NATUREWILD

Magazine for the NATUREKIDS of British Columbia | Summer 2016



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EDIBLE WILD

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> > QUESTIONS?

OUTDOORS IN NATURE – this issue is made for Summer Fun!

The Turkey Vulture story begs you to lie on your back and look up at the sky wishing you were up there with them, lazily riding the thermals hour after hour. When you've finished searching the sky start your land exploration – check out those never-stopping ants. Follow one carrying some food to locate the nest but don't disturb! How many different sizes, shapes and colours of ants can you find?

Then into the forest to hunt for those tasty berries - watch quietly to see who else shares your treasures. Finally, down to the sandy beach if you can, to look for moon snails and sand dollars - even a Plain Midshipman Fish.

Carry out an experiment - Dr. DooWitt invites you to study the tiniest of water plants and see what makes them so successful.

So many things to do and only a summer to do them in! Better start today - let us know what you did... email us at naturewild@naturekidsbc.ca

Brian Herrin, NATUREWILD author and co-editor

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 NATVREWILD magazine: \$20 for 4 issues per year. For more information and to sign up online go to: naturekidsbc.ca

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By Sheila Byers

Many land animals such as birds, frogs, monkeys, and wolves, communicate by singing. In the ocean, whales sing - humpback whales sometimes sing for more than 24 hours.

Amazingly, some fish species can sing too! Also for long periods of time. Right here, on the coast of B.C. there is the Plainfin Midshipman Fish (*Porichthys notatus*), nicknamed the Singing Fish.

By rapidly vibrating its specially adapted swim-bladder the male Midshipman can sing several songs: he hums, he grunts, he growls. The humming or 'fog horn' sound attracts females; grunting defends his nest; and growling shows he is getting ready to attack.

His hest, you ask? Yes, the male builds the nest. When it comes to housekeeping and raising the babies, the male Midshipman is the best.

For most of the year the Plain Midshipman fish live deep in the ocean. Then in the early spring the fish migrate from the deep water to the shallow, rocky intertidal shores. The male arrives first and immediately builds his nest under a rock by cleaning out sand and shell material to make a shallow cave.

Then the males sing their fog-horn song to attract females. A big male can sing much longer and louder than a small one and often attracts more than one female to lay her eggs - the male may end up having 1000 eggs to care for! After a female has attached her eggs on the underside of the rock that is covering the nest she heads back to the ocean, abandoning the male. She will not return

until next year's spawning season. Meanwhile, the male fertilizes the eggs and cares for them. He guards the developing young until the newly hatched baby midshipman are eight weeks old. At that time they are just hanging on to the rock by an umbilical cord and ready to swim away to sea on their own when the tide is right.

Raising babies is hard work! When the male first built his nest in the spring, he was fat and happy. But after tending to the babies throughout the summer, he loses a lot of weight and is thin and exhausted because he has had very little food to eat.



in the World of Fish



Caring for his young in the intertidal area with tides coming and going daily, the Midshipman father must deal with extreme conditions in his nest, such as

having low or no water for up to eight hours;

 being exposed to air that requires breathing through his skin (rather than his gills);

 suffering hot temperatures and human-caused pollution;

 preventing small males from sneaking into the guard male's nest.

All this at the same time as he tries to avoid being eaten or injured by hungry predators like eagles, herons, gulls, crows, and bears. The Plain Midshipman father does it all!! And what is more, he comes back again the next year to raise another huge 'family'!

How did the Plain Midshipman fish get its name?

It has a pattern on its belly that reminded some people of the brass buttons on the uniform of midshipman naval officers. The pattern is created by hundreds of

tiny dots called *photophores* which are cells that give off light. When the Midshipman photophores flash, a broken line of

light confuses predators and helps to camouflage the fish.

Many thanks to Dr. Sigal Balshine for her contributions to this story. (Dr. Sigal Balshine, McMaster University, Aquatic Behavioural Ecology Laboratory, Hamilton, ON. UBC Visiting Faculty Beaty Biodiversity Museum "Way Cool" Series Lecture, February 1, 2015 http://drupal.it.ubc.ca/videos/20136-midshipman-fish-are-way-cool-because)



Midshipman's brass buttons: Credit - Official U.S. Navy Imagery, CC

Down on the Intertidal Zone A message from Sheila

"Many of the animals we find at the ocean's edge look very different from us. Some of them don't even look like they're alive at all! When you're at the beach, remember that you're visiting someone's house. Be kind and careful to every animal that lives in that house. Animals that live under rocks are there to keep moist and to hide from predators. This means that if you look under rocks, you need to remember to place them gently back where you found them so that all of the animals that you can see, as well as the many tiny ones you cannot see, will be safe.

Be a **Beach** Star and care for the animals in the intertidal zone!"

Noses on the ground Sniffing Out Invaders!

By Sue Staniforth, Invasive Species Council of BC

Dogs battle invasive species! "Sniff! Sniff!" "Woof! Woof!"

There are some new conservation workers at Alberta's boat check stations these days..... mussel-sniffing dogs!

THE TEAM

Suess, a German shepherd, Diesel, a chocolate lab mix and Hilo, a one-year-old black lab/golden retriever are specially-trained dogs helping to keep invasive mussels out of western Canada.

THE TARGET

Zebra and quagga mussels are tiny invasive freshwater mussels from Europe that cause big problems in Eastern Canada. There are none in BC yet, but they have been found as far west as Manitoba.



The Team: Credit
- Alberta Environment & Parks

THE EQUIPMENT - the dogs' noses!

Dogs' senses are from 10,000 to 1,000,000 times sharper than ours. While we might notice if our cup of tea has a teaspoon of sugar added to it, a dog can detect a teaspoon of sugar in four million litres of water (as much water as two Olympic-sized swimming pools!)

This amazing nose is what makes dogs such good mussel-catchers. Even though the mussels are very small – only about the size of your baby fingernail when full grown - the dogs are able to sniff out a 'Quagga' or a 'Zebra' smaller than a grain of rice!



The dogs wear this crest: Credit - Alberta Environment & Parks

What's the problem with invasive mussels? Zebra and quagga mussels

- create massive colonies in lakes and rivers that clog pipes for water treatment and power plants, and harm native ecosystems.
- filter water so efficiently that they eat all food sources like plankton, starving out native species.
- damage fish and wildlife by increasing toxic (poisonous) algal blooms.
- take over whole shorelines and cut swimmers' feet with their sharp shells.

We don't want them in BC!



DOGS ON THE HUNT

Sniffer dogs Suess, Diesel and Hilo work at boat inspection stations, and wear bright orange vests. Protective booties on their feet prevent them scratching the boats.

When Hilo is told to check out a boat, he immediately starts sniffing all of the boat's nooks and crannies. If there are mussels on the boat, Hilo sits down where he has found the scent until his trainer asks him to "show me" - then the dog points to the spot with his nose and gets a treat - a toy ball to play with. The boat is then washed with a special hot water, high-pressure washer to kill the mussels.



Last season Hilo, Seuss and Diesel completed over 12,000 watercraft inspections. Eleven boats were decontaminated for mussels - most of these boats were headed for British Columbia. so hooray for the dogs!



Hilo`noses' at an invader mussel; Credit-Frani H

British Columbia will soon be recruiting these 'canine conservation officers' as we REALLY do not want quaggas and zebras invading our province. So! Get ready to get 'sniffed' at a boat station soon!



What do they look like?

Zebra and quagga mussels are tiny, with a triangular shape and black or brown patterns on their shells. One mussel can produce up to a million eggs a year!

Quarter: Credit - MorboKat, CC • Quagga and Zebra mussels



Learn to identify zebra and quagga mussels. Commit to the

CLEAN DRAIN DRY program!

CLEAN off all plant parts, animals, and mud from boat and equipment (boots, waders, fishing gear, etc.). Use a power wash station if available.

ORAIN onto land all items that can hold water (e.g. buckets, wells, bilge, and ballast).

all items completely before launching into another body of water.

Report ALL sightings of zebra or quagga mussels to the Report All Poachers and Polluters (RAPP) hotline: 1-877-952-7277





Seashells (and more!) by thicia Edgar

Beaches rock! And sometimes they're sandy. Every beach is different. Some beaches are made up almost entirely of sand, while others have a lot of larger rocks. Some beaches have deep tidal pools that contain marine life even when the tide is out, and on other beaches you can barely see the water when there is a low tide



Skeleton Sand Dollar (bottom): Credit - Rosemary Taylor, B.C.

the Seashore...

Clams

Are you feeling clammy? If you're looking for animals on a sandy beach, you're likely to find all sizes of clams from the Pacific Littleneck Clam to the gigantic Geoduck.

(In English we pronounce it 'gooeyduck' but the name Geoduck comes from a First Nations word 'g"ideq' meaning 'to dig deep'.)

The **Pacific Littleneck** Clam (Leukoma

staminea): Has a creamy-coloured shell with ridges that start at the top and go to the bottom of the shell. These clams are easy to dig when they're alive, because they live closer to the surface of the sand than Butter Clams, First Nations people have eaten these clams for thousands of years. In fact they created 'clam gardens' with ideal growing conditions for these clams.

Photo: Credit - J. Maughn, CC



The GOODICK Clam (Panopea generosa);

This enormous clam buries itself deep in the sand. Its shell can reach 20 cm across and it has a siphon or 'neck' up to a metre in length. If no-one eats it first, a Geoduck can live for an amazing 150 years!

Photo: Credit - Don McCullough, CC



Leave the shells on the beach!

Everyone loves to collect shells, but please take just one or two. Shells need to be left on the beach as they are an important part of the ecosystem. They provide a surface for seaweed, sea grass, and sponges to attach to. Fish use them to hide from predators and hermit crabs use them as temporary shelters. As more people visit the beach and collect shells the ecosystem becomes less rich. Photo: Credit - Todd Carnahan,



VU LUME

(Cathartes aura)

other member of Nature's clean-up Grew.

By Daphne Solecki (Reviewed by George Clulow, British Columbia Field Ornithologists.)

The breaking down and recycling of once-living material is a very important piece of our living world. Imagine - if every dead leaf that fell from a tree or if every bird, animal or insect that died in the wild just stayed on the ground - we should not be able to move! Turkey Vultures to the rescue! The Turkey Vulture's Latin name tells the story - Cathartes means 'purifier' or 'cleanser'.

In southern British Columbia in summer, Turkey Vultures can be seen riding the wind, their two-toned wings held up in a shallow V-shape, soaring gracefully for hours and hours without flapping. As they fly, they are searching for the aroma of an animal that has been dead for a day or two.

When animals die and start to decompose, a gas escapes and this is what the Turkey Vulture will pick up. Their sense of smell is so keen they can smell a dead mouse under leaves from 60 metres up in the air: about eight times the height of a house.

They rarely choose to eat plant material, but feed almost exclusively on carrion - the dead bodies of birds and other animals that have died from natural causes, disease, starvation, and accidents such as collisions with cars. They also eat washed-up dead fish. Instead of leaving rotting carcasses, the Turkey Vulture leaves nice, clean bones.



Turkey Vulture feeding: Credit - bamyers4az, CC

Carcasses tend to be very messy, which is why the Turkey Vulture has no feathers on its head. It often needs to stick its head inside the carcass to get the meat. Feathers would get all stuck up with gooey muck, but the vulture's body is easy to clean. The little bits that are left on a bald head will get baked dry

and fall off while the vulture sits resting in the sun after its meal.

At night, Turkey Vultures roost in large community groups, separating as the day warms up to go off and look for food on their own. They usually make their nests on the ground and in caves, but for the past one hundred years they have also nested in abandoned farm buildings such as pig sties and barns.



Turkey Vultures are gentle, non-aggressive birds and have few natural predators. However, if some creature were to raid its nest, the Turkey Vulture has a powerful defence – it vomits! The coughed-up lump of half-digested meat smells absolutely disgusting and is enough to put off any raider. The vomit also stings (from the stomach acid that is mixed in it) if the raider gets some on its face or eyes. After the raider has gone, the Turkey Vulture wastes nothing – it eats up the spit-out food.



The Turkey Vulture has another very unusual behaviour. It squirts thick white **urine** (pee) down its legs! This does two important things. A vulture cannot sweat so wetting the legs helps to cool it off. The urine also has powerful acids that kill off any bacteria that may be on the legs after the Turkey Vulture has been stepping in its food.

When September comes, Turkey Vultures prepare to migrate south for the winter. On the mainland their route south is overland but from Vancouver Island, the Juan de Fuca Strait presents a seawater barrier - a challenge for them to fly across.

So they wait, sometimes for weeks, until the winds are right for crossing. Here you may see many hundreds of Turkey Vultures in the air at once, soaring in flocks called "kettles", trying to gain enough height to carry them as far across the Strait as possible without having to flap their wings. We wave them goodbye with thanks for another summer cleaning up British Columbia.



"Summer Timel and the livin' is easy..." except for the

WORKER ANT

By: Brian Herrin

Summer days with silver haze

Filled up with games and fun.

Until I meet, beneath my feet

An ant upon the run.

Worker ant, you make me pant

To watch you toil all day.

You find a bug, begin to tug,

And never stop to play.

Go out. Come back. Along your track

Without a map or sign

You know your trail and without fail

You walk the straightest line

Up stem and stick, until you pick

Your path back to your nest.

I wonder why you never try

To take some time to rest?

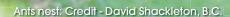
Just look at me, I'm always free.

I hardly work at all.

I've lots of time to watch you climb.

Oh! That's my lunchtime call.







TRY THIS! BY DR. EUCAN DOOMITT

BBLING WITH DUCKWEE

You will need:

- Duckweed (Lemna sp.) from a local pond or ditch
- Three small, clean, plastic yogurt containers labeled A, B and C
- Magnifying glass for counting leaflets
- Nature Notebook
- Put enough pond water in each container so leaflets will be floating. Add pond water as necessary to keep the roots at least 1cm off the bottom.
- 2. Put Duckweed plants in each container to total 10 leaflets in each. Choose healthy green leaflets with no brown areas.
- 3. Each day, count the number of leaflets in the containers. If you can see a tiny new leaflet growing - count it. Make a chart in your Notebook to help keep track.
- How long does it take your Duckweed samples A, B and C to double their number of leaflets to 20 on each? How long to double again to 40? Send your results to Dr.DooWitt@naturekidsbc.ca so I can collect more data to report to you.
- Will Duckweeds keep on growing in your containers forever? Does anything stop them?

Some interesting facts about Duckweed:

Each Duckweed plant spreads by growing new leaflets that eventually split from the parent plant. These new leaflets mature in about seven days and then begin producing more new ones. Duckweed can easily double in quantity every three days and can cover a pond in one summer.

In the fall Duckweed produces very heavy buds which sink to the bottom and overwinter there. In spring as the days get longer and warmer the buds produce leaflets with air cells; these float to the surface to begin the cycle again.

Duckweed is a good food for mammals, birds and fish as it is over 30% protein.









Duckweed in a

Have a Nature Question?



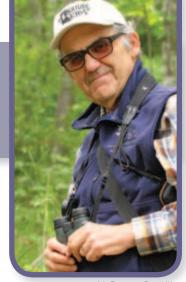
Robber Fly: Credit - David Shackleron

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.

How did the Robber Fly catch and kill the wasp?

Although only about 15mm long the **Robber Fly** is a fearsome killer in the insect world. Also called the **Assassin Fly**, he lurks in ambush like an assassin.



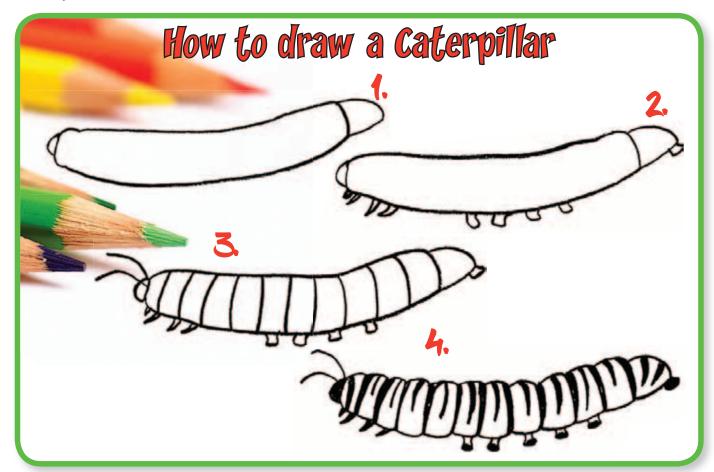
Al Grass: Credit -Robert Alexander, B.C.

When that wasp came by, he pounced. He captured it with his sharp spiny legs, stabbed it with his needle-sharp mouthparts and injected saliva to paralyze it. The saliva also turned the insides of the prey into liquid which the Robber Fly sucked out.

You can tell a Robber Fly from other bee and wasp-like insects – while they are moving around all the time, searching for nectar, the Robber Fly is sitting very still, waiting.

Don't try to catch a Robber Fly! He has jaws that are strong enough to draw blood if he bites you!

Al says: "Please send me more questions. If your question is chosen for NatureWILD you will win a Rite-in-Rain notebook and pencil. Send your questions to naturewild@naturekidsbc.ca, with To Al Grass in the subject line."



NATUREWILD · MET

Passports to Nature

Shelby (Nicomekl), Stacey (Vancouver), Kaylee & Emma (Kelowna), Iris (North Shore) and Theron (Tri-Cities) sent in Passports #1. Hugo (North Shore), Emmy and Ellerie (Nanaimo) each sent in passports #1 and #2 and earned their NKBC caps. Stuart, Carys and Nicolas (Vancouver) all sent in passports #2 and earned their NKBC caps. Nolan (Cowichan Valley) and Alida (Vancouver)

each sent in passport #5. Great work, Alida and Nolan! Well done, everybody!

CONGRATULATIONS MAYA! Maya Sirton (Delta Home Learners) sent in passport #3 AND earned her Bronze Level Action Award! Maya studied the growth of Amanita Mushrooms - my favourite! She promoted a Wilderness Committee petition, helped a friend make a bird feeder and did a project on woolly bear caterpillars with a couple of club friends.

The Eastern Fraser Valley Club had a successful outing to lona for birding. Here is what member Sigourney de Jong wrote about the experience: Jie de Jong, B.C.

It was so exciting when Christine brought out a white bag. It was cinched at the top, but at the bottom of the bag something was

moving and tumbling about. She asked "What do you think is in

this bag?" We knew it was a bird and I was so excited I held my breath. She carefully and slowly reached into the bag and took out a little bird the colour of a lemon, with a black forehead and wings. I knew it was an American Goldfinch. Christine let me hold it between two of my fingers and told me to cup my hand under it. It grasped my finger with its tiny pink claws, and I felt its little soft feathers, then it turned its head around. As I lifted my fingers, it fluttered away into a tree and sang. Bird banding was my favourite NatureKIDS

meeting ever!

The Vancouver Club released Mason Bees in Jericho Beach Park.





Maya with certicate: Credit - Michal Sirton, B.C.

OOPS! in our last

issue, the caption

read 'Tufted Puffin on nest.' It should have read 'Tuffed Puffin on cliff.' (Puffins lay their eggs in burrows.)

The Edible Wild By Tricia Edgar

British Columbia's forests and fields grow food for hummingbirds, deer, and bumblebees, but did you know that they grow food for people as well? These delicious wild foods have provided food for people in British Columbia for thousands of years.



(Rubus Ursinus) Most of us know the so-called Himalayan blackberry, but BC has a smaller cousin, the native

> trailing blackberry. This blackberry's vines run along the ground but its berries are also very tasty. The trailing blackberry grows in both wet and dry areas of southern British Columbia.



Salal

(Gaultheria shallon) This small plant with waxy leaves is common in British Columbia's coastal forests. The berries are blue-black and are not really berries at all, but a thick part of the flower, or sepal. Salal has been a staple food for Coastal First Peoples for

Credit - Todd Carnahan, B.C.

thousands of years.

Credit - Rosemary Taylor, B.C.

Thimbleberry

(Rubus parviflorus)

These berries are just the right size to fit on the tip of your thumb. Peeled thimbleberry stalks are a sweet treat in the springtime. They grow from the south coast into the central interior of British Columbia.

Credit - Todd Carnahan, B.C.



Salmonberry

(Rubus spectabilis) The sweet, orange-red berries of the Salmonberry grow in wet coastal rainforests. Coastal First Peoples enjoyed salmonberry plant shoots as an early spring

Eating Wild Foods - some tips

- Always check with an adult first.
- Get permission to harvest food in that area.
- Only pick a little from each plant to leave food for other animals as well.
- Learn about these plants by adding them to your own garden. The local wildlife will thank you!



Cut out this page and start your BRITISH COLUMBIA NATURE scrap book today!

Huckleberry

(Vaccinium spp) Quick - what colour is a huckleberry? While some huckleberries are red, others are so dark that they're called black huckleberries. All of them have a sweet-tart flavour. If you think that they look like blueberries, you're right, they're closely related to the popular blue fruit. Huckleberries grow in many parts of our province. You can find huckleberries near the ocean and on mountaintops. Credit - Rosemary Taylor, B.C.

Credit - Chancelrie,



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