

- * Amphibian
- * Frogs
- * Hop
- * Coldblooded
- * Insects
- * Species
- * Tailed Frog
- * Water

- * Metamorphosis
- * Hibernate
- * Green Frog
- * Bull Frog
- * Tadpole
- * Spotted Frog
- * Egg Cluster
- * Lake

- * Warts
- * River
- * Pond
- * Endangered
- * Threats
- * Deforestation
- * Woodfrog

Threats to Frogs

Like many other animals, frogs are hurt when their habitat is destroyed. Here are some things that threaten frogs and their habitat:

• Dumping chemicals into the water

Like many animals on earth, frogs need clean water to stay healthy. Sometimes things get into rivers and oceans that pollute them and this can make frogs and many other animals very sick! Sewage, fertilizers, detergents, garbage, and many chemicals are bad for frogs and should never be thrown into the water.

• UV (Ultraviolet) Sensitivity

Frog eggs float in a jelly-like substance near the surface of the water. Since UV levels have been increasing around the world because of the ozone layer being destroyed, frog eggs are exposed to more of the harmful radiation. If there are no trees or plants for shade, frog eggs can die.

• Loss of Habitat

All living things need space. Unfortunately, construction and development crowd out animals, like frogs, from their natural habitat. As a result, they are forced to find a new habitat in other areas which may not be suitable, in which case many frogs will die out from the area.

Eggsposed to Danger!

Being a frog egg is a risky business. Try and unscramble the following letters to reveal the situations that may cause the frog egg to be harmed!

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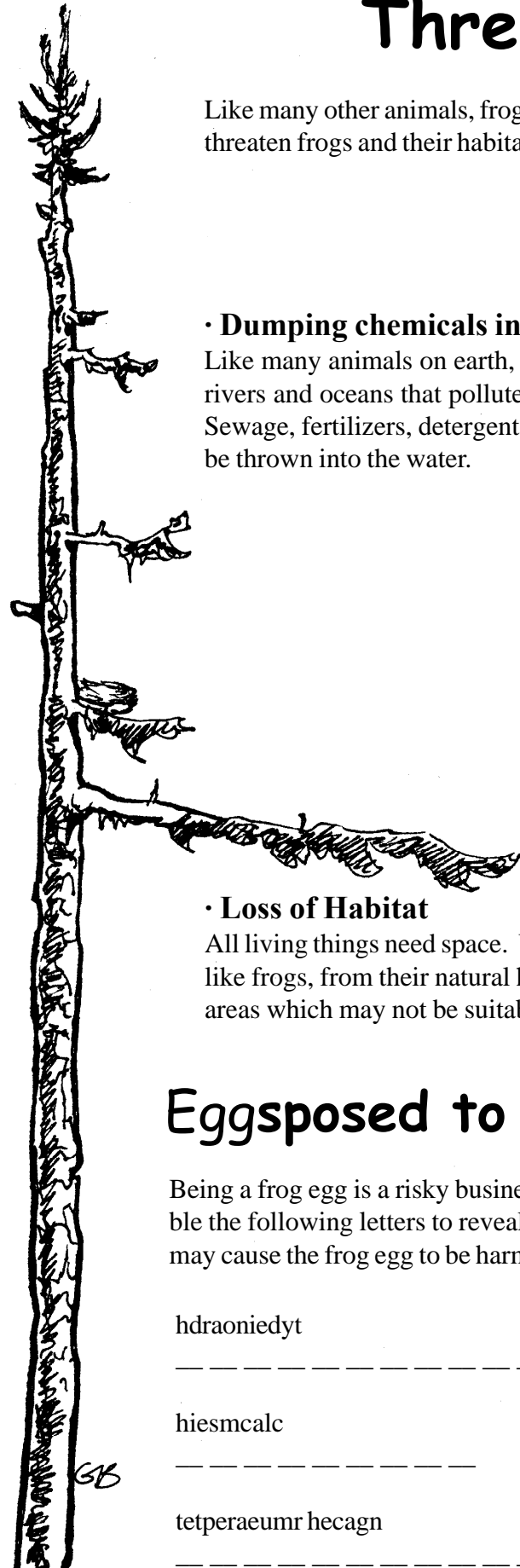
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What YOU Can Do to Help BC Frogs!

Here are some things that you, your friends and your family can do to help protect BC frogs:

• Protect plants and trees!

The plants and trees that grow alongside streams are important to keep frogs healthy. They help provide shades for frog eggs and prevent dirt from washing into the rivers. You can get involved in efforts to restore shorelines, rivers and ponds.

• Stop water pollution!

Don't ever throw anything marked "toxic" down the drain and never dump oil or other chemicals down storm drains. If these get into streams, rivers and ponds, they can make frogs very sick. Always take the chemicals to proper disposal or recycling facilities. Help environmental groups educate others about water pollution and remind them that what they throw down the storm drain might end up in wildlife habitat!

• Protect habitat!

By protecting wildlife and plant habitat we would be protecting all the things that frogs would need for survival, such as food, water, and shelter. You can get involved with restoration projects and clean-up programs to help restore and conserve these precious habitats.

• Save water!

When we use water it means that less is left in streams for frogs to have a healthy home. Some ways to save water are: making sure that there aren't any leaky taps or toilets in your house; turning off the water when you brush your teeth; not running water when you aren't using it; and asking your friends and family to do the same.

• Get involved in Frogwatch!

You can volunteer with Frogwatch to help, along with many people from across Canada, to protect and learn more about different Canadian frog species. Contact Frogwatch to learn more about helping Canadian frogs!

Useful websites:

<http://www.cciw.ca/emanops/> (English)

<http://www.cciw.ca/resepo/> (French)

To check out the website of the Canadian Amphibian and Reptile Conservation Network go to:

<http://www.cciw.ca/ecowatch/dapcan>

How to make a Toad Home!

1. You will first need to find an old clay pot. Measure the opening at the top. It should be about 20cm wide.
2. For this part you may want to get an adult to help. Make a door by very carefully knocking a small section out of the top of the pot. Try to make the part you are knocking out in the shape of a semicircle. Try to get it about 8 cm wide and about 4 or 5 cm in length from the top rim of the pot.
3. Put the pot in a shady spot in your backyard or in your schoolyard. You will need to make sure that there is some water around. If there isn't any water you will need to do the following:

If There Isn't Any Water

4. You will need a small, plastic bucket. Dig a hole into the ground big enough so that the plastic bucket can fit in it and still be even with the ground. Again, you may want to ask an adult for help.
5. Put some rocks or a brick in the bottom of the bucket. Try to find rocks or a brick that will fill the bucket, leaving 5 cm at the top of the bucket. Fill the bucket with water. This will now be your water source for any toads in the area. Make sure you change the water every few days.





FOR EDUCATORS

Critters Credits

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NEW!! Kids Korner



Kids Korner is a part of Northwest Wildlife Preservation Society's website made especially for children. There are wildlife activities, games, facts and fun just for kids!

Check out Kids Korner at www.northwestwildlife.com

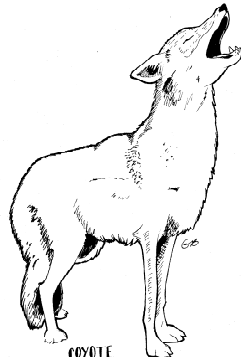
Want to Get Involved with Wildlife Preservation?

Exciting Wildlife Presentations:

Northwest Wildlife Preservation Society (NWPS) offers a variety of programs for audiences of all ages. These programs allow students to get involved in interactive classroom presentations. Our programs can easily fit into your curriculum, either as part of an existing lesson or as a separate lesson about the environment we all share.

Choose from...

- ~ Bats
- ~ Bears - BC & Beyond
- ~ Endangered At Home
- ~ Owls: Folklore, Fact, & Future
- ~ Urban Wildlife
- ~ Vancouver Island marmot
- ~ Wildcats of BC
- ~ Wildlife of BC
- ~ Wolves



Interested in preserving wildlife and wildlife habitat? Wondering what you can do? Join the Northwest Wildlife Preservation Society "Volunteer Team"! To find out more about possible volunteer opportunities with us, please call (604) 713-6686. There are lots of ways to get involved!

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Contact Frogwatch to learn more about helping Canadian frogs!

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