# Nature WILD

For Kids
Who Love Nature
· Winter 2019 ·

NATURE KIDS BC
WWW.NATUREKIDSBC.CA

## After the Fires

## Bat Project update

## New Cave Dwelling Creature Discovered!

## Climate Change - what you can do

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QUESTIONS? COMMENTS?


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## Note to parents:

With so much focus on the climate crisis, even young children know it will affect their future. We hope our short piece on climate strikes (pages 12 & 13) will help you talk with your child(ren) about this issue. Talking about it can help to reduce their anxiety.

As **NatureKIDS** parents, you are already getting your family into nature. This is one of the most important things you can do to help your children feel more positive about the future. Learning about the natural world will also motivate your children to protect it.

Children need hope. They need to see that the adults around them are taking this crisis seriously and doing what they can to solve it. Please continue to reduce your family's ecological footprint and to exercise your adult powers as a citizen. Show your children that you are doing your best to protect their future.

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**NatureKIDS BC** is **THE** club for children and families who love to be outdoors. Members discover nature on Explorer Days organized by volunteer leaders and guided by experts, participate in stewardship projects, earn Action Awards and receive NATUREWILD magazine 4 times a year.

**Come join us!** Family membership: **$35** per year. Individual adult membership: **$25** per year. Or subscribe to NATUREWILD magazine: **$20** for 4 issues per year. For more information and to sign up online go to: naturekidsbc.ca


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**Cover photos:** Pileated Woodpecker: Rob Alexander, B.C. • Burnt Trees: David Shackleton, B.C. • Pallid Bat: mypubliclands, CC

# NatureKids Become Bat Buddies and Detectives

By Paula Rodriguez de la Vega

**Otter Home Learner NatureKIDS** conduct bat counts at a maternity colony roosting in a barn. This valuable information will help biologists monitor how bat populations are doing in BC. They also use a 'slinky' to show how bats send out high-pitched sound waves to hunt for insects at night. Bats listen for the echo to find their prey. This is called echolocation.
Photo credit: Jackie McQuillan

**Delta Home Learner NatureKIDS** study the difference between the smaller bats in B.C., which measure about 20 cm from wing tip to wing tip, and the larger bats which measure about 40 cm. Photo credits: Michal Sirton & Guy Sirton

**South Okanagan NatureKIDS** get ready for a June bat count at Sun Oka Provincial Park where Little Brown and Yuma bats roost in 6 different bat boxes. Emaya wears a bat costume to show that bats are mammals. They are warm-blooded, have fur and give birth to live young (usually 1 pup per female). Pups suckle milk from their mothers.
Photo credit: Keith Baric

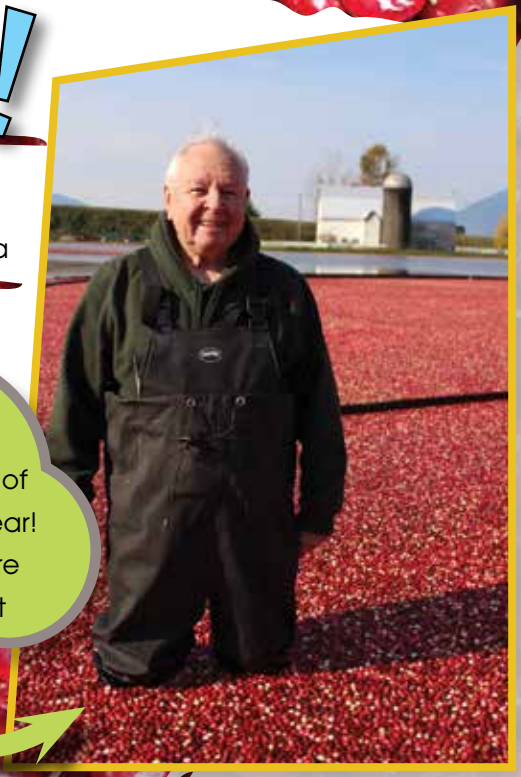
**Comox NatureKIDS** discover that bats are the only flying mammals. They are in the order Chiroptera which means 'hand wing'. They also learn that bats are not related to rodents (rats, mice and squirrels).
Photo Credit: Hayley Datoo

**Vancouver NatureKIDS** learn that there are at least 15 different species of bats in B.C. These bats are important because they eat millions of insects every night. Think how many mosquito bites they save you from!
Photo credit: 9413217529

# Cranberries!

**By Dr. DooWitt**

Dr. DooWitt is very partial to cranberries and when he was invited to a cranberry farm he jumped at the chance! Wading knee deep in cranberries – what fun!



**Cranberry harvest** - In B.C. approximately 840,000 barrels of cranberries are grown every year! I wonder how many barrels are in the field where Dr. DooWitt is standing?

Always wanting to know more, Dr. DooWitt found out that cranberries are a close cousin of the huckleberry and are native to Canada. They grow in cool bogs and wet areas where there is acidic soil.

Early indigenous gatherers used the cranberries as a winter food source and because they kept people healthy. They gathered berries in the fall and well into winter by visiting local bogs. Sometimes they travelled to Burns Bog in the Fraser River delta as that bog was very rich in berries.

The Haida called cranberries `dog-salmon eggs' while the Saanich peoples of southern Vancouver Island called them Ḱem,Ćoles. Others called them Crane Berry because to them the flower looked like the head of a crane. What do you think?

Cranberry flower

Sandhill Crane

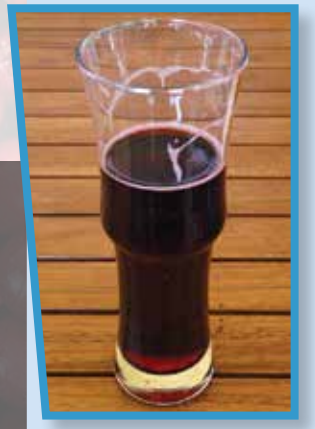
Once the berries were gathered, they were either eaten fresh or saved for winter by storing them under fresh water in containers.

Cranberry plants flower in the early summer of the third year, and the tiny pink blossoms are very attractive to bees because the flowers are wide open for nectar gatherers. The berries are white at the beginning of the fall and change to pink and then red when they are fully ripened.

**Photo credits:** background: 1144980454, istock • Brian in cranberries: Aleena Webber, B.C. • Cranberry harvest: PublicDomainimages, CC • Flower: Wikipedia • Crane: skeeze, CC • Wild cranberry: fotoblend, CC • Cut cranberry: Brian Herrin, B.C. • Juice: Hans, CC • Cranberry sauce: Brian Herrin, B.C.

# Today

The indigenous people introduced the early colonists to this fruit. Those colonists also soon realised that cranberries could be kept over winter. Then they found they could be grown where the soil is acidic like the bogs where the cranberry grows naturally. Now they are grown commercially in fields that have permanent irrigation and soil banks around that allow the fields to be flooded for harvesting. Machines beat the berries off the bushes and the berries float to the top of the water where they are collected. They float because they have air sacs inside.



Today cranberry juice is very popular, while cranberry condiments and desserts are a traditional favourite at Christmas and Thanksgiving, often in a sauce served with turkey.

It is very easy to make Cranberry Sauce from frozen or fresh cranberries.

**Here's Dr. DooWitt's recipe** - **WARNING! You MUST have an adult with you, the sauce gets VERY HOT!**


**Ingredients**

1 cup (250 mL) sugar
1 cup (250 mL) water
1 12-ounce pack (340 g) fresh or frozen cranberries, rinsed and drained

**Directions**

1. Combine water and sugar in a medium saucepan.
2. Bring to boil; add cranberries, and let the mixture come back to the boil.
3. Reduce heat and boil gently for 10 minutes, stirring occasionally.
4. Cover and cool completely at room temperature.
5. Refrigerate until serving time.

# After the Fires-
## what's Old is New again

By Tricia Edgar

Last summer, 2018, and the year before, the skies of British Columbia were filled with smoke. There were wildfires raging through forests in many parts of the province.

What happens to the plants and animals after a wildfire moves through a forest? That depends on what happened during the fire.

You might be surprised to learn that in the past forest fires were common in British Columbia. For thousands of years, First Nations people set fires on purpose to burn forests. They set fires for many reasons, such as clearing land, helping berries and medicine plants grow, and growing grass for animals that people could hunt.

These fires were slow and kept under control, so many trees stayed alive after the fires. With regular fires, the dead leaves and branches that fell to the ground were burned before too much piled up.

Today, many forest fires are large and hot because controlled burns have not happened as often. The layers of dead wood make the fires very hot. Very hot fires kill more trees. They make the earth very hot too, which can burn organic material and kill soil microorganisms, making it harder for plants to grow again after a fire. That's because soil bacteria, fungi, and other microorganisms help plants grow. They do this by breaking down nutrients so the plants can use them.

If those soil microorganisms are able to do their job, plants will grow easily in the new open, sunny areas that are present after a fire. Wildflowers, grasses, mushrooms and berry bushes burst into life. Deer come to eat the grass and bushes, and they enjoy the clearings that the fire has created.

Forest fires also help baby trees grow. For instance, the Lodgepole Pine has cones that are sealed with resin - kind of like a forest glue. The heat of fire actually helps their cones open and release seeds.

After the fire, the burned trees themselves can be full of life. Small animals such as wood-boring beetles come in to live, decompose wood, and lay their eggs. This starts a whole new food chain as birds such as the Three-toed Woodpecker come to the trees to eat the beetles, their larvae and pupae. They can live off these delicious tidbits for five to eight years before they have to move on.

Forest fires change the land around us. For thousands of years, people have tried to understand how to work with fire and the changes that it brings to the land. Today, we are learning from the ancestors how to make fire work for us, not against us.

**Photo credits:** Smoke in distance, New growth, Burned trees x 3 & Fireweed & Indian Paintbrush: David Schackleton, B.C • Remainder of photos: Todd Carnahan, B.C.

# How Craig Fou
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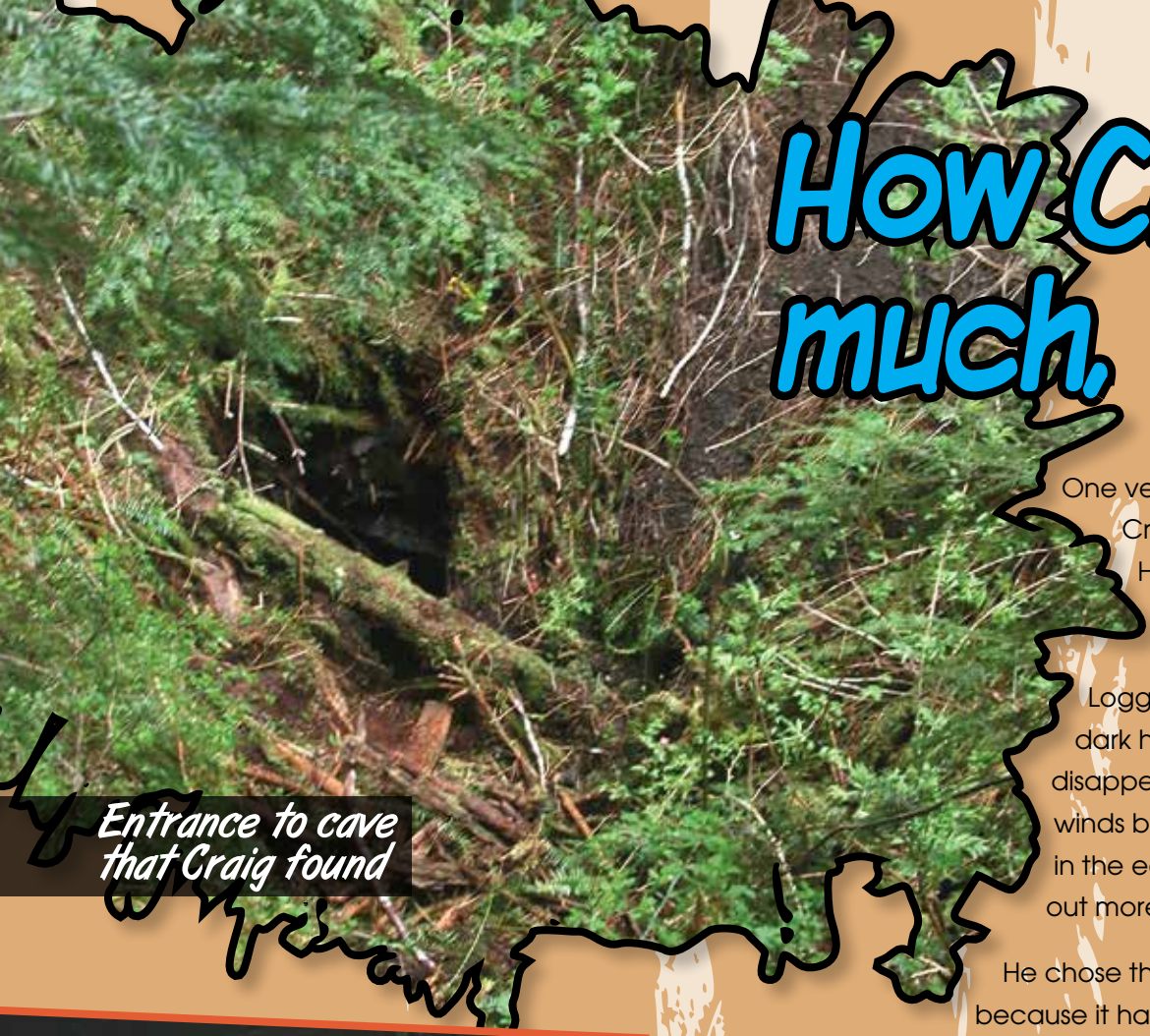
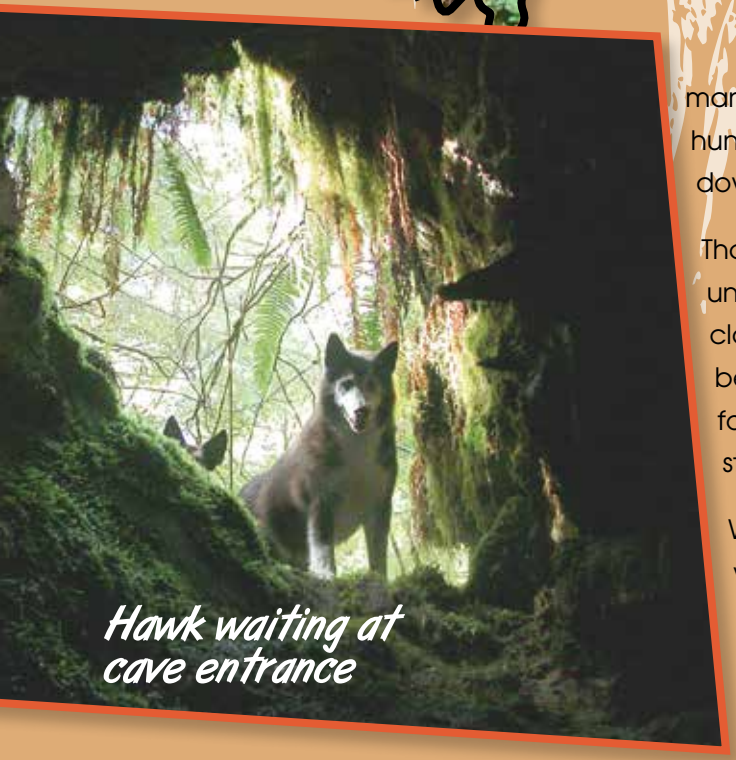


Entrance to cave that Craig found

One very wet spring day in 1998, Craig Wagnall and his dogs Hawk and Kiki explored a hilly area around Sproat Lake near Port Alberni. Loggers had told Craig about dark holes on the surface, streams disappearing into large pits, strong winds blowing out of small cracks in the earth. Craig wanted to find out more.

He chose this day for cave hunting because it had been raining for a week. The ground was soaked, which brought out many surface streams that would normally be dried up. For cave hunting all Craig needed to do was follow these streams, up or down stream, to where they disappeared.



Hawk waiting at cave entrance

That day, Craig was following a stream that disappeared underground into a tangled pile of woody debris. Listening closer, he could hear falling water which told him there might be a cave below. The water flow was too high and dangerous for him to explore any more that day. He had to wait until the stream level had gone down or, better yet, dried up.

When the stream was at last dry, Craig started to remove the woody debris. Soon he was looking into a dark hole and he could hear the sound of dripping water coming from far below. Unfortunately, a boulder was blocking the passage. Craig was very excited to find a new cave, but he went no further that day. A caver's motto is "Never go underground alone!"

Craig was busy exploring other caves in the area so he could not return for a while. At last, in the summer of 2004, with two fellow cavers, Craig set out to remove that boulder from the cave entrance. With bright headlights on, they could see a cave passage beyond the boulder, but they could not squeeze by it. The boulder had to go!

# und a cave and ore!

By Craig Wagnell
Photographs by Paul Rnee

Another cave decoration

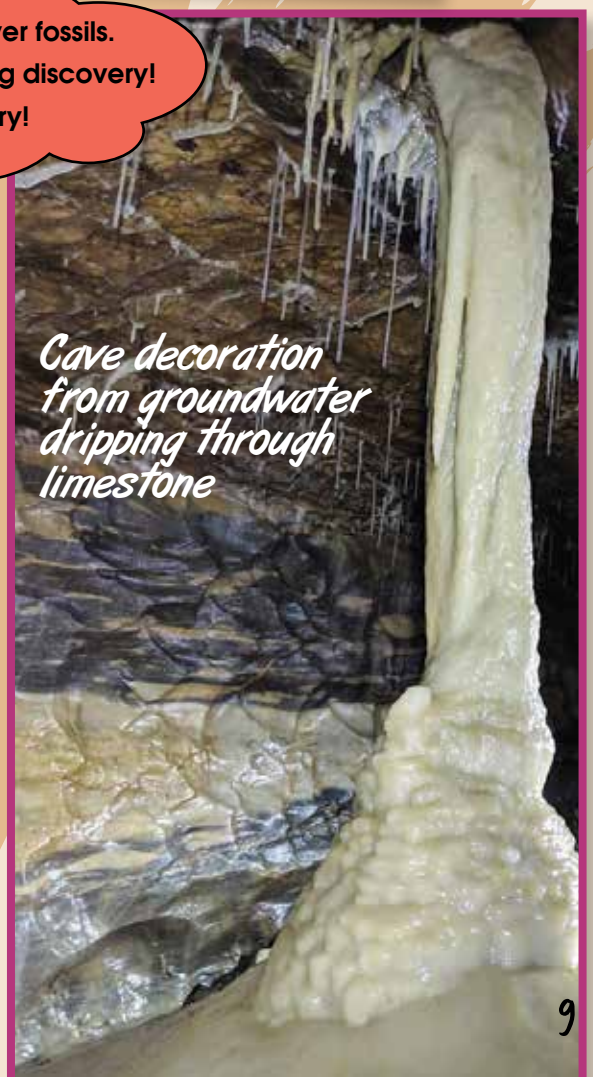
They wrapped the boulder with a length of climbing sling, and with three of them pulling, out it came!

The entrance to the cave was now easy to drop into by shimmying down a vertical slot for 10 metres. The cave opened up large enough to stand up comfortably. The main cave passage soon became too tight to continue but there was another passage heading back up to the surface which, with some digging, also led outside.

Ammonites

mmonites

Craig didn't just discover fossils. He made another amazing discovery! See the next story!



Cave decoration from groundwater dripping through limestone

In the cave Craig noticed many strange round markings all at the same level within the cave walls. Looking closely, he was blown away to see a large assortment of different ammonites and other shellfish fossils. Over ten different species were later identified, dating from the Triassic period (252 to 201 million years ago)!

The following year Craig returned to complete the survey of what is now known as **Fossli Slots**. This is a 'solution cave', meaning that it is formed by groundwater eroding through limestone. Sometimes solution caves have stalactites (downward hanging from the ceiling) or stalagmites (upward growing from the ground). Fossli Slots has only one stalactite and no stalagmites, but it holds huge scientific significance due to the great number of fossils found there.

# New Cave Dwelling Creature Discovered on Vancouver Island.

## Possible Survivor from the last Ice Age!

Craig remembered that when he was taking photos of the ammonites and other fossils, he had seen something very small and white running through his camera view.

He thought it was an immature centipede or some kind of termite, but when he downloaded the pictures later, Craig realized the creature was something he had never seen before. Craig turned to the internet and shared pictures of the creature with some online forums where it was identified as a type of ***dipluran***.

A ***dipluran*** is a tiny ***hexapod*** (six legs) measuring just three to four millimetres long. It is only found in caves and has adapted to living in complete darkness – it has no eyes and is nearly white in colour. The juveniles found in this cave were a little larger, 5 mm while the adults were 10 mm.



Background photo credits: Christian Peters, istock

Craig contacted Dr. Lynn Ferguson (a professor of Biology and Earth Sciences at Longwood University in Virginia), who asked Craig to capture a live sample so he could properly identify the species. This meant going back to the cave to try and capture something that he had only seen once before. Dr. Ferguson suggested Craig use bait traps. After a lot of tries Craig was finally able to capture some diplurans.

Unfortunately, Dr. Ferguson fell ill and could no longer assist Craig. Craig did not give up. He and fellow caver Felix eventually made another trip to the cave in hopes of getting some new video of the still unnamed dipluran. The two were lucky enough to see several of the little creatures and they got some excellent video footage.

Holy Jiminy Jumping Cricket!

Craig put the video on YouTube and in June 2018 received a message from Alberto Sendra, professor of Anthropology at the University of Alcalá in Spain. Alberto said the dipluran video was one of the best he had seen and asked for permission to use it for educational purposes.

This led to Craig sending some more samples to Alberto. Less than a month later, Alberto confirmed that Craig had discovered a new dipluran species never seen before. Over the next eight months, Alberto and Craig co-authored a study which was published in the journal ***Subterranean Biology***. At last dipluran *Haplocampa wagnelli* was officially recognized as a new species and named after its finder, Craig Wagnell. What an exciting moment!

Because the caves found in Port Alberni were once under the Cordilleran Ice Sheet 18,000 years ago, scientists are considering the possibility that *Haplocampa wagnelli* might even be a survivor from the Ice Age!

## News flash from Craig!

Since finding the first little creature, Port Alberni cavers have found *Haplocampa wagnelli* living in another 5 caves within the same area. The cavers' mission is to show people where this creature exists by setting up signs and markers within the caves where it has been seen. We hope others can get a sighting and may like to join us in searching for more locations in the future. Or at least take great care not to harm or step on them by accident when in the marked areas.

Craig's partners in these adventures were:
George Ferro, Myles Belobaba, Tawney Lem, Alberto Sendra, Lyn Ferguson and colleague Felix Ossig-Bonanno.

**https://subtbiol.pensoft.net/article/31467/**

# The Climate and You

**By Susan Fisher**

You are a NatureKID so you care about other living things -- birds and wildflowers, trees, insects, bats and butterflies. If you want to protect them, you **need to understand how climate change is affecting our world.**

## Climate Crisis

Over the past two hundred years, humans have burned huge amounts of coal, oil, and gas. We use these fuels to run our factories and cars and planes, heat our homes and cook our food. But when we burn fossil fuels, we send carbon dioxide into Earth's atmosphere. It stays there, like a blanket around our planet, trapping the Sun's heat and making it hotter. Other human activities, like cutting down trees and draining wetlands, also send carbon dioxide into the atmosphere. A hotter world means more wildfires, more droughts, more unpredictable weather. Some parts of Earth may become so hot that people won't be able to live there.

Climate change will also affect the oceans. As higher temperatures melt mountain glaciers and the Arctic and Antarctic ice sheets, more water will flow into the oceans. At the same time, ocean water will expand as it grows warmer. The result: around the world, sea levels will rise, putting coastal towns at risk of flooding.

It is not just human beings who will be harmed by climate change. Plants and animals will also find it harder to survive in a hotter world.

Climate Action leader Greta Thunberg is a brave Swedish teenager who started the Climate Strike movement. In August of 2018, she began sitting outside the Swedish Parliament, with a sign reading **"School strike for climate."** Within a year, Greta's climate strike had become an international youth movement called **Fridays for Future**. Inspired by Greta, millions of students around the world – including thousands in BC – organized climate strikes in their hometowns.


## Climate Action

**YOU** didn't cause this problem. Adults did. But now the **children of the world** are calling for action. Since September of 2019, millions of young people around the world have been taking part in Climate Strikes: they are walking out of school to tell adults, politicians, and decision-makers, **"YOU MUST ACT NOW! Our future and the future of the earth are at stake."**

## Some NatureKIDS went to strike events in BC.


**Kelly Schaecher (Victoria):** We attended the climate protest last Friday. Our daughter Sasha (7 ) made this sign and we bussed downtown to join others. We watched Greta's speeches and were inspired.

**Sarah Johnston (Pitt Meadows):** I found there was nothing organized here so my family decided to take action. We organized an event at City Hall, and it was a huge success, with several hundred students.

**Laura Pandolfo (Langley):** I'm 20 years old and I've been in NatureKidsBC since I was 8. I was lucky enough to attend the Climate Strike in Vancouver. It was incredibly inspiring to be surrounded by so many people who share a love for nature. I do wish though, instead of just holding signs, we could have acted there and then. With so many people, imagine the shoreline clean up that could have been done!


**Vivian (Vancouver):** I went to the climate march in Vancouver. I felt like I was part of this big community that was just stating the truth that something needs to be done. I believe there will be many marches and other actions that will be a lot of work, but I truly believe we can save our future.


**Fiona, Keith, Cypress and Fraser:** We used an old snow saucer for our sign. It was a great experience to feel the collective energy of people of all ages who care about the future of our planet.


**Ariella and son Ivan (6):** We had a lot of fun making signs together, choosing to use the Lorax as our mascot for the day. We Skytrained to the march and came out into a huge swell of people - all with colourful signs, chanting, holding hands.

## What can YOU do?

Tackling climate change is about big things and small things. The big things are issues like pipelines, power generation, and resource development. Adults – who can vote – must work on those.

But there are many small things that we can all do. Here are some good choices you and your family can start making:

- Plant trees. Trees soak up carbon dioxide.
- Don't turn up the heat; put on a sweater.
- Dry your clothes on a rack, or line, not in a dryer.
- Eat less meat. Growing animals for meat can also harm the climate.
- Eat food that's grown close to home.
- Stop using plastic containers and plastic bags. Bring your own containers for drinks and take-out.
- Don't buy new things you don't need. Just about everything that comes to our province has been shipped by trucks, planes, or trains, which burn fossil fuels to get here. Shop at new-to-you stores. Host a clothing or toy exchange. Remember: Refuse, Reduce, Reuse.
- Take your family holiday close to home – British Columbia has so many marvellous places to visit.

**By making these good choices, you are learning how to live in a future when we will all have to do without many things we have now.**

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Have a Nature Question?

# ASK AL

Al Grass has worked as a career park naturalist and ranger throughout B.C. Now he is a well-known nature tour leader and photographer. Al especially likes birds, insects and spiders. Photo Credit: Robert Alexander, B.C.

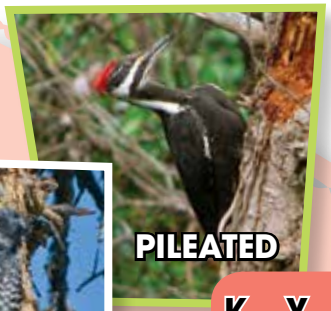
Great Blue Heron and Osprey duking it out – they are probably after the same tasty meal.

**"I saw a heron in a grassy field that seemed to be hunting for food. I thought that herons ate only fish. Do they eat other things as well as fish?"**

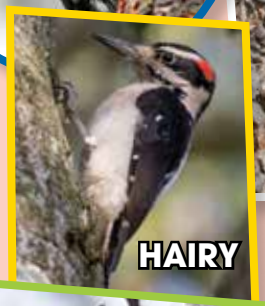
Yes, the Great Blue Heron does have a varied diet which includes some surprising things on its menu, such as frogs, salamanders, newts, voles and mice, birds (even ducklings).

I once watched two herons at Stanley Park plucking dragonflies (big Blue Darners) from mid-air with great accuracy. So, your heron in the field was probably stalking voles (small rodents). Photo credit: Gordon Gore

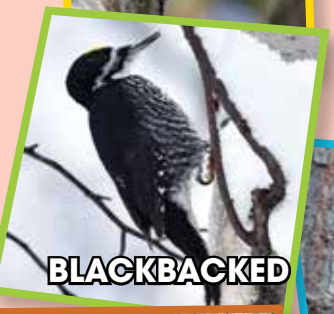
## Woodpecker & Sapsucker Wordsearch











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# Nature WILD NEWS

## Reported by Niki Dun

Congratulations to NatureKIDS Philip (Delta Home Learners) and Angus (Williams Lake) for completing their 1st Passports! Lucas and Tanya (North Okanagan) and Zain (Vancouver) sent in their 2nd Passports and earned their NatureKIDS caps. Tivon (Victoria) earned a reward for his 3rd Passport, while Ken (North Vancouver) and Olivia, Jacob, Daniel, and Andrew (Merritt) completed their 4th Passports. Congratulations to Anna (Nelson) on finishing her 5th Passport to Nature. Maya (Delta Home Learners) wowed us all and earned special rewards for her 13th and 14th Passports! **Congratulations to all for being such great adventurers!**

As well as organizing their local September climate strike event (see page 12), in June this year the Johnston family of NatureKIDS Ridge Meadows also started a non-profit organization called Plastic Battle (sara@plasticbattle.ca). "Plastic Battle does shoreline cleanups and educates our community at farmers' markets and other events."

Aiden and Danika from Plastic Battle and some volunteers cleaned up at Port Haney, saving a few hundred pounds of trash from entering the Fraser River. Credit: Sara Johnston, B.C.

The rain stopped just in time at Cougar Creek for **Delta Home Learners NatureKIDS!** The group had a great Explorer Day, splashing through the creek, looking for wildlife, and learning about the geology of the area from mentor David Smith.

Cougar Creek Hike. Credit: M. Stavoravdis, B.C.

**Comox Valley NatureKIDS** joined mentor Alison Maingon at Nymph Falls Nature Park to search for fall fungi and learn about its role in the forest. What fun names fungi have! Jelly fungi, puffballs, and Cat's Tongue were some of the exciting discoveries of the day.

Focus On Fungi, NymphFalls Nature Park. Credit. H. Datoo, B.C.

**Victoria NatureKIDS** were honoured to join the Victoria Natural History Society at their annual Hawk Watch and BBQ in beautiful East Sooke Regional Park. With raptor flight demonstrations, interactive games, and migration lookout spots, this September Explorer Day was a fun learning experience for everyone! Victoria Hawk Watch. Credit: Britta Bentz, B.C.

# How Animals Survive Winter

**SNOW GEESE** summer in the Arctic but when fall comes, they migrate south. They feed on grasses and sedges in coastal marshes and spend a lot of time paddling in cold water. They have a special way to keep their feet warm. Arteries bring warm blood down their legs to their feet and veins take the cold blood back into their bodies to warm up again. Photo credit: Elsemargriet, CC

**BLACK-CAPPED CHICKADEES** remember not only where they have stashed different food items but also which store of food they have eaten! During the day they fluff up their feathers to keep warm and their skinny legs are kept warm the same way as Snow Geese. At night they can drop their body temperature by 10 to 12°C to save energy. When it is very cold, they also huddle with other chickadees in a nest box or tree cavity. Photo credit: Rob Alexander, B.C.

**FOXES** eat mostly meat - voles, mice and squirrels. Foxes have excellent sight, smell and hearing which helps them find mice beneath deep snow. At night foxes bed down in thickets and heavy bush and keep themselves warm by wrapping their tails around their body. Arctic foxes also have thick fur on their paws, so they can walk on both snow and ice. Photo credit: Pexels, CC

**MARMOTS -** Yellow-bellied marmots spend most of their lives in their burrows. They have special burrows for hibernating which can be very deep (this keeps the marmots warmer and safer from carnivores looking for a winter meal). Marmots hibernate from September to May – almost 9 months out of 12! Photo credit: skeeze, CC

**TURTLES and FISH -** Turtles in frozen freshwater lakes can survive winter. The layer of ice on top of the lake helps the water keep its heat. The warm water sinks to the bottom, where the turtles brumate (brumation is a kind of hibernation). Turtles do not breathe while they brumate, they absorb oxygen through other parts of their bodies. Fish also gather in this warmer water at the lake bottom and 'rest' through the winter. Photo credit: Capri23auto, CC

**SNAKES -** In cold climates it is necessary for snakes to hibernate in dens they find in logs, tree stumps, rock piles, crevices under roads, railroad tracks and buildings. There can be dozens to hundreds of snakes found in these dens. Watching them come out in spring is an amazing sight! Photo credit: Wikipedia • Snowflakes: Tetkoren, istock

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