

INSIDE...

SE(RET (ODE 3

HORSETAILS 4-5

ROBINS 6-7

HIDDEN WONDERS

WORDSEAR(H

READ ALOUD STORY (12-13

ASK AL (

TRY THIS!

NATUREWILD NEWS

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I love spring! Seeing plants punching their way out of the soil, feeling the warmth of the sun and hearing the sound of Robins welcoming the day with their distinctive 'cheerily, cheer up, cheer up, cheerily, cheer up' are some of my favourite things.

Spring is also the time for the largest global environmental event: Earth Day. I'd love to know what you are doing to celebrate and help nature this April 22. Send me an email or post a picture to Instagram using @NatureKidsBC #Earthday2016 and show me what you did.

I wish you a wonderful Earth Day and a nature-filled day, every day! Kristine Webber, Executive Director

Nature KIDS 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: \$25 per year. Schools membership: \$45 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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Elders Council for Parks









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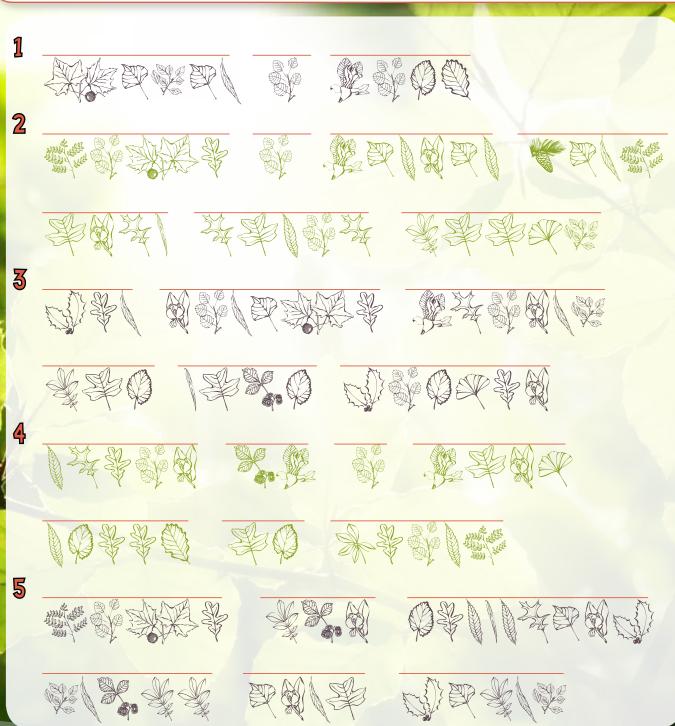


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WHAT WILL YOU DO ON EARTH DAY?

check out our secret code for ideas...





CHERILY, CHEER UP, CHEER

sings the **American Robin** - the first bird singing in the morning, and the last at night. When those of you who live in the interior

or north of B.C see the robin returning after the cold winter, you know spring is truly on its way.

The American Robin was named by early settlers from England who were feeling homesick – this bird with the red breast reminded them of the Robin Redbreast back in England, even though 'our' bird is almost twice the size.

Robin Redbreast: Credit - Martin Mere, C.C.



Robin singing: Credit -K. Schneider,

K. Schneider, WHERE DO AMERICAN ROBINS LIVE?

American Robins live just about everywhere in North America from the Yukon and Alaska to the Gulf of Mexico and southern Mexico. They share their lives alongside humans very well - lawns provide grubs while bushes and trees provide berries and other fruit. However, garden shrubs provide the best nest sites.

The movie

"Mary Poppins" shows

American Robins hopping about
on a window ledge in London.
I wonder how movie makers
could have made such a
'big' mistake!



WHAT DO ROBINS EAT?

You often see robins on the ground, pulling up worms and darting after beetles and caterpillars: they even wander along the beach looking for small mollusks such as periwinkles. In winter they 'garden' with their beaks as they toss fallen leaves about, looking for anything tasty that might be hiding beneath. They like fruit - particularly blackberries, chokecherries and Mountain Ash berries.

Robin eating berries: Credit - Lucina M, C.C.

NETTING

The female robin builds a cup-shaped nest of mud mixed in with dried grass and small twigs; often she will weave in pieces of string, scraps of cloth and bits of paper she finds lying about.

WHEN THE FEMALE ROBIN IS BUILDING THE NEST, SHE MAKES AN AVERAGE OF 180 TRIPS A DAY COLLECTING MATERIAL.

Credit -Irina Souiki, C.C. She then lays three to four blue eggs. She sits on the eggs for about 40 minutes, turns the eggs and flies off for a break. While she's gone, the male guards the nest and sometimes sits on the eggs.

This robin tries to make its nest hard to find: Credit - Rob Alexander, B.C.

Once the eggs hatch you will see the parent robins searching out worms and cutworms to feed their nestlings. Each nestling gets fed about 35 to 40 times a day. While the chicks are in the nest, the parents keep it clean by carrying away their fecal sacks (poop). After about 13 days the nestlings fledge and are ready to leave the nest.

UP, CHERILY, CHER UP...

MIGRATION

Robins are not long distance migrants. They move southwards in waves - the most northerly go just as far south as they have to in order to get away from the really cold weather. At the same time many robins already in that area will move further southwards to make room for the newcomers. In spring and summer robins are usually in pairs or with their young families but when winter comes they join together in large flocks to go foraging for food. That's when you may see them land on a Mountain Ash and strip all the berries from it in two or three days.

SURVIVING WINTER

Robins have a neat trick for winter survival - they have a stretchy gullet (canal between the mouth and the stomach). This means they can stuff themselves with extra food before they settle for the night. This late afternoon/evening snack probably helps them survive long cold nights.

TUK Crows, hawks and raccoons like to rob the nest, but the worst enemy for the robin - indeed all birds - is the CAT, and don't the robins know it! When you hear a loud alarm "cheep" or scolding "tuk, tuk, tuk' you can be pretty sure there is a cat on the prowl for a young robin that has fallen when trying to fly. Time to run outside and chase the cat away! (Do not move the baby bird - the parents will come to get it when the cat has gone.)

OBSERVING ROBINS

If you want to study birds closely, the American Robin is a good species to choose as they are not easily scared. Indeed, if you are out birdwatching and you scan a bush with your binoculars, you may find a robin hidden a few centimetres inside, quietly watching you.



Young Robins have speckled breasts so they are not easily seen - Credit: grandmasandy+chuck, C.C.

This robin landed next to the photographer and proceeded to sunbathe by spreading its wings. Many birds do this as the dust keeps their feathers healthy and the heat helps keep them free of parasites.

Cat hunting: Credit - Niel

Schubert, C.C.

FICES ET Harbingers By Terry Taylor and Brian Herrin

What's a **harbinger** you ask? A harbinger is like a herald. It announces that something important is coming soon.

The plant we call a **Horsetail** is a harbinger - it announces that spring is on its way.

Do you know what a Horsetail is? You may have seen seen this plant but did not know its name. Horsetails are excellent harbingers - if you are near a stream or wet spot you will see their first pale stems poking out of the wet ground as soon as spring rains soak the soil.

Horsetails are some of the oldest plants in the world. In fact, they have been growing on our earth for over 300 *million* years. That's 1500 times longer than humans have been here!

Mature Horsetails are usually bright green but in spring their stems are different! These spring-time stems are made up of sections separated by thin diamonds of scale-like leaves that circle the stem. The stems are pale green, cream or tan coloured because they have little to no chlorophyll in them, and soft because they have no silica to make them tough.

Each stem has a cone-shaped top called a **strobilus** that is made up of six-sided scales. (Fig. 1) This is where the **spores** grow.

The strobilus lives just a few weeks until the spores mature and drop or float away.

Spores are how plants like ferns and Horsetails propagate (grow new plants). Spores are usually very, very tiny and spread by floating away on the breeze.

Horsetail spores are a very interesting shape. Each microscopic green spore (Fig 2) has four twisted arms *(elaters)* with little paddles on their ends. These arms are very sensitive to moisture. When they are in a damp place they twist together. When it is dry they stretch out.

This twisting and untwisting helps to push the spores out of the strobilus so they can float away and find a place to grow.

If you tap an opened strobilus on to the leaf of a tree, you can often see spores floating away on air currents.



FIGURE 1. Horsetail strobilus: Credit - Rosemary Taylor, B.C.

FIGURE 2. Spore with elaters curled up in wet weather



FIGURE 2. Spore with elaters extended in dry weather

of SPRING

Horsetails are ancient plants and can do something modern plants cannot do. If you pull the branches apart into little segments you can stick those little segments back together again! Sometimes you can even take the stem apart and have a pile of little tubes.

After the strobilus has matured you will find bright green shoots springing up like little pointed towers. You can see one just coming up behind and to the left of the Stream Violet flower in Figure 1. When these little towers grow and open out you can see that they are made up of hard, ridged, green, tubular stems and branches but no real leaves.

Clusters of branches grow in whorls (circles) on the upright stem. The whorls are equally spaced along the stem, which is hollow.

When you feel the bright green vegetative stems (Fig. 3 and 4) that grow after the strobilus has fallen off they are hard and rough. These stems have *silica* in their tissues so they can grow up straight. Silica is similar to glass (*See Glass Sponge Reef story*) and these rough Horsetail stems have been used by First Nations to sand and polish canoes, carvings and arrow shafts. Early settlers called Horsetails *Scouring Rush* and used them for scrubbing out metal and ceramic pots.



FIGURE 3. Horsetail stem: Credit - Rosemary Taylor, B.C.

When the earliest Horsetails were alive they were small trees, up to 30 metres tall. We will never see a Horsetail tree, but if you squat down amongst a clump of Horsetails and squint a bit you can step back in time to 300 million years ago when the understory of the forests were covered in 30 metre tall Horsetails!

These tall plants were annuals, dying off every year. Their fallen stems became huge mats. The mats were then compressed by deep layers of mud and sand for eons (a very long time). This compressed vegetation eventually turned into coal.



FIGURE 5. Horsetail stems: Credit - Anke Lenteren, C.C.

Not only are Horsetails a harbinger of spring every year but they are time capsules from millions of years ago.

AIDDEN WONDERS

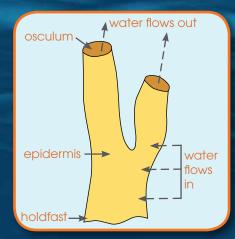
Puget Sound Rockfish inside sponge: Credit - Diane Reid, B.C.

Deep in the chilly coastal waters off British Columbia - in Hecate Strait, the Gulf Islands and Howe Sound - grows one of the strangest life forms on the planet - the **glass sponge reef**.

While glass sponges are found in different parts of the world, only off our coast do they form reefs (*bioherms*). Scientists had thought that reef-forming glass sponges (Hexactinellid sponges) went extinct millions of years ago, during the age of the dinosaurs. Then in 1987, glass sponge reefs up to 9,000 years old were discovered in BC waters.



Cloud Crab www.cmeps



What is a sponge?

A sponge is the simplest animal on earth, with soft organic tissue on a harder mineral skeleton, and no internal organs. In **glass sponges** the skeleton is actually made of nearly pure glass – silica dioxide. The sponges absorb the silica from the sea and use it to form long sharp 'needles' called spicules, which they put together like a set of tent poles. The sponge's soft tissue wraps around this glass skeleton and gives the sponge colours from snow white, to cream to solid orange. Imagine! A living creature made almost entirely of glass!

How sponges feed

The sponge is a filter feeder. It feeds by channeling water through canals in its body and absorbing plankton (microscopic plants, animals and bacteria) for food. Along with this food the sponge also takes in things it does not want such as sediment. The sponge rinses this sediment out by moving water up through its inside and pushing it out of the top opening (osculum).

It has recently been discovered that sponges can filter **900** times their body volume of water in one hour. This constant filtering cleans tons and tons of water every day.

How bioherms grow

The glass sponge attaches itself to rocks and builds up the reef in layers of dead sponge with living crowns on top. Some reefs grow as tall as an 8 storey building and can cover an area of 300 square kilometres. These unique reefs are among the largest living creatures in the world.



Glass Sponge Reefs

By Glen Dennison, Marine Life Sanctuaries Society and Daphne Solecki



Because glass sponge reefs are sessile (attached to the rocky bottom) they act like islands on the flat sea floor, providing food, shelter and nursery areas for many species of sea animals - crabs, shrimps, prawns, krill, annelid worms, sea stars, sea moss (bryozoans), rare bivalves and gastropods - but they are particularly valuable for rockfish.



Glen Dennison: Credit - Sheila Byers, B.C.

Bioherm:

Credit - Roy Mulder:

ts orge Credit - Adam Taylor, 8.0 Howe Sound has the only known bioherms that can be reached by scuba diving. This means that marine biologists can easily go down and study the dark world of cold water sponges. Flourishing in massive beds at depths of 70 to 100 metres, these columns of glass sponge form a habitat for many species of rockfish. In fact we may find that the glass sponge beds are absolutely necessary for the existence of rockfish and for the recovery of the Howe Sound rockfish populations.

Glen says "As a diver, I too can explore the bioherm -

an astounding journey into an alien world. The cream and orange coloured sponge crowns stand between 1 and 2 metres tall and cover the ocean floor so completely that when I dive there is absolutely nowhere for me to touch down, so I float a metre or so above the sponge bed. Below me I can see a forest of the most oddly shaped bodies of sponge; towers, ears,

fans, mittens, baskets and shapes that simply can't be described with words, so we call them 'cloud sponge'."

Cheterochrony Calyx: Credit -Adam Taylor, B.C.



d Ling: Credit - Roy Mulder

N.cmeps.webs.com

Credit - Diane Reid, B.C

SA Yelloweye:

Credit - Diane Reid, B.C

How is a coral reef different from a glass sponge reef?

Coral reefs are only found in the warm waters of tropical seas because they need sunlight to exist. Coral reefs look as though they are made up of rocks, but they are actually live organisms. These organisms are tiny little animals called polyps. Polyps live on the outside of the reef. As the polyps die they become hard and new polyps grow on top of them and over the centuries create the reef.

Threats to glass sponge bioherms: FISHING

As their name tells you, glass sponges are very fragile and easily damaged, so what dangers do the glass sponges face in their day to day living? One direct danger is fishing. Prawning and crab fishing damage the reef; the downrigger ball used in salmon fishing wreaks havoc on the sponge if dropped onto the reef - or worse - dragged through it. The most abhorrent direct damage comes from a boat's anchor when dropped into the sponge beds; first by hitting the sponge, followed by the scythe-like action

of the chain when the tide turns, dragging the chain along through the sponge bed.

Even worse is the damage caused by contact bottom drag-net fishing. Drag-netting scrapes the sea floor, removing corals and sponges and other features. Huge strips of sponge can be ripped from their beds and destroyed. Reefs take hundreds of years to grow back.

Threats to glass sponge bioherms: CLIMATE CHANGE

Direct damage by humans is not the only threat to these unique bioherms. Warming water temperature is an invisible and increasing danger to sponges in Howe Sound.

Bioherm researchers from the Vancouver Aquarium have found that water

temperature above 10 °C damages sponge tissue.

What can we do to protect glass sponges?

The most important way to save glass sponge bioherms from harm is to make sure that as many people as possible know of their existence, including smaller reefs like the ones in Howe Sound, and how easily they are damaged.

When scientists proved that the ground fish trawl fishery was damaging the reefs, fishermen voluntarily stopped fishing in the area. Now Fisheries and Oceans (DFO) has increased protection of glass sponge reefs: no fishing is allowed within 150 metres of all nine glass sponge reefs. The final step would be to declare the reefs a World Heritage Site.

else can we do?

Tell people about the glass sponge bioherms to protect them from damage and play our part in controlling climate change so the water won't get warmer.



;ponge: Credit - Roy Mulder:

For more information: Marine Life Sanctuaries Society: http://mlssbc.com/ Canadian Parks & Wilderness Society: http://cpawsbc.org/

Quillback above the soons

WHO UVES IN THE BIOHERM?

PLQRATSELTTIRB MSRMBUXVCLYRQUI IZEJPDFPLANKTON RQNOYNBGIHMKDMF HOTQSUUWZHARGXQ SCBFKIHDTLLAJC OHILJVCPIPCPTWR NOMENAMDBXKASF F Q E L J N W A F V R R U L J ROCKFISHCZPAIMN JLIFROVQREWENH OALKMSETAQZBRC SSOMAESXBJKIVXH MBFAMIMHPPMFQE SZOTSEACUCUMBER

1. ANEMONE Credit - Carol Munro, C.C.

- 2. BRITTLESTAR Credit - Ken-ichi, C.C.
- 3. CLAM Credit - iStockphotos

12

- 4. CRAB Credit - foxypar4, C.C.
- 5. NUDIBRANCH Credit - flythebirdpath, C.C
- 6. OCTOPUS Credit - vidalia_11, C.C.

- 7. PLANKTON Credit - Macroscopic Solutions, C.C.
- 8. PRAWN Credit - Dan Hershman, C.C.
- 9. ROCKFISH Credit - Diane Reid, B.C.
- 10. SEA CUCUMBER Credit - erikadotnet, C.C
- 11. SEA MOSS Credit - Chris_Moody, C.C.
- 12. SHRIMP Credit - wwarby, C.C.

8









Dolphin: Credit - istockphotos

Far out in the middle of the ocean, where there was nothing to see but sea, and nothing to feel but wet, Puffin bobbed about on the waves. The sky was grey, the sea was, too. Even Puffin's face and beak were grey. Puffin had been at sea for months.

"This is the life for me!" said Puffin. "As much sky as you can fly in, as many fish as you can eat, and the rise and fall of the waves to send you to sleep."

"And don't forget me!" said her friend Dolphin, with a whistle and a click.

"And you," said Puffin. Off they went to catch fish together. Dolphin leapt out of the water and dived under the waves. Puffin dived underwater too, and they swam together after the fish.

One day, Puffin floated on the surface, lost in her thoughts, when Dolphin jumped clean out of water and leapt right over her.

"Hello Puffin, another grand day isn't it?" he said.

"Yes," said Puffin, looking up at the sky. "The days are getting longer, the storms are fewer and the sky is less grey. Soon it will be time for me to leave."

"Leave?" said Dolphin. "But you can't leave!"

"I must," said Puffin.

Dolphin looked around. All he could see was sea. "Where is there to go?"

"Land," said Puffin

"Land?" said Dolphin. "But why would you go there? You can't swim on land! You can't catch fish on land! What's so good about land?"

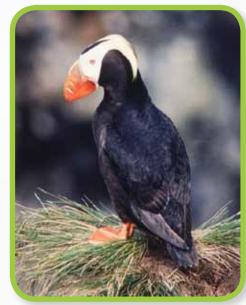
"That's where I will make my nest and lay my egg," said Puffin. "But I don't have to go yet."

So the pair frolicked in the sea and ate fish together a little longer. But it wasn't quite the same. Puffin knew she must leave and Dolphin knew she would be going.

One day, Puffin said, "The days are longer, the storms are few and the sky is no longer grey."

"Neither are you," said Dolphin, looking at his friend.

Puffin saw her reflection in the sea. Her grey face was turning white and her grey beak was growing more colourful.



Tufted Puffin on nest: Credit - David Shackleton, B.C.

"Then it is time for me to leave," said Puffin.

"I'll never see you again," said Dolphin, sadly.

"Of course you will," said Puffin. "I'm only going to lay my egg and raise my baby puffling."

"On the land!" said Dolphin, "Where I can't go."

"On the cliffs, where the land meets the sea," corrected Puffin. "Besides, I'm only nesting on the cliffs. I still have to come back to the sea to catch fish to eat and feed my puffling."

"So we can still see each other?" asked Dolphin.

Dolphin: Credit - blachswan, C.C.

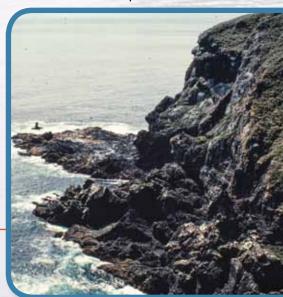
"Every day," said Puffin

And Puffin was as good as her word.

What's more, once her puffling was old enough to feed himself, Puffin left the cliffs and returned to the ocean, where there was nothing to see but sea, and nothing to feel but happy because her good friend Dolphin was there with her.

Adapted from Wild Times March-April 2014 by permission of RSPB Wildlife Explorers

Note to Readers: Tufted Puffins are found in the Scott Islands north of Vancouver Island, British Columbia. Up to 26,000 pairs nest on one of the islands - Triangle Island. This is an ecological reserve and closed to all except researchers.



Triangle Island: Credit - David Shackleton, B.C.



Have a Nature Question?



Al Grass has worked as a career park naturalist and ranger throughout BC. Now he is a well-known nature tour leader and photographer. Al especially likes birds, insects and spiders.

When is a gaterpillar not a gaterpillar?

Answer - when it is a sawfly larva.

If we see a small bird such as a warbler or chickadee with a wiggly green 'worm' in its beak, we think "caterpillar".

But those green worms may not be caterpillars at all - they may be the larvae of sawflies.

Sawflies are not flies; they are related to ants, bees and wasps

Sawfly larvae are often found on willows and alders. If you touch one gently it will wriggle into an 'S' shape. Birds know these juicy little green 'worms' are a tasty treat.



Sawfly Larva: Credit

Sawfly: Credit - gailhampshire, C.C.

TRY THIS!

by Dr. Eucan DooWitt

Find out how a Snail's Foot works.

For this experiment you will need:

- a live Garden Snail
- an absolutely clean, clear glass jar at least 10cm tall
- 1. Put the snail into the jar. Cover the jar with a piece of plastic wrap with holes punched in. Watch as the snail moves around and begins to crawl up the side.
- 2. Can you see how it is able to move on its single 'foot'?
- 3. Does it leave a 'snail trail'?
- 4. Give the snail a piece of lettuce. Watch how it eats with its toothy tongue.
- 5. What else will your snail eat? Where does it feel safe? Add a second snail do the two snails hang out together?
- 6. Write up your findings in your Nature Notebook. Make a sketch of your snail and colour it.
- 7. **Important**: Never leave the jar in the sun. After two days, put your snails back where you found them.

(Note: if you can't find a snail, a slug will do as well.)



NATUREWILD-MENS

Passports to Nature

Emma and Marlene (Salmon Arm), Anya (Vancouver), Seija (Prince George) and Isla, Rowan, and Ewan (Eastern Fraser Valley) all sent in their 1st passports; Maya (Delta Home Learners), Jonathan and Seiran (North Okanagan) earned their caps, and Alida (Vancouver) earned her T-shirt. Well done, everybody!

Remember, you can check off pages in your passport for any nature-based outing such as a school field trip, visit to a bird sanctuary, a park sponsored activity or family camping trip. **Nature KIDS** Explorer Days aren't the only way to learn about and enjoy nature in your neighbourhood.

Explorer Days:

NatureKIDS South Okanagan took part in Earth Week Tree Planting at Ellis Creek, Penticton.

Eastern Fraser Valley Nature KIDS wrote letters to both the B.C. and Federal Ministers of the Environment, asking her to help protect Barn Swallows, whose population is crashing. Here are some letters they wrote.

(1) Sigurney (2) Tanner (3) Corbin

North Vancouver: Participants had a wonderful time making drums at the NatureKids office.



Credit - NatureKIDS B.C.

The first NatureBlitz in the Lower Mainland, co-sponsored by NatureKids BC and Nature Canada, was held at Reifel Bird Sanctuary on February 29th. Everyone was enthralled by the live-trapped vole.

Credit - Nature Canada

OOOPS! WE MADE A MISTAKE.

In our last issue this great picture of a Desert Grasshopper was taken by **Rob Alexander** not Gerry Polman, sorry for the mix up Rob!





With its forests and deserts, ocean and streams, British Columbia is a place with diverse ecosystems. Check out these wild facts about some of the amazing plants and animals that live in our province!

Banana Slug

(Ariolimax)
The banana slug might
be soft, but it has
thousands of tiny "teeth"
on its radula (tongue).
It can munch many hard
foods, including carrots.
Credit - Natalie
NcNear, C.C.



Pacific Chorus Frog

(Pseudacris regilla)
These little frogs are sneaky!
They often breed in **ephemeral**(temporary) pools that dry
up in the summer. This means
that they can avoid
predators such as fish.
Credit - Rob Alexander, B.C.



Little Brown Bat
(Myotis lucifugus) Bats use
echolocation (the echoes
of sound) to help them
hunt. When it's hunting, a little
brown bat will call up to
200 times per second to
locate its prey.
Credit - Muzik Hounds, C.C.



Rufous Hummingbird

(Selasphorus rufus)
The Rufous Hummingbird may only be 8cm long, but it can migrate up to 3,200 km to over-winter in Mexico. They fuel their migration by eating tiny insects and flower nectar.
Credit - Rob Alexander, B.C.



(Naticidae family) Have you ever seen a clam shell with a hole in it? The large moon snail moves its body over its prey - the clam - creates a hole in the shell and eats it! Credit - Ron Long, B.C.



Blue Dasher Dragonfly (Pachydiplax Iongipennis)

These speedy hunters catch their prey on the wing. They're able to hover or even fly backwards to capture and eat other flying insects.

Credit - Wildretum, C.C.





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